

# STORMWATER MANAGEMENT REPORT

## Contents:

- Stormwater Narrative
- A Maps
- B Existing Conditions Drainage Analysis
- C Proposed Conditions Drainage Analysis

## Project:

Reserve at Muir Park [61 Unit Plan]  
(Formerly Prospect Pointe)

## Location:

1001 Oak Avenue  
Prospect Heights, Illinois

## Prepared For:

Lexington Homes  
1731 N. Marcey Street, #200  
Chicago, IL 60614

## Date:

July 23, 2020

## Revised:

Prepared By:

Phil Ceratto, P.E.

Haeger Project No.: 18-219



ENGINEERING | SURVEYING | CONSTRUCTION

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## DRAINAGE SUMMARY

Reserve at Muir Park is a 5.227-acre parcel on the former Muir School / JFH Academy parcel. The site is bounded to the north by Drake's First Addition to Prospect Heights Subdivision, to the east by Lemke Farms Unit 2 Subdivision and Pleasant Run Park in Wheeling, IL, to the south by Muir Park and to the west by Pleasant Run Subdivision.

The purpose of this stormwater management report is to summarize the existing drainage conditions of the Muir School, Muir Park and Pleasant Run Park, including previously provided detention and depressional storage, and the requirements for the development of this site in accordance with the Metropolitan Water Reclamation District Watershed Management Ordinance.

### Existing Drainage

The existing site was separated into six (6) distinct drainage areas. These drainage areas were determined based on tributary areas to depressional storage or to existing drainage structures and storm sewer. Curve numbers were calculated for each area based on TR-55 curve number tables for Hydrologic Soil Group D. For larger areas, time of concentration was calculated using the NRCS method while smaller areas were assumed to have a five (5) minute time of concentration. Depressional storage areas, where applicable, were calculated based on existing 1-foot contours and irregular weir cross sections were used to determine the extents of the depressional storage.

Upstream areas west of the site, identified as The Forums, Pleasant Run, and an area west of Elmhurst Road tributary to The Forums discharge into the 36" sewer along the southern property line via detention storage and restrictor pipes provided during the permitting and construction of those developments. To provide an analysis of existing and proposed flows through this sewer, which is proposed to serve as the primary outfall for the proposed development, these upstream tributary areas were included in the model. Coverage areas, restrictor sizes, and approximate pond storage volumes were gathered from the original MWRD permit application (#73-1228) for use in the model.

The information above was input into a PondPack hydrologic model with Bulletin 75 rainfall data. The model was run for the 24 hour storm event for the 10-, 50-year recurrence intervals, and for the 100-year critical duration analysis. The 100-year critical duration analysis determined the BFE of the existing depressional storage areas, which is being compensated at a ratio of 1.5:1 in the proposed basin.

In addition to the existing drainage analysis, detention was previously provided for the park sites in Prospect Heights and Wheeling. Refer to Appendix D for the previously prepared detention calculations for the park sites. The share of detention provided for the Wheeling park was calculated and combined with the required detention volume in the proposed conditions calculations. Since the Prospect Heights park will be redeveloped and the existing basin will be relocated as part of these improvements, the share of existing detention allocated to Prospect Heights was not included in these calculations. Refer to the existing conditions exhibits, calculations and hydrologic reports provided in Appendix B for additional details.

### Proposed Drainage

Similar to the existing conditions analysis, the site was separated into drainage areas based on the proposed grading and utility design. The site was designed to minimize unrestricted development area to the greatest extent practicable, while maintaining existing drainage patterns from the adjacent sites onto or through the development. The upstream areas west of the site (The Forums, Pleasant Run, etc) are



unimpacted by the proposed development – restricted discharge from these sites will continue to flow into the 36” sewer to remain along the southern perimeter of the site.

The proposed basin was designed in accordance with Prospect Heights and MWRD requirements, while maintaining the general drainage conditions from the Pleasant Run park and Lemke Farms subdivision to the east. Due to grading constraints on the perimeter of the site, small portions along the eastern property line will flow unrestricted into the adjacent sewer system. Small upstream areas along the western perimeter of the site and to the north of the site by the Oak Avenue R.O.W. will be bypassed through the proposed pond.

The overflow structure for the proposed development was designed to meet MWRD runoff control requirements by providing capacity to overflow the critical duration peak inflow into the pond. The overflow structure is proposed to be a 7' x 22' box culvert constructed over the existing 36” sewer for discharge directly into the sewer. 18' of the face of the 22' culvert will be lowered below the rim elevation to function as an overflow weir at the proposed high water level. In the event the water level continues to raise above the top of the weir elevation, the box culvert will have open grating to allow for additional overflow capacity.

The information above was input into a PondPack hydrologic model with Bulletin 75 rainfall data. The model was run for the 24 hour storm event for the 10-, 50-year recurrence intervals, and for the 100-year critical duration analysis. The 100-year critical duration analysis determined the peak discharge rate and elevation from the proposed pond, accounting for all incoming runoff, was 0.680 cfs and 656.40, respectively. The peak discharge through the 36” sewer was determined to be 17.51 cfs. The full flow capacity of a 36” sewer at 0.18%, per the original design plans of the sewer construction, is 28.30 cfs, indicating that the peak discharge from the basin and upstream areas, including overflow as determined by the hydraulic modelling, can be safely discharged downstream. Based on the anticipated maximum water surface level and the design overflow capacity of the overflow structure, the stormwater design should have no adverse impacts to the existing or proposed buildings adjacent the pond or overflow route due to their elevations relative to the pond. Specific design values of the basin, including NWL / HWL and other parameters are summarized in the following section and in Appendix C.

## Stormwater Management Design

The proposed stormwater management system was designed using the MWRD nomograph based on the following criteria:

### Runoff Control

- Due to the grading constraints at the perimeter of the site, portions of the development area along the eastern property line will be unrestricted by the proposed stormwater management system.
  - Tributary Development Area = 5.09 Ac. [CN = 93 / ADJ. CN = 88]
  - Upstream Tributary Area = 0.30 Ac. [CN = 84]
- Tributary development area and curve number were input into PondPack to determine the 100 year, critical duration peak flow rate.
  - Peak Flow = 41.03 cfs [30 minute event]



- A box culvert overflow structure was designed to detain water in the proposed basin and convey runoff to the existing 36" sewer.
  - Weir & Grate Flow = 222.06 cfs
    - Weir Length = 18.00 ft
    - Weir Elevation = 656.50 ft
    - Grate Open Area = 129.36 sf
    - Grate Elevation = 657.00
    - Crest HGL Elevation = 657.10 ft

#### Volume Control

- Proposed impervious area of the development = 3.554 Ac.
  - Required Volume Control Storage = 0.296 ac-ft
- Proposed volume control storage will be provided in the storage below the outlet of the proposed wetland detention basin, including soil media mix and coarse aggregate
  - Volume Control Storage = 0.301 Ac-Ft
    - Top of Volume Control Elevation = 652.00
    - Pond Bottom Elevation = 651.00
    - Underdrain Invert = 649.00

#### Detention

- Development area = 5.227 Ac.
  - Watershed Planning Area = Des Plaines River
  - Watershed Planning Area Release Rate = 0.20 cfs/ac
  - Release Rate per City Requirements = 0.15 cfs/ac
  - Gross Allowable Release Rate = 0.784 cfs
- Proposed unrestricted area along the eastern property line = 0.140 Ac.
  - Unrestricted Release Rate per PondPack = 0.120 cfs
- Net allowable release rate = 0.664 cfs
- Calculated storage volume per Nomograph = 2.239 ac-ft
- Additional storage volume (Depressional Storage) = 0.132 ac-ft
- Total required storage volume = 2.371 ac-ft
- Provided storage volume @ Design HWL (656.60) = 2.416 ac-ft
  - NWL = 652.00
- Orifice diameter = 3.08 in
  - Orifice invert = 649.00
  - Release rate = 0.66 cfs



# Appendix A - Maps

Aerial Exhibit

USGS Exhibit

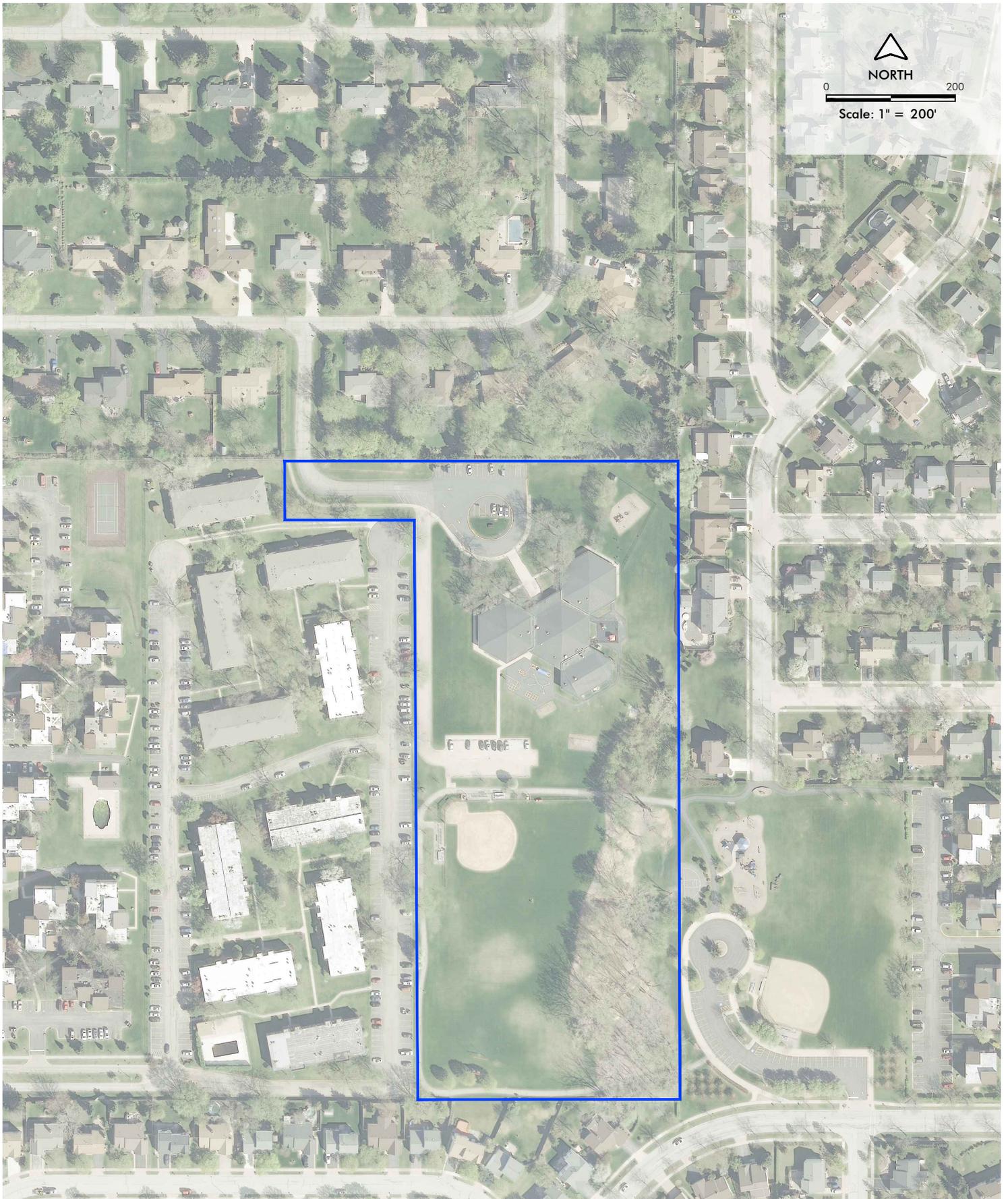
FEMA Firm Exhibit

MWRD Inundation Exhibit

National Wetlands Inventory Exhibit

NRCS Soils Exhibit

GIS Topography Exhibit



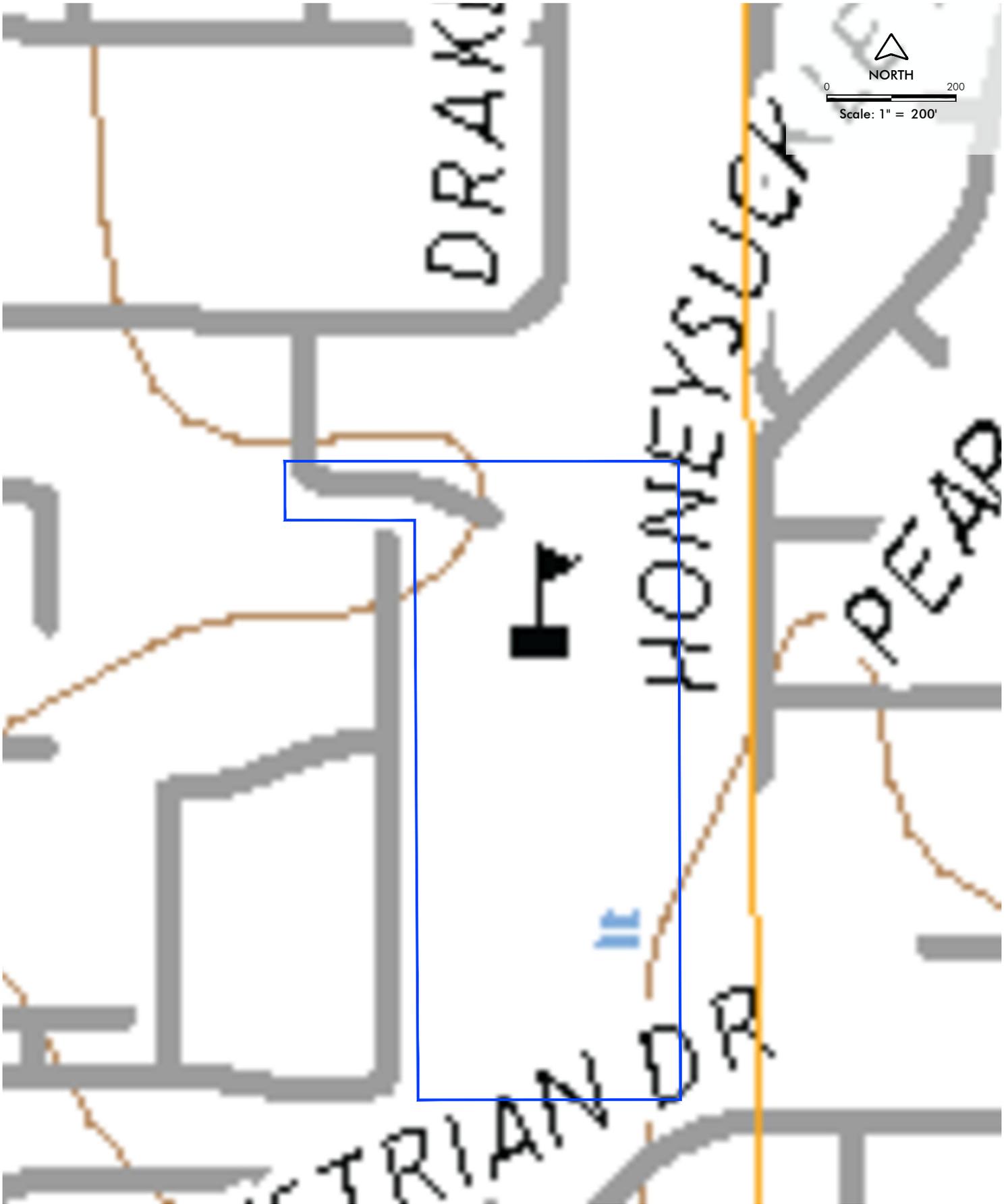
**AERIAL EXHIBIT**  
**1001 OAK AVENUE**

**CITY OF PROSPECT HEIGHTS, COOK COUNTY, ILLINOIS**

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Engineer: P A C  
Date: 03/20/2020  
Project No. 18-219  
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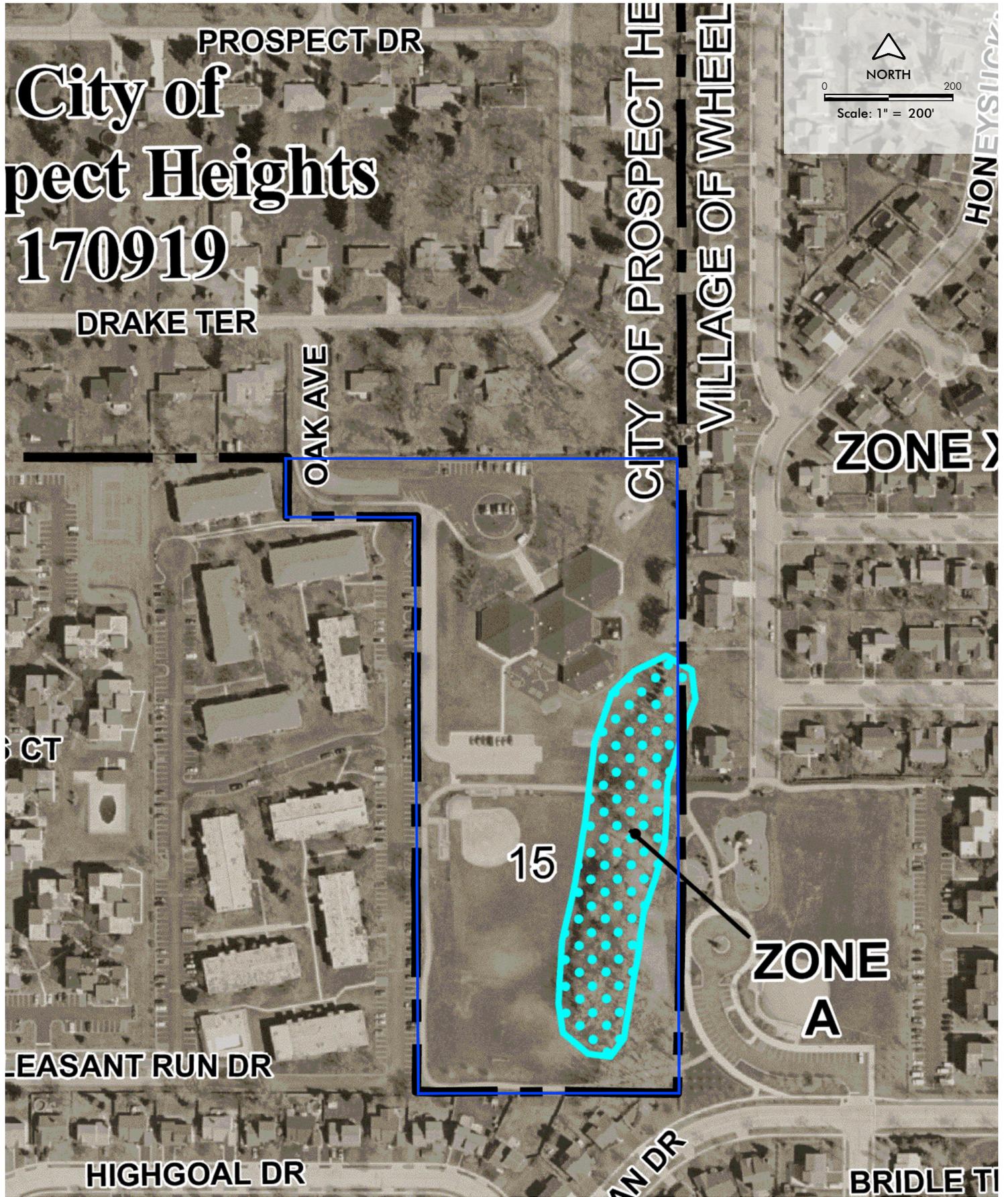
**USGS EXHIBIT  
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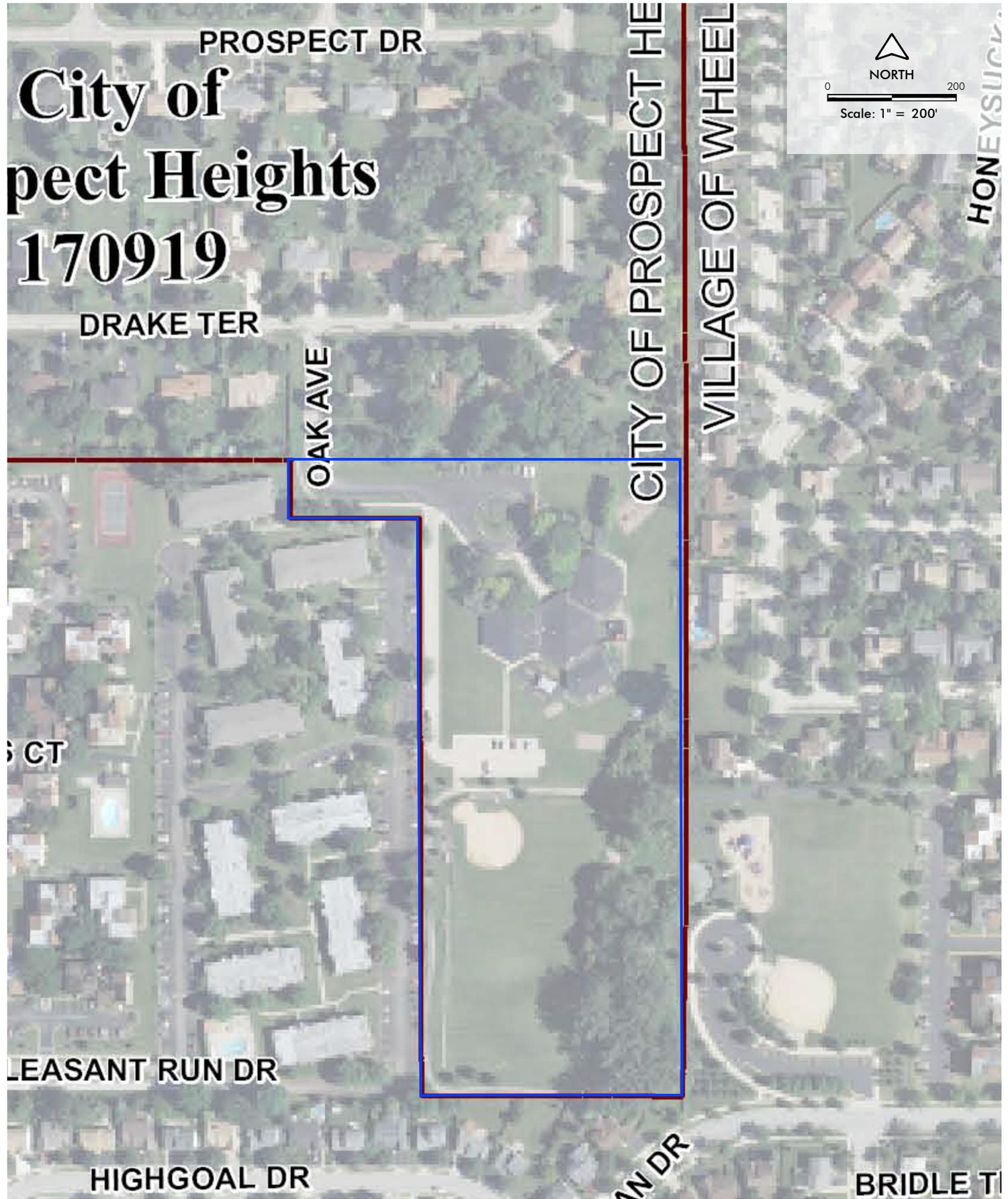
**FEMA FIRM EXHIBIT**  
**1001 OAK AVENUE**

CITY OF PROSPECT HEIGHTS, COOK COUNTY, ILLINOIS

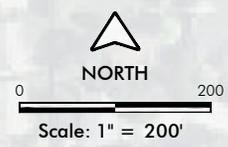
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 Project No. 18-219  
 Sheet 3 / 7



# City of Prospect Heights 170919



**MWRD INUNDATION EXHIBIT**  
**1001 OAK AVENUE**

CITY OF PROSPECT HEIGHTS, COOK COUNTY, ILLINOIS

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Date: 03/20/2020  
Project No. 18-219  
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**NATIONAL WETLAND INVENTORY EXHIBIT**  
**1001 OAK AVENUE**

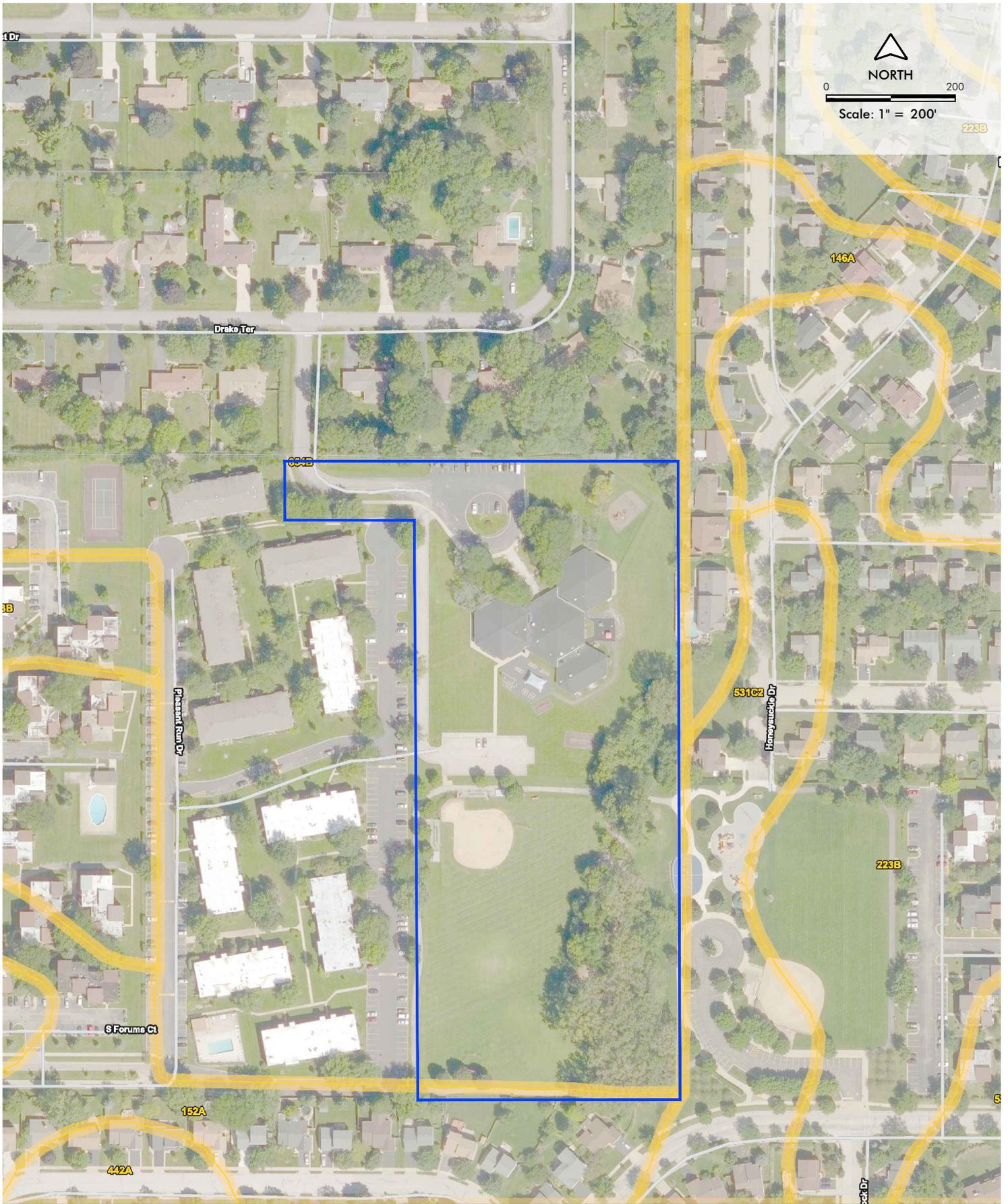
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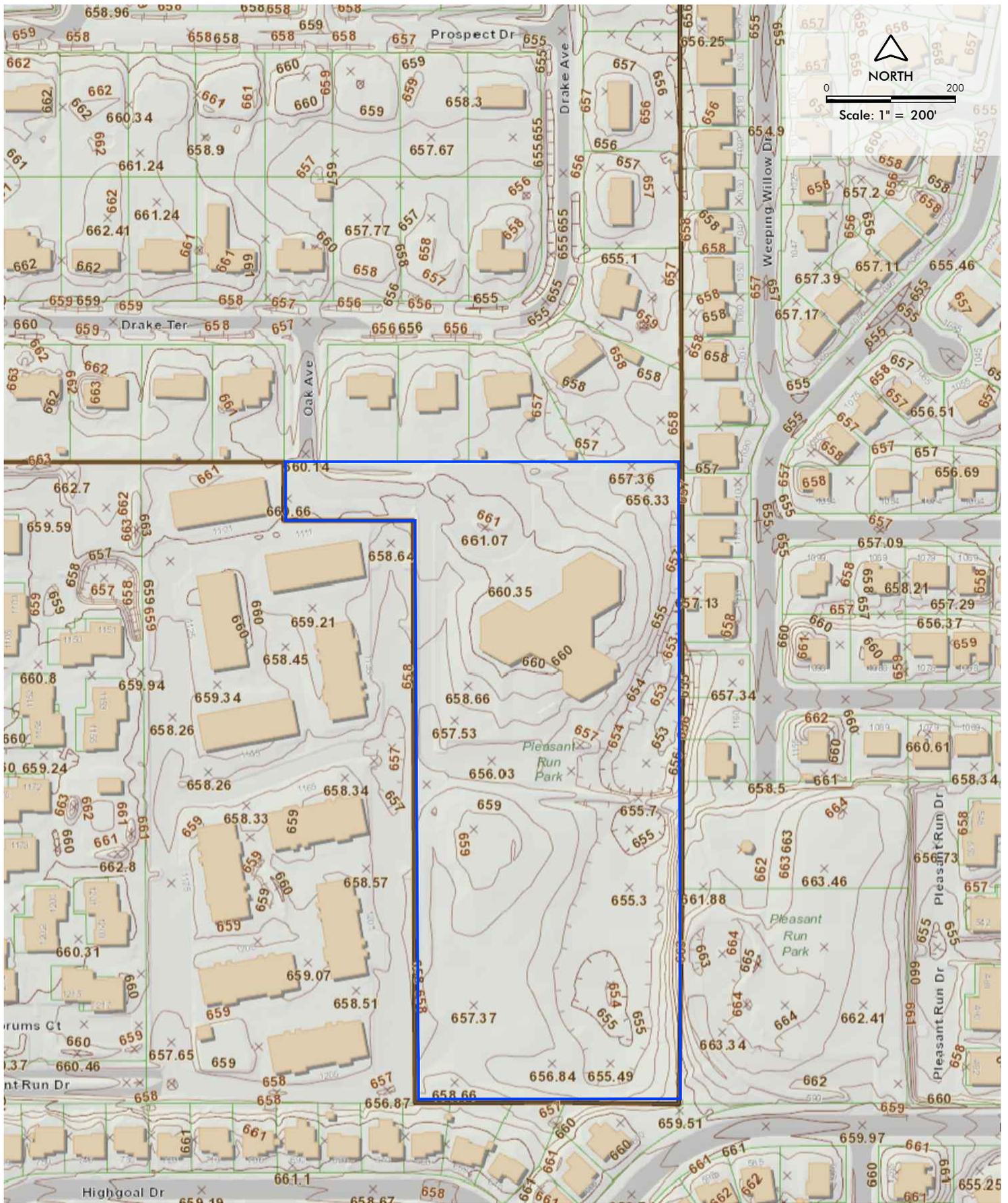
**NRCS SOILS EXHIBIT  
1001 OAK AVENUE**

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Date: 03/20/2020  
Project No. 18-219  
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**GIS TOPOGRAPHY EXHIBIT**  
**1001 OAK AVENUE**

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 Date: 03/20/2020  
 Project No. 18-219  
 Sheet 7 / 7



# Appendix B – Existing Conditions Drainage Analysis

Existing Conditions Drainage Exhibit

Curve Number Calculations

NRCS Time of Concentration Calculations

Detention / Depressional Storage Volume Calculations

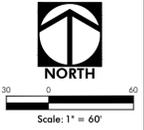
Existing Conditions PondPack Reports

| DEPRESSIONAL AREA / POND SUMMARY TABLE (100-YEAR) |                  |                        |                |
|---|------------------|------------------------|----------------|
| ID  | Type             | Critical Duration Peak | Storm Duration |
| D1 Depression                                     | Storage (ac-ft)  | 0.016                  | 30 Min         |
|   | Elevation (ft)   | 659.530                |                |
|   | Flow (Out) (cfs) | 2.840                  |                |
| EX1 Depression                                    | Storage (ac-ft)  | 0.072                  | 2 Hr           |
|   | Elevation (ft)   | 653.740                |                |
|   | Flow (Out) (cfs) | 17.140                 |                |
| PD1 Pond  | Storage (ac-ft)  | 0.534                  | 2 Hr           |
|   | Elevation (ft)   | 656.350                |                |
|   | Flow (Out) (cfs) | 13.050                 |                |
| PD1-1 Depression                                  | Storage (ac-ft)  | 0.312                  | 30 Min         |
|   | Elevation (ft)   | 658.330                |                |
|   | Flow (Out) (cfs) | 1.850                  |                |
| PR Detention                                      | Storage (ac-ft)  | 1.024                  | 3 Hr           |
|   | Elevation (ft)   | 658.340                |                |
|   | Flow (Out) (cfs) | 16.920                 |                |
| FO Detention                                      | Storage (ac-ft)  | 3.011                  | 3 Hr           |
|   | Elevation (ft)   | 660.260                |                |
|   | Flow (Out) (cfs) | 13.360                 |                |

| DRAINAGE AREA FLOW SUMMARY TABLE (100-YEAR) |            |                        |                |
|---|------------|------------------------|----------------|
| ID  | Type       | Critical Duration Peak | Storm Duration |
| Q-Drake Terrace                             | Flow (cfs) | 2.84                   | 30 Min         |
| Area D1                                     | Flow (cfs) | 3.02                   | 30 Min         |
| Q-36IN to Wheeling Road                     | Flow (cfs) | 23.87                  | 1 Hr           |
| Area S2                                     | Flow (cfs) | 10.96                  | 30 Min         |
| Area PR                                     | Flow (cfs) | 23.79                  | 2 Hr           |
| Area FO                                     | Flow (cfs) | 21.95                  | 2 Hr           |
| Area FO-US                                  | Flow (cfs) | 14.81                  | 1 Hr           |
| Q-Lot 117/118 Sewer                         | Flow (cfs) | 20.04                  | 2 Hr           |
| Area S1                                     | Flow (cfs) | 10.43                  | 30 Min         |
| Area EX1                                    | Flow (cfs) | 8.38                   | 1 Hr           |
| Area PD1                                    | Flow (cfs) | 17.78                  | 1 Hr           |
| Area PD1-1                                  | Flow (cfs) | 1.84                   | 30 Min         |

**LEGEND**

- DRAINAGE AREA
- IMPERVIOUS AREA
- PERVIOUS AREA
- TIME OF CONCENTRATION FLOW PATH
- EXISTING STORM SEWER
- DEPRESSIONAL STORAGE LIMITS



PER MWRD #73-1228, The Forums [Area FO] Receives Upstream Drainage [Area FO-US] from West.  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

**AREA FO**  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

**AREA PR**  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

**AREA PD1**

**AREA D1**

**AREA S1**

**AREA S2**

**AREA EX1**

**AREA PD1-1**

PR Pond Restricted Sewer Flow to 36IN to Wheeling Road

PD Pond Restricted Sewer Flow to PR Restrictor to 36IN to Wheeling Road. Approximate Location per MWRD #73-1228

D1 Depression Overflow to Drake Terrace Ditch

Obscured Sewer

S1 Sewer Flow to Lot 117/118 Storm Sewer

Outfall Point Lot 117/118 Storm Sewer

EX1 Depression Overflow to Lot 117/117 Storm Sewer

Sewer Obstructed to North Near Property Line

Outfall Point 36IN to Wheeling Road

S2 Sewer Flow to 36IN to Wheeling Road

PD1 Pond Overflow to EX1 Depression

PD1-1 Depression Overflow to PD1 Pond

Time of Concentration Flow Path (Typical)

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**EXISTING CONDITIONS  
DRAINAGE EXHIBIT**  
**RESERVES AT MUIR PARK  
LEXINGTON HOMES**  
PROSPECT HEIGHTS, ILLINOIS

Project Manager: T A S  
Engineer: P A C  
Date: 03/16/2020  
Project No. 18-219  
Sheet 1

05/22/2020 Date  
per Village Review & Comment Revision

## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA PD1 **PERMIT NUMBER:** \_\_\_\_\_  
**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL **DATE:** 3/12/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 1.126        | 110.36             |
| Pervious Surface    | D                           | 80 | 4.808        | 384.65             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS: 5.93 495.01

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{495.01}{5.93} \rightarrow \text{Composite CN} = \boxed{83.42}$$



## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA EX1 **PERMIT NUMBER:** \_\_\_\_\_  
**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL **DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 0.456        | 44.68              |
| Pervious Surface    | D                           | 80 | 1.715        | 137.19             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

**TOTALS:** 2.17 181.87

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{181.87}{2.17} \rightarrow \text{Composite CN} = \boxed{83.78}$$







## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA PR **PERMIT NUMBER:** \_\_\_\_\_  
**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL **DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 4.910        | 481.18             |
| Pervious Surface    | D                           | 80 | 4.314        | 345.14             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

**TOTALS:** 9.22 826.32

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{826.32}{9.22} \rightarrow \text{Composite CN} = \boxed{89.58}$$

## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA FO **PERMIT NUMBER:** \_\_\_\_\_  
**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL **DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 3.890        | 381.22             |
| Pervious Surface    | D                           | 80 | 5.480        | 438.40             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

**TOTALS:** 9.37 819.62

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{819.62}{9.37} \rightarrow \text{Composite CN} = \boxed{87.47}$$



## NRCS TIME OF CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

**PROJECT:** Reserves at Muir Park - AREA PD1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 3/12/2020

**CONDITION (SELECT FROM DROP-DOWN)**

PROPOSED CONDITION

EXISTING CONDITION

**SHEET FLOW**

|   |             |       |      |   |           |
|---|-------------|-------|------|---|-----------|
| 1. Segment ID                           | AB          |       |      |   |           |
| 2. Surface description                  | Short Grass |       |      |   |           |
| 3. Manning's roughness coefficient, $n$ | 0.15        |       |      |   |           |
| 4. Flow length, $L$ ( $\leq 100$ ft)    | 100         | ft    |      |   |           |
| 5. 2-year, 24-hr rainfall, $P_2$        | 3.34        | in    | 3.34 |   |           |
| 6. Land slope, $s$                      | 0.005       | ft/ft |      |   |           |
| 7. Travel time, $T_t$                   | 16.70       | +     |      | = | 16.70 min |

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}} (60)$$

**SHALLOW CONCENTRATED FLOW**

|   |         |       |       |   |          |
|---|---------|-------|-------|---|----------|
| 8. Segment ID                           | BC      |       | CD    |   |          |
| 9. Surface description (drop-down list) | Unpaved |       | Paved |   |          |
| 10. Flow length, $L$                    | 77.7    | ft    | 107.8 |   |          |
| 11. Watercourse slope, $s$              | 0.006   | ft/ft | 0.005 |   |          |
| 12. Average velocity, $V$               | 1.25    | fps   | 1.44  |   |          |
| 13. Travel time, $T_t$                  | 1.04    | +     | 1.25  | = | 2.29 min |

$$T_t = \frac{L}{60V}$$

**SHALLOW CONCENTRATED FLOW (cont'd)**

|   |         |       |  |   |          |
|---|---------|-------|--|---|----------|
| 8. Segment ID                           | EF      |       |  |   |          |
| 9. Surface description (drop-down list) | Unpaved |       |  |   |          |
| 10. Flow length, $L$                    | 560.6   | ft    |  |   |          |
| 11. Watercourse slope, $s$              | 0.004   | ft/ft |  |   |          |
| 12. Average velocity, $V$               | 1.02    | fps   |  |   |          |
| 13. Travel time, $T_t$                  | 9.16    | +     |  | = | 9.16 min |

$$T_t = \frac{L}{60V}$$

**OPEN CHANNEL FLOW**

|                                    |       |                 |  |  |  |
|------------------------------------|-------|-----------------|--|--|--|
| 14. Segment ID                     | DE    |                 |  |  |  |
| 15. Cross-sectional flow area, $A$ | 0.78  | ft <sup>2</sup> |  |  |  |
| 16. Wetted Perimeter, $P_w$        | 3.14  | ft              |  |  |  |
| 17. Hydraulic radius, $R$          | 0.25  | ft              |  |  |  |
| 18. Flow Length, $L$               | 296.4 | ft              |  |  |  |

19. Channel slope,  $S$

20. Manning's roughness coefficient,  $n$

21. Average velocity,  $V$

$$V = \frac{1.486}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$$

22. Travel time,  $T_t$

$$T_t = \frac{L}{60V}$$

|       |       |            |
|-------|-------|------------|
| 0.007 | ft/ft |            |
| 0.013 |       |            |
| 3.78  | fps   |            |
| 1.31  | +     | = 1.31 min |

**TIME-OF-CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )**

23. Time-of-Concentration,  $T_c$ , or Travel Time,  $T_t$

$$T_c, T_t = \sum T_t = 29.45 \text{ min}$$

## NRCS TIME OF CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

**PROJECT:** Reserves at Muir Park - AREA EX1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 3/12/2020

**CONDITION (SELECT FROM DROP-DOWN)**

PROPOSED CONDITION

EXISTING CONDITION

**SHEET FLOW**

|   |   |       |       |   |           |
|---|---|-------|-------|---|-----------|
| 1. Segment ID                           | AB  |       |       |   |           |
| 2. Surface description                  | Short Grass   |       |       |   |           |
| 3. Manning's roughness coefficient, $n$ | 0.15  |       |       |   |           |
| 4. Flow length, $L$ ( $\leq 100$ ft)    | 100   | ft    |       |   |           |
| 5. 2-year, 24-hr rainfall, $P_2$        | 3.34  | in    | 3.34  |   |           |
| 6. Land slope, $s$                      | 0.005   | ft/ft |       |   |           |
| 7. Travel time, $T_t$                   | $T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5}S^{0.4}} (60)$ |       | 16.70 | + | 16.70 min |

**SHALLOW CONCENTRATED FLOW**

|   |                       |       |         |   |                 |
|---|-----------------------|-------|---------|---|-----------------|
| 8. Segment ID                           | BC-P                  |       | BC-UP   |   |                 |
| 9. Surface description (drop-down list) | Paved                 |       | Unpaved |   |                 |
| 10. Flow length, $L$                    | 60.3                  | ft    | 228.3   |   |                 |
| 11. Watercourse slope, $s$              | 0.037                 | ft/ft | 0.037   |   |                 |
| 12. Average velocity, $V$               | 3.91                  | fps   | 3.10    |   |                 |
| 13. Travel time, $T_t$                  | $T_t = \frac{L}{60V}$ |       | 0.26    | + | 1.23 = 1.48 min |

**OPEN CHANNEL FLOW**

|  |   |                 |  |   |  |
|--|---|-----------------|--|---|--|
| 14. Segment ID                           |   |                 |  |   |  |
| 15. Cross-sectional flow area, $A$       |   | ft <sup>2</sup> |  |   |  |
| 16. Wetted Perimeter, $P_w$              |   | ft              |  |   |  |
| 17. Hydraulic radius, $R$                |   | ft              |  |   |  |
| 18. Flow Length, $L$                     |   | ft              |  |   |  |
| 19. Channel slope, $S$                   |   | ft/ft           |  |   |  |
| 20. Manning's roughness coefficient, $n$ |   |                 |  |   |  |
| 21. Average velocity, $V$                | $V = \frac{1.486}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ |                 |  |   |  |
| 22. Travel time, $T_t$                   | $T_t = \frac{L}{60V}$                                 |                 |  | + |  |

**TIME-OF-CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )**

|  |                       |  |       |  |     |
|--|-----------------------|--|-------|--|-----|
| 23. Time-of-Concentration, $T_c$ , or Travel Time, $T_t$ | $T_c, T_t = \sum T_t$ |  | 18.18 |  | min |
|--|-----------------------|--|-------|--|-----|

## NRCS TIME OF CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

**PROJECT:** Reserves at Muir Park - AREA S1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 3/12/2020

### CONDITION (SELECT FROM DROP-DOWN)

PROPOSED CONDITION

EXISTING CONDITION

### SHEET FLOW

|   |         |       |      |   |          |
|---|---------|-------|------|---|----------|
| 1. Segment ID                           | AB      |       |      |   |          |
| 2. Surface description                  | Asphalt |       |      |   |          |
| 3. Manning's roughness coefficient, $n$ | 0.011   |       |      |   |          |
| 4. Flow length, $L$ ( $\leq 100$ ft)    | 100     | ft    |      |   |          |
| 5. 2-year, 24-hr rainfall, $P_2$        | 3.34    | in    | 3.34 |   |          |
| 6. Land slope, $s$                      | 0.004   | ft/ft |      |   |          |
| 7. Travel time, $T_t$                   | 2.26    | +     |      | = | 2.26 min |

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} S^{0.4}} (60)$$

### SHALLOW CONCENTRATED FLOW

|   |       |       |         |   |          |
|---|-------|-------|---------|---|----------|
| 8. Segment ID                           | BC    |       | CD      |   |          |
| 9. Surface description (drop-down list) | Paved |       | Unpaved |   |          |
| 10. Flow length, $L$                    | 30.4  | ft    | 458.6   |   |          |
| 11. Watercourse slope, $s$              | 0.015 | ft/ft | 0.013   |   |          |
| 12. Average velocity, $V$               | 2.49  | fps   | 1.84    |   |          |
| 13. Travel time, $T_t$                  | 0.20  | +     | 4.15    | = | 4.36 min |

$$T_t = \frac{L}{60V}$$

### OPEN CHANNEL FLOW

|  |  |                 |  |   |     |
|--|--|-----------------|--|---|-----|
| 14. Segment ID                           |  |                 |  |   |     |
| 15. Cross-sectional flow area, $A$       |  | ft <sup>2</sup> |  |   |     |
| 16. Wetted Perimeter, $P_w$              |  | ft              |  |   |     |
| 17. Hydraulic radius, $R$                |  | ft              |  |   |     |
| 18. Flow Length, $L$                     |  | ft              |  |   |     |
| 19. Channel slope, $S$                   |  | ft/ft           |  |   |     |
| 20. Manning's roughness coefficient, $n$ |  |                 |  |   |     |
| 21. Average velocity, $V$                |  | fps             |  |   |     |
| 22. Travel time, $T_t$                   |  | +               |  | = | min |

$$V = \frac{1.486}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$$

$$T_t = \frac{L}{60V}$$

### TIME-OF-CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

23. Time-of-Concentration,  $T_c$ , or Travel Time,  $T_t$        $T_c, T_t = \sum T_t = 6.62$  min

## NRCS TIME OF CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

**PROJECT:** Reserves at Muir Park - AREA S2

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 3/12/2020

### CONDITION (SELECT FROM DROP-DOWN)

PROPOSED CONDITION

EXISTING CONDITION

### SHEET FLOW

|   |             |       |      |
|---|-------------|-------|------|
| 1. Segment ID                           | AB          |       |      |
| 2. Surface description                  | Short Grass |       |      |
| 3. Manning's roughness coefficient, $n$ | 0.15        |       |      |
| 4. Flow length, $L$ ( $\leq 100$ ft)    | 100         | ft    |      |
| 5. 2-year, 24-hr rainfall, $P_2$        | 3.34        | in    | 3.34 |
| 6. Land slope, $s$                      | 0.009       | ft/ft |      |
| 7. Travel time, $T_t$                   | 13.38       | +     |      |

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5}S^{0.4}} (60)$$

= 13.38 min

### SHALLOW CONCENTRATED FLOW

|   |         |       |
|---|---------|-------|
| 8. Segment ID                           | BC      | CD    |
| 9. Surface description (drop-down list) | Unpaved | Paved |
| 10. Flow length, $L$                    | 36.8    | 419.7 |
| 11. Watercourse slope, $s$              | 0.007   | 0.008 |
| 12. Average velocity, $V$               | 1.35    | 1.82  |
| 13. Travel time, $T_t$                  | 0.45    | 3.85  |

$$T_t = \frac{L}{60V}$$

= 4.30 min

### OPEN CHANNEL FLOW

|  |       |                 |
|--|-------|-----------------|
| 14. Segment ID                           | DE    |                 |
| 15. Cross-sectional flow area, $A$       | 0.20  | ft <sup>2</sup> |
| 16. Wetted Perimeter, $P_w$              | 1.57  | ft              |
| 17. Hydraulic radius, $R$                | 0.12  | ft              |
| 18. Flow Length, $L$                     | 169.9 | ft              |
| 19. Channel slope, $S$                   | 0.004 | ft/ft           |
| 20. Manning's roughness coefficient, $n$ | 0.011 |                 |
| 21. Average velocity, $V$                | 2.13  | fps             |
| 22. Travel time, $T_t$                   | 1.33  | +               |

$$V = \frac{1.486}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$$

$$T_t = \frac{L}{60V}$$

= 1.33 min

### TIME-OF-CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

23. Time-of-Concentration,  $T_c$ , or Travel Time,  $T_t$        $T_c, T_t = \sum T_t$       = 19.01 min

## DETENTION VOLUME PROVIDED

**PROJECT:** Reserves at Muir Park - AREA PD1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 3/12/2020

### AREA UNITS (CHOOSE WITH DROP-DOWN)

Units:

### POND / VAULT / SURFACE DETENTION VOLUME

| Elevation (ft) | Area (ft <sup>2</sup> ) | Average Area (ft <sup>2</sup> ) | Increment Volume (ac-ft) | Cumulative Volume (ac-ft) |
|----------------|-------------------------|---------------------------------|--------------------------|---------------------------|
| 654.10         | 0.00                    |                                 |                          | 0.000                     |
|                |                         | 401.63                          | 0.01                     |                           |
| 655.00         | 803.26                  |                                 |                          | 0.008                     |
|                |                         | 11670.28                        | 0.27                     |                           |
| 656.00         | 22537.29                |                                 |                          | 0.276                     |
|                |                         | 32006.96                        | 0.37                     |                           |
| 656.50         | 41476.63                |                                 |                          | 0.644                     |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |

### STORM SEWER DETENTION VOLUME

| Diameter (in) | Length (ft) | Volume (ac-ft) |
|---------------|-------------|----------------|
| 12            | 0           | 0.00           |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |

### TOTAL DETENTION VOLUME

Pond / Vault / Surface Detention Volume (ac-ft)

0.64

Storm Sewer Detention Volume (ac-ft)

0.00

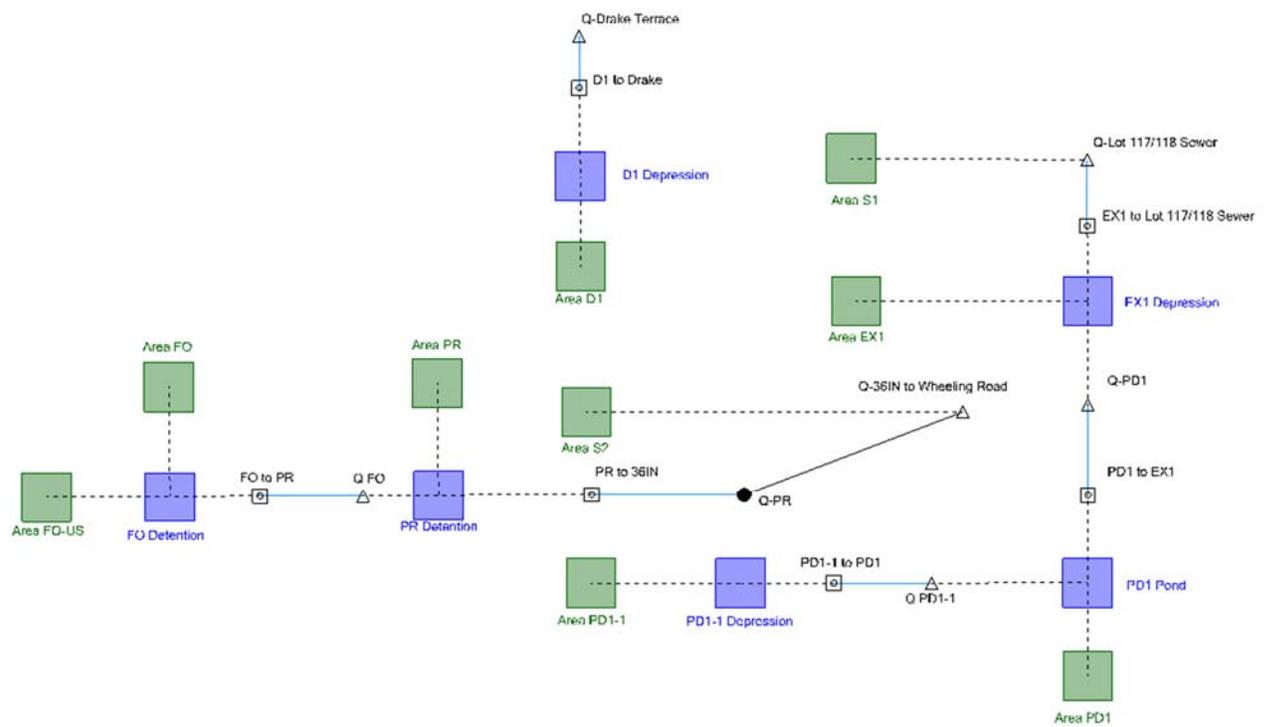
**Total Detention Volume (ac-ft)**

**0.64**









### Existing Conditions PondPack Reports

**Project Summary**

|          |                                       |
|----------|---------------------------------------|
| Title    | Prospect Pointe - Existing Conditions |
| Engineer | PAC                                   |
| Company  | Haeger Engineering LLC                |
| Date     | 5/22/2020                             |

**Notes** Existing Conditions 24 Hour, 10-, 50- & 100-Year Critical Duration Analysis

16219 - Existing Conditions.ppc  
5/15/2020

Bentley Systems, Inc. Haestad Methods Solution Center  
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PondPack CONNECT Edition  
[10.02.00.01]  
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Subsection: Master Network Summary

Catchments Summary

| Label      | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area D1    | 10yr 24hr   | 10                   | 0.140                     | 15.60                | 0.24                           |
| Area D1    | 50yr 24hr   | 50                   | 0.232                     | 15.60                | 0.38                           |
| Area D1    | 100yr 5m    | 100                  | 0.006                     | 0.10                 | 0.77                           |
| Area D1    | 100yr 10m   | 100                  | 0.024                     | 0.10                 | 2.90                           |
| Area D1    | 100yr 15m   | 100                  | 0.039                     | 0.10                 | 2.60                           |
| Area D1    | 100yr 30m   | 100                  | 0.067                     | 0.15                 | 3.02                           |
| Area D1    | 100yr 1hr   | 100                  | 0.097                     | 0.25                 | 2.46                           |
| Area D1    | 100yr 2hr   | 100                  | 0.133                     | 0.25                 | 2.00                           |
| Area D1    | 100yr 3hr   | 100                  | 0.153                     | 0.30                 | 1.73                           |
| Area D1    | 100yr 6hr   | 100                  | 0.189                     | 0.60                 | 1.24                           |
| Area D1    | 100yr 12hr  | 100                  | 0.231                     | 4.80                 | 0.66                           |
| Area D1    | 100yr 18hr  | 100                  | 0.255                     | 11.70                | 0.55                           |
| Area D1    | 100yr 24hr  | 100                  | 0.275                     | 15.60                | 0.45                           |
| Area D1    | 100yr 48hr  | 100                  | 0.310                     | 40.50                | 0.24                           |
| Area D1    | 100yr 72hr  | 100                  | 0.332                     | 61.00                | 0.17                           |
| Area D1    | 100yr 120hr | 100                  | 0.366                     | 102.00               | 0.11                           |
| Area D1    | 100yr 240hr | 100                  | 0.449                     | 204.00               | 0.07                           |
| Area PD1-1 | 10yr 24hr   | 10                   | 0.085                     | 15.60                | 0.15                           |
| Area PD1-1 | 50yr 24hr   | 50                   | 0.141                     | 15.60                | 0.23                           |
| Area PD1-1 | 100yr 5m    | 100                  | 0.004                     | 0.10                 | 0.47                           |
| Area PD1-1 | 100yr 10m   | 100                  | 0.015                     | 0.10                 | 1.76                           |
| Area PD1-1 | 100yr 15m   | 100                  | 0.024                     | 0.10                 | 1.58                           |
| Area PD1-1 | 100yr 30m   | 100                  | 0.041                     | 0.15                 | 1.84                           |
| Area PD1-1 | 100yr 1hr   | 100                  | 0.059                     | 0.25                 | 1.50                           |
| Area PD1-1 | 100yr 2hr   | 100                  | 0.081                     | 0.25                 | 1.22                           |
| Area PD1-1 | 100yr 3hr   | 100                  | 0.093                     | 0.30                 | 1.05                           |
| Area PD1-1 | 100yr 6hr   | 100                  | 0.115                     | 0.60                 | 0.76                           |
| Area PD1-1 | 100yr 12hr  | 100                  | 0.140                     | 4.80                 | 0.40                           |
| Area PD1-1 | 100yr 18hr  | 100                  | 0.155                     | 11.70                | 0.34                           |
| Area PD1-1 | 100yr 24hr  | 100                  | 0.167                     | 15.60                | 0.27                           |
| Area PD1-1 | 100yr 48hr  | 100                  | 0.189                     | 40.50                | 0.15                           |
| Area PD1-1 | 100yr 72hr  | 100                  | 0.202                     | 61.00                | 0.11                           |
| Area PD1-1 | 100yr 120hr | 100                  | 0.222                     | 102.00               | 0.07                           |
| Area PD1-1 | 100yr 240hr | 100                  | 0.273                     | 204.00               | 0.04                           |
| Area S2    | 10yr 24hr   | 10                   | 0.759                     | 15.60                | 1.22                           |
| Area S2    | 50yr 24hr   | 50                   | 1.202                     | 15.60                | 1.85                           |
| Area S2    | 100yr 5m    | 100                  | 0.057                     | 0.25                 | 2.34                           |
| Area S2    | 100yr 10m   | 100                  | 0.170                     | 0.25                 | 6.94                           |
| Area S2    | 100yr 15m   | 100                  | 0.251                     | 0.30                 | 9.04                           |
| Area S2    | 100yr 30m   | 100                  | 0.398                     | 0.30                 | 10.96                          |
| Area S2    | 100yr 1hr   | 100                  | 0.553                     | 0.40                 | 10.94                          |
| Area S2    | 100yr 2hr   | 100                  | 0.726                     | 0.50                 | 9.10                           |
| Area S2    | 100yr 3hr   | 100                  | 0.823                     | 0.50                 | 7.76                           |
| Area S2    | 100yr 6hr   | 100                  | 1.000                     | 0.70                 | 5.98                           |
| Area S2    | 100yr 12hr  | 100                  | 1.195                     | 4.80                 | 3.25                           |

Subsection: Master Network Summary

Catchments Summary

| Label    | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|----------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area S2  | 100yr 18hr  | 100                  | 1.309                     | 11.70                | 2.66                           |
| Area S2  | 100yr 24hr  | 100                  | 1.407                     | 15.60                | 2.13                           |
| Area S2  | 100yr 48hr  | 100                  | 1.559                     | 40.50                | 1.16                           |
| Area S2  | 100yr 72hr  | 100                  | 1.672                     | 61.00                | 0.82                           |
| Area S2  | 100yr 120hr | 100                  | 1.829                     | 102.00               | 0.54                           |
| Area S2  | 100yr 240hr | 100                  | 2.216                     | 204.00               | 0.32                           |
| Area S1  | 10yr 24hr   | 10                   | 0.523                     | 15.60                | 0.90                           |
| Area S1  | 50yr 24hr   | 50                   | 0.863                     | 15.60                | 1.40                           |
| Area S1  | 100yr 5m    | 100                  | 0.024                     | 0.10                 | 2.60                           |
| Area S1  | 100yr 10m   | 100                  | 0.094                     | 0.10                 | 9.93                           |
| Area S1  | 100yr 15m   | 100                  | 0.150                     | 0.15                 | 9.52                           |
| Area S1  | 100yr 30m   | 100                  | 0.254                     | 0.20                 | 10.44                          |
| Area S1  | 100yr 1hr   | 100                  | 0.367                     | 0.25                 | 9.21                           |
| Area S1  | 100yr 2hr   | 100                  | 0.497                     | 0.25                 | 7.41                           |
| Area S1  | 100yr 3hr   | 100                  | 0.571                     | 0.35                 | 6.40                           |
| Area S1  | 100yr 6hr   | 100                  | 0.706                     | 0.60                 | 4.59                           |
| Area S1  | 100yr 12hr  | 100                  | 0.856                     | 4.80                 | 2.43                           |
| Area S1  | 100yr 18hr  | 100                  | 0.945                     | 11.70                | 2.03                           |
| Area S1  | 100yr 24hr  | 100                  | 1.021                     | 15.60                | 1.63                           |
| Area S1  | 100yr 48hr  | 100                  | 1.147                     | 40.50                | 0.89                           |
| Area S1  | 100yr 72hr  | 100                  | 1.238                     | 61.00                | 0.64                           |
| Area S1  | 100yr 120hr | 100                  | 1.351                     | 102.00               | 0.42                           |
| Area S1  | 100yr 240hr | 100                  | 1.653                     | 204.00               | 0.25                           |
| Area PD1 | 10yr 24hr   | 10                   | 1.614                     | 15.60                | 2.78                           |
| Area PD1 | 50yr 24hr   | 50                   | 2.685                     | 15.60                | 4.38                           |
| Area PD1 | 100yr 5m    | 100                  | 0.067                     | 0.35                 | 1.81                           |
| Area PD1 | 100yr 10m   | 100                  | 0.278                     | 0.35                 | 7.50                           |
| Area PD1 | 100yr 15m   | 100                  | 0.447                     | 0.40                 | 11.43                          |
| Area PD1 | 100yr 30m   | 100                  | 0.771                     | 0.50                 | 16.23                          |
| Area PD1 | 100yr 1hr   | 100                  | 1.126                     | 0.55                 | 17.78                          |
| Area PD1 | 100yr 2hr   | 100                  | 1.534                     | 0.70                 | 16.32                          |
| Area PD1 | 100yr 3hr   | 100                  | 1.766                     | 0.85                 | 14.13                          |
| Area PD1 | 100yr 6hr   | 100                  | 2.192                     | 0.90                 | 10.30                          |
| Area PD1 | 100yr 12hr  | 100                  | 2.667                     | 5.00                 | 7.33                           |
| Area PD1 | 100yr 18hr  | 100                  | 2.946                     | 11.70                | 6.32                           |
| Area PD1 | 100yr 24hr  | 100                  | 3.185                     | 15.60                | 5.11                           |
| Area PD1 | 100yr 48hr  | 100                  | 3.561                     | 40.50                | 2.81                           |
| Area PD1 | 100yr 72hr  | 100                  | 3.837                     | 61.00                | 2.01                           |
| Area PD1 | 100yr 120hr | 100                  | 4.224                     | 102.00               | 1.31                           |
| Area PD1 | 100yr 240hr | 100                  | 5.185                     | 204.00               | 0.79                           |
| Area EX1 | 10yr 24hr   | 10                   | 0.608                     | 15.60                | 1.04                           |
| Area EX1 | 50yr 24hr   | 50                   | 1.003                     | 15.60                | 1.63                           |
| Area EX1 | 100yr 5m    | 100                  | 0.028                     | 0.20                 | 1.22                           |
| Area EX1 | 100yr 10m   | 100                  | 0.110                     | 0.20                 | 4.78                           |
| Area EX1 | 100yr 15m   | 100                  | 0.174                     | 0.30                 | 6.39                           |

Subsection: Master Network Summary

Catchments Summary

| Label    | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|----------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area EX1 | 100yr 30m   | 100                  | 0.295                     | 0.35                 | 8.19                           |
| Area EX1 | 100yr 1hr   | 100                  | 0.427                     | 0.40                 | 8.38                           |
| Area EX1 | 100yr 2hr   | 100                  | 0.578                     | 0.55                 | 7.02                           |
| Area EX1 | 100yr 3hr   | 100                  | 0.664                     | 0.55                 | 5.82                           |
| Area EX1 | 100yr 6hr   | 100                  | 0.821                     | 0.70                 | 4.52                           |
| Area EX1 | 100yr 12hr  | 100                  | 0.996                     | 4.90                 | 2.78                           |
| Area EX1 | 100yr 18hr  | 100                  | 1.170                     | 11.70                | 2.35                           |
| Area EX1 | 100yr 24hr  | 100                  | 1.187                     | 15.60                | 1.89                           |
| Area EX1 | 100yr 48hr  | 100                  | 1.325                     | 40.50                | 1.04                           |
| Area EX1 | 100yr 72hr  | 100                  | 1.427                     | 61.00                | 0.74                           |
| Area EX1 | 100yr 120hr | 100                  | 1.569                     | 102.00               | 0.48                           |
| Area EX1 | 100yr 240hr | 100                  | 1.922                     | 204.00               | 0.29                           |
| Area FO  | 10yr 24hr   | 10                   | 2.858                     | 15.70                | 4.59                           |
| Area FO  | 50yr 24hr   | 50                   | 4.600                     | 15.70                | 7.07                           |
| Area FO  | 100yr 5m    | 100                  | 0.179                     | 0.65                 | 2.41                           |
| Area FO  | 100yr 10m   | 100                  | 0.587                     | 0.65                 | 7.92                           |
| Area FO  | 100yr 15m   | 100                  | 0.892                     | 0.70                 | 11.83                          |
| Area FO  | 100yr 30m   | 100                  | 1.453                     | 0.80                 | 18.40                          |
| Area FO  | 100yr 1hr   | 100                  | 2.051                     | 0.95                 | 21.69                          |
| Area FO  | 100yr 2hr   | 100                  | 2.727                     | 1.05                 | 21.95                          |
| Area FO  | 100yr 3hr   | 100                  | 3.107                     | 1.20                 | 20.35                          |
| Area FO  | 100yr 6hr   | 100                  | 3.801                     | 1.45                 | 15.85                          |
| Area FO  | 100yr 12hr  | 100                  | 4.570                     | 5.50                 | 11.80                          |
| Area FO  | 100yr 18hr  | 100                  | 5.021                     | 11.90                | 9.97                           |
| Area FO  | 100yr 24hr  | 100                  | 5.405                     | 15.70                | 8.19                           |
| Area FO  | 100yr 48hr  | 100                  | 6.012                     | 41.00                | 4.50                           |
| Area FO  | 100yr 72hr  | 100                  | 6.469                     | 61.00                | 3.24                           |
| Area FO  | 100yr 120hr | 100                  | 7.071                     | 102.00               | 2.12                           |
| Area FO  | 100yr 240hr | 100                  | 8.603                     | 204.00               | 1.27                           |
| Area PR  | 10yr 24hr   | 10                   | 3.053                     | 15.70                | 4.74                           |
| Area PR  | 50yr 24hr   | 50                   | 4.797                     | 15.70                | 7.15                           |
| Area PR  | 100yr 5m    | 100                  | 0.251                     | 0.65                 | 3.38                           |
| Area PR  | 100yr 10m   | 100                  | 0.712                     | 0.65                 | 9.60                           |
| Area PR  | 100yr 15m   | 100                  | 1.038                     | 0.70                 | 13.77                          |
| Area PR  | 100yr 30m   | 100                  | 1.623                     | 0.80                 | 20.56                          |
| Area PR  | 100yr 1hr   | 100                  | 2.236                     | 0.95                 | 23.69                          |
| Area PR  | 100yr 2hr   | 100                  | 2.921                     | 1.05                 | 23.79                          |
| Area PR  | 100yr 3hr   | 100                  | 3.303                     | 1.20                 | 21.90                          |
| Area PR  | 100yr 6hr   | 100                  | 3.999                     | 1.35                 | 17.12                          |
| Area PR  | 100yr 12hr  | 100                  | 4.767                     | 5.40                 | 12.08                          |
| Area PR  | 100yr 18hr  | 100                  | 5.216                     | 11.90                | 10.06                          |
| Area PR  | 100yr 24hr  | 100                  | 5.598                     | 15.70                | 8.24                           |
| Area PR  | 100yr 48hr  | 100                  | 6.202                     | 41.00                | 4.55                           |
| Area PR  | 100yr 72hr  | 100                  | 6.635                     | 61.00                | 3.24                           |
| Area PR  | 100yr 120hr | 100                  | 7.251                     | 102.00               | 2.11                           |

Subsection: Master Network Summary

Catchments Summary

| Label      | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area PR    | 100yr 240hr | 100                  | 8.769                     | 204.00               | 1.26                           |
| Area FO-US | 10yr 24hr   | 10                   | 1.672                     | 15.70                | 2.79                           |
| Area FO-US | 50yr 24hr   | 50                   | 2.736                     | 15.60                | 4.34                           |
| Area FO-US | 100yr 5m    | 100                  | 0.086                     | 0.50                 | 1.56                           |
| Area FO-US | 100yr 10m   | 100                  | 0.315                     | 0.50                 | 5.72                           |
| Area FO-US | 100yr 15m   | 100                  | 0.492                     | 0.60                 | 8.51                           |
| Area FO-US | 100yr 30m   | 100                  | 0.824                     | 0.70                 | 13.04                          |
| Area FO-US | 100yr 1hr   | 100                  | 1.183                     | 0.70                 | 14.81                          |
| Area FO-US | 100yr 2hr   | 100                  | 1.592                     | 0.90                 | 14.61                          |
| Area FO-US | 100yr 3hr   | 100                  | 1.823                     | 1.00                 | 13.15                          |
| Area FO-US | 100yr 6hr   | 100                  | 2.247                     | 1.20                 | 9.82                           |
| Area FO-US | 100yr 12hr  | 100                  | 2.717                     | 5.30                 | 7.24                           |
| Area FO-US | 100yr 18hr  | 100                  | 2.993                     | 11.80                | 6.21                           |
| Area FO-US | 100yr 24hr  | 100                  | 3.229                     | 15.60                | 5.05                           |
| Area FO-US | 100yr 48hr  | 100                  | 3.602                     | 40.50                | 2.78                           |
| Area FO-US | 100yr 72hr  | 100                  | 3.871                     | 61.00                | 1.98                           |
| Area FO-US | 100yr 120hr | 100                  | 4.253                     | 102.00               | 1.30                           |
| Area FO-US | 100yr 240hr | 100                  | 5.198                     | 204.00               | 0.78                           |

Node Summary

| Label                   | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-Drake Terrace         | 10yr 24hr   | 10                   | 0.134                     | 15.60                | 0.24                           |
| Q-Drake Terrace         | 50yr 24hr   | 50                   | 0.226                     | 15.60                | 0.38                           |
| Q-Drake Terrace         | 100yr 5m    | 100                  | 0.000                     | 0.00                 | 0.00                           |
| Q-Drake Terrace         | 100yr 10m   | 100                  | 0.018                     | 0.15                 | 1.89                           |
| Q-Drake Terrace         | 100yr 15m   | 100                  | 0.033                     | 0.20                 | 2.10                           |
| Q-Drake Terrace         | 100yr 30m   | 100                  | 0.061                     | 0.20                 | 2.84                           |
| Q-Drake Terrace         | 100yr 1hr   | 100                  | 0.091                     | 0.25                 | 2.47                           |
| Q-Drake Terrace         | 100yr 2hr   | 100                  | 0.127                     | 0.30                 | 1.91                           |
| Q-Drake Terrace         | 100yr 3hr   | 100                  | 0.147                     | 0.35                 | 1.65                           |
| Q-Drake Terrace         | 100yr 6hr   | 100                  | 0.183                     | 0.60                 | 1.20                           |
| Q-Drake Terrace         | 100yr 12hr  | 100                  | 0.225                     | 4.80                 | 0.66                           |
| Q-Drake Terrace         | 100yr 18hr  | 100                  | 0.249                     | 11.70                | 0.55                           |
| Q-Drake Terrace         | 100yr 24hr  | 100                  | 0.269                     | 15.60                | 0.44                           |
| Q-Drake Terrace         | 100yr 48hr  | 100                  | 0.304                     | 39.00                | 0.25                           |
| Q-Drake Terrace         | 100yr 72hr  | 100                  | 0.326                     | 58.50                | 0.18                           |
| Q-Drake Terrace         | 100yr 120hr | 100                  | 0.360                     | 97.00                | 0.12                           |
| Q-Drake Terrace         | 100yr 240hr | 100                  | 0.443                     | 204.00               | 0.07                           |
| Q-36IN to Wheeling Road | 10yr 24hr   | 10                   | 8.344                     | 15.70                | 10.40                          |
| Q-36IN to Wheeling Road | 50yr        |                      |                           |                      |                                |

Subsection: Master Network Summary

Node Summary

| Label                   | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-36IN to Wheeling Road | 100yr 5m    | 100                  | 0.573                     | 0.65                 | 7.26                           |
| Q-36IN to Wheeling Road | 100yr 10m   | 100                  | 1.784                     | 0.30                 | 13.67                          |
| Q-36IN to Wheeling Road | 100yr 15m   | 100                  | 2.675                     | 0.35                 | 18.09                          |
| Q-36IN to Wheeling Road | 100yr 30m   | 100                  | 4.300                     | 0.45                 | 22.28                          |
| Q-36IN to Wheeling Road | 100yr 1hr   | 100                  | 6.024                     | 0.50                 | 23.87                          |
| Q-36IN to Wheeling Road | 100yr 2hr   | 100                  | 7.966                     | 0.65                 | 23.06                          |
| Q-36IN to Wheeling Road | 100yr 3hr   | 100                  | 9.056                     | 0.80                 | 21.57                          |
| Q-36IN to Wheeling Road | 100yr 6hr   | 100                  | 11.047                    | 1.05                 | 19.35                          |
| Q-36IN to Wheeling Road | 100yr 12hr  | 100                  | 13.249                    | 5.10                 | 17.90                          |
| Q-36IN to Wheeling Road | 100yr 18hr  | 100                  | 14.541                    | 11.80                | 16.88                          |
| Q-36IN to Wheeling Road | 100yr 24hr  | 100                  | 15.639                    | 15.70                | 15.06                          |
| Q-36IN to Wheeling Road | 100yr 48hr  | 100                  | 17.376                    | 43.00                | 10.42                          |
| Q-36IN to Wheeling Road | 100yr 72hr  | 100                  | 18.627                    | 59.50                | 8.69                           |
| Q-36IN to Wheeling Road | 100yr 120hr | 100                  | 20.404                    | 102.00               | 6.06                           |
| Q-36IN to Wheeling Road | 100yr 240hr | 100                  | 24.785                    | 204.00               | 3.62                           |
| Q-Lot 117/118 Sewer     | 10yr 24hr   | 10                   | 2.810                     | 15.60                | 3.75                           |
| Q-Lot 117/118 Sewer     | 50yr 24hr   | 50                   | 4.673                     | 15.60                | 7.31                           |
| Q-Lot 117/118 Sewer     | 100yr 5m    | 100                  | 0.106                     | 0.10                 | 2.60                           |
| Q-Lot 117/118 Sewer     | 100yr 10m   | 100                  | 0.477                     | 0.10                 | 9.93                           |
| Q-Lot 117/118 Sewer     | 100yr 15m   | 100                  | 0.775                     | 0.30                 | 10.85                          |
| Q-Lot 117/118 Sewer     | 100yr 30m   | 100                  | 1.341                     | 0.30                 | 15.33                          |
| Q-Lot 117/118 Sewer     | 100yr 1hr   | 100                  | 1.961                     | 0.85                 | 18.38                          |
| Q-Lot 117/118 Sewer     | 100yr 2hr   | 100                  | 2.671                     | 0.95                 | 20.04                          |
| Q-Lot 117/118 Sewer     | 100yr 3hr   | 100                  | 3.074                     | 1.10                 | 18.70                          |
| Q-Lot 117/118 Sewer     | 100yr 6hr   | 100                  | 3.815                     | 1.55                 | 14.99                          |
| Q-Lot 117/118 Sewer     | 100yr 12hr  | 100                  | 4.640                     | 5.40                 | 12.42                          |
| Q-Lot 117/118 Sewer     | 100yr 18hr  | 100                  | 5.126                     | 11.70                | 10.84                          |
| Q-Lot 117/118 Sewer     | 100yr 24hr  | 100                  | 5.541                     | 15.60                | 8.78                           |
| Q-Lot 117/118 Sewer     | 100yr 48hr  | 100                  | 6.202                     | 43.00                | 4.51                           |
| Q-Lot 117/118 Sewer     | 100yr 72hr  | 100                  | 6.675                     | 64.50                | 3.13                           |
| Q-Lot 117/118 Sewer     | 100yr 120hr | 100                  | 7.347                     | 102.00               | 2.27                           |
| Q-Lot 117/118 Sewer     | 100yr 240hr | 100                  | 9.013                     | 204.00               | 1.37                           |

Subsection: Master Network Summary

Node Summary

| Label | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-PR  | 10yr 24hr   | 10                   | 7.584                     | 15.80                | 9.23                           |
| Q-PR  | 50yr 24hr   | 50                   | 12.132                    | 15.90                | 11.82                          |
| Q-PR  | 100yr 5m    | 100                  | 0.516                     | 0.65                 | 7.12                           |
| Q-PR  | 100yr 10m   | 100                  | 1.614                     | 0.70                 | 12.19                          |
| Q-PR  | 100yr 15m   | 100                  | 2.423                     | 0.80                 | 14.56                          |
| Q-PR  | 100yr 30m   | 100                  | 3.902                     | 1.20                 | 15.31                          |
| Q-PR  | 100yr 1hr   | 100                  | 5.471                     | 1.55                 | 15.96                          |
| Q-PR  | 100yr 2hr   | 100                  | 7.240                     | 2.50                 | 16.78                          |
| Q-PR  | 100yr 3hr   | 100                  | 8.233                     | 3.05                 | 16.92                          |
| Q-PR  | 100yr 6hr   | 100                  | 10.047                    | 3.60                 | 16.40                          |
| Q-PR  | 100yr 12hr  | 100                  | 12.054                    | 7.70                 | 15.33                          |
| Q-PR  | 100yr 18hr  | 100                  | 13.232                    | 12.00                | 14.48                          |
| Q-PR  | 100yr 24hr  | 100                  | 14.233                    | 15.90                | 13.05                          |
| Q-PR  | 100yr 48hr  | 100                  | 15.817                    | 43.50                | 9.35                           |
| Q-PR  | 100yr 72hr  | 100                  | 16.954                    | 59.50                | 7.87                           |
| Q-PR  | 100yr 120hr | 100                  | 18.575                    | 102.00               | 5.52                           |
| Q-PR  | 100yr 240hr | 100                  | 22.570                    | 204.00               | 3.30                           |

Pond Summary

| Label               | Scenario  | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|---------------------|-----------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| D1 Depression (IN)  | 10yr 24hr | 10                   | 0.140                     | 15.60                | 0.24                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 10yr 24hr | 10                   | 0.134                     | 15.60                | 0.24                           | 659.26                               | 0.010                        |
| D1 Depression (IN)  | 50yr 24hr | 50                   | 0.232                     | 15.60                | 0.38                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 50yr 24hr | 50                   | 0.226                     | 15.60                | 0.38                           | 659.29                               | 0.010                        |
| D1 Depression (IN)  | 100yr 5m  | 100                  | 0.006                     | 0.10                 | 0.77                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 5m  | 100                  | 0.000                     | 0.00                 | 0.00                           | 659.09                               | 0.006                        |
| D1 Depression (IN)  | 100yr 10m | 100                  | 0.024                     | 0.10                 | 2.90                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label               | Scenario   | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|---------------------|------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| D1 Depression (OUT) | 100yr 10m  | 100                  | 0.018                     | 0.15                 | 1.89                           | 659.47                               | 0.014                        |
| D1 Depression (IN)  | 100yr 15m  | 100                  | 0.039                     | 0.10                 | 2.60                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 15m  | 100                  | 0.033                     | 0.20                 | 2.10                           | 659.48                               | 0.015                        |
| D1 Depression (IN)  | 100yr 30m  | 100                  | 0.067                     | 0.15                 | 3.02                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 30m  | 100                  | 0.061                     | 0.20                 | 2.84                           | 659.53                               | 0.016                        |
| D1 Depression (IN)  | 100yr 1hr  | 100                  | 0.097                     | 0.25                 | 2.46                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 1hr  | 100                  | 0.091                     | 0.25                 | 2.47                           | 659.51                               | 0.015                        |
| D1 Depression (IN)  | 100yr 2hr  | 100                  | 0.133                     | 0.25                 | 2.00                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 2hr  | 100                  | 0.127                     | 0.30                 | 1.91                           | 659.47                               | 0.014                        |
| D1 Depression (IN)  | 100yr 3hr  | 100                  | 0.153                     | 0.30                 | 1.73                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 3hr  | 100                  | 0.147                     | 0.35                 | 1.65                           | 659.45                               | 0.014                        |
| D1 Depression (IN)  | 100yr 6hr  | 100                  | 0.189                     | 0.60                 | 1.24                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 6hr  | 100                  | 0.183                     | 0.60                 | 1.20                           | 659.41                               | 0.013                        |
| D1 Depression (IN)  | 100yr 12hr | 100                  | 0.231                     | 4.80                 | 0.66                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT) | 100yr 12hr | 100                  | 0.225                     | 4.80                 | 0.66                           | 659.34                               | 0.011                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| D1 Depression (IN)     | 100yr 18hr  | 100                  | 0.255                     | 11.70                | 0.55                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 18hr  | 100                  | 0.249                     | 11.70                | 0.55                           | 659.32                               | 0.011                        |
| D1 Depression (IN)     | 100yr 24hr  | 100                  | 0.275                     | 15.60                | 0.45                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 24hr  | 100                  | 0.269                     | 15.60                | 0.44                           | 659.31                               | 0.011                        |
| D1 Depression (IN)     | 100yr 48hr  | 100                  | 0.310                     | 40.50                | 0.24                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 48hr  | 100                  | 0.304                     | 39.00                | 0.25                           | 659.26                               | 0.010                        |
| D1 Depression (IN)     | 100yr 72hr  | 100                  | 0.332                     | 61.00                | 0.17                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 72hr  | 100                  | 0.326                     | 58.50                | 0.18                           | 659.24                               | 0.009                        |
| D1 Depression (IN)     | 100yr 120hr | 100                  | 0.366                     | 102.00               | 0.11                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 120hr | 100                  | 0.360                     | 97.00                | 0.12                           | 659.22                               | 0.009                        |
| D1 Depression (IN)     | 100yr 240hr | 100                  | 0.449                     | 204.00               | 0.07                           | (N/A)                                | (N/A)                        |
| D1 Depression (OUT)    | 100yr 240hr | 100                  | 0.443                     | 204.00               | 0.07                           | 659.20                               | 0.008                        |
| PD1-1 Depression (IN)  | 10yr 24hr   | 10                   | 0.085                     | 15.60                | 0.15                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 10yr 24hr   | 10                   | 0.079                     | 15.60                | 0.15                           | 658.25                               | 0.008                        |
| PD1-1 Depression (IN)  | 50yr 24hr   | 50                   | 0.141                     | 15.60                | 0.23                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario  | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-----------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1-1 Depression (OUT) | 50yr 24hr | 50                   | 0.135                     | 15.60                | 0.23                           | 658.26                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 5m  | 100                  | 0.004                     | 0.10                 | 0.47                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 5m  | 100                  | 0.000                     | 0.00                 | 0.00                           | 658.12                               | 0.004                        |
| PD1-1 Depression (IN)  | 100yr 10m | 100                  | 0.015                     | 0.10                 | 1.76                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 10m | 100                  | 0.009                     | 0.15                 | 0.81                           | 658.30                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 15m | 100                  | 0.024                     | 0.10                 | 1.58                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 15m | 100                  | 0.018                     | 0.20                 | 1.22                           | 658.32                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 30m | 100                  | 0.041                     | 0.15                 | 1.84                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 30m | 100                  | 0.035                     | 0.20                 | 1.65                           | 658.33                               | 0.012                        |
| PD1-1 Depression (IN)  | 100yr 1hr | 100                  | 0.059                     | 0.25                 | 1.50                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 1hr | 100                  | 0.053                     | 0.25                 | 1.51                           | 658.33                               | 0.012                        |
| PD1-1 Depression (IN)  | 100yr 2hr | 100                  | 0.081                     | 0.25                 | 1.22                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 2hr | 100                  | 0.075                     | 0.35                 | 1.07                           | 658.31                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 3hr | 100                  | 0.093                     | 0.30                 | 1.05                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 3hr | 100                  | 0.087                     | 0.40                 | 0.94                           | 658.31                               | 0.011                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1-1 Depression (IN)  | 100yr 6hr   | 100                  | 0.115                     | 0.60                 | 0.76                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 6hr   | 100                  | 0.109                     | 0.65                 | 0.71                           | 658.29                               | 0.010                        |
| PD1-1 Depression (IN)  | 100yr 12hr  | 100                  | 0.140                     | 4.80                 | 0.40                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 12hr  | 100                  | 0.134                     | 4.80                 | 0.40                           | 658.27                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 18hr  | 100                  | 0.155                     | 11.70                | 0.34                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 18hr  | 100                  | 0.149                     | 11.70                | 0.34                           | 658.27                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 24hr  | 100                  | 0.167                     | 15.60                | 0.27                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 24hr  | 100                  | 0.161                     | 15.60                | 0.27                           | 658.26                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 48hr  | 100                  | 0.189                     | 40.50                | 0.15                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 48hr  | 100                  | 0.183                     | 40.50                | 0.15                           | 658.25                               | 0.008                        |
| PD1-1 Depression (IN)  | 100yr 72hr  | 100                  | 0.202                     | 61.00                | 0.11                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 72hr  | 100                  | 0.196                     | 58.50                | 0.11                           | 658.24                               | 0.008                        |
| PD1-1 Depression (IN)  | 100yr 120hr | 100                  | 0.222                     | 102.00               | 0.07                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 120hr | 100                  | 0.216                     | 97.00                | 0.07                           | 658.22                               | 0.007                        |
| PD1-1 Depression (IN)  | 100yr 240hr | 100                  | 0.273                     | 204.00               | 0.04                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1-1 Depression (OUT) | 100yr 240hr | 100                  | 0.267                     | 193.00               | 0.04                           | 658.21                               | 0.007                        |
| PD1 Pond (IN)          | 10yr 24hr   | 10                   | 1.693                     | 15.60                | 2.93                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 10yr 24hr   | 10                   | 1.692                     | 17.00                | 1.93                           | 655.87                               | 0.241                        |
| PD1 Pond (IN)          | 50yr 24hr   | 50                   | 2.820                     | 15.60                | 4.61                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 50yr 24hr   | 50                   | 2.820                     | 15.80                | 4.40                           | 656.16                               | 0.393                        |
| PD1 Pond (IN)          | 100yr 5m    | 100                  | 0.067                     | 0.35                 | 1.81                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 5m    | 100                  | 0.067                     | 0.50                 | 1.29                           | 655.03                               | 0.015                        |
| PD1 Pond (IN)          | 100yr 10m   | 100                  | 0.287                     | 0.35                 | 7.60                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 10m   | 100                  | 0.286                     | 0.70                 | 1.78                           | 655.64                               | 0.179                        |
| PD1 Pond (IN)          | 100yr 15m   | 100                  | 0.465                     | 0.40                 | 11.57                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 15m   | 100                  | 0.465                     | 0.80                 | 2.53                           | 656.06                               | 0.317                        |
| PD1 Pond (IN)          | 100yr 30m   | 100                  | 0.805                     | 0.45                 | 16.86                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 30m   | 100                  | 0.805                     | 0.80                 | 8.36                           | 656.27                               | 0.472                        |
| PD1 Pond (IN)          | 100yr 1hr   | 100                  | 1.179                     | 0.55                 | 18.48                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 1hr   | 100                  | 1.179                     | 0.90                 | 12.25                          | 656.34                               | 0.524                        |
| PD1 Pond (IN)          | 100yr 2hr   | 100                  | 1.609                     | 0.70                 | 17.04                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 2hr   | 100                  | 1.608                     | 1.00                 | 13.05                          | 656.35                               | 0.534                        |
| PD1 Pond (IN)          | 100yr 3hr   | 100                  | 1.852                     | 0.80                 | 14.85                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 3hr   | 100                  | 1.852                     | 1.15                 | 12.05                          | 656.33                               | 0.522                        |
| PD1 Pond (IN)          | 100yr 6hr   | 100                  | 2.301                     | 0.90                 | 10.81                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 6hr   | 100                  | 2.301                     | 1.65                 | 9.21                           | 656.28                               | 0.485                        |
| PD1 Pond (IN)          | 100yr 12hr  | 100                  | 2.801                     | 5.00                 | 7.70                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label                | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|----------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1 Pond (OUT)       | 100yr 12hr  | 100                  | 2.800                     | 5.50                 | 7.48                           | 656.25                               | 0.459                        |
| PD1 Pond (IN)        | 100yr 18hr  | 100                  | 3.095                     | 11.70                | 6.65                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 18hr  | 100                  | 3.095                     | 11.80                | 6.52                           | 656.22                               | 0.441                        |
| PD1 Pond (IN)        | 100yr 24hr  | 100                  | 3.346                     | 15.60                | 5.38                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 24hr  | 100                  | 3.346                     | 15.70                | 5.29                           | 656.19                               | 0.416                        |
| PD1 Pond (IN)        | 100yr 48hr  | 100                  | 3.744                     | 40.50                | 2.96                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 48hr  | 100                  | 3.744                     | 43.00                | 2.73                           | 656.07                               | 0.329                        |
| PD1 Pond (IN)        | 100yr 72hr  | 100                  | 4.033                     | 61.00                | 2.11                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 72hr  | 100                  | 4.033                     | 65.00                | 1.86                           | 655.76                               | 0.213                        |
| PD1 Pond (IN)        | 100yr 120hr | 100                  | 4.441                     | 102.00               | 1.38                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 120hr | 100                  | 4.440                     | 102.00               | 1.37                           | 655.09                               | 0.031                        |
| PD1 Pond (IN)        | 100yr 240hr | 100                  | 5.452                     | 204.00               | 0.83                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)       | 100yr 240hr | 100                  | 5.451                     | 204.00               | 0.83                           | 654.80                               | 0.006                        |
| EX1 Depression (IN)  | 10yr 24hr   | 10                   | 2.300                     | 15.60                | 2.86                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 10yr 24hr   | 10                   | 2.287                     | 15.70                | 2.85                           | 653.46                               | 0.042                        |
| EX1 Depression (IN)  | 50yr 24hr   | 50                   | 3.823                     | 15.70                | 5.96                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 50yr 24hr   | 50                   | 3.810                     | 15.70                | 5.96                           | 653.55                               | 0.051                        |
| EX1 Depression (IN)  | 100yr 5m    | 100                  | 0.095                     | 0.25                 | 2.30                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 5m    | 100                  | 0.082                     | 0.45                 | 1.55                           | 653.41                               | 0.035                        |

Subsection: Master Network Summary

Pond Summary

| Label                | Scenario   | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|----------------------|------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| EX1 Depression (IN)  | 100yr 10m  | 100                  | 0.396                     | 0.20                 | 6.12                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 10m  | 100                  | 0.383                     | 0.30                 | 5.51                           | 653.54                               | 0.050                        |
| EX1 Depression (IN)  | 100yr 15m  | 100                  | 0.639                     | 0.30                 | 7.90                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 15m  | 100                  | 0.626                     | 0.35                 | 7.60                           | 653.59                               | 0.055                        |
| EX1 Depression (IN)  | 100yr 30m  | 100                  | 1.100                     | 0.70                 | 9.94                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 30m  | 100                  | 1.087                     | 0.75                 | 9.91                           | 653.63                               | 0.060                        |
| EX1 Depression (IN)  | 100yr 1hr  | 100                  | 1.606                     | 0.85                 | 15.78                          | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 1hr  | 100                  | 1.593                     | 0.85                 | 15.74                          | 653.72                               | 0.070                        |
| EX1 Depression (IN)  | 100yr 2hr  | 100                  | 2.187                     | 1.00                 | 17.14                          | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 2hr  | 100                  | 2.174                     | 1.00                 | 17.14                          | 653.74                               | 0.072                        |
| EX1 Depression (IN)  | 100yr 3hr  | 100                  | 2.516                     | 1.10                 | 15.88                          | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 3hr  | 100                  | 2.503                     | 1.15                 | 15.89                          | 653.72                               | 0.070                        |
| EX1 Depression (IN)  | 100yr 6hr  | 100                  | 3.122                     | 1.60                 | 12.38                          | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 6hr  | 100                  | 3.109                     | 1.60                 | 12.39                          | 653.67                               | 0.065                        |
| EX1 Depression (IN)  | 100yr 12hr | 100                  | 3.797                     | 5.40                 | 10.12                          | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label                | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|----------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| EX1 Depression (OUT) | 100yr 12hr  | 100                  | 3.784                     | 5.50                 | 10.10                          | 653.64                               | 0.060                        |
| EX1 Depression (IN)  | 100yr 18hr  | 100                  | 4.194                     | 11.70                | 8.83                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 18hr  | 100                  | 4.181                     | 11.80                | 8.82                           | 653.61                               | 0.058                        |
| EX1 Depression (IN)  | 100yr 24hr  | 100                  | 4.533                     | 15.60                | 7.16                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 24hr  | 100                  | 4.520                     | 15.60                | 7.15                           | 653.58                               | 0.054                        |
| EX1 Depression (IN)  | 100yr 48hr  | 100                  | 5.069                     | 43.00                | 3.70                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 48hr  | 100                  | 5.056                     | 43.00                | 3.67                           | 653.49                               | 0.045                        |
| EX1 Depression (IN)  | 100yr 72hr  | 100                  | 5.460                     | 64.50                | 2.54                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 72hr  | 100                  | 5.447                     | 64.50                | 2.54                           | 653.45                               | 0.040                        |
| EX1 Depression (IN)  | 100yr 120hr | 100                  | 6.010                     | 102.00               | 1.86                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 120hr | 100                  | 5.997                     | 102.00               | 1.86                           | 653.42                               | 0.037                        |
| EX1 Depression (IN)  | 100yr 240hr | 100                  | 7.373                     | 204.00               | 1.12                           | (N/A)                                | (N/A)                        |
| EX1 Depression (OUT) | 100yr 240hr | 100                  | 7.360                     | 204.00               | 1.12                           | 653.38                               | 0.032                        |
| PR Detention (IN)    | 10yr 24hr   | 10                   | 7.583                     | 15.80                | 9.23                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT)   | 10yr 24hr   | 10                   | 7.583                     | 15.80                | 9.23                           | 655.25                               | 0.000                        |
| PR Detention (IN)    | 50yr 24hr   | 50                   | 12.132                    | 15.80                | 11.83                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT)   | 50yr 24hr   | 50                   | 12.132                    | 15.90                | 11.82                          | 656.09                               | 0.000                        |

Subsection: Master Network Summary

Pond Summary

| Label              | Scenario   | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PR Detention (IN)  | 100yr 5m   | 100                  | 0.516                     | 0.65                 | 7.16                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 5m   | 100                  | 0.516                     | 0.65                 | 7.12                           | 654.72                               | 0.000                        |
| PR Detention (IN)  | 100yr 10m  | 100                  | 1.614                     | 0.65                 | 12.21                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 10m  | 100                  | 1.614                     | 0.70                 | 12.19                          | 656.23                               | 0.000                        |
| PR Detention (IN)  | 100yr 15m  | 100                  | 2.423                     | 0.80                 | 15.54                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 15m  | 100                  | 2.423                     | 0.80                 | 14.56                          | 657.20                               | 0.000                        |
| PR Detention (IN)  | 100yr 30m  | 100                  | 3.900                     | 0.80                 | 22.19                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 30m  | 100                  | 3.900                     | 1.20                 | 15.31                          | 657.54                               | 0.238                        |
| PR Detention (IN)  | 100yr 1hr  | 100                  | 5.471                     | 0.95                 | 26.38                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 1hr  | 100                  | 5.471                     | 1.55                 | 15.96                          | 657.85                               | 0.544                        |
| PR Detention (IN)  | 100yr 2hr  | 100                  | 7.240                     | 1.10                 | 26.63                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 2hr  | 100                  | 7.240                     | 2.50                 | 16.78                          | 658.26                               | 0.948                        |
| PR Detention (IN)  | 100yr 3hr  | 100                  | 8.233                     | 1.20                 | 24.89                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 3hr  | 100                  | 8.233                     | 3.05                 | 16.92                          | 658.34                               | 1.024                        |
| PR Detention (IN)  | 100yr 6hr  | 100                  | 10.047                    | 2.90                 | 21.77                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 6hr  | 100                  | 10.047                    | 3.60                 | 16.40                          | 658.07                               | 0.760                        |
| PR Detention (IN)  | 100yr 12hr | 100                  | 12.054                    | 7.00                 | 17.68                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 12hr | 100                  | 12.054                    | 7.70                 | 15.33                          | 657.55                               | 0.249                        |
| PR Detention (IN)  | 100yr 18hr | 100                  | 13.230                    | 12.00                | 14.50                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 18hr | 100                  | 13.230                    | 12.00                | 14.48                          | 657.16                               | 0.000                        |
| PR Detention (IN)  | 100yr 24hr | 100                  | 14.232                    | 15.80                | 13.05                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 24hr | 100                  | 14.232                    | 15.90                | 13.05                          | 656.56                               | 0.000                        |
| PR Detention (IN)  | 100yr 48hr | 100                  | 15.816                    | 43.00                | 9.38                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label              | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PR Detention (OUT) | 100yr 48hr  | 100                  | 15.816                    | 43.50                | 9.35                           | 655.29                               | 0.000                        |
| PR Detention (IN)  | 100yr 72hr  | 100                  | 16.954                    | 59.00                | 7.96                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 72hr  | 100                  | 16.954                    | 59.50                | 7.87                           | 654.90                               | 0.000                        |
| PR Detention (IN)  | 100yr 120hr | 100                  | 18.575                    | 102.00               | 5.52                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 120hr | 100                  | 18.575                    | 102.00               | 5.52                           | 654.55                               | 0.000                        |
| PR Detention (IN)  | 100yr 240hr | 100                  | 22.570                    | 204.00               | 3.30                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 240hr | 100                  | 22.570                    | 204.00               | 3.30                           | 654.36                               | 0.000                        |
| FO Detention (IN)  | 10yr 24hr   | 10                   | 4.530                     | 15.70                | 7.38                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 10yr 24hr   | 10                   | 4.530                     | 18.00                | 5.18                           | 657.01                               | 0.496                        |
| FO Detention (IN)  | 50yr 24hr   | 50                   | 7.335                     | 15.70                | 11.41                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 50yr 24hr   | 50                   | 7.335                     | 19.10                | 6.30                           | 658.41                               | 1.640                        |
| FO Detention (IN)  | 100yr 5m    | 100                  | 0.265                     | 0.60                 | 3.80                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 5m    | 100                  | 0.265                     | 0.60                 | 3.79                           | 655.80                               | 0.000                        |
| FO Detention (IN)  | 100yr 10m   | 100                  | 0.903                     | 0.60                 | 13.03                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 10m   | 100                  | 0.903                     | 1.80                 | 5.32                           | 656.96                               | 0.455                        |
| FO Detention (IN)  | 100yr 15m   | 100                  | 1.385                     | 0.65                 | 19.78                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 15m   | 100                  | 1.385                     | 2.00                 | 5.85                           | 657.55                               | 0.940                        |
| FO Detention (IN)  | 100yr 30m   | 100                  | 2.277                     | 0.70                 | 30.60                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 30m   | 100                  | 2.277                     | 1.90                 | 6.93                           | 658.61                               | 1.793                        |
| FO Detention (IN)  | 100yr 1hr   | 100                  | 3.235                     | 0.80                 | 35.58                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 1hr   | 100                  | 3.235                     | 2.75                 | 7.73                           | 659.68                               | 2.569                        |
| FO Detention (IN)  | 100yr 2hr   | 100                  | 4.319                     | 1.00                 | 35.77                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 2hr   | 100                  | 4.319                     | 2.20                 | 13.17                          | 660.26                               | 3.008                        |

Subsection: Master Network Summary

**Pond Summary**

| Label              | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| FO Detention (IN)  | 100yr 3hr   | 100                  | 4.930                     | 1.10                 | 32.98                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 3hr   | 100                  | 4.930                     | 2.40                 | 13.36                          | 660.26                               | 3.011                        |
| FO Detention (IN)  | 100yr 6hr   | 100                  | 6.048                     | 1.40                 | 25.46                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 6hr   | 100                  | 6.048                     | 3.05                 | 12.92                          | 660.25                               | 2.999                        |
| FO Detention (IN)  | 100yr 12hr  | 100                  | 7.287                     | 5.40                 | 19.01                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 12hr  | 100                  | 7.287                     | 7.20                 | 10.59                          | 660.18                               | 2.946                        |
| FO Detention (IN)  | 100yr 18hr  | 100                  | 8.014                     | 11.80                | 16.17                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 18hr  | 100                  | 8.014                     | 15.30                | 7.30                           | 659.92                               | 2.743                        |
| FO Detention (IN)  | 100yr 24hr  | 100                  | 8.634                     | 15.70                | 13.23                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 24hr  | 100                  | 8.634                     | 19.10                | 6.87                           | 659.26                               | 2.264                        |
| FO Detention (IN)  | 100yr 48hr  | 100                  | 9.615                     | 41.00                | 7.32                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 48hr  | 100                  | 9.615                     | 45.00                | 5.46                           | 657.43                               | 0.835                        |
| FO Detention (IN)  | 100yr 72hr  | 100                  | 10.320                    | 61.00                | 5.23                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 72hr  | 100                  | 10.319                    | 59.00                | 4.86                           | 656.62                               | 0.178                        |
| FO Detention (IN)  | 100yr 120hr | 100                  | 11.324                    | 102.00               | 3.42                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 120hr | 100                  | 11.324                    | 102.00               | 3.41                           | 655.46                               | 0.000                        |
| FO Detention (IN)  | 100yr 240hr | 100                  | 13.801                    | 204.00               | 2.05                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 240hr | 100                  | 13.801                    | 204.00               | 2.05                           | 654.94                               | 0.000                        |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 10m

Return Event: 100 years  
Storm Event: 10m100y

| Time-Depth Curve: 10m100y |            |
|---------------------------|------------|
| Label                     | 10m100y    |
| Start Time                | 0.00 hours |
| Increment                 | 0.00 hours |
| End Time                  | 0.08 hours |
| Return Event              | 100 years  |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 0.00 hours  
Time on left represents time for first value in each row.

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.29       | 0.59       | 0.77       | 0.94       |
| 0.02         | 1.08       | 1.19       | 1.28       | 1.35       | 1.42       |
| 0.04         | 1.48       | 1.51       | 1.55       | 1.58       | 1.62       |
| 0.06         | 1.66       | 1.69       | 1.73       | 1.75       | 1.76       |
| 0.08         | 1.80       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 120hr

Return Event: 100 years  
Storm Event: 120h100y

| Time-Depth Curve: 120h100y |              |
|----------------------------|--------------|
| Label                      | 120h100y     |
| Start Time                 | 0.00 hours   |
| Increment                  | 6.00 hours   |
| End Time                   | 120.00 hours |
| Return Event               | 100 years    |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 6.00 hours  
Time on left represents time for first value in each row.

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.21       | 0.53       | 0.85       | 1.07       |
| 30.00        | 1.39       | 1.71       | 2.03       | 2.35       | 2.67       |
| 60.00        | 2.98       | 3.41       | 3.73       | 4.16       | 4.80       |
| 90.00        | 5.44       | 6.29       | 7.68       | 8.95       | 9.81       |
| 120.00       | 10.66      | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 12hr

Return Event: 100 years  
Storm Event: 12h100y

| Time-Depth Curve: 12h100y |             |
|---------------------------|-------------|
| Label                     | 12h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 0.60 hours  |
| End Time                  | 12.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 0.60 hours  
Time on left represents time for first value in each row.

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.22       | 0.60       | 0.90       | 1.19       |
| 3.00         | 1.64       | 2.16       | 2.91       | 3.80       | 4.63       |
| 6.00         | 5.22       | 5.67       | 6.04       | 6.34       | 6.56       |
| 9.00         | 6.79       | 6.94       | 7.09       | 7.24       | 7.31       |
| 12.00        | 7.39       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 15m

Return Event: 100 years  
 Storm Event: 15m100y

|                           |            |
|---------------------------|------------|
| Time-Depth Curve: 15m100y |            |
| Label                     | 15m100y    |
| Start Time                | 0.00 hours |
| Increment                 | 0.01 hours |
| End Time                  | 0.25 hours |
| Return Event              | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.01 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.37       | 0.77       | 1.00       | 1.21       |
| 0.06         | 1.39       | 1.53       | 1.65       | 1.74       | 1.83       |
| 0.13         | 1.90       | 1.95       | 2.00       | 2.04       | 2.09       |
| 0.19         | 2.13       | 2.18       | 2.23       | 2.25       | 2.27       |
| 0.25         | 2.30       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 18hr

Return Event: 100 years  
 Storm Event: 18h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 18h100y |             |
| Label                     | 18h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 0.90 hours  |
| End Time                  | 18.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.90 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.24       | 0.48       | 0.73       | 0.97       |
| 4.50         | 1.21       | 1.53       | 1.85       | 2.18       | 2.58       |
| 9.00         | 3.06       | 3.63       | 4.59       | 5.64       | 6.37       |
| 13.50        | 6.85       | 7.17       | 7.42       | 7.66       | 7.82       |
| 18.00        | 7.98       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 1hr

Return Event: 100 years  
 Storm Event: 1h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 1h100y |            |
| Label                    | 1h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.05 hours |
| End Time                 | 1.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.05 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.64       | 1.33       | 1.73       | 2.10       |
| 0.25         | 2.42       | 2.66       | 2.86       | 3.02       | 3.18       |
| 0.50         | 3.30       | 3.39       | 3.47       | 3.55       | 3.63       |
| 0.75         | 3.71       | 3.79       | 3.87       | 3.91       | 3.95       |
| 1.00         | 3.99       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 240hr

Return Event: 100 years  
 Storm Event: 240h100y

|                            |              |
|----------------------------|--------------|
| Time-Depth Curve: 240h100y |              |
| Label                      | 240h100y     |
| Start Time                 | 0.00 hours   |
| Increment                  | 12.00 hours  |
| End Time                   | 240.00 hours |
| Return Event               | 100 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 12.00 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.25       | 0.63       | 1.01       | 1.27       |
| 60.00        | 1.64       | 2.02       | 2.40       | 2.78       | 3.16       |
| 120.00       | 3.54       | 4.05       | 4.43       | 4.93       | 5.69       |
| 180.00       | 6.45       | 7.46       | 9.11       | 10.63      | 11.64      |
| 240.00       | 12.65      | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 24hr

Return Event: 100 years  
 Storm Event: 24h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 24h100y |             |
| Label                     | 24h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 1.20 hours  |
| End Time                  | 24.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.26       | 0.51       | 0.77       | 1.03       |
| 6.00         | 1.29       | 1.63       | 1.97       | 2.31       | 2.74       |
| 12.00        | 3.26       | 3.86       | 4.88       | 6.00       | 6.77       |
| 18.00        | 7.28       | 7.63       | 7.88       | 8.14       | 8.31       |
| 24.00        | 8.48       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 10 Year Critical  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                          |             |
|--------------------------|-------------|
| Time-Depth Curve: 24h10y |             |
| Label                    | 24h10y      |
| Start Time               | 0.00 hours  |
| Increment                | 1.20 hours  |
| End Time                 | 24.00 hours |
| Return Event             | 10 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.15       | 0.31       | 0.46       | 0.62       |
| 6.00         | 0.77       | 0.98       | 1.18       | 1.39       | 1.65       |
| 12.00        | 1.96       | 2.32       | 2.94       | 3.60       | 4.07       |
| 18.00        | 4.38       | 4.58       | 4.74       | 4.89       | 5.00       |
| 24.00        | 5.10       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 50 Year Critical  
 Scenario: 50yr 24hr

Return Event: 50 years  
 Storm Event: 24h50y

|                          |             |
|--------------------------|-------------|
| Time-Depth Curve: 24h50y |             |
| Label                    | 24h50y      |
| Start Time               | 0.00 hours  |
| Increment                | 1.20 hours  |
| End Time                 | 24.00 hours |
| Return Event             | 50 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.22       | 0.45       | 0.68       | 0.90       |
| 6.00         | 1.13       | 1.42       | 1.73       | 2.03       | 2.40       |
| 12.00        | 2.85       | 3.37       | 4.27       | 5.25       | 5.93       |
| 18.00        | 6.38       | 6.67       | 6.90       | 7.12       | 7.28       |
| 24.00        | 7.43       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 2hr

Return Event: 100 years  
 Storm Event: 2h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 2h100y |            |
| Label                    | 2h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.10 hours |
| End Time                 | 2.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.10 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.80       | 1.64       | 2.14       | 2.58       |
| 0.50         | 2.98       | 3.28       | 3.53       | 3.73       | 3.93       |
| 1.00         | 4.08       | 4.17       | 4.27       | 4.37       | 4.47       |
| 1.50         | 4.57       | 4.67       | 4.77       | 4.82       | 4.87       |
| 2.00         | 4.92       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 30m

Return Event: 100 years  
 Storm Event: 30m100y

|                           |            |
|---------------------------|------------|
| Time-Depth Curve: 30m100y |            |
| Label                     | 30m100y    |
| Start Time                | 0.00 hours |
| Increment                 | 0.03 hours |
| End Time                  | 0.50 hours |
| Return Event              | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.03 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.51       | 1.05       | 1.36       | 1.65       |
| 0.13         | 1.90       | 2.09       | 2.25       | 2.38       | 2.50       |
| 0.25         | 2.60       | 2.66       | 2.73       | 2.79       | 2.85       |
| 0.38         | 2.92       | 2.98       | 3.04       | 3.07       | 3.11       |
| 0.50         | 3.14       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 3hr

Return Event: 100 years  
 Storm Event: 3h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 3h100y |            |
| Label                    | 3h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.15 hours |
| End Time                 | 3.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.15 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.88       | 1.81       | 2.36       | 2.85       |
| 0.75         | 3.29       | 3.62       | 3.90       | 4.12       | 4.34       |
| 1.50         | 4.50       | 4.61       | 4.72       | 4.83       | 4.94       |
| 2.25         | 5.05       | 5.16       | 5.27       | 5.33       | 5.38       |
| 3.00         | 5.44       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 48hr

Return Event: 100 years  
 Storm Event: 48h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 48h100y |             |
| Label                     | 48h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 2.40 hours  |
| End Time                  | 48.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 2.40 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.19       | 0.46       | 0.74       | 0.93       |
| 12.00        | 1.21       | 1.48       | 1.76       | 2.04       | 2.32       |
| 24.00        | 2.60       | 2.97       | 3.25       | 3.62       | 4.18       |
| 36.00        | 4.73       | 5.48       | 6.68       | 7.80       | 8.54       |
| 48.00        | 9.28       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 5m

Return Event: 100 years  
 Storm Event: 5m100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 5m100y |            |
| Label                    | 5m100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.00 hours |
| End Time                 | 0.08 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.00 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.16       | 0.34       | 0.44       | 0.54       |
| 0.02         | 0.62       | 0.68       | 0.73       | 0.77       | 0.81       |
| 0.04         | 0.84       | 0.87       | 0.89       | 0.91       | 0.93       |
| 0.06         | 0.95       | 0.97       | 0.99       | 1.00       | 1.01       |
| 0.08         | 1.02       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 6hr

Return Event: 100 years  
 Storm Event: 6h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 6h100y |            |
| Label                    | 6h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.30 hours |
| End Time                 | 6.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.30 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 1.03       | 2.12       | 2.76       | 3.34       |
| 1.50         | 3.86       | 4.24       | 4.57       | 4.82       | 5.08       |
| 3.00         | 5.27       | 5.40       | 5.53       | 5.66       | 5.79       |
| 4.50         | 5.92       | 6.04       | 6.17       | 6.24       | 6.30       |
| 6.00         | 6.37       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 72hr

Return Event: 100 years  
 Storm Event: 72h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 72h100y |             |
| Label                     | 72h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 3.60 hours  |
| End Time                  | 72.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 3.60 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.20       | 0.49       | 0.79       | 0.99       |
| 18.00        | 1.28       | 1.58       | 1.87       | 2.17       | 2.46       |
| 36.00        | 2.76       | 3.15       | 3.45       | 3.84       | 4.43       |
| 54.00        | 5.02       | 5.81       | 7.09       | 8.27       | 9.06       |
| 72.00        | 9.85       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time of Concentration Calculations  
 Label: Area D1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration Results     |            |
| Segment #1: User Defined Tc       |            |
| Time of Concentration             | 0.08 hours |
| Time of Concentration (Composite) |            |
| Time of Concentration (Composite) | 0.08 hours |

Subsection: Time of Concentration Calculations  
 Label: Area D1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

==== User Defined  
 Tc = Value entered by user  
 Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area EX1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

|                             |            |
|-----------------------------|------------|
| Segment #1: User Defined Tc |            |
| Time of Concentration       | 0.30 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.30 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area EX1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area FO  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

|                             |            |
|-----------------------------|------------|
| Segment #1: User Defined Tc |            |
| Time of Concentration       | 1.00 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 1.00 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area FO  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area FO-US  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.75 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.75 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area FO-US  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.49 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.49 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PD1-1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.08 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.08 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PD1-1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 1.00 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 1.00 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area S1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.11 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.11 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area S1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area S2  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.32 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.32 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area S2  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Runoff CN-Area  
 Label: Area D1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area EX1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area FO-US  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
Label: Area PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
Label: Area PD1-1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
Label: Area PR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
Label: Area S1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area S2  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Elevation vs. Volume Curve  
 Label: D1 Depression  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 658.50              | 0.000               |
| 659.00              | 0.004               |
| 659.10              | 0.006               |
| 659.50              | 0.015               |
| 660.00              | 0.035               |

Subsection: Elevation vs. Volume Curve  
 Label: EX1 Depression  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 652.95              | 0.000               |
| 653.00              | 0.001               |
| 653.20              | 0.013               |
| 654.00              | 0.100               |

Subsection: Elevation vs. Volume Curve  
 Label: FO Detention  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 654.10              | 0.000               |
| 656.40              | 0.000               |
| 658.50              | 1.710               |
| 660.00              | 2.800               |
| 660.50              | 3.200               |

Subsection: Elevation vs. Volume Curve  
 Label: PD1 Pond  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 654.10              | 0.000               |
| 655.00              | 0.008               |
| 656.00              | 0.276               |
| 656.50              | 0.644               |

Subsection: Elevation vs. Volume Curve  
 Label: PD1-1 Depression  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 657.90              | 0.000               |
| 658.00              | 0.000               |
| 658.20              | 0.006               |
| 658.50              | 0.020               |

Subsection: Elevation vs. Volume Curve  
 Label: PR Detention  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 653.32              | 0.000               |
| 657.30              | 0.000               |
| 658.50              | 1.180               |

Subsection: Outlet Input Data  
 Label: OF D1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 658.50 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 660.00 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|-----------|-----------|---------|---------|---------|
| Irregular Weir     | Weir D1   | Forward   | TW      | 659.10  | 660.00  |
| Tailwater Settings | Tailwater |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: OF D1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir D1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.90           |
| 5.80         | 0.00           |
| 19.30        | 0.90           |

Lowest Elevation 659.10 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>/s)

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: Outlet Input Data  
 Label: OF EX1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 652.95 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 654.00 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|-----------|-----------|---------|---------|---------|
| Irregular Weir     | Weir EX1  | Forward   | TW      | 653.20  | 654.00  |
| Tailwater Settings | Tailwater |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: OF EX1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir EX1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.80           |
| 42.50        | 0.00           |
| 60.20        | 0.80           |

Lowest Elevation 653.20 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>/s)

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: Outlet Input Data  
 Label: OF PD1-1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 657.90 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 658.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Irregular Weir     | Weir PD1-1 | Forward   | TW      | 658.20  | 658.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: OF PD1-1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir PD1-1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.30           |
| 45.86        | 0.00           |
| 70.86        | 0.30           |

Lowest Elevation 658.20 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

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: Outlet Input Data  
 Label: RF PR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 653.32 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 658.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Orifice-Circular   | Orifice PR | Forward   | TW      | 653.32  | 658.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF PR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Structure ID: Orifice PR         |           |
|----------------------------------|-----------|
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 653.32 ft |
| Orifice Diameter                 | 15.00 in  |
| Orifice Coefficient              | 0.820     |

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: Outlet Input Data  
 Label: RF/OF FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 654.10 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 660.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Orifice-Circular   | Orifice FO | Forward   | TW      | 654.10  | 660.50  |
| Rectangular Weir   | Weir FO    | Forward   | TW      | 660.00  | 660.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF/OF FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice FO         |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 654.10 ft |
| Orifice Diameter                 | 10.00 in  |
| Orifice Coefficient              | 0.820     |

|                                  |                             |
|----------------------------------|-----------------------------|
| Structure ID: Weir FO            |                             |
| Structure Type: Rectangular Weir |                             |
| Number of Openings               | 1                           |
| Elevation                        | 660.00 ft                   |
| Weir Length                      | 20.00 ft                    |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|   |           |
|---|-----------|
| Requested Pond Water Surface Elevations |           |
| Minimum (Headwater)                     | 654.10 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 656.50 ft |

| Outlet Connectivity |             |           |         |         |         |
|---------------------|-------------|-----------|---------|---------|---------|
| Structure Type      | Outlet ID   | Direction | Outfall | E1 (ft) | E2 (ft) |
| Culvert-Circular    | Culvert PD1 | Forward   | TW      | 654.14  | 656.50  |
| Irregular Weir      | Weir PD1    | Forward   | TW      | 655.94  | 656.50  |
| Tailwater Settings  | Tailwater   |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir PD1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.56           |
| 30.00        | 0.00           |
| 53.00        | 0.56           |

Lowest Elevation 655.94 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

|                                  |             |
|----------------------------------|-------------|
| Structure ID: Culvert PD1        |             |
| Structure Type: Culvert-Circular |             |
| Number of Barrels                | 1           |
| Diameter                         | 8.00 in     |
| Length                           | 36.10 ft    |
| Length (Computed Barrel)         | 36.10 ft    |
| Slope (Computed)                 | 0.011 ft/ft |

|                       |         |
|-----------------------|---------|
| Outlet Control Data   |         |
| Manning's n           | 0.013   |
| Ke                    | 0.200   |
| Kb                    | 0.054   |
| Kr                    | 0.200   |
| Convergence Tolerance | 0.00 ft |

|                         |        |
|-------------------------|--------|
| Inlet Control Data      |        |
| Equation Form           | Form 1 |
| K                       | 0.0045 |
| M                       | 2.0000 |
| C                       | 0.0317 |
| Y                       | 0.6900 |
| T1 ratio (HW/D)         | 1.089  |
| T2 ratio (HW/D)         | 1.192  |
| Slope Correction Factor | -0.500 |

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 | 654.87 ft | T1 Flow | 1.00 ft <sup>3</sup> /s |
|--------------|-----------|---------|-------------------------|

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

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...

|              |           |         |                         |
|--------------|-----------|---------|-------------------------|
| T2 Elevation | 654.93 ft | T2 Flow | 1.14 ft <sup>3</sup> /s |
|--------------|-----------|---------|-------------------------|

Subsection: Outlet Input Data  
Label: RF/OF PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

|                                      |                           |
|--------------------------------------|---------------------------|
| 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 |

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# Appendix C – Proposed Conditions Drainage Analysis

Proposed Conditions Drainage Exhibit

MWRD Calculations Overview

Park District Storm Water Analysis

Curve Number & Adjusted Curve Number Calculations

Nomograph Calculations

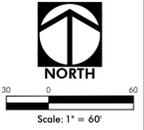
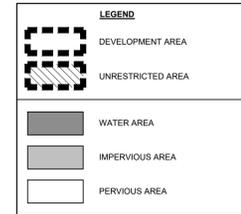
Proposed Conditions PondPack Reports

Provided Detention & Volume Control Calculations

Orifice and Weir Discharge Rate Calculations

| DEPRESSIONAL AREA / POND SUMMARY TABLE (100-YEAR) |                  |                        |                |
|---|------------------|------------------------|----------------|
| ID  | Type             | Critical Duration Peak | Storm Duration |
| Pond  | Storage (ac-ft)  | 2.394                  | 18 Hr          |
|   | Elevation (ft)   | 656.420                |                |
|   | Flow (Out) (cfs) | 0.680                  |                |
| PD1 Pond  | Storage (ac-ft)  | 0.534                  | 2 Hr           |
|   | Elevation (ft)   | 656.350                |                |
|   | Flow (Out) (cfs) | 13.969                 |                |
| PD1-1 Depression                                  | Storage (ac-ft)  | 0.012                  | 30 Mn          |
|   | Elevation (ft)   | 658.330                |                |
|   | Flow (Out) (cfs) | 1.640                  |                |
| PR Detention                                      | Storage (ac-ft)  | 0.094                  | 3 Hr           |
|   | Elevation (ft)   | 658.310                |                |
|   | Flow (Out) (cfs) | 16.870                 |                |
| FO Detention                                      | Storage (ac-ft)  | 3.010                  | 3 Hr           |
|   | Elevation (ft)   | 660.260                |                |
|   | Flow (Out) (cfs) | 13.340                 |                |

| DRAINAGE AREA FLOW SUMMARY TABLE (100-YEAR) |            |                        |                |
|---|------------|------------------------|----------------|
| ID  | Type       | Critical Duration Peak | Storm Duration |
| Q-36N to Wheeling Road                      | Flow (cfs) | 17.51                  | 3 Hr           |
| Area DEV                                    | Flow (cfs) | 39.55                  | 30 Mn          |
| Area UPSTREAM                               | Flow (cfs) | 1.48                   | 30 Mn          |
| Area PR                                     | Flow (cfs) | 23.47                  | 2 Hr           |
| Area FO                                     | Flow (cfs) | 21.95                  | 2 Hr           |
| Area FO-US                                  | Flow (cfs) | 14.81                  | 1 Hr           |
| Q/Lot 117/118 Sewer                         | Flow (cfs) | 15.53                  | 2 Hr           |
| Area UNR                                    | Flow (cfs) | 0.69                   | 30 Mn          |
| Area EX1                                    | Flow (cfs) | 3.65                   | 1 Hr           |
| Area PD1                                    | Flow (cfs) | 17.81                  | 1 Hr           |
| Area PD1-1                                  | Flow (cfs) | 1.83                   | 30 Mn          |
| Area S1                                     | Flow (cfs) | 1.90                   | 30 Mn          |



PER MWRD #73-1228, The Forums [Area FO] Receives Upstream Drainage [Area FO-US] from West.  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

AREA FO  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

AREA PR  
[COVERAGE & TIME OF CONCENTRATION PER MWRD #73-1228]

AREA PD1

LAN DRIVE

UPSTREAM TRIBUTARY AREA

UPSTREAM TRIBUTARY AREA

SHADY TREE LANE

PEAR TREE DRIVE

UNRESTRICTED AREA

AREA S1

AREA EX1

AREA PD1-1

FO Pond Restricted Sewer Flow to PR Restrictor to 36IN to Wheeling Road. Approximate Location per MWRD #73-1228

PR Pond Restricted Sewer Flow to 36IN to Wheeling Road

PD1 Pond Overflow to EX1 Depression

PD1-1 Depression Overflow to PD1 Pond

Time of Concentration Flow Path (Typical)

DEVELOPMENT & UPSTREAM AREAS Flow to 36IN to Wheeling Road Outfall Point to 36IN to Wheeling Road

S1, EX1, PD1 & UNRESTRICTED Flow to Lot 117/118 Storm Sewer

Outfall Point "Lot 117/118 Storm Sewer"

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**PROPOSED CONDITIONS DRAINAGE EXHIBIT**  
**RESERVE AT MUR PARK [61 UNIT] LEXINGTON HOMES**  
PROSPECT HEIGHTS, ILLINOIS

Project Manager: T A S  
Engineer: P A C  
Date: 07/22/2020  
Project No. 18-219  
Sheet 1

## MWRD CALCULATION OVERVIEW

**PROJECT:** Reserve at Muir Park [61 Unit Plan]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### DEFINITIONS & CONSTRAINTS

|   |                     |        |
|---|---------------------|--------|
| 1. Development Area                           | 5.227               | acres  |
| 2. Watershed Planning Area                    | Village Requirement |        |
| 3. Watershed Planning Area Release Rate       | 0.15                | cfs/ac |
| 4. Gross Allowable Release Rate               | 0.784               | cfs    |
| 5. Unrestricted Release Rate (See Area Below) | 0.120               | cfs    |
| 6. Net Allowable Release Rate                 | 0.664               | cfs    |

### AREAS / CURVE NUMBERS

|   |       |       |       |    |
|---|-------|-------|-------|----|
| 7. Detained Area (See Calculations)     | 5.090 | acres | 93.49 | CN |
| 8. Unrestricted Area (See Calculations) | 0.140 | acres | 80.00 | CN |

### VOLUME CONTROL

|                                     |       |       |
|-------------------------------------|-------|-------|
| 9. Development Impervious Area      | 3.554 | acres |
| 10. Required Volume Control Storage | 0.296 | ac-ft |

### DETENTION

|   |           |       |
|---|-----------|-------|
| 11. Methodology   | Nomograph |       |
| 12. Calculated Storage Volume                               | 2.239     | acres |
| 13. Additional Storage Volume (Depressional Storage * 150%) | 0.132     | acres |
| 14. Total Required Storage Volume                           | 2.371     | acres |



## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserve at Muir Park - Unrestricted [61 Unit Plan]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA

MAJOR STORMWATER SYSTEM

UNRESTRICTED AREA

OTHER: \_\_\_\_\_

UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION

EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Pervious Surface    | D                           | 80 | 0.14         | 10.96              |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS:

|      |       |
|------|-------|
| 0.14 | 10.96 |
|------|-------|

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{10.96}{0.14} \rightarrow \text{Composite CN} = \boxed{80.00}$$



## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA PD1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> DETAINED AREA | <input type="checkbox"/> MAJOR STORMWATER SYSTEM |
| <input type="checkbox"/> UNRESTRICTED AREA        | <input type="checkbox"/> OTHER: _____            |
| <input checked="" type="checkbox"/> UPSTREAM AREA |  |

### CONDITION (SELECT WITH DROP-DOWN)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> PROPOSED CONDITION | <input type="checkbox"/> EXISTING CONDITION |
|--|---|

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 1.13         | 110.35             |
| Pervious Surface    | D                           | 80 | 4.81         | 384.65             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

|         |      |        |
|---------|------|--------|
| TOTALS: | 5.93 | 495.01 |
|---------|------|--------|

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{495.01}{5.93} \rightarrow \text{Composite CN} = \boxed{83.42}$$

## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA PD1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA

MAJOR STORMWATER SYSTEM

UNRESTRICTED AREA

OTHER: \_\_\_\_\_

UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION

EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 0.05         | 4.90               |
| Pervious Surface    | D                           | 80 | 0.26         | 20.98              |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS:

0.31

25.88

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{25.88}{0.31} \rightarrow \text{Composite CN} = \boxed{82.88}$$



## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA S1

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

- DETAINED AREA
  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA
  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

- PROPOSED CONDITION
  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 0.07         | 6.62               |
| Pervious Surface    | D                           | 80 | 0.29         | 23.06              |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS: 0.36 29.68

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{\boxed{29.68}}{\boxed{0.36}} \rightarrow \text{Composite CN} = \boxed{83.42}$$

## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA PR

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 5/22/2020

### TYPE OF AREA (SELECT WITH DROP-DOWN)

- DETAINED AREA
  MAJOR STORMWATER SYSTEM  
 UNRESTRICTED AREA
  OTHER: \_\_\_\_\_  
 UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

- PROPOSED CONDITION
  EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 4.91         | 481.18             |
| Pervious Surface    | D                           | 80 | 4.19         | 335.20             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

|         |      |        |
|---------|------|--------|
| TOTALS: | 9.10 | 816.38 |
|---------|------|--------|

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{816.38}{9.10} \rightarrow \text{Composite CN} = \boxed{89.71}$$

## COMPOSITE RUNOFF CURVE NUMBER (CN)

**PROJECT:** Reserves at Muir Park - AREA FO \_\_\_\_\_

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL \_\_\_\_\_

**DATE:** 5/22/2020 \_\_\_\_\_

### TYPE OF AREA (SELECT WITH DROP-DOWN)

DETAINED AREA

MAJOR STORMWATER SYSTEM

UNRESTRICTED AREA

OTHER: \_\_\_\_\_

UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

PROPOSED CONDITION

EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Impervious Surface  | D                           | 98 | 3.89         | 381.22             |
| Pervious Surface    | D                           | 80 | 5.48         | 438.40             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS:

9.37

819.62

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{819.62}{9.37} \rightarrow \text{Composite CN} = \boxed{87.47}$$



## ADJUSTED COMPOSITE RUNOFF CURVE NUMBER ( $CN_{ADJ}$ )

**PROJECT:** Reserve at Muir Park - Detained Dev Area [61 Unit]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### DEVELOPMENT INFORMATION

|  |       |        |
|--|-------|--------|
| 1. Area Detained, $A$                      | 5.090 | acres  |
| 2. Total Impervious Area                   | 3.554 | acres  |
| 3. Composite CN                            | 93.49 |        |
| 4. Volume Control Storage Provided, $VC_P$ | 0.301 | ac-ft  |
| 5. Depth of Rainfall, $P$                  | 8.57  | inches |

### RUNOFF VOLUME (NRCS EQUATIONS)

|                           |   |      |        |
|---------------------------|---|------|--------|
| 6. Maximum Retention, $S$ | $S = \frac{1000}{CN} - 10$                              | 0.70 | inches |
| 7. Runoff Depth, $Q_D$    | $Q_D = \frac{(P - 0.2S)^2}{(P + 0.8S)}$                 | 7.79 | inches |
| 8. Runoff Volume, $V_R$   | $V_R = Q_D A \left( \frac{1}{12 \frac{in}{ft}} \right)$ | 3.30 | ac-ft  |

### VOLUME CONTROL STORAGE

|  |       |       |
|--|-------|-------|
| 9. Volume Control Storage Required, $VC_R$     | 0.296 | ac-ft |
| 10. Additional Volume Control Storage Provided | 0.005 | ac-ft |

### ADJUSTED RUNOFF VOLUME

|   |                        |       |        |
|---|------------------------|-------|--------|
| 11. Adjusted Runoff Volume, $V_{ADJ}$     | $V_{ADJ} = V_R - VC_P$ | 3.002 | ac-ft  |
| 12. Adjusted Runoff Depth, $Q_{ADJ}$      |                        | 7.08  | inches |
| 13. Adjusted Maximum Retention, $S_{ADJ}$ |                        | 1.42  | inches |

### ADJUSTED COMPOSITE RUNOFF CURVE NUMBER

|  |       |
|--|-------|
| 14. Adjusted Runoff Curve Number, $CN_{ADJ}$ | 87.60 |
|--|-------|

## NOMOGRAPH: BULLETIN 70 RAINFALL DATA (2019)

**PROJECT:** Reserve at Muir Park [61 Unit Plan]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### DEVELOPMENT INFORMATION

1. Detained Area

5.090

acres

2. Curve Number

87.60

3. Actual Release Rate

0.714

cfs

### REQUIRED DETENTION VOLUME

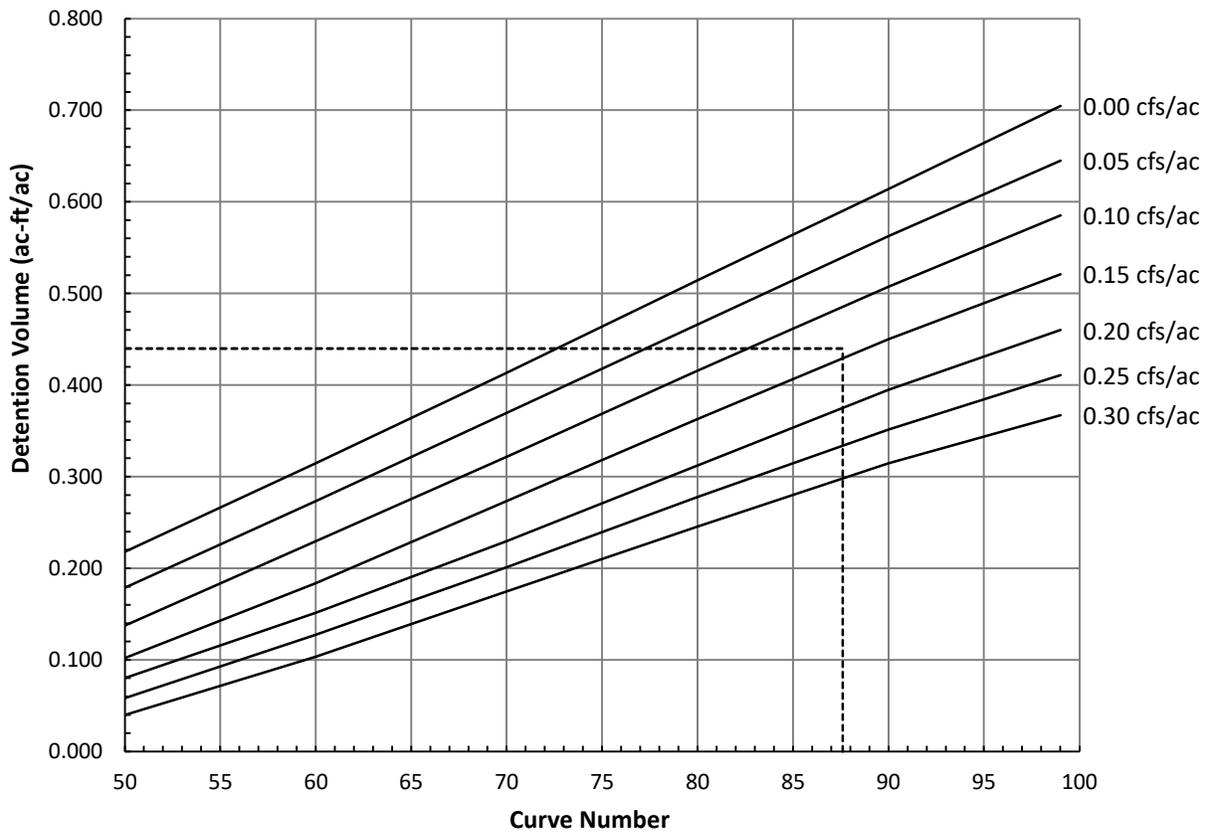
4. Required Detention Volume

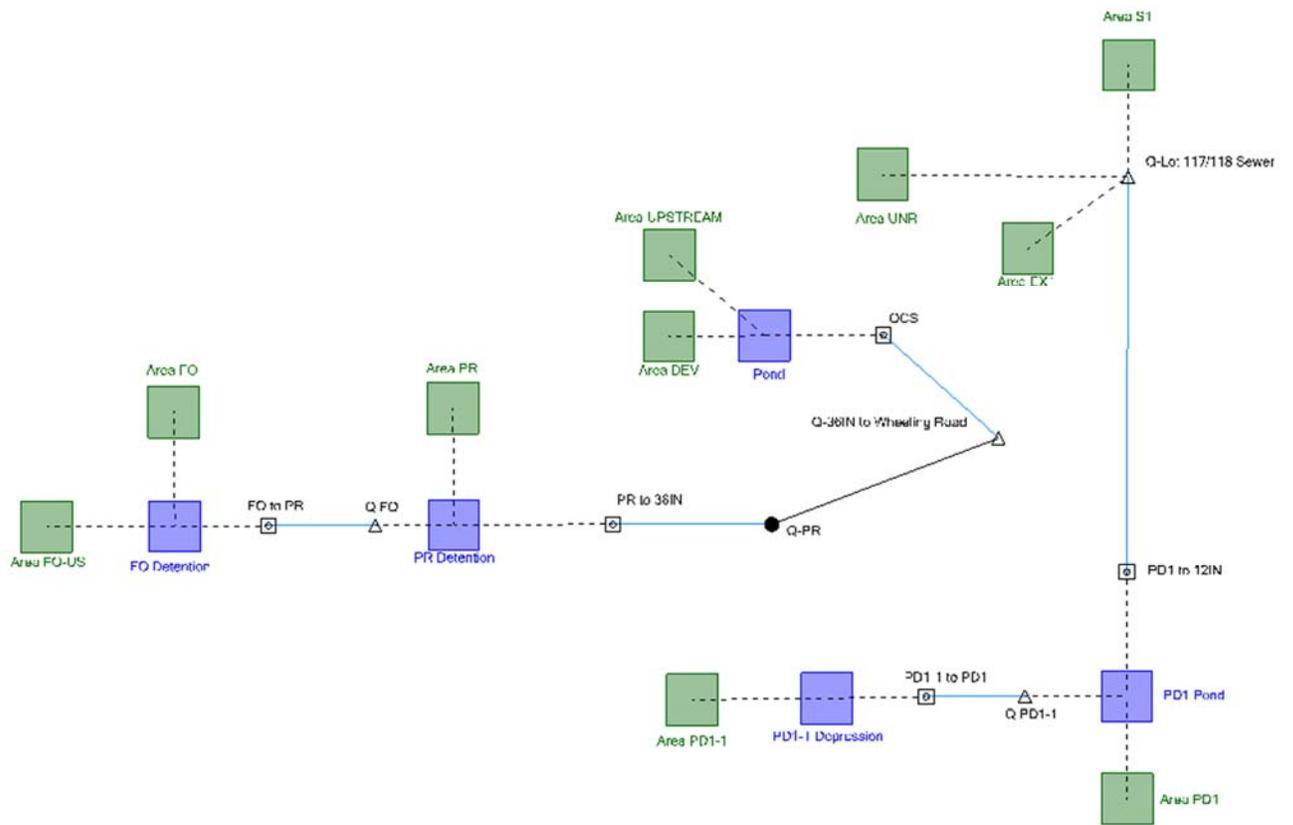
2.239

ac-ft

### NOMOGRAPH

## NOMOGRAPH: BULLETIN 70 (2019)





### Proposed Conditions PondPack Reports

**Project Summary**

|          |                                     |
|----------|-------------------------------------|
| Title    | Reserve at Muir Park (61 Unit Plan) |
| Engineer | PAC                                 |
| Company  | Haeger Engineering LLC              |
| Date     | 7/22/2020                           |

Notes Proposed Conditions 24 Hour, 10-, 50- & 100-Year Critical Duration Analysis

18219 - Proposed Conditions - 61 Unit - PD to 12N.ppc  
7/22/2020

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27 Siemon Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666

PondPack CONNECT Edition [10.02.00.01]  
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| Area FO-US   |    |
| Time of Concentration Calculations, 10 years (10yr 24hr) | 38 |
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| Area PD1-1   |    |
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| Area FO          | Runoff CN-Area, 10 years (10yr 24hr)                     | 54 |
| Area FO-US       | Runoff CN-Area, 10 years (10yr 24hr)                     | 55 |
| Area PD1         | Runoff CN-Area, 10 years (10yr 24hr)                     | 56 |
| Area PD1-1       | Runoff CN-Area, 10 years (10yr 24hr)                     | 57 |
| Area PR          | Runoff CN-Area, 10 years (10yr 24hr)                     | 58 |
| Area S1          | Runoff CN-Area, 10 years (10yr 24hr)                     | 59 |
| Area UNR         | Runoff CN-Area, 10 years (10yr 24hr)                     | 60 |
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Subsection: Master Network Summary

Catchments Summary

| Label    | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|----------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area UNR | 10yr 24hr   | 10                   | 0.035                     | 15.60                | 0.06                           |
| Area UNR | 50yr 24hr   | 50                   | 0.059                     | 15.60                | 0.10                           |
| Area UNR | 100yr 5m    | 100                  | 0.001                     | 0.10                 | 0.14                           |
| Area UNR | 100yr 10m   | 100                  | 0.005                     | 0.10                 | 0.64                           |
| Area UNR | 100yr 15m   | 100                  | 0.009                     | 0.15                 | 0.57                           |
| Area UNR | 100yr 30m   | 100                  | 0.016                     | 0.15                 | 0.69                           |
| Area UNR | 100yr 1hr   | 100                  | 0.024                     | 0.25                 | 0.60                           |
| Area UNR | 100yr 2hr   | 100                  | 0.033                     | 0.25                 | 0.46                           |
| Area UNR | 100yr 3hr   | 100                  | 0.038                     | 0.30                 | 0.40                           |
| Area UNR | 100yr 6hr   | 100                  | 0.048                     | 0.60                 | 0.30                           |
| Area UNR | 100yr 12hr  | 100                  | 0.059                     | 4.80                 | 0.17                           |
| Area UNR | 100yr 18hr  | 100                  | 0.065                     | 11.70                | 0.15                           |
| Area UNR | 100yr 24hr  | 100                  | 0.071                     | 15.60                | 0.12                           |
| Area UNR | 100yr 48hr  | 100                  | 0.080                     | 40.50                | 0.06                           |
| Area UNR | 100yr 72hr  | 100                  | 0.086                     | 61.00                | 0.05                           |
| Area UNR | 100yr 120hr | 100                  | 0.095                     | 102.00               | 0.03                           |
| Area UNR | 100yr 240hr | 100                  | 0.118                     | 204.00               | 0.02                           |
| Area FO  | 10yr 24hr   | 10                   | 2.858                     | 15.70                | 4.59                           |
| Area FO  | 50yr 24hr   | 50                   | 4.600                     | 15.70                | 7.07                           |
| Area FO  | 100yr 5m    | 100                  | 0.179                     | 0.65                 | 2.41                           |
| Area FO  | 100yr 10m   | 100                  | 0.587                     | 0.65                 | 7.92                           |
| Area FO  | 100yr 15m   | 100                  | 0.892                     | 0.70                 | 11.83                          |
| Area FO  | 100yr 30m   | 100                  | 1.453                     | 0.80                 | 18.40                          |
| Area FO  | 100yr 1hr   | 100                  | 2.051                     | 0.95                 | 21.69                          |
| Area FO  | 100yr 2hr   | 100                  | 2.727                     | 1.05                 | 21.95                          |
| Area FO  | 100yr 3hr   | 100                  | 3.107                     | 1.20                 | 20.35                          |
| Area FO  | 100yr 6hr   | 100                  | 3.801                     | 1.45                 | 15.85                          |
| Area FO  | 100yr 12hr  | 100                  | 4.570                     | 5.50                 | 11.80                          |
| Area FO  | 100yr 18hr  | 100                  | 5.021                     | 11.90                | 9.97                           |
| Area FO  | 100yr 24hr  | 100                  | 5.405                     | 15.70                | 8.19                           |
| Area FO  | 100yr 48hr  | 100                  | 6.012                     | 41.00                | 4.54                           |
| Area FO  | 100yr 72hr  | 100                  | 6.449                     | 61.00                | 3.24                           |
| Area FO  | 100yr 120hr | 100                  | 7.071                     | 102.00               | 2.12                           |
| Area FO  | 100yr 240hr | 100                  | 8.603                     | 204.00               | 1.27                           |
| Area PR  | 10yr 24hr   | 10                   | 3.012                     | 15.70                | 4.67                           |
| Area PR  | 50yr 24hr   | 50                   | 4.732                     | 15.70                | 7.05                           |
| Area PR  | 100yr 5m    | 100                  | 0.248                     | 0.65                 | 3.34                           |
| Area PR  | 100yr 10m   | 100                  | 0.702                     | 0.65                 | 9.47                           |
| Area PR  | 100yr 15m   | 100                  | 1.024                     | 0.70                 | 13.58                          |
| Area PR  | 100yr 30m   | 100                  | 1.601                     | 0.80                 | 20.29                          |
| Area PR  | 100yr 1hr   | 100                  | 2.206                     | 0.95                 | 23.37                          |
| Area PR  | 100yr 2hr   | 100                  | 2.881                     | 1.05                 | 23.47                          |
| Area PR  | 100yr 3hr   | 100                  | 3.259                     | 1.20                 | 21.61                          |
| Area PR  | 100yr 6hr   | 100                  | 3.945                     | 1.35                 | 16.89                          |
| Area PR  | 100yr 12hr  | 100                  | 4.703                     | 5.40                 | 11.92                          |

Subsection: Master Network Summary

Catchments Summary

| Label      | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area PR    | 100yr 18hr  | 100                  | 5.146                     | 11.90                | 9.92                           |
| Area PR    | 100yr 24hr  | 100                  | 5.523                     | 15.70                | 8.13                           |
| Area PR    | 100yr 48hr  | 100                  | 6.118                     | 41.00                | 4.48                           |
| Area PR    | 100yr 72hr  | 100                  | 6.545                     | 61.00                | 3.19                           |
| Area PR    | 100yr 120hr | 100                  | 7.154                     | 102.00               | 2.08                           |
| Area PR    | 100yr 240hr | 100                  | 8.651                     | 204.00               | 1.24                           |
| Area FO-US | 10yr 24hr   | 10                   | 1.572                     | 15.70                | 2.79                           |
| Area FO-US | 50yr 24hr   | 50                   | 2.736                     | 15.60                | 4.34                           |
| Area FO-US | 100yr 5m    | 100                  | 0.086                     | 0.50                 | 1.56                           |
| Area FO-US | 100yr 10m   | 100                  | 0.315                     | 0.50                 | 5.72                           |
| Area FO-US | 100yr 15m   | 100                  | 0.492                     | 0.60                 | 8.51                           |
| Area FO-US | 100yr 30m   | 100                  | 0.824                     | 0.70                 | 13.04                          |
| Area FO-US | 100yr 1hr   | 100                  | 1.183                     | 0.70                 | 14.81                          |
| Area FO-US | 100yr 2hr   | 100                  | 1.592                     | 0.90                 | 14.61                          |
| Area FO-US | 100yr 3hr   | 100                  | 1.823                     | 1.00                 | 13.15                          |
| Area FO-US | 100yr 6hr   | 100                  | 2.247                     | 1.20                 | 9.82                           |
| Area FO-US | 100yr 12hr  | 100                  | 2.717                     | 5.30                 | 7.24                           |
| Area FO-US | 100yr 18hr  | 100                  | 2.993                     | 11.80                | 6.21                           |
| Area FO-US | 100yr 24hr  | 100                  | 3.229                     | 15.60                | 5.05                           |
| Area FO-US | 100yr 48hr  | 100                  | 3.602                     | 40.50                | 2.78                           |
| Area FO-US | 100yr 72hr  | 100                  | 3.871                     | 61.00                | 1.98                           |
| Area FO-US | 100yr 120hr | 100                  | 4.253                     | 102.00               | 1.30                           |
| Area FO-US | 100yr 240hr | 100                  | 5.198                     | 204.00               | 0.78                           |
| Area EX1   | 10yr 24hr   | 10                   | 0.263                     | 15.60                | 0.45                           |
| Area EX1   | 50yr 24hr   | 50                   | 0.434                     | 15.60                | 0.71                           |
| Area EX1   | 100yr 5m    | 100                  | 0.012                     | 0.20                 | 0.54                           |
| Area EX1   | 100yr 10m   | 100                  | 0.048                     | 0.20                 | 2.10                           |
| Area EX1   | 100yr 15m   | 100                  | 0.075                     | 0.30                 | 2.78                           |
| Area EX1   | 100yr 30m   | 100                  | 0.128                     | 0.35                 | 3.56                           |
| Area EX1   | 100yr 1hr   | 100                  | 0.185                     | 0.40                 | 3.65                           |
| Area EX1   | 100yr 2hr   | 100                  | 0.250                     | 0.55                 | 3.04                           |
| Area EX1   | 100yr 3hr   | 100                  | 0.288                     | 0.55                 | 2.53                           |
| Area EX1   | 100yr 6hr   | 100                  | 0.356                     | 0.70                 | 1.96                           |
| Area EX1   | 100yr 12hr  | 100                  | 0.431                     | 4.90                 | 1.20                           |
| Area EX1   | 100yr 18hr  | 100                  | 0.476                     | 11.70                | 1.02                           |
| Area EX1   | 100yr 24hr  | 100                  | 0.514                     | 15.60                | 0.82                           |
| Area EX1   | 100yr 48hr  | 100                  | 0.574                     | 40.50                | 0.45                           |
| Area EX1   | 100yr 72hr  | 100                  | 0.618                     | 61.00                | 0.32                           |
| Area EX1   | 100yr 120hr | 100                  | 0.679                     | 102.00               | 0.21                           |
| Area EX1   | 100yr 240hr | 100                  | 0.832                     | 204.00               | 0.13                           |
| Area S1    | 10yr 24hr   | 10                   | 0.097                     | 15.60                | 0.17                           |
| Area S1    | 50yr 24hr   | 50                   | 0.161                     | 15.60                | 0.27                           |
| Area S1    | 100yr 5m    | 100                  | 0.004                     | 0.10                 | 0.43                           |
| Area S1    | 100yr 10m   | 100                  | 0.017                     | 0.10                 | 1.76                           |
| Area S1    | 100yr 15m   | 100                  | 0.027                     | 0.15                 | 1.71                           |

Subsection: Master Network Summary

Catchments Summary

| Label         | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|---------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area S1       | 100yr 30m   | 100                  | 0.046                     | 0.20                 | 1.90                           |
| Area S1       | 100yr 1hr   | 100                  | 0.068                     | 0.25                 | 1.68                           |
| Area S1       | 100yr 2hr   | 100                  | 0.092                     | 0.25                 | 1.33                           |
| Area S1       | 100yr 3hr   | 100                  | 0.106                     | 0.35                 | 1.16                           |
| Area S1       | 100yr 6hr   | 100                  | 0.131                     | 0.60                 | 0.84                           |
| Area S1       | 100yr 12hr  | 100                  | 0.160                     | 4.80                 | 0.46                           |
| Area S1       | 100yr 18hr  | 100                  | 0.177                     | 11.70                | 0.38                           |
| Area S1       | 100yr 24hr  | 100                  | 0.191                     | 15.60                | 0.31                           |
| Area S1       | 100yr 48hr  | 100                  | 0.215                     | 40.50                | 0.17                           |
| Area S1       | 100yr 72hr  | 100                  | 0.230                     | 61.00                | 0.12                           |
| Area S1       | 100yr 120hr | 100                  | 0.254                     | 102.00               | 0.08                           |
| Area S1       | 100yr 240hr | 100                  | 0.311                     | 204.00               | 0.05                           |
| Area DEV      | 10yr 24hr   | 10                   | 1.822                     | 15.60                | 2.77                           |
| Area DEV      | 50yr 24hr   | 50                   | 2.796                     | 15.50                | 4.10                           |
| Area DEV      | 100yr 5m    | 100                  | 0.193                     | 0.15                 | 14.02                          |
| Area DEV      | 100yr 10m   | 100                  | 0.477                     | 0.15                 | 34.27                          |
| Area DEV      | 100yr 15m   | 100                  | 0.673                     | 0.15                 | 35.01                          |
| Area DEV      | 100yr 30m   | 100                  | 1.012                     | 0.20                 | 39.55                          |
| Area DEV      | 100yr 1hr   | 100                  | 1.362                     | 0.25                 | 34.44                          |
| Area DEV      | 100yr 2hr   | 100                  | 1.748                     | 0.30                 | 27.90                          |
| Area DEV      | 100yr 3hr   | 100                  | 1.962                     | 0.35                 | 24.20                          |
| Area DEV      | 100yr 6hr   | 100                  | 2.352                     | 0.60                 | 16.38                          |
| Area DEV      | 100yr 12hr  | 100                  | 2.779                     | 4.80                 | 7.41                           |
| Area DEV      | 100yr 18hr  | 100                  | 3.029                     | 11.60                | 5.88                           |
| Area DEV      | 100yr 24hr  | 100                  | 3.242                     | 15.50                | 4.70                           |
| Area DEV      | 100yr 48hr  | 100                  | 3.581                     | 40.50                | 2.55                           |
| Area DEV      | 100yr 72hr  | 100                  | 3.820                     | 61.00                | 1.81                           |
| Area DEV      | 100yr 120hr | 100                  | 4.162                     | 102.00               | 1.18                           |
| Area DEV      | 100yr 240hr | 100                  | 5.002                     | 204.00               | 0.70                           |
| Area UPSTREAM | 10yr 24hr   | 10                   | 0.084                     | 15.60                | 0.14                           |
| Area UPSTREAM | 50yr 24hr   | 50                   | 0.139                     | 15.60                | 0.23                           |
| Area UPSTREAM | 100yr 5m    | 100                  | 0.004                     | 0.15                 | 0.29                           |
| Area UPSTREAM | 100yr 10m   | 100                  | 0.015                     | 0.15                 | 1.11                           |
| Area UPSTREAM | 100yr 15m   | 100                  | 0.024                     | 0.20                 | 1.24                           |
| Area UPSTREAM | 100yr 30m   | 100                  | 0.041                     | 0.20                 | 1.48                           |
| Area UPSTREAM | 100yr 1hr   | 100                  | 0.059                     | 0.30                 | 1.38                           |
| Area UPSTREAM | 100yr 2hr   | 100                  | 0.080                     | 0.35                 | 1.06                           |
| Area UPSTREAM | 100yr 3hr   | 100                  | 0.092                     | 0.40                 | 0.93                           |
| Area UPSTREAM | 100yr 6hr   | 100                  | 0.113                     | 0.65                 | 0.71                           |
| Area UPSTREAM | 100yr 12hr  | 100                  | 0.138                     | 4.80                 | 0.39                           |
| Area UPSTREAM | 100yr 18hr  | 100                  | 0.152                     | 11.70                | 0.33                           |
| Area UPSTREAM | 100yr 24hr  | 100                  | 0.164                     | 15.60                | 0.26                           |
| Area UPSTREAM | 100yr 48hr  | 100                  | 0.184                     | 40.50                | 0.14                           |
| Area UPSTREAM | 100yr 72hr  | 100                  | 0.197                     | 61.00                | 0.10                           |
| Area UPSTREAM | 100yr 120hr | 100                  | 0.217                     | 102.00               | 0.07                           |

Subsection: Master Network Summary

Catchments Summary

| Label         | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|---------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Area UPSTREAM | 100yr 240hr | 100                  | 0.266                     | 204.00               | 0.04                           |
| Area PD1-1    | 10yr 24hr   | 10                   | 0.084                     | 15.60                | 0.15                           |
| Area PD1-1    | 50yr 24hr   | 50                   | 0.140                     | 15.60                | 0.23                           |
| Area PD1-1    | 100yr 5m    | 100                  | 0.004                     | 0.10                 | 0.47                           |
| Area PD1-1    | 100yr 10m   | 100                  | 0.015                     | 0.10                 | 1.75                           |
| Area PD1-1    | 100yr 15m   | 100                  | 0.023                     | 0.10                 | 1.57                           |
| Area PD1-1    | 100yr 30m   | 100                  | 0.040                     | 0.15                 | 1.83                           |
| Area PD1-1    | 100yr 1hr   | 100                  | 0.059                     | 0.25                 | 1.49                           |
| Area PD1-1    | 100yr 2hr   | 100                  | 0.080                     | 0.25                 | 1.21                           |
| Area PD1-1    | 100yr 3hr   | 100                  | 0.092                     | 0.30                 | 1.04                           |
| Area PD1-1    | 100yr 6hr   | 100                  | 0.114                     | 0.60                 | 0.75                           |
| Area PD1-1    | 100yr 12hr  | 100                  | 0.139                     | 4.80                 | 0.40                           |
| Area PD1-1    | 100yr 18hr  | 100                  | 0.154                     | 11.70                | 0.33                           |
| Area PD1-1    | 100yr 24hr  | 100                  | 0.166                     | 15.60                | 0.27                           |
| Area PD1-1    | 100yr 48hr  | 100                  | 0.188                     | 40.50                | 0.15                           |
| Area PD1-1    | 100yr 72hr  | 100                  | 0.201                     | 61.00                | 0.10                           |
| Area PD1-1    | 100yr 120hr | 100                  | 0.221                     | 102.00               | 0.07                           |
| Area PD1-1    | 100yr 240hr | 100                  | 0.271                     | 204.00               | 0.04                           |
| Area PD1      | 10yr 24hr   | 10                   | 1.615                     | 15.60                | 2.78                           |
| Area PD1      | 50yr 24hr   | 50                   | 2.688                     | 15.60                | 4.39                           |
| Area PD1      | 100yr 5m    | 100                  | 0.067                     | 0.35                 | 1.82                           |
| Area PD1      | 100yr 10m   | 100                  | 0.278                     | 0.35                 | 7.52                           |
| Area PD1      | 100yr 15m   | 100                  | 0.448                     | 0.40                 | 11.46                          |
| Area PD1      | 100yr 30m   | 100                  | 0.771                     | 0.50                 | 16.27                          |
| Area PD1      | 100yr 1hr   | 100                  | 1.127                     | 0.55                 | 17.81                          |
| Area PD1      | 100yr 2hr   | 100                  | 1.536                     | 0.70                 | 16.34                          |
| Area PD1      | 100yr 3hr   | 100                  | 1.767                     | 0.85                 | 14.15                          |
| Area PD1      | 100yr 6hr   | 100                  | 2.194                     | 0.90                 | 10.31                          |
| Area PD1      | 100yr 12hr  | 100                  | 2.669                     | 5.00                 | 7.33                           |
| Area PD1      | 100yr 18hr  | 100                  | 2.949                     | 11.70                | 6.33                           |
| Area PD1      | 100yr 24hr  | 100                  | 3.188                     | 15.60                | 5.11                           |
| Area PD1      | 100yr 48hr  | 100                  | 3.565                     | 40.50                | 2.81                           |
| Area PD1      | 100yr 72hr  | 100                  | 3.841                     | 61.00                | 2.01                           |
| Area PD1      | 100yr 120hr | 100                  | 4.229                     | 102.00               | 1.31                           |
| Area PD1      | 100yr 240hr | 100                  | 5.190                     | 204.00               | 0.79                           |

Node Summary

| Label                   | Scenario  | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------------------------|-----------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-36IN to Wheeling Road | 10yr 24hr | 10                   | 9.449                     | 15.80                | 9.71                           |
| Q-36IN to Wheeling Road | 50yr 24hr | 50                   | 15.003                    | 15.90                | 12.36                          |

Subsection: Master Network Summary

Node Summary

| Label                   | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-36IN to Wheeling Road | 100yr 5m    | 100                  | 0.709                     | 0.65                 | 7.53                           |
| Q-36IN to Wheeling Road | 100yr 10m   | 100                  | 2.097                     | 0.70                 | 12.61                          |
| Q-36IN to Wheeling Road | 100yr 15m   | 100                  | 3.106                     | 0.85                 | 14.97                          |
| Q-36IN to Wheeling Road | 100yr 30m   | 100                  | 4.931                     | 1.20                 | 15.84                          |
| Q-36IN to Wheeling Road | 100yr 1hr   | 100                  | 6.862                     | 1.55                 | 16.51                          |
| Q-36IN to Wheeling Road | 100yr 2hr   | 100                  | 9.031                     | 2.50                 | 17.35                          |
| Q-36IN to Wheeling Road | 100yr 3hr   | 100                  | 10.242                    | 3.05                 | 17.51                          |
| Q-36IN to Wheeling Road | 100yr 6hr   | 100                  | 12.327                    | 3.60                 | 16.99                          |
| Q-36IN to Wheeling Road | 100yr 12hr  | 100                  | 14.913                    | 7.70                 | 15.94                          |
| Q-36IN to Wheeling Road | 100yr 18hr  | 100                  | 16.341                    | 12.00                | 15.02                          |
| Q-36IN to Wheeling Road | 100yr 24hr  | 100                  | 17.564                    | 15.90                | 13.60                          |
| Q-36IN to Wheeling Road | 100yr 48hr  | 100                  | 19.498                    | 43.50                | 9.93                           |
| Q-36IN to Wheeling Road | 100yr 72hr  | 100                  | 20.882                    | 61.50                | 8.37                           |
| Q-36IN to Wheeling Road | 100yr 120hr | 100                  | 22.857                    | 102.00               | 6.01                           |
| Q-36IN to Wheeling Road | 100yr 240hr | 100                  | 27.720                    | 204.00               | 3.76                           |
| Q-Lot 117/118 Sewer     | 10yr 24hr   | 10                   | 2.088                     | 15.60                | 2.50                           |
| Q-Lot 117/118 Sewer     | 50yr 24hr   | 50                   | 3.477                     | 15.60                | 5.38                           |
| Q-Lot 117/118 Sewer     | 100yr 5m    | 100                  | 0.084                     | 0.30                 | 1.68                           |
| Q-Lot 117/118 Sewer     | 100yr 10m   | 100                  | 0.356                     | 0.15                 | 4.22                           |
| Q-Lot 117/118 Sewer     | 100yr 15m   | 100                  | 0.576                     | 0.25                 | 5.46                           |
| Q-Lot 117/118 Sewer     | 100yr 30m   | 100                  | 0.995                     | 0.75                 | 8.98                           |
| Q-Lot 117/118 Sewer     | 100yr 1hr   | 100                  | 1.456                     | 0.85                 | 14.46                          |
| Q-Lot 117/118 Sewer     | 100yr 2hr   | 100                  | 1.985                     | 1.00                 | 15.53                          |
| Q-Lot 117/118 Sewer     | 100yr 3hr   | 100                  | 2.285                     | 1.15                 | 14.38                          |
| Q-Lot 117/118 Sewer     | 100yr 6hr   | 100                  | 2.837                     | 1.55                 | 11.21                          |
| Q-Lot 117/118 Sewer     | 100yr 12hr  | 100                  | 3.452                     | 5.40                 | 9.21                           |
| Q-Lot 117/118 Sewer     | 100yr 18hr  | 100                  | 3.815                     | 11.70                | 8.03                           |
| Q-Lot 117/118 Sewer     | 100yr 24hr  | 100                  | 4.124                     | 15.60                | 6.52                           |
| Q-Lot 117/118 Sewer     | 100yr 48hr  | 100                  | 4.615                     | 43.00                | 3.37                           |
| Q-Lot 117/118 Sewer     | 100yr 72hr  | 100                  | 4.970                     | 64.50                | 2.31                           |
| Q-Lot 117/118 Sewer     | 100yr 120hr | 100                  | 5.472                     | 102.00               | 1.69                           |
| Q-Lot 117/118 Sewer     | 100yr 240hr | 100                  | 6.716                     | 204.00               | 1.02                           |

Subsection: Master Network Summary

Node Summary

| Label | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) |
|-------|-------------|----------------------|---------------------------|----------------------|--------------------------------|
| Q-PR  | 10yr 24hr   | 10                   | 7.543                     | 15.80                | 9.18                           |
| Q-PR  | 50yr 24hr   | 50                   | 12.068                    | 15.90                | 11.75                          |
| Q-PR  | 100yr 5m    | 100                  | 0.513                     | 0.65                 | 7.08                           |
| Q-PR  | 100yr 10m   | 100                  | 1.605                     | 0.70                 | 12.12                          |
| Q-PR  | 100yr 15m   | 100                  | 2.409                     | 0.85                 | 14.45                          |
| Q-PR  | 100yr 30m   | 100                  | 3.878                     | 1.20                 | 15.28                          |
| Q-PR  | 100yr 1hr   | 100                  | 5.441                     | 1.55                 | 15.92                          |
| Q-PR  | 100yr 2hr   | 100                  | 7.203                     | 2.50                 | 16.72                          |
| Q-PR  | 100yr 3hr   | 100                  | 8.189                     | 3.05                 | 16.87                          |
| Q-PR  | 100yr 6hr   | 100                  | 9.993                     | 3.60                 | 16.34                          |
| Q-PR  | 100yr 12hr  | 100                  | 11.995                    | 7.70                 | 15.28                          |
| Q-PR  | 100yr 18hr  | 100                  | 13.159                    | 12.00                | 14.38                          |
| Q-PR  | 100yr 24hr  | 100                  | 14.158                    | 15.90                | 12.97                          |
| Q-PR  | 100yr 48hr  | 100                  | 15.734                    | 43.50                | 9.31                           |
| Q-PR  | 100yr 72hr  | 100                  | 16.865                    | 59.50                | 7.83                           |
| Q-PR  | 100yr 120hr | 100                  | 18.478                    | 102.00               | 5.49                           |
| Q-PR  | 100yr 240hr | 100                  | 22.452                    | 204.00               | 3.29                           |

Pond Summary

| Label              | Scenario  | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|-----------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PR Detention (IN)  | 10yr 24hr | 10                   | 7.542                     | 15.80                | 9.19                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 10yr 24hr | 10                   | 7.541                     | 15.80                | 9.18                           | 655.24                               | 0.000                        |
| PR Detention (IN)  | 50yr 24hr | 50                   | 12.068                    | 15.80                | 11.76                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 50yr 24hr | 50                   | 12.068                    | 15.90                | 11.75                          | 656.07                               | 0.000                        |
| PR Detention (IN)  | 100yr 5m  | 100                  | 0.512                     | 0.65                 | 7.11                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 5m  | 100                  | 0.512                     | 0.65                 | 7.08                           | 654.71                               | 0.000                        |
| PR Detention (IN)  | 100yr 10m | 100                  | 1.605                     | 0.65                 | 12.14                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 10m | 100                  | 1.605                     | 0.70                 | 12.12                          | 656.20                               | 0.000                        |
| PR Detention (IN)  | 100yr 15m | 100                  | 2.409                     | 0.80                 | 15.14                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 15m | 100                  | 2.409                     | 0.85                 | 14.45                          | 657.15                               | 0.000                        |
| PR Detention (IN)  | 100yr 30m | 100                  | 3.878                     | 0.80                 | 21.92                          | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label              | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PR Detention (OUT) | 100yr 30m   | 100                  | 3.878                     | 1.20                 | 15.28                          | 657.53                               | 0.226                        |
| PR Detention (IN)  | 100yr 1hr   | 100                  | 5.441                     | 0.95                 | 26.08                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 1hr   | 100                  | 5.441                     | 1.55                 | 15.92                          | 657.83                               | 0.525                        |
| PR Detention (IN)  | 100yr 2hr   | 100                  | 7.200                     | 1.10                 | 26.32                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 2hr   | 100                  | 7.200                     | 2.50                 | 16.72                          | 658.23                               | 0.919                        |
| PR Detention (IN)  | 100yr 3hr   | 100                  | 8.188                     | 1.20                 | 24.61                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 3hr   | 100                  | 8.188                     | 3.05                 | 16.87                          | 658.31                               | 0.994                        |
| PR Detention (IN)  | 100yr 6hr   | 100                  | 9.993                     | 2.90                 | 21.60                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 6hr   | 100                  | 9.993                     | 3.60                 | 16.34                          | 658.04                               | 0.731                        |
| PR Detention (IN)  | 100yr 12hr  | 100                  | 11.990                    | 7.00                 | 17.52                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 12hr  | 100                  | 11.990                    | 7.70                 | 15.28                          | 657.53                               | 0.224                        |
| PR Detention (IN)  | 100yr 18hr  | 100                  | 13.159                    | 12.00                | 14.41                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 18hr  | 100                  | 13.159                    | 12.00                | 14.38                          | 657.12                               | 0.000                        |
| PR Detention (IN)  | 100yr 24hr  | 100                  | 14.157                    | 15.80                | 12.97                          | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 24hr  | 100                  | 14.157                    | 15.90                | 12.97                          | 656.52                               | 0.000                        |
| PR Detention (IN)  | 100yr 48hr  | 100                  | 15.733                    | 43.00                | 9.33                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 48hr  | 100                  | 15.733                    | 43.50                | 9.31                           | 655.27                               | 0.000                        |
| PR Detention (IN)  | 100yr 72hr  | 100                  | 16.865                    | 59.00                | 7.92                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 72hr  | 100                  | 16.865                    | 59.50                | 7.83                           | 654.89                               | 0.000                        |
| PR Detention (IN)  | 100yr 120hr | 100                  | 18.478                    | 102.00               | 5.50                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 120hr | 100                  | 18.478                    | 102.00               | 5.49                           | 654.55                               | 0.000                        |
| PR Detention (IN)  | 100yr 240hr | 100                  | 22.452                    | 204.00               | 3.29                           | (N/A)                                | (N/A)                        |
| PR Detention (OUT) | 100yr 240hr | 100                  | 22.452                    | 204.00               | 3.29                           | 654.35                               | 0.000                        |

Subsection: Master Network Summary

Pond Summary

| Label              | Scenario   | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| FO Detention (IN)  | 10yr 24hr  | 10                   | 4.530                     | 15.70                | 7.38                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 10yr 24hr  | 10                   | 4.530                     | 18.00                | 5.18                           | 657.00                               | 0.493                        |
| FO Detention (IN)  | 50yr 24hr  | 50                   | 7.335                     | 15.70                | 11.41                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 50yr 24hr  | 50                   | 7.335                     | 19.10                | 6.30                           | 658.40                               | 1.632                        |
| FO Detention (IN)  | 100yr 5m   | 100                  | 0.265                     | 0.60                 | 3.80                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 5m   | 100                  | 0.265                     | 0.60                 | 3.79                           | 655.80                               | 0.000                        |
| FO Detention (IN)  | 100yr 10m  | 100                  | 0.903                     | 0.60                 | 13.03                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 10m  | 100                  | 0.903                     | 1.80                 | 5.31                           | 656.96                               | 0.452                        |
| FO Detention (IN)  | 100yr 15m  | 100                  | 1.385                     | 0.65                 | 19.78                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 15m  | 100                  | 1.385                     | 2.00                 | 5.84                           | 657.55                               | 0.933                        |
| FO Detention (IN)  | 100yr 30m  | 100                  | 2.277                     | 0.70                 | 30.60                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 30m  | 100                  | 2.277                     | 1.85                 | 6.90                           | 658.61                               | 1.790                        |
| FO Detention (IN)  | 100yr 1hr  | 100                  | 3.235                     | 0.80                 | 35.58                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 1hr  | 100                  | 3.235                     | 2.70                 | 7.83                           | 659.68                               | 2.566                        |
| FO Detention (IN)  | 100yr 2hr  | 100                  | 4.319                     | 1.00                 | 35.77                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 2hr  | 100                  | 4.319                     | 2.20                 | 13.14                          | 660.26                               | 3.007                        |
| FO Detention (IN)  | 100yr 3hr  | 100                  | 4.930                     | 1.10                 | 32.98                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 3hr  | 100                  | 4.930                     | 2.40                 | 13.34                          | 660.26                               | 3.010                        |
| FO Detention (IN)  | 100yr 6hr  | 100                  | 6.048                     | 1.40                 | 25.46                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 6hr  | 100                  | 6.048                     | 3.05                 | 12.89                          | 660.25                               | 2.998                        |
| FO Detention (IN)  | 100yr 12hr | 100                  | 7.287                     | 5.40                 | 19.01                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 12hr | 100                  | 7.287                     | 7.20                 | 10.56                          | 660.18                               | 2.945                        |
| FO Detention (IN)  | 100yr 18hr | 100                  | 8.014                     | 11.80                | 16.17                          | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label              | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|--------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| FO Detention (OUT) | 100yr 18hr  | 100                  | 8.014                     | 15.30                | 7.29                           | 659.91                               | 2.731                        |
| FO Detention (IN)  | 100yr 24hr  | 100                  | 8.634                     | 15.70                | 13.23                          | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 24hr  | 100                  | 8.634                     | 19.10                | 6.87                           | 659.25                               | 2.254                        |
| FO Detention (IN)  | 100yr 48hr  | 100                  | 9.615                     | 41.00                | 7.32                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 48hr  | 100                  | 9.615                     | 45.00                | 5.47                           | 657.42                               | 0.830                        |
| FO Detention (IN)  | 100yr 72hr  | 100                  | 10.320                    | 61.00                | 5.23                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 72hr  | 100                  | 10.319                    | 59.00                | 4.85                           | 656.61                               | 0.174                        |
| FO Detention (IN)  | 100yr 120hr | 100                  | 11.324                    | 102.00               | 3.42                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 120hr | 100                  | 11.324                    | 102.00               | 3.41                           | 655.46                               | 0.000                        |
| FO Detention (IN)  | 100yr 240hr | 100                  | 13.801                    | 204.00               | 2.05                           | (N/A)                                | (N/A)                        |
| FO Detention (OUT) | 100yr 240hr | 100                  | 13.801                    | 204.00               | 2.05                           | 654.94                               | 0.000                        |
| Pond (IN)          | 10yr 24hr   | 10                   | 1.906                     | 15.60                | 2.91                           | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 10yr 24hr   | 10                   | 1.906                     | 21.70                | 0.56                           | 654.07                               | 1.058                        |
| Pond (IN)          | 50yr 24hr   | 50                   | 2.935                     | 15.50                | 4.32                           | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 50yr 24hr   | 50                   | 2.935                     | 24.00                | 0.65                           | 655.65                               | 1.936                        |
| Pond (IN)          | 100yr 5m    | 100                  | 0.197                     | 0.15                 | 14.31                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 5m    | 100                  | 0.197                     | 0.40                 | 0.45                           | 652.35                               | 0.180                        |
| Pond (IN)          | 100yr 10m   | 100                  | 0.492                     | 0.15                 | 35.38                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 10m   | 100                  | 0.492                     | 0.45                 | 0.49                           | 652.92                               | 0.473                        |
| Pond (IN)          | 100yr 15m   | 100                  | 0.697                     | 0.15                 | 36.15                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 15m   | 100                  | 0.697                     | 0.55                 | 0.52                           | 653.32                               | 0.673                        |
| Pond (IN)          | 100yr 30m   | 100                  | 1.053                     | 0.20                 | 41.03                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 30m   | 100                  | 1.053                     | 0.75                 | 0.56                           | 653.99                               | 1.019                        |
| Pond (IN)          | 100yr 1hr   | 100                  | 1.421                     | 0.25                 | 35.78                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 1hr   | 100                  | 1.421                     | 1.20                 | 0.60                           | 654.67                               | 1.364                        |
| Pond (IN)          | 100yr 2hr   | 100                  | 1.828                     | 0.30                 | 28.95                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 2hr   | 100                  | 1.828                     | 2.20                 | 0.63                           | 655.31                               | 1.724                        |
| Pond (IN)          | 100yr 3hr   | 100                  | 2.054                     | 0.35                 | 25.12                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 3hr   | 100                  | 2.054                     | 3.15                 | 0.64                           | 655.59                               | 1.900                        |
| Pond (IN)          | 100yr 6hr   | 100                  | 2.465                     | 0.60                 | 17.07                          | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 6hr   | 100                  | 2.465                     | 6.10                 | 0.66                           | 656.01                               | 2.159                        |
| Pond (IN)          | 100yr 12hr  | 100                  | 2.917                     | 4.80                 | 7.80                           | (N/A)                                | (N/A)                        |
| Pond (OUT)         | 100yr 12hr  | 100                  | 2.917                     | 11.20                | 0.68                           | 656.34                               | 2.359                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| Pond (IN)              | 100yr 18hr  | 100                  | 3.181                     | 11.70                | 6.21                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 18hr  | 100                  | 3.181                     | 18.10                | 0.68                           | 655.40                               | 2.394                        |
| Pond (IN)              | 100yr 24hr  | 100                  | 3.406                     | 15.50                | 4.96                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 24hr  | 100                  | 3.406                     | 24.00                | 0.68                           | 656.34                               | 2.361                        |
| Pond (IN)              | 100yr 48hr  | 100                  | 3.765                     | 40.50                | 2.69                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 48hr  | 100                  | 3.765                     | 48.50                | 0.65                           | 655.77                               | 2.008                        |
| Pond (IN)              | 100yr 72hr  | 100                  | 4.017                     | 61.00                | 1.91                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 72hr  | 100                  | 4.017                     | 72.00                | 0.62                           | 655.15                               | 1.626                        |
| Pond (IN)              | 100yr 120hr | 100                  | 4.379                     | 102.00               | 1.24                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 120hr | 100                  | 4.379                     | 120.00               | 0.57                           | 654.26                               | 1.157                        |
| Pond (IN)              | 100yr 240hr | 100                  | 5.268                     | 204.00               | 0.74                           | (N/A)                                | (N/A)                        |
| Pond (OUT)             | 100yr 240hr | 100                  | 5.268                     | 216.50               | 0.50                           | 652.99                               | 0.507                        |
| PD1-1 Depression (IN)  | 10yr 24hr   | 10                   | 0.084                     | 15.60                | 0.15                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 10yr 24hr   | 10                   | 0.078                     | 15.60                | 0.15                           | 658.25                               | 0.008                        |
| PD1-1 Depression (IN)  | 50yr 24hr   | 50                   | 0.140                     | 15.60                | 0.23                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 50yr 24hr   | 50                   | 0.134                     | 15.60                | 0.23                           | 658.26                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 5m    | 100                  | 0.004                     | 0.10                 | 0.47                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 5m    | 100                  | 0.000                     | 0.00                 | 0.00                           | 658.12                               | 0.004                        |
| PD1-1 Depression (IN)  | 100yr 10m   | 100                  | 0.015                     | 0.10                 | 1.75                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 10m   | 100                  | 0.009                     | 0.15                 | 0.79                           | 658.30                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 15m   | 100                  | 0.023                     | 0.10                 | 1.57                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 15m   | 100                  | 0.017                     | 0.20                 | 1.21                           | 658.31                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 30m   | 100                  | 0.040                     | 0.15                 | 1.83                           | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario   | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1-1 Depression (OUT) | 100yr 30m  | 100                  | 0.034                     | 0.20                 | 1.64                           | 658.33                               | 0.012                        |
| PD1-1 Depression (IN)  | 100yr 1hr  | 100                  | 0.059                     | 0.25                 | 1.49                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 1hr  | 100                  | 0.053                     | 0.25                 | 1.49                           | 658.33                               | 0.012                        |
| PD1-1 Depression (IN)  | 100yr 2hr  | 100                  | 0.080                     | 0.25                 | 1.21                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 2hr  | 100                  | 0.074                     | 0.35                 | 1.07                           | 658.31                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 3hr  | 100                  | 0.092                     | 0.30                 | 1.04                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 3hr  | 100                  | 0.086                     | 0.40                 | 0.93                           | 658.30                               | 0.011                        |
| PD1-1 Depression (IN)  | 100yr 6hr  | 100                  | 0.114                     | 0.60                 | 0.75                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 6hr  | 100                  | 0.108                     | 0.65                 | 0.70                           | 658.29                               | 0.010                        |
| PD1-1 Depression (IN)  | 100yr 12hr | 100                  | 0.139                     | 4.80                 | 0.40                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 12hr | 100                  | 0.133                     | 4.80                 | 0.40                           | 658.27                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 18hr | 100                  | 0.154                     | 11.70                | 0.33                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 18hr | 100                  | 0.148                     | 11.70                | 0.33                           | 658.26                               | 0.009                        |
| PD1-1 Depression (IN)  | 100yr 24hr | 100                  | 0.166                     | 15.60                | 0.27                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 24hr | 100                  | 0.160                     | 15.60                | 0.27                           | 658.26                               | 0.009                        |

Subsection: Master Network Summary

Pond Summary

| Label                  | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|------------------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1-1 Depression (IN)  | 100yr 48hr  | 100                  | 0.188                     | 40.50                | 0.15                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 48hr  | 100                  | 0.182                     | 40.50                | 0.15                           | 658.25                               | 0.008                        |
| PD1-1 Depression (IN)  | 100yr 72hr  | 100                  | 0.201                     | 61.00                | 0.10                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 72hr  | 100                  | 0.195                     | 58.50                | 0.11                           | 658.24                               | 0.008                        |
| PD1-1 Depression (IN)  | 100yr 120hr | 100                  | 0.221                     | 102.00               | 0.07                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 120hr | 100                  | 0.215                     | 97.00                | 0.07                           | 658.22                               | 0.007                        |
| PD1-1 Depression (IN)  | 100yr 240hr | 100                  | 0.271                     | 204.00               | 0.04                           | (N/A)                                | (N/A)                        |
| PD1-1 Depression (OUT) | 100yr 240hr | 100                  | 0.265                     | 193.00               | 0.04                           | 658.21                               | 0.007                        |
| PD1 Pond (IN)          | 10yr 24hr   | 10                   | 1.694                     | 15.60                | 2.93                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 10yr 24hr   | 10                   | 1.693                     | 17.00                | 1.93                           | 655.87                               | 0.242                        |
| PD1 Pond (IN)          | 50yr 24hr   | 50                   | 2.822                     | 15.60                | 4.62                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 50yr 24hr   | 50                   | 2.822                     | 15.80                | 4.40                           | 656.16                               | 0.393                        |
| PD1 Pond (IN)          | 100yr 5m    | 100                  | 0.067                     | 0.35                 | 1.82                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 5m    | 100                  | 0.067                     | 0.50                 | 1.29                           | 655.03                               | 0.016                        |
| PD1 Pond (IN)          | 100yr 10m   | 100                  | 0.287                     | 0.35                 | 7.61                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 10m   | 100                  | 0.287                     | 0.70                 | 1.78                           | 655.64                               | 0.179                        |
| PD1 Pond (IN)          | 100yr 15m   | 100                  | 0.465                     | 0.40                 | 11.59                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT)         | 100yr 15m   | 100                  | 0.465                     | 0.80                 | 2.53                           | 656.06                               | 0.318                        |
| PD1 Pond (IN)          | 100yr 30m   | 100                  | 0.806                     | 0.45                 | 16.90                          | (N/A)                                | (N/A)                        |

Subsection: Master Network Summary

**Pond Summary**

| Label          | Scenario    | Return Event (years) | Hydrograph Volume (ac-ft) | Time to Peak (hours) | Peak Flow (ft <sup>3</sup> /s) | Maximum Water Surface Elevation (ft) | Maximum Pond Storage (ac-ft) |
|----------------|-------------|----------------------|---------------------------|----------------------|--------------------------------|--------------------------------------|------------------------------|
| PD1 Pond (OUT) | 100yr 30m   | 100                  | 0.805                     | 0.80                 | 8.38                           | 656.27                               | 0.473                        |
| PD1 Pond (IN)  | 100yr 1hr   | 100                  | 1.180                     | 0.55                 | 18.51                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 1hr   | 100                  | 1.180                     | 0.90                 | 12.27                          | 656.34                               | 0.524                        |
| PD1 Pond (IN)  | 100yr 2hr   | 100                  | 1.610                     | 0.70                 | 17.06                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 2hr   | 100                  | 1.609                     | 1.00                 | 13.08                          | 656.35                               | 0.534                        |
| PD1 Pond (IN)  | 100yr 3hr   | 100                  | 1.854                     | 0.80                 | 14.86                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 3hr   | 100                  | 1.853                     | 1.15                 | 12.06                          | 656.33                               | 0.522                        |
| PD1 Pond (IN)  | 100yr 6hr   | 100                  | 2.302                     | 0.90                 | 10.82                          | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 6hr   | 100                  | 2.302                     | 1.65                 | 9.22                           | 656.28                               | 0.485                        |
| PD1 Pond (IN)  | 100yr 12hr  | 100                  | 2.803                     | 5.00                 | 7.70                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 12hr  | 100                  | 2.802                     | 5.50                 | 7.48                           | 656.25                               | 0.459                        |
| PD1 Pond (IN)  | 100yr 18hr  | 100                  | 3.097                     | 11.70                | 6.66                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 18hr  | 100                  | 3.097                     | 11.80                | 6.53                           | 656.22                               | 0.441                        |
| PD1 Pond (IN)  | 100yr 24hr  | 100                  | 3.349                     | 15.60                | 5.38                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 24hr  | 100                  | 3.348                     | 15.70                | 5.29                           | 656.19                               | 0.416                        |
| PD1 Pond (IN)  | 100yr 48hr  | 100                  | 3.747                     | 40.50                | 2.96                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 48hr  | 100                  | 3.747                     | 43.00                | 2.73                           | 656.07                               | 0.329                        |
| PD1 Pond (IN)  | 100yr 72hr  | 100                  | 4.036                     | 61.00                | 2.11                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 72hr  | 100                  | 4.035                     | 65.00                | 1.86                           | 655.76                               | 0.213                        |
| PD1 Pond (IN)  | 100yr 120hr | 100                  | 4.444                     | 102.00               | 1.38                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 120hr | 100                  | 4.443                     | 102.00               | 1.37                           | 655.09                               | 0.032                        |
| PD1 Pond (IN)  | 100yr 240hr | 100                  | 5.455                     | 204.00               | 0.83                           | (N/A)                                | (N/A)                        |
| PD1 Pond (OUT) | 100yr 240hr | 100                  | 5.455                     | 204.00               | 0.83                           | 654.80                               | 0.006                        |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 10m

Return Event: 100 years  
Storm Event: 10m100y

Time-Depth Curve: 10m100y

|              |            |
|--------------|------------|
| Label        | 10m100y    |
| Start Time   | 0.00 hours |
| Increment    | 0.00 hours |
| End Time     | 0.08 hours |
| Return Event | 100 years  |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 0.00 hours

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.29       | 0.59       | 0.77       | 0.94       |
| 0.02         | 1.08       | 1.19       | 1.28       | 1.35       | 1.42       |
| 0.04         | 1.48       | 1.51       | 1.55       | 1.58       | 1.62       |
| 0.06         | 1.66       | 1.69       | 1.73       | 1.75       | 1.76       |
| 0.08         | 1.80       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 120hr

Return Event: 100 years  
Storm Event: 120h100y

Time-Depth Curve: 120h100y

|              |              |
|--------------|--------------|
| Label        | 120h100y     |
| Start Time   | 0.00 hours   |
| Increment    | 6.00 hours   |
| End Time     | 120.00 hours |
| Return Event | 100 years    |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 6.00 hours

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.21       | 0.53       | 0.85       | 1.07       |
| 30.00        | 1.39       | 1.71       | 2.03       | 2.35       | 2.67       |
| 60.00        | 2.98       | 3.41       | 3.73       | 4.16       | 4.80       |
| 90.00        | 5.44       | 6.29       | 7.68       | 8.95       | 9.81       |
| 120.00       | 10.66      | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
Label: B75 - 100 Year Critical  
Scenario: 100yr 12hr

Return Event: 100 years  
Storm Event: 12h100y

Time-Depth Curve: 12h100y

|              |             |
|--------------|-------------|
| Label        | 12h100y     |
| Start Time   | 0.00 hours  |
| Increment    | 0.60 hours  |
| End Time     | 12.00 hours |
| Return Event | 100 years   |

**CUMULATIVE RAINFALL (in)**  
Output Time Increment = 0.60 hours

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.22       | 0.60       | 0.90       | 1.19       |
| 3.00         | 1.64       | 2.16       | 2.91       | 3.80       | 4.63       |
| 6.00         | 5.22       | 5.67       | 6.04       | 6.34       | 6.56       |
| 9.00         | 6.79       | 6.94       | 7.09       | 7.24       | 7.31       |
| 12.00        | 7.39       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 15m

Return Event: 100 years  
 Storm Event: 15m100y

|                           |            |
|---------------------------|------------|
| Time-Depth Curve: 15m100y |            |
| Label                     | 15m100y    |
| Start Time                | 0.00 hours |
| Increment                 | 0.01 hours |
| End Time                  | 0.25 hours |
| Return Event              | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.01 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.37       | 0.77       | 1.00       | 1.21       |
| 0.06         | 1.39       | 1.53       | 1.65       | 1.74       | 1.83       |
| 0.13         | 1.90       | 1.95       | 2.00       | 2.04       | 2.09       |
| 0.19         | 2.13       | 2.18       | 2.23       | 2.25       | 2.27       |
| 0.25         | 2.30       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 18hr

Return Event: 100 years  
 Storm Event: 18h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 18h100y |             |
| Label                     | 18h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 0.90 hours  |
| End Time                  | 18.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.90 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.24       | 0.48       | 0.73       | 0.97       |
| 4.50         | 1.21       | 1.53       | 1.85       | 2.18       | 2.58       |
| 9.00         | 3.06       | 3.63       | 4.59       | 5.64       | 6.37       |
| 13.50        | 6.85       | 7.17       | 7.42       | 7.66       | 7.82       |
| 18.00        | 7.98       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 1hr

Return Event: 100 years  
 Storm Event: 1h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 1h100y |            |
| Label                    | 1h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.05 hours |
| End Time                 | 1.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.05 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.64       | 1.33       | 1.73       | 2.10       |
| 0.25         | 2.42       | 2.66       | 2.86       | 3.02       | 3.18       |
| 0.50         | 3.30       | 3.39       | 3.47       | 3.55       | 3.63       |
| 0.75         | 3.71       | 3.79       | 3.87       | 3.91       | 3.95       |
| 1.00         | 3.99       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 240hr

Return Event: 100 years  
 Storm Event: 240h100y

|                            |              |
|----------------------------|--------------|
| Time-Depth Curve: 240h100y |              |
| Label                      | 240h100y     |
| Start Time                 | 0.00 hours   |
| Increment                  | 12.00 hours  |
| End Time                   | 240.00 hours |
| Return Event               | 100 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 12.00 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.25       | 0.63       | 1.01       | 1.27       |
| 60.00        | 1.64       | 2.02       | 2.40       | 2.78       | 3.16       |
| 120.00       | 3.54       | 4.05       | 4.43       | 4.93       | 5.69       |
| 180.00       | 6.45       | 7.46       | 9.11       | 10.63      | 11.64      |
| 240.00       | 12.65      | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 24hr

Return Event: 100 years  
 Storm Event: 24h100y

| Time-Depth Curve: 24h100y |             |
|---------------------------|-------------|
| Label                     | 24h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 1.20 hours  |
| End Time                  | 24.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.26       | 0.51       | 0.77       | 1.03       |
| 6.00         | 1.29       | 1.63       | 1.97       | 2.31       | 2.74       |
| 12.00        | 3.26       | 3.86       | 4.88       | 6.00       | 6.77       |
| 18.00        | 7.28       | 7.63       | 7.88       | 8.14       | 8.31       |
| 24.00        | 8.48       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 10 Year Critical  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Time-Depth Curve: 24h10y |             |
|--------------------------|-------------|
| Label                    | 24h10y      |
| Start Time               | 0.00 hours  |
| Increment                | 1.20 hours  |
| End Time                 | 24.00 hours |
| Return Event             | 10 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.15       | 0.31       | 0.46       | 0.62       |
| 6.00         | 0.77       | 0.98       | 1.18       | 1.39       | 1.65       |
| 12.00        | 1.96       | 2.32       | 2.94       | 3.60       | 4.07       |
| 18.00        | 4.38       | 4.58       | 4.74       | 4.89       | 5.00       |
| 24.00        | 5.10       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 50 Year Critical  
 Scenario: 50yr 24hr

Return Event: 50 years  
 Storm Event: 24h50y

| Time-Depth Curve: 24h50y |             |
|--------------------------|-------------|
| Label                    | 24h50y      |
| Start Time               | 0.00 hours  |
| Increment                | 1.20 hours  |
| End Time                 | 24.00 hours |
| Return Event             | 50 years    |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.20 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.22       | 0.45       | 0.68       | 0.90       |
| 6.00         | 1.13       | 1.42       | 1.73       | 2.03       | 2.40       |
| 12.00        | 2.85       | 3.37       | 4.27       | 5.25       | 5.93       |
| 18.00        | 6.38       | 6.67       | 6.90       | 7.12       | 7.28       |
| 24.00        | 7.43       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 2hr

Return Event: 100 years  
 Storm Event: 2h100y

| Time-Depth Curve: 2h100y |            |
|--------------------------|------------|
| Label                    | 2h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.10 hours |
| End Time                 | 2.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.10 hours**  
**Time on left represents time for first value in each row.**

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.80       | 1.64       | 2.14       | 2.58       |
| 0.50         | 2.98       | 3.28       | 3.53       | 3.73       | 3.93       |
| 1.00         | 4.08       | 4.17       | 4.27       | 4.37       | 4.47       |
| 1.50         | 4.57       | 4.67       | 4.77       | 4.82       | 4.87       |
| 2.00         | 4.92       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 30m

Return Event: 100 years  
 Storm Event: 30m100y

|                           |            |
|---------------------------|------------|
| Time-Depth Curve: 30m100y |            |
| Label                     | 30m100y    |
| Start Time                | 0.00 hours |
| Increment                 | 0.03 hours |
| End Time                  | 0.50 hours |
| Return Event              | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.03 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.51       | 1.05       | 1.36       | 1.65       |
| 0.13         | 1.90       | 2.09       | 2.25       | 2.38       | 2.50       |
| 0.25         | 2.60       | 2.66       | 2.73       | 2.79       | 2.85       |
| 0.38         | 2.92       | 2.98       | 3.04       | 3.07       | 3.11       |
| 0.50         | 3.14       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 3hr

Return Event: 100 years  
 Storm Event: 3h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 3h100y |            |
| Label                    | 3h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.15 hours |
| End Time                 | 3.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.15 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.88       | 1.81       | 2.36       | 2.85       |
| 0.75         | 3.29       | 3.62       | 3.90       | 4.12       | 4.34       |
| 1.50         | 4.50       | 4.61       | 4.72       | 4.83       | 4.94       |
| 2.25         | 5.05       | 5.16       | 5.27       | 5.33       | 5.38       |
| 3.00         | 5.44       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 48hr

Return Event: 100 years  
 Storm Event: 48h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 48h100y |             |
| Label                     | 48h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 2.40 hours  |
| End Time                  | 48.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 2.40 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.19       | 0.46       | 0.74       | 0.93       |
| 12.00        | 1.21       | 1.48       | 1.76       | 2.04       | 2.32       |
| 24.00        | 2.60       | 2.97       | 3.25       | 3.62       | 4.18       |
| 36.00        | 4.73       | 5.48       | 6.68       | 7.80       | 8.54       |
| 48.00        | 9.28       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 5m

Return Event: 100 years  
 Storm Event: 5m100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 5m100y |            |
| Label                    | 5m100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.00 hours |
| End Time                 | 0.08 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.00 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.16       | 0.34       | 0.44       | 0.54       |
| 0.02         | 0.62       | 0.68       | 0.73       | 0.77       | 0.81       |
| 0.04         | 0.84       | 0.87       | 0.89       | 0.91       | 0.93       |
| 0.06         | 0.95       | 0.97       | 0.99       | 1.00       | 1.01       |
| 0.08         | 1.02       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 6hr

Return Event: 100 years  
 Storm Event: 6h100y

|                          |            |
|--------------------------|------------|
| Time-Depth Curve: 6h100y |            |
| Label                    | 6h100y     |
| Start Time               | 0.00 hours |
| Increment                | 0.30 hours |
| End Time                 | 6.00 hours |
| Return Event             | 100 years  |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.30 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 1.03       | 2.12       | 2.76       | 3.34       |
| 1.50         | 3.86       | 4.24       | 4.57       | 4.82       | 5.08       |
| 3.00         | 5.27       | 5.40       | 5.53       | 5.66       | 5.79       |
| 4.50         | 5.92       | 6.04       | 6.17       | 6.24       | 6.30       |
| 6.00         | 6.37       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time-Depth Curve  
 Label: B75 - 100 Year Critical  
 Scenario: 100yr 72hr

Return Event: 100 years  
 Storm Event: 72h100y

|                           |             |
|---------------------------|-------------|
| Time-Depth Curve: 72h100y |             |
| Label                     | 72h100y     |
| Start Time                | 0.00 hours  |
| Increment                 | 3.60 hours  |
| End Time                  | 72.00 hours |
| Return Event              | 100 years   |

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 3.60 hours**

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

| Time (hours) | Depth (in) |
|--------------|------------|------------|------------|------------|------------|
| 0.00         | 0.00       | 0.20       | 0.49       | 0.79       | 0.99       |
| 18.00        | 1.28       | 1.58       | 1.87       | 2.17       | 2.46       |
| 36.00        | 2.76       | 3.15       | 3.45       | 3.84       | 4.43       |
| 54.00        | 5.02       | 5.81       | 7.09       | 8.27       | 9.06       |
| 72.00        | 9.85       | (N/A)      | (N/A)      | (N/A)      | (N/A)      |

Subsection: Time of Concentration Calculations  
 Label: Area DEV  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration Results     |            |
| Segment #1: User Defined Tc       |            |
| Time of Concentration             | 0.17 hours |
| Time of Concentration (Composite) |            |
| Time of Concentration (Composite) | 0.17 hours |

Subsection: Time of Concentration Calculations  
 Label: Area DEV  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

==== User Defined  
 Tc = Value entered by user  
 Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area EX1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

|                             |            |
|-----------------------------|------------|
| Segment #1: User Defined Tc |            |
| Time of Concentration       | 0.30 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.30 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area EX1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area FO  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

|                             |            |
|-----------------------------|------------|
| Segment #1: User Defined Tc |            |
| Time of Concentration       | 1.00 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 1.00 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area FO  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area FO-US  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.75 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.75 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area FO-US  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.49 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.49 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PD1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PD1-1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 0.08 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.08 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PD1-1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area PR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

Segment #1: User Defined Tc

|                       |            |
|-----------------------|------------|
| Time of Concentration | 1.00 hours |
|-----------------------|------------|

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 1.00 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area PR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== User Defined

Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area S1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

| Segment #1: User Defined Tc |            |
|-----------------------------|------------|
| Time of Concentration       | 0.11 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.11 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area S1  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
Label: Area UNR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

Time of Concentration Results

| Segment #1: User Defined Tc |            |
|-----------------------------|------------|
| Time of Concentration       | 0.08 hours |

Time of Concentration (Composite)

|                                   |            |
|-----------------------------------|------------|
| Time of Concentration (Composite) | 0.08 hours |
|-----------------------------------|------------|

Subsection: Time of Concentration Calculations  
Label: Area UNR  
Scenario: 10yr 24hr

Return Event: 10 years  
Storm Event: 24h10y

==== **User Defined**  
Tc = Value entered by user  
Where: Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations  
 Label: Area UPSTREAM  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Time of Concentration Results     |            |
|-----------------------------------|------------|
| Segment #1: User Defined Tc       |            |
| Time of Concentration             | 0.17 hours |
| Time of Concentration (Composite) |            |
| Time of Concentration (Composite) | 0.17 hours |

Subsection: Time of Concentration Calculations  
 Label: Area UPSTREAM  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

==== User Defined  
 Tc = Value entered by user  
 Where: Tc= Time of concentration, hours

Subsection: Runoff CN-Area  
 Label: Area DEV  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area EX1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area FO-US  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area PD1-1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area PR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area S1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area UNR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Runoff CN-Area  
 Label: Area UPSTREAM  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Runoff Curve Number Data**

| Soil/Surface Description          | CN    | Area (acres) | C (%) | UC (%) | Adjusted CN |
|-----------------------------------|-------|--------------|-------|--------|-------------|
| COMPOSITE AREA & WEIGHTED CN ---> | (N/A) | (N/A)        | (N/A) | (N/A)  | (N/A)       |

Subsection: Elevation vs. Volume Curve  
 Label: FO Detention  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 654.10              | 0.000               |
| 656.40              | 0.000               |
| 658.50              | 1.710               |
| 660.00              | 2.800               |
| 660.50              | 3.200               |

Subsection: Elevation vs. Volume Curve  
 Label: PD1 Pond  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 654.10              | 0.000               |
| 655.00              | 0.008               |
| 656.00              | 0.276               |
| 656.50              | 0.644               |

Subsection: Elevation vs. Volume Curve  
 Label: PD1-1 Depression  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 657.90              | 0.000               |
| 658.00              | 0.000               |
| 658.20              | 0.006               |
| 658.50              | 0.020               |

Subsection: Elevation vs. Volume Curve  
 Label: Pond  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 649.00              | 0.000               |
| 652.00              | 0.000               |
| 655.00              | 1.534               |
| 656.50              | 2.458               |
| 657.50              | 3.000               |

Subsection: Elevation vs. Volume Curve  
 Label: PR Detention  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Elevation-Volume**

| Pond Elevation (ft) | Pond Volume (ac-ft) |
|---------------------|---------------------|
| 653.32              | 0.000               |
| 657.30              | 0.000               |
| 658.50              | 1.180               |

Subsection: Outlet Input Data  
 Label: OF PD1-1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 657.90 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 658.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Irregular Weir     | Weir PD1-1 | Forward   | TW      | 658.20  | 658.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: OF PD1-1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir PD1-1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.30           |
| 45.86        | 0.00           |
| 70.86        | 0.30           |

Lowest Elevation 658.20 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>/s)

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: Outlet Input Data  
 Label: RF PR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

| Requested Pond Water Surface Elevations |           |
|---|-----------|
| Minimum (Headwater)                     | 653.32 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 658.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Orifice-Circular   | Orifice PR | Forward   | TW      | 653.32  | 658.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF PR  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice PR         |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 653.32 ft |
| Orifice Diameter                 | 15.00 in  |
| Orifice Coefficient              | 0.820     |

|                                      |              |
|--------------------------------------|--------------|
| 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: Outlet Input Data  
 Label: RF/OF FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|   |           |
|---|-----------|
| Requested Pond Water Surface Elevations |           |
| Minimum (Headwater)                     | 654.10 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 660.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID  | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|------------|-----------|---------|---------|---------|
| Orifice-Circular   | Orifice FO | Forward   | TW      | 654.10  | 660.50  |
| Rectangular Weir   | Weir FO    | Forward   | TW      | 660.00  | 660.50  |
| Tailwater Settings | Tailwater  |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF/OF FO  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                  |           |
|----------------------------------|-----------|
| Structure ID: Orifice FO         |           |
| Structure Type: Orifice-Circular |           |
| Number of Openings               | 1         |
| Elevation                        | 654.10 ft |
| Orifice Diameter                 | 10.00 in  |
| Orifice Coefficient              | 0.820     |

|                                  |                             |
|----------------------------------|-----------------------------|
| Structure ID: Weir FO            |                             |
| Structure Type: Rectangular Weir |                             |
| Number of Openings               | 1                           |
| Elevation                        | 660.00 ft                   |
| Weir Length                      | 20.00 ft                    |
| Weir Coefficient                 | 3.00 (ft <sup>0.5</sup> )/s |

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|   |           |
|---|-----------|
| Requested Pond Water Surface Elevations |           |
| Minimum (Headwater)                     | 654.10 ft |
| Increment (Headwater)                   | 0.05 ft   |
| Maximum (Headwater)                     | 656.50 ft |

**Outlet Connectivity**

| Structure Type     | Outlet ID   | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|-------------|-----------|---------|---------|---------|
| Culvert-Circular   | Culvert PD1 | Forward   | TW      | 654.14  | 656.50  |
| Irregular Weir     | Weir PD1    | Forward   | TW      | 655.94  | 656.50  |
| Tailwater Settings | Tailwater   |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

**Structure ID: Weir PD1**  
**Structure Type: Irregular Weir**

| Station (ft) | Elevation (ft) |
|--------------|----------------|
| 0.00         | 0.56           |
| 30.00        | 0.00           |
| 53.00        | 0.56           |

Lowest Elevation 655.94 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>/s)

Structure ID: Culvert PD1  
 Structure Type: Culvert-Circular

Number of Barrels 1  
 Diameter 8.00 in  
 Length 36.10 ft  
 Length (Computed Barrel) 36.10 ft  
 Slope (Computed) 0.011 ft/ft

Outlet Control Data

Manning's n 0.013  
 Ke 0.200  
 Kb 0.054  
 Kr 0.200  
 Convergence Tolerance 0.00 ft

Inlet Control Data

Equation Form Form 1  
 K 0.0045  
 M 2.0000  
 C 0.0317  
 Y 0.6900  
 T1 ratio (HW/D) 1.089  
 T2 ratio (HW/D) 1.192  
 Slope Correction Factor -0.500

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 | 654.87 ft | T1 Flow | 1.00 ft <sup>3</sup> /s |
|--------------|-----------|---------|-------------------------|
|--------------|-----------|---------|-------------------------|

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

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...

| T2 Elevation | 654.93 ft | T2 Flow | 1.14 ft <sup>3</sup> /s |
|--------------|-----------|---------|-------------------------|
|--------------|-----------|---------|-------------------------|

Subsection: Outlet Input Data  
 Label: RF/OF PD1  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

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: Outlet Input Data  
 Label: RF/OF Pond  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

Requested Pond Water Surface Elevations

Minimum (Headwater) 649.00 ft  
 Increment (Headwater) 0.05 ft  
 Maximum (Headwater) 657.50 ft

Outlet Connectivity

| Structure Type     | Outlet ID    | Direction | Outfall | E1 (ft) | E2 (ft) |
|--------------------|--------------|-----------|---------|---------|---------|
| Orifice-Circular   | Orifice Pond | Forward   | TW      | 649.00  | 657.50  |
| Rectangular Weir   | Weir Pond    | Forward   | TW      | 656.50  | 657.50  |
| Tailwater Settings | Tailwater    |           |         | (N/A)   | (N/A)   |

Subsection: Outlet Input Data  
 Label: RF/OF Pond  
 Scenario: 10yr 24hr

Return Event: 10 years  
 Storm Event: 24h10y

|                                      |                             |
|--------------------------------------|-----------------------------|
| Structure ID: Orifice Pond           |                             |
| Structure Type: Orifice-Circular     |                             |
| Number of Openings                   | 1                           |
| Elevation                            | 649.00 ft                   |
| Orifice Diameter                     | 3.08 in                     |
| Orifice Coefficient                  | 0.610                       |
| Structure ID: Weir Pond              |                             |
| Structure Type: Rectangular Weir     |                             |
| Number of Openings                   | 1                           |
| Elevation                            | 656.50 ft                   |
| Weir Length                          | 18.00 ft                    |
| Weir Coefficient                     | 3.00 (ft <sup>0.5</sup> )/s |
| 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   |

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# CRITICAL DURATION ANALYSIS - COMPARISON

HAEGER ENGINEERING, LLC  
consulting engineers and land surveyors

Project: Reserve at Muir Park [61 Unit Plan]  
Location: Prospect Heights, IL  
Project #: 18-219

Prepared: PAC  
Reviewed: TAS  
Date: 07/22/20

### Existing Flow Analysis:

| Flow                    | Recurrence Interval | Pond Pack Results | 5min Storm Event | 10min Storm Event | 15min Storm Event | 30min Storm Event | 1hr Storm Event | 2hr Storm Event | 3hr Storm Event | 6hr Storm Event | 12hr Storm Event | 18hr Storm Event | 24hr Storm Event | 48hr Storm Event | 72hr Storm Event | 5d Storm Event | 10d Storm Event | Critical Event |
|-------------------------|---------------------|-------------------|------------------|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|----------------|-----------------|----------------|
| Q-36IN to Wheeling Road | 10-Year             | Q Peak (cfs)      | 1.86             | 8.36              | 10.56             | 13.93             | 15.54           | 16.09           | 15.61           | 13.96           | 12.43            | 11.47            | 10.40            | 7.47             | 5.46             | 3.67           | 2.31            | 16.09          |
|                         | 50-Year             | Q Peak (cfs)      | 5.28             | 11.66             | 15.85             | 19.81             | 21.23           | 20.11           | 15.61           | 18.37           | 16.74            | 15.18            | 13.58            | 9.53             | 8.07             | 5.30           | 3.21            | 21.23          |
|                         | 100-Year            | Q Peak (cfs)      | 7.26             | 13.67             | 18.09             | 22.28             | 23.87           | 23.06           | 21.57           | 19.35           | 17.90            | 16.88            | 15.06            | 10.42            | 8.69             | 6.06           | 3.62            | 23.87          |
| Q-Lot 117/118 Sewer     | 10-Year             | Q Peak (cfs)      | 0.38             | 3.05              | 3.30              | 6.39              | 7.30            | 7.07            | 6.37            | 4.92            | 4.51             | 4.25             | 3.75             | 2.53             | 2.00             | 1.35           | 0.86            | 7.30           |
|                         | 50-Year             | Q Peak (cfs)      | 1.73             | 7.58              | 8.36              | 12.00             | 13.38           | 13.91           | 6.37            | 11.41           | 10.08            | 8.94             | 7.31             | 3.63             | 2.77             | 1.99           | 1.21            | 13.91          |
|                         | 100-Year            | Q Peak (cfs)      | 2.60             | 9.92              | 10.85             | 15.32             | 18.37           | 20.04           | 18.70           | 14.99           | 12.42            | 10.84            | 8.78             | 4.51             | 3.13             | 2.27           | 1.37            | 20.04          |

### Proposed Flow Analysis:

| Flow                    | Recurrence Interval | Pond Pack Results | 5min Storm Event | 10min Storm Event | 15min Storm Event | 30min Storm Event | 1hr Storm Event | 2hr Storm Event | 3hr Storm Event | 6hr Storm Event | 12hr Storm Event | 18hr Storm Event | 24hr Storm Event | 48hr Storm Event | 72hr Storm Event | 5d Storm Event | 10d Storm Event | Critical Event |
|-------------------------|---------------------|-------------------|------------------|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|----------------|-----------------|----------------|
| Q-36IN to Wheeling Road | 10-Year             | Q Peak (cfs)      | 2.24             | 8.61              | 10.18             | 12.68             | 13.96           | 14.21           | 13.80           | 12.43           | 11.29            | 10.56            | 9.71             | 7.26             | 5.42             | 3.78           | 2.53            | 14.21          |
|                         | 50-Year             | Q Peak (cfs)      | 5.59             | 11.40             | 13.60             | 15.47             | 15.95           | 16.18           | 16.09           | 15.64           | 14.77            | 13.60            | 12.36            | 7.83             | 7.83             | 5.30           | 3.37            | 16.18          |
|                         | 100-Year            | Q Peak (cfs)      | 7.53             | 12.61             | 14.97             | 15.84             | 16.51           | 17.35           | 17.51           | 16.99           | 15.94            | 15.02            | 13.60            | 9.93             | 8.37             | 6.01           | 3.76            | 17.51          |
| Q-Lot 117/118 Sewer     | 10-Year             | Q Peak (cfs)      | 0.21             | 1.91              | 2.70              | 3.35              | 3.63            | 3.77            | 3.71            | 3.32            | 3.04             | 2.83             | 2.50             | 1.87             | 1.49             | 1.01           | 0.64            | 3.77           |
|                         | 50-Year             | Q Peak (cfs)      | 1.29             | 3.50              | 4.52              | 5.59              | 10.23           | 11.38           | 10.75           | 8.66            | 7.46             | 6.57             | 5.38             | 2.05             | 2.05             | 1.48           | 0.90            | 11.38          |
|                         | 100-Year            | Q Peak (cfs)      | 1.68             | 4.22              | 5.46              | 8.98              | 14.46           | 15.53           | 14.38           | 11.21           | 9.21             | 8.03             | 6.52             | 3.37             | 2.31             | 1.69           | 1.02            | 15.53          |

### Difference:

| Flow                    | Recurrence Interval | Pond Pack Results | 5min Storm Event | 10min Storm Event | 15min Storm Event | 30min Storm Event | 1hr Storm Event | 2hr Storm Event | 3hr Storm Event | 6hr Storm Event | 12hr Storm Event | 18hr Storm Event | 24hr Storm Event | 48hr Storm Event | 72hr Storm Event | 5d Storm Event | 10d Storm Event | Critical Event |
|-------------------------|---------------------|-------------------|------------------|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|----------------|-----------------|----------------|
| Q-36IN to Wheeling Road | 10-Year             | Q Peak (cfs)      | 0.38             | 0.25              | -0.38             | -1.25             | -1.58           | -1.88           | -1.81           | -1.53           | -1.14            | -0.91            | -0.69            | -0.21            | -0.04            | 0.11           | 0.22            | -1.88          |
|                         | 50-Year             | Q Peak (cfs)      | 0.31             | -0.26             | -2.25             | -4.34             | -5.28           | -3.93           | 0.48            | -2.73           | -1.97            | -1.58            | -1.22            | -1.70            | -0.24            | 0.00           | 0.16            | -5.28          |
|                         | 100-Year            | Q Peak (cfs)      | 0.27             | -1.06             | -3.12             | -6.44             | -7.36           | -5.71           | -4.06           | -2.36           | -1.96            | -1.86            | -1.46            | -0.49            | -0.32            | -0.05          | 0.14            | -7.36          |
| Q-Lot 117/118 Sewer     | 10-Year             | Q Peak (cfs)      | -0.17            | -1.14             | -0.60             | -3.04             | -3.67           | -3.30           | -2.66           | -1.60           | -1.47            | -1.42            | -1.25            | -0.66            | -0.51            | -0.34          | -0.22           | -3.67          |
|                         | 50-Year             | Q Peak (cfs)      | -0.44            | -4.08             | -3.84             | -6.41             | -3.15           | -2.53           | 4.38            | -2.75           | -2.62            | -2.37            | -1.93            | -1.58            | -0.72            | -0.51          | -0.31           | -6.41          |
|                         | 100-Year            | Q Peak (cfs)      | -0.92            | -5.70             | -5.39             | -6.34             | -3.91           | -4.51           | -4.32           | -3.78           | -3.21            | -2.81            | -2.26            | -1.14            | -0.82            | -0.58          | -0.35           | -6.34          |

## DETENTION VOLUME PROVIDED

**PROJECT:** Reserve at Muir Park [61 Unit Plan]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### AREA UNITS (CHOOSE WITH DROP-DOWN)

Units:

### POND / VAULT / SURFACE DETENTION VOLUME

| Elevation (ft) | Area (ft <sup>2</sup> ) | Average Area (ft <sup>2</sup> ) | Increment Volume (ac-ft) | Cumulative Volume (ac-ft) |
|----------------|-------------------------|---------------------------------|--------------------------|---------------------------|
| 652.00         | 10189.00                |                                 |                          | 0.00                      |
|                |                         | 11000.50                        | 0.25                     |                           |
| 653.00         | 11812.00                |                                 |                          | 0.25                      |
|                |                         | 12673.50                        | 0.29                     |                           |
| 654.00         | 13535.00                |                                 |                          | 0.54                      |
|                |                         | 14447.00                        | 0.33                     |                           |
| 655.00         | 15359.00                |                                 |                          | 0.88                      |
|                |                         | 16321.50                        | 0.37                     |                           |
| 656.00         | 17284.00                |                                 |                          | 1.25                      |
|                |                         | 17784.00                        | 0.20                     |                           |
| 656.50         | 18284.00                |                                 |                          | 1.45                      |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |
|                |                         |                                 |                          |                           |

### STORM SEWER DETENTION VOLUME

| Diameter (in) | Length (ft) | Volume (ac-ft) |
|---------------|-------------|----------------|
| 12            | 0           | 0.00           |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |
|               |             |                |

### TOTAL DETENTION VOLUME

Pond / Vault / Surface Detention Volume (ac-ft)

1.45

Storm Sewer Detention Volume (ac-ft)

0.00

**Total Detention Volume (ac-ft)**

**1.45**

## VAULT STORAGE CALCULATIONS

**PROJECT:** Reserve at Muir Park [61 Unit Plan]      **PERMIT NUMBER:** \_\_\_\_\_  
**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL      **DATE:** 7/22/2020

### AREA UNITS (CHOOSE WITH DROP-DOWN)

Units: ft<sup>2</sup>

### UNDERGROUND VAULT STORAGE: VAULT #1

|  |        |    |
|--|--------|----|
| 1. Vault Bottom                            | 652.0  | ft |
| 2. Vault Top                               | 655.0  | ft |
| 3. Vault Height                            | 3.0    | ft |
| 4. Vault Area                              | 9,258  | sf |
| 5. Effective Vault Volume (90% Efficiency) | 24,997 | cf |

### UNDERGROUND VAULT STORAGE: VAULT #2

|  |       |    |
|--|-------|----|
| 1. Vault Bottom                            | 652.0 | ft |
| 2. Vault Top                               | 656.5 | ft |
| 3. Vault Height                            | 4.5   | ft |
| 4. Vault Area                              | 1,202 | sf |
| 5. Effective Vault Volume (90% Efficiency) | 4,868 | cf |

### UNDERGROUND VAULT STORAGE: VAULT #3

|  |       |    |
|--|-------|----|
| 1. Vault Bottom                            | 652.0 | ft |
| 2. Vault Top                               | 656.5 | ft |
| 3. Vault Height                            | 4.5   | ft |
| 4. Vault Area                              | 1,202 | sf |
| 5. Effective Vault Volume (90% Efficiency) | 4,868 | cf |

### UNDERGROUND VAULT STORAGE: VAULT #4

|  |       |    |
|--|-------|----|
| 1. Vault Bottom                            | 652.0 | ft |
| 2. Vault Top                               | 656.5 | ft |
| 3. Vault Height                            | 4.5   | ft |
| 4. Vault Area                              | 1,817 | sf |
| 5. Effective Vault Volume (90% Efficiency) | 7,359 | cf |

### UNDERGROUND VAULT STORAGE: COMBINED VOLUME

|  |        |    |
|--|--------|----|
| 1. Effective Vault Volume (90% Efficiency) | 42,092 | cf |
|--|--------|----|



## ORIFICE DISCHARGE RATE

**PROJECT:** Reserve at Muir Park - Detained Dev Area [61 Unit]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### RESTRICTOR INFORMTION

|                                 |        |    |  |
|---------------------------------|--------|----|--|
| 1. Orifice Number               | 1      |    |  |
| 2. Orifice diameter, $d$        | 3.08   | in |  |
| 3. Discharge Coefficient, $C_d$ | 0.61   |    |  |
| 4. Invert Elevation             | 649.00 | ft |  |
| 5. High Water Elevation, HWL    | 655.88 | ft |  |
| 6. Tail Water Elevation         | N/A    | ft |  |

### ACTUAL RELEASE RATE

|   |      |     |  |
|---|------|-----|--|
| 6. Free Flow Actual Release Rate at HWL | 0.66 | cfs |  |
| 7. Submerged Actual Release Rate at HWL | 0.00 | cfs |  |

### STAGE-DISCHARGE TABLE CONDITION (SELECT FROM DROP-DOWN)

Free-flow

### STAGE-DISCHARGE TABLE

| Elevation (ft) | Orifice 1 (cfs) | Orifice 2 (cfs) | Total (cfs) |
|----------------|-----------------|-----------------|-------------|
| 652.00         | 0.43            |                 | 0.43        |
| 653.00         | 0.50            |                 | 0.50        |
| 654.00         | 0.56            |                 | 0.56        |
| 655.00         | 0.61            |                 | 0.61        |
| 655.82         | 0.66            |                 | 0.66        |
| 655.88         | 0.66            |                 | 0.66        |
| 656.00         | 0.66            |                 | 0.66        |
| 656.50         | 0.69            |                 | 0.69        |
|                |                 |                 |             |
|                |                 |                 |             |
|                |                 |                 |             |
|                |                 |                 |             |

HWL

## BOX CULVERT OVERFLOW STRUCTURE - WEIR & GRATE CAPACITY

**PROJECT:** Reserve at Muir Park [61 Unit Plan]

**PERMIT NUMBER:** \_\_\_\_\_

**LOCATION:** 1001 Oak Avenue, Prospect Heights, IL

**DATE:** 7/22/2020

### WEIR INFORMATION

|                                     |        |    |  |
|-------------------------------------|--------|----|--|
| 1. Weir Number                      | 1      |    |  |
| 2. Weir Length                      | 18.00  | ft |  |
| 3. Weir Coefficient                 | 3.0    |    |  |
| 4. Weir Elevation                   | 656.50 | ft |  |
| 5. Hydraulic Grade Line (HGL) Crest | 657.10 | ft |  |

### GRATE INFORMATION

|                                     |        |    |  |
|-------------------------------------|--------|----|--|
| 1. Grate Number                     | 1      |    |  |
| 2. Grate Area                       | 154.00 | sf |  |
| 3. Open Area of Grate               | 129.36 | sf |  |
| 4. Orifice Coefficient              | 0.6    |    |  |
| 5. Grate Elevation                  | 657.00 | ft |  |
| 6. Hydraulic Grade Line (HGL) Crest | 657.10 | ft |  |

### ACTUAL RELEASE RATE

|   |        |     |  |
|---|--------|-----|--|
| 6. Free Flow Actual Release Rate at HGL Crest | 222.06 | cfs |  |
|---|--------|-----|--|

### STAGE-DISCHARGE TABLE

| Elevation (ft) | Weir 1 (cfs) | Grate 1 (cfs) | Total (cfs) |
|----------------|--------------|---------------|-------------|
| 656.50         | 0.00         | 0.00          | 0.00        |
| 657.00         | 19.09        | 0.00          | 19.09       |
| 657.10         | 25.10        | 196.97        | 222.06      |
| 657.20         | 31.63        | 278.55        | 310.18      |
| 657.30         | 38.64        | 341.16        | 379.80      |
| 657.40         | 46.11        | 393.93        | 440.04      |
| 657.50         | 54.00        | 440.43        | 494.43      |
|                |              |               |             |

# OUTFALL SEWER CAPACITY

PROJECT: RESERVES AT MUIR PARK  
 SUBJECT: STORM SEWER  
 Assumptions: n = 0.013 for RCP

| MH/CB No. | q<br>(cfs) | Diam.<br>(in) | Slope<br>(%) | Pipe full<br>Q | Pipe full<br>V | q/Q<br>Capacity | v/V  |
|-----------|------------|---------------|--------------|----------------|----------------|-----------------|------|
| A         | 18.73      |               |              |                |                |                 |      |
| A to B    |            | 36            | 0.18         | 28.30          | 4.00           | 0.66            | 0.93 |
| B         |            |               |              |                |                |                 |      |