

STORMWATER REPORT  
**LXT EASTSIDE DEVELOPMENT**

LEE'S SUMMIT PROJECT #47732472

*LEE'S SUMMIT MUNICIPAL AIRPORT*  
**LEE'S SUMMIT, MO**

SEPTEMBER 2023  
REVISED NOVEMBER 2023

Prepared by:



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## General Information:

This drainage analysis is being conducted as part of the LTX Eastside Development project for the Lee's Summit Municipal Airport. The proposed improvements are located on the east side of the airport along NE Hagen Rd. The purpose of this report is to document the drainage for the proposed conditions.

The drainage analysis follows the requirements set forth by the City of Lee's Summit which has adopted Section 5600 of the Kansas City Metropolitan Chapter of the American Public Works Association (APWA) Design Criteria, with its own supplements. APWA Section 5608 requires that the 2-year, 10-year, and 100-year storm events be analyzed and controlled. In addition to this, the City of Lee's Summit requires that the 50-year storm be controlled.

Storm sewer calculations have been prepared using the rational method and are in accordance with these criteria. The attached calculations verify that the post-developed runoff rates for the proposed airport improvements will not exceed the allowable runoff rates for the 2-, 10-, and 100-year storms.

FEMA FIRM map 29095C0430G effective 01/20/2017 classifies the project area as Zone X, indicating it is an area of minimal flood risk.

## Methodology:

Runoff calculations for detention analysis have been performed using the SCS Method with a 24-hour Type II Distribution. Rainfall depths for the various storm events were obtained from NOAA in Appendix A. Calculations for the improvements were performed for the 2, 10, 50 and 100-year storm runoff events. Bentley PondPack was used to complete the calculations. A summary of the detention basin is shown in the table below. The outlet structure has also been designed to meet water quality requirements by providing extended detention. Calculations for storm sewer analysis utilized the rational method utilizing intensities from the City's stormwater manual. Detailed calculations are shown in the Appendix, including time of concentration, runoff, water quality calculations, outlet structure information, web soil survey, and output results from Bentley PondPack.

## Existing Conditions Analysis:

The existing drainage patterns are displayed in Exhibit A. The watershed analyzed in this report is approximately 82 acres and contains a combination of paved, graveled and grassed areas. The entire project area outfalls to an existing low area that leads to a set of 72" CMPs under NE Hagan Rd.

The following table shows the existing release rates for the required rainfall events for the project area:

### EXISTING DRAINAGE

| DRAINAGE AREA | AREA (AC) | TC (HRS) | CN    | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------------|-----------|----------|-------|----------|-----------|------------|
| E-1           | 82.82     | 0.81     | 81.55 | 95.81    | 184.63    | 348.80     |

## Proposed Conditions Analysis:

The basin was sized to accommodate the future terminal and associated development shown on the plans. The proposed improvements are contained within 13 acres of the existing 82 acres analyzed in existing conditions. Exhibit B shows the proposed drainage for the watershed in the post-developed stage which routes offsite drainage through a dry bottom detention basin north of the proposed improvements. For the proposed analysis the project area was separated into three distinct drainage areas. Drainage area P-A is the flow from the proposed improvements, and offsite flow that is collected and conveyed through the proposed storm basin, P-B is offsite flow that drains to the basin, P-C is offsite flow that drains around the basin to the existing culverts under NE Hagan Rd.

The following tables show the proposed release rates for the required rainfall events for each of the drainage areas:

### PROPOSED DRAINAGE

| DRAINAGE AREA | AREA (AC) | TC (HRS) | CN    | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------------|-----------|----------|-------|----------|-----------|------------|
| P-A           | 13.42     | 0.26     | 88.92 | 36.53    | 62.03     | 107.06     |
| P-B           | 68.23     | 0.81     | 80.70 | 76.94    | 150.43    | 287.13     |
| P-C           | 2.64      | 0.26     | 80.00 | 5.66     | 10.96     | 20.75      |

To calculate the allowable discharge from the proposed detention basin the peak flow into the basin was calculated in PondPack, then the runoff from the 13.4-acre project site (P-A) was subtracted from the basin inflow, and the allowable discharge for the site was added. This allowable discharge was then used to size the basin. The basin provides 231,300 ft<sup>3</sup> of the required 98,600 ft<sup>3</sup> of WQV storage for the local 90% mean annual event at a peak release rate of 2.54 cfs.



The following table shows the proposed release rates for the required rainfall events for the drainage basin:

#### *PROPOSED DETENTION*

| RAINFALL<br>EVENT<br>(YEARS) | ALLOWABLE<br>SITE<br>DISCHARGE<br>[D] (cfs) | PEAK FLOW<br>INTO BASIN<br>[B] (cfs) | ALLOWABLE<br>BASIN DISCHARGE<br>[B – P-A + D] (cfs) |
|------------------------------|---------------------------------------------|--------------------------------------|-----------------------------------------------------|
| 2                            | 6.15                                        | 86.89                                | 56.51                                               |
| 10                           | 24.58                                       | 167.13                               | 129.68                                              |
| 100                          | 36.87                                       | 316.53                               | 246.34                                              |

### Conclusions and Recommendations:

The proposed release rate for the future improvements has been proven to release below the allowable release rate of the site for the drainage basin. The chart below shows the flow reduction provided by the basin for each rainfall event.

#### *DRAINAGE BASIN*

| RAINFALL<br>EVENT<br>(YEARS) | PEAK<br>INFLOW<br>RATE (cfs) | MAX WATER<br>SURFACE<br>ELEVATION (FT) | PEAK<br>RELEASE<br>RATE (cfs) | ALLOWABLE<br>RELEASE RATE<br>(cfs) |
|------------------------------|------------------------------|----------------------------------------|-------------------------------|------------------------------------|
| 2                            | 86.89                        | 952.73                                 | 21.70                         | 56.51                              |
| 10                           | 167.13                       | 954.07                                 | 92.45                         | 129.68                             |
| 50                           | 268.06                       | 955.40                                 | 190.34                        | ----                               |
| 100                          | 316.53                       | 955.94                                 | 236.26                        | 246.34                             |

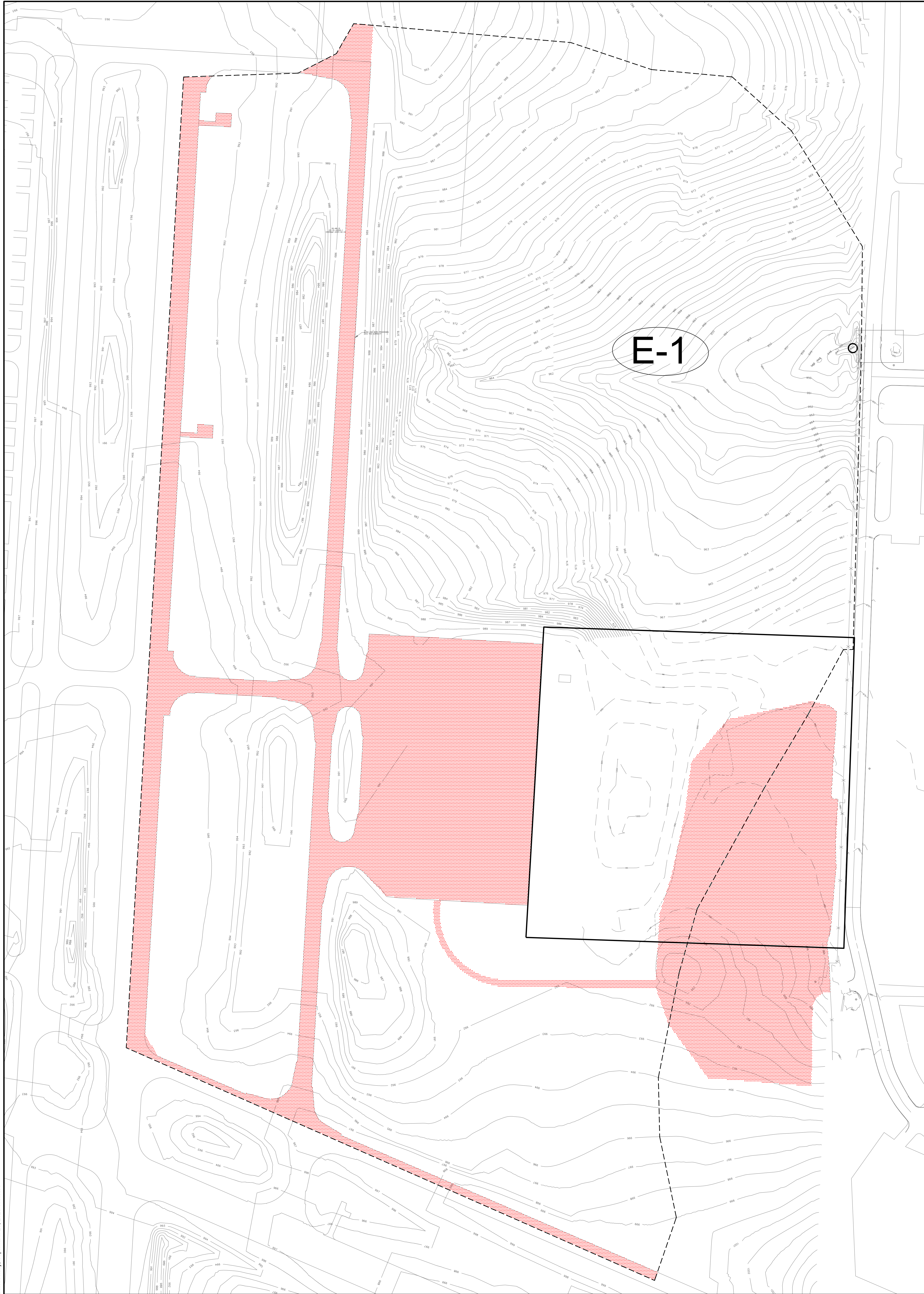
### Storm Sewer Design:

Approximately 2700 linear feet of storm sewer are proposed to be constructed to accommodate the new hangar parking lots and drives. The sizes of the proposed storm sewers range from 18-inch diameter to 36-inch diameter. Storm sewer design will be evaluated using the Rational Method in accordance with Missouri Department of Transportation Drainage Manual for tributary areas less than 200 acres. Storm sewers will be evaluated using a 25-year design event. Storm sewer computations indicating flows, capacities and flow velocities for each of the pipe runs are included in the Appendix.

## **EXHIBITS**



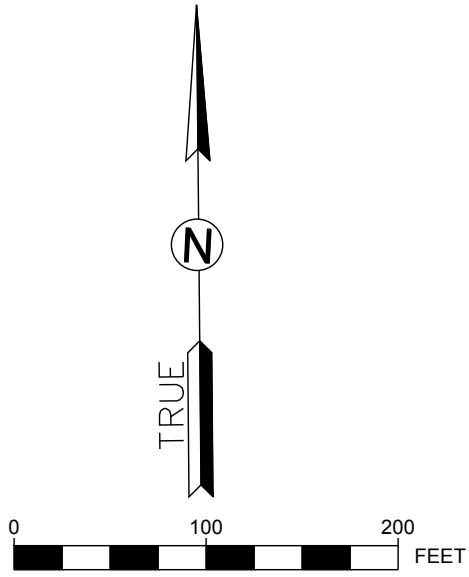
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Date: Friday, September 27, 2024 17:45:06



KEYNOTE

IMPERVIOUS AREA

WATERSHED BOUNDARY



| Description | Area (AC) | C (runoff coefficient) | Total Travel Time (mins) | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|-------------|-----------|------------------------|--------------------------|----------|-----------|------------|
| E-1         | 82.82     | 0.41                   | 48.60                    | 95.81    | 184.63    | 348.8      |



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| MARK | DATE | DESCRIPTION |
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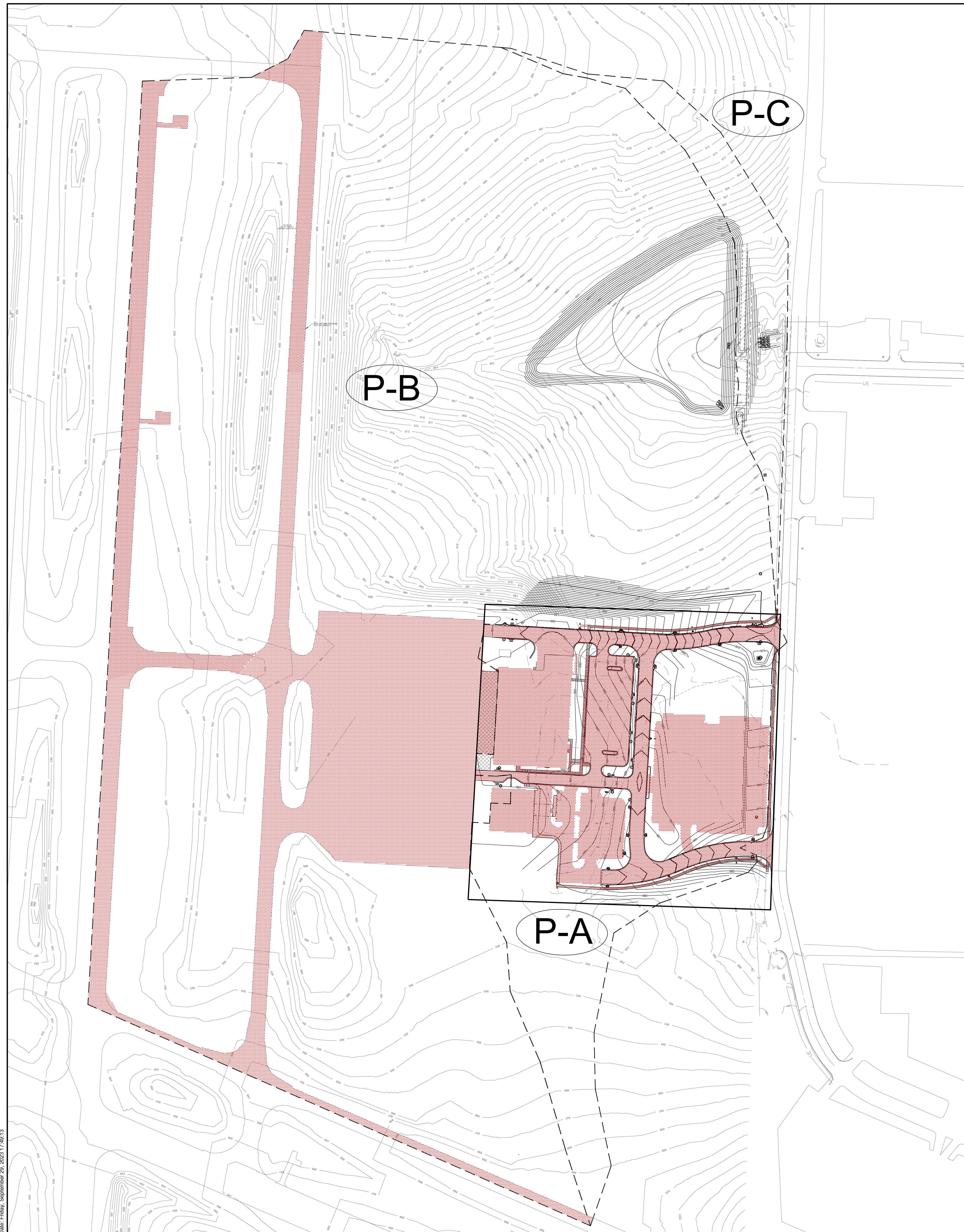
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| DRAWN BY: WLC                    |  |  |
| CHECKED BY: JRC                  |  |  |
| APPROVED BY: TGH                 |  |  |
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SHEET TITLE

EXISTING  
WATERSHED

EXHIBIT A





| Description | Area (AC) | C (runoff coefficient) | Total Travel Time (mins) | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|-------------|-----------|------------------------|--------------------------|----------|-----------|------------|
| P-A         | 13.42     | 0.90                   | 15.88                    | 36.53    | 62.03     | 107.06     |
| P-B         | 68.23     | 0.30                   | 48.41                    | 76.94    | 150.43    | 287.13     |
| P-C         | 2.64      | 0.30                   | 15.51                    | 5.66     | 10.96     | 20.75      |



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| RK | DATE | DESCRIPTION |

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| ADD DWG FILE: WATERSHED-EXHIBITS |
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| DRAWN BY: WLC                    |
| CHECKED BY: JRC                  |
| APPROVED BY: TGH                 |
| COPYRIGHT                        |

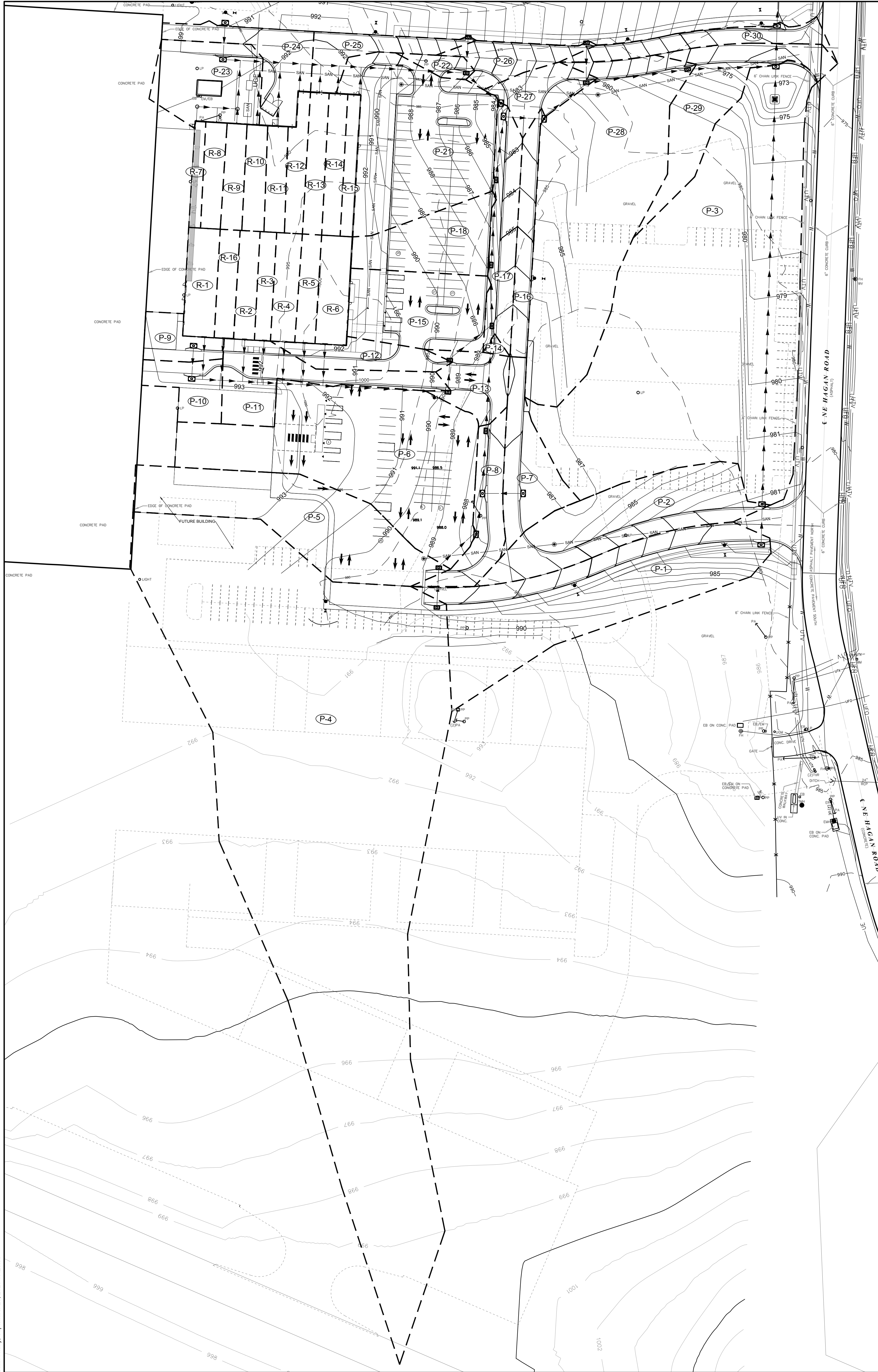
SHEET TITLE

PROPOSED  
WATERSHED

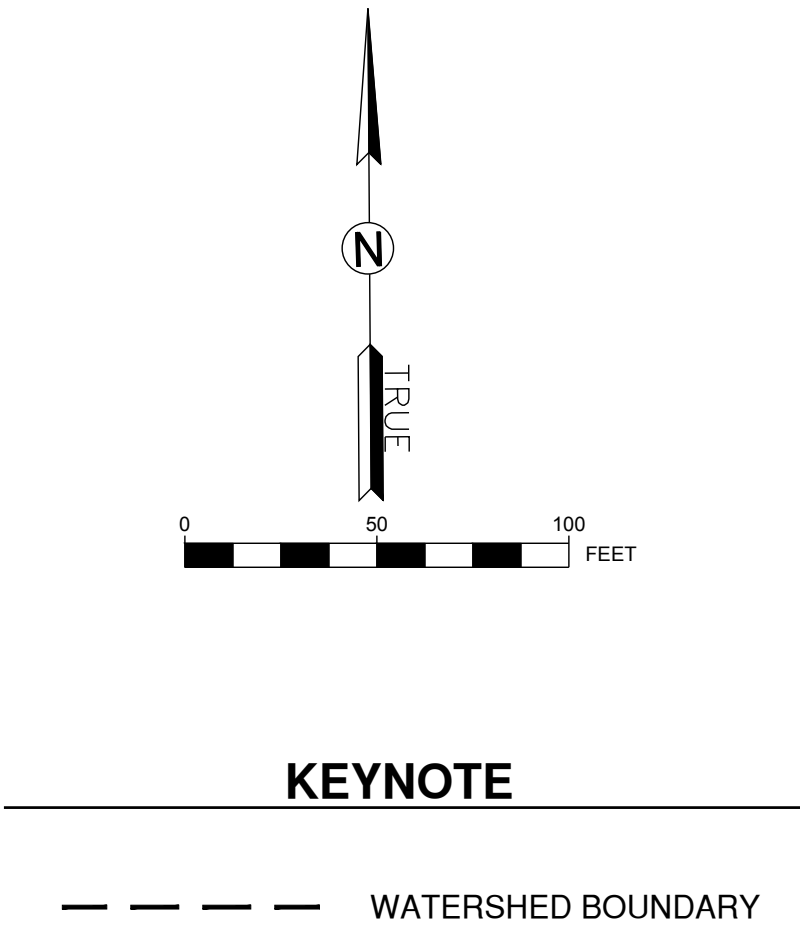
EXHIBIT B



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Date: Friday, September 23, 2022 17:25:35



| Description | Area (AC) | C (runoff coefficient) | Total Travel Time (mins) | Q (cfs) | Intensity (in/hr) |
|-------------|-----------|------------------------|--------------------------|---------|-------------------|
| P-1         | 0.64      | 0.30                   | 10.96                    | 2.07    | 6.82              |
| P-2         | 0.37      | 0.30                   | 11.77                    | 1.18    | 6.64              |
| P-3         | 1.79      | 0.30                   | 15.67                    | 9.51    | 5.89              |
| P-4         | 3.34      | 0.30                   | 17.39                    | 10.61   | 5.67              |
| P-5         | 0.30      | 0.30                   | 12.33                    | 1.34    | 6.52              |
| P-6         | 0.65      | 0.30                   | 5.00                     | 4.61    | 8.53              |
| P-7         | 0.16      | 0.30                   | 5.00                     | 0.85    | 8.53              |
| P-8         | 0.14      | 0.30                   | 5.00                     | 0.82    | 8.53              |
| P-9         | 0.07      | 0.30                   | 5.00                     | 0.40    | 8.53              |
| P-10        | 0.09      | 0.30                   | 5.00                     | 0.58    | 8.53              |
| P-11        | 0.20      | 0.30                   | 5.00                     | 1.43    | 8.53              |
| P-12        | 0.10      | 0.30                   | 5.00                     | 0.71    | 8.53              |
| P-13        | 0.11      | 0.30                   | 5.00                     | 0.81    | 8.53              |
| P-14        | 0.01      | 0.30                   | 5.00                     | 0.05    | 8.53              |
| P-15        | 0.26      | 0.30                   | 5.00                     | 1.74    | 8.53              |
| P-16        | 0.10      | 0.30                   | 5.00                     | 0.79    | 8.53              |
| P-17        | 0.16      | 0.30                   | 5.00                     | 0.90    | 8.53              |
| P-18        | 0.20      | 0.30                   | 5.00                     | 1.41    | 8.53              |
| P-21        | 0.53      | 0.30                   | 5.00                     | 3.44    | 8.53              |
| P-22        | 0.03      | 0.30                   | 5.00                     | 0.20    | 8.53              |
| P-23        | 0.21      | 0.30                   | 5.00                     | 0.74    | 8.53              |
| P-24        | 0.16      | 0.30                   | 5.00                     | 1.07    | 8.53              |
| P-25        | 0.10      | 0.30                   | 5.00                     | 0.77    | 8.53              |
| P-26        | 0.09      | 0.30                   | 5.00                     | 0.66    | 8.53              |
| P-27        | 0.10      | 0.30                   | 5.00                     | 0.58    | 8.53              |
| P-28        | 0.85      | 0.30                   | 5.00                     | 2.41    | 8.53              |
| P-29        | 0.25      | 0.30                   | 5.00                     | 1.03    | 8.53              |
| P-30        | 0.11      | 0.30                   | 5.00                     | 0.87    | 8.53              |
| R-1         | 0.12      | 0.90                   | 5.00                     | 0.90    | 8.53              |
| R-2         | 0.08      | 0.90                   | 5.00                     | 0.64    | 8.53              |
| R-3         | 0.05      | 0.90                   | 5.00                     | 0.35    | 8.53              |
| R-4         | 0.07      | 0.90                   | 5.00                     | 0.54    | 8.53              |
| R-5         | 0.06      | 0.90                   | 5.00                     | 0.42    | 8.53              |
| R-6         | 0.09      | 0.90                   | 5.00                     | 0.67    | 8.53              |
| R-7         | 0.03      | 0.90                   | 5.00                     | 0.24    | 8.53              |
| R-8         | 0.06      | 0.90                   | 5.00                     | 0.43    | 8.53              |
| R-9         | 0.06      | 0.90                   | 5.00                     | 0.43    | 8.53              |
| R-10        | 0.06      | 0.90                   | 5.00                     | 0.45    | 8.53              |
| R-11        | 0.06      | 0.90                   | 5.00                     | 0.43    | 8.53              |
| R-12        | 0.06      | 0.90                   | 5.00                     | 0.49    | 8.53              |
| R-13        | 0.07      | 0.90                   | 5.00                     | 0.53    | 8.53              |
| R-14        | 0.07      | 0.90                   | 5.00                     | 0.52    | 8.53              |
| R-15        | 0.05      | 0.90                   | 5.00                     | 0.36    | 8.53              |
| R-16        | 0.05      | 0.90                   | 5.00                     | 0.42    | 8.53              |



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| MARK | DATE | DESCRIPTION |
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| PROJECT NO:   | 47732472  |
| CAD DWG FILE: | WATERSHED |
| DESIGNED BY:  | WLC       |
| DRAWN BY:     | WLC       |
| CHECKED BY:   | JRC       |
| APPROVED BY:  | TGH       |
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SHEET TITLE

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WATERSHED

EXHIBIT C



## **APPENDIX A**



**NOAA Atlas 14, Volume 8, Version 2**  
**Location name: Lees Summit, Missouri, USA\***  
**Latitude: 38.9624°, Longitude: -94.3704°**  
**Elevation: 993 ft\*\***

\* source: ESRI Maps

\*\* source: USGS



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk,  
 Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aeriels](#)

**PF tabular**

| <b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b> |                                            |                               |                               |                               |                              |                              |                             |                             |                             |                             |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>Duration</b>                                                                                                | <b>Average recurrence interval (years)</b> |                               |                               |                               |                              |                              |                             |                             |                             |                             |
|                                                                                                                | <b>1</b>                                   | <b>2</b>                      | <b>5</b>                      | <b>10</b>                     | <b>25</b>                    | <b>50</b>                    | <b>100</b>                  | <b>200</b>                  | <b>500</b>                  | <b>1000</b>                 |
| <b>5-min</b>                                                                                                   | <b>0.414</b><br>(0.327-0.520)              | <b>0.482</b><br>(0.380-0.607) | <b>0.596</b><br>(0.469-0.752) | <b>0.693</b><br>(0.542-0.877) | <b>0.830</b><br>(0.631-1.08) | <b>0.938</b><br>(0.699-1.24) | <b>1.05</b><br>(0.758-1.41) | <b>1.16</b><br>(0.810-1.61) | <b>1.32</b><br>(0.887-1.87) | <b>1.44</b><br>(0.945-2.06) |
| <b>10-min</b>                                                                                                  | <b>0.606</b><br>(0.478-0.762)              | <b>0.706</b><br>(0.557-0.888) | <b>0.873</b><br>(0.686-1.10)  | <b>1.02</b><br>(0.794-1.28)   | <b>1.22</b><br>(0.924-1.58)  | <b>1.37</b><br>(1.02-1.81)   | <b>1.54</b><br>(1.11-2.07)  | <b>1.70</b><br>(1.19-2.35)  | <b>1.93</b><br>(1.30-2.73)  | <b>2.11</b><br>(1.38-3.02)  |
| <b>15-min</b>                                                                                                  | <b>0.739</b><br>(0.584-0.929)              | <b>0.861</b><br>(0.679-1.08)  | <b>1.06</b><br>(0.837-1.34)   | <b>1.24</b><br>(0.968-1.57)   | <b>1.48</b><br>(1.13-1.93)   | <b>1.68</b><br>(1.25-2.21)   | <b>1.87</b><br>(1.35-2.52)  | <b>2.08</b><br>(1.45-2.87)  | <b>2.36</b><br>(1.58-3.33)  | <b>2.57</b><br>(1.69-3.68)  |
| <b>30-min</b>                                                                                                  | <b>1.02</b><br>(0.809-1.29)                | <b>1.20</b><br>(0.946-1.51)   | <b>1.49</b><br>(1.17-1.88)    | <b>1.74</b><br>(1.36-2.20)    | <b>2.08</b><br>(1.58-2.71)   | <b>2.35</b><br>(1.75-3.10)   | <b>2.63</b><br>(1.90-3.55)  | <b>2.92</b><br>(2.03-4.02)  | <b>3.30</b><br>(2.22-4.67)  | <b>3.60</b><br>(2.36-5.16)  |
| <b>60-min</b>                                                                                                  | <b>1.34</b><br>(1.06-1.68)                 | <b>1.57</b><br>(1.24-1.98)    | <b>1.96</b><br>(1.54-2.47)    | <b>2.29</b><br>(1.79-2.90)    | <b>2.77</b><br>(2.10-3.61)   | <b>3.14</b><br>(2.34-4.15)   | <b>3.53</b><br>(2.55-4.76)  | <b>3.93</b><br>(2.73-5.42)  | <b>4.47</b><br>(3.01-6.33)  | <b>4.90</b><br>(3.21-7.01)  |
| <b>2-hr</b>                                                                                                    | <b>1.65</b><br>(1.31-2.06)                 | <b>1.94</b><br>(1.54-2.43)    | <b>2.43</b><br>(1.92-3.04)    | <b>2.85</b><br>(2.24-3.58)    | <b>3.45</b><br>(2.64-4.48)   | <b>3.93</b><br>(2.95-5.16)   | <b>4.42</b><br>(3.22-5.93)  | <b>4.94</b><br>(3.46-6.78)  | <b>5.64</b><br>(3.82-7.93)  | <b>6.19</b><br>(4.09-8.80)  |
| <b>3-hr</b>                                                                                                    | <b>1.87</b><br>(1.49-2.32)                 | <b>2.20</b><br>(1.75-2.74)    | <b>2.76</b><br>(2.19-3.44)    | <b>3.25</b><br>(2.57-4.07)    | <b>3.95</b><br>(3.05-5.12)   | <b>4.52</b><br>(3.41-5.92)   | <b>5.11</b><br>(3.73-6.83)  | <b>5.72</b><br>(4.03-7.84)  | <b>6.58</b><br>(4.48-9.22)  | <b>7.24</b><br>(4.81-10.3)  |
| <b>6-hr</b>                                                                                                    | <b>2.25</b><br>(1.81-2.78)                 | <b>2.66</b><br>(2.14-3.29)    | <b>3.38</b><br>(2.70-4.18)    | <b>4.00</b><br>(3.19-4.98)    | <b>4.91</b><br>(3.82-6.33)   | <b>5.65</b><br>(4.29-7.36)   | <b>6.42</b><br>(4.73-8.54)  | <b>7.24</b><br>(5.14-9.86)  | <b>8.37</b><br>(5.74-11.7)  | <b>9.27</b><br>(6.20-13.1)  |
| <b>12-hr</b>                                                                                                   | <b>2.65</b><br>(2.15-3.25)                 | <b>3.17</b><br>(2.56-3.89)    | <b>4.06</b><br>(3.27-4.99)    | <b>4.83</b><br>(3.87-5.97)    | <b>5.97</b><br>(4.67-7.66)   | <b>6.90</b><br>(5.28-8.93)   | <b>7.87</b><br>(5.84-10.4)  | <b>8.90</b><br>(6.37-12.1)  | <b>10.3</b><br>(7.14-14.3)  | <b>11.5</b><br>(7.73-16.1)  |
| <b>24-hr</b>                                                                                                   | <b>3.10</b><br>(2.53-3.78)                 | <b>3.71</b><br>(3.02-4.52)    | <b>4.76</b><br>(3.86-5.81)    | <b>5.67</b><br>(4.58-6.95)    | <b>7.02</b><br>(5.53-8.93)   | <b>8.11</b><br>(6.25-10.4)   | <b>9.26</b><br>(6.92-12.2)  | <b>10.5</b><br>(7.55-14.1)  | <b>12.2</b><br>(8.47-16.8)  | <b>13.5</b><br>(9.17-18.8)  |
| <b>2-day</b>                                                                                                   | <b>3.65</b><br>(3.00-4.41)                 | <b>4.30</b><br>(3.53-5.21)    | <b>5.43</b><br>(4.44-6.59)    | <b>6.43</b><br>(5.22-7.82)    | <b>7.89</b><br>(6.26-9.97)   | <b>9.08</b><br>(7.05-11.6)   | <b>10.3</b><br>(7.78-13.5)  | <b>11.7</b><br>(8.47-15.6)  | <b>13.5</b><br>(9.48-18.5)  | <b>15.0</b><br>(10.2-20.7)  |
| <b>3-day</b>                                                                                                   | <b>4.06</b><br>(3.34-4.89)                 | <b>4.70</b><br>(3.87-5.66)    | <b>5.82</b><br>(4.77-7.03)    | <b>6.82</b><br>(5.56-8.26)    | <b>8.28</b><br>(6.61-10.4)   | <b>9.49</b><br>(7.40-12.1)   | <b>10.8</b><br>(8.14-14.0)  | <b>12.1</b><br>(8.84-16.1)  | <b>14.0</b><br>(9.88-19.1)  | <b>15.6</b><br>(10.7-21.4)  |
| <b>4-day</b>                                                                                                   | <b>4.40</b><br>(3.63-5.28)                 | <b>5.03</b><br>(4.15-6.04)    | <b>6.14</b><br>(5.05-7.38)    | <b>7.12</b><br>(5.83-8.60)    | <b>8.58</b><br>(6.86-10.8)   | <b>9.78</b><br>(7.65-12.4)   | <b>11.0</b><br>(8.38-14.3)  | <b>12.4</b><br>(9.07-16.5)  | <b>14.3</b><br>(10.1-19.4)  | <b>15.8</b><br>(10.9-21.7)  |
| <b>7-day</b>                                                                                                   | <b>5.21</b><br>(4.32-6.21)                 | <b>5.87</b><br>(4.87-7.00)    | <b>7.01</b><br>(5.80-8.38)    | <b>8.00</b><br>(6.59-9.61)    | <b>9.45</b><br>(7.59-11.7)   | <b>10.6</b><br>(8.35-13.4)   | <b>11.9</b><br>(9.04-15.2)  | <b>13.2</b><br>(9.67-17.3)  | <b>15.0</b><br>(10.6-20.2)  | <b>16.4</b><br>(11.3-22.3)  |
| <b>10-day</b>                                                                                                  | <b>5.89</b><br>(4.91-7.00)                 | <b>6.63</b><br>(5.52-7.88)    | <b>7.87</b><br>(6.53-9.37)    | <b>8.92</b><br>(7.37-10.7)    | <b>10.4</b><br>(8.38-12.8)   | <b>11.6</b><br>(9.14-14.5)   | <b>12.8</b><br>(9.80-16.4)  | <b>14.1</b><br>(10.4-18.4)  | <b>15.8</b><br>(11.3-21.2)  | <b>17.2</b><br>(11.9-23.3)  |
| <b>20-day</b>                                                                                                  | <b>7.84</b><br>(6.58-9.25)                 | <b>8.86</b><br>(7.43-10.5)    | <b>10.5</b><br>(8.77-12.4)    | <b>11.8</b><br>(9.83-14.0)    | <b>13.6</b><br>(11.0-16.5)   | <b>15.0</b><br>(11.8-18.4)   | <b>16.3</b><br>(12.5-20.5)  | <b>17.6</b><br>(13.0-22.7)  | <b>19.3</b><br>(13.8-25.6)  | <b>20.5</b><br>(14.4-27.7)  |
| <b>30-day</b>                                                                                                  | <b>9.48</b><br>(7.99-11.1)                 | <b>10.7</b><br>(9.03-12.6)    | <b>12.7</b><br>(10.6-14.9)    | <b>14.3</b><br>(11.9-16.9)    | <b>16.3</b><br>(13.2-19.7)   | <b>17.8</b><br>(14.1-21.8)   | <b>19.2</b><br>(14.8-24.1)  | <b>20.6</b><br>(15.3-26.5)  | <b>22.3</b><br>(16.0-29.4)  | <b>23.6</b><br>(16.6-31.7)  |
| <b>45-day</b>                                                                                                  | <b>11.6</b><br>(9.79-13.5)                 | <b>13.1</b><br>(11.0-15.3)    | <b>15.4</b><br>(13.0-18.1)    | <b>17.2</b><br>(14.5-20.3)    | <b>19.6</b><br>(15.8-23.5)   | <b>21.3</b><br>(16.9-25.9)   | <b>22.8</b><br>(17.6-28.4)  | <b>24.3</b><br>(18.1-31.0)  | <b>26.0</b><br>(18.7-34.1)  | <b>27.2</b><br>(19.2-36.5)  |
| <b>60-day</b>                                                                                                  | <b>13.4</b><br>(11.3-15.6)                 | <b>15.1</b><br>(12.8-17.6)    | <b>17.7</b><br>(14.9-20.7)    | <b>19.7</b><br>(16.6-23.1)    | <b>22.3</b><br>(18.0-26.5)   | <b>24.1</b><br>(19.2-29.1)   | <b>25.7</b><br>(19.9-31.8)  | <b>27.2</b><br>(20.3-34.6)  | <b>29.0</b><br>(20.9-37.8)  | <b>30.2</b><br>(21.4-40.3)  |

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

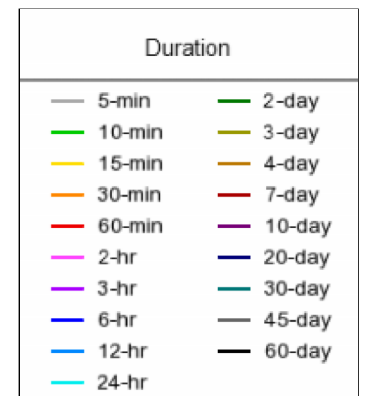
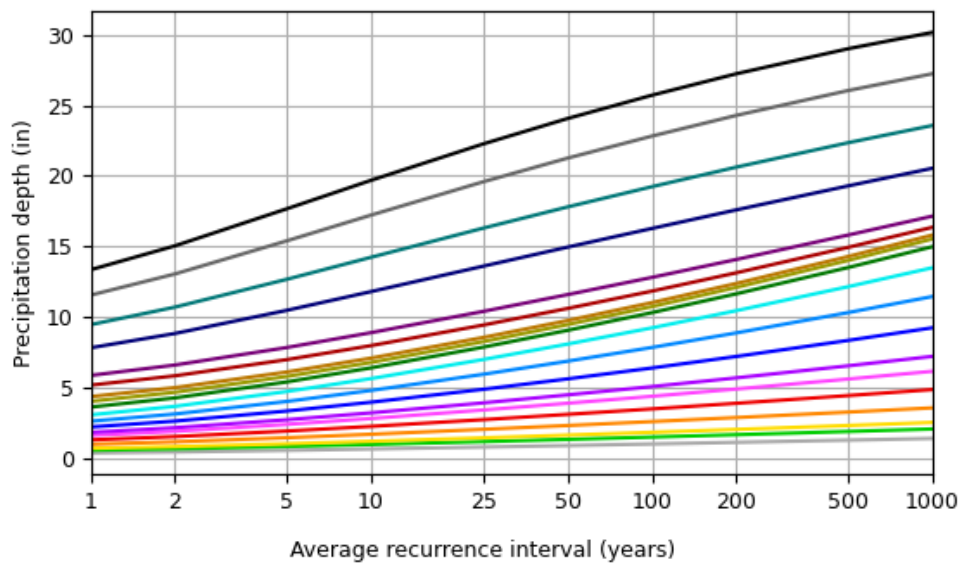
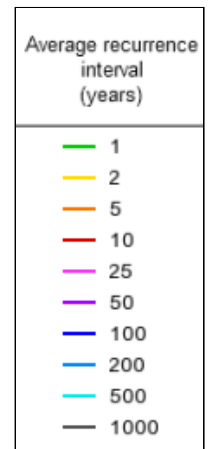
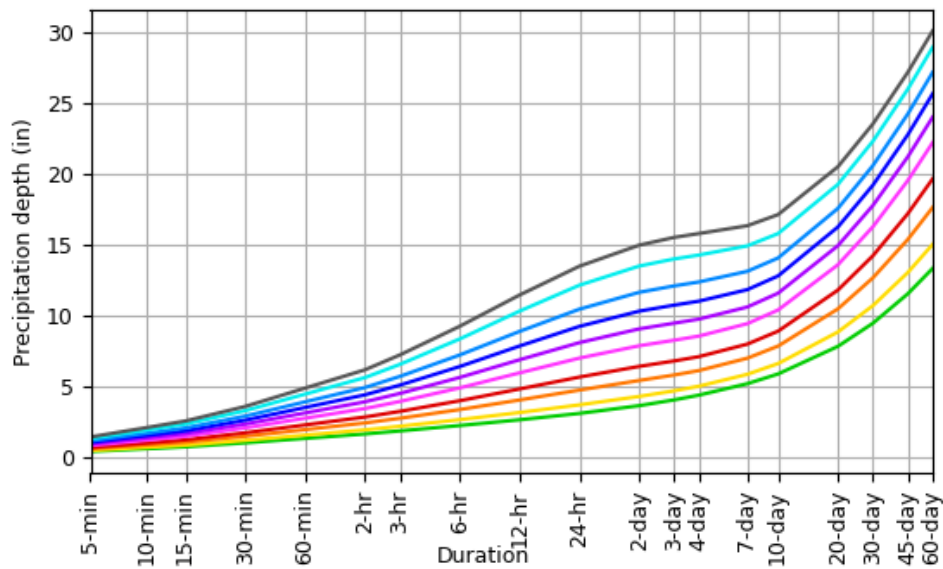
Please refer to NOAA Atlas 14 document for more information.

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## PF graphical

### PDS-based depth-duration-frequency (DDF) curves

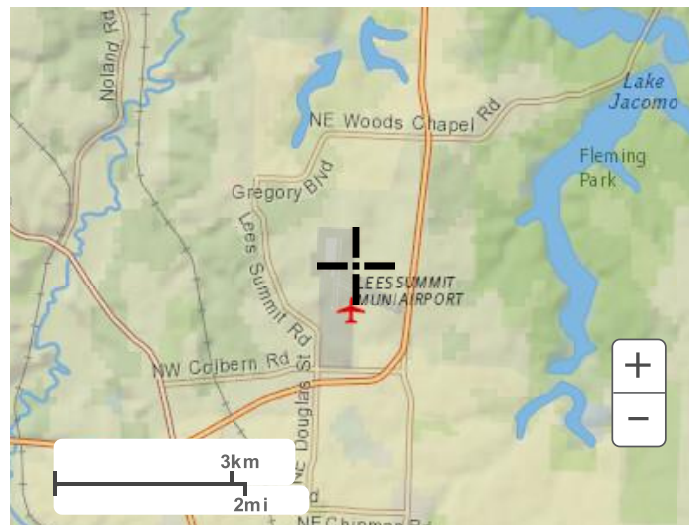
Latitude: 38.9624°, Longitude: -94.3704°

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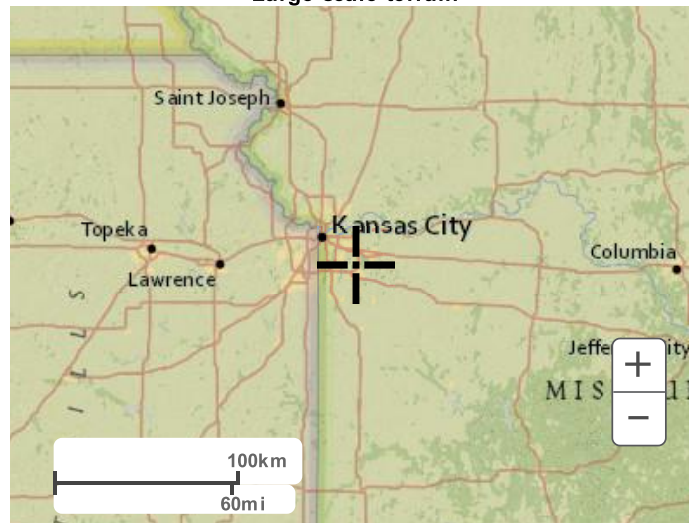
## Maps & aerials

Small scale terrain





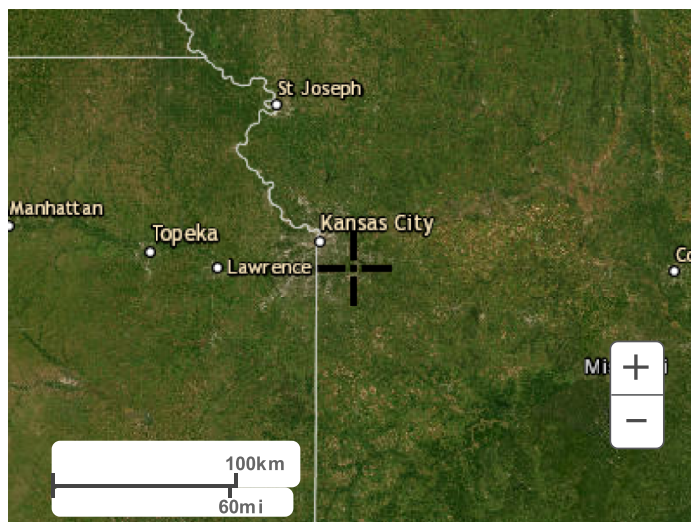
Large scale terrain



Large scale map



Large scale aerial



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## **APPENDIX B**

Hydrologic Soil Group—Jackson County, Missouri





## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Missouri  
 Survey Area Data: Version 24, Aug 31, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 30, 2022—Sep 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Map unit symbol                    | Map unit name                                      | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|----------------------------------------------------|--------|--------------|----------------|
| 10024                              | Greenton-Urban land complex, 5 to 9 percent slopes | D      | 27.2         | 49.7%          |
| 10136                              | Sibley-Urban land complex, 2 to 5 percent slopes   | C      | 27.5         | 50.3%          |
| <b>Totals for Area of Interest</b> |                                                    |        | <b>54.8</b>  | <b>100.0%</b>  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

### *Aggregation Method: Dominant Condition*

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

### *Component Percent Cutoff: None Specified*

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

### *Tie-break Rule: Higher*

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



## **APPENDIX C**

| Time of Concentration Calculations |                        |        |              |                |        |                            |  |        |                                                        |              |                |        |                                     |                         |
|------------------------------------|------------------------|--------|--------------|----------------|--------|----------------------------|--|--------|--------------------------------------------------------|--------------|----------------|--------|-------------------------------------|-------------------------|
| Overland Flow                      |                        |        |              |                |        |                            |  |        | Open Channel Flow (MODOT 749.5.3.3.2 Kirpich Equation) |              |                |        |                                     |                         |
| Drainage Area                      | C (runoff coefficient) | Length | Upstream El. | Downstream El. | Slope  | Overland Travel Time (min) |  | K      | Length                                                 | Upstream El. | Downstream El. | Slope  | Open Channel Flow Travel Time (min) | Total Travel Time (min) |
| P-1                                | 0.30                   | 100    | 993          | 988            | 0.0500 | 8.42                       |  | 0.0078 | 300                                                    | 988          | 980            | 0.0267 | 2.54                                | 10.96                   |
| P-2                                | 0.30                   | 90     | 988          | 985.5          | 0.0278 | 9.72                       |  | 0.0078 | 220                                                    | 985.5        | 980            | 0.0250 | 2.05                                | 11.77                   |
| P-3                                | 0.30                   | 111    | 988          | 986            | 0.0180 | 12.47                      |  | 0.0078 | 452                                                    | 986          | 971            | 0.0332 | 3.21                                | 15.67                   |
| P-4                                | 0.30                   | 100    | 996          | 994.5          | 0.0150 | 12.58                      |  | 0.0078 | 460                                                    | 994.5        | 989            | 0.0120 | 4.81                                | 17.39                   |
| P-5                                | 0.30                   | 117    | 993.5        | 990            | 0.0299 | 10.81                      |  | 0.0078 | 110                                                    | 990          | 988.5          | 0.0136 | 1.52                                | 12.33                   |
| P-6                                | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-7                                | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-8                                | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-9                                | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-10                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-11                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-12                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-13                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-14                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-15                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-16                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-17                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-18                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-19                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-20                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-21                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-22                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-23                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-24                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-25                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-26                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-27                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-28                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-29                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| P-30                               | 0.30                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-1                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-2                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-3                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-4                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-5                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-6                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-7                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-8                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-9                                | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-10                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-11                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-12                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-13                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-14                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-15                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| R-16                               | 0.90                   |        |              |                |        | 0.00                       |  | 0.0078 |                                                        |              |                |        | 0.00                                | 5.00                    |
| E-1                                | 0.30                   | 100    | 978.9        | 978            | 0.0090 | 14.91                      |  | 0.0078 | 3800                                                   |              |                | 0.0053 | 33.49                               | 48.41                   |
| P-A                                | 0.90                   | 100    | 1000         | 999            | 0.0100 | 3.60                       |  | 0.0078 | 2209                                                   | 999          | 945.5          | 0.0242 | 12.28                               | 15.88                   |
| P-B                                | 0.30                   | 100    | 978.9        | 978            | 0.0090 | 14.91                      |  | 0.0078 | 3800                                                   |              |                | 0.0053 | 33.49                               | 48.41                   |
| P-C                                | 0.30                   | 96     | 986.5        | 984            | 0.0260 | 10.26                      |  | 0.0078 | 950                                                    | 984          | 945.5          | 0.0405 | 5.26                                | 15.51                   |

## **APPENDIX D**



25-year Proposed - PHASE 1

| Frequency (year) | Drainage Area | Area (SF) | Area (AC) | Intensity (in/hr) | C    | Q (cfs) |
|------------------|---------------|-----------|-----------|-------------------|------|---------|
| 25               | P-1           | 28001     | 0.64      | 6.82              | 0.47 | 2.07    |
| 25               | P-2           | 16290     | 0.37      | 6.64              | 0.47 | 1.18    |
| 25               | P-3           | 78155.7   | 1.79      | 5.89              | 0.90 | 9.51    |
| 25               | P-4           | 145663    | 3.34      | 5.67              | 0.56 | 10.61   |
| 25               | P-5           | 12938     | 0.30      | 6.52              | 0.69 | 1.34    |
| 25               | P-6           | 28293     | 0.65      | 8.53              | 0.83 | 4.61    |
| 25               | P-7           | 7123      | 0.16      | 8.53              | 0.61 | 0.85    |
| 25               | P-8           | 6055      | 0.14      | 8.53              | 0.69 | 0.82    |
| 25               | P-11          | 8613      | 0.20      | 8.53              | 0.85 | 1.43    |
| 25               | P-9           | 3151      | 0.07      | 8.53              | 0.64 | 0.40    |
| 25               | P-10          | 4083      | 0.09      | 8.53              | 0.73 | 0.58    |
| 25               | P-12          | 4334      | 0.10      | 8.53              | 0.83 | 0.71    |
| 25               | P-13          | 4599      | 0.11      | 8.53              | 0.90 | 0.81    |
| 25               | P-14          | 308       | 0.01      | 8.53              | 0.90 | 0.05    |
| 25               | P-15          | 11406     | 0.26      | 8.53              | 0.78 | 1.74    |
| 25               | P-16          | 4473      | 0.10      | 8.53              | 0.90 | 0.79    |
| 25               | P-17          | 6840      | 0.16      | 8.53              | 0.67 | 0.90    |
| 25               | P-18          | 8590      | 0.20      | 8.53              | 0.84 | 1.41    |
| 25               | P-21          | 23274     | 0.53      | 8.53              | 0.75 | 3.44    |
| 25               | P-22          | 1273      | 0.03      | 8.53              | 0.81 | 0.20    |
| 25               | P-23          | 9227      | 0.21      | 8.53              | 0.41 | 0.74    |
| 25               | P-24          | 6923      | 0.16      | 8.53              | 0.79 | 1.07    |
| 25               | P-25          | 4388      | 0.10      | 8.53              | 0.90 | 0.77    |
| 25               | P-26          | 4021      | 0.09      | 8.53              | 0.84 | 0.66    |
| 25               | P-27          | 4144      | 0.10      | 8.53              | 0.72 | 0.58    |
| 25               | P-28          | 37201     | 0.85      | 8.53              | 0.33 | 2.41    |
| 25               | P-29          | 10822     | 0.25      | 8.53              | 0.49 | 1.03    |
| 25               | P-30          | 4917      | 0.11      | 8.53              | 0.90 | 0.87    |
| 25               | P-31          | 0         | 0.00      | 0.00              | 0.00 | 0.00    |
| 25               | R-1           | 5079      | 0.12      | 8.53              | 0.90 | 0.90    |
| 25               | R-2           | 3649      | 0.08      | 8.53              | 0.90 | 0.64    |
| 25               | R-3           | 1987      | 0.05      | 8.53              | 0.90 | 0.35    |
| 25               | R-4           | 3039      | 0.07      | 8.53              | 0.90 | 0.54    |
| 25               | R-5           | 2409      | 0.06      | 8.53              | 0.90 | 0.42    |
| 25               | R-6           | 3814      | 0.09      | 8.53              | 0.90 | 0.67    |
| 25               | R-7           | 1339      | 0.03      | 8.53              | 0.90 | 0.24    |
| 25               | R-8           | 2448      | 0.06      | 8.53              | 0.90 | 0.43    |
| 25               | R-9           | 2468      | 0.06      | 8.53              | 0.90 | 0.43    |
| 25               | R-10          | 2542      | 0.06      | 8.53              | 0.90 | 0.45    |
| 25               | R-11          | 2431      | 0.06      | 8.53              | 0.90 | 0.43    |
| 25               | R-12          | 2761      | 0.06      | 8.53              | 0.90 | 0.49    |
| 25               | R-13          | 3016      | 0.07      | 8.53              | 0.90 | 0.53    |
| 25               | R-14          | 2954      | 0.07      | 8.53              | 0.90 | 0.52    |
| 25               | R-15          | 2046      | 0.05      | 8.53              | 0.90 | 0.36    |
| 25               | R-16          | 2387      | 0.05      | 8.53              | 0.90 | 0.42    |

## **APPENDIX E**

| STORM SEWER PIPE CALCULATIONS |      |                    |              |             |                    |                    |                 |                  |                       |                    |                |                            |                                      |                    |             |           |            |      | COVER CHECK  |              |               |               |
|-------------------------------|------|--------------------|--------------|-------------|--------------------|--------------------|-----------------|------------------|-----------------------|--------------------|----------------|----------------------------|--------------------------------------|--------------------|-------------|-----------|------------|------|--------------|--------------|---------------|---------------|
| Reach                         |      | Add. Drainage Area | Inflow (cfs) | Length (ft) | Pipe Slope (ft/ft) | Pipe Diameter (in) | PIPE INFLOW INV | PIPE OUTFLOW INV | Manning's Coefficient | Pipe Diameter (ft) | Pipe Area (sf) | P <sub>w</sub> (ft) (full) | R <sub>h</sub> (ft <sup>2</sup> /ft) | Velocity Cap (fps) | Q Cap (cfs) | Pass/Fail | % Capacity | TYPE | GRADE INFLOW | COVER INFLOW | GRADE OUTFLOW | COVER OUTFLOW |
| 1                             | 2    | P-4                | 10.61        | 39          | 0.018              | 24                 | 984.10          | 983.40           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.67               | 30.39       | PASS      | 34.9%      | RCP  | 989.00       | 2.90         | 988.25        | 2.85          |
| 2                             | 3    | P-5                | 11.95        | 48          | 0.019              | 24                 | 983.20          | 982.30           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.89               | 31.06       | PASS      | 38.5%      | RCP  | 988.25       | 3.05         | 987.45        | 3.15          |
| 3                             | 4    | P-6                | 16.56        | 37          | 0.016              | 24                 | 982.10          | 981.50           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.19               | 28.89       | PASS      | 57.3%      | RCP  | 987.45       | 3.35         | 986.40        | 2.90          |
| 4                             | 5    | P-8                | 18.23        | 74          | 0.018              | 24                 | 981.30          | 980.00           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.57               | 30.07       | PASS      | 60.6%      | RCP  | 986.40       | 3.10         | 988.00        | 6.00          |
| 5                             | 6    | P-13               | 19.04        | 70          | 0.017              | 24                 | 979.80          | 978.60           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.45               | 29.70       | PASS      | 64.1%      | RCP  | 988.00       | 6.20         | 988.00        | 7.40          |
| 6                             | 7    | P-14               | 26.15        | 77          | 0.012              | 30                 | 978.40          | 977.50           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 9.06               | 44.46       | PASS      | 58.8%      | RCP  | 988.00       | 7.10         | 988.15        | 8.15          |
| 7                             | 8    | P-15               | 27.89        | 83          | 0.018              | 30                 | 977.30          | 975.80           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 11.26              | 55.29       | PASS      | 50.4%      | RCP  | 988.15       | 8.35         | 987.50        | 9.20          |
| 8                             | 9    | P-18               | 29.30        | 61          | 0.025              | 30                 | 975.60          | 974.10           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 13.14              | 64.49       | PASS      | 45.4%      | RCP  | 987.50       | 9.40         | 985.25        | 8.65          |
| 9                             | 10   | P-17               | 39.94        | 40          | 0.018              | 30                 | 973.90          | 973.20           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 11.08              | 54.41       | PASS      | 73.4%      | RCP  | 985.25       | 8.85         | 984.75        | 9.05          |
| 10                            | 11   | P-16               | 40.73        | 54          | 0.019              | 30                 | 973.00          | 972.00           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 11.40              | 55.97       | PASS      | 72.8%      | RCP  | 984.75       | 9.25         | 980.00        | 5.50          |
| 11                            | 12   | P-27               | 41.97        | 101         | 0.031              | 30                 | 971.35          | 968.17           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 14.87              | 72.98       | PASS      | 57.5%      | RCP  | 980.00       | 6.15         | 976.25        | 5.58          |
| 12                            | 13   | P-28               | 44.38        | 86          | 0.017              | 30                 | 967.89          | 966.39           | 0.013                 | 2.50               | 4.91           | 7.85                       | 0.625                                | 11.07              | 54.32       | PASS      | 81.7%      | RCP  | 976.25       | 5.86         | 973.25        | 4.36          |
| 13                            | 14   | P-29               | 58.16        | 40          | 0.015              | 36                 | 965.81          | 965.21           | 0.013                 | 3.00               | 7.07           | 9.42                       | 0.75                                 | 11.59              | 81.91       | PASS      | 71.0%      | RCP  | 973.25       | 4.44         | 973.00        | 4.79          |
| 14                            | 15A  | P-30               | 59.03        | 351         | 0.024              | 36                 | 964.00          | 955.72           | 0.013                 | 3.00               | 7.07           | 9.42                       | 0.75                                 | 14.53              | 102.72      | PASS      | 57.5%      | RCP  | 973.00       | 6.00         | 963.40        | 4.68          |
| 15A                           | 15   | P-31               | 59.03        | 183         | 0.020              | 36                 | 954.60          | 951.00           | 0.013                 | 3.00               | 7.07           | 9.42                       | 0.75                                 | 13.27              | 93.80       | PASS      | 62.9%      | RCP  | 963.40       | 5.80         | 951.00        | --            |
| 16                            | 17   | P-24               | 1.07         | 36          | 0.017              | 18                 | 984.48          | 983.88           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 7.69               | 13.60       | PASS      | 7.9%       | RCP  | 991.00       | 5.02         | 991.00        | 5.62          |
| 17                            | 18   | P-23               | 5.33         | 268         | 0.018              | 18                 | 983.07          | 978.37           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 7.89               | 13.95       | PASS      | 38.2%      | RCP  | 991.00       | 6.43         | 986.50        | 6.63          |
| 18                            | 19   | P-22               | 6.30         | 44          | 0.017              | 18                 | 975.21          | 974.46           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 7.78               | 13.75       | PASS      | 45.8%      | RCP  | 986.50       | 9.79         | 986.35        | 10.39         |
| 18A                           | 18   | P-25               | 0.77         | 35          | 0.017              | 18                 | 976.00          | 975.40           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 7.80               | 13.79       | PASS      | 5.6%       | RCP  | 987.00       | 9.50         | 986.50        | 9.60          |
| 19                            | 9    | P-21               | 9.74         | 7           | 0.026              | 24                 | 973.70          | 973.52           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 11.58              | 36.37       | PASS      | 26.8%      | RCP  | 986.35       | 10.65        | 985.25        | 9.73          |
| 20                            | 21   | P-1                | 2.07         | 38          | 0.018              | 24                 | 976.60          | 975.90           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.80               | 30.79       | PASS      | 6.7%       | RCP  | 980.20       | 1.60         | 980.00        | 2.10          |
| 21                            | 22   | P-2                | 3.24         | 426         | 0.018              | 24                 | 975.70          | 968.20           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.58               | 30.10       | PASS      | 10.8%      | RCP  | 980.00       | 2.30         | 972.00        | 1.80          |
| 22                            | 13   | P-3                | 12.76        | 30          | 0.009              | 24                 | 968.11          | 967.85           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 6.72               | 21.12       | PASS      | 60.4%      | RCP  | 972.00       | 1.89         | 973.25        | 3.40          |
| 11A                           | 11   | P-26               | 0.66         | 39          | 0.018              | 24                 | 972.70          | 972.00           | 0.013                 | 2.00               | 3.14           | 6.28                       | 0.5                                  | 9.67               | 30.39       | PASS      | 2.2%       | RCP  | 980.00       | 5.30         | 980.00        | 6.00          |
| 4A                            | 4    | P-7                | 0.85         | 38          | 0.018              | 18                 | 982.20          | 981.50           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 8.09               | 14.30       | PASS      | 5.9%       | RCP  | 986.25       | 2.55         | 986.40        | 3.40          |
| 6A                            | 6    | P-12               | 7.05         | 41          | 0.041              | 18                 | 982.51          | 980.81           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 12.14              | 21.45       | PASS      | 32.9%      | RCP  | 992.75       | 8.74         | 988.00        | 5.69          |
| 6B                            | 6D   | P-10               | 0.98         | 264         | 0.011              | 18                 | 987.76          | 984.93           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 6.17               | 10.91       | PASS      | 9.0%       | RCP  | 992.50       | 3.24         | 993.00        | 6.57          |
| 6D                            | 6A   | P-11               | 6.35         | 31          | 0.034              | 18                 | 983.74          | 982.69           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 10.97              | 19.38       | PASS      | 32.7%      | RCP  | 993.00       | 7.76         | 992.75        | 8.56          |
| 6C                            | 6B   | P-9                | 0.40         | 32          | 0.011              | 18                 | 988.10          | 987.76           | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 6.14               | 10.86       | PASS      | 3.7%       | RCP  | 993.00       | 3.40         | 992.50        | 3.24          |
| R-1                           | P-10 | R-1                | 0.90         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 73.9%      | PVC  | --           | --           | --            | --            |
| R-16                          | P-10 | R-16               | 0.42         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 34.7%      | PVC  | --           | --           | --            | --            |
| R-2                           | P-10 | R-2                | 0.64         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 53.1%      | PVC  | --           | --           | --            | --            |
| R-3                           | P-10 | R-3                | 0.35         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 28.9%      | PVC  | --           | --           | --            | --            |
| R-4                           | P-10 | R-4                | 0.54         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 44.2%      | PVC  | --           | --           | --            | --            |
| R-5                           | P-10 | R-5                | 0.42         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 35.0%      | PVC  | --           | --           | --            | --            |
| R-6                           | P-10 | R-6                | 0.67         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 55.5%      | PVC  | --           | --           | --            | --            |
| R-7                           | P-23 | R-7                | 0.24         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 19.5%      | PVC  | --           | --           | --            | --            |
| R-8                           | P-23 | R-8                | 0.43         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 35.6%      | PVC  | --           | --           | --            | --            |
| R-9                           | P-23 | R-9                | 0.43         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 35.9%      | PVC  | --           | --           | --            | --            |
| R-10                          | P-23 | R-10               | 0.45         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 37.0%      | PVC  | --           | --           | --            | --            |
| R-11                          | P-23 | R-11               | 0.43         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 35.4%      | PVC  | --           | --           | --            | --            |
| R-12                          | P-23 | R-12               | 0.49         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 40.2%      | PVC  | --           | --           | --            | --            |
| R-13                          | P-23 | R-13               | 0.53         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 43.9%      | PVC  | --           | --           | --            | --            |
| R-14                          | P-23 | R-14               | 0.52         |             | 0.010              | 8                  |                 |                  | 0.013                 | 0.67               | 0.35           | 2.09                       | 0.166667                             | 3.47               | 1.21        | PASS      | 43.0%      | PVC  | --           | --           | --            | --            |
| P-23                          | 17   | N/A                | 3.52         |             | 0.010              | 18                 |                 |                  | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 5.96               | 10.53       | PASS      | 33.4%      | PVC  | --           | --           | 991.00        | 989.50        |
| P-10                          | 6D   | N/A                | 3.94         |             | 0.010              | 18                 |                 |                  | 0.013                 | 1.50               | 1.77           | 4.71                       | 0.375                                | 5.96               | 10.53       | PASS      | 37.4%      | PVC  | --           | --           | 993.00        | 991.50        |



## **APPENDIX F**

OUTLET STRUCTURE DISCHARGE COMPUTATIONS  
FOR EXTENDED DETENTION BASINS

\*\*\*\*ENTER THE FOLLOWING INFORMATION\*\*\*\*\*

PROJECT: 22001238-00 LEE'S SUMMIT AIRPORT EASTSIDE DEVELOPMENT  
Date Printed:

RISER PIPE DIAMETER: 0 INCHES  
OUTLET PIPE DIA.: 48 INCHES

RED TEXT INDICATES INPUT CELLS

PERFORATION DIA: 4 INCHES  
# HOLES PER ROW: 1  
ORIFICE AREA: 12.56 SQ. IN.

NUMBER OF ROWS: 3

FLOWLINE ELEVATION  
AT BOTTOM OF BASIN: 947.30

MAXIMUM PONDING  
ELEV. FOR  
EXTENDED DETENTION: 952.00

\*\*\*\*\*

IN COLUMN A, ENTER WATER ELEVATIONS AT 3" INCREMENTS BEGINNING WITH THE ELEVATION  
ENTERED ABOVE FOR MAXIMUM PONDING ELEVATION FOR EXTENDED DETENTION  
AND PROCEEDING DOWNWARD TO THE FLOWLINE ELEVATION AT THE BOTTOM OF THE BASIN

IN COLUMN B ENTER THE AREA CORRESPONDING TO THE ELEVATION IN COLUMN A

ENTER THE ELEVATION OF EACH ROW OF HOLES BELOW THE ROW NUMBER  
ENTER ELEVATION 9999.0 FOR ROWS NOT USED (ROW 1 to be the bottom row)

RESULT IS DISPLAYED AT THE BOTTOM OF COLUMN A

| WATER<br>ELEVATION | AVERAGE<br>AREA (SF) | INCREMENTAL<br>VOL (CF) | OUTFLOW RATE (CFS) |        |        | COMBINED<br>OUTFLOW | DRAIN TIME<br>(HOURS) |
|--------------------|----------------------|-------------------------|--------------------|--------|--------|---------------------|-----------------------|
|                    |                      |                         | ROW 1              | ROW 2  | ROW 3  |                     |                       |
| 947.30             | 0.00                 | 0                       | 947.30             | 948.00 | 948.50 | 0.000               | 0.000                 |
| 948.00             | 4260.00              | 1491                    | 0.351              | 0.000  | 0.000  | 0.351               | 1.179                 |
| 949.00             | 29960.00             | 17110                   | 0.548              | 0.420  | 0.297  | 1.265               | 3.759                 |
| 950.00             | 66600.00             | 48280                   | 0.690              | 0.594  | 0.514  | 1.798               | 7.457                 |
| 951.00             | 84840.00             | 75720                   | 0.808              | 0.727  | 0.664  | 2.199               | 9.564                 |
| 952.00             | 92590.00             | 88715                   | 0.910              | 0.840  | 0.786  | 2.536               | 9.717                 |

1491

90206

|              |         |                  |            |
|--------------|---------|------------------|------------|
| TOTAL VOLUME | 231,316 | TOTAL DRAIN TIME | 31.7 hours |
|--------------|---------|------------------|------------|

|                     |          |
|---------------------|----------|
| MAX. OUTFLOW RATE = | 2.54 CFS |
|---------------------|----------|

WQV storm (in) 1.37  
Impervious Area 17.53  
Total Area 80.82  
Imp. 21.690175699  
RV 0.245211581  
WQV 98,557

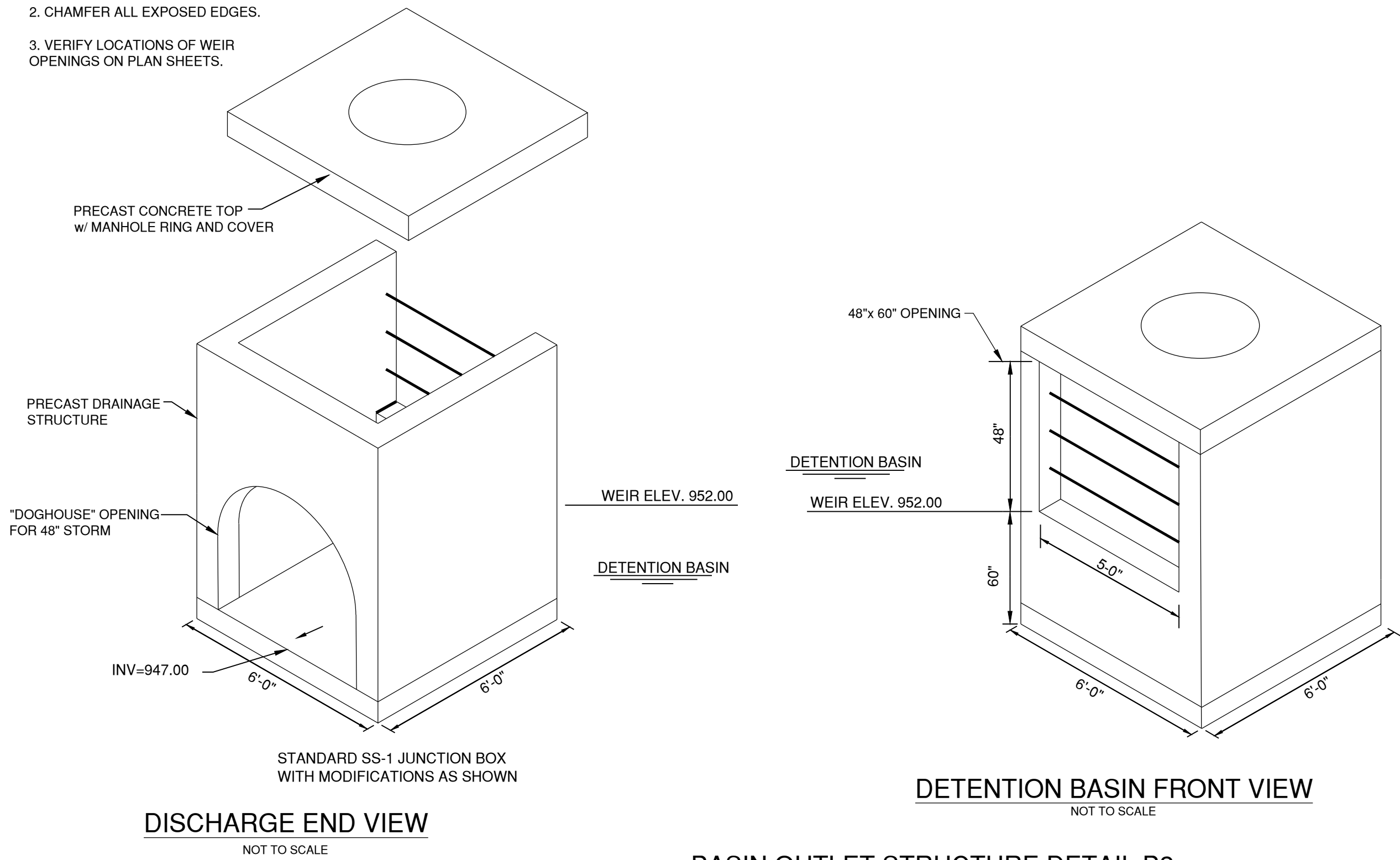
|         | ELEVATION | DIAMETER (IN) | LENGTH (FT) | AREA (SF) | DEPTH (FT) | TOP ELEV. (FT) |
|---------|-----------|---------------|-------------|-----------|------------|----------------|
| ORIFICE | 947.30    | 4             |             |           |            |                |
| ORIFICE | 948.00    | 4             |             |           |            |                |
| ORIFICE | 948.50    | 4             |             |           |            |                |
| WEIR    | 952.00    |               | 5           | 20        | 4          | 956.00         |
| CULVERT | 947.00    | 48            |             |           |            |                |
|         |           |               |             |           |            |                |
| WEIR    | 952.00    |               | 5           | 20        | 4          | 956.00         |
| CULVERT | 947.00    | 48            |             |           |            |                |

|        |                                   |
|--------|-----------------------------------|
| WQCV = | ELEVATION OF NEXT HIGHEST ORIFACE |
| 98,557 | 952.00                            |

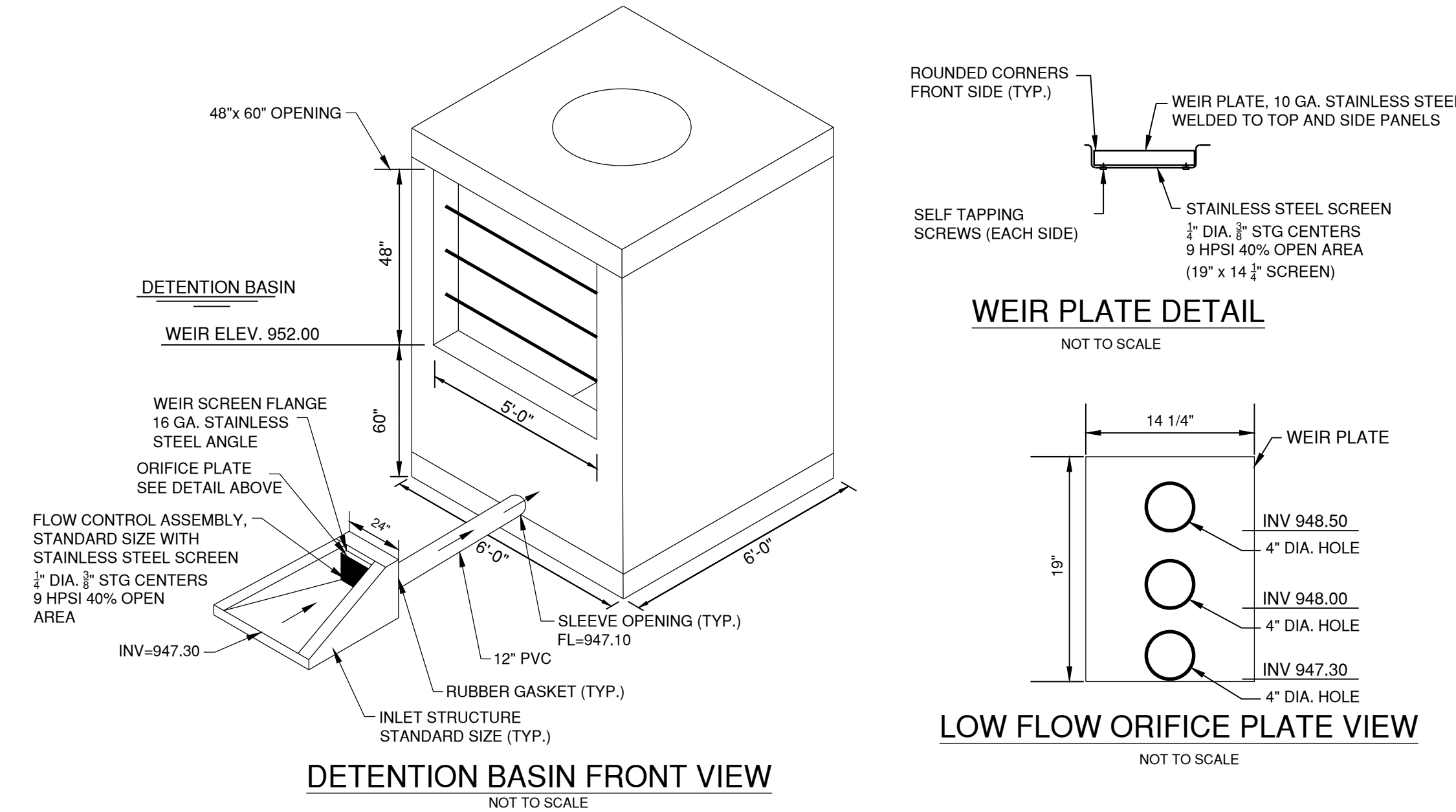
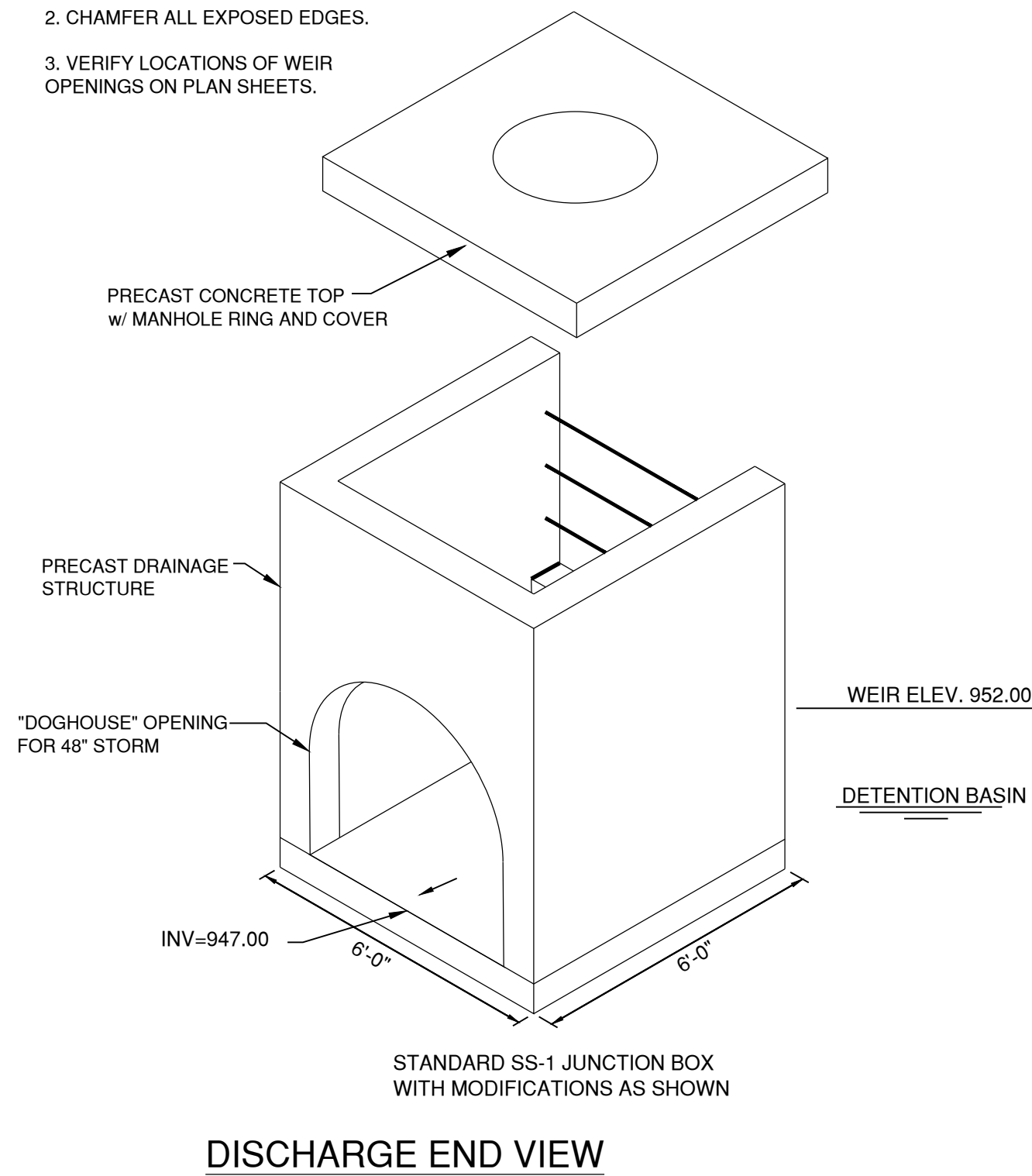
## **APPENDIX G**



- NOTES:
1. ANCHOR LID TO BOX. DRILL, DOWEL & GROUT OR APPROVED EQUAL.
  2. CHAMFER ALL EXPOSED EDGES.
  3. VERIFY LOCATIONS OF WEIR OPENINGS ON PLAN SHEETS.



- NOTES:
1. ANCHOR LID TO BOX. DRILL, DOWEL & GROUT OR APPROVED EQUAL.
  2. CHAMFER ALL EXPOSED EDGES.
  3. VERIFY LOCATIONS OF WEIR OPENINGS ON PLAN SHEETS.

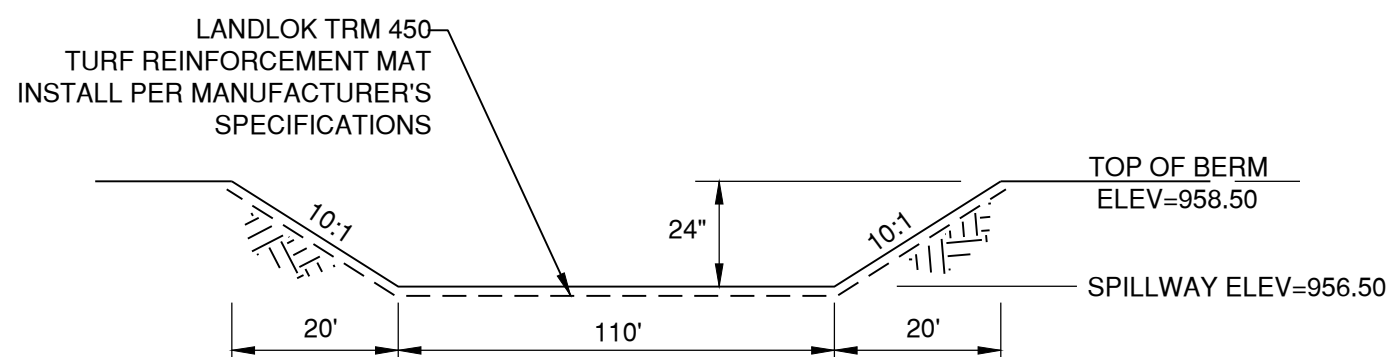


#### DETENTION BASIN STAGE-STORAGE DISCHARGE

| STAGE (FT) | ELEVATION (FT) | TOTAL STORAGE (CU.FT.) | DISCHARGE (CFS) |
|------------|----------------|------------------------|-----------------|
| 0.0        | 948.0          | 0                      | 0.00            |
| 1.0        | 949.0          | 4,259                  | 0.37            |
| 2.0        | 950.0          | 28,372                 | 0.60            |
| 3.0        | 951.0          | 67,686                 | 0.76            |
| 4.0        | 952.0          | 110,438                | 9.33            |
| 5.0        | 953.0          | 456,730                | 44.98           |
| 6.0        | 954.0          | 206,661                | 95.60           |
| 7.0        | 955.0          | 265,750                | 144.83          |
| 7.5        | 955.5          | 299,637                | 154.84          |

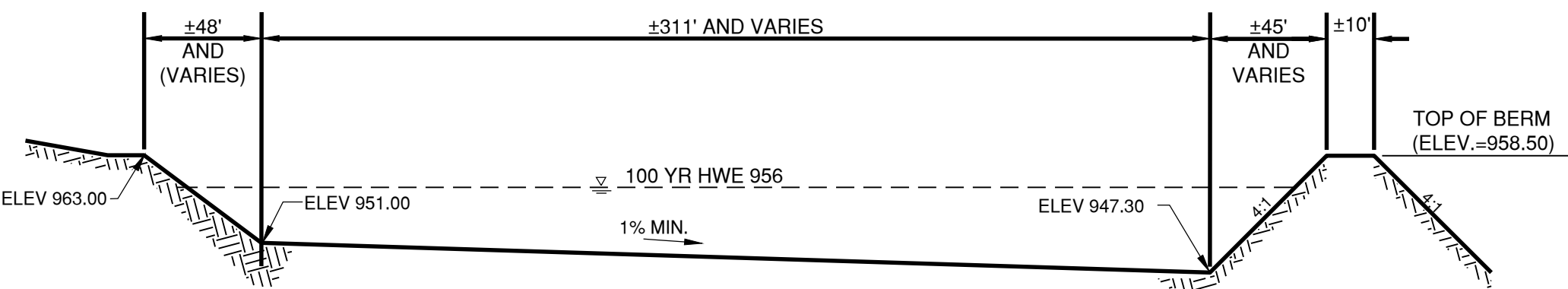
#### DETENTION BASIN VOLUME

| STAGE (FT) | ELEVATION (FT) | CONTOUR AREA (SQ.FT.) | TOTAL STORAGE (CU.FT.) |
|------------|----------------|-----------------------|------------------------|
| 0.0        | 948.0          | 0                     | 0                      |
| 1.0        | 949.0          | 12,778                | 4,259                  |
| 2.0        | 950.0          | 37,632                | 28,372                 |
| 3.0        | 951.0          | 41,020                | 67,686                 |
| 4.0        | 952.0          | 44,508                | 110,438                |
| 5.0        | 953.0          | 48,098                | 456,730                |
| 6.0        | 954.0          | 51,788                | 206,661                |
| 7.0        | 955.0          | 66,703                | 265,750                |
| 7.5        | 955.5          | 68,851                | 299,637                |



#### EMERGENCY SPILLWAY SECTION

N.T.S.

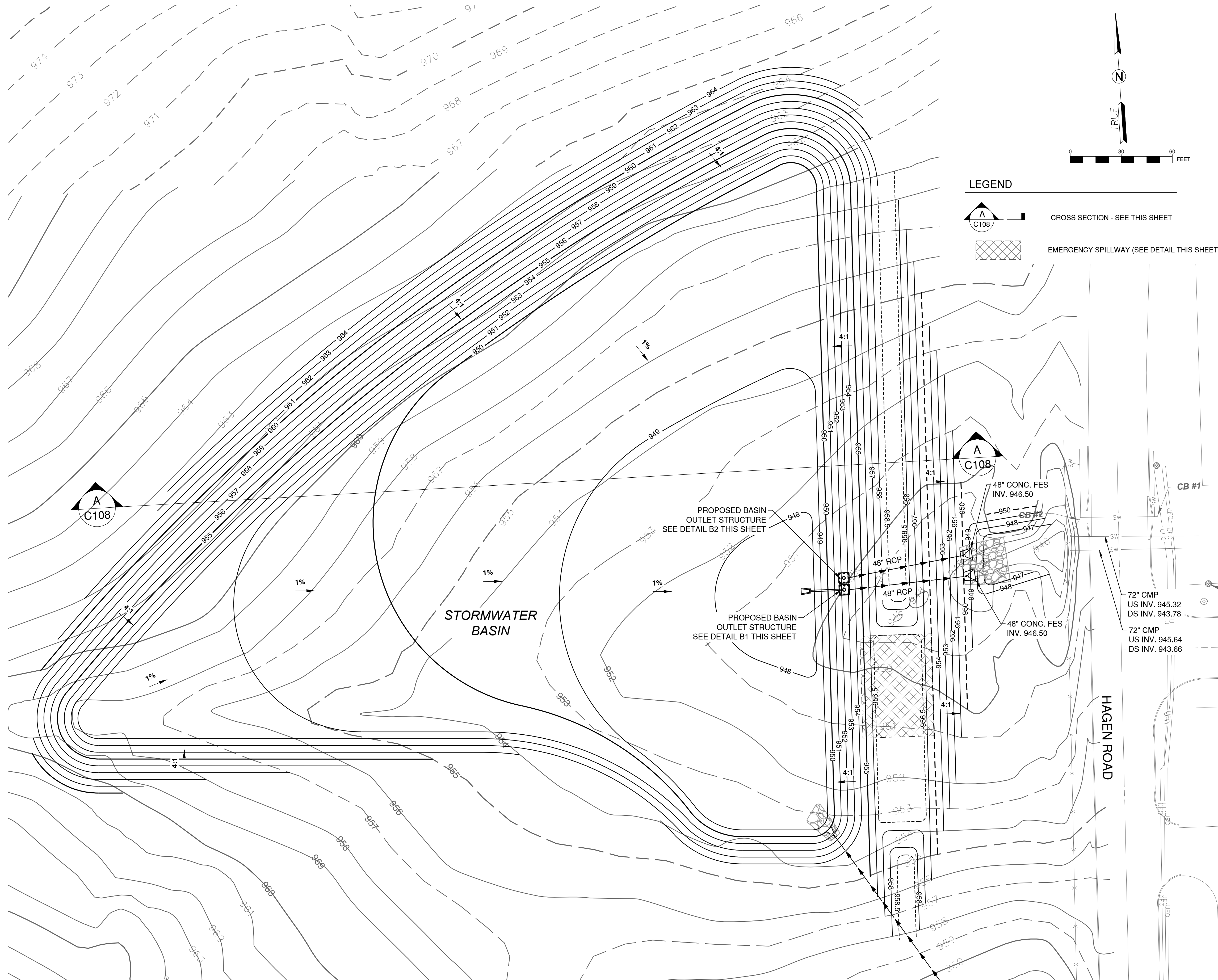


#### BASIN SECTION A-A

N.T.S.

#### GRADING PLAN GENERAL NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS OR CONTACT THE RESPECTIVE UTILITY OWNER TO REQUEST SUCH RELOCATION.
2. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
3. CONTRACTOR SHALL STRIP TOPSOIL AND STOCKPILE ON-SITE OR AT A NEARBY LOCATION AS DIRECTED BY THE OWNER FOR USE AS FINAL GRADING AT THE END OF THE PROJECT. ALL EXCESS TOPSOIL AND STRUCTURAL FILL SHALL BE COMPLETELY REMOVED FROM THE OWNER'S PROPERTY AND PROPERLY DISPOSED OF.
4. ALL EXISTING AND PROPOSED GRADE CONTOURS SHOWN AT 1 FOOT INTERVALS.
5. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
6. SLOPES SHALL BE A MAXIMUM OF 4:1 OR FLATTER UNLESS OTHERWISE INDICATED ON THE PLANS.



1627 MAIN STREET, SUITE 600  
KANSAS CITY, MO 64108



1627 MAIN STREET, #100  
KANSAS CITY, MO 64108



1301 BURLINGTON STREET  
NORTH KANSAS CITY, MO 64116

LEE'S SUMMIT MUNICIPAL AIRPORT  
LEE'S SUMMIT, MISSOURI

EASTSIDE DEVELOPMENT  
CITY PROJECT NO. - 47732472

LEE'S SUMMIT MUNICIPAL AIRPORT  
LEE'S SUMMIT, MO

MARK DATE DESCRIPTION

PROJECT NO: 47732472  
CAD DWG FILE: BASIN DETAIL  
DESIGNED BY: WLC  
DRAWN BY: WLC  
CHECKED BY: JRC  
APPROVED BY: TGH  
COPYRIGHT

SHEET TITLE

BASIN DETAIL

C108

SHEET OF XX



## **APPENDIX H**

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Project Summary

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Title

Engineer

Company

Date

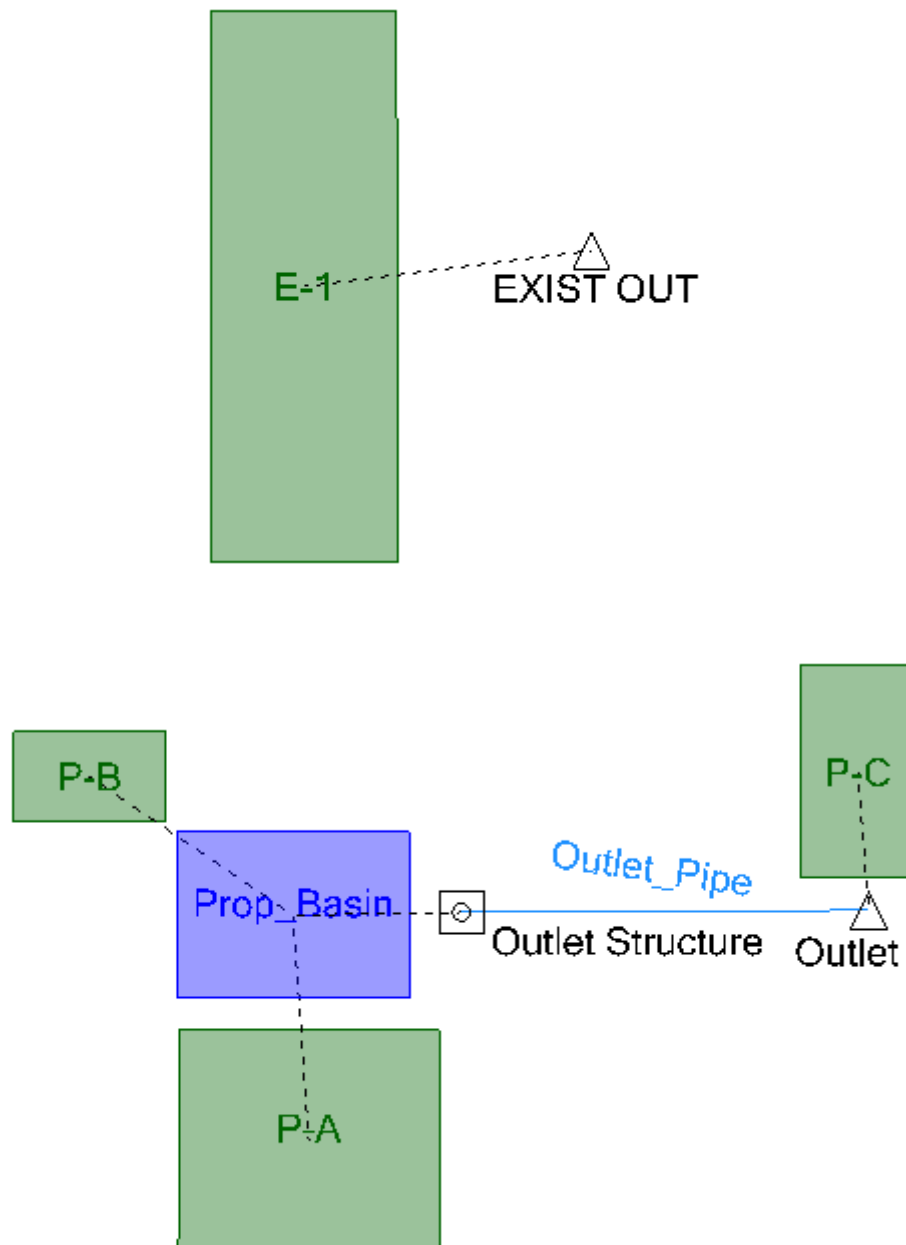
6/16/2023

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## Subsection: User Notifications

### User Notifications

|              |                                                                                                                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Message Id   | 15                                                                                                                                                                                                                                                     |
| Scenario     | 2YR-24HR                                                                                                                                                                                                                                               |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.50 .                                                                                                                                                  |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 19                                                                                                                                                                                                                                                     |
| Scenario     | 2YR-24HR                                                                                                                                                                                                                                               |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option. |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 15                                                                                                                                                                                                                                                     |
| Scenario     | 10YR-24HR                                                                                                                                                                                                                                              |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.50 .                                                                                                                                                  |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 19                                                                                                                                                                                                                                                     |
| Scenario     | 10YR-24HR                                                                                                                                                                                                                                              |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option. |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 15                                                                                                                                                                                                                                                     |
| Scenario     | 100YR-24HR                                                                                                                                                                                                                                             |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.50 .                                                                                                                                                  |
| Source       | Warning                                                                                                                                                                                                                                                |

Subsection: User Notifications

### User Notifications

|              |                                                                                                                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Message Id   | 19                                                                                                                                                                                                                                                     |
| Scenario     | 100YR-24HR                                                                                                                                                                                                                                             |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option. |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 15                                                                                                                                                                                                                                                     |
| Scenario     | 50YR-24HR                                                                                                                                                                                                                                              |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.50 .                                                                                                                                                  |
| Source       | Warning                                                                                                                                                                                                                                                |
| Message Id   | 19                                                                                                                                                                                                                                                     |
| Scenario     | 50YR-24HR                                                                                                                                                                                                                                              |
| Element Type | Composite Outlet Structure                                                                                                                                                                                                                             |
| Element Id   | 31                                                                                                                                                                                                                                                     |
| Label        | Basin Outlet Structure                                                                                                                                                                                                                                 |
| Time         | (N/A)                                                                                                                                                                                                                                                  |
| Message      | Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option. |
| Source       | Warning                                                                                                                                                                                                                                                |



## Subsection: Master Network Summary

### Catchments Summary

| Label | Scenario   | Return Event (years) | Hydrograph Volume (ft³) | Time to Peak (hours) | Peak Flow (ft³/s) |
|-------|------------|----------------------|-------------------------|----------------------|-------------------|
| P-A   | 2YR-24HR   | 2                    | 113,177                 | 12.050               | 36.53             |
| P-A   | 10YR-24HR  | 10                   | 197,380                 | 12.050               | 62.03             |
| P-A   | 50YR-24HR  | 50                   | 301,915                 | 12.050               | 92.60             |
| P-A   | 100YR-24HR | 100                  | 352,251                 | 12.050               | 107.06            |
| P-B   | 2YR-24HR   | 2                    | 454,689                 | 12.350               | 76.94             |
| P-B   | 10YR-24HR  | 10                   | 878,037                 | 12.350               | 150.43            |
| P-B   | 50YR-24HR  | 50                   | 1,425,788               | 12.350               | 242.79            |
| P-B   | 100YR-24HR | 100                  | 1,693,982               | 12.350               | 287.13            |
| E-1   | 2YR-24HR   | 2                    | 564,322                 | 12.350               | 95.81             |
| E-1   | 10YR-24HR  | 10                   | 1,077,928               | 12.350               | 184.63            |
| E-1   | 50YR-24HR  | 50                   | 1,739,221               | 12.350               | 295.63            |
| E-1   | 100YR-24HR | 100                  | 2,062,348               | 12.350               | 348.80            |
| P-C   | 2YR-24HR   | 2                    | 17,230                  | 12.050               | 5.66              |
| P-C   | 10YR-24HR  | 10                   | 33,545                  | 12.050               | 10.96             |
| P-C   | 50YR-24HR  | 50                   | 54,732                  | 12.050               | 17.58             |
| P-C   | 100YR-24HR | 100                  | 65,123                  | 12.050               | 20.75             |

### Node Summary

| Label     | Scenario   | Return Event (years) | Hydrograph Volume (ft³) | Time to Peak (hours) | Peak Flow (ft³/s) |
|-----------|------------|----------------------|-------------------------|----------------------|-------------------|
| Outlet    | 2YR-24HR   | 2                    | 353,993                 | 13.350               | 22.12             |
| Outlet    | 10YR-24HR  | 10                   | 866,269                 | 12.800               | 93.54             |
| Outlet    | 50YR-24HR  | 50                   | 1,527,428               | 12.650               | 192.43            |
| Outlet    | 100YR-24HR | 100                  | 1,853,047               | 12.600               | 238.98            |
| EXIST OUT | 2YR-24HR   | 2                    | 564,322                 | 12.350               | 95.81             |
| EXIST OUT | 10YR-24HR  | 10                   | 1,077,928               | 12.350               | 184.63            |
| EXIST OUT | 50YR-24HR  | 50                   | 1,739,221               | 12.350               | 295.63            |
| EXIST OUT | 100YR-24HR | 100                  | 2,062,348               | 12.350               | 348.80            |

### Pond Summary

| Label            | Scenario  | Return Event (years) | Hydrograph Volume (ft³) | Time to Peak (hours) | Peak Flow (ft³/s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ft³) |
|------------------|-----------|----------------------|-------------------------|----------------------|-------------------|--------------------------------------|----------------------------|
| Prop_Basin (IN)  | 2YR-24HR  | 2                    | 567,867                 | 12.350               | 86.89             | (N/A)                                | (N/A)                      |
| Prop_Basin (OUT) | 2YR-24HR  | 2                    | 336,763                 | 13.350               | 21.70             | 952.73                               | 296,474                    |
| Prop_Basin (IN)  | 10YR-24HR | 10                   | 1,075,416               | 12.250               | 167.13            | (N/A)                                | (N/A)                      |
| Prop_Basin (OUT) | 10YR-24HR | 10                   | 832,724                 | 12.800               | 92.45             | 954.07                               | 431,363                    |
| Prop_Basin (IN)  | 50YR-24HR | 50                   | 1,727,703               | 12.250               | 268.06            | (N/A)                                | (N/A)                      |
| Prop_Basin (OUT) | 50YR-24HR | 50                   | 1,472,696               | 12.650               | 190.34            | 955.40                               | 574,538                    |

Subsection: Master Network Summary

**Pond Summary**

| Label            | Scenario   | Return Event (years) | Hydrograph Volume (ft <sup>3</sup> ) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ft <sup>3</sup> ) |
|------------------|------------|----------------------|--------------------------------------|----------------------|--------------------------------|--------------------------------------|-----------------------------------------|
| Prop_Basin (IN)  | 100YR-24HR | 100                  | 2,046,233                            | 12.250               | 316.53                         | (N/A)                                | (N/A)                                   |
| Prop_Basin (OUT) | 100YR-24HR | 100                  | 1,787,924                            | 12.600               | 236.26                         | 955.94                               | 635,971                                 |

Subsection: Time-Depth Curve  
Label: Time-Depth - 2  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

Time-Depth Curve: 100YR-24HR

|              |              |
|--------------|--------------|
| Label        | 100YR-24HR   |
| Start Time   | 0.000 hours  |
| Increment    | 0.100 hours  |
| End Time     | 24.000 hours |
| Return Event | 100 years    |

**CUMULATIVE RAINFALL (in)**

**Output Time Increment = 0.100 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 0.000           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           |
| 0.500           | 0.0           | 0.1           | 0.1           | 0.1           | 0.1           |
| 1.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 1.500           | 0.1           | 0.2           | 0.2           | 0.2           | 0.2           |
| 2.000           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 2.500           | 0.3           | 0.3           | 0.3           | 0.3           | 0.3           |
| 3.000           | 0.3           | 0.3           | 0.3           | 0.4           | 0.4           |
| 3.500           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 4.000           | 0.4           | 0.5           | 0.5           | 0.5           | 0.5           |
| 4.500           | 0.5           | 0.5           | 0.5           | 0.6           | 0.6           |
| 5.000           | 0.6           | 0.6           | 0.6           | 0.6           | 0.6           |
| 5.500           | 0.7           | 0.7           | 0.7           | 0.7           | 0.7           |
| 6.000           | 0.7           | 0.8           | 0.8           | 0.8           | 0.8           |
| 6.500           | 0.8           | 0.8           | 0.9           | 0.9           | 0.9           |
| 7.000           | 0.9           | 0.9           | 1.0           | 1.0           | 1.0           |
| 7.500           | 1.0           | 1.0           | 1.1           | 1.1           | 1.1           |
| 8.000           | 1.1           | 1.1           | 1.2           | 1.2           | 1.2           |
| 8.500           | 1.2           | 1.3           | 1.3           | 1.3           | 1.3           |
| 9.000           | 1.4           | 1.4           | 1.4           | 1.5           | 1.5           |
| 9.500           | 1.5           | 1.5           | 1.6           | 1.6           | 1.6           |
| 10.000          | 1.7           | 1.7           | 1.8           | 1.8           | 1.8           |
| 10.500          | 1.9           | 1.9           | 2.0           | 2.1           | 2.1           |
| 11.000          | 2.2           | 2.2           | 2.3           | 2.4           | 2.5           |
| 11.500          | 2.6           | 2.8           | 3.3           | 4.0           | 5.3           |
| 12.000          | 6.1           | 6.3           | 6.5           | 6.6           | 6.7           |
| 12.500          | 6.8           | 6.9           | 7.0           | 7.0           | 7.1           |
| 13.000          | 7.1           | 7.2           | 7.3           | 7.3           | 7.4           |
| 13.500          | 7.4           | 7.4           | 7.5           | 7.5           | 7.6           |
| 14.000          | 7.6           | 7.6           | 7.7           | 7.7           | 7.7           |
| 14.500          | 7.8           | 7.8           | 7.8           | 7.8           | 7.9           |
| 15.000          | 7.9           | 7.9           | 8.0           | 8.0           | 8.0           |
| 15.500          | 8.0           | 8.1           | 8.1           | 8.1           | 8.1           |
| 16.000          | 8.1           | 8.2           | 8.2           | 8.2           | 8.2           |
| 16.500          | 8.3           | 8.3           | 8.3           | 8.3           | 8.3           |
| 17.000          | 8.4           | 8.4           | 8.4           | 8.4           | 8.4           |
| 17.500          | 8.4           | 8.5           | 8.5           | 8.5           | 8.5           |
| 18.000          | 8.5           | 8.5           | 8.6           | 8.6           | 8.6           |
| 18.500          | 8.6           | 8.6           | 8.6           | 8.7           | 8.7           |
| 19.000          | 8.7           | 8.7           | 8.7           | 8.7           | 8.7           |
| 19.500          | 8.8           | 8.8           | 8.8           | 8.8           | 8.8           |

Subsection: Time-Depth Curve  
 Label: Time-Depth - 2  
 Scenario: 100YR-24HR

Return Event: 100 years  
 Storm Event: 100YR-24HR

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 20.000          | 8.8           | 8.8           | 8.8           | 8.9           | 8.9           |
| 20.500          | 8.9           | 8.9           | 8.9           | 8.9           | 8.9           |
| 21.000          | 8.9           | 8.9           | 9.0           | 9.0           | 9.0           |
| 21.500          | 9.0           | 9.0           | 9.0           | 9.0           | 9.0           |
| 22.000          | 9.0           | 9.1           | 9.1           | 9.1           | 9.1           |
| 22.500          | 9.1           | 9.1           | 9.1           | 9.1           | 9.1           |
| 23.000          | 9.2           | 9.2           | 9.2           | 9.2           | 9.2           |
| 23.500          | 9.2           | 9.2           | 9.2           | 9.2           | 9.2           |
| 24.000          | 9.3           | (N/A)         | (N/A)         | (N/A)         | (N/A)         |

Subsection: Time-Depth Curve  
Label: Time-Depth - 2  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

Time-Depth Curve: 10YR-24HR

|              |              |
|--------------|--------------|
| Label        | 10YR-24HR    |
| Start Time   | 0.000 hours  |
| Increment    | 0.100 hours  |
| End Time     | 24.000 hours |
| Return Event | 10 years     |

**CUMULATIVE RAINFALL (in)**

**Output Time Increment = 0.100 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 0.000           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           |
| 0.500           | 0.0           | 0.0           | 0.0           | 0.0           | 0.1           |
| 1.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 1.500           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 2.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.2           |
| 2.500           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 3.000           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 3.500           | 0.2           | 0.2           | 0.2           | 0.3           | 0.3           |
| 4.000           | 0.3           | 0.3           | 0.3           | 0.3           | 0.3           |
| 4.500           | 0.3           | 0.3           | 0.3           | 0.3           | 0.4           |
| 5.000           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 5.500           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 6.000           | 0.5           | 0.5           | 0.5           | 0.5           | 0.5           |
| 6.500           | 0.5           | 0.5           | 0.5           | 0.5           | 0.6           |
| 7.000           | 0.6           | 0.6           | 0.6           | 0.6           | 0.6           |
| 7.500           | 0.6           | 0.6           | 0.6           | 0.7           | 0.7           |
| 8.000           | 0.7           | 0.7           | 0.7           | 0.7           | 0.7           |
| 8.500           | 0.8           | 0.8           | 0.8           | 0.8           | 0.8           |
| 9.000           | 0.8           | 0.9           | 0.9           | 0.9           | 0.9           |
| 9.500           | 0.9           | 0.9           | 1.0           | 1.0           | 1.0           |
| 10.000          | 1.0           | 1.1           | 1.1           | 1.1           | 1.1           |
| 10.500          | 1.2           | 1.2           | 1.2           | 1.3           | 1.3           |
| 11.000          | 1.3           | 1.4           | 1.4           | 1.5           | 1.5           |
| 11.500          | 1.6           | 1.7           | 2.0           | 2.5           | 3.2           |
| 12.000          | 3.8           | 3.9           | 4.0           | 4.1           | 4.1           |
| 12.500          | 4.2           | 4.2           | 4.3           | 4.3           | 4.4           |
| 13.000          | 4.4           | 4.4           | 4.5           | 4.5           | 4.5           |
| 13.500          | 4.6           | 4.6           | 4.6           | 4.6           | 4.7           |
| 14.000          | 4.7           | 4.7           | 4.7           | 4.7           | 4.8           |
| 14.500          | 4.8           | 4.8           | 4.8           | 4.8           | 4.8           |
| 15.000          | 4.9           | 4.9           | 4.9           | 4.9           | 4.9           |
| 15.500          | 4.9           | 5.0           | 5.0           | 5.0           | 5.0           |
| 16.000          | 5.0           | 5.0           | 5.0           | 5.1           | 5.1           |
| 16.500          | 5.1           | 5.1           | 5.1           | 5.1           | 5.1           |
| 17.000          | 5.1           | 5.2           | 5.2           | 5.2           | 5.2           |
| 17.500          | 5.2           | 5.2           | 5.2           | 5.2           | 5.2           |
| 18.000          | 5.2           | 5.3           | 5.3           | 5.3           | 5.3           |
| 18.500          | 5.3           | 5.3           | 5.3           | 5.3           | 5.3           |
| 19.000          | 5.3           | 5.4           | 5.4           | 5.4           | 5.4           |
| 19.500          | 5.4           | 5.4           | 5.4           | 5.4           | 5.4           |



Subsection: Time-Depth Curve  
 Label: Time-Depth - 2  
 Scenario: 10YR-24HR

Return Event: 10 years  
 Storm Event: 10YR-24HR

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 20.000          | 5.4           | 5.4           | 5.4           | 5.4           | 5.5           |
| 20.500          | 5.5           | 5.5           | 5.5           | 5.5           | 5.5           |
| 21.000          | 5.5           | 5.5           | 5.5           | 5.5           | 5.5           |
| 21.500          | 5.5           | 5.5           | 5.5           | 5.6           | 5.6           |
| 22.000          | 5.6           | 5.6           | 5.6           | 5.6           | 5.6           |
| 22.500          | 5.6           | 5.6           | 5.6           | 5.6           | 5.6           |
| 23.000          | 5.6           | 5.6           | 5.6           | 5.7           | 5.7           |
| 23.500          | 5.7           | 5.7           | 5.7           | 5.7           | 5.7           |
| 24.000          | 5.7           | (N/A)         | (N/A)         | (N/A)         | (N/A)         |

Subsection: Time-Depth Curve  
Label: Time-Depth - 2  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

Time-Depth Curve: 2YR-24HR

|              |              |
|--------------|--------------|
| Label        | 2YR-24HR     |
| Start Time   | 0.000 hours  |
| Increment    | 0.100 hours  |
| End Time     | 24.000 hours |
| Return Event | 2 years      |

**CUMULATIVE RAINFALL (in)**

**Output Time Increment = 0.100 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 0.000           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           |
| 0.500           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           |
| 1.000           | 0.0           | 0.0           | 0.0           | 0.1           | 0.1           |
| 1.500           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 2.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 2.500           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 3.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 3.500           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 4.000           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 4.500           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 5.000           | 0.2           | 0.2           | 0.2           | 0.3           | 0.3           |
| 5.500           | 0.3           | 0.3           | 0.3           | 0.3           | 0.3           |
| 6.000           | 0.3           | 0.3           | 0.3           | 0.3           | 0.3           |
| 6.500           | 0.3           | 0.3           | 0.3           | 0.4           | 0.4           |
| 7.000           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 7.500           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 8.000           | 0.4           | 0.5           | 0.5           | 0.5           | 0.5           |
| 8.500           | 0.5           | 0.5           | 0.5           | 0.5           | 0.5           |
| 9.000           | 0.5           | 0.6           | 0.6           | 0.6           | 0.6           |
| 9.500           | 0.6           | 0.6           | 0.6           | 0.6           | 0.7           |
| 10.000          | 0.7           | 0.7           | 0.7           | 0.7           | 0.7           |
| 10.500          | 0.8           | 0.8           | 0.8           | 0.8           | 0.8           |
| 11.000          | 0.9           | 0.9           | 0.9           | 1.0           | 1.0           |
| 11.500          | 1.0           | 1.1           | 1.3           | 1.6           | 2.1           |
| 12.000          | 2.5           | 2.5           | 2.6           | 2.6           | 2.7           |
| 12.500          | 2.7           | 2.8           | 2.8           | 2.8           | 2.8           |
| 13.000          | 2.9           | 2.9           | 2.9           | 2.9           | 2.9           |
| 13.500          | 3.0           | 3.0           | 3.0           | 3.0           | 3.0           |
| 14.000          | 3.0           | 3.1           | 3.1           | 3.1           | 3.1           |
| 14.500          | 3.1           | 3.1           | 3.1           | 3.1           | 3.2           |
| 15.000          | 3.2           | 3.2           | 3.2           | 3.2           | 3.2           |
| 15.500          | 3.2           | 3.2           | 3.2           | 3.2           | 3.3           |
| 16.000          | 3.3           | 3.3           | 3.3           | 3.3           | 3.3           |
| 16.500          | 3.3           | 3.3           | 3.3           | 3.3           | 3.3           |
| 17.000          | 3.3           | 3.4           | 3.4           | 3.4           | 3.4           |
| 17.500          | 3.4           | 3.4           | 3.4           | 3.4           | 3.4           |
| 18.000          | 3.4           | 3.4           | 3.4           | 3.4           | 3.4           |
| 18.500          | 3.4           | 3.5           | 3.5           | 3.5           | 3.5           |
| 19.000          | 3.5           | 3.5           | 3.5           | 3.5           | 3.5           |
| 19.500          | 3.5           | 3.5           | 3.5           | 3.5           | 3.5           |

Subsection: Time-Depth Curve  
 Label: Time-Depth - 2  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 20.000          | 3.5           | 3.5           | 3.5           | 3.5           | 3.6           |
| 20.500          | 3.6           | 3.6           | 3.6           | 3.6           | 3.6           |
| 21.000          | 3.6           | 3.6           | 3.6           | 3.6           | 3.6           |
| 21.500          | 3.6           | 3.6           | 3.6           | 3.6           | 3.6           |
| 22.000          | 3.6           | 3.6           | 3.6           | 3.6           | 3.6           |
| 22.500          | 3.6           | 3.7           | 3.7           | 3.7           | 3.7           |
| 23.000          | 3.7           | 3.7           | 3.7           | 3.7           | 3.7           |
| 23.500          | 3.7           | 3.7           | 3.7           | 3.7           | 3.7           |
| 24.000          | 3.7           | (N/A)         | (N/A)         | (N/A)         | (N/A)         |

Subsection: Time-Depth Curve  
Label: Time-Depth - 2  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

Time-Depth Curve: 50YR-24HR

|              |              |
|--------------|--------------|
| Label        | 50YR-24HR    |
| Start Time   | 0.000 hours  |
| Increment    | 0.100 hours  |
| End Time     | 24.000 hours |
| Return Event | 50 years     |

**CUMULATIVE RAINFALL (in)**

**Output Time Increment = 0.100 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 0.000           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           |
| 0.500           | 0.0           | 0.1           | 0.1           | 0.1           | 0.1           |
| 1.000           | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| 1.500           | 0.1           | 0.1           | 0.1           | 0.2           | 0.2           |
| 2.000           | 0.2           | 0.2           | 0.2           | 0.2           | 0.2           |
| 2.500           | 0.2           | 0.2           | 0.2           | 0.3           | 0.3           |
| 3.000           | 0.3           | 0.3           | 0.3           | 0.3           | 0.3           |
| 3.500           | 0.3           | 0.3           | 0.4           | 0.4           | 0.4           |
| 4.000           | 0.4           | 0.4           | 0.4           | 0.4           | 0.4           |
| 4.500           | 0.4           | 0.5           | 0.5           | 0.5           | 0.5           |
| 5.000           | 0.5           | 0.5           | 0.5           | 0.6           | 0.6           |
| 5.500           | 0.6           | 0.6           | 0.6           | 0.6           | 0.6           |
| 6.000           | 0.6           | 0.7           | 0.7           | 0.7           | 0.7           |
| 6.500           | 0.7           | 0.7           | 0.8           | 0.8           | 0.8           |
| 7.000           | 0.8           | 0.8           | 0.8           | 0.9           | 0.9           |
| 7.500           | 0.9           | 0.9           | 0.9           | 0.9           | 1.0           |
| 8.000           | 1.0           | 1.0           | 1.0           | 1.0           | 1.1           |
| 8.500           | 1.1           | 1.1           | 1.1           | 1.1           | 1.2           |
| 9.000           | 1.2           | 1.2           | 1.2           | 1.3           | 1.3           |
| 9.500           | 1.3           | 1.3           | 1.4           | 1.4           | 1.4           |
| 10.000          | 1.5           | 1.5           | 1.5           | 1.6           | 1.6           |
| 10.500          | 1.7           | 1.7           | 1.7           | 1.8           | 1.8           |
| 11.000          | 1.9           | 2.0           | 2.0           | 2.1           | 2.2           |
| 11.500          | 2.3           | 2.5           | 2.9           | 3.5           | 4.6           |
| 12.000          | 5.4           | 5.5           | 5.7           | 5.8           | 5.9           |
| 12.500          | 6.0           | 6.0           | 6.1           | 6.2           | 6.2           |
| 13.000          | 6.3           | 6.3           | 6.4           | 6.4           | 6.4           |
| 13.500          | 6.5           | 6.5           | 6.6           | 6.6           | 6.6           |
| 14.000          | 6.7           | 6.7           | 6.7           | 6.7           | 6.8           |
| 14.500          | 6.8           | 6.8           | 6.8           | 6.9           | 6.9           |
| 15.000          | 6.9           | 6.9           | 7.0           | 7.0           | 7.0           |
| 15.500          | 7.0           | 7.1           | 7.1           | 7.1           | 7.1           |
| 16.000          | 7.1           | 7.2           | 7.2           | 7.2           | 7.2           |
| 16.500          | 7.2           | 7.2           | 7.3           | 7.3           | 7.3           |
| 17.000          | 7.3           | 7.3           | 7.3           | 7.4           | 7.4           |
| 17.500          | 7.4           | 7.4           | 7.4           | 7.4           | 7.5           |
| 18.000          | 7.5           | 7.5           | 7.5           | 7.5           | 7.5           |
| 18.500          | 7.5           | 7.6           | 7.6           | 7.6           | 7.6           |
| 19.000          | 7.6           | 7.6           | 7.6           | 7.6           | 7.7           |
| 19.500          | 7.7           | 7.7           | 7.7           | 7.7           | 7.7           |

Subsection: Time-Depth Curve  
 Label: Time-Depth - 2  
 Scenario: 50YR-24HR

Return Event: 50 years  
 Storm Event: 50YR-24HR

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) | Depth<br>(in) |
|-----------------|---------------|---------------|---------------|---------------|---------------|
| 20.000          | 7.7           | 7.7           | 7.7           | 7.8           | 7.8           |
| 20.500          | 7.8           | 7.8           | 7.8           | 7.8           | 7.8           |
| 21.000          | 7.8           | 7.8           | 7.8           | 7.9           | 7.9           |
| 21.500          | 7.9           | 7.9           | 7.9           | 7.9           | 7.9           |
| 22.000          | 7.9           | 7.9           | 7.9           | 8.0           | 8.0           |
| 22.500          | 8.0           | 8.0           | 8.0           | 8.0           | 8.0           |
| 23.000          | 8.0           | 8.0           | 8.0           | 8.0           | 8.1           |
| 23.500          | 8.1           | 8.1           | 8.1           | 8.1           | 8.1           |
| 24.000          | 8.1           | (N/A)         | (N/A)         | (N/A)         | (N/A)         |



## Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method (Computational Notes)

#### Definition of Terms

|        |                                                                                                                                                                                            |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| At     | Total area (acres): $A_t = A_i + A_p$                                                                                                                                                      |
| Ai     | Impervious area (acres)                                                                                                                                                                    |
| Ap     | Pervious area (acres)                                                                                                                                                                      |
| CNi    | Runoff curve number for impervious area                                                                                                                                                    |
| CNp    | Runoff curve number for pervious area                                                                                                                                                      |
| fLoss  | f loss constant infiltration (depth/time)                                                                                                                                                  |
| gKs    | Saturated Hydraulic Conductivity (depth/time)                                                                                                                                              |
| Md     | Volumetric Moisture Deficit                                                                                                                                                                |
| Psi    | Capillary Suction (length)                                                                                                                                                                 |
| hK     | Horton Infiltration Decay Rate ( $\text{time}^{-1}$ )                                                                                                                                      |
| fo     | Initial Infiltration Rate (depth/time)                                                                                                                                                     |
| fc     | Ultimate(capacity)Infiltration Rate (depth/time)                                                                                                                                           |
| Ia     | Initial Abstraction (length)                                                                                                                                                               |
| dt     | Computational increment (duration of unit excess rainfall)<br>Default dt is smallest value of $0.1333T_c$ , $r_{tm}$ , and $t_h$<br>(Smallest dt is then adjusted to match up with $T_p$ ) |
| UDdt   | User specified override computational main time increment<br>(only used if UDdt is $\geq 0.1333T_c$ )                                                                                      |
| D(t)   | Point on distribution curve (fraction of P) for time step t                                                                                                                                |
| K      | $2 / (1 + (T_r/T_p))$ : default $K = 0.75$ : (for $T_r/T_p = 1.67$ )                                                                                                                       |
| Ks     | Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$<br>Default $K_s = 645.333 * 0.75 = 484$ |
| Lag    | Lag time from center of excess runoff (dt) to $T_p$ : $\text{Lag} = 0.6T_c$                                                                                                                |
| P      | Total precipitation depth, inches                                                                                                                                                          |
| Pa(t)  | Accumulated rainfall at time step t                                                                                                                                                        |
| Pi(t)  | Incremental rainfall at time step t                                                                                                                                                        |
| qp     | Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$ , $A = \text{sq.mi.}$ )                                                |
| Qu(t)  | Unit hydrograph ordinate (cfs) at time step t                                                                                                                                              |
| Q(t)   | Final hydrograph ordinate (cfs) at time step t                                                                                                                                             |
| Rai(t) | Accumulated runoff (inches) at time step t for impervious area                                                                                                                             |
| Rap(t) | Accumulated runoff (inches) at time step t for pervious area                                                                                                                               |
| Rii(t) | Incremental runoff (inches) at time step t for impervious area                                                                                                                             |
| Rip(t) | Incremental runoff (inches) at time step t for pervious area                                                                                                                               |
| R(t)   | Incremental weighted total runoff (inches)                                                                                                                                                 |
| Rtm    | Time increment for rainfall table                                                                                                                                                          |
| Si     | S for impervious area: $S_i = (1000/CN_i) - 10$                                                                                                                                            |
| Sp     | S for pervious area: $S_p = (1000/CN_p) - 10$                                                                                                                                              |
| t      | Time step (row) number                                                                                                                                                                     |
| Tc     | Time of concentration                                                                                                                                                                      |
| Tb     | Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$                                                                                                                                    |
| Tp     | Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$                                                                                                                       |
| Tr     | Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$                                                                                                               |

## Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method

#### Computational Notes

##### Precipitation

|            |                                                            |
|------------|------------------------------------------------------------|
| Column (1) | Time for time step t                                       |
| Column (2) | $D(t)$ = Point on distribution curve for time step t       |
| Column (3) | $P_i(t) = P_a(t) - P_a(t-1)$ : Col.(4) - Preceding Col.(4) |
| Column (4) | $P_a(t) = D(t) \times P$ : Col.(2) x P                     |

##### Pervious Area Runoff (using SCS Runoff CN Method)

|            |                                                                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Column (5) | $Rap(t)$ = Accumulated pervious runoff for time step t<br>If $(P_a(t) \leq 0.2Sp)$ then use: $Rap(t) = 0.0$<br>If $(P_a(t) > 0.2Sp)$ then use:<br>$Rap(t) = (Col.(4) - 0.2Sp) * 2 / (Col.(4) + 0.8Sp)$ |
| Column (6) | $Rip(t)$ = Incremental pervious runoff for time step t<br>$Rip(t) = Rap(t) - Rap(t-1)$<br>$Rip(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.                                            |

##### Impervious Area Runoff

|                   |                                          |
|-------------------|------------------------------------------|
| Column (7 & 8)... | Did not specify to use impervious areas. |
|-------------------|------------------------------------------|

##### Incremental Weighted Runoff

|            |                                                                                                                               |
|------------|-------------------------------------------------------------------------------------------------------------------------------|
| Column (9) | $R(t) = (A_p/A_t) \times Rip(t) + (A_i/A_t) \times R_{ii}(t)$<br>$R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$ |
|------------|-------------------------------------------------------------------------------------------------------------------------------|

##### SCS Unit Hydrograph Method

|             |                                                                                    |
|-------------|------------------------------------------------------------------------------------|
| Column (10) | $Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Q_u(t)$ . |
|-------------|------------------------------------------------------------------------------------|

## Subsection: Unit Hydrograph Summary

Label: E-1

Scenario: 2YR-24HR

Return Event: 2 years

Storm Event: 2YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 2YR-24HR                  |
| Return Event                                    | 2 years                   |
| Duration                                        | 24.000 hours              |
| Depth                                           | 3.7 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 81.82 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 96.36 ft <sup>3</sup> /s  |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 95.81 ft <sup>3</sup> /s  |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 81.55                     |
| Area (User Defined)                             | 81.82 acres               |
| Maximum Retention<br>(Pervious)                 | 2.3 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 1.9 in                    |
| Runoff Volume (Pervious)                        | 570,871 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 564,322 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 114.03 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 2YR-24HR     |
| Return Event                         | 2 years      |
| Duration                             | 24.000 hours |
| Depth                                | 3.7 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 81.82 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 8.200           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 8.450           | 0.01                         | 0.02                         | 0.03                         | 0.04                         | 0.06                         |
| 8.700           | 0.07                         | 0.09                         | 0.11                         | 0.14                         | 0.17                         |
| 8.950           | 0.20                         | 0.23                         | 0.26                         | 0.29                         | 0.33                         |
| 9.200           | 0.37                         | 0.41                         | 0.45                         | 0.49                         | 0.54                         |
| 9.450           | 0.58                         | 0.62                         | 0.67                         | 0.71                         | 0.76                         |
| 9.700           | 0.81                         | 0.85                         | 0.90                         | 0.95                         | 1.00                         |
| 9.950           | 1.06                         | 1.12                         | 1.18                         | 1.24                         | 1.31                         |
| 10.200          | 1.38                         | 1.45                         | 1.53                         | 1.62                         | 1.71                         |
| 10.450          | 1.80                         | 1.90                         | 2.01                         | 2.12                         | 2.24                         |
| 10.700          | 2.37                         | 2.50                         | 2.64                         | 2.79                         | 2.95                         |
| 10.950          | 3.12                         | 3.31                         | 3.49                         | 3.71                         | 3.92                         |
| 11.200          | 4.17                         | 4.43                         | 4.71                         | 5.02                         | 5.35                         |
| 11.450          | 5.73                         | 6.14                         | 6.68                         | 7.24                         | 8.31                         |
| 11.700          | 9.38                         | 11.67                        | 14.16                        | 18.71                        | 24.18                        |
| 11.950          | 31.43                        | 40.32                        | 49.87                        | 60.63                        | 71.03                        |
| 12.200          | 79.81                        | 88.51                        | 92.16                        | 95.81                        | 95.29                        |
| 12.450          | 94.01                        | 90.52                        | 85.98                        | 80.57                        | 74.33                        |
| 12.700          | 68.18                        | 62.20                        | 56.45                        | 51.81                        | 47.17                        |
| 12.950          | 43.63                        | 40.10                        | 37.16                        | 34.33                        | 31.90                        |
| 13.200          | 29.66                        | 27.68                        | 25.93                        | 24.31                        | 22.92                        |
| 13.450          | 21.59                        | 20.49                        | 19.39                        | 18.51                        | 17.63                        |
| 13.700          | 16.88                        | 16.16                        | 15.52                        | 14.92                        | 14.36                        |
| 13.950          | 13.86                        | 13.38                        | 12.95                        | 12.53                        | 12.15                        |
| 14.200          | 11.78                        | 11.44                        | 11.10                        | 10.79                        | 10.49                        |
| 14.450          | 10.22                        | 9.97                         | 9.74                         | 9.55                         | 9.37                         |
| 14.700          | 9.22                         | 9.07                         | 8.94                         | 8.81                         | 8.69                         |
| 14.950          | 8.58                         | 8.47                         | 8.37                         | 8.27                         | 8.17                         |
| 15.200          | 8.08                         | 7.98                         | 7.89                         | 7.80                         | 7.72                         |
| 15.450          | 7.63                         | 7.54                         | 7.46                         | 7.37                         | 7.29                         |
| 15.700          | 7.21                         | 7.12                         | 7.04                         | 6.96                         | 6.87                         |
| 15.950          | 6.79                         | 6.71                         | 6.62                         | 6.54                         | 6.46                         |
| 16.200          | 6.38                         | 6.30                         | 6.23                         | 6.15                         | 6.08                         |
| 16.450          | 6.02                         | 5.95                         | 5.89                         | 5.84                         | 5.79                         |
| 16.700          | 5.73                         | 5.69                         | 5.64                         | 5.60                         | 5.56                         |
| 16.950          | 5.53                         | 5.49                         | 5.45                         | 5.42                         | 5.38                         |
| 17.200          | 5.35                         | 5.32                         | 5.28                         | 5.25                         | 5.22                         |
| 17.450          | 5.19                         | 5.16                         | 5.13                         | 5.10                         | 5.07                         |
| 17.700          | 5.04                         | 5.01                         | 4.98                         | 4.95                         | 4.92                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
 Label: E-1  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 17.950          | 4.89                         | 4.86                         | 4.83                         | 4.80                         | 4.77                         |
| 18.200          | 4.74                         | 4.71                         | 4.68                         | 4.65                         | 4.62                         |
| 18.450          | 4.59                         | 4.56                         | 4.53                         | 4.50                         | 4.47                         |
| 18.700          | 4.44                         | 4.41                         | 4.38                         | 4.35                         | 4.32                         |
| 18.950          | 4.29                         | 4.26                         | 4.23                         | 4.20                         | 4.17                         |
| 19.200          | 4.14                         | 4.11                         | 4.08                         | 4.05                         | 4.02                         |
| 19.450          | 3.99                         | 3.96                         | 3.93                         | 3.90                         | 3.87                         |
| 19.700          | 3.84                         | 3.81                         | 3.78                         | 3.75                         | 3.72                         |
| 19.950          | 3.69                         | 3.66                         | 3.63                         | 3.60                         | 3.57                         |
| 20.200          | 3.54                         | 3.51                         | 3.48                         | 3.46                         | 3.43                         |
| 20.450          | 3.41                         | 3.39                         | 3.37                         | 3.35                         | 3.33                         |
| 20.700          | 3.32                         | 3.30                         | 3.29                         | 3.28                         | 3.27                         |
| 20.950          | 3.26                         | 3.25                         | 3.24                         | 3.23                         | 3.22                         |
| 21.200          | 3.21                         | 3.21                         | 3.20                         | 3.19                         | 3.19                         |
| 21.450          | 3.18                         | 3.17                         | 3.17                         | 3.16                         | 3.15                         |
| 21.700          | 3.15                         | 3.14                         | 3.14                         | 3.13                         | 3.12                         |
| 21.950          | 3.12                         | 3.11                         | 3.11                         | 3.10                         | 3.09                         |
| 22.200          | 3.09                         | 3.08                         | 3.08                         | 3.07                         | 3.06                         |
| 22.450          | 3.06                         | 3.05                         | 3.05                         | 3.04                         | 3.04                         |
| 22.700          | 3.03                         | 3.02                         | 3.02                         | 3.01                         | 3.01                         |
| 22.950          | 3.00                         | 2.99                         | 2.99                         | 2.98                         | 2.98                         |
| 23.200          | 2.97                         | 2.97                         | 2.96                         | 2.95                         | 2.95                         |
| 23.450          | 2.94                         | 2.94                         | 2.93                         | 2.92                         | 2.92                         |
| 23.700          | 2.91                         | 2.91                         | 2.90                         | 2.90                         | 2.89                         |
| 23.950          | 2.88                         | 2.87                         | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: E-1  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 10YR-24HR                 |
| Return Event                                    | 10 years                  |
| Duration                                        | 24.000 hours              |
| Depth                                           | 5.7 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 81.82 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 185.52 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 184.63 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 81.55                     |
| Area (User Defined)                             | 81.82 acres               |
| Maximum Retention<br>(Pervious)                 | 2.3 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 3.7 in                    |
| Runoff Volume (Pervious)                        | 1,088,913 ft <sup>3</sup> |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 1,077,928 ft <sup>3</sup> |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 114.03 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |



Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 10YR-24HR    |
| Return Event                         | 10 years     |
| Duration                             | 24.000 hours |
| Depth                                | 5.7 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 81.82 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 6.050           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 6.300           | 0.01                         | 0.02                         | 0.03                         | 0.05                         | 0.06                         |
| 6.550           | 0.08                         | 0.10                         | 0.13                         | 0.15                         | 0.18                         |
| 6.800           | 0.21                         | 0.24                         | 0.28                         | 0.31                         | 0.35                         |
| 7.050           | 0.38                         | 0.42                         | 0.46                         | 0.50                         | 0.54                         |
| 7.300           | 0.58                         | 0.62                         | 0.66                         | 0.71                         | 0.75                         |
| 7.550           | 0.79                         | 0.84                         | 0.88                         | 0.92                         | 0.97                         |
| 7.800           | 1.02                         | 1.06                         | 1.11                         | 1.16                         | 1.20                         |
| 8.050           | 1.25                         | 1.30                         | 1.35                         | 1.40                         | 1.45                         |
| 8.300           | 1.50                         | 1.56                         | 1.62                         | 1.68                         | 1.74                         |
| 8.550           | 1.81                         | 1.88                         | 1.96                         | 2.04                         | 2.12                         |
| 8.800           | 2.21                         | 2.30                         | 2.39                         | 2.49                         | 2.58                         |
| 9.050           | 2.69                         | 2.79                         | 2.90                         | 3.01                         | 3.11                         |
| 9.300           | 3.22                         | 3.33                         | 3.44                         | 3.54                         | 3.65                         |
| 9.550           | 3.75                         | 3.85                         | 3.94                         | 4.04                         | 4.14                         |
| 9.800           | 4.24                         | 4.34                         | 4.46                         | 4.57                         | 4.70                         |
| 10.050          | 4.84                         | 4.98                         | 5.13                         | 5.29                         | 5.47                         |
| 10.300          | 5.65                         | 5.86                         | 6.06                         | 6.29                         | 6.52                         |
| 10.550          | 6.77                         | 7.03                         | 7.30                         | 7.59                         | 7.90                         |
| 10.800          | 8.23                         | 8.56                         | 8.93                         | 9.31                         | 9.73                         |
| 11.050          | 10.15                        | 10.63                        | 11.11                        | 11.65                        | 12.22                        |
| 11.300          | 12.84                        | 13.52                        | 14.25                        | 15.06                        | 15.95                        |
| 11.550          | 17.11                        | 18.31                        | 20.59                        | 22.88                        | 27.64                        |
| 11.800          | 32.82                        | 41.94                        | 52.85                        | 66.99                        | 84.12                        |
| 12.050          | 102.29                       | 122.38                       | 141.66                       | 157.41                       | 172.99                       |
| 12.300          | 178.81                       | 184.63                       | 182.62                       | 179.20                       | 171.72                       |
| 12.550          | 162.34                       | 151.47                       | 139.19                       | 127.17                       | 115.65                       |
| 12.800          | 104.60                       | 95.72                        | 86.86                        | 80.12                        | 73.39                        |
| 13.050          | 67.81                        | 62.46                        | 57.87                        | 53.65                        | 49.91                        |
| 13.300          | 46.64                        | 43.60                        | 41.01                        | 38.51                        | 36.48                        |
| 13.550          | 34.44                        | 32.81                        | 31.17                        | 29.79                        | 28.46                        |
| 13.800          | 27.28                        | 26.19                        | 25.18                        | 24.26                        | 23.39                        |
| 14.050          | 22.61                        | 21.84                        | 21.16                        | 20.48                        | 19.87                        |
| 14.300          | 19.26                        | 18.71                        | 18.17                        | 17.68                        | 17.23                        |
| 14.550          | 16.83                        | 16.49                        | 16.17                        | 15.90                        | 15.64                        |
| 14.800          | 15.41                        | 15.18                        | 14.97                        | 14.77                        | 14.58                        |
| 15.050          | 14.40                        | 14.22                        | 14.05                        | 13.88                        | 13.72                        |
| 15.300          | 13.56                        | 13.40                        | 13.25                        | 13.10                        | 12.95                        |
| 15.550          | 12.80                        | 12.65                        | 12.50                        | 12.36                        | 12.21                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 15.800          | 12.06                        | 11.92                        | 11.77                        | 11.63                        | 11.48                        |
| 16.050          | 11.34                        | 11.19                        | 11.05                        | 10.91                        | 10.78                        |
| 16.300          | 10.65                        | 10.52                        | 10.40                        | 10.28                        | 10.17                        |
| 16.550          | 10.07                        | 9.97                         | 9.88                         | 9.79                         | 9.71                         |
| 16.800          | 9.63                         | 9.56                         | 9.49                         | 9.42                         | 9.36                         |
| 17.050          | 9.29                         | 9.23                         | 9.17                         | 9.11                         | 9.06                         |
| 17.300          | 9.00                         | 8.94                         | 8.89                         | 8.83                         | 8.78                         |
| 17.550          | 8.73                         | 8.67                         | 8.62                         | 8.57                         | 8.52                         |
| 17.800          | 8.47                         | 8.41                         | 8.36                         | 8.31                         | 8.26                         |
| 18.050          | 8.21                         | 8.16                         | 8.10                         | 8.05                         | 8.00                         |
| 18.300          | 7.95                         | 7.90                         | 7.85                         | 7.80                         | 7.74                         |
| 18.550          | 7.69                         | 7.64                         | 7.59                         | 7.54                         | 7.49                         |
| 18.800          | 7.43                         | 7.38                         | 7.33                         | 7.28                         | 7.23                         |
| 19.050          | 7.18                         | 7.12                         | 7.07                         | 7.02                         | 6.97                         |
| 19.300          | 6.92                         | 6.87                         | 6.81                         | 6.76                         | 6.71                         |
| 19.550          | 6.66                         | 6.61                         | 6.56                         | 6.50                         | 6.45                         |
| 19.800          | 6.40                         | 6.35                         | 6.29                         | 6.24                         | 6.19                         |
| 20.050          | 6.14                         | 6.09                         | 6.03                         | 5.98                         | 5.94                         |
| 20.300          | 5.89                         | 5.84                         | 5.80                         | 5.76                         | 5.72                         |
| 20.550          | 5.69                         | 5.66                         | 5.63                         | 5.60                         | 5.58                         |
| 20.800          | 5.56                         | 5.54                         | 5.52                         | 5.50                         | 5.48                         |
| 21.050          | 5.47                         | 5.45                         | 5.44                         | 5.43                         | 5.41                         |
| 21.300          | 5.40                         | 5.39                         | 5.37                         | 5.36                         | 5.35                         |
| 21.550          | 5.34                         | 5.33                         | 5.32                         | 5.31                         | 5.30                         |
| 21.800          | 5.29                         | 5.28                         | 5.27                         | 5.25                         | 5.24                         |
| 22.050          | 5.23                         | 5.22                         | 5.21                         | 5.20                         | 5.19                         |
| 22.300          | 5.18                         | 5.17                         | 5.16                         | 5.15                         | 5.14                         |
| 22.550          | 5.13                         | 5.12                         | 5.11                         | 5.10                         | 5.09                         |
| 22.800          | 5.08                         | 5.07                         | 5.06                         | 5.05                         | 5.04                         |
| 23.050          | 5.03                         | 5.02                         | 5.01                         | 5.00                         | 4.99                         |
| 23.300          | 4.98                         | 4.97                         | 4.96                         | 4.95                         | 4.94                         |
| 23.550          | 4.93                         | 4.92                         | 4.91                         | 4.90                         | 4.89                         |
| 23.800          | 4.88                         | 4.87                         | 4.86                         | 4.85                         | 4.82                         |

## Subsection: Unit Hydrograph Summary

Label: E-1

Scenario: 50YR-24HR

Return Event: 50 years

Storm Event: 50YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 50YR-24HR                 |
| Return Event                                    | 50 years                  |
| Duration                                        | 24.000 hours              |
| Depth                                           | 8.1 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 81.82 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 296.88 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 295.63 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 81.55                     |
| Area (User Defined)                             | 81.82 acres               |
| Maximum Retention<br>(Pervious)                 | 2.3 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 5.9 in                    |
| Runoff Volume (Pervious)                        | 1,755,505 ft <sup>3</sup> |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 1,739,221 ft <sup>3</sup> |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 114.03 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 50YR-24HR    |
| Return Event                         | 50 years     |
| Duration                             | 24.000 hours |
| Depth                                | 8.1 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 81.82 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 4.600           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 4.850           | 0.02                         | 0.03                         | 0.04                         | 0.06                         | 0.08                         |
| 5.100           | 0.10                         | 0.14                         | 0.17                         | 0.20                         | 0.24                         |
| 5.350           | 0.29                         | 0.33                         | 0.38                         | 0.43                         | 0.48                         |
| 5.600           | 0.53                         | 0.58                         | 0.64                         | 0.70                         | 0.76                         |
| 5.850           | 0.81                         | 0.88                         | 0.94                         | 1.00                         | 1.06                         |
| 6.100           | 1.12                         | 1.19                         | 1.25                         | 1.32                         | 1.39                         |
| 6.350           | 1.45                         | 1.52                         | 1.59                         | 1.66                         | 1.73                         |
| 6.600           | 1.79                         | 1.86                         | 1.94                         | 2.01                         | 2.08                         |
| 6.850           | 2.15                         | 2.22                         | 2.30                         | 2.37                         | 2.44                         |
| 7.100           | 2.52                         | 2.59                         | 2.67                         | 2.74                         | 2.82                         |
| 7.350           | 2.90                         | 2.97                         | 3.05                         | 3.13                         | 3.21                         |
| 7.600           | 3.29                         | 3.36                         | 3.44                         | 3.52                         | 3.60                         |
| 7.850           | 3.68                         | 3.76                         | 3.84                         | 3.92                         | 4.01                         |
| 8.100           | 4.09                         | 4.17                         | 4.26                         | 4.35                         | 4.45                         |
| 8.350           | 4.55                         | 4.66                         | 4.76                         | 4.89                         | 5.01                         |
| 8.600           | 5.15                         | 5.30                         | 5.45                         | 5.61                         | 5.77                         |
| 8.850           | 5.94                         | 6.12                         | 6.30                         | 6.49                         | 6.69                         |
| 9.100           | 6.88                         | 7.08                         | 7.29                         | 7.49                         | 7.69                         |
| 9.350           | 7.88                         | 8.07                         | 8.26                         | 8.44                         | 8.61                         |
| 9.600           | 8.77                         | 8.94                         | 9.10                         | 9.26                         | 9.43                         |
| 9.850           | 9.60                         | 9.79                         | 9.98                         | 10.20                        | 10.43                        |
| 10.100          | 10.67                        | 10.94                        | 11.22                        | 11.54                        | 11.85                        |
| 10.350          | 12.21                        | 12.57                        | 12.97                        | 13.37                        | 13.81                        |
| 10.600          | 14.27                        | 14.75                        | 15.26                        | 15.80                        | 16.37                        |
| 10.850          | 16.96                        | 17.60                        | 18.25                        | 18.98                        | 19.71                        |
| 11.100          | 20.53                        | 21.36                        | 22.29                        | 23.25                        | 24.32                        |
| 11.350          | 25.47                        | 26.71                        | 28.10                        | 29.59                        | 31.57                        |
| 11.600          | 33.59                        | 37.45                        | 41.30                        | 49.23                        | 57.84                        |
| 11.850          | 72.75                        | 90.52                        | 113.28                       | 140.66                       | 169.50                       |
| 12.100          | 201.02                       | 231.18                       | 255.30                       | 279.18                       | 287.41                       |
| 12.350          | 295.63                       | 291.51                       | 285.18                       | 272.56                       | 256.98                       |
| 12.600          | 239.21                       | 219.33                       | 199.96                       | 181.54                       | 163.88                       |
| 12.850          | 149.73                       | 135.61                       | 124.90                       | 114.19                       | 105.34                       |
| 13.100          | 96.85                        | 89.59                        | 82.93                        | 77.02                        | 71.86                        |
| 13.350          | 67.06                        | 62.99                        | 59.07                        | 55.87                        | 52.68                        |
| 13.600          | 50.12                        | 47.57                        | 45.41                        | 43.34                        | 41.50                        |
| 13.850          | 39.79                        | 38.23                        | 36.80                        | 35.45                        | 34.25                        |
| 14.100          | 33.06                        | 32.01                        | 30.95                        | 30.01                        | 29.07                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.350          | 28.22                        | 27.39                        | 26.65                        | 25.96                        | 25.35                        |
| 14.600          | 24.82                        | 24.33                        | 23.92                        | 23.52                        | 23.17                        |
| 14.850          | 22.82                        | 22.51                        | 22.20                        | 21.91                        | 21.63                        |
| 15.100          | 21.36                        | 21.10                        | 20.85                        | 20.60                        | 20.36                        |
| 15.350          | 20.12                        | 19.88                        | 19.65                        | 19.42                        | 19.20                        |
| 15.600          | 18.97                        | 18.75                        | 18.53                        | 18.31                        | 18.09                        |
| 15.850          | 17.86                        | 17.64                        | 17.42                        | 17.21                        | 16.99                        |
| 16.100          | 16.77                        | 16.56                        | 16.35                        | 16.14                        | 15.94                        |
| 16.350          | 15.75                        | 15.56                        | 15.39                        | 15.22                        | 15.06                        |
| 16.600          | 14.92                        | 14.78                        | 14.65                        | 14.53                        | 14.41                        |
| 16.850          | 14.30                        | 14.19                        | 14.09                        | 13.99                        | 13.90                        |
| 17.100          | 13.80                        | 13.71                        | 13.62                        | 13.54                        | 13.45                        |
| 17.350          | 13.37                        | 13.28                        | 13.20                        | 13.12                        | 13.04                        |
| 17.600          | 12.96                        | 12.88                        | 12.80                        | 12.72                        | 12.64                        |
| 17.850          | 12.56                        | 12.48                        | 12.41                        | 12.33                        | 12.25                        |
| 18.100          | 12.17                        | 12.10                        | 12.02                        | 11.94                        | 11.86                        |
| 18.350          | 11.79                        | 11.71                        | 11.63                        | 11.55                        | 11.47                        |
| 18.600          | 11.40                        | 11.32                        | 11.24                        | 11.16                        | 11.09                        |
| 18.850          | 11.01                        | 10.93                        | 10.85                        | 10.77                        | 10.70                        |
| 19.100          | 10.62                        | 10.54                        | 10.46                        | 10.39                        | 10.31                        |
| 19.350          | 10.23                        | 10.15                        | 10.08                        | 10.00                        | 9.92                         |
| 19.600          | 9.84                         | 9.77                         | 9.69                         | 9.61                         | 9.53                         |
| 19.850          | 9.45                         | 9.37                         | 9.30                         | 9.22                         | 9.14                         |
| 20.100          | 9.06                         | 8.98                         | 8.91                         | 8.84                         | 8.77                         |
| 20.350          | 8.70                         | 8.64                         | 8.58                         | 8.52                         | 8.47                         |
| 20.600          | 8.42                         | 8.38                         | 8.34                         | 8.30                         | 8.27                         |
| 20.850          | 8.24                         | 8.21                         | 8.18                         | 8.16                         | 8.13                         |
| 21.100          | 8.11                         | 8.09                         | 8.07                         | 8.05                         | 8.03                         |
| 21.350          | 8.01                         | 7.99                         | 7.98                         | 7.96                         | 7.94                         |
| 21.600          | 7.92                         | 7.91                         | 7.89                         | 7.87                         | 7.86                         |
| 21.850          | 7.84                         | 7.83                         | 7.81                         | 7.80                         | 7.78                         |
| 22.100          | 7.76                         | 7.75                         | 7.73                         | 7.72                         | 7.70                         |
| 22.350          | 7.69                         | 7.67                         | 7.66                         | 7.64                         | 7.62                         |
| 22.600          | 7.61                         | 7.59                         | 7.58                         | 7.56                         | 7.55                         |
| 22.850          | 7.53                         | 7.52                         | 7.50                         | 7.49                         | 7.47                         |
| 23.100          | 7.45                         | 7.44                         | 7.42                         | 7.41                         | 7.39                         |
| 23.350          | 7.38                         | 7.36                         | 7.35                         | 7.33                         | 7.32                         |
| 23.600          | 7.30                         | 7.29                         | 7.27                         | 7.25                         | 7.24                         |
| 23.850          | 7.22                         | 7.21                         | 7.19                         | 7.15                         | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: E-1  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 100YR-24HR                |
| Return Event                                    | 100 years                 |
| Duration                                        | 24.000 hours              |
| Depth                                           | 9.3 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 81.82 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 350.22 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 348.80 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 81.55                     |
| Area (User Defined)                             | 81.82 acres               |
| Maximum Retention<br>(Pervious)                 | 2.3 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 7.0 in                    |
| Runoff Volume (Pervious)                        | 2,081,138 ft <sup>3</sup> |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 2,062,348 ft <sup>3</sup> |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 114.03 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |



Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 100YR-24HR   |
| Return Event                         | 100 years    |
| Duration                             | 24.000 hours |
| Depth                                | 9.3 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 81.82 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 4.150           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.02                         |
| 4.400           | 0.03                         | 0.04                         | 0.06                         | 0.08                         | 0.11                         |
| 4.650           | 0.14                         | 0.17                         | 0.21                         | 0.26                         | 0.30                         |
| 4.900           | 0.35                         | 0.41                         | 0.46                         | 0.52                         | 0.58                         |
| 5.150           | 0.64                         | 0.70                         | 0.77                         | 0.84                         | 0.90                         |
| 5.400           | 0.97                         | 1.04                         | 1.11                         | 1.18                         | 1.26                         |
| 5.650           | 1.33                         | 1.41                         | 1.48                         | 1.56                         | 1.63                         |
| 5.900           | 1.71                         | 1.79                         | 1.87                         | 1.95                         | 2.03                         |
| 6.150           | 2.11                         | 2.19                         | 2.28                         | 2.36                         | 2.44                         |
| 6.400           | 2.52                         | 2.61                         | 2.69                         | 2.78                         | 2.87                         |
| 6.650           | 2.95                         | 3.04                         | 3.13                         | 3.22                         | 3.30                         |
| 6.900           | 3.39                         | 3.48                         | 3.57                         | 3.66                         | 3.75                         |
| 7.150           | 3.84                         | 3.94                         | 4.03                         | 4.12                         | 4.21                         |
| 7.400           | 4.31                         | 4.40                         | 4.49                         | 4.59                         | 4.68                         |
| 7.650           | 4.78                         | 4.87                         | 4.97                         | 5.06                         | 5.16                         |
| 7.900           | 5.26                         | 5.35                         | 5.45                         | 5.55                         | 5.65                         |
| 8.150           | 5.75                         | 5.86                         | 5.96                         | 6.08                         | 6.20                         |
| 8.400           | 6.33                         | 6.47                         | 6.62                         | 6.77                         | 6.94                         |
| 8.650           | 7.12                         | 7.31                         | 7.51                         | 7.71                         | 7.93                         |
| 8.900           | 8.14                         | 8.37                         | 8.60                         | 8.85                         | 9.09                         |
| 9.150           | 9.34                         | 9.59                         | 9.83                         | 10.08                        | 10.32                        |
| 9.400           | 10.55                        | 10.77                        | 10.99                        | 11.19                        | 11.39                        |
| 9.650           | 11.58                        | 11.77                        | 11.96                        | 12.16                        | 12.36                        |
| 9.900           | 12.59                        | 12.82                        | 13.08                        | 13.36                        | 13.65                        |
| 10.150          | 13.98                        | 14.31                        | 14.69                        | 15.07                        | 15.51                        |
| 10.400          | 15.94                        | 16.43                        | 16.92                        | 17.45                        | 18.00                        |
| 10.650          | 18.59                        | 19.20                        | 19.85                        | 20.54                        | 21.25                        |
| 10.900          | 22.03                        | 22.82                        | 23.69                        | 24.57                        | 25.56                        |
| 11.150          | 26.56                        | 27.67                        | 28.83                        | 30.11                        | 31.50                        |
| 11.400          | 32.98                        | 34.64                        | 36.43                        | 38.80                        | 41.22                        |
| 11.650          | 45.83                        | 50.45                        | 59.90                        | 70.17                        | 87.86                        |
| 11.900          | 108.92                       | 135.81                       | 168.09                       | 202.01                       | 238.97                       |
| 12.150          | 274.29                       | 302.37                       | 330.15                       | 339.48                       | 348.80                       |
| 12.400          | 343.63                       | 335.86                       | 320.75                       | 302.18                       | 281.09                       |
| 12.650          | 257.57                       | 234.67                       | 212.96                       | 192.13                       | 175.46                       |
| 12.900          | 158.83                       | 146.22                       | 133.61                       | 123.20                       | 113.21                       |
| 13.150          | 104.67                       | 96.84                        | 89.90                        | 83.84                        | 78.21                        |
| 13.400          | 73.43                        | 68.83                        | 65.08                        | 61.33                        | 58.33                        |
| 13.650          | 55.34                        | 52.82                        | 50.38                        | 48.24                        | 46.24                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: E-1  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.900          | 44.41                        | 42.74                        | 41.17                        | 39.75                        | 38.37                        |
| 14.150          | 37.14                        | 35.91                        | 34.81                        | 33.71                        | 32.72                        |
| 14.400          | 31.75                        | 30.89                        | 30.08                        | 29.37                        | 28.76                        |
| 14.650          | 28.19                        | 27.72                        | 27.25                        | 26.84                        | 26.43                        |
| 14.900          | 26.07                        | 25.71                        | 25.38                        | 25.05                        | 24.74                        |
| 15.150          | 24.44                        | 24.14                        | 23.86                        | 23.57                        | 23.30                        |
| 15.400          | 23.02                        | 22.76                        | 22.49                        | 22.23                        | 21.97                        |
| 15.650          | 21.71                        | 21.45                        | 21.19                        | 20.93                        | 20.68                        |
| 15.900          | 20.42                        | 20.17                        | 19.91                        | 19.66                        | 19.41                        |
| 16.150          | 19.16                        | 18.92                        | 18.67                        | 18.45                        | 18.22                        |
| 16.400          | 18.01                        | 17.80                        | 17.61                        | 17.43                        | 17.26                        |
| 16.650          | 17.10                        | 16.94                        | 16.80                        | 16.67                        | 16.54                        |
| 16.900          | 16.42                        | 16.30                        | 16.18                        | 16.07                        | 15.97                        |
| 17.150          | 15.86                        | 15.76                        | 15.66                        | 15.56                        | 15.46                        |
| 17.400          | 15.36                        | 15.27                        | 15.17                        | 15.08                        | 14.98                        |
| 17.650          | 14.89                        | 14.80                        | 14.71                        | 14.62                        | 14.53                        |
| 17.900          | 14.43                        | 14.34                        | 14.25                        | 14.16                        | 14.07                        |
| 18.150          | 13.98                        | 13.89                        | 13.80                        | 13.71                        | 13.62                        |
| 18.400          | 13.53                        | 13.44                        | 13.35                        | 13.26                        | 13.17                        |
| 18.650          | 13.08                        | 12.99                        | 12.90                        | 12.81                        | 12.72                        |
| 18.900          | 12.63                        | 12.54                        | 12.45                        | 12.36                        | 12.27                        |
| 19.150          | 12.18                        | 12.09                        | 12.00                        | 11.91                        | 11.82                        |
| 19.400          | 11.73                        | 11.64                        | 11.55                        | 11.46                        | 11.37                        |
| 19.650          | 11.28                        | 11.19                        | 11.10                        | 11.01                        | 10.92                        |
| 19.900          | 10.83                        | 10.74                        | 10.65                        | 10.56                        | 10.47                        |
| 20.150          | 10.38                        | 10.29                        | 10.21                        | 10.13                        | 10.05                        |
| 20.400          | 9.98                         | 9.91                         | 9.84                         | 9.78                         | 9.73                         |
| 20.650          | 9.68                         | 9.63                         | 9.59                         | 9.55                         | 9.52                         |
| 20.900          | 9.48                         | 9.45                         | 9.42                         | 9.39                         | 9.37                         |
| 21.150          | 9.34                         | 9.32                         | 9.30                         | 9.27                         | 9.25                         |
| 21.400          | 9.23                         | 9.21                         | 9.19                         | 9.17                         | 9.15                         |
| 21.650          | 9.13                         | 9.11                         | 9.09                         | 9.08                         | 9.06                         |
| 21.900          | 9.04                         | 9.02                         | 9.00                         | 8.98                         | 8.97                         |
| 22.150          | 8.95                         | 8.93                         | 8.91                         | 8.89                         | 8.88                         |
| 22.400          | 8.86                         | 8.84                         | 8.82                         | 8.80                         | 8.79                         |
| 22.650          | 8.77                         | 8.75                         | 8.73                         | 8.71                         | 8.70                         |
| 22.900          | 8.68                         | 8.66                         | 8.64                         | 8.62                         | 8.61                         |
| 23.150          | 8.59                         | 8.57                         | 8.55                         | 8.54                         | 8.52                         |
| 23.400          | 8.50                         | 8.48                         | 8.46                         | 8.45                         | 8.43                         |
| 23.650          | 8.41                         | 8.39                         | 8.37                         | 8.36                         | 8.34                         |
| 23.900          | 8.32                         | 8.30                         | 8.26                         | (N/A)                        | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-A  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 2YR-24HR                 |
| Return Event                                    | 2 years                  |
| Duration                                        | 24.000 hours             |
| Depth                                           | 3.7 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 12.29 acres              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 36.68 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 36.53 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 88.92                    |
| Area (User Defined)                             | 12.29 acres              |
| Maximum Retention<br>(Pervious)                 | 1.2 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.2 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 2.5 in                   |
| Runoff Volume (Pervious)                        | 113,521 ft <sup>3</sup>  |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 113,177 ft <sup>3</sup>  |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 53.56 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 2YR-24HR     |
| Return Event                         | 2 years      |
| Duration                             | 24.000 hours |
| Depth                                | 3.7 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 12.29 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 5.350           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 5.600           | 0.01                         | 0.01                         | 0.02                         | 0.02                         | 0.03                         |
| 5.850           | 0.03                         | 0.03                         | 0.04                         | 0.04                         | 0.05                         |
| 6.100           | 0.05                         | 0.06                         | 0.06                         | 0.06                         | 0.07                         |
| 6.350           | 0.07                         | 0.08                         | 0.08                         | 0.09                         | 0.09                         |
| 6.600           | 0.09                         | 0.10                         | 0.10                         | 0.11                         | 0.11                         |
| 6.850           | 0.12                         | 0.12                         | 0.13                         | 0.13                         | 0.14                         |
| 7.100           | 0.14                         | 0.15                         | 0.15                         | 0.16                         | 0.16                         |
| 7.350           | 0.17                         | 0.17                         | 0.18                         | 0.18                         | 0.19                         |
| 7.600           | 0.19                         | 0.20                         | 0.20                         | 0.21                         | 0.21                         |
| 7.850           | 0.22                         | 0.22                         | 0.23                         | 0.23                         | 0.24                         |
| 8.100           | 0.25                         | 0.25                         | 0.26                         | 0.27                         | 0.28                         |
| 8.350           | 0.29                         | 0.30                         | 0.31                         | 0.32                         | 0.33                         |
| 8.600           | 0.34                         | 0.36                         | 0.37                         | 0.38                         | 0.40                         |
| 8.850           | 0.41                         | 0.42                         | 0.44                         | 0.45                         | 0.46                         |
| 9.100           | 0.48                         | 0.49                         | 0.50                         | 0.51                         | 0.52                         |
| 9.350           | 0.53                         | 0.54                         | 0.54                         | 0.55                         | 0.56                         |
| 9.600           | 0.57                         | 0.58                         | 0.59                         | 0.61                         | 0.63                         |
| 9.850           | 0.65                         | 0.67                         | 0.69                         | 0.71                         | 0.74                         |
| 10.100          | 0.76                         | 0.79                         | 0.82                         | 0.85                         | 0.88                         |
| 10.350          | 0.92                         | 0.95                         | 0.99                         | 1.02                         | 1.06                         |
| 10.600          | 1.10                         | 1.15                         | 1.20                         | 1.25                         | 1.31                         |
| 10.850          | 1.37                         | 1.43                         | 1.49                         | 1.56                         | 1.63                         |
| 11.100          | 1.70                         | 1.79                         | 1.90                         | 2.02                         | 2.15                         |
| 11.350          | 2.29                         | 2.44                         | 2.60                         | 2.77                         | 3.06                         |
| 11.600          | 3.65                         | 4.73                         | 6.54                         | 9.08                         | 12.52                        |
| 11.850          | 17.06                        | 23.19                        | 30.02                        | 35.16                        | 36.53                        |
| 12.100          | 33.76                        | 27.53                        | 21.05                        | 15.84                        | 12.29                        |
| 12.350          | 9.95                         | 8.32                         | 7.12                         | 6.21                         | 5.47                         |
| 12.600          | 4.88                         | 4.38                         | 4.01                         | 3.72                         | 3.50                         |
| 12.850          | 3.34                         | 3.20                         | 3.08                         | 2.96                         | 2.85                         |
| 13.100          | 2.75                         | 2.65                         | 2.57                         | 2.49                         | 2.43                         |
| 13.350          | 2.36                         | 2.30                         | 2.24                         | 2.18                         | 2.13                         |
| 13.600          | 2.07                         | 2.02                         | 1.97                         | 1.92                         | 1.88                         |
| 13.850          | 1.83                         | 1.79                         | 1.75                         | 1.71                         | 1.67                         |
| 14.100          | 1.63                         | 1.60                         | 1.57                         | 1.54                         | 1.52                         |
| 14.350          | 1.51                         | 1.49                         | 1.47                         | 1.46                         | 1.44                         |
| 14.600          | 1.43                         | 1.41                         | 1.40                         | 1.39                         | 1.37                         |
| 14.850          | 1.36                         | 1.34                         | 1.33                         | 1.31                         | 1.30                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 15.100          | 1.29                         | 1.27                         | 1.26                         | 1.24                         | 1.23                         |
| 15.350          | 1.21                         | 1.20                         | 1.19                         | 1.17                         | 1.16                         |
| 15.600          | 1.14                         | 1.13                         | 1.11                         | 1.10                         | 1.08                         |
| 15.850          | 1.07                         | 1.06                         | 1.04                         | 1.03                         | 1.01                         |
| 16.100          | 1.00                         | 0.99                         | 0.98                         | 0.97                         | 0.96                         |
| 16.350          | 0.95                         | 0.95                         | 0.94                         | 0.94                         | 0.93                         |
| 16.600          | 0.93                         | 0.92                         | 0.92                         | 0.91                         | 0.91                         |
| 16.850          | 0.90                         | 0.90                         | 0.89                         | 0.89                         | 0.88                         |
| 17.100          | 0.88                         | 0.87                         | 0.87                         | 0.86                         | 0.86                         |
| 17.350          | 0.85                         | 0.85                         | 0.84                         | 0.83                         | 0.83                         |
| 17.600          | 0.82                         | 0.82                         | 0.81                         | 0.81                         | 0.80                         |
| 17.850          | 0.80                         | 0.79                         | 0.79                         | 0.78                         | 0.78                         |
| 18.100          | 0.77                         | 0.77                         | 0.76                         | 0.76                         | 0.75                         |
| 18.350          | 0.75                         | 0.74                         | 0.74                         | 0.73                         | 0.73                         |
| 18.600          | 0.72                         | 0.72                         | 0.71                         | 0.71                         | 0.70                         |
| 18.850          | 0.69                         | 0.69                         | 0.68                         | 0.68                         | 0.67                         |
| 19.100          | 0.67                         | 0.66                         | 0.66                         | 0.65                         | 0.65                         |
| 19.350          | 0.64                         | 0.64                         | 0.63                         | 0.63                         | 0.62                         |
| 19.600          | 0.62                         | 0.61                         | 0.61                         | 0.60                         | 0.60                         |
| 19.850          | 0.59                         | 0.58                         | 0.58                         | 0.57                         | 0.57                         |
| 20.100          | 0.56                         | 0.56                         | 0.56                         | 0.55                         | 0.55                         |
| 20.350          | 0.55                         | 0.55                         | 0.55                         | 0.55                         | 0.55                         |
| 20.600          | 0.54                         | 0.54                         | 0.54                         | 0.54                         | 0.54                         |
| 20.850          | 0.54                         | 0.54                         | 0.54                         | 0.54                         | 0.54                         |
| 21.100          | 0.53                         | 0.53                         | 0.53                         | 0.53                         | 0.53                         |
| 21.350          | 0.53                         | 0.53                         | 0.53                         | 0.53                         | 0.53                         |
| 21.600          | 0.52                         | 0.52                         | 0.52                         | 0.52                         | 0.52                         |
| 21.850          | 0.52                         | 0.52                         | 0.52                         | 0.52                         | 0.51                         |
| 22.100          | 0.51                         | 0.51                         | 0.51                         | 0.51                         | 0.51                         |
| 22.350          | 0.51                         | 0.51                         | 0.51                         | 0.51                         | 0.50                         |
| 22.600          | 0.50                         | 0.50                         | 0.50                         | 0.50                         | 0.50                         |
| 22.850          | 0.50                         | 0.50                         | 0.50                         | 0.50                         | 0.49                         |
| 23.100          | 0.49                         | 0.49                         | 0.49                         | 0.49                         | 0.49                         |
| 23.350          | 0.49                         | 0.49                         | 0.49                         | 0.48                         | 0.48                         |
| 23.600          | 0.48                         | 0.48                         | 0.48                         | 0.48                         | 0.48                         |
| 23.850          | 0.48                         | 0.48                         | 0.48                         | 0.47                         | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-A  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 10YR-24HR                |
| Return Event                                    | 10 years                 |
| Duration                                        | 24.000 hours             |
| Depth                                           | 5.7 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 12.29 acres              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 62.50 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 62.03 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 88.92                    |
| Area (User Defined)                             | 12.29 acres              |
| Maximum Retention<br>(Pervious)                 | 1.2 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.2 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 4.4 in                   |
| Runoff Volume (Pervious)                        | 197,927 ft <sup>3</sup>  |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 197,380 ft <sup>3</sup>  |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 53.56 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 10YR-24HR    |
| Return Event                         | 10 years     |
| Duration                             | 24.000 hours |
| Depth                                | 5.7 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 12.29 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 3.800           | 0.00                         | 0.00                         | 0.01                         | 0.01                         | 0.01                         |
| 4.050           | 0.02                         | 0.03                         | 0.03                         | 0.04                         | 0.04                         |
| 4.300           | 0.05                         | 0.06                         | 0.06                         | 0.07                         | 0.08                         |
| 4.550           | 0.08                         | 0.09                         | 0.10                         | 0.10                         | 0.11                         |
| 4.800           | 0.12                         | 0.12                         | 0.13                         | 0.14                         | 0.15                         |
| 5.050           | 0.15                         | 0.16                         | 0.17                         | 0.17                         | 0.18                         |
| 5.300           | 0.19                         | 0.20                         | 0.21                         | 0.21                         | 0.22                         |
| 5.550           | 0.23                         | 0.24                         | 0.24                         | 0.25                         | 0.26                         |
| 5.800           | 0.27                         | 0.28                         | 0.29                         | 0.29                         | 0.30                         |
| 6.050           | 0.31                         | 0.32                         | 0.33                         | 0.34                         | 0.34                         |
| 6.300           | 0.35                         | 0.36                         | 0.37                         | 0.38                         | 0.39                         |
| 6.550           | 0.40                         | 0.40                         | 0.41                         | 0.42                         | 0.43                         |
| 6.800           | 0.44                         | 0.45                         | 0.46                         | 0.47                         | 0.48                         |
| 7.050           | 0.48                         | 0.49                         | 0.50                         | 0.51                         | 0.52                         |
| 7.300           | 0.53                         | 0.54                         | 0.55                         | 0.56                         | 0.57                         |
| 7.550           | 0.58                         | 0.59                         | 0.59                         | 0.60                         | 0.61                         |
| 7.800           | 0.62                         | 0.63                         | 0.64                         | 0.65                         | 0.66                         |
| 8.050           | 0.67                         | 0.68                         | 0.69                         | 0.71                         | 0.73                         |
| 8.300           | 0.75                         | 0.77                         | 0.79                         | 0.81                         | 0.84                         |
| 8.550           | 0.86                         | 0.89                         | 0.91                         | 0.94                         | 0.96                         |
| 8.800           | 0.99                         | 1.02                         | 1.05                         | 1.07                         | 1.10                         |
| 9.050           | 1.13                         | 1.15                         | 1.18                         | 1.20                         | 1.22                         |
| 9.300           | 1.23                         | 1.24                         | 1.25                         | 1.26                         | 1.27                         |
| 9.550           | 1.29                         | 1.30                         | 1.32                         | 1.34                         | 1.37                         |
| 9.800           | 1.41                         | 1.45                         | 1.49                         | 1.53                         | 1.57                         |
| 10.050          | 1.62                         | 1.67                         | 1.72                         | 1.77                         | 1.83                         |
| 10.300          | 1.89                         | 1.96                         | 2.02                         | 2.09                         | 2.16                         |
| 10.550          | 2.23                         | 2.30                         | 2.39                         | 2.48                         | 2.58                         |
| 10.800          | 2.68                         | 2.79                         | 2.90                         | 3.02                         | 3.14                         |
| 11.050          | 3.26                         | 3.40                         | 3.56                         | 3.75                         | 3.97                         |
| 11.300          | 4.21                         | 4.47                         | 4.74                         | 5.02                         | 5.33                         |
| 11.550          | 5.84                         | 6.93                         | 8.89                         | 12.17                        | 16.71                        |
| 11.800          | 22.73                        | 30.53                        | 40.84                        | 52.08                        | 60.27                        |
| 12.050          | 62.03                        | 56.92                        | 46.19                        | 35.18                        | 26.40                        |
| 12.300          | 20.41                        | 16.48                        | 13.73                        | 11.71                        | 10.20                        |
| 12.550          | 8.96                         | 7.98                         | 7.16                         | 6.54                         | 6.06                         |
| 12.800          | 5.71                         | 5.44                         | 5.21                         | 5.01                         | 4.82                         |
| 13.050          | 4.64                         | 4.47                         | 4.31                         | 4.17                         | 4.05                         |
| 13.300          | 3.94                         | 3.83                         | 3.73                         | 3.63                         | 3.54                         |



Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.550          | 3.45                         | 3.36                         | 3.27                         | 3.19                         | 3.11                         |
| 13.800          | 3.04                         | 2.97                         | 2.90                         | 2.83                         | 2.76                         |
| 14.050          | 2.70                         | 2.64                         | 2.58                         | 2.53                         | 2.49                         |
| 14.300          | 2.46                         | 2.43                         | 2.40                         | 2.38                         | 2.35                         |
| 14.550          | 2.33                         | 2.31                         | 2.28                         | 2.26                         | 2.24                         |
| 14.800          | 2.21                         | 2.19                         | 2.17                         | 2.14                         | 2.12                         |
| 15.050          | 2.10                         | 2.07                         | 2.05                         | 2.03                         | 2.00                         |
| 15.300          | 1.98                         | 1.96                         | 1.93                         | 1.91                         | 1.89                         |
| 15.550          | 1.86                         | 1.84                         | 1.82                         | 1.79                         | 1.77                         |
| 15.800          | 1.75                         | 1.72                         | 1.70                         | 1.68                         | 1.65                         |
| 16.050          | 1.63                         | 1.61                         | 1.59                         | 1.57                         | 1.56                         |
| 16.300          | 1.54                         | 1.53                         | 1.52                         | 1.52                         | 1.51                         |
| 16.550          | 1.50                         | 1.49                         | 1.48                         | 1.47                         | 1.46                         |
| 16.800          | 1.46                         | 1.45                         | 1.44                         | 1.43                         | 1.42                         |
| 17.050          | 1.41                         | 1.41                         | 1.40                         | 1.39                         | 1.38                         |
| 17.300          | 1.37                         | 1.36                         | 1.36                         | 1.35                         | 1.34                         |
| 17.550          | 1.33                         | 1.32                         | 1.31                         | 1.31                         | 1.30                         |
| 17.800          | 1.29                         | 1.28                         | 1.27                         | 1.26                         | 1.26                         |
| 18.050          | 1.25                         | 1.24                         | 1.23                         | 1.22                         | 1.21                         |
| 18.300          | 1.21                         | 1.20                         | 1.19                         | 1.18                         | 1.17                         |
| 18.550          | 1.16                         | 1.15                         | 1.15                         | 1.14                         | 1.13                         |
| 18.800          | 1.12                         | 1.11                         | 1.10                         | 1.10                         | 1.09                         |
| 19.050          | 1.08                         | 1.07                         | 1.06                         | 1.05                         | 1.05                         |
| 19.300          | 1.04                         | 1.03                         | 1.02                         | 1.01                         | 1.00                         |
| 19.550          | 0.99                         | 0.99                         | 0.98                         | 0.97                         | 0.96                         |
| 19.800          | 0.95                         | 0.94                         | 0.94                         | 0.93                         | 0.92                         |
| 20.050          | 0.91                         | 0.90                         | 0.90                         | 0.89                         | 0.89                         |
| 20.300          | 0.88                         | 0.88                         | 0.88                         | 0.88                         | 0.87                         |
| 20.550          | 0.87                         | 0.87                         | 0.87                         | 0.87                         | 0.87                         |
| 20.800          | 0.86                         | 0.86                         | 0.86                         | 0.86                         | 0.86                         |
| 21.050          | 0.86                         | 0.85                         | 0.85                         | 0.85                         | 0.85                         |
| 21.300          | 0.85                         | 0.85                         | 0.84                         | 0.84                         | 0.84                         |
| 21.550          | 0.84                         | 0.84                         | 0.84                         | 0.83                         | 0.83                         |
| 21.800          | 0.83                         | 0.83                         | 0.83                         | 0.83                         | 0.82                         |
| 22.050          | 0.82                         | 0.82                         | 0.82                         | 0.82                         | 0.82                         |
| 22.300          | 0.81                         | 0.81                         | 0.81                         | 0.81                         | 0.81                         |
| 22.550          | 0.81                         | 0.80                         | 0.80                         | 0.80                         | 0.80                         |
| 22.800          | 0.80                         | 0.80                         | 0.79                         | 0.79                         | 0.79                         |
| 23.050          | 0.79                         | 0.79                         | 0.79                         | 0.78                         | 0.78                         |
| 23.300          | 0.78                         | 0.78                         | 0.78                         | 0.78                         | 0.77                         |
| 23.550          | 0.77                         | 0.77                         | 0.77                         | 0.77                         | 0.77                         |
| 23.800          | 0.76                         | 0.76                         | 0.76                         | 0.76                         | 0.76                         |

Subsection: Unit Hydrograph Summary  
Label: P-A  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 50YR-24HR                |
| Return Event                                    | 50 years                 |
| Duration                                        | 24.000 hours             |
| Depth                                           | 8.1 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 12.29 acres              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 93.47 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 92.60 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 88.92                    |
| Area (User Defined)                             | 12.29 acres              |
| Maximum Retention<br>(Pervious)                 | 1.2 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.2 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 6.8 in                   |
| Runoff Volume (Pervious)                        | 302,708 ft <sup>3</sup>  |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 301,915 ft <sup>3</sup>  |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 53.56 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 50YR-24HR    |
| Return Event                         | 50 years     |
| Duration                             | 24.000 hours |
| Depth                                | 8.1 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 12.29 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.800           | 0.00                         | 0.00                         | 0.01                         | 0.01                         | 0.02                         |
| 3.050           | 0.03                         | 0.04                         | 0.05                         | 0.06                         | 0.07                         |
| 3.300           | 0.08                         | 0.09                         | 0.10                         | 0.11                         | 0.12                         |
| 3.550           | 0.13                         | 0.14                         | 0.15                         | 0.17                         | 0.18                         |
| 3.800           | 0.19                         | 0.20                         | 0.21                         | 0.22                         | 0.23                         |
| 4.050           | 0.24                         | 0.25                         | 0.26                         | 0.27                         | 0.28                         |
| 4.300           | 0.29                         | 0.30                         | 0.31                         | 0.33                         | 0.34                         |
| 4.550           | 0.35                         | 0.36                         | 0.37                         | 0.39                         | 0.40                         |
| 4.800           | 0.41                         | 0.42                         | 0.43                         | 0.45                         | 0.46                         |
| 5.050           | 0.47                         | 0.48                         | 0.50                         | 0.51                         | 0.52                         |
| 5.300           | 0.53                         | 0.55                         | 0.56                         | 0.57                         | 0.59                         |
| 5.550           | 0.60                         | 0.61                         | 0.62                         | 0.64                         | 0.65                         |
| 5.800           | 0.66                         | 0.68                         | 0.69                         | 0.70                         | 0.72                         |
| 6.050           | 0.73                         | 0.74                         | 0.76                         | 0.77                         | 0.78                         |
| 6.300           | 0.80                         | 0.81                         | 0.82                         | 0.84                         | 0.85                         |
| 6.550           | 0.87                         | 0.88                         | 0.89                         | 0.91                         | 0.92                         |
| 6.800           | 0.93                         | 0.95                         | 0.96                         | 0.98                         | 0.99                         |
| 7.050           | 1.00                         | 1.02                         | 1.03                         | 1.04                         | 1.06                         |
| 7.300           | 1.07                         | 1.09                         | 1.10                         | 1.11                         | 1.13                         |
| 7.550           | 1.14                         | 1.16                         | 1.17                         | 1.18                         | 1.20                         |
| 7.800           | 1.21                         | 1.23                         | 1.24                         | 1.25                         | 1.27                         |
| 8.050           | 1.28                         | 1.30                         | 1.32                         | 1.35                         | 1.38                         |
| 8.300           | 1.41                         | 1.44                         | 1.48                         | 1.52                         | 1.56                         |
| 8.550           | 1.60                         | 1.64                         | 1.68                         | 1.73                         | 1.77                         |
| 8.800           | 1.81                         | 1.85                         | 1.90                         | 1.94                         | 1.99                         |
| 9.050           | 2.03                         | 2.07                         | 2.11                         | 2.14                         | 2.16                         |
| 9.300           | 2.18                         | 2.20                         | 2.21                         | 2.23                         | 2.24                         |
| 9.550           | 2.25                         | 2.27                         | 2.30                         | 2.34                         | 2.38                         |
| 9.800           | 2.44                         | 2.50                         | 2.56                         | 2.63                         | 2.70                         |
| 10.050          | 2.77                         | 2.85                         | 2.93                         | 3.01                         | 3.10                         |
| 10.300          | 3.20                         | 3.30                         | 3.41                         | 3.51                         | 3.62                         |
| 10.550          | 3.73                         | 3.85                         | 3.98                         | 4.12                         | 4.27                         |
| 10.800          | 4.43                         | 4.60                         | 4.78                         | 4.95                         | 5.14                         |
| 11.050          | 5.33                         | 5.54                         | 5.79                         | 6.08                         | 6.42                         |
| 11.300          | 6.79                         | 7.19                         | 7.61                         | 8.04                         | 8.50                         |
| 11.550          | 9.30                         | 10.98                        | 14.02                        | 19.08                        | 26.04                        |
| 11.800          | 35.17                        | 46.86                        | 62.15                        | 78.64                        | 90.42                        |
| 12.050          | 92.60                        | 84.64                        | 68.52                        | 52.09                        | 39.03                        |
| 12.300          | 30.12                        | 24.27                        | 20.20                        | 17.20                        | 14.96                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
 Label: P-A  
 Scenario: 50YR-24HR

Return Event: 50 years  
 Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 12.550          | 13.13                        | 11.68                        | 10.48                        | 9.56                         | 8.86                         |
| 12.800          | 8.34                         | 7.95                         | 7.61                         | 7.32                         | 7.03                         |
| 13.050          | 6.77                         | 6.52                         | 6.29                         | 6.09                         | 5.90                         |
| 13.300          | 5.74                         | 5.59                         | 5.44                         | 5.30                         | 5.16                         |
| 13.550          | 5.02                         | 4.89                         | 4.76                         | 4.64                         | 4.53                         |
| 13.800          | 4.43                         | 4.32                         | 4.22                         | 4.12                         | 4.02                         |
| 14.050          | 3.93                         | 3.84                         | 3.76                         | 3.69                         | 3.63                         |
| 14.300          | 3.58                         | 3.54                         | 3.50                         | 3.46                         | 3.42                         |
| 14.550          | 3.39                         | 3.35                         | 3.32                         | 3.29                         | 3.25                         |
| 14.800          | 3.22                         | 3.18                         | 3.15                         | 3.11                         | 3.08                         |
| 15.050          | 3.05                         | 3.01                         | 2.98                         | 2.94                         | 2.91                         |
| 15.300          | 2.88                         | 2.84                         | 2.81                         | 2.77                         | 2.74                         |
| 15.550          | 2.71                         | 2.67                         | 2.64                         | 2.60                         | 2.57                         |
| 15.800          | 2.54                         | 2.50                         | 2.47                         | 2.43                         | 2.40                         |
| 16.050          | 2.36                         | 2.33                         | 2.30                         | 2.28                         | 2.26                         |
| 16.300          | 2.24                         | 2.23                         | 2.21                         | 2.20                         | 2.19                         |
| 16.550          | 2.17                         | 2.16                         | 2.15                         | 2.14                         | 2.13                         |
| 16.800          | 2.11                         | 2.10                         | 2.09                         | 2.08                         | 2.06                         |
| 17.050          | 2.05                         | 2.04                         | 2.03                         | 2.02                         | 2.00                         |
| 17.300          | 1.99                         | 1.98                         | 1.97                         | 1.95                         | 1.94                         |
| 17.550          | 1.93                         | 1.92                         | 1.91                         | 1.89                         | 1.88                         |
| 17.800          | 1.87                         | 1.86                         | 1.84                         | 1.83                         | 1.82                         |
| 18.050          | 1.81                         | 1.80                         | 1.78                         | 1.77                         | 1.76                         |
| 18.300          | 1.75                         | 1.73                         | 1.72                         | 1.71                         | 1.70                         |
| 18.550          | 1.69                         | 1.67                         | 1.66                         | 1.65                         | 1.64                         |
| 18.800          | 1.62                         | 1.61                         | 1.60                         | 1.59                         | 1.58                         |
| 19.050          | 1.56                         | 1.55                         | 1.54                         | 1.53                         | 1.51                         |
| 19.300          | 1.50                         | 1.49                         | 1.48                         | 1.47                         | 1.45                         |
| 19.550          | 1.44                         | 1.43                         | 1.42                         | 1.40                         | 1.39                         |
| 19.800          | 1.38                         | 1.37                         | 1.35                         | 1.34                         | 1.33                         |
| 20.050          | 1.32                         | 1.31                         | 1.30                         | 1.29                         | 1.28                         |
| 20.300          | 1.28                         | 1.28                         | 1.27                         | 1.27                         | 1.27                         |
| 20.550          | 1.26                         | 1.26                         | 1.26                         | 1.26                         | 1.25                         |
| 20.800          | 1.25                         | 1.25                         | 1.25                         | 1.24                         | 1.24                         |
| 21.050          | 1.24                         | 1.24                         | 1.23                         | 1.23                         | 1.23                         |
| 21.300          | 1.23                         | 1.22                         | 1.22                         | 1.22                         | 1.22                         |
| 21.550          | 1.21                         | 1.21                         | 1.21                         | 1.21                         | 1.20                         |
| 21.800          | 1.20                         | 1.20                         | 1.20                         | 1.20                         | 1.19                         |
| 22.050          | 1.19                         | 1.19                         | 1.19                         | 1.18                         | 1.18                         |
| 22.300          | 1.18                         | 1.18                         | 1.17                         | 1.17                         | 1.17                         |
| 22.550          | 1.17                         | 1.16                         | 1.16                         | 1.16                         | 1.16                         |
| 22.800          | 1.15                         | 1.15                         | 1.15                         | 1.15                         | 1.14                         |
| 23.050          | 1.14                         | 1.14                         | 1.14                         | 1.13                         | 1.13                         |
| 23.300          | 1.13                         | 1.13                         | 1.12                         | 1.12                         | 1.12                         |
| 23.550          | 1.12                         | 1.11                         | 1.11                         | 1.11                         | 1.11                         |
| 23.800          | 1.10                         | 1.10                         | 1.10                         | 1.10                         | 1.09                         |

Subsection: Unit Hydrograph Summary  
Label: P-A  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 100YR-24HR                |
| Return Event                                    | 100 years                 |
| Duration                                        | 24.000 hours              |
| Depth                                           | 9.3 in                    |
| Time of Concentration<br>(Composite)            | 0.260 hours               |
| Area (User Defined)                             | 12.29 acres               |
| Computational Time<br>Increment                 | 0.035 hours               |
| Time to Peak (Computed)                         | 12.029 hours              |
| Flow (Peak, Computed)                           | 108.12 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours              |
| Flow (Peak Interpolated<br>Output)              | 107.06 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 88.92                     |
| Area (User Defined)                             | 12.29 acres               |
| Maximum Retention<br>(Pervious)                 | 1.2 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.2 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 7.9 in                    |
| Runoff Volume (Pervious)                        | 353,160 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 352,251 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.260 hours               |
| Computational Time<br>Increment                 | 0.035 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 53.56 ft <sup>3</sup> /s  |
| Unit peak time, Tp                              | 0.173 hours               |
| Unit receding limb, Tr                          | 0.693 hours               |
| Total unit time, Tb                             | 0.867 hours               |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-A  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 100YR-24HR   |
| Return Event                         | 100 years    |
| Duration                             | 24.000 hours |
| Depth                                | 9.3 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 12.29 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.450           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.02                         |
| 2.700           | 0.03                         | 0.04                         | 0.05                         | 0.06                         | 0.08                         |
| 2.950           | 0.09                         | 0.10                         | 0.11                         | 0.13                         | 0.14                         |
| 3.200           | 0.15                         | 0.17                         | 0.18                         | 0.19                         | 0.20                         |
| 3.450           | 0.22                         | 0.23                         | 0.24                         | 0.26                         | 0.27                         |
| 3.700           | 0.28                         | 0.29                         | 0.31                         | 0.32                         | 0.33                         |
| 3.950           | 0.34                         | 0.35                         | 0.37                         | 0.38                         | 0.39                         |
| 4.200           | 0.41                         | 0.42                         | 0.43                         | 0.45                         | 0.46                         |
| 4.450           | 0.47                         | 0.49                         | 0.50                         | 0.52                         | 0.53                         |
| 4.700           | 0.55                         | 0.56                         | 0.57                         | 0.59                         | 0.60                         |
| 4.950           | 0.62                         | 0.63                         | 0.65                         | 0.66                         | 0.68                         |
| 5.200           | 0.69                         | 0.71                         | 0.72                         | 0.74                         | 0.75                         |
| 5.450           | 0.77                         | 0.78                         | 0.80                         | 0.81                         | 0.83                         |
| 5.700           | 0.85                         | 0.86                         | 0.88                         | 0.89                         | 0.91                         |
| 5.950           | 0.92                         | 0.94                         | 0.95                         | 0.97                         | 0.99                         |
| 6.200           | 1.00                         | 1.02                         | 1.03                         | 1.05                         | 1.06                         |
| 6.450           | 1.08                         | 1.10                         | 1.11                         | 1.13                         | 1.14                         |
| 6.700           | 1.16                         | 1.18                         | 1.19                         | 1.21                         | 1.22                         |
| 6.950           | 1.24                         | 1.26                         | 1.27                         | 1.29                         | 1.30                         |
| 7.200           | 1.32                         | 1.34                         | 1.35                         | 1.37                         | 1.38                         |
| 7.450           | 1.40                         | 1.42                         | 1.43                         | 1.45                         | 1.46                         |
| 7.700           | 1.48                         | 1.50                         | 1.51                         | 1.53                         | 1.54                         |
| 7.950           | 1.56                         | 1.58                         | 1.59                         | 1.61                         | 1.64                         |
| 8.200           | 1.67                         | 1.70                         | 1.74                         | 1.78                         | 1.83                         |
| 8.450           | 1.88                         | 1.92                         | 1.97                         | 2.02                         | 2.07                         |
| 8.700           | 2.12                         | 2.17                         | 2.22                         | 2.27                         | 2.32                         |
| 8.950           | 2.37                         | 2.43                         | 2.48                         | 2.53                         | 2.57                         |
| 9.200           | 2.60                         | 2.63                         | 2.65                         | 2.67                         | 2.69                         |
| 9.450           | 2.70                         | 2.72                         | 2.73                         | 2.75                         | 2.78                         |
| 9.700           | 2.82                         | 2.88                         | 2.94                         | 3.01                         | 3.09                         |
| 9.950           | 3.17                         | 3.25                         | 3.33                         | 3.42                         | 3.51                         |
| 10.200          | 3.61                         | 3.72                         | 3.84                         | 3.96                         | 4.08                         |
| 10.450          | 4.20                         | 4.33                         | 4.46                         | 4.59                         | 4.74                         |
| 10.700          | 4.91                         | 5.09                         | 5.28                         | 5.47                         | 5.68                         |
| 10.950          | 5.89                         | 6.10                         | 6.32                         | 6.57                         | 6.86                         |
| 11.200          | 7.20                         | 7.60                         | 8.03                         | 8.50                         | 8.98                         |
| 11.450          | 9.48                         | 10.02                        | 10.94                        | 12.91                        | 16.47                        |
| 11.700          | 22.37                        | 30.48                        | 41.07                        | 54.60                        | 72.24                        |
| 11.950          | 91.21                        | 104.69                       | 107.06                       | 97.76                        | 79.08                        |

Subsection: Unit Hydrograph (Hydrograph Table)

Label: P-A

Scenario: 100YR-24HR

Return Event: 100 years

Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**

**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 12.200          | 60.09                        | 45.00                        | 34.71                        | 27.96                        | 23.26                        |
| 12.450          | 19.80                        | 17.21                        | 15.10                        | 13.43                        | 12.05                        |
| 12.700          | 10.99                        | 10.19                        | 9.59                         | 9.13                         | 8.75                         |
| 12.950          | 8.41                         | 8.08                         | 7.78                         | 7.49                         | 7.23                         |
| 13.200          | 6.99                         | 6.78                         | 6.60                         | 6.42                         | 6.25                         |
| 13.450          | 6.09                         | 5.93                         | 5.77                         | 5.62                         | 5.47                         |
| 13.700          | 5.33                         | 5.21                         | 5.08                         | 4.96                         | 4.85                         |
| 13.950          | 4.73                         | 4.62                         | 4.51                         | 4.41                         | 4.31                         |
| 14.200          | 4.24                         | 4.17                         | 4.11                         | 4.06                         | 4.02                         |
| 14.450          | 3.97                         | 3.93                         | 3.89                         | 3.85                         | 3.81                         |
| 14.700          | 3.77                         | 3.73                         | 3.69                         | 3.65                         | 3.61                         |
| 14.950          | 3.58                         | 3.54                         | 3.50                         | 3.46                         | 3.42                         |
| 15.200          | 3.38                         | 3.34                         | 3.30                         | 3.26                         | 3.22                         |
| 15.450          | 3.18                         | 3.14                         | 3.11                         | 3.07                         | 3.03                         |
| 15.700          | 2.99                         | 2.95                         | 2.91                         | 2.87                         | 2.83                         |
| 15.950          | 2.79                         | 2.75                         | 2.71                         | 2.68                         | 2.64                         |
| 16.200          | 2.62                         | 2.59                         | 2.57                         | 2.56                         | 2.54                         |
| 16.450          | 2.52                         | 2.51                         | 2.50                         | 2.48                         | 2.47                         |
| 16.700          | 2.45                         | 2.44                         | 2.42                         | 2.41                         | 2.40                         |
| 16.950          | 2.38                         | 2.37                         | 2.35                         | 2.34                         | 2.33                         |
| 17.200          | 2.31                         | 2.30                         | 2.28                         | 2.27                         | 2.26                         |
| 17.450          | 2.24                         | 2.23                         | 2.21                         | 2.20                         | 2.19                         |
| 17.700          | 2.17                         | 2.16                         | 2.14                         | 2.13                         | 2.12                         |
| 17.950          | 2.10                         | 2.09                         | 2.07                         | 2.06                         | 2.05                         |
| 18.200          | 2.03                         | 2.02                         | 2.00                         | 1.99                         | 1.98                         |
| 18.450          | 1.96                         | 1.95                         | 1.93                         | 1.92                         | 1.91                         |
| 18.700          | 1.89                         | 1.88                         | 1.86                         | 1.85                         | 1.84                         |
| 18.950          | 1.82                         | 1.81                         | 1.79                         | 1.78                         | 1.77                         |
| 19.200          | 1.75                         | 1.74                         | 1.72                         | 1.71                         | 1.69                         |
| 19.450          | 1.68                         | 1.67                         | 1.65                         | 1.64                         | 1.62                         |
| 19.700          | 1.61                         | 1.60                         | 1.58                         | 1.57                         | 1.55                         |
| 19.950          | 1.54                         | 1.53                         | 1.51                         | 1.50                         | 1.49                         |
| 20.200          | 1.48                         | 1.47                         | 1.47                         | 1.46                         | 1.46                         |
| 20.450          | 1.45                         | 1.45                         | 1.45                         | 1.45                         | 1.44                         |
| 20.700          | 1.44                         | 1.44                         | 1.43                         | 1.43                         | 1.43                         |
| 20.950          | 1.43                         | 1.42                         | 1.42                         | 1.42                         | 1.42                         |
| 21.200          | 1.41                         | 1.41                         | 1.41                         | 1.40                         | 1.40                         |
| 21.450          | 1.40                         | 1.40                         | 1.39                         | 1.39                         | 1.39                         |
| 21.700          | 1.38                         | 1.38                         | 1.38                         | 1.38                         | 1.37                         |
| 21.950          | 1.37                         | 1.37                         | 1.36                         | 1.36                         | 1.36                         |
| 22.200          | 1.36                         | 1.35                         | 1.35                         | 1.35                         | 1.35                         |
| 22.450          | 1.34                         | 1.34                         | 1.34                         | 1.33                         | 1.33                         |
| 22.700          | 1.33                         | 1.33                         | 1.32                         | 1.32                         | 1.32                         |
| 22.950          | 1.31                         | 1.31                         | 1.31                         | 1.31                         | 1.30                         |
| 23.200          | 1.30                         | 1.30                         | 1.29                         | 1.29                         | 1.29                         |
| 23.450          | 1.29                         | 1.28                         | 1.28                         | 1.28                         | 1.27                         |
| 23.700          | 1.27                         | 1.27                         | 1.27                         | 1.26                         | 1.26                         |



Subsection: Unit Hydrograph (Hydrograph Table)

Label: P-A

Scenario: 100YR-24HR

Return Event: 100 years

Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**

**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 23.950          | 1.26                         | 1.25                         | (N/A)                        | (N/A)                        | (N/A)                        |

## Subsection: Unit Hydrograph Summary

Label: P-B

Scenario: 2YR-24HR

Return Event: 2 years

Storm Event: 2YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 2YR-24HR                 |
| Return Event                                    | 2 years                  |
| Duration                                        | 24.000 hours             |
| Depth                                           | 3.7 in                   |
| Time of Concentration<br>(Composite)            | 0.813 hours              |
| Area (User Defined)                             | 68.23 acres              |
| Computational Time<br>Increment                 | 0.108 hours              |
| Time to Peak (Computed)                         | 12.358 hours             |
| Flow (Peak, Computed)                           | 77.40 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours             |
| Flow (Peak Interpolated<br>Output)              | 76.94 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 80.70                    |
| Area (User Defined)                             | 68.23 acres              |
| Maximum Retention<br>(Pervious)                 | 2.4 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 1.9 in                   |
| Runoff Volume (Pervious)                        | 460,068 ft <sup>3</sup>  |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 454,689 ft <sup>3</sup>  |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.813 hours              |
| Computational Time<br>Increment                 | 0.108 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 95.09 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.542 hours              |
| Unit receding limb, Tr                          | 2.168 hours              |
| Total unit time, Tb                             | 2.710 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 2YR-24HR     |
| Return Event                         | 2 years      |
| Duration                             | 24.000 hours |
| Depth                                | 3.7 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 68.23 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 8.500           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 8.750           | 0.02                         | 0.02                         | 0.03                         | 0.05                         | 0.06                         |
| 9.000           | 0.08                         | 0.10                         | 0.12                         | 0.14                         | 0.17                         |
| 9.250           | 0.20                         | 0.22                         | 0.26                         | 0.29                         | 0.32                         |
| 9.500           | 0.35                         | 0.39                         | 0.42                         | 0.46                         | 0.49                         |
| 9.750           | 0.53                         | 0.57                         | 0.60                         | 0.65                         | 0.69                         |
| 10.000          | 0.73                         | 0.78                         | 0.83                         | 0.88                         | 0.94                         |
| 10.250          | 1.00                         | 1.06                         | 1.12                         | 1.19                         | 1.27                         |
| 10.500          | 1.34                         | 1.43                         | 1.51                         | 1.61                         | 1.70                         |
| 10.750          | 1.81                         | 1.92                         | 2.03                         | 2.16                         | 2.29                         |
| 11.000          | 2.44                         | 2.58                         | 2.75                         | 2.92                         | 3.11                         |
| 11.250          | 3.31                         | 3.54                         | 3.78                         | 4.04                         | 4.34                         |
| 11.500          | 4.66                         | 5.09                         | 5.53                         | 6.37                         | 7.22                         |
| 11.750          | 9.03                         | 11.01                        | 14.63                        | 19.00                        | 24.81                        |
| 12.000          | 31.95                        | 39.63                        | 48.32                        | 56.72                        | 63.85                        |
| 12.250          | 70.91                        | 73.93                        | 76.94                        | 76.59                        | 75.63                        |
| 12.500          | 72.88                        | 69.28                        | 64.97                        | 59.97                        | 55.04                        |
| 12.750          | 50.24                        | 45.63                        | 41.89                        | 38.16                        | 35.32                        |
| 13.000          | 32.47                        | 30.11                        | 27.83                        | 25.87                        | 24.07                        |
| 13.250          | 22.47                        | 21.06                        | 19.75                        | 18.63                        | 17.55                        |
| 13.500          | 16.67                        | 15.78                        | 15.07                        | 14.36                        | 13.75                        |
| 13.750          | 13.17                        | 12.65                        | 12.16                        | 11.71                        | 11.31                        |
| 14.000          | 10.92                        | 10.57                        | 10.23                        | 9.92                         | 9.61                         |
| 14.250          | 9.34                         | 9.07                         | 8.82                         | 8.57                         | 8.35                         |
| 14.500          | 8.15                         | 7.96                         | 7.81                         | 7.66                         | 7.54                         |
| 14.750          | 7.41                         | 7.31                         | 7.20                         | 7.11                         | 7.01                         |
| 15.000          | 6.93                         | 6.84                         | 6.76                         | 6.68                         | 6.61                         |
| 15.250          | 6.53                         | 6.46                         | 6.38                         | 6.31                         | 6.24                         |
| 15.500          | 6.17                         | 6.10                         | 6.03                         | 5.97                         | 5.90                         |
| 15.750          | 5.83                         | 5.76                         | 5.69                         | 5.63                         | 5.56                         |
| 16.000          | 5.49                         | 5.42                         | 5.36                         | 5.29                         | 5.22                         |
| 16.250          | 5.16                         | 5.10                         | 5.04                         | 4.98                         | 4.93                         |
| 16.500          | 4.87                         | 4.83                         | 4.78                         | 4.74                         | 4.70                         |
| 16.750          | 4.66                         | 4.62                         | 4.59                         | 4.56                         | 4.53                         |
| 17.000          | 4.49                         | 4.47                         | 4.44                         | 4.41                         | 4.38                         |
| 17.250          | 4.35                         | 4.33                         | 4.30                         | 4.28                         | 4.25                         |
| 17.500          | 4.23                         | 4.20                         | 4.18                         | 4.15                         | 4.13                         |
| 17.750          | 4.10                         | 4.08                         | 4.05                         | 4.03                         | 4.01                         |
| 18.000          | 3.98                         | 3.96                         | 3.93                         | 3.91                         | 3.89                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 18.250          | 3.86                         | 3.84                         | 3.81                         | 3.79                         | 3.76                         |
| 18.500          | 3.74                         | 3.72                         | 3.69                         | 3.67                         | 3.64                         |
| 18.750          | 3.62                         | 3.59                         | 3.57                         | 3.54                         | 3.52                         |
| 19.000          | 3.50                         | 3.47                         | 3.45                         | 3.42                         | 3.40                         |
| 19.250          | 3.37                         | 3.35                         | 3.32                         | 3.30                         | 3.27                         |
| 19.500          | 3.25                         | 3.23                         | 3.20                         | 3.18                         | 3.15                         |
| 19.750          | 3.13                         | 3.10                         | 3.08                         | 3.05                         | 3.03                         |
| 20.000          | 3.00                         | 2.98                         | 2.95                         | 2.93                         | 2.90                         |
| 20.250          | 2.88                         | 2.86                         | 2.84                         | 2.82                         | 2.80                         |
| 20.500          | 2.78                         | 2.76                         | 2.75                         | 2.73                         | 2.72                         |
| 20.750          | 2.71                         | 2.70                         | 2.69                         | 2.68                         | 2.67                         |
| 21.000          | 2.66                         | 2.66                         | 2.65                         | 2.64                         | 2.64                         |
| 21.250          | 2.63                         | 2.63                         | 2.62                         | 2.61                         | 2.61                         |
| 21.500          | 2.60                         | 2.60                         | 2.59                         | 2.59                         | 2.58                         |
| 21.750          | 2.58                         | 2.57                         | 2.57                         | 2.56                         | 2.56                         |
| 22.000          | 2.55                         | 2.55                         | 2.54                         | 2.54                         | 2.53                         |
| 22.250          | 2.53                         | 2.52                         | 2.52                         | 2.52                         | 2.51                         |
| 22.500          | 2.51                         | 2.50                         | 2.50                         | 2.49                         | 2.49                         |
| 22.750          | 2.48                         | 2.48                         | 2.47                         | 2.47                         | 2.46                         |
| 23.000          | 2.46                         | 2.45                         | 2.45                         | 2.44                         | 2.44                         |
| 23.250          | 2.43                         | 2.43                         | 2.42                         | 2.42                         | 2.42                         |
| 23.500          | 2.41                         | 2.41                         | 2.40                         | 2.40                         | 2.39                         |
| 23.750          | 2.39                         | 2.38                         | 2.38                         | 2.37                         | 2.37                         |
| 24.000          | 2.35                         | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-B  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 10YR-24HR                 |
| Return Event                                    | 10 years                  |
| Duration                                        | 24.000 hours              |
| Depth                                           | 5.7 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 68.23 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 151.16 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 150.43 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 80.70                     |
| Area (User Defined)                             | 68.23 acres               |
| Maximum Retention<br>(Pervious)                 | 2.4 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 3.6 in                    |
| Runoff Volume (Pervious)                        | 887,119 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 878,037 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 95.09 ft <sup>3</sup> /s  |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 10YR-24HR    |
| Return Event                         | 10 years     |
| Duration                             | 24.000 hours |
| Depth                                | 5.7 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 68.23 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 6.300           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 6.550           | 0.01                         | 0.02                         | 0.03                         | 0.04                         | 0.05                         |
| 6.800           | 0.07                         | 0.09                         | 0.11                         | 0.13                         | 0.15                         |
| 7.050           | 0.18                         | 0.20                         | 0.23                         | 0.26                         | 0.29                         |
| 7.300           | 0.32                         | 0.35                         | 0.38                         | 0.42                         | 0.45                         |
| 7.550           | 0.48                         | 0.52                         | 0.55                         | 0.59                         | 0.62                         |
| 7.800           | 0.66                         | 0.70                         | 0.73                         | 0.77                         | 0.81                         |
| 8.050           | 0.85                         | 0.89                         | 0.92                         | 0.97                         | 1.01                         |
| 8.300           | 1.05                         | 1.09                         | 1.14                         | 1.19                         | 1.24                         |
| 8.550           | 1.29                         | 1.35                         | 1.41                         | 1.47                         | 1.54                         |
| 8.800           | 1.60                         | 1.68                         | 1.75                         | 1.82                         | 1.90                         |
| 9.050           | 1.98                         | 2.06                         | 2.15                         | 2.23                         | 2.32                         |
| 9.300           | 2.41                         | 2.49                         | 2.58                         | 2.66                         | 2.74                         |
| 9.550           | 2.83                         | 2.90                         | 2.98                         | 3.06                         | 3.14                         |
| 9.800           | 3.22                         | 3.31                         | 3.40                         | 3.49                         | 3.59                         |
| 10.050          | 3.70                         | 3.82                         | 3.94                         | 4.07                         | 4.21                         |
| 10.300          | 4.36                         | 4.52                         | 4.68                         | 4.86                         | 5.05                         |
| 10.550          | 5.25                         | 5.46                         | 5.68                         | 5.91                         | 6.15                         |
| 10.800          | 6.42                         | 6.69                         | 6.98                         | 7.28                         | 7.62                         |
| 11.050          | 7.96                         | 8.34                         | 8.73                         | 9.16                         | 9.62                         |
| 11.300          | 10.12                        | 10.67                        | 11.25                        | 11.91                        | 12.62                        |
| 11.550          | 13.56                        | 14.52                        | 16.37                        | 18.21                        | 22.06                        |
| 11.800          | 26.25                        | 33.65                        | 42.51                        | 54.02                        | 67.97                        |
| 12.050          | 82.80                        | 99.22                        | 115.00                       | 127.93                       | 140.73                       |
| 12.300          | 145.58                       | 150.43                       | 148.87                       | 146.17                       | 140.14                       |
| 12.550          | 132.55                       | 123.73                       | 113.75                       | 103.97                       | 94.58                        |
| 12.800          | 85.58                        | 78.33                        | 71.11                        | 65.61                        | 60.12                        |
| 13.050          | 55.57                        | 51.19                        | 47.45                        | 44.01                        | 40.95                        |
| 13.300          | 38.28                        | 35.79                        | 33.68                        | 31.64                        | 29.97                        |
| 13.550          | 28.30                        | 26.97                        | 25.63                        | 24.50                        | 23.41                        |
| 13.800          | 22.45                        | 21.55                        | 20.72                        | 19.97                        | 19.25                        |
| 14.050          | 18.61                        | 17.99                        | 17.43                        | 16.87                        | 16.37                        |
| 14.300          | 15.87                        | 15.41                        | 14.97                        | 14.57                        | 14.20                        |
| 14.550          | 13.88                        | 13.59                        | 13.33                        | 13.11                        | 12.89                        |
| 14.800          | 12.70                        | 12.51                        | 12.34                        | 12.18                        | 12.02                        |
| 15.050          | 11.87                        | 11.73                        | 11.59                        | 11.45                        | 11.31                        |
| 15.300          | 11.18                        | 11.05                        | 10.93                        | 10.80                        | 10.68                        |
| 15.550          | 10.56                        | 10.43                        | 10.31                        | 10.19                        | 10.07                        |
| 15.800          | 9.95                         | 9.83                         | 9.71                         | 9.59                         | 9.47                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 16.050          | 9.35                         | 9.24                         | 9.12                         | 9.01                         | 8.89                         |
| 16.300          | 8.78                         | 8.68                         | 8.58                         | 8.48                         | 8.39                         |
| 16.550          | 8.31                         | 8.23                         | 8.15                         | 8.08                         | 8.01                         |
| 16.800          | 7.95                         | 7.89                         | 7.83                         | 7.78                         | 7.72                         |
| 17.050          | 7.67                         | 7.62                         | 7.57                         | 7.52                         | 7.48                         |
| 17.300          | 7.43                         | 7.38                         | 7.34                         | 7.29                         | 7.25                         |
| 17.550          | 7.20                         | 7.16                         | 7.12                         | 7.07                         | 7.03                         |
| 17.800          | 6.99                         | 6.95                         | 6.90                         | 6.86                         | 6.82                         |
| 18.050          | 6.78                         | 6.73                         | 6.69                         | 6.65                         | 6.61                         |
| 18.300          | 6.57                         | 6.52                         | 6.48                         | 6.44                         | 6.40                         |
| 18.550          | 6.35                         | 6.31                         | 6.27                         | 6.22                         | 6.18                         |
| 18.800          | 6.14                         | 6.10                         | 6.05                         | 6.01                         | 5.97                         |
| 19.050          | 5.93                         | 5.88                         | 5.84                         | 5.80                         | 5.76                         |
| 19.300          | 5.71                         | 5.67                         | 5.63                         | 5.59                         | 5.54                         |
| 19.550          | 5.50                         | 5.46                         | 5.41                         | 5.37                         | 5.33                         |
| 19.800          | 5.29                         | 5.24                         | 5.20                         | 5.16                         | 5.11                         |
| 20.050          | 5.07                         | 5.03                         | 4.99                         | 4.94                         | 4.90                         |
| 20.300          | 4.87                         | 4.83                         | 4.79                         | 4.76                         | 4.73                         |
| 20.550          | 4.70                         | 4.67                         | 4.65                         | 4.63                         | 4.61                         |
| 20.800          | 4.59                         | 4.57                         | 4.56                         | 4.54                         | 4.53                         |
| 21.050          | 4.52                         | 4.51                         | 4.49                         | 4.48                         | 4.47                         |
| 21.300          | 4.46                         | 4.45                         | 4.44                         | 4.43                         | 4.42                         |
| 21.550          | 4.41                         | 4.40                         | 4.39                         | 4.39                         | 4.38                         |
| 21.800          | 4.37                         | 4.36                         | 4.35                         | 4.34                         | 4.33                         |
| 22.050          | 4.33                         | 4.32                         | 4.31                         | 4.30                         | 4.29                         |
| 22.300          | 4.28                         | 4.27                         | 4.27                         | 4.26                         | 4.25                         |
| 22.550          | 4.24                         | 4.23                         | 4.22                         | 4.22                         | 4.21                         |
| 22.800          | 4.20                         | 4.19                         | 4.18                         | 4.17                         | 4.17                         |
| 23.050          | 4.16                         | 4.15                         | 4.14                         | 4.13                         | 4.12                         |
| 23.300          | 4.12                         | 4.11                         | 4.10                         | 4.09                         | 4.08                         |
| 23.550          | 4.07                         | 4.06                         | 4.06                         | 4.05                         | 4.04                         |
| 23.800          | 4.03                         | 4.02                         | 4.01                         | 4.01                         | 3.98                         |

Subsection: Unit Hydrograph Summary  
Label: P-B  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 50YR-24HR                 |
| Return Event                                    | 50 years                  |
| Duration                                        | 24.000 hours              |
| Depth                                           | 8.1 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 68.23 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 243.84 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 242.79 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 80.70                     |
| Area (User Defined)                             | 68.23 acres               |
| Maximum Retention<br>(Pervious)                 | 2.4 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 5.8 in                    |
| Runoff Volume (Pervious)                        | 1,439,299 ft <sup>3</sup> |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 1,425,788 ft <sup>3</sup> |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 95.09 ft <sup>3</sup> /s  |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |



Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 50YR-24HR    |
| Return Event                         | 50 years     |
| Duration                             | 24.000 hours |
| Depth                                | 8.1 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 68.23 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 4.850           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 5.100           | 0.02                         | 0.03                         | 0.05                         | 0.06                         | 0.08                         |
| 5.350           | 0.11                         | 0.14                         | 0.17                         | 0.20                         | 0.23                         |
| 5.600           | 0.27                         | 0.31                         | 0.35                         | 0.39                         | 0.44                         |
| 5.850           | 0.48                         | 0.53                         | 0.57                         | 0.62                         | 0.67                         |
| 6.100           | 0.72                         | 0.77                         | 0.82                         | 0.87                         | 0.93                         |
| 6.350           | 0.98                         | 1.03                         | 1.09                         | 1.14                         | 1.20                         |
| 6.600           | 1.25                         | 1.31                         | 1.37                         | 1.43                         | 1.48                         |
| 6.850           | 1.54                         | 1.60                         | 1.66                         | 1.72                         | 1.78                         |
| 7.100           | 1.84                         | 1.90                         | 1.96                         | 2.02                         | 2.08                         |
| 7.350           | 2.14                         | 2.21                         | 2.27                         | 2.33                         | 2.40                         |
| 7.600           | 2.46                         | 2.52                         | 2.59                         | 2.65                         | 2.72                         |
| 7.850           | 2.78                         | 2.85                         | 2.91                         | 2.98                         | 3.05                         |
| 8.100           | 3.11                         | 3.18                         | 3.25                         | 3.33                         | 3.41                         |
| 8.350           | 3.48                         | 3.57                         | 3.66                         | 3.76                         | 3.86                         |
| 8.600           | 3.97                         | 4.09                         | 4.21                         | 4.34                         | 4.47                         |
| 8.850           | 4.61                         | 4.75                         | 4.90                         | 5.05                         | 5.20                         |
| 9.100           | 5.36                         | 5.52                         | 5.69                         | 5.85                         | 6.01                         |
| 9.350           | 6.17                         | 6.32                         | 6.47                         | 6.62                         | 6.76                         |
| 9.600           | 6.89                         | 7.03                         | 7.16                         | 7.29                         | 7.43                         |
| 9.850           | 7.57                         | 7.72                         | 7.88                         | 8.06                         | 8.24                         |
| 10.100          | 8.44                         | 8.66                         | 8.89                         | 9.15                         | 9.40                         |
| 10.350          | 9.69                         | 9.98                         | 10.31                        | 10.64                        | 10.99                        |
| 10.600          | 11.36                        | 11.76                        | 12.17                        | 12.60                        | 13.07                        |
| 10.850          | 13.55                        | 14.07                        | 14.60                        | 15.19                        | 15.79                        |
| 11.100          | 16.45                        | 17.13                        | 17.88                        | 18.67                        | 19.54                        |
| 11.350          | 20.48                        | 21.49                        | 22.61                        | 23.84                        | 25.45                        |
| 11.600          | 27.10                        | 30.24                        | 33.38                        | 39.86                        | 46.90                        |
| 11.850          | 59.11                        | 73.67                        | 92.36                        | 114.85                       | 138.56                       |
| 12.100          | 164.52                       | 189.37                       | 209.31                       | 229.03                       | 235.91                       |
| 12.350          | 242.79                       | 239.50                       | 234.40                       | 224.10                       | 211.37                       |
| 12.600          | 196.81                       | 180.51                       | 164.62                       | 149.49                       | 134.98                       |
| 12.850          | 123.35                       | 111.75                       | 102.94                       | 94.14                        | 86.86                        |
| 13.100          | 79.88                        | 73.91                        | 68.43                        | 63.57                        | 59.32                        |
| 13.350          | 55.37                        | 52.02                        | 48.79                        | 46.16                        | 43.53                        |
| 13.600          | 41.42                        | 39.32                        | 37.54                        | 35.83                        | 34.32                        |
| 13.850          | 32.91                        | 31.62                        | 30.44                        | 29.33                        | 28.33                        |
| 14.100          | 27.36                        | 26.49                        | 25.62                        | 24.84                        | 24.06                        |
| 14.350          | 23.36                        | 22.68                        | 22.06                        | 21.49                        | 20.99                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.600          | 20.55                        | 20.15                        | 19.81                        | 19.48                        | 19.19                        |
| 14.850          | 18.90                        | 18.64                        | 18.38                        | 18.15                        | 17.92                        |
| 15.100          | 17.69                        | 17.48                        | 17.27                        | 17.06                        | 16.86                        |
| 15.350          | 16.67                        | 16.47                        | 16.28                        | 16.09                        | 15.90                        |
| 15.600          | 15.72                        | 15.53                        | 15.35                        | 15.17                        | 14.98                        |
| 15.850          | 14.80                        | 14.62                        | 14.44                        | 14.26                        | 14.07                        |
| 16.100          | 13.90                        | 13.72                        | 13.54                        | 13.37                        | 13.21                        |
| 16.350          | 13.05                        | 12.90                        | 12.75                        | 12.61                        | 12.48                        |
| 16.600          | 12.36                        | 12.25                        | 12.14                        | 12.04                        | 11.94                        |
| 16.850          | 11.85                        | 11.76                        | 11.68                        | 11.60                        | 11.52                        |
| 17.100          | 11.44                        | 11.37                        | 11.29                        | 11.22                        | 11.15                        |
| 17.350          | 11.08                        | 11.01                        | 10.94                        | 10.87                        | 10.81                        |
| 17.600          | 10.74                        | 10.67                        | 10.61                        | 10.54                        | 10.48                        |
| 17.850          | 10.41                        | 10.35                        | 10.28                        | 10.22                        | 10.16                        |
| 18.100          | 10.09                        | 10.03                        | 9.96                         | 9.90                         | 9.83                         |
| 18.350          | 9.77                         | 9.71                         | 9.64                         | 9.58                         | 9.51                         |
| 18.600          | 9.45                         | 9.38                         | 9.32                         | 9.26                         | 9.19                         |
| 18.850          | 9.13                         | 9.06                         | 9.00                         | 8.93                         | 8.87                         |
| 19.100          | 8.81                         | 8.74                         | 8.68                         | 8.61                         | 8.55                         |
| 19.350          | 8.48                         | 8.42                         | 8.36                         | 8.29                         | 8.23                         |
| 19.600          | 8.16                         | 8.10                         | 8.03                         | 7.97                         | 7.90                         |
| 19.850          | 7.84                         | 7.77                         | 7.71                         | 7.64                         | 7.58                         |
| 20.100          | 7.51                         | 7.45                         | 7.39                         | 7.33                         | 7.27                         |
| 20.350          | 7.21                         | 7.16                         | 7.11                         | 7.07                         | 7.02                         |
| 20.600          | 6.98                         | 6.95                         | 6.91                         | 6.89                         | 6.86                         |
| 20.850          | 6.83                         | 6.81                         | 6.79                         | 6.77                         | 6.75                         |
| 21.100          | 6.73                         | 6.71                         | 6.69                         | 6.68                         | 6.66                         |
| 21.350          | 6.64                         | 6.63                         | 6.61                         | 6.60                         | 6.59                         |
| 21.600          | 6.57                         | 6.56                         | 6.54                         | 6.53                         | 6.52                         |
| 21.850          | 6.50                         | 6.49                         | 6.48                         | 6.47                         | 6.45                         |
| 22.100          | 6.44                         | 6.43                         | 6.41                         | 6.40                         | 6.39                         |
| 22.350          | 6.38                         | 6.36                         | 6.35                         | 6.34                         | 6.32                         |
| 22.600          | 6.31                         | 6.30                         | 6.29                         | 6.27                         | 6.26                         |
| 22.850          | 6.25                         | 6.23                         | 6.22                         | 6.21                         | 6.20                         |
| 23.100          | 6.18                         | 6.17                         | 6.16                         | 6.15                         | 6.13                         |
| 23.350          | 6.12                         | 6.11                         | 6.09                         | 6.08                         | 6.07                         |
| 23.600          | 6.06                         | 6.04                         | 6.03                         | 6.02                         | 6.00                         |
| 23.850          | 5.99                         | 5.98                         | 5.97                         | 5.93                         | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-B  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| Storm Event                                     | 100YR-24HR                |
| Return Event                                    | 100 years                 |
| Duration                                        | 24.000 hours              |
| Depth                                           | 9.3 in                    |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Area (User Defined)                             | 68.23 acres               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Time to Peak (Computed)                         | 12.358 hours              |
| Flow (Peak, Computed)                           | 288.32 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours               |
| Time to Flow (Peak<br>Interpolated Output)      | 12.350 hours              |
| Flow (Peak Interpolated<br>Output)              | 287.13 ft <sup>3</sup> /s |
| Drainage Area                                   |                           |
| SCS CN (Composite)                              | 80.70                     |
| Area (User Defined)                             | 68.23 acres               |
| Maximum Retention<br>(Pervious)                 | 2.4 in                    |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                    |
| Cumulative Runoff                               |                           |
| Cumulative Runoff Depth<br>(Pervious)           | 6.9 in                    |
| Runoff Volume (Pervious)                        | 1,709,587 ft <sup>3</sup> |
| Hydrograph Volume (Area under Hydrograph curve) |                           |
| Volume                                          | 1,693,982 ft <sup>3</sup> |
| SCS Unit Hydrograph Parameters                  |                           |
| Time of Concentration<br>(Composite)            | 0.813 hours               |
| Computational Time<br>Increment                 | 0.108 hours               |
| Unit Hydrograph Shape<br>Factor                 | 483.43                    |
| K Factor                                        | 0.75                      |
| Receding/Rising, Tr/Tp                          | 1.670                     |
| Unit peak, qp                                   | 95.09 ft <sup>3</sup> /s  |
| Unit peak time, Tp                              | 0.542 hours               |
| Unit receding limb, Tr                          | 2.168 hours               |
| Total unit time, Tb                             | 2.710 hours               |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 100YR-24HR   |
| Return Event                         | 100 years    |
| Duration                             | 24.000 hours |
| Depth                                | 9.3 in       |
| Time of Concentration<br>(Composite) | 0.813 hours  |
| Area (User Defined)                  | 68.23 acres  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 4.350           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 4.600           | 0.02                         | 0.03                         | 0.05                         | 0.07                         | 0.09                         |
| 4.850           | 0.12                         | 0.15                         | 0.18                         | 0.22                         | 0.26                         |
| 5.100           | 0.30                         | 0.34                         | 0.39                         | 0.44                         | 0.49                         |
| 5.350           | 0.54                         | 0.59                         | 0.65                         | 0.70                         | 0.76                         |
| 5.600           | 0.82                         | 0.87                         | 0.93                         | 0.99                         | 1.05                         |
| 5.850           | 1.11                         | 1.18                         | 1.24                         | 1.30                         | 1.37                         |
| 6.100           | 1.43                         | 1.50                         | 1.56                         | 1.63                         | 1.69                         |
| 6.350           | 1.76                         | 1.83                         | 1.90                         | 1.97                         | 2.04                         |
| 6.600           | 2.11                         | 2.18                         | 2.25                         | 2.32                         | 2.39                         |
| 6.850           | 2.46                         | 2.53                         | 2.60                         | 2.68                         | 2.75                         |
| 7.100           | 2.83                         | 2.90                         | 2.97                         | 3.05                         | 3.12                         |
| 7.350           | 3.20                         | 3.28                         | 3.35                         | 3.43                         | 3.50                         |
| 7.600           | 3.58                         | 3.66                         | 3.74                         | 3.81                         | 3.89                         |
| 7.850           | 3.97                         | 4.05                         | 4.13                         | 4.21                         | 4.29                         |
| 8.100           | 4.37                         | 4.46                         | 4.54                         | 4.63                         | 4.72                         |
| 8.350           | 4.82                         | 4.93                         | 5.04                         | 5.16                         | 5.29                         |
| 8.600           | 5.43                         | 5.57                         | 5.72                         | 5.88                         | 6.04                         |
| 8.850           | 6.22                         | 6.39                         | 6.58                         | 6.77                         | 6.96                         |
| 9.100           | 7.16                         | 7.36                         | 7.56                         | 7.76                         | 7.96                         |
| 9.350           | 8.15                         | 8.34                         | 8.52                         | 8.70                         | 8.87                         |
| 9.600           | 9.03                         | 9.19                         | 9.34                         | 9.50                         | 9.66                         |
| 9.850           | 9.83                         | 10.01                        | 10.20                        | 10.42                        | 10.64                        |
| 10.100          | 10.88                        | 11.15                        | 11.42                        | 11.73                        | 12.04                        |
| 10.350          | 12.40                        | 12.75                        | 13.15                        | 13.55                        | 13.98                        |
| 10.600          | 14.43                        | 14.91                        | 15.41                        | 15.93                        | 16.50                        |
| 10.850          | 17.08                        | 17.72                        | 18.36                        | 19.07                        | 19.79                        |
| 11.100          | 20.59                        | 21.41                        | 22.32                        | 23.27                        | 24.32                        |
| 11.350          | 25.45                        | 26.66                        | 28.02                        | 29.49                        | 31.42                        |
| 11.600          | 33.41                        | 37.18                        | 40.96                        | 48.71                        | 57.13                        |
| 11.850          | 71.66                        | 88.96                        | 111.09                       | 137.67                       | 165.62                       |
| 12.100          | 196.12                       | 225.29                       | 248.53                       | 271.53                       | 279.33                       |
| 12.350          | 287.13                       | 282.97                       | 276.67                       | 264.31                       | 249.09                       |
| 12.600          | 231.76                       | 212.43                       | 193.59                       | 175.71                       | 158.56                       |
| 12.850          | 144.83                       | 131.13                       | 120.74                       | 110.35                       | 101.77                       |
| 13.100          | 93.54                        | 86.50                        | 80.05                        | 74.32                        | 69.32                        |
| 13.350          | 64.68                        | 60.74                        | 56.94                        | 53.85                        | 50.75                        |
| 13.600          | 48.28                        | 45.81                        | 43.73                        | 41.72                        | 39.95                        |
| 13.850          | 38.29                        | 36.78                        | 35.41                        | 34.10                        | 32.94                        |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-B  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.100          | 31.79                        | 30.78                        | 29.76                        | 28.85                        | 27.94                        |
| 14.350          | 27.12                        | 26.32                        | 25.61                        | 24.94                        | 24.35                        |
| 14.600          | 23.85                        | 23.38                        | 22.98                        | 22.60                        | 22.26                        |
| 14.850          | 21.92                        | 21.62                        | 21.32                        | 21.05                        | 20.77                        |
| 15.100          | 20.52                        | 20.27                        | 20.02                        | 19.78                        | 19.55                        |
| 15.350          | 19.32                        | 19.09                        | 18.87                        | 18.65                        | 18.44                        |
| 15.600          | 18.22                        | 18.00                        | 17.79                        | 17.58                        | 17.36                        |
| 15.850          | 17.15                        | 16.94                        | 16.73                        | 16.52                        | 16.31                        |
| 16.100          | 16.10                        | 15.89                        | 15.69                        | 15.49                        | 15.30                        |
| 16.350          | 15.11                        | 14.94                        | 14.77                        | 14.61                        | 14.46                        |
| 16.600          | 14.32                        | 14.19                        | 14.06                        | 13.94                        | 13.83                        |
| 16.850          | 13.72                        | 13.62                        | 13.52                        | 13.43                        | 13.34                        |
| 17.100          | 13.25                        | 13.16                        | 13.07                        | 12.99                        | 12.91                        |
| 17.350          | 12.83                        | 12.75                        | 12.67                        | 12.59                        | 12.51                        |
| 17.600          | 12.43                        | 12.36                        | 12.28                        | 12.20                        | 12.13                        |
| 17.850          | 12.05                        | 11.98                        | 11.90                        | 11.83                        | 11.75                        |
| 18.100          | 11.68                        | 11.60                        | 11.53                        | 11.46                        | 11.38                        |
| 18.350          | 11.31                        | 11.23                        | 11.16                        | 11.08                        | 11.01                        |
| 18.600          | 10.93                        | 10.86                        | 10.78                        | 10.71                        | 10.63                        |
| 18.850          | 10.56                        | 10.48                        | 10.41                        | 10.34                        | 10.26                        |
| 19.100          | 10.19                        | 10.11                        | 10.04                        | 9.96                         | 9.89                         |
| 19.350          | 9.81                         | 9.74                         | 9.67                         | 9.59                         | 9.52                         |
| 19.600          | 9.44                         | 9.37                         | 9.29                         | 9.22                         | 9.14                         |
| 19.850          | 9.06                         | 8.99                         | 8.91                         | 8.84                         | 8.76                         |
| 20.100          | 8.69                         | 8.62                         | 8.55                         | 8.47                         | 8.41                         |
| 20.350          | 8.34                         | 8.28                         | 8.22                         | 8.17                         | 8.12                         |
| 20.600          | 8.07                         | 8.03                         | 8.00                         | 7.96                         | 7.93                         |
| 20.850          | 7.90                         | 7.87                         | 7.85                         | 7.82                         | 7.80                         |
| 21.100          | 7.78                         | 7.76                         | 7.74                         | 7.72                         | 7.70                         |
| 21.350          | 7.68                         | 7.66                         | 7.65                         | 7.63                         | 7.61                         |
| 21.600          | 7.60                         | 7.58                         | 7.57                         | 7.55                         | 7.53                         |
| 21.850          | 7.52                         | 7.50                         | 7.49                         | 7.47                         | 7.46                         |
| 22.100          | 7.44                         | 7.43                         | 7.41                         | 7.40                         | 7.38                         |
| 22.350          | 7.37                         | 7.35                         | 7.34                         | 7.32                         | 7.31                         |
| 22.600          | 7.29                         | 7.28                         | 7.26                         | 7.25                         | 7.23                         |
| 22.850          | 7.22                         | 7.21                         | 7.19                         | 7.18                         | 7.16                         |
| 23.100          | 7.15                         | 7.13                         | 7.12                         | 7.10                         | 7.09                         |
| 23.350          | 7.07                         | 7.06                         | 7.04                         | 7.03                         | 7.01                         |
| 23.600          | 7.00                         | 6.98                         | 6.97                         | 6.95                         | 6.94                         |
| 23.850          | 6.92                         | 6.91                         | 6.89                         | 6.86                         | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-C  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 2YR-24HR                 |
| Return Event                                    | 2 years                  |
| Duration                                        | 24.000 hours             |
| Depth                                           | 3.7 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 2.64 acres               |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.064 hours             |
| Flow (Peak, Computed)                           | 5.68 ft <sup>3</sup> /s  |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 5.66 ft <sup>3</sup> /s  |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 80.00                    |
| Area (User Defined)                             | 2.64 acres               |
| Maximum Retention<br>(Pervious)                 | 2.5 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 1.8 in                   |
| Runoff Volume (Pervious)                        | 17,294 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 17,230 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 11.50 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 2YR-24HR     |
| Return Event                         | 2 years      |
| Duration                             | 24.000 hours |
| Depth                                | 3.7 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 2.64 acres   |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 8.750           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.00                         |
| 9.000           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.01                         |
| 9.250           | 0.01                         | 0.01                         | 0.02                         | 0.02                         | 0.02                         |
| 9.500           | 0.02                         | 0.02                         | 0.02                         | 0.02                         | 0.03                         |
| 9.750           | 0.03                         | 0.03                         | 0.03                         | 0.03                         | 0.04                         |
| 10.000          | 0.04                         | 0.04                         | 0.04                         | 0.05                         | 0.05                         |
| 10.250          | 0.05                         | 0.06                         | 0.06                         | 0.06                         | 0.07                         |
| 10.500          | 0.07                         | 0.08                         | 0.08                         | 0.09                         | 0.09                         |
| 10.750          | 0.10                         | 0.11                         | 0.11                         | 0.12                         | 0.13                         |
| 11.000          | 0.14                         | 0.14                         | 0.15                         | 0.17                         | 0.18                         |
| 11.250          | 0.19                         | 0.21                         | 0.23                         | 0.25                         | 0.27                         |
| 11.500          | 0.29                         | 0.33                         | 0.40                         | 0.53                         | 0.76                         |
| 11.750          | 1.10                         | 1.58                         | 2.26                         | 3.23                         | 4.36                         |
| 12.000          | 5.29                         | 5.66                         | 5.34                         | 4.41                         | 3.41                         |
| 12.250          | 2.59                         | 2.03                         | 1.66                         | 1.40                         | 1.21                         |
| 12.500          | 1.06                         | 0.94                         | 0.84                         | 0.76                         | 0.70                         |
| 12.750          | 0.65                         | 0.61                         | 0.58                         | 0.56                         | 0.54                         |
| 13.000          | 0.52                         | 0.50                         | 0.48                         | 0.47                         | 0.45                         |
| 13.250          | 0.44                         | 0.43                         | 0.42                         | 0.41                         | 0.40                         |
| 13.500          | 0.39                         | 0.38                         | 0.37                         | 0.36                         | 0.35                         |
| 13.750          | 0.34                         | 0.33                         | 0.33                         | 0.32                         | 0.31                         |
| 14.000          | 0.31                         | 0.30                         | 0.29                         | 0.29                         | 0.28                         |
| 14.250          | 0.28                         | 0.27                         | 0.27                         | 0.27                         | 0.26                         |
| 14.500          | 0.26                         | 0.26                         | 0.26                         | 0.25                         | 0.25                         |
| 14.750          | 0.25                         | 0.25                         | 0.24                         | 0.24                         | 0.24                         |
| 15.000          | 0.24                         | 0.23                         | 0.23                         | 0.23                         | 0.23                         |
| 15.250          | 0.22                         | 0.22                         | 0.22                         | 0.22                         | 0.21                         |
| 15.500          | 0.21                         | 0.21                         | 0.21                         | 0.20                         | 0.20                         |
| 15.750          | 0.20                         | 0.20                         | 0.19                         | 0.19                         | 0.19                         |
| 16.000          | 0.19                         | 0.18                         | 0.18                         | 0.18                         | 0.18                         |
| 16.250          | 0.18                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 16.500          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 16.750          | 0.17                         | 0.17                         | 0.16                         | 0.16                         | 0.16                         |
| 17.000          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 17.250          | 0.16                         | 0.16                         | 0.16                         | 0.15                         | 0.15                         |
| 17.500          | 0.15                         | 0.15                         | 0.15                         | 0.15                         | 0.15                         |
| 17.750          | 0.15                         | 0.15                         | 0.15                         | 0.15                         | 0.14                         |
| 18.000          | 0.14                         | 0.14                         | 0.14                         | 0.14                         | 0.14                         |
| 18.250          | 0.14                         | 0.14                         | 0.14                         | 0.14                         | 0.14                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
 Label: P-C  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 18.500          | 0.13                         | 0.13                         | 0.13                         | 0.13                         | 0.13                         |
| 18.750          | 0.13                         | 0.13                         | 0.13                         | 0.13                         | 0.13                         |
| 19.000          | 0.13                         | 0.12                         | 0.12                         | 0.12                         | 0.12                         |
| 19.250          | 0.12                         | 0.12                         | 0.12                         | 0.12                         | 0.12                         |
| 19.500          | 0.12                         | 0.11                         | 0.11                         | 0.11                         | 0.11                         |
| 19.750          | 0.11                         | 0.11                         | 0.11                         | 0.11                         | 0.11                         |
| 20.000          | 0.11                         | 0.11                         | 0.10                         | 0.10                         | 0.10                         |
| 20.250          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 20.500          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 20.750          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 21.000          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 21.250          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 21.500          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 21.750          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 22.000          | 0.10                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 22.250          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 22.500          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 22.750          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 23.000          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 23.250          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 23.500          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 23.750          | 0.09                         | 0.09                         | 0.09                         | 0.09                         | 0.09                         |
| 24.000          | 0.09                         | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |



Subsection: Unit Hydrograph Summary  
Label: P-C  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 10YR-24HR                |
| Return Event                                    | 10 years                 |
| Duration                                        | 24.000 hours             |
| Depth                                           | 5.7 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 2.64 acres               |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 10.97 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 10.96 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 80.00                    |
| Area (User Defined)                             | 2.64 acres               |
| Maximum Retention<br>(Pervious)                 | 2.5 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 3.5 in                   |
| Runoff Volume (Pervious)                        | 33,654 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 33,545 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 11.50 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 10YR-24HR    |
| Return Event                         | 10 years     |
| Duration                             | 24.000 hours |
| Depth                                | 5.7 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 2.64 acres   |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 6.600           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.00                         |
| 6.850           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.01                         |
| 7.100           | 0.01                         | 0.01                         | 0.01                         | 0.02                         | 0.02                         |
| 7.350           | 0.02                         | 0.02                         | 0.02                         | 0.02                         | 0.02                         |
| 7.600           | 0.03                         | 0.03                         | 0.03                         | 0.03                         | 0.03                         |
| 7.850           | 0.03                         | 0.03                         | 0.04                         | 0.04                         | 0.04                         |
| 8.100           | 0.04                         | 0.04                         | 0.04                         | 0.05                         | 0.05                         |
| 8.350           | 0.05                         | 0.05                         | 0.06                         | 0.06                         | 0.06                         |
| 8.600           | 0.07                         | 0.07                         | 0.07                         | 0.08                         | 0.08                         |
| 8.850           | 0.08                         | 0.09                         | 0.09                         | 0.09                         | 0.10                         |
| 9.100           | 0.10                         | 0.10                         | 0.11                         | 0.11                         | 0.11                         |
| 9.350           | 0.12                         | 0.12                         | 0.12                         | 0.12                         | 0.12                         |
| 9.600           | 0.13                         | 0.13                         | 0.13                         | 0.14                         | 0.14                         |
| 9.850           | 0.15                         | 0.16                         | 0.16                         | 0.17                         | 0.17                         |
| 10.100          | 0.18                         | 0.19                         | 0.20                         | 0.20                         | 0.21                         |
| 10.350          | 0.22                         | 0.23                         | 0.24                         | 0.25                         | 0.26                         |
| 10.600          | 0.27                         | 0.29                         | 0.30                         | 0.31                         | 0.33                         |
| 10.850          | 0.35                         | 0.36                         | 0.38                         | 0.40                         | 0.42                         |
| 11.100          | 0.44                         | 0.47                         | 0.50                         | 0.53                         | 0.57                         |
| 11.350          | 0.61                         | 0.65                         | 0.70                         | 0.75                         | 0.83                         |
| 11.600          | 0.99                         | 1.29                         | 1.81                         | 2.54                         | 3.54                         |
| 11.850          | 4.88                         | 6.74                         | 8.83                         | 10.46                        | 10.96                        |
| 12.100          | 10.19                        | 8.34                         | 6.40                         | 4.83                         | 3.76                         |
| 12.350          | 3.05                         | 2.56                         | 2.19                         | 1.92                         | 1.69                         |
| 12.600          | 1.51                         | 1.36                         | 1.25                         | 1.16                         | 1.09                         |
| 12.850          | 1.04                         | 1.00                         | 0.96                         | 0.92                         | 0.89                         |
| 13.100          | 0.86                         | 0.83                         | 0.80                         | 0.78                         | 0.76                         |
| 13.350          | 0.74                         | 0.72                         | 0.70                         | 0.68                         | 0.67                         |
| 13.600          | 0.65                         | 0.63                         | 0.62                         | 0.60                         | 0.59                         |
| 13.850          | 0.57                         | 0.56                         | 0.55                         | 0.54                         | 0.52                         |
| 14.100          | 0.51                         | 0.50                         | 0.49                         | 0.48                         | 0.48                         |
| 14.350          | 0.47                         | 0.47                         | 0.46                         | 0.46                         | 0.45                         |
| 14.600          | 0.45                         | 0.44                         | 0.44                         | 0.44                         | 0.43                         |
| 14.850          | 0.43                         | 0.42                         | 0.42                         | 0.41                         | 0.41                         |
| 15.100          | 0.40                         | 0.40                         | 0.40                         | 0.39                         | 0.39                         |
| 15.350          | 0.38                         | 0.38                         | 0.37                         | 0.37                         | 0.36                         |
| 15.600          | 0.36                         | 0.36                         | 0.35                         | 0.35                         | 0.34                         |
| 15.850          | 0.34                         | 0.33                         | 0.33                         | 0.32                         | 0.32                         |
| 16.100          | 0.31                         | 0.31                         | 0.31                         | 0.31                         | 0.30                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 16.350          | 0.30                         | 0.30                         | 0.30                         | 0.30                         | 0.29                         |
| 16.600          | 0.29                         | 0.29                         | 0.29                         | 0.29                         | 0.29                         |
| 16.850          | 0.28                         | 0.28                         | 0.28                         | 0.28                         | 0.28                         |
| 17.100          | 0.28                         | 0.27                         | 0.27                         | 0.27                         | 0.27                         |
| 17.350          | 0.27                         | 0.27                         | 0.27                         | 0.26                         | 0.26                         |
| 17.600          | 0.26                         | 0.26                         | 0.26                         | 0.26                         | 0.25                         |
| 17.850          | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 18.100          | 0.24                         | 0.24                         | 0.24                         | 0.24                         | 0.24                         |
| 18.350          | 0.24                         | 0.23                         | 0.23                         | 0.23                         | 0.23                         |
| 18.600          | 0.23                         | 0.23                         | 0.22                         | 0.22                         | 0.22                         |
| 18.850          | 0.22                         | 0.22                         | 0.22                         | 0.21                         | 0.21                         |
| 19.100          | 0.21                         | 0.21                         | 0.21                         | 0.21                         | 0.20                         |
| 19.350          | 0.20                         | 0.20                         | 0.20                         | 0.20                         | 0.20                         |
| 19.600          | 0.19                         | 0.19                         | 0.19                         | 0.19                         | 0.19                         |
| 19.850          | 0.19                         | 0.19                         | 0.18                         | 0.18                         | 0.18                         |
| 20.100          | 0.18                         | 0.18                         | 0.18                         | 0.18                         | 0.17                         |
| 20.350          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 20.600          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 20.850          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 21.100          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 21.350          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.17                         |
| 21.600          | 0.17                         | 0.17                         | 0.17                         | 0.17                         | 0.16                         |
| 21.850          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 22.100          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 22.350          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 22.600          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 22.850          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 23.100          | 0.16                         | 0.16                         | 0.16                         | 0.16                         | 0.16                         |
| 23.350          | 0.15                         | 0.15                         | 0.15                         | 0.15                         | 0.15                         |
| 23.600          | 0.15                         | 0.15                         | 0.15                         | 0.15                         | 0.15                         |
| 23.850          | 0.15                         | 0.15                         | 0.15                         | 0.15                         | (N/A)                        |

Subsection: Unit Hydrograph Summary  
Label: P-C  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 50YR-24HR                |
| Return Event                                    | 50 years                 |
| Duration                                        | 24.000 hours             |
| Depth                                           | 8.1 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 2.64 acres               |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 17.67 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 17.58 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 80.00                    |
| Area (User Defined)                             | 2.64 acres               |
| Maximum Retention<br>(Pervious)                 | 2.5 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 5.7 in                   |
| Runoff Volume (Pervious)                        | 54,895 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 54,732 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 11.50 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 50YR-24HR    |
| Return Event                         | 50 years     |
| Duration                             | 24.000 hours |
| Depth                                | 8.1 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 2.64 acres   |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 5.050           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 5.300           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.01                         |
| 5.550           | 0.02                         | 0.02                         | 0.02                         | 0.02                         | 0.02                         |
| 5.800           | 0.03                         | 0.03                         | 0.03                         | 0.03                         | 0.03                         |
| 6.050           | 0.04                         | 0.04                         | 0.04                         | 0.04                         | 0.04                         |
| 6.300           | 0.05                         | 0.05                         | 0.05                         | 0.05                         | 0.06                         |
| 6.550           | 0.06                         | 0.06                         | 0.06                         | 0.06                         | 0.07                         |
| 6.800           | 0.07                         | 0.07                         | 0.07                         | 0.08                         | 0.08                         |
| 7.050           | 0.08                         | 0.08                         | 0.09                         | 0.09                         | 0.09                         |
| 7.300           | 0.09                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 7.550           | 0.11                         | 0.11                         | 0.11                         | 0.11                         | 0.12                         |
| 7.800           | 0.12                         | 0.12                         | 0.12                         | 0.13                         | 0.13                         |
| 8.050           | 0.13                         | 0.13                         | 0.14                         | 0.14                         | 0.15                         |
| 8.300           | 0.15                         | 0.16                         | 0.16                         | 0.17                         | 0.17                         |
| 8.550           | 0.18                         | 0.18                         | 0.19                         | 0.20                         | 0.20                         |
| 8.800           | 0.21                         | 0.22                         | 0.22                         | 0.23                         | 0.24                         |
| 9.050           | 0.24                         | 0.25                         | 0.26                         | 0.26                         | 0.27                         |
| 9.300           | 0.27                         | 0.28                         | 0.28                         | 0.28                         | 0.29                         |
| 9.550           | 0.29                         | 0.29                         | 0.30                         | 0.31                         | 0.31                         |
| 9.800           | 0.32                         | 0.33                         | 0.34                         | 0.35                         | 0.37                         |
| 10.050          | 0.38                         | 0.39                         | 0.40                         | 0.42                         | 0.43                         |
| 10.300          | 0.45                         | 0.47                         | 0.48                         | 0.50                         | 0.52                         |
| 10.550          | 0.54                         | 0.56                         | 0.58                         | 0.60                         | 0.63                         |
| 10.800          | 0.66                         | 0.69                         | 0.72                         | 0.75                         | 0.78                         |
| 11.050          | 0.81                         | 0.85                         | 0.90                         | 0.95                         | 1.01                         |
| 11.300          | 1.07                         | 1.14                         | 1.21                         | 1.29                         | 1.37                         |
| 11.550          | 1.51                         | 1.81                         | 2.33                         | 3.22                         | 4.45                         |
| 11.800          | 6.12                         | 8.31                         | 11.26                        | 14.52                        | 16.96                        |
| 12.050          | 17.58                        | 16.22                        | 13.21                        | 10.09                        | 7.59                         |
| 12.300          | 5.88                         | 4.76                         | 3.98                         | 3.40                         | 2.96                         |
| 12.550          | 2.61                         | 2.33                         | 2.09                         | 1.91                         | 1.77                         |
| 12.800          | 1.67                         | 1.59                         | 1.53                         | 1.47                         | 1.41                         |
| 13.050          | 1.36                         | 1.31                         | 1.26                         | 1.22                         | 1.19                         |
| 13.300          | 1.15                         | 1.12                         | 1.10                         | 1.07                         | 1.04                         |
| 13.550          | 1.01                         | 0.99                         | 0.96                         | 0.94                         | 0.91                         |
| 13.800          | 0.89                         | 0.87                         | 0.85                         | 0.83                         | 0.81                         |
| 14.050          | 0.79                         | 0.78                         | 0.76                         | 0.75                         | 0.73                         |
| 14.300          | 0.72                         | 0.72                         | 0.71                         | 0.70                         | 0.69                         |
| 14.550          | 0.69                         | 0.68                         | 0.67                         | 0.67                         | 0.66                         |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.800          | 0.65                         | 0.65                         | 0.64                         | 0.63                         | 0.62                         |
| 15.050          | 0.62                         | 0.61                         | 0.60                         | 0.60                         | 0.59                         |
| 15.300          | 0.58                         | 0.58                         | 0.57                         | 0.56                         | 0.56                         |
| 15.550          | 0.55                         | 0.54                         | 0.54                         | 0.53                         | 0.52                         |
| 15.800          | 0.52                         | 0.51                         | 0.50                         | 0.49                         | 0.49                         |
| 16.050          | 0.48                         | 0.47                         | 0.47                         | 0.46                         | 0.46                         |
| 16.300          | 0.46                         | 0.45                         | 0.45                         | 0.45                         | 0.45                         |
| 16.550          | 0.44                         | 0.44                         | 0.44                         | 0.44                         | 0.43                         |
| 16.800          | 0.43                         | 0.43                         | 0.43                         | 0.42                         | 0.42                         |
| 17.050          | 0.42                         | 0.42                         | 0.41                         | 0.41                         | 0.41                         |
| 17.300          | 0.41                         | 0.40                         | 0.40                         | 0.40                         | 0.40                         |
| 17.550          | 0.39                         | 0.39                         | 0.39                         | 0.39                         | 0.38                         |
| 17.800          | 0.38                         | 0.38                         | 0.38                         | 0.37                         | 0.37                         |
| 18.050          | 0.37                         | 0.37                         | 0.36                         | 0.36                         | 0.36                         |
| 18.300          | 0.36                         | 0.35                         | 0.35                         | 0.35                         | 0.35                         |
| 18.550          | 0.34                         | 0.34                         | 0.34                         | 0.34                         | 0.33                         |
| 18.800          | 0.33                         | 0.33                         | 0.33                         | 0.32                         | 0.32                         |
| 19.050          | 0.32                         | 0.32                         | 0.31                         | 0.31                         | 0.31                         |
| 19.300          | 0.31                         | 0.30                         | 0.30                         | 0.30                         | 0.30                         |
| 19.550          | 0.29                         | 0.29                         | 0.29                         | 0.29                         | 0.28                         |
| 19.800          | 0.28                         | 0.28                         | 0.28                         | 0.27                         | 0.27                         |
| 20.050          | 0.27                         | 0.27                         | 0.27                         | 0.26                         | 0.26                         |
| 20.300          | 0.26                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |
| 20.550          | 0.26                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |
| 20.800          | 0.26                         | 0.26                         | 0.26                         | 0.25                         | 0.25                         |
| 21.050          | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 21.300          | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 21.550          | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 21.800          | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.24                         |
| 22.050          | 0.24                         | 0.24                         | 0.24                         | 0.24                         | 0.24                         |
| 22.300          | 0.24                         | 0.24                         | 0.24                         | 0.24                         | 0.24                         |
| 22.550          | 0.24                         | 0.24                         | 0.24                         | 0.24                         | 0.24                         |
| 22.800          | 0.24                         | 0.24                         | 0.24                         | 0.24                         | 0.23                         |
| 23.050          | 0.23                         | 0.23                         | 0.23                         | 0.23                         | 0.23                         |
| 23.300          | 0.23                         | 0.23                         | 0.23                         | 0.23                         | 0.23                         |
| 23.550          | 0.23                         | 0.23                         | 0.23                         | 0.23                         | 0.23                         |
| 23.800          | 0.23                         | 0.23                         | 0.23                         | 0.23                         | 0.22                         |

Subsection: Unit Hydrograph Summary  
Label: P-C  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Storm Event                                     | 100YR-24HR               |
| Return Event                                    | 100 years                |
| Duration                                        | 24.000 hours             |
| Depth                                           | 9.3 in                   |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Area (User Defined)                             | 2.64 acres               |
| Computational Time<br>Increment                 | 0.035 hours              |
| Time to Peak (Computed)                         | 12.029 hours             |
| Flow (Peak, Computed)                           | 20.88 ft <sup>3</sup> /s |
| Output Increment                                | 0.050 hours              |
| Time to Flow (Peak<br>Interpolated Output)      | 12.050 hours             |
| Flow (Peak Interpolated<br>Output)              | 20.75 ft <sup>3</sup> /s |
| Drainage Area                                   |                          |
| SCS CN (Composite)                              | 80.00                    |
| Area (User Defined)                             | 2.64 acres               |
| Maximum Retention<br>(Pervious)                 | 2.5 in                   |
| Maximum Retention<br>(Pervious, 20 percent)     | 0.5 in                   |
| Cumulative Runoff                               |                          |
| Cumulative Runoff Depth<br>(Pervious)           | 6.8 in                   |
| Runoff Volume (Pervious)                        | 65,311 ft <sup>3</sup>   |
| Hydrograph Volume (Area under Hydrograph curve) |                          |
| Volume                                          | 65,123 ft <sup>3</sup>   |
| SCS Unit Hydrograph Parameters                  |                          |
| Time of Concentration<br>(Composite)            | 0.260 hours              |
| Computational Time<br>Increment                 | 0.035 hours              |
| Unit Hydrograph Shape<br>Factor                 | 483.43                   |
| K Factor                                        | 0.75                     |
| Receding/Rising, Tr/Tp                          | 1.670                    |
| Unit peak, qp                                   | 11.50 ft <sup>3</sup> /s |
| Unit peak time, Tp                              | 0.173 hours              |
| Unit receding limb, Tr                          | 0.693 hours              |
| Total unit time, Tb                             | 0.867 hours              |

Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                      |              |
|--------------------------------------|--------------|
| Storm Event                          | 100YR-24HR   |
| Return Event                         | 100 years    |
| Duration                             | 24.000 hours |
| Depth                                | 9.3 in       |
| Time of Concentration<br>(Composite) | 0.260 hours  |
| Area (User Defined)                  | 2.64 acres   |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 4.550           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 4.800           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.02                         |
| 5.050           | 0.02                         | 0.02                         | 0.02                         | 0.02                         | 0.03                         |
| 5.300           | 0.03                         | 0.03                         | 0.03                         | 0.04                         | 0.04                         |
| 5.550           | 0.04                         | 0.04                         | 0.05                         | 0.05                         | 0.05                         |
| 5.800           | 0.05                         | 0.06                         | 0.06                         | 0.06                         | 0.06                         |
| 6.050           | 0.07                         | 0.07                         | 0.07                         | 0.07                         | 0.08                         |
| 6.300           | 0.08                         | 0.08                         | 0.09                         | 0.09                         | 0.09                         |
| 6.550           | 0.09                         | 0.10                         | 0.10                         | 0.10                         | 0.10                         |
| 6.800           | 0.11                         | 0.11                         | 0.11                         | 0.12                         | 0.12                         |
| 7.050           | 0.12                         | 0.12                         | 0.13                         | 0.13                         | 0.13                         |
| 7.300           | 0.14                         | 0.14                         | 0.14                         | 0.15                         | 0.15                         |
| 7.550           | 0.15                         | 0.15                         | 0.16                         | 0.16                         | 0.16                         |
| 7.800           | 0.17                         | 0.17                         | 0.17                         | 0.18                         | 0.18                         |
| 8.050           | 0.18                         | 0.19                         | 0.19                         | 0.19                         | 0.20                         |
| 8.300           | 0.21                         | 0.21                         | 0.22                         | 0.23                         | 0.23                         |
| 8.550           | 0.24                         | 0.25                         | 0.26                         | 0.26                         | 0.27                         |
| 8.800           | 0.28                         | 0.29                         | 0.30                         | 0.31                         | 0.32                         |
| 9.050           | 0.32                         | 0.33                         | 0.34                         | 0.35                         | 0.35                         |
| 9.300           | 0.36                         | 0.36                         | 0.37                         | 0.37                         | 0.37                         |
| 9.550           | 0.38                         | 0.38                         | 0.39                         | 0.40                         | 0.41                         |
| 9.800           | 0.42                         | 0.43                         | 0.44                         | 0.46                         | 0.47                         |
| 10.050          | 0.48                         | 0.50                         | 0.52                         | 0.53                         | 0.55                         |
| 10.300          | 0.57                         | 0.59                         | 0.61                         | 0.64                         | 0.66                         |
| 10.550          | 0.68                         | 0.70                         | 0.73                         | 0.76                         | 0.79                         |
| 10.800          | 0.83                         | 0.86                         | 0.90                         | 0.94                         | 0.97                         |
| 11.050          | 1.01                         | 1.06                         | 1.11                         | 1.17                         | 1.25                         |
| 11.300          | 1.32                         | 1.41                         | 1.50                         | 1.59                         | 1.69                         |
| 11.550          | 1.86                         | 2.21                         | 2.85                         | 3.91                         | 5.40                         |
| 11.800          | 7.39                         | 9.98                         | 13.45                        | 17.26                        | 20.08                        |
| 12.050          | 20.75                        | 19.10                        | 15.53                        | 11.85                        | 8.90                         |
| 12.300          | 6.89                         | 5.57                         | 4.65                         | 3.97                         | 3.46                         |
| 12.550          | 3.04                         | 2.71                         | 2.44                         | 2.23                         | 2.06                         |
| 12.800          | 1.94                         | 1.85                         | 1.78                         | 1.71                         | 1.64                         |
| 13.050          | 1.58                         | 1.52                         | 1.47                         | 1.42                         | 1.38                         |
| 13.300          | 1.34                         | 1.31                         | 1.27                         | 1.24                         | 1.21                         |
| 13.550          | 1.18                         | 1.15                         | 1.12                         | 1.09                         | 1.06                         |
| 13.800          | 1.04                         | 1.01                         | 0.99                         | 0.97                         | 0.94                         |
| 14.050          | 0.92                         | 0.90                         | 0.88                         | 0.87                         | 0.85                         |



Subsection: Unit Hydrograph (Hydrograph Table)  
Label: P-C  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.300          | 0.84                         | 0.83                         | 0.82                         | 0.81                         | 0.80                         |
| 14.550          | 0.80                         | 0.79                         | 0.78                         | 0.77                         | 0.76                         |
| 14.800          | 0.76                         | 0.75                         | 0.74                         | 0.73                         | 0.73                         |
| 15.050          | 0.72                         | 0.71                         | 0.70                         | 0.69                         | 0.69                         |
| 15.300          | 0.68                         | 0.67                         | 0.66                         | 0.65                         | 0.65                         |
| 15.550          | 0.64                         | 0.63                         | 0.62                         | 0.61                         | 0.61                         |
| 15.800          | 0.60                         | 0.59                         | 0.58                         | 0.57                         | 0.57                         |
| 16.050          | 0.56                         | 0.55                         | 0.54                         | 0.54                         | 0.53                         |
| 16.300          | 0.53                         | 0.53                         | 0.52                         | 0.52                         | 0.52                         |
| 16.550          | 0.51                         | 0.51                         | 0.51                         | 0.50                         | 0.50                         |
| 16.800          | 0.50                         | 0.50                         | 0.49                         | 0.49                         | 0.49                         |
| 17.050          | 0.48                         | 0.48                         | 0.48                         | 0.48                         | 0.47                         |
| 17.300          | 0.47                         | 0.47                         | 0.46                         | 0.46                         | 0.46                         |
| 17.550          | 0.46                         | 0.45                         | 0.45                         | 0.45                         | 0.44                         |
| 17.800          | 0.44                         | 0.44                         | 0.44                         | 0.43                         | 0.43                         |
| 18.050          | 0.43                         | 0.42                         | 0.42                         | 0.42                         | 0.42                         |
| 18.300          | 0.41                         | 0.41                         | 0.41                         | 0.40                         | 0.40                         |
| 18.550          | 0.40                         | 0.40                         | 0.39                         | 0.39                         | 0.39                         |
| 18.800          | 0.38                         | 0.38                         | 0.38                         | 0.38                         | 0.37                         |
| 19.050          | 0.37                         | 0.37                         | 0.36                         | 0.36                         | 0.36                         |
| 19.300          | 0.36                         | 0.35                         | 0.35                         | 0.35                         | 0.34                         |
| 19.550          | 0.34                         | 0.34                         | 0.34                         | 0.33                         | 0.33                         |
| 19.800          | 0.33                         | 0.32                         | 0.32                         | 0.32                         | 0.32                         |
| 20.050          | 0.31                         | 0.31                         | 0.31                         | 0.31                         | 0.30                         |
| 20.300          | 0.30                         | 0.30                         | 0.30                         | 0.30                         | 0.30                         |
| 20.550          | 0.30                         | 0.30                         | 0.30                         | 0.30                         | 0.30                         |
| 20.800          | 0.30                         | 0.30                         | 0.30                         | 0.29                         | 0.29                         |
| 21.050          | 0.29                         | 0.29                         | 0.29                         | 0.29                         | 0.29                         |
| 21.300          | 0.29                         | 0.29                         | 0.29                         | 0.29                         | 0.29                         |
| 21.550          | 0.29                         | 0.29                         | 0.29                         | 0.29                         | 0.29                         |
| 21.800          | 0.29                         | 0.28                         | 0.28                         | 0.28                         | 0.28                         |
| 22.050          | 0.28                         | 0.28                         | 0.28                         | 0.28                         | 0.28                         |
| 22.300          | 0.28                         | 0.28                         | 0.28                         | 0.28                         | 0.28                         |
| 22.550          | 0.28                         | 0.28                         | 0.28                         | 0.27                         | 0.27                         |
| 22.800          | 0.27                         | 0.27                         | 0.27                         | 0.27                         | 0.27                         |
| 23.050          | 0.27                         | 0.27                         | 0.27                         | 0.27                         | 0.27                         |
| 23.300          | 0.27                         | 0.27                         | 0.27                         | 0.27                         | 0.27                         |
| 23.550          | 0.27                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |
| 23.800          | 0.26                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |

Subsection: Addition Summary

Label: EXIST OUT

Scenario: 2YR-24HR

Return Event: 2 years

Storm Event: 2YR-24HR

### Summary for Hydrograph Addition at 'EXIST OUT'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | E-1           |

### Node Inflows

| Inflow Type | Element   | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-----------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | E-1       | 564,322                      | 12.350                  | 95.81                               |
| Flow (In)   | EXIST OUT | 564,322                      | 12.350                  | 95.81                               |

Subsection: Addition Summary

Label: EXIST OUT

Scenario: 10YR-24HR

Return Event: 10 years

Storm Event: 10YR-24HR

### Summary for Hydrograph Addition at 'EXIST OUT'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | E-1           |

### Node Inflows

| Inflow Type | Element   | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-----------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | E-1       | 1,077,928                    | 12.350                  | 184.63                              |
| Flow (In)   | EXIST OUT | 1,077,928                    | 12.350                  | 184.63                              |

Subsection: Addition Summary

Label: EXIST OUT

Scenario: 50YR-24HR

Return Event: 50 years

Storm Event: 50YR-24HR

### Summary for Hydrograph Addition at 'EXIST OUT'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | E-1           |

### Node Inflows

| Inflow Type | Element   | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-----------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | E-1       | 1,739,221                    | 12.350                  | 295.63                              |
| Flow (In)   | EXIST OUT | 1,739,221                    | 12.350                  | 295.63                              |

Subsection: Addition Summary

Label: EXIST OUT

Scenario: 100YR-24HR

Return Event: 100 years

Storm Event: 100YR-24HR

**Summary for Hydrograph Addition at 'EXIST OUT'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | E-1           |

**Node Inflows**

| Inflow Type | Element   | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-----------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | E-1       | 2,062,348                    | 12.350                  | 348.80                              |
| Flow (In)   | EXIST OUT | 2,062,348                    | 12.350                  | 348.80                              |

Subsection: Addition Summary

Label: Outlet

Scenario: 2YR-24HR

Return Event: 2 years

Storm Event: 2YR-24HR

### Summary for Hydrograph Addition at 'Outlet'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-C           |
| Outlet_Pipe                 | Prop_Basin    |

### Node Inflows

| Inflow Type | Element     | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-C         | 17,230                       | 12.050                  | 5.66                                |
| Flow (From) | Outlet_Pipe | 336,763                      | 13.350                  | 21.70                               |
| Flow (In)   | Outlet      | 353,993                      | 13.350                  | 22.12                               |

Subsection: Addition Summary

Label: Outlet

Scenario: 10YR-24HR

Return Event: 10 years

Storm Event: 10YR-24HR

### Summary for Hydrograph Addition at 'Outlet'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-C           |
| Outlet_Pipe                 | Prop_Basin    |

### Node Inflows

| Inflow Type | Element     | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-C         | 33,545                       | 12.050                  | 10.96                               |
| Flow (From) | Outlet_Pipe | 832,724                      | 12.800                  | 92.45                               |
| Flow (In)   | Outlet      | 866,269                      | 12.800                  | 93.54                               |

Subsection: Addition Summary

Label: Outlet

Scenario: 50YR-24HR

Return Event: 50 years

Storm Event: 50YR-24HR

### Summary for Hydrograph Addition at 'Outlet'

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-C           |
| Outlet_Pipe                 | Prop_Basin    |

### Node Inflows

| Inflow Type | Element     | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-C         | 54,732                       | 12.050                  | 17.58                               |
| Flow (From) | Outlet_Pipe | 1,472,696                    | 12.650                  | 190.34                              |
| Flow (In)   | Outlet      | 1,527,428                    | 12.650                  | 192.43                              |



Subsection: Addition Summary

Label: Outlet

Scenario: 100YR-24HR

Return Event: 100 years

Storm Event: 100YR-24HR

**Summary for Hydrograph Addition at 'Outlet'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-C           |
| Outlet_Pipe                 | Prop_Basin    |

**Node Inflows**

| Inflow Type | Element     | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|-------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-C         | 65,123                       | 12.050                  | 20.75                               |
| Flow (From) | Outlet_Pipe | 1,787,924                    | 12.600                  | 236.26                              |
| Flow (In)   | Outlet      | 1,853,047                    | 12.600                  | 238.98                              |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 4.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 4.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 4.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 4.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 5.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 5.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 5.500           | 947.30            | 947.30            | 947.30            | 947.31            | 947.31            |
| 5.750           | 947.31            | 947.32            | 947.32            | 947.33            | 947.33            |
| 6.000           | 947.34            | 947.34            | 947.35            | 947.36            | 947.36            |
| 6.250           | 947.37            | 947.38            | 947.39            | 947.39            | 947.40            |
| 6.500           | 947.41            | 947.42            | 947.43            | 947.43            | 947.44            |
| 6.750           | 947.45            | 947.46            | 947.47            | 947.48            | 947.49            |
| 7.000           | 947.50            | 947.51            | 947.52            | 947.52            | 947.53            |
| 7.250           | 947.54            | 947.55            | 947.56            | 947.57            | 947.58            |
| 7.500           | 947.59            | 947.60            | 947.61            | 947.62            | 947.63            |
| 7.750           | 947.64            | 947.65            | 947.66            | 947.67            | 947.69            |
| 8.000           | 947.70            | 947.71            | 947.72            | 947.73            | 947.74            |
| 8.250           | 947.75            | 947.76            | 947.78            | 947.79            | 947.80            |
| 8.500           | 947.81            | 947.81            | 947.82            | 947.82            | 947.83            |
| 8.750           | 947.84            | 947.85            | 947.86            | 947.87            | 947.88            |
| 9.000           | 947.89            | 947.91            | 947.93            | 947.94            | 947.97            |
| 9.250           | 947.99            | 948.01            | 948.02            | 948.03            | 948.04            |
| 9.500           | 948.06            | 948.07            | 948.09            | 948.11            | 948.12            |
| 9.750           | 948.14            | 948.16            | 948.18            | 948.21            | 948.23            |
| 10.000          | 948.26            | 948.28            | 948.31            | 948.32            | 948.34            |
| 10.250          | 948.36            | 948.38            | 948.40            | 948.42            | 948.45            |
| 10.500          | 948.47            | 948.50            | 948.52            | 948.54            | 948.56            |
| 10.750          | 948.58            | 948.60            | 948.63            | 948.66            | 948.68            |
| 11.000          | 948.71            | 948.74            | 948.78            | 948.81            | 948.83            |
| 11.250          | 948.85            | 948.88            | 948.91            | 948.94            | 948.97            |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 11.500          | 949.01            | 949.04            | 949.09            | 949.14            | 949.20            |
| 11.750          | 949.29            | 949.36            | 949.46            | 949.59            | 949.77            |
| 12.000          | 949.94            | 950.13            | 950.33            | 950.52            | 950.72            |
| 12.250          | 950.90            | 951.08            | 951.26            | 951.43            | 951.60            |
| 12.500          | 951.76            | 951.90            | 952.04            | 952.16            | 952.27            |
| 12.750          | 952.36            | 952.44            | 952.50            | 952.55            | 952.60            |
| 13.000          | 952.63            | 952.66            | 952.68            | 952.70            | 952.71            |
| 13.250          | 952.72            | 952.73            | 952.73            | 952.73            | 952.73            |
| 13.500          | 952.72            | 952.72            | 952.71            | 952.70            | 952.69            |
| 13.750          | 952.68            | 952.67            | 952.66            | 952.65            | 952.64            |
| 14.000          | 952.63            | 952.62            | 952.61            | 952.60            | 952.59            |
| 14.250          | 952.58            | 952.57            | 952.56            | 952.54            | 952.53            |
| 14.500          | 952.52            | 952.51            | 952.51            | 952.50            | 952.49            |
| 14.750          | 952.48            | 952.47            | 952.46            | 952.45            | 952.45            |
| 15.000          | 952.44            | 952.43            | 952.42            | 952.42            | 952.41            |
| 15.250          | 952.41            | 952.40            | 952.39            | 952.39            | 952.38            |
| 15.500          | 952.38            | 952.37            | 952.37            | 952.36            | 952.36            |
| 15.750          | 952.35            | 952.35            | 952.35            | 952.34            | 952.34            |
| 16.000          | 952.33            | 952.33            | 952.33            | 952.32            | 952.32            |
| 16.250          | 952.32            | 952.31            | 952.31            | 952.31            | 952.30            |
| 16.500          | 952.30            | 952.30            | 952.29            | 952.29            | 952.29            |
| 16.750          | 952.28            | 952.28            | 952.28            | 952.27            | 952.27            |
| 17.000          | 952.27            | 952.27            | 952.26            | 952.26            | 952.26            |
| 17.250          | 952.25            | 952.25            | 952.25            | 952.25            | 952.24            |
| 17.500          | 952.24            | 952.24            | 952.23            | 952.23            | 952.23            |
| 17.750          | 952.23            | 952.22            | 952.22            | 952.22            | 952.22            |
| 18.000          | 952.21            | 952.21            | 952.21            | 952.21            | 952.20            |
| 18.250          | 952.20            | 952.20            | 952.20            | 952.20            | 952.19            |
| 18.500          | 952.19            | 952.19            | 952.19            | 952.18            | 952.18            |
| 18.750          | 952.18            | 952.18            | 952.18            | 952.17            | 952.17            |
| 19.000          | 952.17            | 952.17            | 952.16            | 952.16            | 952.16            |
| 19.250          | 952.16            | 952.16            | 952.15            | 952.15            | 952.15            |
| 19.500          | 952.15            | 952.15            | 952.14            | 952.14            | 952.14            |
| 19.750          | 952.14            | 952.14            | 952.13            | 952.13            | 952.13            |
| 20.000          | 952.13            | 952.13            | 952.12            | 952.12            | 952.12            |
| 20.250          | 952.12            | 952.12            | 952.11            | 952.11            | 952.11            |
| 20.500          | 952.11            | 952.11            | 952.11            | 952.10            | 952.10            |
| 20.750          | 952.10            | 952.10            | 952.10            | 952.10            | 952.09            |
| 21.000          | 952.09            | 952.09            | 952.09            | 952.09            | 952.09            |
| 21.250          | 952.08            | 952.08            | 952.08            | 952.08            | 952.08            |
| 21.500          | 952.08            | 952.08            | 952.08            | 952.07            | 952.07            |
| 21.750          | 952.07            | 952.07            | 952.07            | 952.07            | 952.07            |
| 22.000          | 952.07            | 952.07            | 952.07            | 952.06            | 952.06            |
| 22.250          | 952.06            | 952.06            | 952.06            | 952.06            | 952.06            |
| 22.500          | 952.06            | 952.06            | 952.06            | 952.06            | 952.06            |
| 22.750          | 952.05            | 952.05            | 952.05            | 952.05            | 952.05            |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 23.000          | 952.05            | 952.05            | 952.05            | 952.05            | 952.05            |
| 23.250          | 952.05            | 952.05            | 952.05            | 952.05            | 952.05            |
| 23.500          | 952.04            | 952.04            | 952.04            | 952.04            | 952.04            |
| 23.750          | 952.04            | 952.04            | 952.04            | 952.04            | 952.04            |
| 24.000          | 952.04            | (N/A)             | (N/A)             | (N/A)             | (N/A)             |

Subsection: Time vs. Elevation  
 Label: Prop\_Basin (OUT)  
 Scenario: 10YR-24HR

Return Event: 10 years  
 Storm Event: 10YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 4.000           | 947.31            | 947.31            | 947.31            | 947.32            | 947.32            |
| 4.250           | 947.33            | 947.34            | 947.35            | 947.36            | 947.36            |
| 4.500           | 947.37            | 947.38            | 947.39            | 947.41            | 947.42            |
| 4.750           | 947.43            | 947.44            | 947.45            | 947.47            | 947.48            |
| 5.000           | 947.49            | 947.50            | 947.52            | 947.53            | 947.55            |
| 5.250           | 947.56            | 947.57            | 947.59            | 947.60            | 947.62            |
| 5.500           | 947.63            | 947.65            | 947.66            | 947.68            | 947.69            |
| 5.750           | 947.71            | 947.72            | 947.74            | 947.76            | 947.77            |
| 6.000           | 947.79            | 947.80            | 947.81            | 947.81            | 947.81            |
| 6.250           | 947.82            | 947.83            | 947.83            | 947.84            | 947.85            |
| 6.500           | 947.85            | 947.86            | 947.87            | 947.88            | 947.89            |
| 6.750           | 947.90            | 947.91            | 947.93            | 947.94            | 947.96            |
| 7.000           | 947.98            | 948.00            | 948.01            | 948.02            | 948.03            |
| 7.250           | 948.04            | 948.06            | 948.07            | 948.08            | 948.10            |
| 7.500           | 948.12            | 948.13            | 948.15            | 948.17            | 948.19            |
| 7.750           | 948.21            | 948.23            | 948.25            | 948.28            | 948.30            |
| 8.000           | 948.31            | 948.33            | 948.34            | 948.36            | 948.38            |
| 8.250           | 948.39            | 948.41            | 948.43            | 948.45            | 948.47            |
| 8.500           | 948.49            | 948.51            | 948.52            | 948.54            | 948.55            |
| 8.750           | 948.57            | 948.59            | 948.61            | 948.63            | 948.65            |
| 9.000           | 948.67            | 948.69            | 948.71            | 948.74            | 948.76            |
| 9.250           | 948.78            | 948.81            | 948.82            | 948.84            | 948.85            |
| 9.500           | 948.87            | 948.89            | 948.91            | 948.93            | 948.94            |
| 9.750           | 948.96            | 948.98            | 949.00            | 949.03            | 949.05            |
| 10.000          | 949.07            | 949.09            | 949.12            | 949.14            | 949.17            |
| 10.250          | 949.20            | 949.22            | 949.25            | 949.28            | 949.31            |
| 10.500          | 949.33            | 949.35            | 949.38            | 949.40            | 949.43            |
| 10.750          | 949.45            | 949.48            | 949.51            | 949.54            | 949.57            |
| 11.000          | 949.60            | 949.64            | 949.68            | 949.72            | 949.76            |
| 11.250          | 949.80            | 949.83            | 949.87            | 949.91            | 949.95            |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 11.500          | 949.99            | 950.04            | 950.09            | 950.14            | 950.21            |
| 11.750          | 950.30            | 950.40            | 950.53            | 950.70            | 950.91            |
| 12.000          | 951.15            | 951.43            | 951.73            | 952.04            | 952.34            |
| 12.250          | 952.62            | 952.89            | 953.13            | 953.35            | 953.54            |
| 12.500          | 953.70            | 953.83            | 953.92            | 954.00            | 954.04            |
| 12.750          | 954.07            | 954.07            | 954.06            | 954.05            | 954.02            |
| 13.000          | 953.98            | 953.94            | 953.90            | 953.85            | 953.81            |
| 13.250          | 953.76            | 953.71            | 953.66            | 953.61            | 953.57            |
| 13.500          | 953.52            | 953.47            | 953.43            | 953.39            | 953.35            |
| 13.750          | 953.31            | 953.27            | 953.24            | 953.20            | 953.17            |
| 14.000          | 953.13            | 953.10            | 953.07            | 953.05            | 953.02            |
| 14.250          | 952.99            | 952.97            | 952.94            | 952.92            | 952.90            |
| 14.500          | 952.88            | 952.86            | 952.84            | 952.82            | 952.80            |
| 14.750          | 952.79            | 952.77            | 952.76            | 952.74            | 952.73            |
| 15.000          | 952.72            | 952.70            | 952.69            | 952.68            | 952.67            |
| 15.250          | 952.65            | 952.64            | 952.63            | 952.62            | 952.61            |
| 15.500          | 952.60            | 952.59            | 952.59            | 952.58            | 952.57            |
| 15.750          | 952.56            | 952.55            | 952.54            | 952.54            | 952.53            |
| 16.000          | 952.52            | 952.52            | 952.51            | 952.50            | 952.50            |
| 16.250          | 952.49            | 952.48            | 952.48            | 952.47            | 952.47            |
| 16.500          | 952.46            | 952.46            | 952.45            | 952.45            | 952.44            |
| 16.750          | 952.44            | 952.43            | 952.43            | 952.42            | 952.42            |
| 17.000          | 952.41            | 952.41            | 952.41            | 952.40            | 952.40            |
| 17.250          | 952.40            | 952.39            | 952.39            | 952.39            | 952.38            |
| 17.500          | 952.38            | 952.38            | 952.37            | 952.37            | 952.37            |
| 17.750          | 952.37            | 952.36            | 952.36            | 952.36            | 952.36            |
| 18.000          | 952.35            | 952.35            | 952.35            | 952.35            | 952.35            |
| 18.250          | 952.34            | 952.34            | 952.34            | 952.34            | 952.34            |
| 18.500          | 952.33            | 952.33            | 952.33            | 952.33            | 952.33            |
| 18.750          | 952.32            | 952.32            | 952.32            | 952.32            | 952.32            |
| 19.000          | 952.32            | 952.31            | 952.31            | 952.31            | 952.31            |
| 19.250          | 952.31            | 952.31            | 952.30            | 952.30            | 952.30            |
| 19.500          | 952.30            | 952.30            | 952.30            | 952.29            | 952.29            |
| 19.750          | 952.29            | 952.29            | 952.29            | 952.28            | 952.28            |
| 20.000          | 952.28            | 952.28            | 952.28            | 952.27            | 952.27            |
| 20.250          | 952.27            | 952.27            | 952.26            | 952.26            | 952.26            |
| 20.500          | 952.26            | 952.26            | 952.25            | 952.25            | 952.25            |
| 20.750          | 952.25            | 952.24            | 952.24            | 952.24            | 952.24            |
| 21.000          | 952.24            | 952.23            | 952.23            | 952.23            | 952.23            |
| 21.250          | 952.23            | 952.23            | 952.22            | 952.22            | 952.22            |
| 21.500          | 952.22            | 952.22            | 952.22            | 952.21            | 952.21            |
| 21.750          | 952.21            | 952.21            | 952.21            | 952.21            | 952.21            |
| 22.000          | 952.20            | 952.20            | 952.20            | 952.20            | 952.20            |
| 22.250          | 952.20            | 952.20            | 952.20            | 952.19            | 952.19            |
| 22.500          | 952.19            | 952.19            | 952.19            | 952.19            | 952.19            |
| 22.750          | 952.19            | 952.18            | 952.18            | 952.18            | 952.18            |

Subsection: Time vs. Elevation  
 Label: Prop\_Basin (OUT)  
 Scenario: 10YR-24HR

Return Event: 10 years  
 Storm Event: 10YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 23.000          | 952.18            | 952.18            | 952.18            | 952.18            | 952.18            |
| 23.250          | 952.18            | 952.18            | 952.17            | 952.17            | 952.17            |
| 23.500          | 952.17            | 952.17            | 952.17            | 952.17            | 952.17            |
| 23.750          | 952.17            | 952.17            | 952.17            | 952.16            | 952.16            |
| 24.000          | 952.16            | (N/A)             | (N/A)             | (N/A)             | (N/A)             |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 3.000           | 947.31            | 947.31            | 947.32            | 947.33            | 947.34            |
| 3.250           | 947.35            | 947.36            | 947.38            | 947.39            | 947.40            |
| 3.500           | 947.42            | 947.44            | 947.45            | 947.47            | 947.49            |
| 3.750           | 947.51            | 947.53            | 947.55            | 947.57            | 947.58            |
| 4.000           | 947.60            | 947.62            | 947.64            | 947.67            | 947.69            |
| 4.250           | 947.71            | 947.73            | 947.75            | 947.77            | 947.79            |
| 4.500           | 947.80            | 947.81            | 947.82            | 947.82            | 947.83            |
| 4.750           | 947.84            | 947.85            | 947.85            | 947.86            | 947.87            |
| 5.000           | 947.89            | 947.90            | 947.91            | 947.92            | 947.94            |
| 5.250           | 947.95            | 947.97            | 947.99            | 948.01            | 948.02            |
| 5.500           | 948.03            | 948.04            | 948.05            | 948.07            | 948.09            |
| 5.750           | 948.10            | 948.12            | 948.14            | 948.16            | 948.18            |
| 6.000           | 948.21            | 948.23            | 948.26            | 948.28            | 948.31            |
| 6.250           | 948.32            | 948.34            | 948.36            | 948.38            | 948.40            |
| 6.500           | 948.42            | 948.44            | 948.46            | 948.49            | 948.51            |
| 6.750           | 948.52            | 948.54            | 948.56            | 948.57            | 948.59            |
| 7.000           | 948.61            | 948.63            | 948.65            | 948.67            | 948.69            |
| 7.250           | 948.71            | 948.73            | 948.76            | 948.78            | 948.80            |
| 7.500           | 948.82            | 948.83            | 948.84            | 948.86            | 948.88            |
| 7.750           | 948.89            | 948.91            | 948.92            | 948.94            | 948.96            |
| 8.000           | 948.98            | 949.00            | 949.01            | 949.03            | 949.05            |
| 8.250           | 949.07            | 949.09            | 949.11            | 949.14            | 949.16            |
| 8.500           | 949.18            | 949.21            | 949.23            | 949.26            | 949.28            |
| 8.750           | 949.31            | 949.32            | 949.34            | 949.36            | 949.38            |
| 9.000           | 949.40            | 949.42            | 949.45            | 949.47            | 949.49            |
| 9.250           | 949.52            | 949.54            | 949.56            | 949.59            | 949.62            |
| 9.500           | 949.64            | 949.67            | 949.70            | 949.73            | 949.76            |
| 9.750           | 949.79            | 949.81            | 949.84            | 949.86            | 949.88            |
| 10.000          | 949.91            | 949.93            | 949.96            | 949.98            | 950.01            |
| 10.250          | 950.04            | 950.07            | 950.10            | 950.13            | 950.16            |
| 10.500          | 950.19            | 950.23            | 950.26            | 950.30            | 950.33            |
| 10.750          | 950.37            | 950.40            | 950.44            | 950.48            | 950.52            |
| 11.000          | 950.56            | 950.61            | 950.65            | 950.70            | 950.75            |
| 11.250          | 950.81            | 950.86            | 950.91            | 950.96            | 951.02            |



Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**Time vs. Elevation (ft)**

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 11.500          | 951.09            | 951.15            | 951.23            | 951.31            | 951.40            |
| 11.750          | 951.52            | 951.66            | 951.84            | 952.07            | 952.36            |
| 12.000          | 952.68            | 953.03            | 953.39            | 953.73            | 954.04            |
| 12.250          | 954.33            | 954.58            | 954.80            | 954.99            | 955.14            |
| 12.500          | 955.25            | 955.33            | 955.38            | 955.40            | 955.39            |
| 12.750          | 955.35            | 955.30            | 955.23            | 955.15            | 955.07            |
| 13.000          | 954.98            | 954.88            | 954.79            | 954.70            | 954.61            |
| 13.250          | 954.52            | 954.43            | 954.34            | 954.26            | 954.18            |
| 13.500          | 954.11            | 954.03            | 953.96            | 953.90            | 953.83            |
| 13.750          | 953.78            | 953.72            | 953.66            | 953.61            | 953.56            |
| 14.000          | 953.51            | 953.47            | 953.43            | 953.39            | 953.35            |
| 14.250          | 953.32            | 953.28            | 953.25            | 953.22            | 953.19            |
| 14.500          | 953.16            | 953.13            | 953.10            | 953.08            | 953.05            |
| 14.750          | 953.03            | 953.01            | 952.99            | 952.97            | 952.95            |
| 15.000          | 952.94            | 952.92            | 952.90            | 952.89            | 952.88            |
| 15.250          | 952.86            | 952.85            | 952.84            | 952.83            | 952.82            |
| 15.500          | 952.81            | 952.80            | 952.79            | 952.78            | 952.77            |
| 15.750          | 952.76            | 952.75            | 952.74            | 952.73            | 952.72            |
| 16.000          | 952.71            | 952.71            | 952.70            | 952.69            | 952.68            |
| 16.250          | 952.67            | 952.66            | 952.66            | 952.65            | 952.64            |
| 16.500          | 952.64            | 952.63            | 952.62            | 952.61            | 952.61            |
| 16.750          | 952.60            | 952.60            | 952.59            | 952.58            | 952.58            |
| 17.000          | 952.57            | 952.57            | 952.56            | 952.56            | 952.55            |
| 17.250          | 952.55            | 952.54            | 952.54            | 952.53            | 952.53            |
| 17.500          | 952.53            | 952.52            | 952.52            | 952.51            | 952.51            |
| 17.750          | 952.51            | 952.50            | 952.50            | 952.50            | 952.49            |
| 18.000          | 952.49            | 952.49            | 952.48            | 952.48            | 952.48            |
| 18.250          | 952.47            | 952.47            | 952.47            | 952.47            | 952.46            |
| 18.500          | 952.46            | 952.46            | 952.45            | 952.45            | 952.45            |
| 18.750          | 952.45            | 952.44            | 952.44            | 952.44            | 952.44            |
| 19.000          | 952.43            | 952.43            | 952.43            | 952.43            | 952.42            |
| 19.250          | 952.42            | 952.42            | 952.42            | 952.41            | 952.41            |
| 19.500          | 952.41            | 952.41            | 952.40            | 952.40            | 952.40            |
| 19.750          | 952.40            | 952.39            | 952.39            | 952.39            | 952.39            |
| 20.000          | 952.38            | 952.38            | 952.38            | 952.38            | 952.37            |
| 20.250          | 952.37            | 952.37            | 952.37            | 952.37            | 952.36            |
| 20.500          | 952.36            | 952.36            | 952.36            | 952.35            | 952.35            |
| 20.750          | 952.35            | 952.35            | 952.35            | 952.35            | 952.34            |
| 21.000          | 952.34            | 952.34            | 952.34            | 952.34            | 952.34            |
| 21.250          | 952.33            | 952.33            | 952.33            | 952.33            | 952.33            |
| 21.500          | 952.33            | 952.33            | 952.33            | 952.33            | 952.32            |
| 21.750          | 952.32            | 952.32            | 952.32            | 952.32            | 952.32            |
| 22.000          | 952.32            | 952.32            | 952.32            | 952.32            | 952.32            |
| 22.250          | 952.32            | 952.31            | 952.31            | 952.31            | 952.31            |
| 22.500          | 952.31            | 952.31            | 952.31            | 952.31            | 952.31            |
| 22.750          | 952.31            | 952.31            | 952.31            | 952.31            | 952.31            |

Subsection: Time vs. Elevation  
 Label: Prop\_Basin (OUT)  
 Scenario: 50YR-24HR

Return Event: 50 years  
 Storm Event: 50YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 23.000          | 952.31            | 952.31            | 952.30            | 952.30            | 952.30            |
| 23.250          | 952.30            | 952.30            | 952.30            | 952.30            | 952.30            |
| 23.500          | 952.30            | 952.30            | 952.30            | 952.30            | 952.30            |
| 23.750          | 952.30            | 952.30            | 952.30            | 952.30            | 952.30            |
| 24.000          | 952.29            | (N/A)             | (N/A)             | (N/A)             | (N/A)             |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 0.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 0.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.500           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 1.750           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.000           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.250           | 947.30            | 947.30            | 947.30            | 947.30            | 947.30            |
| 2.500           | 947.30            | 947.30            | 947.30            | 947.31            | 947.31            |
| 2.750           | 947.32            | 947.33            | 947.34            | 947.35            | 947.36            |
| 3.000           | 947.38            | 947.39            | 947.41            | 947.43            | 947.45            |
| 3.250           | 947.47            | 947.49            | 947.51            | 947.54            | 947.56            |
| 3.500           | 947.58            | 947.61            | 947.63            | 947.65            | 947.68            |
| 3.750           | 947.70            | 947.73            | 947.75            | 947.78            | 947.80            |
| 4.000           | 947.81            | 947.81            | 947.82            | 947.83            | 947.84            |
| 4.250           | 947.85            | 947.85            | 947.86            | 947.88            | 947.89            |
| 4.500           | 947.90            | 947.91            | 947.93            | 947.94            | 947.96            |
| 4.750           | 947.98            | 948.00            | 948.01            | 948.02            | 948.03            |
| 5.000           | 948.04            | 948.06            | 948.07            | 948.09            | 948.11            |
| 5.250           | 948.13            | 948.15            | 948.17            | 948.19            | 948.22            |
| 5.500           | 948.25            | 948.27            | 948.30            | 948.32            | 948.34            |
| 5.750           | 948.36            | 948.38            | 948.40            | 948.42            | 948.44            |
| 6.000           | 948.47            | 948.49            | 948.51            | 948.53            | 948.55            |
| 6.250           | 948.56            | 948.58            | 948.60            | 948.62            | 948.64            |
| 6.500           | 948.67            | 948.69            | 948.71            | 948.73            | 948.76            |
| 6.750           | 948.78            | 948.80            | 948.82            | 948.84            | 948.85            |
| 7.000           | 948.87            | 948.89            | 948.90            | 948.92            | 948.94            |
| 7.250           | 948.96            | 948.98            | 949.00            | 949.02            | 949.04            |
| 7.500           | 949.06            | 949.08            | 949.10            | 949.12            | 949.15            |
| 7.750           | 949.17            | 949.19            | 949.22            | 949.24            | 949.27            |
| 8.000           | 949.29            | 949.31            | 949.33            | 949.35            | 949.36            |
| 8.250           | 949.38            | 949.40            | 949.42            | 949.44            | 949.46            |
| 8.500           | 949.48            | 949.50            | 949.52            | 949.55            | 949.57            |
| 8.750           | 949.59            | 949.62            | 949.64            | 949.67            | 949.70            |
| 9.000           | 949.72            | 949.75            | 949.78            | 949.81            | 949.83            |
| 9.250           | 949.86            | 949.88            | 949.90            | 949.93            | 949.95            |
| 9.500           | 949.98            | 950.01            | 950.03            | 950.06            | 950.09            |
| 9.750           | 950.12            | 950.15            | 950.18            | 950.21            | 950.24            |
| 10.000          | 950.27            | 950.30            | 950.33            | 950.36            | 950.39            |
| 10.250          | 950.42            | 950.46            | 950.49            | 950.52            | 950.56            |
| 10.500          | 950.60            | 950.63            | 950.67            | 950.71            | 950.76            |
| 10.750          | 950.80            | 950.84            | 950.88            | 950.93            | 950.97            |
| 11.000          | 951.02            | 951.07            | 951.12            | 951.18            | 951.24            |
| 11.250          | 951.30            | 951.35            | 951.42            | 951.48            | 951.55            |

Subsection: Time vs. Elevation  
Label: Prop\_Basin (OUT)  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 11.500          | 951.63            | 951.70            | 951.79            | 951.88            | 951.99            |
| 11.750          | 952.12            | 952.28            | 952.47            | 952.71            | 953.00            |
| 12.000          | 953.33            | 953.68            | 954.04            | 954.38            | 954.69            |
| 12.250          | 954.96            | 955.21            | 955.42            | 955.60            | 955.74            |
| 12.500          | 955.84            | 955.90            | 955.94            | 955.93            | 955.90            |
| 12.750          | 955.85            | 955.77            | 955.68            | 955.58            | 955.47            |
| 13.000          | 955.37            | 955.25            | 955.14            | 955.03            | 954.92            |
| 13.250          | 954.82            | 954.71            | 954.61            | 954.52            | 954.43            |
| 13.500          | 954.34            | 954.26            | 954.17            | 954.10            | 954.03            |
| 13.750          | 953.96            | 953.89            | 953.83            | 953.78            | 953.72            |
| 14.000          | 953.67            | 953.62            | 953.57            | 953.53            | 953.48            |
| 14.250          | 953.44            | 953.41            | 953.37            | 953.34            | 953.30            |
| 14.500          | 953.27            | 953.24            | 953.21            | 953.19            | 953.16            |
| 14.750          | 953.14            | 953.11            | 953.09            | 953.07            | 953.05            |
| 15.000          | 953.03            | 953.01            | 953.00            | 952.98            | 952.96            |
| 15.250          | 952.95            | 952.94            | 952.92            | 952.91            | 952.90            |
| 15.500          | 952.89            | 952.87            | 952.86            | 952.85            | 952.84            |
| 15.750          | 952.83            | 952.83            | 952.82            | 952.81            | 952.80            |
| 16.000          | 952.79            | 952.78            | 952.77            | 952.77            | 952.76            |
| 16.250          | 952.75            | 952.74            | 952.73            | 952.73            | 952.72            |
| 16.500          | 952.71            | 952.70            | 952.70            | 952.69            | 952.68            |
| 16.750          | 952.68            | 952.67            | 952.66            | 952.66            | 952.65            |
| 17.000          | 952.64            | 952.64            | 952.63            | 952.63            | 952.62            |
| 17.250          | 952.62            | 952.61            | 952.61            | 952.60            | 952.60            |
| 17.500          | 952.59            | 952.59            | 952.58            | 952.58            | 952.58            |
| 17.750          | 952.57            | 952.57            | 952.56            | 952.56            | 952.56            |
| 18.000          | 952.55            | 952.55            | 952.55            | 952.54            | 952.54            |
| 18.250          | 952.54            | 952.53            | 952.53            | 952.53            | 952.52            |
| 18.500          | 952.52            | 952.52            | 952.51            | 952.51            | 952.51            |
| 18.750          | 952.50            | 952.50            | 952.50            | 952.49            | 952.49            |
| 19.000          | 952.49            | 952.49            | 952.48            | 952.48            | 952.48            |
| 19.250          | 952.47            | 952.47            | 952.47            | 952.47            | 952.46            |
| 19.500          | 952.46            | 952.46            | 952.45            | 952.45            | 952.45            |
| 19.750          | 952.45            | 952.44            | 952.44            | 952.44            | 952.43            |
| 20.000          | 952.43            | 952.43            | 952.43            | 952.42            | 952.42            |
| 20.250          | 952.42            | 952.42            | 952.41            | 952.41            | 952.41            |
| 20.500          | 952.41            | 952.40            | 952.40            | 952.40            | 952.40            |
| 20.750          | 952.39            | 952.39            | 952.39            | 952.39            | 952.39            |
| 21.000          | 952.38            | 952.38            | 952.38            | 952.38            | 952.38            |
| 21.250          | 952.38            | 952.37            | 952.37            | 952.37            | 952.37            |
| 21.500          | 952.37            | 952.37            | 952.37            | 952.36            | 952.36            |
| 21.750          | 952.36            | 952.36            | 952.36            | 952.36            | 952.36            |
| 22.000          | 952.36            | 952.36            | 952.36            | 952.35            | 952.35            |
| 22.250          | 952.35            | 952.35            | 952.35            | 952.35            | 952.35            |
| 22.500          | 952.35            | 952.35            | 952.35            | 952.35            | 952.35            |
| 22.750          | 952.34            | 952.34            | 952.34            | 952.34            | 952.34            |

Subsection: Time vs. Elevation  
 Label: Prop\_Basin (OUT)  
 Scenario: 100YR-24HR

Return Event: 100 years  
 Storm Event: 100YR-24HR

### Time vs. Elevation (ft)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) | Elevation<br>(ft) |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 23.000          | 952.34            | 952.34            | 952.34            | 952.34            | 952.34            |
| 23.250          | 952.34            | 952.34            | 952.34            | 952.34            | 952.34            |
| 23.500          | 952.34            | 952.33            | 952.33            | 952.33            | 952.33            |
| 23.750          | 952.33            | 952.33            | 952.33            | 952.33            | 952.33            |
| 24.000          | 952.33            | (N/A)             | (N/A)             | (N/A)             | (N/A)             |

Subsection: Time vs. Volume  
 Label: Prop\_Basin  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 5.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 5.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 5.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 5.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 6.000           | 0                            | 0                            | 0                            | 1                            | 1                            |
| 6.250           | 1                            | 1                            | 2                            | 2                            | 3                            |
| 6.500           | 4                            | 5                            | 6                            | 7                            | 9                            |
| 6.750           | 10                           | 12                           | 14                           | 17                           | 19                           |
| 7.000           | 22                           | 25                           | 29                           | 33                           | 37                           |
| 7.250           | 42                           | 47                           | 53                           | 59                           | 66                           |
| 7.500           | 73                           | 81                           | 89                           | 98                           | 107                          |
| 7.750           | 118                          | 129                          | 140                          | 153                          | 166                          |
| 8.000           | 180                          | 195                          | 211                          | 228                          | 247                          |
| 8.250           | 267                          | 291                          | 317                          | 347                          | 367                          |
| 8.500           | 376                          | 387                          | 399                          | 413                          | 430                          |
| 8.750           | 449                          | 472                          | 498                          | 528                          | 563                          |
| 9.000           | 605                          | 653                          | 710                          | 776                          | 852                          |
| 9.250           | 941                          | 1,017                        | 1,070                        | 1,130                        | 1,196                        |
| 9.500           | 1,268                        | 1,348                        | 1,437                        | 1,535                        | 1,643                        |
| 9.750           | 1,764                        | 1,898                        | 2,048                        | 2,215                        | 2,402                        |
| 10.000          | 2,611                        | 2,845                        | 3,065                        | 3,230                        | 3,412                        |
| 10.250          | 3,613                        | 3,836                        | 4,083                        | 4,356                        | 4,660                        |
| 10.500          | 4,997                        | 5,371                        | 5,636                        | 5,927                        | 6,247                        |
| 10.750          | 6,599                        | 6,988                        | 7,418                        | 7,893                        | 8,420                        |
| 11.000          | 9,004                        | 9,654                        | 10,377                       | 11,064                       | 11,591                       |
| 11.250          | 12,176                       | 12,827                       | 13,556                       | 14,371                       | 15,287                       |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 11.500          | 16,319                       | 17,494                       | 18,870                       | 20,584                       | 22,846                       |
| 11.750          | 26,007                       | 29,113                       | 33,328                       | 39,580                       | 48,876                       |
| 12.000          | 59,103                       | 71,766                       | 86,222                       | 100,416                      | 115,530                      |
| 12.250          | 130,645                      | 145,782                      | 161,218                      | 176,174                      | 190,804                      |
| 12.500          | 205,102                      | 218,553                      | 231,079                      | 242,381                      | 252,441                      |
| 12.750          | 261,093                      | 268,379                      | 274,495                      | 279,583                      | 283,780                      |
| 13.000          | 287,211                      | 289,964                      | 292,127                      | 293,771                      | 294,970                      |
| 13.250          | 295,783                      | 296,268                      | 296,474                      | 296,442                      | 296,207                      |
| 13.500          | 295,803                      | 295,258                      | 294,595                      | 293,837                      | 293,000                      |
| 13.750          | 292,102                      | 291,153                      | 290,166                      | 289,149                      | 288,113                      |
| 14.000          | 287,063                      | 286,005                      | 284,945                      | 283,886                      | 282,833                      |
| 14.250          | 281,789                      | 280,757                      | 279,739                      | 278,737                      | 277,754                      |
| 14.500          | 276,790                      | 275,850                      | 274,934                      | 274,045                      | 273,184                      |
| 14.750          | 272,353                      | 271,549                      | 270,774                      | 270,026                      | 269,305                      |
| 15.000          | 268,610                      | 267,940                      | 267,294                      | 266,671                      | 266,070                      |
| 15.250          | 265,490                      | 264,930                      | 264,388                      | 263,865                      | 263,359                      |
| 15.500          | 262,869                      | 262,395                      | 261,935                      | 261,488                      | 261,055                      |
| 15.750          | 260,633                      | 260,223                      | 259,824                      | 259,434                      | 259,055                      |
| 16.000          | 258,684                      | 258,321                      | 257,966                      | 257,620                      | 257,281                      |
| 16.250          | 256,950                      | 256,627                      | 256,311                      | 256,004                      | 255,705                      |
| 16.500          | 255,411                      | 255,115                      | 254,818                      | 254,523                      | 254,228                      |
| 16.750          | 253,935                      | 253,644                      | 253,354                      | 253,067                      | 252,783                      |
| 17.000          | 252,501                      | 252,222                      | 251,946                      | 251,672                      | 251,402                      |
| 17.250          | 251,134                      | 250,869                      | 250,607                      | 250,348                      | 250,091                      |
| 17.500          | 249,837                      | 249,586                      | 249,337                      | 249,091                      | 248,848                      |
| 17.750          | 248,607                      | 248,368                      | 248,132                      | 247,898                      | 247,666                      |
| 18.000          | 247,436                      | 247,209                      | 246,983                      | 246,759                      | 246,538                      |
| 18.250          | 246,318                      | 246,099                      | 245,883                      | 245,668                      | 245,455                      |
| 18.500          | 245,243                      | 245,032                      | 244,824                      | 244,616                      | 244,410                      |
| 18.750          | 244,205                      | 244,001                      | 243,798                      | 243,597                      | 243,397                      |
| 19.000          | 243,198                      | 243,000                      | 242,802                      | 242,606                      | 242,411                      |
| 19.250          | 242,217                      | 242,024                      | 241,831                      | 241,639                      | 241,448                      |
| 19.500          | 241,258                      | 241,069                      | 240,880                      | 240,692                      | 240,505                      |
| 19.750          | 240,318                      | 240,131                      | 239,946                      | 239,761                      | 239,576                      |
| 20.000          | 239,392                      | 239,208                      | 239,025                      | 238,843                      | 238,661                      |
| 20.250          | 238,480                      | 238,301                      | 238,123                      | 237,947                      | 237,773                      |
| 20.500          | 237,601                      | 237,431                      | 237,263                      | 237,098                      | 236,936                      |
| 20.750          | 236,777                      | 236,620                      | 236,467                      | 236,316                      | 236,169                      |
| 21.000          | 236,024                      | 235,883                      | 235,745                      | 235,610                      | 235,477                      |
| 21.250          | 235,348                      | 235,221                      | 235,098                      | 234,977                      | 234,858                      |
| 21.500          | 234,743                      | 234,629                      | 234,519                      | 234,410                      | 234,305                      |
| 21.750          | 234,201                      | 234,099                      | 234,000                      | 233,903                      | 233,808                      |
| 22.000          | 233,715                      | 233,624                      | 233,534                      | 233,447                      | 233,361                      |
| 22.250          | 233,277                      | 233,194                      | 233,114                      | 233,034                      | 232,956                      |
| 22.500          | 232,880                      | 232,805                      | 232,731                      | 232,659                      | 232,588                      |
| 22.750          | 232,518                      | 232,449                      | 232,382                      | 232,316                      | 232,250                      |

Subsection: Time vs. Volume  
 Label: Prop\_Basin  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 23.000          | 232,186                      | 232,123                      | 232,061                      | 231,999                      | 231,939                      |
| 23.250          | 231,879                      | 231,821                      | 231,763                      | 231,706                      | 231,650                      |
| 23.500          | 231,594                      | 231,540                      | 231,486                      | 231,432                      | 231,380                      |
| 23.750          | 231,328                      | 231,276                      | 231,225                      | 231,175                      | 231,125                      |
| 24.000          | 231,075                      | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |



Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 4.250           | 0                            | 0                            | 0                            | 0                            | 1                            |
| 4.500           | 1                            | 2                            | 2                            | 3                            | 5                            |
| 4.750           | 6                            | 8                            | 10                           | 13                           | 16                           |
| 5.000           | 20                           | 25                           | 30                           | 36                           | 43                           |
| 5.250           | 51                           | 59                           | 69                           | 80                           | 93                           |
| 5.500           | 106                          | 122                          | 138                          | 156                          | 176                          |
| 5.750           | 198                          | 222                          | 248                          | 276                          | 306                          |
| 6.000           | 338                          | 365                          | 374                          | 384                          | 395                          |
| 6.250           | 407                          | 421                          | 435                          | 451                          | 469                          |
| 6.500           | 489                          | 510                          | 535                          | 562                          | 593                          |
| 6.750           | 628                          | 668                          | 714                          | 767                          | 827                          |
| 7.000           | 897                          | 977                          | 1,028                        | 1,076                        | 1,129                        |
| 7.250           | 1,188                        | 1,253                        | 1,325                        | 1,405                        | 1,493                        |
| 7.500           | 1,590                        | 1,696                        | 1,813                        | 1,942                        | 2,083                        |
| 7.750           | 2,238                        | 2,407                        | 2,591                        | 2,793                        | 3,012                        |
| 8.000           | 3,148                        | 3,293                        | 3,450                        | 3,618                        | 3,799                        |
| 8.250           | 3,994                        | 4,204                        | 4,432                        | 4,679                        | 4,947                        |
| 8.500           | 5,237                        | 5,486                        | 5,702                        | 5,934                        | 6,184                        |
| 8.750           | 6,452                        | 6,740                        | 7,050                        | 7,384                        | 7,742                        |
| 9.000           | 8,128                        | 8,543                        | 8,989                        | 9,468                        | 9,982                        |
| 9.250           | 10,532                       | 11,025                       | 11,390                       | 11,776                       | 12,182                       |
| 9.500           | 12,609                       | 13,058                       | 13,530                       | 14,025                       | 14,547                       |
| 9.750           | 15,096                       | 15,676                       | 16,288                       | 16,934                       | 17,614                       |
| 10.000          | 18,331                       | 19,089                       | 19,891                       | 20,740                       | 21,642                       |
| 10.250          | 22,600                       | 23,620                       | 24,709                       | 25,871                       | 26,911                       |
| 10.500          | 27,764                       | 28,670                       | 29,635                       | 30,663                       | 31,761                       |
| 10.750          | 32,934                       | 34,190                       | 35,536                       | 36,981                       | 38,532                       |
| 11.000          | 40,201                       | 41,997                       | 43,935                       | 46,031                       | 48,304                       |
| 11.250          | 50,780                       | 52,746                       | 54,883                       | 57,211                       | 59,753                       |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 11.500          | 62,535                       | 65,604                       | 69,030                       | 73,043                       | 77,959                       |
| 11.750          | 84,234                       | 91,440                       | 101,080                      | 114,203                      | 130,963                      |
| 12.000          | 151,694                      | 175,953                      | 202,691                      | 230,852                      | 258,961                      |
| 12.250          | 286,157                      | 312,026                      | 335,861                      | 357,586                      | 376,407                      |
| 12.500          | 392,561                      | 405,795                      | 415,936                      | 423,303                      | 428,110                      |
| 12.750          | 430,692                      | 431,363                      | 430,523                      | 428,496                      | 425,566                      |
| 13.000          | 421,980                      | 417,895                      | 413,463                      | 408,795                      | 403,999                      |
| 13.250          | 399,015                      | 393,981                      | 388,971                      | 384,033                      | 379,199                      |
| 13.500          | 374,499                      | 369,953                      | 365,576                      | 361,379                      | 357,364                      |
| 13.750          | 353,535                      | 349,793                      | 346,166                      | 342,676                      | 339,324                      |
| 14.000          | 336,109                      | 333,029                      | 330,081                      | 327,263                      | 324,571                      |
| 14.250          | 322,001                      | 319,549                      | 317,211                      | 314,982                      | 312,859                      |
| 14.500          | 310,839                      | 308,921                      | 307,103                      | 305,382                      | 303,757                      |
| 14.750          | 302,179                      | 300,651                      | 299,179                      | 297,761                      | 296,397                      |
| 15.000          | 295,084                      | 293,821                      | 292,604                      | 291,433                      | 290,305                      |
| 15.250          | 289,218                      | 288,170                      | 287,160                      | 286,185                      | 285,243                      |
| 15.500          | 284,332                      | 283,452                      | 282,600                      | 281,775                      | 280,974                      |
| 15.750          | 280,198                      | 279,444                      | 278,710                      | 277,997                      | 277,301                      |
| 16.000          | 276,624                      | 275,963                      | 275,317                      | 274,687                      | 274,072                      |
| 16.250          | 273,472                      | 272,887                      | 272,317                      | 271,763                      | 271,223                      |
| 16.500          | 270,698                      | 270,189                      | 269,695                      | 269,216                      | 268,751                      |
| 16.750          | 268,302                      | 267,867                      | 267,447                      | 267,040                      | 266,647                      |
| 17.000          | 266,267                      | 265,900                      | 265,544                      | 265,201                      | 264,868                      |
| 17.250          | 264,545                      | 264,233                      | 263,930                      | 263,636                      | 263,351                      |
| 17.500          | 263,074                      | 262,805                      | 262,543                      | 262,288                      | 262,039                      |
| 17.750          | 261,797                      | 261,561                      | 261,330                      | 261,104                      | 260,883                      |
| 18.000          | 260,667                      | 260,455                      | 260,248                      | 260,044                      | 259,844                      |
| 18.250          | 259,647                      | 259,453                      | 259,263                      | 259,075                      | 258,890                      |
| 18.500          | 258,707                      | 258,526                      | 258,348                      | 258,172                      | 257,997                      |
| 18.750          | 257,825                      | 257,654                      | 257,485                      | 257,317                      | 257,150                      |
| 19.000          | 256,985                      | 256,822                      | 256,659                      | 256,497                      | 256,337                      |
| 19.250          | 256,177                      | 256,018                      | 255,861                      | 255,704                      | 255,547                      |
| 19.500          | 255,388                      | 255,224                      | 255,056                      | 254,884                      | 254,708                      |
| 19.750          | 254,529                      | 254,347                      | 254,160                      | 253,971                      | 253,778                      |
| 20.000          | 253,582                      | 253,384                      | 253,182                      | 252,978                      | 252,772                      |
| 20.250          | 252,565                      | 252,356                      | 252,146                      | 251,937                      | 251,727                      |
| 20.500          | 251,519                      | 251,311                      | 251,104                      | 250,900                      | 250,697                      |
| 20.750          | 250,497                      | 250,300                      | 250,105                      | 249,914                      | 249,725                      |
| 21.000          | 249,540                      | 249,358                      | 249,179                      | 249,003                      | 248,831                      |
| 21.250          | 248,662                      | 248,496                      | 248,333                      | 248,173                      | 248,016                      |
| 21.500          | 247,862                      | 247,711                      | 247,563                      | 247,418                      | 247,275                      |
| 21.750          | 247,135                      | 246,998                      | 246,863                      | 246,730                      | 246,600                      |
| 22.000          | 246,472                      | 246,347                      | 246,223                      | 246,102                      | 245,983                      |
| 22.250          | 245,866                      | 245,750                      | 245,637                      | 245,525                      | 245,415                      |
| 22.500          | 245,307                      | 245,200                      | 245,095                      | 244,992                      | 244,890                      |
| 22.750          | 244,789                      | 244,690                      | 244,592                      | 244,496                      | 244,401                      |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 23.000          | 244,307                      | 244,214                      | 244,122                      | 244,032                      | 243,942                      |
| 23.250          | 243,854                      | 243,766                      | 243,680                      | 243,594                      | 243,510                      |
| 23.500          | 243,426                      | 243,343                      | 243,262                      | 243,180                      | 243,100                      |
| 23.750          | 243,020                      | 242,941                      | 242,863                      | 242,785                      | 242,709                      |
| 24.000          | 242,631                      | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 3.250           | 0                            | 1                            | 1                            | 2                            | 3                            |
| 3.500           | 5                            | 7                            | 11                           | 15                           | 20                           |
| 3.750           | 26                           | 34                           | 43                           | 54                           | 67                           |
| 4.000           | 82                           | 99                           | 119                          | 141                          | 166                          |
| 4.250           | 194                          | 226                          | 262                          | 301                          | 345                          |
| 4.500           | 370                          | 382                          | 396                          | 412                          | 430                          |
| 4.750           | 450                          | 471                          | 495                          | 521                          | 550                          |
| 5.000           | 582                          | 617                          | 657                          | 701                          | 752                          |
| 5.250           | 810                          | 877                          | 955                          | 1,018                        | 1,065                        |
| 5.500           | 1,119                        | 1,179                        | 1,248                        | 1,325                        | 1,412                        |
| 5.750           | 1,509                        | 1,619                        | 1,742                        | 1,879                        | 2,033                        |
| 6.000           | 2,205                        | 2,396                        | 2,609                        | 2,846                        | 3,067                        |
| 6.250           | 3,231                        | 3,409                        | 3,604                        | 3,814                        | 4,043                        |
| 6.500           | 4,291                        | 4,559                        | 4,850                        | 5,164                        | 5,455                        |
| 6.750           | 5,687                        | 5,934                        | 6,197                        | 6,476                        | 6,773                        |
| 7.000           | 7,088                        | 7,422                        | 7,777                        | 8,153                        | 8,552                        |
| 7.250           | 8,974                        | 9,422                        | 9,895                        | 10,397                       | 10,912                       |
| 7.500           | 11,240                       | 11,584                       | 11,944                       | 12,321                       | 12,715                       |
| 7.750           | 13,128                       | 13,560                       | 14,012                       | 14,485                       | 14,979                       |
| 8.000           | 15,495                       | 16,035                       | 16,598                       | 17,185                       | 17,797                       |
| 8.250           | 18,436                       | 19,104                       | 19,805                       | 20,539                       | 21,310                       |
| 8.500           | 22,121                       | 22,974                       | 23,873                       | 24,821                       | 25,821                       |
| 8.750           | 26,759                       | 27,477                       | 28,231                       | 29,024                       | 29,858                       |
| 9.000           | 30,734                       | 31,656                       | 32,625                       | 33,643                       | 34,710                       |
| 9.250           | 35,829                       | 36,999                       | 38,221                       | 39,497                       | 40,827                       |
| 9.500           | 42,212                       | 43,653                       | 45,151                       | 46,709                       | 48,331                       |
| 9.750           | 50,020                       | 51,510                       | 52,846                       | 54,235                       | 55,682                       |
| 10.000          | 57,191                       | 58,766                       | 60,412                       | 62,137                       | 63,943                       |
| 10.250          | 65,824                       | 67,780                       | 69,818                       | 71,941                       | 74,156                       |
| 10.500          | 76,468                       | 78,883                       | 81,408                       | 84,044                       | 86,452                       |
| 10.750          | 88,974                       | 91,622                       | 94,402                       | 97,324                       | 100,397                      |
| 11.000          | 103,631                      | 107,037                      | 110,630                      | 114,427                      | 118,449                      |
| 11.250          | 122,671                      | 126,770                      | 131,142                      | 135,811                      | 140,802                      |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 11.500          | 146,118                      | 151,832                      | 158,103                      | 165,255                      | 173,415                      |
| 11.750          | 183,576                      | 196,517                      | 213,180                      | 234,372                      | 260,791                      |
| 12.000          | 291,947                      | 326,229                      | 361,701                      | 396,263                      | 428,347                      |
| 12.250          | 458,168                      | 484,846                      | 508,709                      | 528,918                      | 545,540                      |
| 12.500          | 558,500                      | 567,506                      | 572,745                      | 574,538                      | 573,246                      |
| 12.750          | 569,401                      | 563,478                      | 555,838                      | 547,104                      | 537,673                      |
| 13.000          | 527,882                      | 517,917                      | 507,939                      | 497,802                      | 487,847                      |
| 13.250          | 478,156                      | 468,808                      | 459,846                      | 451,176                      | 442,770                      |
| 13.500          | 434,755                      | 427,141                      | 419,930                      | 413,125                      | 406,710                      |
| 13.750          | 400,593                      | 394,705                      | 389,119                      | 383,826                      | 378,817                      |
| 14.000          | 374,081                      | 369,606                      | 365,380                      | 361,390                      | 357,625                      |
| 14.250          | 354,072                      | 350,656                      | 347,354                      | 344,196                      | 341,178                      |
| 14.500          | 338,299                      | 335,556                      | 332,950                      | 330,480                      | 328,141                      |
| 14.750          | 325,931                      | 323,841                      | 321,867                      | 320,000                      | 318,236                      |
| 15.000          | 316,567                      | 314,988                      | 313,493                      | 312,077                      | 310,733                      |
| 15.250          | 309,458                      | 308,246                      | 307,092                      | 305,993                      | 304,945                      |
| 15.500          | 303,944                      | 302,972                      | 302,011                      | 301,070                      | 300,147                      |
| 15.750          | 299,242                      | 298,354                      | 297,482                      | 296,625                      | 295,782                      |
| 16.000          | 294,953                      | 294,136                      | 293,332                      | 292,540                      | 291,761                      |
| 16.250          | 290,995                      | 290,243                      | 289,505                      | 288,783                      | 288,076                      |
| 16.500          | 287,385                      | 286,710                      | 286,052                      | 285,411                      | 284,788                      |
| 16.750          | 284,182                      | 283,594                      | 283,023                      | 282,469                      | 281,931                      |
| 17.000          | 281,410                      | 280,904                      | 280,413                      | 279,937                      | 279,475                      |
| 17.250          | 279,026                      | 278,589                      | 278,165                      | 277,752                      | 277,351                      |
| 17.500          | 276,959                      | 276,578                      | 276,206                      | 275,843                      | 275,488                      |
| 17.750          | 275,142                      | 274,803                      | 274,471                      | 274,146                      | 273,827                      |
| 18.000          | 273,514                      | 273,207                      | 272,906                      | 272,609                      | 272,317                      |
| 18.250          | 272,030                      | 271,747                      | 271,468                      | 271,192                      | 270,920                      |
| 18.500          | 270,651                      | 270,385                      | 270,122                      | 269,861                      | 269,603                      |
| 18.750          | 269,347                      | 269,094                      | 268,843                      | 268,593                      | 268,346                      |
| 19.000          | 268,100                      | 267,856                      | 267,614                      | 267,373                      | 267,133                      |
| 19.250          | 266,895                      | 266,657                      | 266,421                      | 266,187                      | 265,953                      |
| 19.500          | 265,720                      | 265,488                      | 265,256                      | 265,026                      | 264,796                      |
| 19.750          | 264,566                      | 264,338                      | 264,110                      | 263,882                      | 263,655                      |
| 20.000          | 263,428                      | 263,201                      | 262,976                      | 262,751                      | 262,527                      |
| 20.250          | 262,306                      | 262,086                      | 261,869                      | 261,656                      | 261,446                      |
| 20.500          | 261,240                      | 261,038                      | 260,841                      | 260,649                      | 260,463                      |
| 20.750          | 260,281                      | 260,106                      | 259,936                      | 259,772                      | 259,613                      |
| 21.000          | 259,460                      | 259,312                      | 259,170                      | 259,032                      | 258,900                      |
| 21.250          | 258,772                      | 258,649                      | 258,530                      | 258,415                      | 258,304                      |
| 21.500          | 258,197                      | 258,093                      | 257,993                      | 257,897                      | 257,803                      |
| 21.750          | 257,712                      | 257,624                      | 257,539                      | 257,456                      | 257,376                      |
| 22.000          | 257,297                      | 257,221                      | 257,147                      | 257,075                      | 257,004                      |
| 22.250          | 256,935                      | 256,868                      | 256,802                      | 256,737                      | 256,674                      |
| 22.500          | 256,612                      | 256,551                      | 256,491                      | 256,432                      | 256,374                      |
| 22.750          | 256,317                      | 256,261                      | 256,206                      | 256,151                      | 256,097                      |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**Time vs. Volume (ft<sup>3</sup>)**

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 23.000          | 256,044                      | 255,991                      | 255,939                      | 255,887                      | 255,836                      |
| 23.250          | 255,786                      | 255,736                      | 255,686                      | 255,637                      | 255,588                      |
| 23.500          | 255,539                      | 255,491                      | 255,441                      | 255,390                      | 255,338                      |
| 23.750          | 255,285                      | 255,231                      | 255,176                      | 255,120                      | 255,062                      |
| 24.000          | 255,003                      | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 0.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 0.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 1.750           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.000           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.250           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.500           | 0                            | 0                            | 0                            | 0                            | 0                            |
| 2.750           | 0                            | 0                            | 0                            | 0                            | 1                            |
| 3.000           | 1                            | 2                            | 4                            | 7                            | 10                           |
| 3.250           | 14                           | 21                           | 28                           | 38                           | 50                           |
| 3.500           | 65                           | 82                           | 103                          | 127                          | 155                          |
| 3.750           | 187                          | 224                          | 265                          | 312                          | 362                          |
| 4.000           | 376                          | 391                          | 407                          | 426                          | 447                          |
| 4.250           | 469                          | 494                          | 522                          | 553                          | 587                          |
| 4.500           | 624                          | 666                          | 713                          | 767                          | 827                          |
| 4.750           | 897                          | 978                          | 1,030                        | 1,079                        | 1,135                        |
| 5.000           | 1,198                        | 1,270                        | 1,352                        | 1,444                        | 1,549                        |
| 5.250           | 1,667                        | 1,800                        | 1,950                        | 2,119                        | 2,309                        |
| 5.500           | 2,523                        | 2,762                        | 3,022                        | 3,191                        | 3,376                        |
| 5.750           | 3,579                        | 3,800                        | 4,042                        | 4,305                        | 4,592                        |
| 6.000           | 4,905                        | 5,245                        | 5,525                        | 5,778                        | 6,048                        |
| 6.250           | 6,336                        | 6,644                        | 6,972                        | 7,323                        | 7,696                        |
| 6.500           | 8,094                        | 8,517                        | 8,968                        | 9,448                        | 9,958                        |
| 6.750           | 10,500                       | 10,999                       | 11,356                       | 11,731                       | 12,125                       |
| 7.000           | 12,539                       | 12,973                       | 13,430                       | 13,909                       | 14,411                       |
| 7.250           | 14,938                       | 15,491                       | 16,070                       | 16,676                       | 17,308                       |
| 7.500           | 17,966                       | 18,652                       | 19,366                       | 20,110                       | 20,885                       |
| 7.750           | 21,691                       | 22,530                       | 23,403                       | 24,311                       | 25,256                       |
| 8.000           | 26,238                       | 27,006                       | 27,688                       | 28,394                       | 29,127                       |
| 8.250           | 29,888                       | 30,680                       | 31,504                       | 32,363                       | 33,260                       |
| 8.500           | 34,197                       | 35,177                       | 36,204                       | 37,280                       | 38,409                       |
| 8.750           | 39,593                       | 40,837                       | 42,144                       | 43,518                       | 44,963                       |
| 9.000           | 46,482                       | 48,080                       | 49,760                       | 51,323                       | 52,668                       |
| 9.250           | 54,071                       | 55,533                       | 57,053                       | 58,633                       | 60,273                       |
| 9.500           | 61,974                       | 63,735                       | 65,544                       | 67,397                       | 69,297                       |
| 9.750           | 71,246                       | 73,248                       | 75,306                       | 77,424                       | 79,606                       |
| 10.000          | 81,856                       | 84,158                       | 86,247                       | 88,408                       | 90,647                       |
| 10.250          | 92,969                       | 95,382                       | 97,890                       | 100,501                      | 103,222                      |
| 10.500          | 106,057                      | 109,016                      | 112,104                      | 115,333                      | 118,711                      |
| 10.750          | 122,246                      | 125,591                      | 129,099                      | 132,783                      | 136,654                      |
| 11.000          | 140,720                      | 144,973                      | 149,423                      | 154,089                      | 158,989                      |
| 11.250          | 164,150                      | 169,354                      | 174,834                      | 180,635                      | 186,785                      |

Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

### Time vs. Volume (ft<sup>3</sup>)

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 11.500          | 193,319                      | 200,333                      | 208,016                      | 216,564                      | 226,684                      |
| 11.750          | 238,831                      | 253,792                      | 272,013                      | 294,847                      | 322,611                      |
| 12.000          | 355,402                      | 391,138                      | 427,804                      | 463,467                      | 496,340                      |
| 12.250          | 526,439                      | 553,488                      | 576,999                      | 596,890                      | 612,930                      |
| 12.500          | 624,836                      | 632,405                      | 635,971                      | 635,729                      | 632,091                      |
| 12.750          | 625,687                      | 616,988                      | 606,572                      | 595,146                      | 583,163                      |
| 13.000          | 570,968                      | 558,581                      | 546,097                      | 533,844                      | 521,954                      |
| 13.250          | 510,501                      | 499,277                      | 488,492                      | 478,224                      | 468,488                      |
| 13.500          | 459,293                      | 450,490                      | 442,061                      | 434,104                      | 426,602                      |
| 13.750          | 419,545                      | 412,914                      | 406,692                      | 400,780                      | 395,104                      |
| 14.000          | 389,729                      | 384,643                      | 379,834                      | 375,288                      | 370,993                      |
| 14.250          | 366,936                      | 363,105                      | 359,487                      | 356,073                      | 352,851                      |
| 14.500          | 349,717                      | 346,717                      | 343,861                      | 341,148                      | 338,575                      |
| 14.750          | 336,139                      | 333,832                      | 331,649                      | 329,581                      | 327,625                      |
| 15.000          | 325,771                      | 324,015                      | 322,350                      | 320,770                      | 319,269                      |
| 15.250          | 317,842                      | 316,485                      | 315,191                      | 313,956                      | 312,777                      |
| 15.500          | 311,649                      | 310,569                      | 309,532                      | 308,536                      | 307,578                      |
| 15.750          | 306,654                      | 305,762                      | 304,899                      | 304,064                      | 303,251                      |
| 16.000          | 302,431                      | 301,617                      | 300,808                      | 300,007                      | 299,213                      |
| 16.250          | 298,427                      | 297,651                      | 296,886                      | 296,133                      | 295,392                      |
| 16.500          | 294,665                      | 293,952                      | 293,254                      | 292,572                      | 291,907                      |
| 16.750          | 291,258                      | 290,626                      | 290,010                      | 289,412                      | 288,830                      |
| 17.000          | 288,264                      | 287,714                      | 287,179                      | 286,659                      | 286,152                      |
| 17.250          | 285,660                      | 285,180                      | 284,712                      | 284,257                      | 283,812                      |
| 17.500          | 283,379                      | 282,955                      | 282,541                      | 282,137                      | 281,741                      |
| 17.750          | 281,354                      | 280,974                      | 280,602                      | 280,237                      | 279,878                      |
| 18.000          | 279,526                      | 279,180                      | 278,839                      | 278,504                      | 278,173                      |
| 18.250          | 277,847                      | 277,526                      | 277,208                      | 276,895                      | 276,585                      |
| 18.500          | 276,278                      | 275,974                      | 275,674                      | 275,376                      | 275,081                      |
| 18.750          | 274,788                      | 274,497                      | 274,209                      | 273,923                      | 273,639                      |
| 19.000          | 273,356                      | 273,076                      | 272,797                      | 272,519                      | 272,244                      |
| 19.250          | 271,969                      | 271,696                      | 271,423                      | 271,153                      | 270,883                      |
| 19.500          | 270,614                      | 270,346                      | 270,079                      | 269,812                      | 269,547                      |
| 19.750          | 269,282                      | 269,017                      | 268,753                      | 268,490                      | 268,227                      |
| 20.000          | 267,965                      | 267,703                      | 267,442                      | 267,181                      | 266,923                      |
| 20.250          | 266,666                      | 266,412                      | 266,161                      | 265,914                      | 265,670                      |
| 20.500          | 265,432                      | 265,198                      | 264,970                      | 264,748                      | 264,531                      |
| 20.750          | 264,321                      | 264,118                      | 263,921                      | 263,731                      | 263,547                      |
| 21.000          | 263,369                      | 263,198                      | 263,033                      | 262,874                      | 262,720                      |
| 21.250          | 262,572                      | 262,429                      | 262,291                      | 262,157                      | 262,029                      |
| 21.500          | 261,905                      | 261,785                      | 261,669                      | 261,556                      | 261,448                      |
| 21.750          | 261,342                      | 261,240                      | 261,141                      | 261,045                      | 260,952                      |
| 22.000          | 260,861                      | 260,773                      | 260,686                      | 260,602                      | 260,520                      |
| 22.250          | 260,440                      | 260,362                      | 260,285                      | 260,210                      | 260,137                      |
| 22.500          | 260,065                      | 259,994                      | 259,924                      | 259,856                      | 259,789                      |
| 22.750          | 259,722                      | 259,657                      | 259,593                      | 259,529                      | 259,467                      |



Subsection: Time vs. Volume  
Label: Prop\_Basin  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**Time vs. Volume (ft<sup>3</sup>)**

**Output Time increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) | Volume<br>(ft <sup>3</sup> ) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 23.000          | 259,405                      | 259,344                      | 259,283                      | 259,223                      | 259,164                      |
| 23.250          | 259,105                      | 259,047                      | 258,989                      | 258,932                      | 258,875                      |
| 23.500          | 258,819                      | 258,763                      | 258,707                      | 258,652                      | 258,597                      |
| 23.750          | 258,542                      | 258,487                      | 258,433                      | 258,379                      | 258,325                      |
| 24.000          | 258,270                      | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Elevation-Area Volume Curve

Label: Prop\_Basin

Scenario: 2YR-24HR

Return Event: 2 years

Storm Event: 2YR-24HR

| Elevation<br>(ft) | Planimeter<br>(ft <sup>2</sup> ) | Area<br>(acres) | A1+A2+sqr<br>(A1*A2)<br>(acres) | Volume<br>(ft <sup>3</sup> ) |
|-------------------|----------------------------------|-----------------|---------------------------------|------------------------------|
| 947.30            | 0.0                              | 0.00            | 0.00                            | 0                            |
| 948.00            | 0.0                              | 0.10            | 0.10                            | 994                          |
| 949.00            | 0.0                              | 0.69            | 1.04                            | 15,172                       |
| 950.00            | 0.0                              | 1.53            | 3.24                            | 47,076                       |
| 951.00            | 0.0                              | 1.95            | 5.20                            | 75,536                       |
| 952.00            | 0.0                              | 2.13            | 6.11                            | 88,687                       |
| 953.00            | 0.0                              | 2.25            | 6.57                            | 95,361                       |
| 954.00            | 0.0                              | 2.38            | 6.95                            | 100,977                      |
| 955.00            | 0.0                              | 2.52            | 7.35                            | 106,692                      |
| 955.50            | 0.0                              | 2.58            | 7.65                            | 55,522                       |
| 956.00            | 0.0                              | 2.70            | 7.92                            | 57,525                       |

Volume (Total)  
(ft<sup>3</sup>)

|         |
|---------|
| 0       |
| 994     |
| 16,166  |
| 63,243  |
| 138,779 |
| 227,466 |
| 322,827 |
| 423,804 |
| 530,496 |
| 586,018 |
| 643,543 |

Subsection: Volume Equations  
Label: Prop\_Basin  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

### **Pond Volume Equations**

**\* Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

|        |              |                                             |
|--------|--------------|---------------------------------------------|
| where: | EL1, EL2     | Lower and upper elevations of the increment |
|        | Area1, Area2 | Areas computed for EL1, EL2, respectively   |
|        | Volume       | Incremental volume between EL1 and EL2      |

Subsection: Elevation-Area Volume Curve

Label: Prop\_Basin

Scenario: 10YR-24HR

Return Event: 10 years

Storm Event: 10YR-24HR

| Elevation<br>(ft) | Planimeter<br>(ft <sup>2</sup> ) | Area<br>(acres) | A1+A2+sqr<br>(A1*A2)<br>(acres) | Volume<br>(ft <sup>3</sup> ) |
|-------------------|----------------------------------|-----------------|---------------------------------|------------------------------|
| 947.30            | 0.0                              | 0.00            | 0.00                            | 0                            |
| 948.00            | 0.0                              | 0.10            | 0.10                            | 994                          |
| 949.00            | 0.0                              | 0.69            | 1.04                            | 15,172                       |
| 950.00            | 0.0                              | 1.53            | 3.24                            | 47,076                       |
| 951.00            | 0.0                              | 1.95            | 5.20                            | 75,536                       |
| 952.00            | 0.0                              | 2.13            | 6.11                            | 88,687                       |
| 953.00            | 0.0                              | 2.25            | 6.57                            | 95,361                       |
| 954.00            | 0.0                              | 2.38            | 6.95                            | 100,977                      |
| 955.00            | 0.0                              | 2.52            | 7.35                            | 106,692                      |
| 955.50            | 0.0                              | 2.58            | 7.65                            | 55,522                       |
| 956.00            | 0.0                              | 2.70            | 7.92                            | 57,525                       |

Volume (Total)  
(ft<sup>3</sup>)

|         |
|---------|
| 0       |
| 994     |
| 16,166  |
| 63,243  |
| 138,779 |
| 227,466 |
| 322,827 |
| 423,804 |
| 530,496 |
| 586,018 |
| 643,543 |

Subsection: Volume Equations  
Label: Prop\_Basin  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

### **Pond Volume Equations**

**\* Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

|        |              |                                             |
|--------|--------------|---------------------------------------------|
| where: | EL1, EL2     | Lower and upper elevations of the increment |
|        | Area1, Area2 | Areas computed for EL1, EL2, respectively   |
|        | Volume       | Incremental volume between EL1 and EL2      |

Subsection: Elevation-Area Volume Curve

Label: Prop\_Basin

Scenario: 50YR-24HR

Return Event: 50 years

Storm Event: 50YR-24HR

| Elevation<br>(ft) | Planimeter<br>(ft <sup>2</sup> ) | Area<br>(acres) | A1+A2+sqr<br>(A1*A2)<br>(acres) | Volume<br>(ft <sup>3</sup> ) |
|-------------------|----------------------------------|-----------------|---------------------------------|------------------------------|
| 947.30            | 0.0                              | 0.00            | 0.00                            | 0                            |
| 948.00            | 0.0                              | 0.10            | 0.10                            | 994                          |
| 949.00            | 0.0                              | 0.69            | 1.04                            | 15,172                       |
| 950.00            | 0.0                              | 1.53            | 3.24                            | 47,076                       |
| 951.00            | 0.0                              | 1.95            | 5.20                            | 75,536                       |
| 952.00            | 0.0                              | 2.13            | 6.11                            | 88,687                       |
| 953.00            | 0.0                              | 2.25            | 6.57                            | 95,361                       |
| 954.00            | 0.0                              | 2.38            | 6.95                            | 100,977                      |
| 955.00            | 0.0                              | 2.52            | 7.35                            | 106,692                      |
| 955.50            | 0.0                              | 2.58            | 7.65                            | 55,522                       |
| 956.00            | 0.0                              | 2.70            | 7.92                            | 57,525                       |

Volume (Total)  
(ft<sup>3</sup>)

|         |
|---------|
| 0       |
| 994     |
| 16,166  |
| 63,243  |
| 138,779 |
| 227,466 |
| 322,827 |
| 423,804 |
| 530,496 |
| 586,018 |
| 643,543 |

Subsection: Volume Equations  
Label: Prop\_Basin  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

### **Pond Volume Equations**

**\* Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

|        |              |                                             |
|--------|--------------|---------------------------------------------|
| where: | EL1, EL2     | Lower and upper elevations of the increment |
|        | Area1, Area2 | Areas computed for EL1, EL2, respectively   |
|        | Volume       | Incremental volume between EL1 and EL2      |

Subsection: Elevation-Area Volume Curve

Label: Prop\_Basin

Scenario: 100YR-24HR

Return Event: 100 years

Storm Event: 100YR-24HR

| Elevation<br>(ft) | Planimeter<br>(ft <sup>2</sup> ) | Area<br>(acres) | A1+A2+sqr<br>(A1*A2)<br>(acres) | Volume<br>(ft <sup>3</sup> ) |
|-------------------|----------------------------------|-----------------|---------------------------------|------------------------------|
| 947.30            | 0.0                              | 0.00            | 0.00                            | 0                            |
| 948.00            | 0.0                              | 0.10            | 0.10                            | 994                          |
| 949.00            | 0.0                              | 0.69            | 1.04                            | 15,172                       |
| 950.00            | 0.0                              | 1.53            | 3.24                            | 47,076                       |
| 951.00            | 0.0                              | 1.95            | 5.20                            | 75,536                       |
| 952.00            | 0.0                              | 2.13            | 6.11                            | 88,687                       |
| 953.00            | 0.0                              | 2.25            | 6.57                            | 95,361                       |
| 954.00            | 0.0                              | 2.38            | 6.95                            | 100,977                      |
| 955.00            | 0.0                              | 2.52            | 7.35                            | 106,692                      |
| 955.50            | 0.0                              | 2.58            | 7.65                            | 55,522                       |
| 956.00            | 0.0                              | 2.70            | 7.92                            | 57,525                       |

Volume (Total)  
(ft<sup>3</sup>)

|         |
|---------|
| 0       |
| 994     |
| 16,166  |
| 63,243  |
| 138,779 |
| 227,466 |
| 322,827 |
| 423,804 |
| 530,496 |
| 586,018 |
| 643,543 |



Subsection: Volume Equations  
Label: Prop\_Basin  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

### **Pond Volume Equations**

**\* Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

|        |              |                                             |
|--------|--------------|---------------------------------------------|
| where: | EL1, EL2     | Lower and upper elevations of the increment |
|        | Area1, Area2 | Areas computed for EL1, EL2, respectively   |
|        | Volume       | Incremental volume between EL1 and EL2      |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

| Requested Pond Water Surface Elevations |           |
|-----------------------------------------|-----------|
| Minimum (Headwater)                     | 947.30 ft |
| Increment (Headwater)                   | 0.50 ft   |
| Maximum (Headwater)                     | 956.00 ft |

### Outlet Connectivity

| Structure Type     | Outlet ID   | Direction | Outfall     | E1<br>(ft) | E2<br>(ft) |
|--------------------|-------------|-----------|-------------|------------|------------|
| Inlet Box          | Riser - 2   | Forward   | Culvert - 2 | 952.00     | 956.00     |
| Culvert-Circular   | Culvert - 2 | Forward   | TW          | 947.00     | 956.00     |
| Orifice-Circular   | Orifice - 2 | Forward   | Culvert - 1 | 948.00     | 956.00     |
| Orifice-Circular   | Orifice - 3 | Forward   | Culvert - 1 | 948.50     | 956.00     |
| Inlet Box          | Riser - 1   | Forward   | Culvert - 1 | 952.00     | 956.00     |
| Orifice-Circular   | Orifice - 1 | Forward   | Culvert - 1 | 947.30     | 956.00     |
| Culvert-Circular   | Culvert - 1 | Forward   | TW          | 947.00     | 956.00     |
| Tailwater Settings | Tailwater   |           |             | (N/A)      | (N/A)      |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 1        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 1.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                  |                             |
|----------------------------------|-----------------------------|
| Structure ID: Riser - 1          |                             |
| Structure Type: Inlet Box        |                             |
| Number of Openings               | 1                           |
| Elevation                        | 952.00 ft                   |
| Orifice Area                     | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient              | 0.60                        |
| Weir Length                      | 5.00 ft                     |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                        | 1.00                        |
| Manning's n                      | 0.00                        |
| Kev, Charged Riser               | 0.00                        |
| Weir Submergence                 | False                       |
| Orifice H to crest               | False                       |
| Structure ID: Orifice - 1        |                             |
| Structure Type: Orifice-Circular |                             |
| Number of Openings               | 1                           |
| Elevation                        | 947.30 ft                   |
| Orifice Diameter                 | 4.0 in                      |
| Orifice Coefficient              | 0.60                        |
| Structure ID: Orifice - 2        |                             |
| Structure Type: Orifice-Circular |                             |
| Number of Openings               | 1                           |
| Elevation                        | 948.00 ft                   |
| Orifice Diameter                 | 4.0 in                      |
| Orifice Coefficient              | 0.60                        |
| Structure ID: Riser - 2          |                             |
| Structure Type: Inlet Box        |                             |
| Number of Openings               | 1                           |
| Elevation                        | 952.00 ft                   |
| Orifice Area                     | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient              | 0.60                        |
| Weir Length                      | 5.00 ft                     |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                        | 1.00                        |
| Manning's n                      | 0.00                        |
| Kev, Charged Riser               | 0.00                        |
| Weir Submergence                 | False                       |
| Orifice H to crest               | False                       |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 2        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 0.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                                      |                           |
|--------------------------------------|---------------------------|
| Structure ID: Orifice - 3            |                           |
| Structure Type: Orifice-Circular     |                           |
| Number of Openings                   | 1                         |
| Elevation                            | 948.50 ft                 |
| Orifice Diameter                     | 4.0 in                    |
| Orifice Coefficient                  | 0.60                      |
| Structure ID: TW                     |                           |
| Structure Type: TW Setup, DS Channel |                           |
| Tailwater Type                       | Free Outfall              |
| Convergence Tolerances               |                           |
| Maximum Iterations                   | 30                        |
| Tailwater Tolerance (Minimum)        | 0.01 ft                   |
| Tailwater Tolerance (Maximum)        | 0.50 ft                   |
| Headwater Tolerance (Minimum)        | 0.01 ft                   |
| Headwater Tolerance (Maximum)        | 0.50 ft                   |
| Flow Tolerance (Minimum)             | 0.001 ft <sup>3</sup> /s  |
| Flow Tolerance (Maximum)             | 10.000 ft <sup>3</sup> /s |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 130.58 ft<sup>3</sup>/s  
Upstream ID = Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1  
Downstream ID = Tailwater (Pond Outfall)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.24                             | 947.21                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.31                             | 947.24                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.52                             | 947.31                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.67                             | 0.00                                       | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.96                             | 947.42                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 1.34                             | 947.51                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 1.63                             | 947.55                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 1.84                             | 947.59                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 2.08                             | 947.63                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 2.24                             | 947.65                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 2.40                             | 947.67                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 2.46                             | 947.68                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 5.00                             | 947.98                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 13.30                            | 948.64                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 24.76                            | 949.28                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 38.70                            | 949.93                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 954.30                       | 54.74                            | 950.58                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.02                                   | (N/A)                             |
| 954.80                       | 72.62                            | 951.25                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.03                                   | (N/A)                             |
| 955.30                       | 92.15                            | 951.97                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.07                                   | (N/A)                             |
| 955.80                       | 116.25                           | 953.07                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 124.50                           | 953.57                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                                                                       |
|------|-----------------------------------------------------------------------|
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .047ft Dcr= .141ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .053ft Dcr= .158ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .070ft Dcr= .207ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .079ft Dcr= .234ft<br>CRIT.DEPTH Hev= .00ft |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 130.58 ft<sup>3</sup>/s  
Upstream ID = Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1  
Downstream ID = Tailwater (Pond Outfall)

| Tailwater<br>Error<br>(ft) | Message                                                                 |
|----------------------------|-------------------------------------------------------------------------|
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .095ft Dcr= .281ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .113ft Dcr= .333ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | FLOW PRECEDENCE SET<br>TO UPSTREAM<br>CONTROLLING<br>STRUCTURE          |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .133ft Dcr= .390ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | FLOW PRECEDENCE SET<br>TO UPSTREAM<br>CONTROLLING<br>STRUCTURE          |
| 0.00                       | FLOW PRECEDENCE SET<br>TO UPSTREAM<br>CONTROLLING<br>STRUCTURE          |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .152ft Dcr= .446ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | FLOW PRECEDENCE SET<br>TO UPSTREAM<br>CONTROLLING<br>STRUCTURE          |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .224ft Dcr= .647ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .380ft Dcr= 1.067ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .543ft Dcr= 1.470ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .715ft Dcr= 1.855ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .903ft Dcr= 2.225ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= 1.118ft Dcr= 2.578ft<br>CRIT.DEPTH Hev= .00ft |



Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
 Structure ID = Culvert - 1 (Culvert-Circular)

-----  
 Mannings open channel maximum capacity: 130.58 ft<sup>3</sup>/s  
 Upstream ID = Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1  
 Downstream ID = Tailwater (Pond Outfall)

| Tailwater<br>Error<br>(ft) | Message                                                                 |
|----------------------------|-------------------------------------------------------------------------|
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= 1.375ft Dcr= 2.911ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00                       | INLET CONTROL...<br>Submerged: HW =6.07                                 |
| 0.00                       | INLET CONTROL...<br>Submerged: HW =6.57                                 |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)

Downstream ID = Culvert - 1 (Culvert-Circular)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.21                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.00                             | 0.00                                       | 0.00                                          | 947.24                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.00                             | 0.00                                       | 0.00                                          | 947.31                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.42                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.00                             | 0.00                                       | 0.00                                          | 947.51                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.55                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.00                             | 0.00                                       | 0.00                                          | 947.59                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.63                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.00                             | 0.00                                       | 0.00                                          | 947.65                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.67                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.00                             | 0.00                                       | 0.00                                          | 947.68                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 2.46                             | 952.30                                     | Free Outfall                                  | 947.98                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 10.73                            | 952.80                                     | Free Outfall                                  | 948.64                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 22.23                            | 953.30                                     | Free Outfall                                  | 949.28                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 36.22                            | 953.80                                     | Free Outfall                                  | 949.93                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.30                       | 52.32                            | 954.30                                     | Free Outfall                                  | 950.58                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.80                       | 70.28                            | 954.80                                     | Free Outfall                                  | 951.25                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.30                       | 89.92                            | 955.30                                     | Free Outfall                                  | 951.97                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.80                       | 111.11                           | 955.80                                     | 953.07                                        | 953.07                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 120.00                           | 956.00                                     | 953.57                                        | 953.57                                    | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                              |
|------|------------------------------|
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |

Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Riser - 1 (Inlet Box)

Upstream ID = (Pond Water Surface)

Downstream ID = Culvert - 1 (Culvert-Circular)

| Tailwater<br>Error<br>(ft) | Message                                               |
|----------------------------|-------------------------------------------------------|
| 0.00                       | WS below an invert; no flow.                          |
| 0.00                       | WS below an invert; no flow.                          |
| 0.00                       | WS below an invert; no flow.                          |
| 0.00                       | WS below an invert; no flow.                          |
| 0.00                       | WS below an invert; no flow.                          |
| 0.00                       | Weir: H =0.3ft                                        |
| 0.00                       | Weir: H =0.8ft                                        |
| 0.00                       | Weir: H =1.3ft                                        |
| 0.00                       | Weir: H =1.8ft                                        |
| 0.00                       | Weir: H =2.3ft                                        |
| 0.00                       | Weir: H =2.8ft                                        |
| 0.00                       | Weir: H =3.3ft                                        |
| 0.00                       | FULLY CHARGED RISER:<br>ADJUSTED TO WEIR: H<br>=3.8ft |
| 0.00                       | FULLY CHARGED RISER:<br>ADJUSTED TO WEIR: H<br>=4ft   |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 1 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.24                             | 947.80                                     | Free Outfall                                  | 947.21                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.31                             | 948.00                                     | Free Outfall                                  | 947.24                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.38                             | 948.30                                     | 947.31                                        | 947.31                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.43                             | 948.50                                     | 947.35                                        | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.48                             | 948.80                                     | 947.42                                        | 947.42                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.56                             | 949.30                                     | 947.50                                        | 947.51                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.63                             | 949.80                                     | 947.55                                        | 947.55                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.69                             | 950.30                                     | 947.59                                        | 947.59                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.75                             | 950.80                                     | 947.63                                        | 947.63                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.80                             | 951.30                                     | 947.65                                        | 947.65                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.85                             | 951.80                                     | 947.67                                        | 947.67                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.87                             | 952.00                                     | 947.68                                        | 947.68                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 0.87                             | 952.30                                     | 947.98                                        | 947.98                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 0.86                             | 952.80                                     | 948.64                                        | 948.64                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 0.84                             | 953.30                                     | 949.28                                        | 949.28                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 0.83                             | 953.80                                     | 949.93                                        | 949.93                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.30                       | 0.81                             | 954.30                                     | 950.58                                        | 950.58                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.80                       | 0.79                             | 954.80                                     | 951.25                                        | 951.25                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.30                       | 0.77                             | 955.30                                     | 951.97                                        | 951.97                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.80                       | 0.69                             | 955.80                                     | 953.07                                        | 953.07                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 0.65                             | 956.00                                     | 953.57                                        | 953.57                                    | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                              |
|------|------------------------------|
| 0.00 | WS below an invert; no flow. |
| 0.00 | H =.33                       |
| 0.00 | H =.53                       |
| 0.00 | H =.83                       |
| 0.00 | H =1.03                      |
| 0.00 | H =1.33                      |
| 0.00 | H =1.80                      |
| 0.00 | H =2.25                      |
| 0.00 | H =2.71                      |
| 0.00 | H =3.17                      |
| 0.00 | H =3.65                      |
| 0.00 | H =4.13                      |
| 0.00 | H =4.32                      |
| 0.00 | H =4.32                      |
| 0.00 | H =4.16                      |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 1 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Tailwater<br>Error<br>(ft) | Message |
|----------------------------|---------|
| 0.00                       | H =4.02 |
| 0.00                       | H =3.87 |
| 0.00                       | H =3.72 |
| 0.00                       | H =3.55 |
| 0.00                       | H =3.33 |
| 0.00                       | H =2.73 |
| 0.00                       | H =2.43 |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 2 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.21                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.00                             | 0.00                                       | 0.00                                          | 947.24                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.14                             | 948.30                                     | Free Outfall                                  | 947.31                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.24                             | 948.50                                     | Free Outfall                                  | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.33                             | 948.80                                     | Free Outfall                                  | 947.42                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.45                             | 949.30                                     | Free Outfall                                  | 947.51                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.54                             | 949.80                                     | Free Outfall                                  | 947.55                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.61                             | 950.30                                     | Free Outfall                                  | 947.59                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.68                             | 950.80                                     | Free Outfall                                  | 947.63                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.74                             | 951.30                                     | Free Outfall                                  | 947.65                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.80                             | 951.80                                     | Free Outfall                                  | 947.67                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.82                             | 952.00                                     | Free Outfall                                  | 947.68                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 0.85                             | 952.30                                     | Free Outfall                                  | 947.98                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 0.86                             | 952.80                                     | 948.64                                        | 948.64                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 0.84                             | 953.30                                     | 949.28                                        | 949.28                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 0.83                             | 953.80                                     | 949.93                                        | 949.93                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.30                       | 0.81                             | 954.30                                     | 950.58                                        | 950.58                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.80                       | 0.79                             | 954.80                                     | 951.25                                        | 951.25                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.30                       | 0.77                             | 955.30                                     | 951.97                                        | 951.97                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.80                       | 0.69                             | 955.80                                     | 953.07                                        | 953.07                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 0.65                             | 956.00                                     | 953.57                                        | 953.57                                    | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                                                                       |
|------|-----------------------------------------------------------------------|
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .090ft Dcr= .210ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00 | H =.33                                                                |
| 0.00 | H =.63                                                                |
| 0.00 | H =1.13                                                               |
| 0.00 | H =1.63                                                               |
| 0.00 | H =2.13                                                               |
| 0.00 | H =2.63                                                               |
| 0.00 | H =3.13                                                               |
| 0.00 | H =3.63                                                               |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 2 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Tailwater<br>Error<br>(ft) | Message |
|----------------------------|---------|
| 0.00                       | H =3.83 |
| 0.00                       | H =4.13 |
| 0.00                       | H =4.16 |
| 0.00                       | H =4.02 |
| 0.00                       | H =3.87 |
| 0.00                       | H =3.72 |
| 0.00                       | H =3.55 |
| 0.00                       | H =3.33 |
| 0.00                       | H =2.73 |
| 0.00                       | H =2.43 |

Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Riser - 2 (Inlet Box)

Upstream ID = (Pond Water Surface)

Downstream ID = Culvert - 2 (Culvert-Circular)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 2.46                             | 952.30                                     | Free Outfall                                  | 947.68                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 10.73                            | 952.80                                     | Free Outfall                                  | 948.46                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 22.23                            | 953.30                                     | Free Outfall                                  | 949.15                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 36.22                            | 953.80                                     | Free Outfall                                  | 949.82                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.30                       | 52.32                            | 954.30                                     | Free Outfall                                  | 950.49                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.80                       | 70.28                            | 954.80                                     | Free Outfall                                  | 951.17                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.30                       | 89.92                            | 955.30                                     | Free Outfall                                  | 951.89                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.80                       | 111.11                           | 955.80                                     | 952.79                                        | 952.79                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 120.00                           | 956.00                                     | 953.30                                        | 953.30                                    | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                              |
|------|------------------------------|
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |



Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Riser - 2 (Inlet Box)

Upstream ID = (Pond Water Surface)  
 Downstream ID = Culvert - 2 (Culvert-Circular)

| Tailwater<br>Error<br>(ft) | Message                                            |
|----------------------------|----------------------------------------------------|
| 0.00                       | WS below an invert; no flow.                       |
| 0.00                       | WS below an invert; no flow.                       |
| 0.00                       | WS below an invert; no flow.                       |
| 0.00                       | WS below an invert; no flow.                       |
| 0.00                       | WS below an invert; no flow.                       |
| 0.00                       | Weir: H =0.3ft                                     |
| 0.00                       | Weir: H =0.8ft                                     |
| 0.00                       | Weir: H =1.3ft                                     |
| 0.00                       | Weir: H =1.8ft                                     |
| 0.00                       | Weir: H =2.3ft                                     |
| 0.00                       | Weir: H =2.8ft                                     |
| 0.00                       | Weir: H =3.3ft                                     |
| 0.00                       | FULLY CHARGED RISER:<br>ADJUSTED TO WEIR: H =3.8ft |
| 0.00                       | FULLY CHARGED RISER:<br>ADJUSTED TO WEIR: H =4ft   |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Culvert - 2 (Culvert-Circular)

Mannings open channel maximum capacity: 130.58 ft<sup>3</sup>/s  
Upstream ID = Riser - 2 (Inlet Box)  
Downstream ID = Tailwater (Pond Outfall)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.00                             | 0.00                                       | 0.00                                          | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 2.47                             | 947.68                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 10.74                            | 948.46                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 953.30                       | 22.25                            | 949.15                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.02                                   | (N/A)                             |
| 953.80                       | 36.21                            | 949.82                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 954.30                       | 52.34                            | 950.49                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 954.80                       | 70.27                            | 951.17                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 955.30                       | 89.94                            | 951.89                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.01                                   | (N/A)                             |
| 955.80                       | 111.25                           | 952.79                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 120.14                           | 953.30                                     | Free Outfall                                  | Free Outfall                              | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                              |
|------|------------------------------|
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |
| 0.00 | WS below an invert; no flow. |

Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
 Structure ID = Culvert - 2 (Culvert-Circular)

Mannings open channel maximum capacity: 130.58 ft<sup>3</sup>/s  
 Upstream ID = Riser - 2 (Inlet Box)  
 Downstream ID = Tailwater (Pond Outfall)

| Tailwater<br>Error<br>(ft) | Message                                                                 |
|----------------------------|-------------------------------------------------------------------------|
| 0.00                       | WS below an invert; no flow.                                            |
| 0.00                       | WS below an invert; no flow.                                            |
| 0.00                       | WS below an invert; no flow.                                            |
| 0.00                       | WS below an invert; no flow.                                            |
| 0.00                       | WS below an invert; no flow.                                            |
| 0.00                       | FLOW PRECEDENCE SET TO UPSTREAM CONTROLLING STRUCTURE                   |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .338ft Dcr= .956ft<br>CRIT.DEPTH Hev= .00ft   |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .510ft Dcr= 1.391ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .685ft Dcr= 1.792ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= .875ft Dcr= 2.173ft<br>CRIT.DEPTH Hev= .00ft  |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= 1.089ft Dcr= 2.534ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00                       | CRIT.DEPTH CONTROL<br>Vh= 1.344ft Dcr= 2.875ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00                       | INLET CONTROL...<br>Submerged: HW =5.79                                 |
| 0.00                       | INLET CONTROL...<br>Submerged: HW =6.30                                 |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 3 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Water Surface Elevation (ft) | Device Flow (ft <sup>3</sup> /s) | (into) Headwater Hydraulic Grade Line (ft) | Converge Downstream Hydraulic Grade Line (ft) | Next Downstream Hydraulic Grade Line (ft) | Downstream Hydraulic Grade Line Error (ft) | Convergence Error (ft <sup>3</sup> /s) | Downstream Channel Tailwater (ft) |
|------------------------------|----------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------|
| 947.30                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 947.80                       | 0.00                             | 0.00                                       | 0.00                                          | 947.21                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.00                       | 0.00                             | 0.00                                       | 0.00                                          | 947.24                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.30                       | 0.00                             | 0.00                                       | 0.00                                          | 947.31                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.50                       | 0.00                             | 0.00                                       | 0.00                                          | 0.00                                      | 0.00                                       | 0.00                                   | (N/A)                             |
| 948.80                       | 0.14                             | 948.80                                     | Free Outfall                                  | 947.42                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.30                       | 0.33                             | 949.30                                     | Free Outfall                                  | 947.51                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 949.80                       | 0.45                             | 949.80                                     | Free Outfall                                  | 947.55                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.30                       | 0.54                             | 950.30                                     | Free Outfall                                  | 947.59                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 950.80                       | 0.61                             | 950.80                                     | Free Outfall                                  | 947.63                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.30                       | 0.68                             | 951.30                                     | Free Outfall                                  | 947.65                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 951.80                       | 0.74                             | 951.80                                     | Free Outfall                                  | 947.67                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.00                       | 0.77                             | 952.00                                     | Free Outfall                                  | 947.68                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.30                       | 0.80                             | 952.30                                     | Free Outfall                                  | 947.98                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 952.80                       | 0.85                             | 952.80                                     | 948.64                                        | 948.64                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.30                       | 0.84                             | 953.30                                     | 949.28                                        | 949.28                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 953.80                       | 0.83                             | 953.80                                     | 949.93                                        | 949.93                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.30                       | 0.81                             | 954.30                                     | 950.58                                        | 950.58                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 954.80                       | 0.79                             | 954.80                                     | 951.25                                        | 951.25                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.30                       | 0.77                             | 955.30                                     | 951.97                                        | 951.97                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 955.80                       | 0.69                             | 955.80                                     | 953.07                                        | 953.07                                    | 0.00                                       | 0.00                                   | (N/A)                             |
| 956.00                       | 0.65                             | 956.00                                     | 953.57                                        | 953.57                                    | 0.00                                       | 0.00                                   | (N/A)                             |

Tailwater Error (ft) Message

|      |                                                                       |
|------|-----------------------------------------------------------------------|
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | WS below an invert; no flow.                                          |
| 0.00 | CRIT.DEPTH CONTROL<br>Vh= .090ft Dcr= .210ft<br>CRIT.DEPTH Hev= .00ft |
| 0.00 | H =.63                                                                |
| 0.00 | H =1.13                                                               |
| 0.00 | H =1.63                                                               |
| 0.00 | H =2.13                                                               |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = Orifice - 3 (Orifice-Circular)

Upstream ID = (Pond Water Surface)  
Downstream ID = Culvert - 1 (Culvert-Circular)

| Tailwater<br>Error<br>(ft) | Message |
|----------------------------|---------|
| 0.00                       | H =2.63 |
| 0.00                       | H =3.13 |
| 0.00                       | H =3.33 |
| 0.00                       | H =3.63 |
| 0.00                       | H =4.13 |
| 0.00                       | H =4.02 |
| 0.00                       | H =3.87 |
| 0.00                       | H =3.72 |
| 0.00                       | H =3.55 |
| 0.00                       | H =3.33 |
| 0.00                       | H =2.73 |
| 0.00                       | H =2.43 |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

Composite Outflow Summary

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| 947.30                             | 0.00                         | (N/A)                       | 0.00                      |
| 947.80                             | 0.24                         | (N/A)                       | 0.00                      |
| 948.00                             | 0.31                         | (N/A)                       | 0.00                      |
| 948.30                             | 0.52                         | (N/A)                       | 0.00                      |
| 948.50                             | 0.67                         | (N/A)                       | 0.00                      |
| 948.80                             | 0.96                         | (N/A)                       | 0.00                      |
| 949.30                             | 1.34                         | (N/A)                       | 0.00                      |
| 949.80                             | 1.61                         | (N/A)                       | 0.00                      |
| 950.30                             | 1.84                         | (N/A)                       | 0.00                      |
| 950.80                             | 2.04                         | (N/A)                       | 0.00                      |
| 951.30                             | 2.23                         | (N/A)                       | 0.00                      |
| 951.80                             | 2.40                         | (N/A)                       | 0.00                      |
| 952.00                             | 2.46                         | (N/A)                       | 0.00                      |
| 952.30                             | 7.46                         | (N/A)                       | 0.00                      |
| 952.80                             | 24.05                        | (N/A)                       | 0.00                      |
| 953.30                             | 47.01                        | (N/A)                       | 0.00                      |
| 953.80                             | 74.91                        | (N/A)                       | 0.00                      |
| 954.30                             | 107.07                       | (N/A)                       | 0.00                      |
| 954.80                             | 142.89                       | (N/A)                       | 0.00                      |
| 955.30                             | 182.09                       | (N/A)                       | 0.00                      |
| 955.80                             | 224.31                       | (N/A)                       | 0.00                      |
| 956.00                             | 241.96                       | (N/A)                       | 0.00                      |

Contributing Structures

(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1,Orifice -  
1,Culvert - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
3,Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Riser - 1)

Return Event: 2 years  
Storm Event: 2YR-24HR

## Contributing Structures

[illegible]

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

#### Composite Outflow Summary

| Contributing Structures                                                                  |
|------------------------------------------------------------------------------------------|
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |



Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

| Requested Pond Water Surface Elevations |           |
|-----------------------------------------|-----------|
| Minimum (Headwater)                     | 947.30 ft |
| Increment (Headwater)                   | 0.50 ft   |
| Maximum (Headwater)                     | 956.00 ft |

### Outlet Connectivity

| Structure Type     | Outlet ID   | Direction | Outfall     | E1<br>(ft) | E2<br>(ft) |
|--------------------|-------------|-----------|-------------|------------|------------|
| Inlet Box          | Riser - 2   | Forward   | Culvert - 2 | 952.00     | 956.00     |
| Culvert-Circular   | Culvert - 2 | Forward   | TW          | 947.00     | 956.00     |
| Orifice-Circular   | Orifice - 2 | Forward   | Culvert - 1 | 948.00     | 956.00     |
| Orifice-Circular   | Orifice - 3 | Forward   | Culvert - 1 | 948.50     | 956.00     |
| Inlet Box          | Riser - 1   | Forward   | Culvert - 1 | 952.00     | 956.00     |
| Orifice-Circular   | Orifice - 1 | Forward   | Culvert - 1 | 947.30     | 956.00     |
| Culvert-Circular   | Culvert - 1 | Forward   | TW          | 947.00     | 956.00     |
| Tailwater Settings | Tailwater   |           |             | (N/A)      | (N/A)      |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 1        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 1.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                           |                             |
|---------------------------|-----------------------------|
| Structure ID: Riser - 1   |                             |
| Structure Type: Inlet Box |                             |
| Number of Openings        | 1                           |
| Elevation                 | 952.00 ft                   |
| Orifice Area              | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient       | 0.60                        |
| Weir Length               | 5.00 ft                     |
| Weir Coefficient          | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                 | 1.00                        |
| Manning's n               | 0.00                        |
| Kev, Charged Riser        | 0.00                        |
| Weir Submergence          | False                       |
| Orifice H to crest        | False                       |

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice - 1        |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 947.30 ft |
| Orifice Diameter                 | 4.0 in    |
| Orifice Coefficient              | 0.60      |

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice - 2        |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 948.00 ft |
| Orifice Diameter                 | 4.0 in    |
| Orifice Coefficient              | 0.60      |

|                           |                             |
|---------------------------|-----------------------------|
| Structure ID: Riser - 2   |                             |
| Structure Type: Inlet Box |                             |
| Number of Openings        | 1                           |
| Elevation                 | 952.00 ft                   |
| Orifice Area              | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient       | 0.60                        |
| Weir Length               | 5.00 ft                     |
| Weir Coefficient          | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                 | 1.00                        |
| Manning's n               | 0.00                        |
| Kev, Charged Riser        | 0.00                        |
| Weir Submergence          | False                       |
| Orifice H to crest        | False                       |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 2        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 0.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                                      |                           |
|--------------------------------------|---------------------------|
| Structure ID: Orifice - 3            |                           |
| Structure Type: Orifice-Circular     |                           |
| Number of Openings                   | 1                         |
| Elevation                            | 948.50 ft                 |
| Orifice Diameter                     | 4.0 in                    |
| Orifice Coefficient                  | 0.60                      |
| Structure ID: TW                     |                           |
| Structure Type: TW Setup, DS Channel |                           |
| Tailwater Type                       | Free Outfall              |
| Convergence Tolerances               |                           |
| Maximum Iterations                   | 30                        |
| Tailwater Tolerance (Minimum)        | 0.01 ft                   |
| Tailwater Tolerance (Maximum)        | 0.50 ft                   |
| Headwater Tolerance (Minimum)        | 0.01 ft                   |
| Headwater Tolerance (Maximum)        | 0.50 ft                   |
| Flow Tolerance (Minimum)             | 0.001 ft <sup>3</sup> /s  |
| Flow Tolerance (Maximum)             | 10.000 ft <sup>3</sup> /s |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |



Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

Composite Outflow Summary

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| 947.30                             | 0.00                         | (N/A)                       | 0.00                      |
| 947.80                             | 0.24                         | (N/A)                       | 0.00                      |
| 948.00                             | 0.31                         | (N/A)                       | 0.00                      |
| 948.30                             | 0.52                         | (N/A)                       | 0.00                      |
| 948.50                             | 0.67                         | (N/A)                       | 0.00                      |
| 948.80                             | 0.96                         | (N/A)                       | 0.00                      |
| 949.30                             | 1.34                         | (N/A)                       | 0.00                      |
| 949.80                             | 1.61                         | (N/A)                       | 0.00                      |
| 950.30                             | 1.84                         | (N/A)                       | 0.00                      |
| 950.80                             | 2.04                         | (N/A)                       | 0.00                      |
| 951.30                             | 2.23                         | (N/A)                       | 0.00                      |
| 951.80                             | 2.40                         | (N/A)                       | 0.00                      |
| 952.00                             | 2.46                         | (N/A)                       | 0.00                      |
| 952.30                             | 7.46                         | (N/A)                       | 0.00                      |
| 952.80                             | 24.05                        | (N/A)                       | 0.00                      |
| 953.30                             | 47.01                        | (N/A)                       | 0.00                      |
| 953.80                             | 74.91                        | (N/A)                       | 0.00                      |
| 954.30                             | 107.07                       | (N/A)                       | 0.00                      |
| 954.80                             | 142.89                       | (N/A)                       | 0.00                      |
| 955.30                             | 182.09                       | (N/A)                       | 0.00                      |
| 955.80                             | 224.31                       | (N/A)                       | 0.00                      |
| 956.00                             | 241.96                       | (N/A)                       | 0.00                      |

Contributing Structures

(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1,Orifice -  
1,Culvert - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
3,Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Riser - 1)

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

#### Composite Outflow Summary

| Contributing Structures                                                                         |
|-------------------------------------------------------------------------------------------------|
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Orifice - 2, Orifice - 3, Orifice - 1, Culvert - 1<br>(no Q: Riser - 2, Culvert - 2, Riser - 1) |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |
| Riser - 2, Culvert - 2, Orifice - 2, Orifice - 3, Riser - 1, Orifice - 1, Culvert - 1           |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

#### Composite Outflow Summary

| Contributing Structures                                                                  |
|------------------------------------------------------------------------------------------|
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

| Requested Pond Water Surface Elevations |           |
|-----------------------------------------|-----------|
| Minimum (Headwater)                     | 947.30 ft |
| Increment (Headwater)                   | 0.50 ft   |
| Maximum (Headwater)                     | 956.00 ft |

### Outlet Connectivity

| Structure Type     | Outlet ID   | Direction | Outfall     | E1<br>(ft) | E2<br>(ft) |
|--------------------|-------------|-----------|-------------|------------|------------|
| Inlet Box          | Riser - 2   | Forward   | Culvert - 2 | 952.00     | 956.00     |
| Culvert-Circular   | Culvert - 2 | Forward   | TW          | 947.00     | 956.00     |
| Orifice-Circular   | Orifice - 2 | Forward   | Culvert - 1 | 948.00     | 956.00     |
| Orifice-Circular   | Orifice - 3 | Forward   | Culvert - 1 | 948.50     | 956.00     |
| Inlet Box          | Riser - 1   | Forward   | Culvert - 1 | 952.00     | 956.00     |
| Orifice-Circular   | Orifice - 1 | Forward   | Culvert - 1 | 947.30     | 956.00     |
| Culvert-Circular   | Culvert - 1 | Forward   | TW          | 947.00     | 956.00     |
| Tailwater Settings | Tailwater   |           |             | (N/A)      | (N/A)      |



Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 1        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 1.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                           |                             |
|---------------------------|-----------------------------|
| Structure ID: Riser - 1   |                             |
| Structure Type: Inlet Box |                             |
| Number of Openings        | 1                           |
| Elevation                 | 952.00 ft                   |
| Orifice Area              | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient       | 0.60                        |
| Weir Length               | 5.00 ft                     |
| Weir Coefficient          | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                 | 1.00                        |
| Manning's n               | 0.00                        |
| Kev, Charged Riser        | 0.00                        |
| Weir Submergence          | False                       |
| Orifice H to crest        | False                       |

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice - 1        |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 947.30 ft |
| Orifice Diameter                 | 4.0 in    |
| Orifice Coefficient              | 0.60      |

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice - 2        |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 948.00 ft |
| Orifice Diameter                 | 4.0 in    |
| Orifice Coefficient              | 0.60      |

|                           |                             |
|---------------------------|-----------------------------|
| Structure ID: Riser - 2   |                             |
| Structure Type: Inlet Box |                             |
| Number of Openings        | 1                           |
| Elevation                 | 952.00 ft                   |
| Orifice Area              | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient       | 0.60                        |
| Weir Length               | 5.00 ft                     |
| Weir Coefficient          | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                 | 1.00                        |
| Manning's n               | 0.00                        |
| Kev, Charged Riser        | 0.00                        |
| Weir Submergence          | False                       |
| Orifice H to crest        | False                       |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 2        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 0.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.  
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                                      |                           |
|--------------------------------------|---------------------------|
| Structure ID: Orifice - 3            |                           |
| Structure Type: Orifice-Circular     |                           |
| Number of Openings                   | 1                         |
| Elevation                            | 948.50 ft                 |
| Orifice Diameter                     | 4.0 in                    |
| Orifice Coefficient                  | 0.60                      |
| Structure ID: TW                     |                           |
| Structure Type: TW Setup, DS Channel |                           |
| Tailwater Type                       | Free Outfall              |
| Convergence Tolerances               |                           |
| Maximum Iterations                   | 30                        |
| Tailwater Tolerance (Minimum)        | 0.01 ft                   |
| Tailwater Tolerance (Maximum)        | 0.50 ft                   |
| Headwater Tolerance (Minimum)        | 0.01 ft                   |
| Headwater Tolerance (Maximum)        | 0.50 ft                   |
| Flow Tolerance (Minimum)             | 0.001 ft <sup>3</sup> /s  |
| Flow Tolerance (Maximum)             | 10.000 ft <sup>3</sup> /s |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |



Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 50YR-24HR

Return Event: 50 years  
 Storm Event: 50YR-24HR

# RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

Composite Outflow Summary

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| 947.30                             | 0.00                         | (N/A)                       | 0.00                      |
| 947.80                             | 0.24                         | (N/A)                       | 0.00                      |
| 948.00                             | 0.31                         | (N/A)                       | 0.00                      |
| 948.30                             | 0.52                         | (N/A)                       | 0.00                      |
| 948.50                             | 0.67                         | (N/A)                       | 0.00                      |
| 948.80                             | 0.96                         | (N/A)                       | 0.00                      |
| 949.30                             | 1.34                         | (N/A)                       | 0.00                      |
| 949.80                             | 1.61                         | (N/A)                       | 0.00                      |
| 950.30                             | 1.84                         | (N/A)                       | 0.00                      |
| 950.80                             | 2.04                         | (N/A)                       | 0.00                      |
| 951.30                             | 2.23                         | (N/A)                       | 0.00                      |
| 951.80                             | 2.40                         | (N/A)                       | 0.00                      |
| 952.00                             | 2.46                         | (N/A)                       | 0.00                      |
| 952.30                             | 7.46                         | (N/A)                       | 0.00                      |
| 952.80                             | 24.05                        | (N/A)                       | 0.00                      |
| 953.30                             | 47.01                        | (N/A)                       | 0.00                      |
| 953.80                             | 74.91                        | (N/A)                       | 0.00                      |
| 954.30                             | 107.07                       | (N/A)                       | 0.00                      |
| 954.80                             | 142.89                       | (N/A)                       | 0.00                      |
| 955.30                             | 182.09                       | (N/A)                       | 0.00                      |
| 955.80                             | 224.31                       | (N/A)                       | 0.00                      |
| 956.00                             | 241.96                       | (N/A)                       | 0.00                      |

Contributing Structures

(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1,Orifice -  
1,Culvert - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
3,Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Riser - 1)

Return Event: 50 years  
Storm Event: 50YR-24HR

## Contributing Structures

[illegible]

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

#### Composite Outflow Summary

| Contributing Structures                                                                  |
|------------------------------------------------------------------------------------------|
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

| Requested Pond Water Surface Elevations |           |
|-----------------------------------------|-----------|
| Minimum (Headwater)                     | 947.30 ft |
| Increment (Headwater)                   | 0.50 ft   |
| Maximum (Headwater)                     | 956.00 ft |

### Outlet Connectivity

| Structure Type     | Outlet ID   | Direction | Outfall     | E1<br>(ft) | E2<br>(ft) |
|--------------------|-------------|-----------|-------------|------------|------------|
| Inlet Box          | Riser - 2   | Forward   | Culvert - 2 | 952.00     | 956.00     |
| Culvert-Circular   | Culvert - 2 | Forward   | TW          | 947.00     | 956.00     |
| Orifice-Circular   | Orifice - 2 | Forward   | Culvert - 1 | 948.00     | 956.00     |
| Orifice-Circular   | Orifice - 3 | Forward   | Culvert - 1 | 948.50     | 956.00     |
| Inlet Box          | Riser - 1   | Forward   | Culvert - 1 | 952.00     | 956.00     |
| Orifice-Circular   | Orifice - 1 | Forward   | Culvert - 1 | 947.30     | 956.00     |
| Culvert-Circular   | Culvert - 1 | Forward   | TW          | 947.00     | 956.00     |
| Tailwater Settings | Tailwater   |           |             | (N/A)      | (N/A)      |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 1        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 1.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |



Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                  |                             |
|----------------------------------|-----------------------------|
| Structure ID: Riser - 1          |                             |
| Structure Type: Inlet Box        |                             |
| Number of Openings               | 1                           |
| Elevation                        | 952.00 ft                   |
| Orifice Area                     | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient              | 0.60                        |
| Weir Length                      | 5.00 ft                     |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                        | 1.00                        |
| Manning's n                      | 0.00                        |
| Kev, Charged Riser               | 0.00                        |
| Weir Submergence                 | False                       |
| Orifice H to crest               | False                       |
| Structure ID: Orifice - 1        |                             |
| Structure Type: Orifice-Circular |                             |
| Number of Openings               | 1                           |
| Elevation                        | 947.30 ft                   |
| Orifice Diameter                 | 4.0 in                      |
| Orifice Coefficient              | 0.60                        |
| Structure ID: Orifice - 2        |                             |
| Structure Type: Orifice-Circular |                             |
| Number of Openings               | 1                           |
| Elevation                        | 948.00 ft                   |
| Orifice Diameter                 | 4.0 in                      |
| Orifice Coefficient              | 0.60                        |
| Structure ID: Riser - 2          |                             |
| Structure Type: Inlet Box        |                             |
| Number of Openings               | 1                           |
| Elevation                        | 952.00 ft                   |
| Orifice Area                     | 20.0 ft <sup>2</sup>        |
| Orifice Coefficient              | 0.60                        |
| Weir Length                      | 5.00 ft                     |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |
| K Reverse                        | 1.00                        |
| Manning's n                      | 0.00                        |
| Kev, Charged Riser               | 0.00                        |
| Weir Submergence                 | False                       |
| Orifice H to crest               | False                       |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert - 2        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 48.0 in     |
| Length                           | 70.00 ft    |
| Length (Computed Barrel)         | 70.00 ft    |
| Slope (Computed)                 | 0.007 ft/ft |
| Outlet Control Data              |             |
| Manning's n                      | 0.013       |
| Ke                               | 0.50        |
| Kb                               | 0.00        |
| Kr                               | 0.00        |
| Convergence Tolerance            | 0.00 ft     |
| Inlet Control Data               |             |
| Equation Form                    | Form 1      |
| K                                | 0.0098      |
| M                                | 2.0000      |
| C                                | 0.0398      |
| Y                                | 0.6700      |
| T1 ratio (HW/D)                  | 1.16        |
| T2 ratio (HW/D)                  | 1.30        |
| Slope Correction Factor          | -0.50       |

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

|              |           |         |                           |
|--------------|-----------|---------|---------------------------|
| T1 Elevation | 951.63 ft | T1 Flow | 87.96 ft <sup>3</sup> /s  |
| T2 Elevation | 952.21 ft | T2 Flow | 100.53 ft <sup>3</sup> /s |

Subsection: Outlet Input Data  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                                      |                           |
|--------------------------------------|---------------------------|
| Structure ID: Orifice - 3            |                           |
| Structure Type: Orifice-Circular     |                           |
| Number of Openings                   | 1                         |
| Elevation                            | 948.50 ft                 |
| Orifice Diameter                     | 4.0 in                    |
| Orifice Coefficient                  | 0.60                      |
| Structure ID: TW                     |                           |
| Structure Type: TW Setup, DS Channel |                           |
| Tailwater Type                       | Free Outfall              |
| Convergence Tolerances               |                           |
| Maximum Iterations                   | 30                        |
| Tailwater Tolerance (Minimum)        | 0.01 ft                   |
| Tailwater Tolerance (Maximum)        | 0.50 ft                   |
| Headwater Tolerance (Minimum)        | 0.01 ft                   |
| Headwater Tolerance (Maximum)        | 0.50 ft                   |
| Flow Tolerance (Minimum)             | 0.001 ft <sup>3</sup> /s  |
| Flow Tolerance (Maximum)             | 10.000 ft <sup>3</sup> /s |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
Structure ID = ()

-----  
Upstream ID =  
Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |



Subsection: Individual Outlet Curves  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

-----

Upstream ID =

Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Individual Outlet Curves  
 Label: Basin Outlet Structure  
 Scenario: 100YR-24HR

Return Event: 100 years  
 Storm Event: 100YR-24HR

RATING TABLE FOR ONE OUTLET TYPE  
 Structure ID = ()

Upstream ID =  
 Downstream ID =

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| Contributing Structures            |                              |                             |                           |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

#### Composite Outflow Summary

| Water Surface<br>Elevation<br>(ft) | Flow<br>(ft <sup>3</sup> /s) | Tailwater Elevation<br>(ft) | Convergence Error<br>(ft) |
|------------------------------------|------------------------------|-----------------------------|---------------------------|
| 947.30                             | 0.00                         | (N/A)                       | 0.00                      |
| 947.80                             | 0.24                         | (N/A)                       | 0.00                      |
| 948.00                             | 0.31                         | (N/A)                       | 0.00                      |
| 948.30                             | 0.52                         | (N/A)                       | 0.00                      |
| 948.50                             | 0.67                         | (N/A)                       | 0.00                      |
| 948.80                             | 0.96                         | (N/A)                       | 0.00                      |
| 949.30                             | 1.34                         | (N/A)                       | 0.00                      |
| 949.80                             | 1.61                         | (N/A)                       | 0.00                      |
| 950.30                             | 1.84                         | (N/A)                       | 0.00                      |
| 950.80                             | 2.04                         | (N/A)                       | 0.00                      |
| 951.30                             | 2.23                         | (N/A)                       | 0.00                      |
| 951.80                             | 2.40                         | (N/A)                       | 0.00                      |
| 952.00                             | 2.46                         | (N/A)                       | 0.00                      |
| 952.30                             | 7.46                         | (N/A)                       | 0.00                      |
| 952.80                             | 24.05                        | (N/A)                       | 0.00                      |
| 953.30                             | 47.01                        | (N/A)                       | 0.00                      |
| 953.80                             | 74.91                        | (N/A)                       | 0.00                      |
| 954.30                             | 107.07                       | (N/A)                       | 0.00                      |
| 954.80                             | 142.89                       | (N/A)                       | 0.00                      |
| 955.30                             | 182.09                       | (N/A)                       | 0.00                      |
| 955.80                             | 224.31                       | (N/A)                       | 0.00                      |
| 956.00                             | 241.96                       | (N/A)                       | 0.00                      |

#### Contributing Structures

(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1,Orifice -  
1,Culvert - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Orifice - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
1,Culvert - 1 (no Q: Riser  
- 2,Culvert - 2,Orifice -  
3,Riser - 1)  
Orifice - 2,Orifice -  
3,Orifice - 1,Culvert - 1  
(no Q: Riser - 2,Culvert -  
2,Riser - 1)

Subsection: Composite Rating Curve  
 Label: Basin Outlet Structure  
 Scenario: 100YR-24HR

Return Event: 100 years  
 Storm Event: 100YR-24HR

# Composite Outflow Summary

| Contributing Structures                                                                    |
|--------------------------------------------------------------------------------------------|
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Orifice - 2,Orifice - 3,Orifice - 1,Culvert - 1<br>(no Q: Riser - 2,Culvert - 2,Riser - 1) |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |
| Riser - 2,Culvert - 2,Orifice - 2,Orifice - 3,Riser - 1,Orifice - 1,Culvert - 1            |

Subsection: Composite Rating Curve  
Label: Basin Outlet Structure  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

#### Composite Outflow Summary

| Contributing Structures                                                                  |
|------------------------------------------------------------------------------------------|
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |
| Riser - 2,Culvert -<br>2,Orifice - 2,Orifice -<br>3,Riser - 1,Orifice -<br>1,Culvert - 1 |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                   |                          |
|-------------------|--------------------------|
| Peak Discharge    | 21.70 ft <sup>3</sup> /s |
| Time to Peak      | 13.350 hours             |
| Hydrograph Volume | 336,763 ft <sup>3</sup>  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 5.500           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 5.750           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.02                         |
| 6.000           | 0.02                         | 0.02                         | 0.02                         | 0.03                         | 0.03                         |
| 6.250           | 0.03                         | 0.04                         | 0.04                         | 0.05                         | 0.05                         |
| 6.500           | 0.05                         | 0.06                         | 0.06                         | 0.07                         | 0.07                         |
| 6.750           | 0.07                         | 0.08                         | 0.08                         | 0.09                         | 0.09                         |
| 7.000           | 0.10                         | 0.10                         | 0.10                         | 0.11                         | 0.11                         |
| 7.250           | 0.12                         | 0.12                         | 0.13                         | 0.13                         | 0.14                         |
| 7.500           | 0.14                         | 0.15                         | 0.15                         | 0.16                         | 0.16                         |
| 7.750           | 0.17                         | 0.17                         | 0.18                         | 0.18                         | 0.19                         |
| 8.000           | 0.19                         | 0.20                         | 0.20                         | 0.21                         | 0.21                         |
| 8.250           | 0.22                         | 0.22                         | 0.23                         | 0.24                         | 0.24                         |
| 8.500           | 0.24                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 8.750           | 0.25                         | 0.26                         | 0.26                         | 0.26                         | 0.27                         |
| 9.000           | 0.27                         | 0.28                         | 0.28                         | 0.29                         | 0.29                         |
| 9.250           | 0.30                         | 0.31                         | 0.32                         | 0.33                         | 0.34                         |
| 9.500           | 0.35                         | 0.36                         | 0.37                         | 0.38                         | 0.40                         |
| 9.750           | 0.41                         | 0.42                         | 0.44                         | 0.46                         | 0.47                         |
| 10.000          | 0.49                         | 0.51                         | 0.53                         | 0.54                         | 0.55                         |
| 10.250          | 0.57                         | 0.58                         | 0.60                         | 0.61                         | 0.63                         |
| 10.500          | 0.65                         | 0.67                         | 0.69                         | 0.70                         | 0.72                         |
| 10.750          | 0.75                         | 0.77                         | 0.79                         | 0.82                         | 0.85                         |
| 11.000          | 0.87                         | 0.90                         | 0.94                         | 0.97                         | 0.98                         |
| 11.250          | 1.00                         | 1.02                         | 1.04                         | 1.07                         | 1.09                         |
| 11.500          | 1.12                         | 1.15                         | 1.18                         | 1.22                         | 1.27                         |
| 11.750          | 1.33                         | 1.38                         | 1.43                         | 1.50                         | 1.60                         |
| 12.000          | 1.68                         | 1.76                         | 1.86                         | 1.93                         | 2.01                         |
| 12.250          | 2.08                         | 2.15                         | 2.21                         | 2.27                         | 2.33                         |
| 12.500          | 2.38                         | 2.43                         | 3.11                         | 5.13                         | 6.92                         |
| 12.750          | 9.43                         | 11.98                        | 14.11                        | 15.88                        | 17.33                        |
| 13.000          | 18.52                        | 19.47                        | 20.21                        | 20.78                        | 21.19                        |
| 13.250          | 21.47                        | 21.63                        | 21.70                        | 21.69                        | 21.61                        |
| 13.500          | 21.47                        | 21.29                        | 21.06                        | 20.80                        | 20.51                        |
| 13.750          | 20.20                        | 19.88                        | 19.53                        | 19.18                        | 18.83                        |
| 14.000          | 18.46                        | 18.10                        | 17.73                        | 17.37                        | 17.00                        |
| 14.250          | 16.64                        | 16.28                        | 15.93                        | 15.58                        | 15.24                        |
| 14.500          | 14.91                        | 14.58                        | 14.26                        | 13.95                        | 13.65                        |
| 14.750          | 13.36                        | 13.08                        | 12.81                        | 12.55                        | 12.30                        |
| 15.000          | 12.06                        | 11.82                        | 11.60                        | 11.38                        | 11.17                        |
| 15.250          | 10.97                        | 10.77                        | 10.58                        | 10.40                        | 10.22                        |
| 15.500          | 10.05                        | 9.88                         | 9.72                         | 9.56                         | 9.41                         |
| 15.750          | 9.26                         | 9.12                         | 8.98                         | 8.84                         | 8.71                         |
| 16.000          | 8.58                         | 8.45                         | 8.33                         | 8.21                         | 8.09                         |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 16.250          | 7.97                         | 7.86                         | 7.75                         | 7.64                         | 7.53                         |
| 16.500          | 7.44                         | 7.39                         | 7.34                         | 7.29                         | 7.23                         |
| 16.750          | 7.18                         | 7.13                         | 7.08                         | 7.03                         | 6.98                         |
| 17.000          | 6.93                         | 6.88                         | 6.83                         | 6.78                         | 6.73                         |
| 17.250          | 6.69                         | 6.64                         | 6.59                         | 6.55                         | 6.50                         |
| 17.500          | 6.46                         | 6.41                         | 6.37                         | 6.32                         | 6.28                         |
| 17.750          | 6.24                         | 6.20                         | 6.15                         | 6.11                         | 6.07                         |
| 18.000          | 6.03                         | 5.99                         | 5.95                         | 5.91                         | 5.87                         |
| 18.250          | 5.83                         | 5.79                         | 5.75                         | 5.72                         | 5.68                         |
| 18.500          | 5.64                         | 5.60                         | 5.57                         | 5.53                         | 5.49                         |
| 18.750          | 5.46                         | 5.42                         | 5.38                         | 5.35                         | 5.31                         |
| 19.000          | 5.28                         | 5.24                         | 5.21                         | 5.17                         | 5.14                         |
| 19.250          | 5.10                         | 5.07                         | 5.03                         | 5.00                         | 4.97                         |
| 19.500          | 4.93                         | 4.90                         | 4.86                         | 4.83                         | 4.80                         |
| 19.750          | 4.76                         | 4.73                         | 4.70                         | 4.66                         | 4.63                         |
| 20.000          | 4.60                         | 4.57                         | 4.53                         | 4.50                         | 4.47                         |
| 20.250          | 4.44                         | 4.40                         | 4.37                         | 4.34                         | 4.31                         |
| 20.500          | 4.28                         | 4.25                         | 4.22                         | 4.19                         | 4.16                         |
| 20.750          | 4.13                         | 4.10                         | 4.08                         | 4.05                         | 4.02                         |
| 21.000          | 4.00                         | 3.97                         | 3.95                         | 3.92                         | 3.90                         |
| 21.250          | 3.88                         | 3.85                         | 3.83                         | 3.81                         | 3.79                         |
| 21.500          | 3.77                         | 3.75                         | 3.73                         | 3.71                         | 3.69                         |
| 21.750          | 3.67                         | 3.65                         | 3.63                         | 3.62                         | 3.60                         |
| 22.000          | 3.58                         | 3.57                         | 3.55                         | 3.54                         | 3.52                         |
| 22.250          | 3.50                         | 3.49                         | 3.48                         | 3.46                         | 3.45                         |
| 22.500          | 3.43                         | 3.42                         | 3.41                         | 3.39                         | 3.38                         |
| 22.750          | 3.37                         | 3.36                         | 3.34                         | 3.33                         | 3.32                         |
| 23.000          | 3.31                         | 3.30                         | 3.29                         | 3.28                         | 3.27                         |
| 23.250          | 3.25                         | 3.24                         | 3.23                         | 3.22                         | 3.21                         |
| 23.500          | 3.20                         | 3.19                         | 3.18                         | 3.17                         | 3.16                         |
| 23.750          | 3.16                         | 3.15                         | 3.14                         | 3.13                         | 3.12                         |
| 24.000          | 3.11                         | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

|                   |                          |
|-------------------|--------------------------|
| Peak Discharge    | 92.45 ft <sup>3</sup> /s |
| Time to Peak      | 12.800 hours             |
| Hydrograph Volume | 832,724 ft <sup>3</sup>  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 3.900           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 4.150           | 0.01                         | 0.01                         | 0.01                         | 0.02                         | 0.02                         |
| 4.400           | 0.03                         | 0.03                         | 0.04                         | 0.04                         | 0.05                         |
| 4.650           | 0.05                         | 0.06                         | 0.06                         | 0.07                         | 0.07                         |
| 4.900           | 0.08                         | 0.09                         | 0.09                         | 0.10                         | 0.11                         |
| 5.150           | 0.11                         | 0.12                         | 0.13                         | 0.13                         | 0.14                         |
| 5.400           | 0.15                         | 0.15                         | 0.16                         | 0.17                         | 0.18                         |
| 5.650           | 0.18                         | 0.19                         | 0.20                         | 0.21                         | 0.21                         |
| 5.900           | 0.22                         | 0.23                         | 0.24                         | 0.24                         | 0.24                         |
| 6.150           | 0.24                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 6.400           | 0.25                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |
| 6.650           | 0.27                         | 0.27                         | 0.27                         | 0.28                         | 0.28                         |
| 6.900           | 0.29                         | 0.29                         | 0.30                         | 0.30                         | 0.31                         |
| 7.150           | 0.32                         | 0.33                         | 0.34                         | 0.35                         | 0.36                         |
| 7.400           | 0.37                         | 0.38                         | 0.39                         | 0.40                         | 0.42                         |
| 7.650           | 0.43                         | 0.44                         | 0.46                         | 0.47                         | 0.49                         |
| 7.900           | 0.51                         | 0.52                         | 0.53                         | 0.54                         | 0.55                         |
| 8.150           | 0.57                         | 0.58                         | 0.59                         | 0.60                         | 0.62                         |
| 8.400           | 0.63                         | 0.64                         | 0.66                         | 0.67                         | 0.69                         |
| 8.650           | 0.70                         | 0.72                         | 0.74                         | 0.75                         | 0.77                         |
| 8.900           | 0.79                         | 0.81                         | 0.83                         | 0.85                         | 0.87                         |
| 9.150           | 0.90                         | 0.92                         | 0.94                         | 0.96                         | 0.98                         |
| 9.400           | 0.99                         | 1.00                         | 1.01                         | 1.03                         | 1.04                         |
| 9.650           | 1.06                         | 1.07                         | 1.08                         | 1.10                         | 1.12                         |
| 9.900           | 1.13                         | 1.15                         | 1.17                         | 1.18                         | 1.20                         |
| 10.150          | 1.22                         | 1.24                         | 1.26                         | 1.28                         | 1.31                         |
| 10.400          | 1.33                         | 1.35                         | 1.36                         | 1.37                         | 1.38                         |
| 10.650          | 1.40                         | 1.41                         | 1.43                         | 1.44                         | 1.46                         |
| 10.900          | 1.47                         | 1.49                         | 1.51                         | 1.53                         | 1.55                         |
| 11.150          | 1.57                         | 1.59                         | 1.61                         | 1.63                         | 1.65                         |
| 11.400          | 1.66                         | 1.68                         | 1.70                         | 1.72                         | 1.74                         |
| 11.650          | 1.77                         | 1.80                         | 1.84                         | 1.88                         | 1.94                         |
| 11.900          | 2.00                         | 2.08                         | 2.17                         | 2.27                         | 2.37                         |
| 12.150          | 3.07                         | 8.68                         | 18.15                        | 28.16                        | 39.31                        |
| 12.400          | 49.84                        | 60.27                        | 69.14                        | 76.56                        | 82.89                        |
| 12.650          | 87.46                        | 90.44                        | 92.03                        | 92.45                        | 91.93                        |
| 12.900          | 90.68                        | 88.87                        | 86.64                        | 84.11                        | 81.35                        |
| 13.150          | 78.44                        | 75.44                        | 72.66                        | 69.91                        | 67.17                        |
| 13.400          | 64.46                        | 61.81                        | 59.22                        | 56.70                        | 54.28                        |
| 13.650          | 51.95                        | 49.71                        | 47.58                        | 45.75                        | 44.08                        |
| 13.900          | 42.47                        | 40.92                        | 39.42                        | 37.99                        | 36.62                        |
| 14.150          | 35.31                        | 34.05                        | 32.85                        | 31.70                        | 30.60                        |
| 14.400          | 29.55                        | 28.55                        | 27.60                        | 26.70                        | 25.84                        |



Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.650          | 25.03                        | 24.26                        | 23.66                        | 23.14                        | 22.63                        |
| 14.900          | 22.15                        | 21.68                        | 21.23                        | 20.79                        | 20.37                        |
| 15.150          | 19.97                        | 19.58                        | 19.21                        | 18.85                        | 18.50                        |
| 15.400          | 18.16                        | 17.84                        | 17.52                        | 17.22                        | 16.92                        |
| 15.650          | 16.64                        | 16.36                        | 16.09                        | 15.83                        | 15.57                        |
| 15.900          | 15.33                        | 15.08                        | 14.85                        | 14.62                        | 14.39                        |
| 16.150          | 14.18                        | 13.96                        | 13.75                        | 13.55                        | 13.35                        |
| 16.400          | 13.16                        | 12.97                        | 12.79                        | 12.61                        | 12.44                        |
| 16.650          | 12.27                        | 12.11                        | 11.95                        | 11.80                        | 11.65                        |
| 16.900          | 11.51                        | 11.37                        | 11.24                        | 11.11                        | 10.99                        |
| 17.150          | 10.87                        | 10.75                        | 10.64                        | 10.53                        | 10.42                        |
| 17.400          | 10.32                        | 10.22                        | 10.12                        | 10.03                        | 9.93                         |
| 17.650          | 9.84                         | 9.76                         | 9.67                         | 9.59                         | 9.51                         |
| 17.900          | 9.43                         | 9.35                         | 9.28                         | 9.20                         | 9.13                         |
| 18.150          | 9.06                         | 8.99                         | 8.92                         | 8.85                         | 8.78                         |
| 18.400          | 8.72                         | 8.65                         | 8.59                         | 8.52                         | 8.46                         |
| 18.650          | 8.40                         | 8.34                         | 8.28                         | 8.22                         | 8.16                         |
| 18.900          | 8.10                         | 8.04                         | 7.98                         | 7.93                         | 7.87                         |
| 19.150          | 7.81                         | 7.75                         | 7.70                         | 7.64                         | 7.59                         |
| 19.400          | 7.53                         | 7.48                         | 7.44                         | 7.41                         | 7.38                         |
| 19.650          | 7.35                         | 7.32                         | 7.29                         | 7.25                         | 7.22                         |
| 19.900          | 7.19                         | 7.15                         | 7.12                         | 7.08                         | 7.05                         |
| 20.150          | 7.01                         | 6.98                         | 6.94                         | 6.90                         | 6.87                         |
| 20.400          | 6.83                         | 6.79                         | 6.75                         | 6.72                         | 6.68                         |
| 20.650          | 6.64                         | 6.61                         | 6.57                         | 6.54                         | 6.50                         |
| 20.900          | 6.47                         | 6.44                         | 6.40                         | 6.37                         | 6.34                         |
| 21.150          | 6.31                         | 6.28                         | 6.25                         | 6.22                         | 6.19                         |
| 21.400          | 6.16                         | 6.13                         | 6.11                         | 6.08                         | 6.05                         |
| 21.650          | 6.03                         | 6.00                         | 5.98                         | 5.95                         | 5.93                         |
| 21.900          | 5.90                         | 5.88                         | 5.86                         | 5.84                         | 5.81                         |
| 22.150          | 5.79                         | 5.77                         | 5.75                         | 5.73                         | 5.71                         |
| 22.400          | 5.69                         | 5.67                         | 5.65                         | 5.63                         | 5.61                         |
| 22.650          | 5.60                         | 5.58                         | 5.56                         | 5.54                         | 5.52                         |
| 22.900          | 5.51                         | 5.49                         | 5.47                         | 5.46                         | 5.44                         |
| 23.150          | 5.43                         | 5.41                         | 5.39                         | 5.38                         | 5.36                         |
| 23.400          | 5.35                         | 5.33                         | 5.32                         | 5.30                         | 5.29                         |
| 23.650          | 5.27                         | 5.26                         | 5.25                         | 5.23                         | 5.22                         |
| 23.900          | 5.20                         | 5.19                         | 5.18                         | (N/A)                        | (N/A)                        |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

|                   |                           |
|-------------------|---------------------------|
| Peak Discharge    | 190.34 ft <sup>3</sup> /s |
| Time to Peak      | 12.650 hours              |
| Hydrograph Volume | 1,472,696 ft <sup>3</sup> |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.900           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 3.150           | 0.01                         | 0.02                         | 0.02                         | 0.03                         | 0.04                         |
| 3.400           | 0.04                         | 0.05                         | 0.06                         | 0.07                         | 0.07                         |
| 3.650           | 0.08                         | 0.09                         | 0.10                         | 0.11                         | 0.12                         |
| 3.900           | 0.13                         | 0.14                         | 0.15                         | 0.16                         | 0.17                         |
| 4.150           | 0.18                         | 0.19                         | 0.20                         | 0.21                         | 0.22                         |
| 4.400           | 0.23                         | 0.24                         | 0.24                         | 0.24                         | 0.25                         |
| 4.650           | 0.25                         | 0.25                         | 0.25                         | 0.26                         | 0.26                         |
| 4.900           | 0.26                         | 0.27                         | 0.27                         | 0.27                         | 0.28                         |
| 5.150           | 0.28                         | 0.29                         | 0.29                         | 0.30                         | 0.30                         |
| 5.400           | 0.31                         | 0.32                         | 0.33                         | 0.34                         | 0.35                         |
| 5.650           | 0.36                         | 0.37                         | 0.38                         | 0.39                         | 0.41                         |
| 5.900           | 0.42                         | 0.44                         | 0.45                         | 0.47                         | 0.49                         |
| 6.150           | 0.51                         | 0.53                         | 0.54                         | 0.55                         | 0.56                         |
| 6.400           | 0.58                         | 0.59                         | 0.61                         | 0.62                         | 0.64                         |
| 6.650           | 0.66                         | 0.67                         | 0.69                         | 0.70                         | 0.72                         |
| 6.900           | 0.74                         | 0.76                         | 0.77                         | 0.79                         | 0.81                         |
| 7.150           | 0.83                         | 0.85                         | 0.87                         | 0.89                         | 0.92                         |
| 7.400           | 0.94                         | 0.96                         | 0.97                         | 0.98                         | 0.99                         |
| 7.650           | 1.01                         | 1.02                         | 1.03                         | 1.04                         | 1.06                         |
| 7.900           | 1.07                         | 1.08                         | 1.10                         | 1.11                         | 1.12                         |
| 8.150           | 1.14                         | 1.15                         | 1.17                         | 1.19                         | 1.20                         |
| 8.400           | 1.22                         | 1.24                         | 1.25                         | 1.27                         | 1.29                         |
| 8.650           | 1.31                         | 1.33                         | 1.35                         | 1.36                         | 1.37                         |
| 8.900           | 1.38                         | 1.39                         | 1.40                         | 1.41                         | 1.42                         |
| 9.150           | 1.43                         | 1.45                         | 1.46                         | 1.47                         | 1.49                         |
| 9.400           | 1.50                         | 1.51                         | 1.53                         | 1.54                         | 1.56                         |
| 9.650           | 1.57                         | 1.59                         | 1.61                         | 1.62                         | 1.63                         |
| 9.900           | 1.64                         | 1.65                         | 1.66                         | 1.67                         | 1.69                         |
| 10.150          | 1.70                         | 1.71                         | 1.72                         | 1.74                         | 1.75                         |
| 10.400          | 1.76                         | 1.78                         | 1.79                         | 1.81                         | 1.83                         |
| 10.650          | 1.84                         | 1.86                         | 1.87                         | 1.88                         | 1.90                         |
| 10.900          | 1.92                         | 1.93                         | 1.95                         | 1.97                         | 1.99                         |
| 11.150          | 2.00                         | 2.02                         | 2.05                         | 2.06                         | 2.08                         |
| 11.400          | 2.10                         | 2.13                         | 2.15                         | 2.17                         | 2.20                         |
| 11.650          | 2.23                         | 2.26                         | 2.30                         | 2.35                         | 2.41                         |
| 11.900          | 3.70                         | 9.32                         | 20.15                        | 34.82                        | 52.13                        |
| 12.150          | 71.16                        | 90.59                        | 109.08                       | 127.04                       | 142.90                       |
| 12.400          | 157.44                       | 169.29                       | 178.47                       | 185.02                       | 188.98                       |
| 12.650          | 190.34                       | 189.36                       | 186.45                       | 181.98                       | 176.59                       |
| 12.900          | 170.40                       | 163.69                       | 156.70                       | 149.54                       | 142.39                       |
| 13.150          | 135.67                       | 129.04                       | 122.56                       | 116.27                       | 110.22                       |
| 13.400          | 104.61                       | 99.47                        | 94.54                        | 89.84                        | 85.37                        |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.650          | 81.14                        | 77.13                        | 73.52                        | 70.31                        | 67.25                        |
| 13.900          | 64.35                        | 61.60                        | 58.98                        | 56.51                        | 54.17                        |
| 14.150          | 51.95                        | 49.86                        | 47.88                        | 46.15                        | 44.63                        |
| 14.400          | 43.17                        | 41.78                        | 40.44                        | 39.17                        | 37.96                        |
| 14.650          | 36.81                        | 35.72                        | 34.68                        | 33.71                        | 32.78                        |
| 14.900          | 31.91                        | 31.08                        | 30.30                        | 29.56                        | 28.85                        |
| 15.150          | 28.19                        | 27.55                        | 26.95                        | 26.38                        | 25.84                        |
| 15.400          | 25.32                        | 24.82                        | 24.35                        | 23.93                        | 23.60                        |
| 15.650          | 23.28                        | 22.96                        | 22.65                        | 22.35                        | 22.05                        |
| 15.900          | 21.76                        | 21.47                        | 21.18                        | 20.90                        | 20.63                        |
| 16.150          | 20.35                        | 20.08                        | 19.82                        | 19.56                        | 19.31                        |
| 16.400          | 19.06                        | 18.81                        | 18.58                        | 18.34                        | 18.12                        |
| 16.650          | 17.89                        | 17.68                        | 17.47                        | 17.27                        | 17.07                        |
| 16.900          | 16.88                        | 16.69                        | 16.51                        | 16.33                        | 16.16                        |
| 17.150          | 16.00                        | 15.84                        | 15.68                        | 15.53                        | 15.38                        |
| 17.400          | 15.24                        | 15.10                        | 14.97                        | 14.83                        | 14.70                        |
| 17.650          | 14.58                        | 14.45                        | 14.33                        | 14.22                        | 14.10                        |
| 17.900          | 13.99                        | 13.88                        | 13.77                        | 13.66                        | 13.56                        |
| 18.150          | 13.45                        | 13.35                        | 13.25                        | 13.15                        | 13.05                        |
| 18.400          | 12.96                        | 12.86                        | 12.77                        | 12.68                        | 12.58                        |
| 18.650          | 12.49                        | 12.40                        | 12.31                        | 12.23                        | 12.14                        |
| 18.900          | 12.05                        | 11.96                        | 11.88                        | 11.79                        | 11.71                        |
| 19.150          | 11.62                        | 11.54                        | 11.46                        | 11.37                        | 11.29                        |
| 19.400          | 11.21                        | 11.13                        | 11.05                        | 10.97                        | 10.88                        |
| 19.650          | 10.80                        | 10.72                        | 10.64                        | 10.56                        | 10.48                        |
| 19.900          | 10.40                        | 10.32                        | 10.24                        | 10.17                        | 10.09                        |
| 20.150          | 10.01                        | 9.93                         | 9.85                         | 9.77                         | 9.70                         |
| 20.400          | 9.62                         | 9.55                         | 9.48                         | 9.41                         | 9.34                         |
| 20.650          | 9.27                         | 9.20                         | 9.14                         | 9.08                         | 9.02                         |
| 20.900          | 8.96                         | 8.91                         | 8.85                         | 8.80                         | 8.75                         |
| 21.150          | 8.70                         | 8.66                         | 8.61                         | 8.57                         | 8.53                         |
| 21.400          | 8.49                         | 8.45                         | 8.41                         | 8.37                         | 8.34                         |
| 21.650          | 8.30                         | 8.27                         | 8.24                         | 8.21                         | 8.18                         |
| 21.900          | 8.15                         | 8.12                         | 8.09                         | 8.07                         | 8.04                         |
| 22.150          | 8.01                         | 7.99                         | 7.97                         | 7.94                         | 7.92                         |
| 22.400          | 7.90                         | 7.87                         | 7.85                         | 7.83                         | 7.81                         |
| 22.650          | 7.79                         | 7.77                         | 7.75                         | 7.73                         | 7.71                         |
| 22.900          | 7.69                         | 7.67                         | 7.65                         | 7.63                         | 7.61                         |
| 23.150          | 7.60                         | 7.58                         | 7.56                         | 7.54                         | 7.53                         |
| 23.400          | 7.51                         | 7.49                         | 7.47                         | 7.46                         | 7.45                         |
| 23.650          | 7.44                         | 7.43                         | 7.42                         | 7.41                         | 7.40                         |
| 23.900          | 7.39                         | 7.38                         | 7.37                         | (N/A)                        | (N/A)                        |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                   |                           |
|-------------------|---------------------------|
| Peak Discharge    | 236.26 ft <sup>3</sup> /s |
| Time to Peak      | 12.600 hours              |
| Hydrograph Volume | 1,787,924 ft <sup>3</sup> |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.550           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 2.800           | 0.01                         | 0.02                         | 0.02                         | 0.03                         | 0.04                         |
| 3.050           | 0.05                         | 0.05                         | 0.06                         | 0.07                         | 0.08                         |
| 3.300           | 0.09                         | 0.10                         | 0.11                         | 0.13                         | 0.14                         |
| 3.550           | 0.15                         | 0.16                         | 0.17                         | 0.18                         | 0.19                         |
| 3.800           | 0.21                         | 0.22                         | 0.23                         | 0.24                         | 0.24                         |
| 4.050           | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.26                         |
| 4.300           | 0.26                         | 0.26                         | 0.27                         | 0.27                         | 0.27                         |
| 4.550           | 0.28                         | 0.28                         | 0.29                         | 0.29                         | 0.30                         |
| 4.800           | 0.30                         | 0.31                         | 0.32                         | 0.33                         | 0.34                         |
| 5.050           | 0.35                         | 0.36                         | 0.37                         | 0.38                         | 0.40                         |
| 5.300           | 0.41                         | 0.43                         | 0.45                         | 0.46                         | 0.48                         |
| 5.550           | 0.50                         | 0.52                         | 0.54                         | 0.55                         | 0.56                         |
| 5.800           | 0.58                         | 0.59                         | 0.61                         | 0.63                         | 0.64                         |
| 6.050           | 0.66                         | 0.68                         | 0.69                         | 0.71                         | 0.73                         |
| 6.300           | 0.75                         | 0.77                         | 0.79                         | 0.81                         | 0.83                         |
| 6.550           | 0.85                         | 0.87                         | 0.90                         | 0.92                         | 0.94                         |
| 6.800           | 0.96                         | 0.97                         | 0.99                         | 1.00                         | 1.01                         |
| 7.050           | 1.03                         | 1.04                         | 1.05                         | 1.07                         | 1.08                         |
| 7.300           | 1.10                         | 1.11                         | 1.13                         | 1.14                         | 1.16                         |
| 7.550           | 1.17                         | 1.19                         | 1.21                         | 1.23                         | 1.24                         |
| 7.800           | 1.26                         | 1.28                         | 1.30                         | 1.32                         | 1.34                         |
| 8.050           | 1.35                         | 1.36                         | 1.37                         | 1.38                         | 1.39                         |
| 8.300           | 1.40                         | 1.41                         | 1.42                         | 1.43                         | 1.44                         |
| 8.550           | 1.45                         | 1.46                         | 1.48                         | 1.49                         | 1.50                         |
| 8.800           | 1.51                         | 1.53                         | 1.54                         | 1.56                         | 1.57                         |
| 9.050           | 1.59                         | 1.60                         | 1.62                         | 1.63                         | 1.64                         |
| 9.300           | 1.65                         | 1.66                         | 1.67                         | 1.68                         | 1.70                         |
| 9.550           | 1.71                         | 1.72                         | 1.73                         | 1.75                         | 1.76                         |
| 9.800           | 1.77                         | 1.79                         | 1.80                         | 1.81                         | 1.83                         |
| 10.050          | 1.84                         | 1.86                         | 1.87                         | 1.88                         | 1.89                         |
| 10.300          | 1.91                         | 1.92                         | 1.93                         | 1.95                         | 1.96                         |
| 10.550          | 1.98                         | 1.99                         | 2.01                         | 2.03                         | 2.04                         |
| 10.800          | 2.06                         | 2.07                         | 2.09                         | 2.11                         | 2.13                         |
| 11.050          | 2.14                         | 2.16                         | 2.18                         | 2.20                         | 2.23                         |
| 11.300          | 2.25                         | 2.27                         | 2.29                         | 2.31                         | 2.34                         |
| 11.550          | 2.36                         | 2.39                         | 2.42                         | 2.46                         | 4.50                         |
| 11.800          | 7.16                         | 13.24                        | 21.15                        | 33.13                        | 48.62                        |
| 12.050          | 68.36                        | 90.25                        | 112.67                       | 134.70                       | 155.66                       |
| 12.300          | 174.93                       | 192.19                       | 207.10                       | 218.96                       | 227.82                       |
| 12.550          | 233.57                       | 236.26                       | 236.08                       | 233.33                       | 228.47                       |
| 12.800          | 221.94                       | 214.28                       | 205.80                       | 196.83                       | 187.64                       |
| 13.050          | 178.52                       | 169.69                       | 160.96                       | 152.44                       | 144.19                       |

Subsection: Diverted Hydrograph  
Label: Outlet\_Pipe  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.300          | 136.65                       | 129.47                       | 122.60                       | 116.06                       | 109.84                       |
| 13.550          | 104.19                       | 99.03                        | 94.14                        | 89.51                        | 85.13                        |
| 13.800          | 81.01                        | 77.12                        | 73.62                        | 70.52                        | 67.59                        |
| 14.050          | 64.80                        | 62.16                        | 59.65                        | 57.28                        | 55.03                        |
| 14.300          | 52.91                        | 50.90                        | 48.99                        | 47.19                        | 45.72                        |
| 14.550          | 44.34                        | 43.02                        | 41.76                        | 40.57                        | 39.44                        |
| 14.800          | 38.37                        | 37.35                        | 36.39                        | 35.48                        | 34.61                        |
| 15.050          | 33.79                        | 33.01                        | 32.27                        | 31.57                        | 30.90                        |
| 15.300          | 30.26                        | 29.65                        | 29.07                        | 28.52                        | 27.99                        |
| 15.550          | 27.48                        | 26.99                        | 26.52                        | 26.07                        | 25.63                        |
| 15.800          | 25.21                        | 24.80                        | 24.40                        | 24.03                        | 23.75                        |
| 16.050          | 23.47                        | 23.19                        | 22.92                        | 22.64                        | 22.38                        |
| 16.300          | 22.11                        | 21.85                        | 21.59                        | 21.33                        | 21.08                        |
| 16.550          | 20.84                        | 20.60                        | 20.36                        | 20.13                        | 19.91                        |
| 16.800          | 19.69                        | 19.48                        | 19.28                        | 19.07                        | 18.88                        |
| 17.050          | 18.69                        | 18.50                        | 18.33                        | 18.15                        | 17.98                        |
| 17.300          | 17.81                        | 17.65                        | 17.49                        | 17.34                        | 17.19                        |
| 17.550          | 17.04                        | 16.90                        | 16.76                        | 16.62                        | 16.49                        |
| 17.800          | 16.36                        | 16.23                        | 16.10                        | 15.98                        | 15.86                        |
| 18.050          | 15.74                        | 15.62                        | 15.50                        | 15.39                        | 15.27                        |
| 18.300          | 15.16                        | 15.05                        | 14.94                        | 14.83                        | 14.73                        |
| 18.550          | 14.62                        | 14.52                        | 14.41                        | 14.31                        | 14.21                        |
| 18.800          | 14.11                        | 14.01                        | 13.91                        | 13.81                        | 13.71                        |
| 19.050          | 13.61                        | 13.52                        | 13.42                        | 13.32                        | 13.23                        |
| 19.300          | 13.13                        | 13.04                        | 12.94                        | 12.85                        | 12.76                        |
| 19.550          | 12.66                        | 12.57                        | 12.48                        | 12.38                        | 12.29                        |
| 19.800          | 12.20                        | 12.11                        | 12.01                        | 11.92                        | 11.83                        |
| 20.050          | 11.74                        | 11.65                        | 11.56                        | 11.47                        | 11.38                        |
| 20.300          | 11.29                        | 11.20                        | 11.11                        | 11.03                        | 10.95                        |
| 20.550          | 10.86                        | 10.78                        | 10.71                        | 10.63                        | 10.56                        |
| 20.800          | 10.49                        | 10.42                        | 10.35                        | 10.29                        | 10.22                        |
| 21.050          | 10.16                        | 10.11                        | 10.05                        | 10.00                        | 9.94                         |
| 21.300          | 9.89                         | 9.85                         | 9.80                         | 9.75                         | 9.71                         |
| 21.550          | 9.67                         | 9.63                         | 9.59                         | 9.55                         | 9.51                         |
| 21.800          | 9.48                         | 9.44                         | 9.41                         | 9.38                         | 9.34                         |
| 22.050          | 9.31                         | 9.28                         | 9.25                         | 9.22                         | 9.20                         |
| 22.300          | 9.17                         | 9.14                         | 9.12                         | 9.09                         | 9.06                         |
| 22.550          | 9.04                         | 9.02                         | 8.99                         | 8.97                         | 8.94                         |
| 22.800          | 8.92                         | 8.90                         | 8.88                         | 8.85                         | 8.83                         |
| 23.050          | 8.81                         | 8.79                         | 8.77                         | 8.75                         | 8.73                         |
| 23.300          | 8.71                         | 8.69                         | 8.67                         | 8.65                         | 8.63                         |
| 23.550          | 8.61                         | 8.59                         | 8.57                         | 8.55                         | 8.53                         |
| 23.800          | 8.51                         | 8.49                         | 8.47                         | 8.45                         | 8.43                         |

Subsection: Elevation-Volume-Flow Table (Pond)  
Label: Prop\_Basin  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

| Infiltration                       |                         |
|------------------------------------|-------------------------|
| Infiltration Method (Computed)     | No Infiltration         |
| Initial Conditions                 |                         |
| Elevation (Water Surface, Initial) | 947.30 ft               |
| Volume (Initial)                   | 0 ft <sup>3</sup>       |
| Flow (Initial Outlet)              | 0.00 ft <sup>3</sup> /s |
| Flow (Initial Infiltration)        | 0.00 ft <sup>3</sup> /s |
| Flow (Initial, Total)              | 0.00 ft <sup>3</sup> /s |
| Time Increment                     | 0.050 hours             |

| Elevation (ft) | Outflow (ft <sup>3</sup> /s) | Storage (ft <sup>3</sup> ) | Area (acres) | Infiltration (ft <sup>3</sup> /s) | Flow (Total) (ft <sup>3</sup> /s) | 2S/t + O (ft <sup>3</sup> /s) |
|----------------|------------------------------|----------------------------|--------------|-----------------------------------|-----------------------------------|-------------------------------|
| 947.30         | 0.00                         | 0                          | 0.00         | 0.00                              | 0.00                              | 0.00                          |
| 947.80         | 0.24                         | 362                        | 0.05         | 0.00                              | 0.24                              | 4.27                          |
| 948.00         | 0.31                         | 994                        | 0.10         | 0.00                              | 0.31                              | 11.35                         |
| 948.30         | 0.52                         | 3,010                      | 0.22         | 0.00                              | 0.52                              | 33.97                         |
| 948.50         | 0.67                         | 5,368                      | 0.33         | 0.00                              | 0.67                              | 60.31                         |
| 948.80         | 0.96                         | 10,890                     | 0.53         | 0.00                              | 0.96                              | 121.96                        |
| 949.30         | 1.34                         | 26,543                     | 0.91         | 0.00                              | 1.34                              | 296.27                        |
| 949.80         | 1.61                         | 50,781                     | 1.33         | 0.00                              | 1.61                              | 565.84                        |
| 950.30         | 1.84                         | 84,004                     | 1.65         | 0.00                              | 1.84                              | 935.22                        |
| 950.80         | 2.04                         | 122,195                    | 1.86         | 0.00                              | 2.04                              | 1,359.77                      |
| 951.30         | 2.23                         | 164,574                    | 2.00         | 0.00                              | 2.23                              | 1,830.82                      |
| 951.80         | 2.40                         | 209,106                    | 2.09         | 0.00                              | 2.40                              | 2,325.80                      |
| 952.00         | 2.46                         | 227,466                    | 2.13         | 0.00                              | 2.46                              | 2,529.86                      |
| 952.30         | 7.46                         | 255,491                    | 2.16         | 0.00                              | 7.46                              | 2,846.24                      |
| 952.80         | 24.05                        | 303,308                    | 2.23         | 0.00                              | 24.05                             | 3,394.14                      |
| 953.30         | 47.01                        | 352,527                    | 2.29         | 0.00                              | 47.01                             | 3,963.98                      |
| 953.80         | 74.91                        | 403,155                    | 2.36         | 0.00                              | 74.91                             | 4,554.40                      |
| 954.30         | 107.07                       | 455,207                    | 2.42         | 0.00                              | 107.07                            | 5,164.93                      |
| 954.80         | 142.89                       | 508,695                    | 2.49         | 0.00                              | 142.89                            | 5,795.05                      |
| 955.30         | 182.09                       | 563,634                    | 2.56         | 0.00                              | 182.09                            | 6,444.69                      |
| 955.80         | 224.31                       | 620,227                    | 2.65         | 0.00                              | 224.31                            | 7,115.72                      |
| 956.00         | 241.96                       | 643,543                    | 2.70         | 0.00                              | 241.96                            | 7,392.44                      |

Subsection: Elevation-Volume-Flow Table (Pond)  
Label: Prop\_Basin  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

| Infiltration                       |                         |
|------------------------------------|-------------------------|
| Infiltration Method (Computed)     | No Infiltration         |
| Initial Conditions                 |                         |
| Elevation (Water Surface, Initial) | 947.30 ft               |
| Volume (Initial)                   | 0 ft <sup>3</sup>       |
| Flow (Initial Outlet)              | 0.00 ft <sup>3</sup> /s |
| Flow (Initial Infiltration)        | 0.00 ft <sup>3</sup> /s |
| Flow (Initial, Total)              | 0.00 ft <sup>3</sup> /s |
| Time Increment                     | 0.050 hours             |

| Elevation (ft) | Outflow (ft <sup>3</sup> /s) | Storage (ft <sup>3</sup> ) | Area (acres) | Infiltration (ft <sup>3</sup> /s) | Flow (Total) (ft <sup>3</sup> /s) | 2S/t + O (ft <sup>3</sup> /s) |
|----------------|------------------------------|----------------------------|--------------|-----------------------------------|-----------------------------------|-------------------------------|
| 947.30         | 0.00                         | 0                          | 0.00         | 0.00                              | 0.00                              | 0.00                          |
| 947.80         | 0.24                         | 362                        | 0.05         | 0.00                              | 0.24                              | 4.27                          |
| 948.00         | 0.31                         | 994                        | 0.10         | 0.00                              | 0.31                              | 11.35                         |
| 948.30         | 0.52                         | 3,010                      | 0.22         | 0.00                              | 0.52                              | 33.97                         |
| 948.50         | 0.67                         | 5,368                      | 0.33         | 0.00                              | 0.67                              | 60.31                         |
| 948.80         | 0.96                         | 10,890                     | 0.53         | 0.00                              | 0.96                              | 121.96                        |
| 949.30         | 1.34                         | 26,543                     | 0.91         | 0.00                              | 1.34                              | 296.27                        |
| 949.80         | 1.61                         | 50,781                     | 1.33         | 0.00                              | 1.61                              | 565.84                        |
| 950.30         | 1.84                         | 84,004                     | 1.65         | 0.00                              | 1.84                              | 935.22                        |
| 950.80         | 2.04                         | 122,195                    | 1.86         | 0.00                              | 2.04                              | 1,359.77                      |
| 951.30         | 2.23                         | 164,574                    | 2.00         | 0.00                              | 2.23                              | 1,830.82                      |
| 951.80         | 2.40                         | 209,106                    | 2.09         | 0.00                              | 2.40                              | 2,325.80                      |
| 952.00         | 2.46                         | 227,466                    | 2.13         | 0.00                              | 2.46                              | 2,529.86                      |
| 952.30         | 7.46                         | 255,491                    | 2.16         | 0.00                              | 7.46                              | 2,846.24                      |
| 952.80         | 24.05                        | 303,308                    | 2.23         | 0.00                              | 24.05                             | 3,394.14                      |
| 953.30         | 47.01                        | 352,527                    | 2.29         | 0.00                              | 47.01                             | 3,963.98                      |
| 953.80         | 74.91                        | 403,155                    | 2.36         | 0.00                              | 74.91                             | 4,554.40                      |
| 954.30         | 107.07                       | 455,207                    | 2.42         | 0.00                              | 107.07                            | 5,164.93                      |
| 954.80         | 142.89                       | 508,695                    | 2.49         | 0.00                              | 142.89                            | 5,795.05                      |
| 955.30         | 182.09                       | 563,634                    | 2.56         | 0.00                              | 182.09                            | 6,444.69                      |
| 955.80         | 224.31                       | 620,227                    | 2.65         | 0.00                              | 224.31                            | 7,115.72                      |
| 956.00         | 241.96                       | 643,543                    | 2.70         | 0.00                              | 241.96                            | 7,392.44                      |

Subsection: Elevation-Volume-Flow Table (Pond)  
Label: Prop\_Basin  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

| Infiltration                       |                         |
|------------------------------------|-------------------------|
| Infiltration Method (Computed)     | No Infiltration         |
| Initial Conditions                 |                         |
| Elevation (Water Surface, Initial) | 947.30 ft               |
| Volume (Initial)                   | 0 ft <sup>3</sup>       |
| Flow (Initial Outlet)              | 0.00 ft <sup>3</sup> /s |
| Flow (Initial Infiltration)        | 0.00 ft <sup>3</sup> /s |
| Flow (Initial, Total)              | 0.00 ft <sup>3</sup> /s |
| Time Increment                     | 0.050 hours             |

| Elevation (ft) | Outflow (ft <sup>3</sup> /s) | Storage (ft <sup>3</sup> ) | Area (acres) | Infiltration (ft <sup>3</sup> /s) | Flow (Total) (ft <sup>3</sup> /s) | 2S/t + O (ft <sup>3</sup> /s) |
|----------------|------------------------------|----------------------------|--------------|-----------------------------------|-----------------------------------|-------------------------------|
| 947.30         | 0.00                         | 0                          | 0.00         | 0.00                              | 0.00                              | 0.00                          |
| 947.80         | 0.24                         | 362                        | 0.05         | 0.00                              | 0.24                              | 4.27                          |
| 948.00         | 0.31                         | 994                        | 0.10         | 0.00                              | 0.31                              | 11.35                         |
| 948.30         | 0.52                         | 3,010                      | 0.22         | 0.00                              | 0.52                              | 33.97                         |
| 948.50         | 0.67                         | 5,368                      | 0.33         | 0.00                              | 0.67                              | 60.31                         |
| 948.80         | 0.96                         | 10,890                     | 0.53         | 0.00                              | 0.96                              | 121.96                        |
| 949.30         | 1.34                         | 26,543                     | 0.91         | 0.00                              | 1.34                              | 296.27                        |
| 949.80         | 1.61                         | 50,781                     | 1.33         | 0.00                              | 1.61                              | 565.84                        |
| 950.30         | 1.84                         | 84,004                     | 1.65         | 0.00                              | 1.84                              | 935.22                        |
| 950.80         | 2.04                         | 122,195                    | 1.86         | 0.00                              | 2.04                              | 1,359.77                      |
| 951.30         | 2.23                         | 164,574                    | 2.00         | 0.00                              | 2.23                              | 1,830.82                      |
| 951.80         | 2.40                         | 209,106                    | 2.09         | 0.00                              | 2.40                              | 2,325.80                      |
| 952.00         | 2.46                         | 227,466                    | 2.13         | 0.00                              | 2.46                              | 2,529.86                      |
| 952.30         | 7.46                         | 255,491                    | 2.16         | 0.00                              | 7.46                              | 2,846.24                      |
| 952.80         | 24.05                        | 303,308                    | 2.23         | 0.00                              | 24.05                             | 3,394.14                      |
| 953.30         | 47.01                        | 352,527                    | 2.29         | 0.00                              | 47.01                             | 3,963.98                      |
| 953.80         | 74.91                        | 403,155                    | 2.36         | 0.00                              | 74.91                             | 4,554.40                      |
| 954.30         | 107.07                       | 455,207                    | 2.42         | 0.00                              | 107.07                            | 5,164.93                      |
| 954.80         | 142.89                       | 508,695                    | 2.49         | 0.00                              | 142.89                            | 5,795.05                      |
| 955.30         | 182.09                       | 563,634                    | 2.56         | 0.00                              | 182.09                            | 6,444.69                      |
| 955.80         | 224.31                       | 620,227                    | 2.65         | 0.00                              | 224.31                            | 7,115.72                      |
| 956.00         | 241.96                       | 643,543                    | 2.70         | 0.00                              | 241.96                            | 7,392.44                      |



Subsection: Elevation-Volume-Flow Table (Pond)  
Label: Prop\_Basin  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

| Infiltration                       |                         |
|------------------------------------|-------------------------|
| Infiltration Method (Computed)     | No Infiltration         |
| Initial Conditions                 |                         |
| Elevation (Water Surface, Initial) | 947.30 ft               |
| Volume (Initial)                   | 0 ft <sup>3</sup>       |
| Flow (Initial Outlet)              | 0.00 ft <sup>3</sup> /s |
| Flow (Initial Infiltration)        | 0.00 ft <sup>3</sup> /s |
| Flow (Initial, Total)              | 0.00 ft <sup>3</sup> /s |
| Time Increment                     | 0.050 hours             |

| Elevation (ft) | Outflow (ft <sup>3</sup> /s) | Storage (ft <sup>3</sup> ) | Area (acres) | Infiltration (ft <sup>3</sup> /s) | Flow (Total) (ft <sup>3</sup> /s) | 2S/t + O (ft <sup>3</sup> /s) |
|----------------|------------------------------|----------------------------|--------------|-----------------------------------|-----------------------------------|-------------------------------|
| 947.30         | 0.00                         | 0                          | 0.00         | 0.00                              | 0.00                              | 0.00                          |
| 947.80         | 0.24                         | 362                        | 0.05         | 0.00                              | 0.24                              | 4.27                          |
| 948.00         | 0.31                         | 994                        | 0.10         | 0.00                              | 0.31                              | 11.35                         |
| 948.30         | 0.52                         | 3,010                      | 0.22         | 0.00                              | 0.52                              | 33.97                         |
| 948.50         | 0.67                         | 5,368                      | 0.33         | 0.00                              | 0.67                              | 60.31                         |
| 948.80         | 0.96                         | 10,890                     | 0.53         | 0.00                              | 0.96                              | 121.96                        |
| 949.30         | 1.34                         | 26,543                     | 0.91         | 0.00                              | 1.34                              | 296.27                        |
| 949.80         | 1.61                         | 50,781                     | 1.33         | 0.00                              | 1.61                              | 565.84                        |
| 950.30         | 1.84                         | 84,004                     | 1.65         | 0.00                              | 1.84                              | 935.22                        |
| 950.80         | 2.04                         | 122,195                    | 1.86         | 0.00                              | 2.04                              | 1,359.77                      |
| 951.30         | 2.23                         | 164,574                    | 2.00         | 0.00                              | 2.23                              | 1,830.82                      |
| 951.80         | 2.40                         | 209,106                    | 2.09         | 0.00                              | 2.40                              | 2,325.80                      |
| 952.00         | 2.46                         | 227,466                    | 2.13         | 0.00                              | 2.46                              | 2,529.86                      |
| 952.30         | 7.46                         | 255,491                    | 2.16         | 0.00                              | 7.46                              | 2,846.24                      |
| 952.80         | 24.05                        | 303,308                    | 2.23         | 0.00                              | 24.05                             | 3,394.14                      |
| 953.30         | 47.01                        | 352,527                    | 2.29         | 0.00                              | 47.01                             | 3,963.98                      |
| 953.80         | 74.91                        | 403,155                    | 2.36         | 0.00                              | 74.91                             | 4,554.40                      |
| 954.30         | 107.07                       | 455,207                    | 2.42         | 0.00                              | 107.07                            | 5,164.93                      |
| 954.80         | 142.89                       | 508,695                    | 2.49         | 0.00                              | 142.89                            | 5,795.05                      |
| 955.30         | 182.09                       | 563,634                    | 2.56         | 0.00                              | 182.09                            | 6,444.69                      |
| 955.80         | 224.31                       | 620,227                    | 2.65         | 0.00                              | 224.31                            | 7,115.72                      |
| 956.00         | 241.96                       | 643,543                    | 2.70         | 0.00                              | 241.96                            | 7,392.44                      |

Subsection: Level Pool Pond Routing Summary  
Label: Prop\_Basin (IN)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

| Infiltration                       |                          |                             |              |
|------------------------------------|--------------------------|-----------------------------|--------------|
| Infiltration Method<br>(Computed)  |                          | No Infiltration             |              |
| Initial Conditions                 |                          |                             |              |
| Elevation (Water Surface, Initial) | 947.30 ft                |                             |              |
| Volume (Initial)                   | 0 ft <sup>3</sup>        |                             |              |
| Flow (Initial Outlet)              | 0.00 ft <sup>3</sup> /s  |                             |              |
| Flow (Initial Infiltration)        | 0.00 ft <sup>3</sup> /s  |                             |              |
| Flow (Initial, Total)              | 0.00 ft <sup>3</sup> /s  |                             |              |
| Time Increment                     | 0.050 hours              |                             |              |
| Inflow/Outflow Hydrograph Summary  |                          |                             |              |
| Flow (Peak In)                     | 86.89 ft <sup>3</sup> /s | Time to Peak (Flow, In)     | 12.350 hours |
| Flow (Peak Outlet)                 | 21.70 ft <sup>3</sup> /s | Time to Peak (Flow, Outlet) | 13.350 hours |
|                                    |                          |                             |              |
| Elevation (Water Surface, Peak)    | 952.73 ft                |                             |              |
| Volume (Peak)                      | 296,474 ft <sup>3</sup>  |                             |              |
| Mass Balance (ft <sup>3</sup> )    |                          |                             |              |
| Volume (Initial)                   | 0 ft <sup>3</sup>        |                             |              |
| Volume (Total Inflow)              | 567,867 ft <sup>3</sup>  |                             |              |
| Volume (Total Infiltration)        | 0 ft <sup>3</sup>        |                             |              |
| Volume (Total Outlet Outflow)      | 336,763 ft <sup>3</sup>  |                             |              |
| Volume (Retained)                  | 230,528 ft <sup>3</sup>  |                             |              |
| Volume (Unrouted)                  | -575 ft <sup>3</sup>     |                             |              |
| Error (Mass Balance)               | 0.1 %                    |                             |              |

Subsection: Level Pool Pond Routing Summary  
Label: Prop\_Basin (IN)  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

| Infiltration                          |               |                             |              |
|---------------------------------------|---------------|-----------------------------|--------------|
| Infiltration Method<br>(Computed)     |               | No Infiltration             |              |
| Initial Conditions                    |               |                             |              |
| Elevation (Water Surface,<br>Initial) | 947.30 ft     |                             |              |
| Volume (Initial)                      | 0 ft³         |                             |              |
| Flow (Initial Outlet)                 | 0.00 ft³/s    |                             |              |
| Flow (Initial Infiltration)           | 0.00 ft³/s    |                             |              |
| Flow (Initial, Total)                 | 0.00 ft³/s    |                             |              |
| Time Increment                        | 0.050 hours   |                             |              |
| Inflow/Outflow Hydrograph Summary     |               |                             |              |
| Flow (Peak In)                        | 167.13 ft³/s  | Time to Peak (Flow, In)     | 12.250 hours |
| Flow (Peak Outlet)                    | 92.45 ft³/s   | Time to Peak (Flow, Outlet) | 12.800 hours |
| Peak Conditions                       |               |                             |              |
| Elevation (Water Surface,<br>Peak)    | 954.07 ft     |                             |              |
| Volume (Peak)                         | 431,363 ft³   |                             |              |
| Mass Balance (ft³)                    |               |                             |              |
| Volume (Initial)                      | 0 ft³         |                             |              |
| Volume (Total Inflow)                 | 1,075,416 ft³ |                             |              |
| Volume (Total Infiltration)           | 0 ft³         |                             |              |
| Volume (Total Outlet<br>Outflow)      | 832,724 ft³   |                             |              |
| Volume (Retained)                     | 241,714 ft³   |                             |              |
| Volume (Unrouted)                     | -979 ft³      |                             |              |
| Error (Mass Balance)                  | 0.1 %         |                             |              |

Subsection: Level Pool Pond Routing Summary  
Label: Prop\_Basin (IN)  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

| Infiltration                          |                           |                             |              |
|---------------------------------------|---------------------------|-----------------------------|--------------|
| Infiltration Method<br>(Computed)     |                           | No Infiltration             |              |
| Initial Conditions                    |                           |                             |              |
| Elevation (Water Surface,<br>Initial) | 947.30 ft                 |                             |              |
| Volume (Initial)                      | 0 ft <sup>3</sup>         |                             |              |
| Flow (Initial Outlet)                 | 0.00 ft <sup>3</sup> /s   |                             |              |
| Flow (Initial Infiltration)           | 0.00 ft <sup>3</sup> /s   |                             |              |
| Flow (Initial, Total)                 | 0.00 ft <sup>3</sup> /s   |                             |              |
| Time Increment                        | 0.050 hours               |                             |              |
| Inflow/Outflow Hydrograph Summary     |                           |                             |              |
| Flow (Peak In)                        | 268.06 ft <sup>3</sup> /s | Time to Peak (Flow, In)     | 12.250 hours |
| Flow (Peak Outlet)                    | 190.34 ft <sup>3</sup> /s | Time to Peak (Flow, Outlet) | 12.650 hours |
|                                       |                           |                             |              |
| Elevation (Water Surface,<br>Peak)    | 955.40 ft                 |                             |              |
| Volume (Peak)                         | 574,538 ft <sup>3</sup>   |                             |              |
| Mass Balance (ft <sup>3</sup> )       |                           |                             |              |
| Volume (Initial)                      | 0 ft <sup>3</sup>         |                             |              |
| Volume (Total Inflow)                 | 1,727,703 ft <sup>3</sup> |                             |              |
| Volume (Total Infiltration)           | 0 ft <sup>3</sup>         |                             |              |
| Volume (Total Outlet<br>Outflow)      | 1,472,696 ft <sup>3</sup> |                             |              |
| Volume (Retained)                     | 253,686 ft <sup>3</sup>   |                             |              |
| Volume (Unrouted)                     | -1,321 ft <sup>3</sup>    |                             |              |
| Error (Mass Balance)                  | 0.1 %                     |                             |              |

Subsection: Level Pool Pond Routing Summary  
Label: Prop\_Basin (IN)  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

| Infiltration                          |               |                             |              |
|---------------------------------------|---------------|-----------------------------|--------------|
| Infiltration Method<br>(Computed)     |               | No Infiltration             |              |
| Initial Conditions                    |               |                             |              |
| Elevation (Water Surface,<br>Initial) | 947.30 ft     |                             |              |
| Volume (Initial)                      | 0 ft³         |                             |              |
| Flow (Initial Outlet)                 | 0.00 ft³/s    |                             |              |
| Flow (Initial Infiltration)           | 0.00 ft³/s    |                             |              |
| Flow (Initial, Total)                 | 0.00 ft³/s    |                             |              |
| Time Increment                        | 0.050 hours   |                             |              |
| Inflow/Outflow Hydrograph Summary     |               |                             |              |
| Flow (Peak In)                        | 316.53 ft³/s  | Time to Peak (Flow, In)     | 12.250 hours |
| Flow (Peak Outlet)                    | 236.26 ft³/s  | Time to Peak (Flow, Outlet) | 12.600 hours |
|                                       |               |                             |              |
| Elevation (Water Surface,<br>Peak)    | 955.94 ft     |                             |              |
| Volume (Peak)                         | 635,971 ft³   |                             |              |
| Mass Balance (ft³)                    |               |                             |              |
| Volume (Initial)                      | 0 ft³         |                             |              |
| Volume (Total Inflow)                 | 2,046,233 ft³ |                             |              |
| Volume (Total Infiltration)           | 0 ft³         |                             |              |
| Volume (Total Outlet<br>Outflow)      | 1,787,924 ft³ |                             |              |
| Volume (Retained)                     | 256,817 ft³   |                             |              |
| Volume (Unrouted)                     | -1,491 ft³    |                             |              |
| Error (Mass Balance)                  | 0.1 %         |                             |              |

Subsection: Pond Routed Hydrograph (total out)  
Label: Prop\_Basin (OUT)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

|                   |                          |
|-------------------|--------------------------|
| Peak Discharge    | 21.70 ft <sup>3</sup> /s |
| Time to Peak      | 13.350 hours             |
| Hydrograph Volume | 336,763 ft <sup>3</sup>  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 5.500           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 5.750           | 0.01                         | 0.01                         | 0.01                         | 0.01                         | 0.02                         |
| 6.000           | 0.02                         | 0.02                         | 0.02                         | 0.03                         | 0.03                         |
| 6.250           | 0.03                         | 0.04                         | 0.04                         | 0.05                         | 0.05                         |
| 6.500           | 0.05                         | 0.06                         | 0.06                         | 0.07                         | 0.07                         |
| 6.750           | 0.07                         | 0.08                         | 0.08                         | 0.09                         | 0.09                         |
| 7.000           | 0.10                         | 0.10                         | 0.10                         | 0.11                         | 0.11                         |
| 7.250           | 0.12                         | 0.12                         | 0.13                         | 0.13                         | 0.14                         |
| 7.500           | 0.14                         | 0.15                         | 0.15                         | 0.16                         | 0.16                         |
| 7.750           | 0.17                         | 0.17                         | 0.18                         | 0.18                         | 0.19                         |
| 8.000           | 0.19                         | 0.20                         | 0.20                         | 0.21                         | 0.21                         |
| 8.250           | 0.22                         | 0.22                         | 0.23                         | 0.24                         | 0.24                         |
| 8.500           | 0.24                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 8.750           | 0.25                         | 0.26                         | 0.26                         | 0.26                         | 0.27                         |
| 9.000           | 0.27                         | 0.28                         | 0.28                         | 0.29                         | 0.29                         |
| 9.250           | 0.30                         | 0.31                         | 0.32                         | 0.33                         | 0.34                         |
| 9.500           | 0.35                         | 0.36                         | 0.37                         | 0.38                         | 0.40                         |
| 9.750           | 0.41                         | 0.42                         | 0.44                         | 0.46                         | 0.47                         |
| 10.000          | 0.49                         | 0.51                         | 0.53                         | 0.54                         | 0.55                         |
| 10.250          | 0.57                         | 0.58                         | 0.60                         | 0.61                         | 0.63                         |
| 10.500          | 0.65                         | 0.67                         | 0.69                         | 0.70                         | 0.72                         |
| 10.750          | 0.75                         | 0.77                         | 0.79                         | 0.82                         | 0.85                         |
| 11.000          | 0.87                         | 0.90                         | 0.94                         | 0.97                         | 0.98                         |
| 11.250          | 1.00                         | 1.02                         | 1.04                         | 1.07                         | 1.09                         |
| 11.500          | 1.12                         | 1.15                         | 1.18                         | 1.22                         | 1.27                         |
| 11.750          | 1.33                         | 1.38                         | 1.43                         | 1.50                         | 1.60                         |
| 12.000          | 1.68                         | 1.76                         | 1.86                         | 1.93                         | 2.01                         |
| 12.250          | 2.08                         | 2.15                         | 2.21                         | 2.27                         | 2.33                         |
| 12.500          | 2.38                         | 2.43                         | 3.11                         | 5.13                         | 6.92                         |
| 12.750          | 9.43                         | 11.98                        | 14.11                        | 15.88                        | 17.33                        |
| 13.000          | 18.52                        | 19.47                        | 20.21                        | 20.78                        | 21.19                        |
| 13.250          | 21.47                        | 21.63                        | 21.70                        | 21.69                        | 21.61                        |
| 13.500          | 21.47                        | 21.29                        | 21.06                        | 20.80                        | 20.51                        |
| 13.750          | 20.20                        | 19.88                        | 19.53                        | 19.18                        | 18.83                        |
| 14.000          | 18.46                        | 18.10                        | 17.73                        | 17.37                        | 17.00                        |
| 14.250          | 16.64                        | 16.28                        | 15.93                        | 15.58                        | 15.24                        |
| 14.500          | 14.91                        | 14.58                        | 14.26                        | 13.95                        | 13.65                        |
| 14.750          | 13.36                        | 13.08                        | 12.81                        | 12.55                        | 12.30                        |
| 15.000          | 12.06                        | 11.82                        | 11.60                        | 11.38                        | 11.17                        |
| 15.250          | 10.97                        | 10.77                        | 10.58                        | 10.40                        | 10.22                        |
| 15.500          | 10.05                        | 9.88                         | 9.72                         | 9.56                         | 9.41                         |
| 15.750          | 9.26                         | 9.12                         | 8.98                         | 8.84                         | 8.71                         |
| 16.000          | 8.58                         | 8.45                         | 8.33                         | 8.21                         | 8.09                         |

Subsection: Pond Routed Hydrograph (total out)  
 Label: Prop\_Basin (OUT)  
 Scenario: 2YR-24HR

Return Event: 2 years  
 Storm Event: 2YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 16.250          | 7.97                         | 7.86                         | 7.75                         | 7.64                         | 7.53                         |
| 16.500          | 7.44                         | 7.39                         | 7.34                         | 7.29                         | 7.23                         |
| 16.750          | 7.18                         | 7.13                         | 7.08                         | 7.03                         | 6.98                         |
| 17.000          | 6.93                         | 6.88                         | 6.83                         | 6.78                         | 6.73                         |
| 17.250          | 6.69                         | 6.64                         | 6.59                         | 6.55                         | 6.50                         |
| 17.500          | 6.46                         | 6.41                         | 6.37                         | 6.32                         | 6.28                         |
| 17.750          | 6.24                         | 6.20                         | 6.15                         | 6.11                         | 6.07                         |
| 18.000          | 6.03                         | 5.99                         | 5.95                         | 5.91                         | 5.87                         |
| 18.250          | 5.83                         | 5.79                         | 5.75                         | 5.72                         | 5.68                         |
| 18.500          | 5.64                         | 5.60                         | 5.57                         | 5.53                         | 5.49                         |
| 18.750          | 5.46                         | 5.42                         | 5.38                         | 5.35                         | 5.31                         |
| 19.000          | 5.28                         | 5.24                         | 5.21                         | 5.17                         | 5.14                         |
| 19.250          | 5.10                         | 5.07                         | 5.03                         | 5.00                         | 4.97                         |
| 19.500          | 4.93                         | 4.90                         | 4.86                         | 4.83                         | 4.80                         |
| 19.750          | 4.76                         | 4.73                         | 4.70                         | 4.66                         | 4.63                         |
| 20.000          | 4.60                         | 4.57                         | 4.53                         | 4.50                         | 4.47                         |
| 20.250          | 4.44                         | 4.40                         | 4.37                         | 4.34                         | 4.31                         |
| 20.500          | 4.28                         | 4.25                         | 4.22                         | 4.19                         | 4.16                         |
| 20.750          | 4.13                         | 4.10                         | 4.08                         | 4.05                         | 4.02                         |
| 21.000          | 4.00                         | 3.97                         | 3.95                         | 3.92                         | 3.90                         |
| 21.250          | 3.88                         | 3.85                         | 3.83                         | 3.81                         | 3.79                         |
| 21.500          | 3.77                         | 3.75                         | 3.73                         | 3.71                         | 3.69                         |
| 21.750          | 3.67                         | 3.65                         | 3.63                         | 3.62                         | 3.60                         |
| 22.000          | 3.58                         | 3.57                         | 3.55                         | 3.54                         | 3.52                         |
| 22.250          | 3.50                         | 3.49                         | 3.48                         | 3.46                         | 3.45                         |
| 22.500          | 3.43                         | 3.42                         | 3.41                         | 3.39                         | 3.38                         |
| 22.750          | 3.37                         | 3.36                         | 3.34                         | 3.33                         | 3.32                         |
| 23.000          | 3.31                         | 3.30                         | 3.29                         | 3.28                         | 3.27                         |
| 23.250          | 3.25                         | 3.24                         | 3.23                         | 3.22                         | 3.21                         |
| 23.500          | 3.20                         | 3.19                         | 3.18                         | 3.17                         | 3.16                         |
| 23.750          | 3.16                         | 3.15                         | 3.14                         | 3.13                         | 3.12                         |
| 24.000          | 3.11                         | (N/A)                        | (N/A)                        | (N/A)                        | (N/A)                        |

Subsection: Pond Routed Hydrograph (total out)  
 Label: Prop\_Basin (OUT)  
 Scenario: 10YR-24HR

Return Event: 10 years  
 Storm Event: 10YR-24HR

|                   |                          |
|-------------------|--------------------------|
| Peak Discharge    | 92.45 ft <sup>3</sup> /s |
| Time to Peak      | 12.800 hours             |
| Hydrograph Volume | 832,724 ft <sup>3</sup>  |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 3.900           | 0.00                         | 0.00                         | 0.00                         | 0.00                         | 0.01                         |
| 4.150           | 0.01                         | 0.01                         | 0.01                         | 0.02                         | 0.02                         |
| 4.400           | 0.03                         | 0.03                         | 0.04                         | 0.04                         | 0.05                         |
| 4.650           | 0.05                         | 0.06                         | 0.06                         | 0.07                         | 0.07                         |
| 4.900           | 0.08                         | 0.09                         | 0.09                         | 0.10                         | 0.11                         |
| 5.150           | 0.11                         | 0.12                         | 0.13                         | 0.13                         | 0.14                         |
| 5.400           | 0.15                         | 0.15                         | 0.16                         | 0.17                         | 0.18                         |
| 5.650           | 0.18                         | 0.19                         | 0.20                         | 0.21                         | 0.21                         |
| 5.900           | 0.22                         | 0.23                         | 0.24                         | 0.24                         | 0.24                         |
| 6.150           | 0.24                         | 0.25                         | 0.25                         | 0.25                         | 0.25                         |
| 6.400           | 0.25                         | 0.26                         | 0.26                         | 0.26                         | 0.26                         |
| 6.650           | 0.27                         | 0.27                         | 0.27                         | 0.28                         | 0.28                         |
| 6.900           | 0.29                         | 0.29                         | 0.30                         | 0.30                         | 0.31                         |
| 7.150           | 0.32                         | 0.33                         | 0.34                         | 0.35                         | 0.36                         |
| 7.400           | 0.37                         | 0.38                         | 0.39                         | 0.40                         | 0.42                         |
| 7.650           | 0.43                         | 0.44                         | 0.46                         | 0.47                         | 0.49                         |
| 7.900           | 0.51                         | 0.52                         | 0.53                         | 0.54                         | 0.55                         |
| 8.150           | 0.57                         | 0.58                         | 0.59                         | 0.60                         | 0.62                         |
| 8.400           | 0.63                         | 0.64                         | 0.66                         | 0.67                         | 0.69                         |
| 8.650           | 0.70                         | 0.72                         | 0.74                         | 0.75                         | 0.77                         |
| 8.900           | 0.79                         | 0.81                         | 0.83                         | 0.85                         | 0.87                         |
| 9.150           | 0.90                         | 0.92                         | 0.94                         | 0.96                         | 0.98                         |
| 9.400           | 0.99                         | 1.00                         | 1.01                         | 1.03                         | 1.04                         |
| 9.650           | 1.06                         | 1.07                         | 1.08                         | 1.10                         | 1.12                         |
| 9.900           | 1.13                         | 1.15                         | 1.17                         | 1.18                         | 1.20                         |
| 10.150          | 1.22                         | 1.24                         | 1.26                         | 1.28                         | 1.31                         |
| 10.400          | 1.33                         | 1.35                         | 1.36                         | 1.37                         | 1.38                         |
| 10.650          | 1.40                         | 1.41                         | 1.43                         | 1.44                         | 1.46                         |
| 10.900          | 1.47                         | 1.49                         | 1.51                         | 1.53                         | 1.55                         |
| 11.150          | 1.57                         | 1.59                         | 1.61                         | 1.63                         | 1.65                         |
| 11.400          | 1.66                         | 1.68                         | 1.70                         | 1.72                         | 1.74                         |
| 11.650          | 1.77                         | 1.80                         | 1.84                         | 1.88                         | 1.94                         |
| 11.900          | 2.00                         | 2.08                         | 2.17                         | 2.27                         | 2.37                         |
| 12.150          | 3.07                         | 8.68                         | 18.15                        | 28.16                        | 39.31                        |
| 12.400          | 49.84                        | 60.27                        | 69.14                        | 76.56                        | 82.89                        |
| 12.650          | 87.46                        | 90.44                        | 92.03                        | 92.45                        | 91.93                        |
| 12.900          | 90.68                        | 88.87                        | 86.64                        | 84.11                        | 81.35                        |
| 13.150          | 78.44                        | 75.44                        | 72.66                        | 69.91                        | 67.17                        |
| 13.400          | 64.46                        | 61.81                        | 59.22                        | 56.70                        | 54.28                        |
| 13.650          | 51.95                        | 49.71                        | 47.58                        | 45.75                        | 44.08                        |
| 13.900          | 42.47                        | 40.92                        | 39.42                        | 37.99                        | 36.62                        |
| 14.150          | 35.31                        | 34.05                        | 32.85                        | 31.70                        | 30.60                        |
| 14.400          | 29.55                        | 28.55                        | 27.60                        | 26.70                        | 25.84                        |



Subsection: Pond Routed Hydrograph (total out)  
Label: Prop\_Basin (OUT)  
Scenario: 10YR-24HR

Return Event: 10 years  
Storm Event: 10YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 14.650          | 25.03                        | 24.26                        | 23.66                        | 23.14                        | 22.63                        |
| 14.900          | 22.15                        | 21.68                        | 21.23                        | 20.79                        | 20.37                        |
| 15.150          | 19.97                        | 19.58                        | 19.21                        | 18.85                        | 18.50                        |
| 15.400          | 18.16                        | 17.84                        | 17.52                        | 17.22                        | 16.92                        |
| 15.650          | 16.64                        | 16.36                        | 16.09                        | 15.83                        | 15.57                        |
| 15.900          | 15.33                        | 15.08                        | 14.85                        | 14.62                        | 14.39                        |
| 16.150          | 14.18                        | 13.96                        | 13.75                        | 13.55                        | 13.35                        |
| 16.400          | 13.16                        | 12.97                        | 12.79                        | 12.61                        | 12.44                        |
| 16.650          | 12.27                        | 12.11                        | 11.95                        | 11.80                        | 11.65                        |
| 16.900          | 11.51                        | 11.37                        | 11.24                        | 11.11                        | 10.99                        |
| 17.150          | 10.87                        | 10.75                        | 10.64                        | 10.53                        | 10.42                        |
| 17.400          | 10.32                        | 10.22                        | 10.12                        | 10.03                        | 9.93                         |
| 17.650          | 9.84                         | 9.76                         | 9.67                         | 9.59                         | 9.51                         |
| 17.900          | 9.43                         | 9.35                         | 9.28                         | 9.20                         | 9.13                         |
| 18.150          | 9.06                         | 8.99                         | 8.92                         | 8.85                         | 8.78                         |
| 18.400          | 8.72                         | 8.65                         | 8.59                         | 8.52                         | 8.46                         |
| 18.650          | 8.40                         | 8.34                         | 8.28                         | 8.22                         | 8.16                         |
| 18.900          | 8.10                         | 8.04                         | 7.98                         | 7.93                         | 7.87                         |
| 19.150          | 7.81                         | 7.75                         | 7.70                         | 7.64                         | 7.59                         |
| 19.400          | 7.53                         | 7.48                         | 7.44                         | 7.41                         | 7.38                         |
| 19.650          | 7.35                         | 7.32                         | 7.29                         | 7.25                         | 7.22                         |
| 19.900          | 7.19                         | 7.15                         | 7.12                         | 7.08                         | 7.05                         |
| 20.150          | 7.01                         | 6.98                         | 6.94                         | 6.90                         | 6.87                         |
| 20.400          | 6.83                         | 6.79                         | 6.75                         | 6.72                         | 6.68                         |
| 20.650          | 6.64                         | 6.61                         | 6.57                         | 6.54                         | 6.50                         |
| 20.900          | 6.47                         | 6.44                         | 6.40                         | 6.37                         | 6.34                         |
| 21.150          | 6.31                         | 6.28                         | 6.25                         | 6.22                         | 6.19                         |
| 21.400          | 6.16                         | 6.13                         | 6.11                         | 6.08                         | 6.05                         |
| 21.650          | 6.03                         | 6.00                         | 5.98                         | 5.95                         | 5.93                         |
| 21.900          | 5.90                         | 5.88                         | 5.86                         | 5.84                         | 5.81                         |
| 22.150          | 5.79                         | 5.77                         | 5.75                         | 5.73                         | 5.71                         |
| 22.400          | 5.69                         | 5.67                         | 5.65                         | 5.63                         | 5.61                         |
| 22.650          | 5.60                         | 5.58                         | 5.56                         | 5.54                         | 5.52                         |
| 22.900          | 5.51                         | 5.49                         | 5.47                         | 5.46                         | 5.44                         |
| 23.150          | 5.43                         | 5.41                         | 5.39                         | 5.38                         | 5.36                         |
| 23.400          | 5.35                         | 5.33                         | 5.32                         | 5.30                         | 5.29                         |
| 23.650          | 5.27                         | 5.26                         | 5.25                         | 5.23                         | 5.22                         |
| 23.900          | 5.20                         | 5.19                         | 5.18                         | (N/A)                        | (N/A)                        |

Subsection: Pond Routed Hydrograph (total out)  
 Label: Prop\_Basin (OUT)  
 Scenario: 50YR-24HR

Return Event: 50 years  
 Storm Event: 50YR-24HR

|                   |                           |
|-------------------|---------------------------|
| Peak Discharge    | 190.34 ft <sup>3</sup> /s |
| Time to Peak      | 12.650 hours              |
| Hydrograph Volume | 1,472,696 ft <sup>3</sup> |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.900           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 3.150           | 0.01                         | 0.02                         | 0.02                         | 0.03                         | 0.04                         |
| 3.400           | 0.04                         | 0.05                         | 0.06                         | 0.07                         | 0.07                         |
| 3.650           | 0.08                         | 0.09                         | 0.10                         | 0.11                         | 0.12                         |
| 3.900           | 0.13                         | 0.14                         | 0.15                         | 0.16                         | 0.17                         |
| 4.150           | 0.18                         | 0.19                         | 0.20                         | 0.21                         | 0.22                         |
| 4.400           | 0.23                         | 0.24                         | 0.24                         | 0.24                         | 0.25                         |
| 4.650           | 0.25                         | 0.25                         | 0.25                         | 0.26                         | 0.26                         |
| 4.900           | 0.26                         | 0.27                         | 0.27                         | 0.27                         | 0.28                         |
| 5.150           | 0.28                         | 0.29                         | 0.29                         | 0.30                         | 0.30                         |
| 5.400           | 0.31                         | 0.32                         | 0.33                         | 0.34                         | 0.35                         |
| 5.650           | 0.36                         | 0.37                         | 0.38                         | 0.39                         | 0.41                         |
| 5.900           | 0.42                         | 0.44                         | 0.45                         | 0.47                         | 0.49                         |
| 6.150           | 0.51                         | 0.53                         | 0.54                         | 0.55                         | 0.56                         |
| 6.400           | 0.58                         | 0.59                         | 0.61                         | 0.62                         | 0.64                         |
| 6.650           | 0.66                         | 0.67                         | 0.69                         | 0.70                         | 0.72                         |
| 6.900           | 0.74                         | 0.76                         | 0.77                         | 0.79                         | 0.81                         |
| 7.150           | 0.83                         | 0.85                         | 0.87                         | 0.89                         | 0.92                         |
| 7.400           | 0.94                         | 0.96                         | 0.97                         | 0.98                         | 0.99                         |
| 7.650           | 1.01                         | 1.02                         | 1.03                         | 1.04                         | 1.06                         |
| 7.900           | 1.07                         | 1.08                         | 1.10                         | 1.11                         | 1.12                         |
| 8.150           | 1.14                         | 1.15                         | 1.17                         | 1.19                         | 1.20                         |
| 8.400           | 1.22                         | 1.24                         | 1.25                         | 1.27                         | 1.29                         |
| 8.650           | 1.31                         | 1.33                         | 1.35                         | 1.36                         | 1.37                         |
| 8.900           | 1.38                         | 1.39                         | 1.40                         | 1.41                         | 1.42                         |
| 9.150           | 1.43                         | 1.45                         | 1.46                         | 1.47                         | 1.49                         |
| 9.400           | 1.50                         | 1.51                         | 1.53                         | 1.54                         | 1.56                         |
| 9.650           | 1.57                         | 1.59                         | 1.61                         | 1.62                         | 1.63                         |
| 9.900           | 1.64                         | 1.65                         | 1.66                         | 1.67                         | 1.69                         |
| 10.150          | 1.70                         | 1.71                         | 1.72                         | 1.74                         | 1.75                         |
| 10.400          | 1.76                         | 1.78                         | 1.79                         | 1.81                         | 1.83                         |
| 10.650          | 1.84                         | 1.86                         | 1.87                         | 1.88                         | 1.90                         |
| 10.900          | 1.92                         | 1.93                         | 1.95                         | 1.97                         | 1.99                         |
| 11.150          | 2.00                         | 2.02                         | 2.05                         | 2.06                         | 2.08                         |
| 11.400          | 2.10                         | 2.13                         | 2.15                         | 2.17                         | 2.20                         |
| 11.650          | 2.23                         | 2.26                         | 2.30                         | 2.35                         | 2.41                         |
| 11.900          | 3.70                         | 9.32                         | 20.15                        | 34.82                        | 52.13                        |
| 12.150          | 71.16                        | 90.59                        | 109.08                       | 127.04                       | 142.90                       |
| 12.400          | 157.44                       | 169.29                       | 178.47                       | 185.02                       | 188.98                       |
| 12.650          | 190.34                       | 189.36                       | 186.45                       | 181.98                       | 176.59                       |
| 12.900          | 170.40                       | 163.69                       | 156.70                       | 149.54                       | 142.39                       |
| 13.150          | 135.67                       | 129.04                       | 122.56                       | 116.27                       | 110.22                       |
| 13.400          | 104.61                       | 99.47                        | 94.54                        | 89.84                        | 85.37                        |

Subsection: Pond Routed Hydrograph (total out)  
Label: Prop\_Basin (OUT)  
Scenario: 50YR-24HR

Return Event: 50 years  
Storm Event: 50YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.650          | 81.14                        | 77.13                        | 73.52                        | 70.31                        | 67.25                        |
| 13.900          | 64.35                        | 61.60                        | 58.98                        | 56.51                        | 54.17                        |
| 14.150          | 51.95                        | 49.86                        | 47.88                        | 46.15                        | 44.63                        |
| 14.400          | 43.17                        | 41.78                        | 40.44                        | 39.17                        | 37.96                        |
| 14.650          | 36.81                        | 35.72                        | 34.68                        | 33.71                        | 32.78                        |
| 14.900          | 31.91                        | 31.08                        | 30.30                        | 29.56                        | 28.85                        |
| 15.150          | 28.19                        | 27.55                        | 26.95                        | 26.38                        | 25.84                        |
| 15.400          | 25.32                        | 24.82                        | 24.35                        | 23.93                        | 23.60                        |
| 15.650          | 23.28                        | 22.96                        | 22.65                        | 22.35                        | 22.05                        |
| 15.900          | 21.76                        | 21.47                        | 21.18                        | 20.90                        | 20.63                        |
| 16.150          | 20.35                        | 20.08                        | 19.82                        | 19.56                        | 19.31                        |
| 16.400          | 19.06                        | 18.81                        | 18.58                        | 18.34                        | 18.12                        |
| 16.650          | 17.89                        | 17.68                        | 17.47                        | 17.27                        | 17.07                        |
| 16.900          | 16.88                        | 16.69                        | 16.51                        | 16.33                        | 16.16                        |
| 17.150          | 16.00                        | 15.84                        | 15.68                        | 15.53                        | 15.38                        |
| 17.400          | 15.24                        | 15.10                        | 14.97                        | 14.83                        | 14.70                        |
| 17.650          | 14.58                        | 14.45                        | 14.33                        | 14.22                        | 14.10                        |
| 17.900          | 13.99                        | 13.88                        | 13.77                        | 13.66                        | 13.56                        |
| 18.150          | 13.45                        | 13.35                        | 13.25                        | 13.15                        | 13.05                        |
| 18.400          | 12.96                        | 12.86                        | 12.77                        | 12.68                        | 12.58                        |
| 18.650          | 12.49                        | 12.40                        | 12.31                        | 12.23                        | 12.14                        |
| 18.900          | 12.05                        | 11.96                        | 11.88                        | 11.79                        | 11.71                        |
| 19.150          | 11.62                        | 11.54                        | 11.46                        | 11.37                        | 11.29                        |
| 19.400          | 11.21                        | 11.13                        | 11.05                        | 10.97                        | 10.88                        |
| 19.650          | 10.80                        | 10.72                        | 10.64                        | 10.56                        | 10.48                        |
| 19.900          | 10.40                        | 10.32                        | 10.24                        | 10.17                        | 10.09                        |
| 20.150          | 10.01                        | 9.93                         | 9.85                         | 9.77                         | 9.70                         |
| 20.400          | 9.62                         | 9.55                         | 9.48                         | 9.41                         | 9.34                         |
| 20.650          | 9.27                         | 9.20                         | 9.14                         | 9.08                         | 9.02                         |
| 20.900          | 8.96                         | 8.91                         | 8.85                         | 8.80                         | 8.75                         |
| 21.150          | 8.70                         | 8.66                         | 8.61                         | 8.57                         | 8.53                         |
| 21.400          | 8.49                         | 8.45                         | 8.41                         | 8.37                         | 8.34                         |
| 21.650          | 8.30                         | 8.27                         | 8.24                         | 8.21                         | 8.18                         |
| 21.900          | 8.15                         | 8.12                         | 8.09                         | 8.07                         | 8.04                         |
| 22.150          | 8.01                         | 7.99                         | 7.97                         | 7.94                         | 7.92                         |
| 22.400          | 7.90                         | 7.87                         | 7.85                         | 7.83                         | 7.81                         |
| 22.650          | 7.79                         | 7.77                         | 7.75                         | 7.73                         | 7.71                         |
| 22.900          | 7.69                         | 7.67                         | 7.65                         | 7.63                         | 7.61                         |
| 23.150          | 7.60                         | 7.58                         | 7.56                         | 7.54                         | 7.53                         |
| 23.400          | 7.51                         | 7.49                         | 7.47                         | 7.46                         | 7.45                         |
| 23.650          | 7.44                         | 7.43                         | 7.42                         | 7.41                         | 7.40                         |
| 23.900          | 7.39                         | 7.38                         | 7.37                         | (N/A)                        | (N/A)                        |

Subsection: Pond Routed Hydrograph (total out)  
Label: Prop\_Basin (OUT)  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

|                   |                           |
|-------------------|---------------------------|
| Peak Discharge    | 236.26 ft <sup>3</sup> /s |
| Time to Peak      | 12.600 hours              |
| Hydrograph Volume | 1,787,924 ft <sup>3</sup> |

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**

**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2.550           | 0.00                         | 0.00                         | 0.00                         | 0.01                         | 0.01                         |
| 2.800           | 0.01                         | 0.02                         | 0.02                         | 0.03                         | 0.04                         |
| 3.050           | 0.05                         | 0.05                         | 0.06                         | 0.07                         | 0.08                         |
| 3.300           | 0.09                         | 0.10                         | 0.11                         | 0.13                         | 0.14                         |
| 3.550           | 0.15                         | 0.16                         | 0.17                         | 0.18                         | 0.19                         |
| 3.800           | 0.21                         | 0.22                         | 0.23                         | 0.24                         | 0.24                         |
| 4.050           | 0.25                         | 0.25                         | 0.25                         | 0.25                         | 0.26                         |
| 4.300           | 0.26                         | 0.26                         | 0.27                         | 0.27                         | 0.27                         |
| 4.550           | 0.28                         | 0.28                         | 0.29                         | 0.29                         | 0.30                         |
| 4.800           | 0.30                         | 0.31                         | 0.32                         | 0.33                         | 0.34                         |
| 5.050           | 0.35                         | 0.36                         | 0.37                         | 0.38                         | 0.40                         |
| 5.300           | 0.41                         | 0.43                         | 0.45                         | 0.46                         | 0.48                         |
| 5.550           | 0.50                         | 0.52                         | 0.54                         | 0.55                         | 0.56                         |
| 5.800           | 0.58                         | 0.59                         | 0.61                         | 0.63                         | 0.64                         |
| 6.050           | 0.66                         | 0.68                         | 0.69                         | 0.71                         | 0.73                         |
| 6.300           | 0.75                         | 0.77                         | 0.79                         | 0.81                         | 0.83                         |
| 6.550           | 0.85                         | 0.87                         | 0.90                         | 0.92                         | 0.94                         |
| 6.800           | 0.96                         | 0.97                         | 0.99                         | 1.00                         | 1.01                         |
| 7.050           | 1.03                         | 1.04                         | 1.05                         | 1.07                         | 1.08                         |
| 7.300           | 1.10                         | 1.11                         | 1.13                         | 1.14                         | 1.16                         |
| 7.550           | 1.17                         | 1.19                         | 1.21                         | 1.23                         | 1.24                         |
| 7.800           | 1.26                         | 1.28                         | 1.30                         | 1.32                         | 1.34                         |
| 8.050           | 1.35                         | 1.36                         | 1.37                         | 1.38                         | 1.39                         |
| 8.300           | 1.40                         | 1.41                         | 1.42                         | 1.43                         | 1.44                         |
| 8.550           | 1.45                         | 1.46                         | 1.48                         | 1.49                         | 1.50                         |
| 8.800           | 1.51                         | 1.53                         | 1.54                         | 1.56                         | 1.57                         |
| 9.050           | 1.59                         | 1.60                         | 1.62                         | 1.63                         | 1.64                         |
| 9.300           | 1.65                         | 1.66                         | 1.67                         | 1.68                         | 1.70                         |
| 9.550           | 1.71                         | 1.72                         | 1.73                         | 1.75                         | 1.76                         |
| 9.800           | 1.77                         | 1.79                         | 1.80                         | 1.81                         | 1.83                         |
| 10.050          | 1.84                         | 1.86                         | 1.87                         | 1.88                         | 1.89                         |
| 10.300          | 1.91                         | 1.92                         | 1.93                         | 1.95                         | 1.96                         |
| 10.550          | 1.98                         | 1.99                         | 2.01                         | 2.03                         | 2.04                         |
| 10.800          | 2.06                         | 2.07                         | 2.09                         | 2.11                         | 2.13                         |
| 11.050          | 2.14                         | 2.16                         | 2.18                         | 2.20                         | 2.23                         |
| 11.300          | 2.25                         | 2.27                         | 2.29                         | 2.31                         | 2.34                         |
| 11.550          | 2.36                         | 2.39                         | 2.42                         | 2.46                         | 4.50                         |
| 11.800          | 7.16                         | 13.24                        | 21.15                        | 33.13                        | 48.62                        |
| 12.050          | 68.36                        | 90.25                        | 112.67                       | 134.70                       | 155.66                       |
| 12.300          | 174.93                       | 192.19                       | 207.10                       | 218.96                       | 227.82                       |
| 12.550          | 233.57                       | 236.26                       | 236.08                       | 233.33                       | 228.47                       |
| 12.800          | 221.94                       | 214.28                       | 205.80                       | 196.83                       | 187.64                       |
| 13.050          | 178.52                       | 169.69                       | 160.96                       | 152.44                       | 144.19                       |

Subsection: Pond Routed Hydrograph (total out)  
 Label: Prop\_Basin (OUT)  
 Scenario: 100YR-24HR

Return Event: 100 years  
 Storm Event: 100YR-24HR

**HYDROGRAPH ORDINATES (ft<sup>3</sup>/s)**  
**Output Time Increment = 0.050 hours**  
**Time on left represents time for first value in each row.**

| Time<br>(hours) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) | Flow<br>(ft <sup>3</sup> /s) |
|-----------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13.300          | 136.65                       | 129.47                       | 122.60                       | 116.06                       | 109.84                       |
| 13.550          | 104.19                       | 99.03                        | 94.14                        | 89.51                        | 85.13                        |
| 13.800          | 81.01                        | 77.12                        | 73.62                        | 70.52                        | 67.59                        |
| 14.050          | 64.80                        | 62.16                        | 59.65                        | 57.28                        | 55.03                        |
| 14.300          | 52.91                        | 50.90                        | 48.99                        | 47.19                        | 45.72                        |
| 14.550          | 44.34                        | 43.02                        | 41.76                        | 40.57                        | 39.44                        |
| 14.800          | 38.37                        | 37.35                        | 36.39                        | 35.48                        | 34.61                        |
| 15.050          | 33.79                        | 33.01                        | 32.27                        | 31.57                        | 30.90                        |
| 15.300          | 30.26                        | 29.65                        | 29.07                        | 28.52                        | 27.99                        |
| 15.550          | 27.48                        | 26.99                        | 26.52                        | 26.07                        | 25.63                        |
| 15.800          | 25.21                        | 24.80                        | 24.40                        | 24.03                        | 23.75                        |
| 16.050          | 23.47                        | 23.19                        | 22.92                        | 22.64                        | 22.38                        |
| 16.300          | 22.11                        | 21.85                        | 21.59                        | 21.33                        | 21.08                        |
| 16.550          | 20.84                        | 20.60                        | 20.36                        | 20.13                        | 19.91                        |
| 16.800          | 19.69                        | 19.48                        | 19.28                        | 19.07                        | 18.88                        |
| 17.050          | 18.69                        | 18.50                        | 18.33                        | 18.15                        | 17.98                        |
| 17.300          | 17.81                        | 17.65                        | 17.49                        | 17.34                        | 17.19                        |
| 17.550          | 17.04                        | 16.90                        | 16.76                        | 16.62                        | 16.49                        |
| 17.800          | 16.36                        | 16.23                        | 16.10                        | 15.98                        | 15.86                        |
| 18.050          | 15.74                        | 15.62                        | 15.50                        | 15.39                        | 15.27                        |
| 18.300          | 15.16                        | 15.05                        | 14.94                        | 14.83                        | 14.73                        |
| 18.550          | 14.62                        | 14.52                        | 14.41                        | 14.31                        | 14.21                        |
| 18.800          | 14.11                        | 14.01                        | 13.91                        | 13.81                        | 13.71                        |
| 19.050          | 13.61                        | 13.52                        | 13.42                        | 13.32                        | 13.23                        |
| 19.300          | 13.13                        | 13.04                        | 12.94                        | 12.85                        | 12.76                        |
| 19.550          | 12.66                        | 12.57                        | 12.48                        | 12.38                        | 12.29                        |
| 19.800          | 12.20                        | 12.11                        | 12.01                        | 11.92                        | 11.83                        |
| 20.050          | 11.74                        | 11.65                        | 11.56                        | 11.47                        | 11.38                        |
| 20.300          | 11.29                        | 11.20                        | 11.11                        | 11.03                        | 10.95                        |
| 20.550          | 10.86                        | 10.78                        | 10.71                        | 10.63                        | 10.56                        |
| 20.800          | 10.49                        | 10.42                        | 10.35                        | 10.29                        | 10.22                        |
| 21.050          | 10.16                        | 10.11                        | 10.05                        | 10.00                        | 9.94                         |
| 21.300          | 9.89                         | 9.85                         | 9.80                         | 9.75                         | 9.71                         |
| 21.550          | 9.67                         | 9.63                         | 9.59                         | 9.55                         | 9.51                         |
| 21.800          | 9.48                         | 9.44                         | 9.41                         | 9.38                         | 9.34                         |
| 22.050          | 9.31                         | 9.28                         | 9.25                         | 9.22                         | 9.20                         |
| 22.300          | 9.17                         | 9.14                         | 9.12                         | 9.09                         | 9.06                         |
| 22.550          | 9.04                         | 9.02                         | 8.99                         | 8.97                         | 8.94                         |
| 22.800          | 8.92                         | 8.90                         | 8.88                         | 8.85                         | 8.83                         |
| 23.050          | 8.81                         | 8.79                         | 8.77                         | 8.75                         | 8.73                         |
| 23.300          | 8.71                         | 8.69                         | 8.67                         | 8.65                         | 8.63                         |
| 23.550          | 8.61                         | 8.59                         | 8.57                         | 8.55                         | 8.53                         |
| 23.800          | 8.51                         | 8.49                         | 8.47                         | 8.45                         | 8.43                         |

Subsection: Pond Inflow Summary  
Label: Prop\_Basin (IN)  
Scenario: 2YR-24HR

Return Event: 2 years  
Storm Event: 2YR-24HR

**Summary for Hydrograph Addition at 'Prop\_Basin'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-A           |
| <Catchment to Outflow Node> | P-B           |

**Node Inflows**

| Inflow Type | Element    | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-A        | 113,177                      | 12.050                  | 36.53                               |
| Flow (From) | P-B        | 454,689                      | 12.350                  | 76.94                               |
| Flow (In)   | Prop_Basin | 567,867                      | 12.350                  | 86.89                               |

Subsection: Pond Inflow Summary

Label: Prop\_Basin (IN)

Scenario: 10YR-24HR

Return Event: 10 years

Storm Event: 10YR-24HR

**Summary for Hydrograph Addition at 'Prop\_Basin'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-A           |
| <Catchment to Outflow Node> | P-B           |

**Node Inflows**

| Inflow Type | Element    | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-A        | 197,380                      | 12.050                  | 62.03                               |
| Flow (From) | P-B        | 878,037                      | 12.350                  | 150.43                              |
| Flow (In)   | Prop_Basin | 1,075,416                    | 12.250                  | 167.13                              |

Subsection: Pond Inflow Summary

Label: Prop\_Basin (IN)

Scenario: 50YR-24HR

Return Event: 50 years

Storm Event: 50YR-24HR

**Summary for Hydrograph Addition at 'Prop\_Basin'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-A           |
| <Catchment to Outflow Node> | P-B           |

**Node Inflows**

| Inflow Type | Element    | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-A        | 301,915                      | 12.050                  | 92.60                               |
| Flow (From) | P-B        | 1,425,788                    | 12.350                  | 242.79                              |
| Flow (In)   | Prop_Basin | 1,727,703                    | 12.250                  | 268.06                              |



Subsection: Pond Inflow Summary  
Label: Prop\_Basin (IN)  
Scenario: 100YR-24HR

Return Event: 100 years  
Storm Event: 100YR-24HR

**Summary for Hydrograph Addition at 'Prop\_Basin'**

| Upstream Link               | Upstream Node |
|-----------------------------|---------------|
| <Catchment to Outflow Node> | P-A           |
| <Catchment to Outflow Node> | P-B           |

**Node Inflows**

| Inflow Type | Element    | Volume<br>(ft <sup>3</sup> ) | Time to Peak<br>(hours) | Flow (Peak)<br>(ft <sup>3</sup> /s) |
|-------------|------------|------------------------------|-------------------------|-------------------------------------|
| Flow (From) | P-A        | 352,251                      | 12.050                  | 107.06                              |
| Flow (From) | P-B        | 1,693,982                    | 12.350                  | 287.13                              |
| Flow (In)   | Prop_Basin | 2,046,233                    | 12.250                  | 316.53                              |

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