

of Parking spots being used at Mikes Carwash

Purpose: Track the # of vehicles parked in our current parking spots through out the day. This is to help Louisville metro Zoning with the number of parking spots we need at new sites.

Action: Please count the number of parking spaces that are taken by customers or Mikes Carwash employees at the times listed and enter the number under corresponding time / date. **Do not include handicap spaces**

58

| Location Site Address | | 2962 Breckenridge Ln Louisville, KY | | |
|-----------------------|------|-------------------------------------|-----------|-----------|
| | Date | 6/17/2022 | 6/18/2022 | 6/19/2022 |
| Time | | | | |
| 8am | | 1 | 1 | 2 |
| 9am | | 2 | 2 | 2 |
| 10am | | 3 | 2 | 3 |
| 11am | | 2 | 3 | 3 |
| 12pm | | 2 | 3 | 2 |
| 1pm | | 4 | 3 | 2 |
| 2pm | | 2 | 4 | 4 |
| 3pm | | 2 | 3 | 3 |
| 4pm | | 2 | 2 | 2 |
| 5pm | | 3 | 2 | 2 |

of Parking spots being used at Mikes Carwash

Purpose: Track the # of vehicles parked in our current parking spots through out the day. This is to help Louisville metro Zoning with the number of parking spots we need at new sites.

Action: Please count the number of parking spaces that are taken by customers or Mikes Carwash employees at the times listed and enter the number under corresponding time / date. **Do not include handicap spaces**

| Location Site Address | | 6/20/22 | 6/21/22 | 6/22/22 |
|-----------------------|--|-----------|----------------------|----------------------|
| Date | | 6/17/2022 | 6/18/2022 | 6/19/2022 |
| Time | | | | |
| 8am | | 1 | 2 | 3 |
| 9am | | 1 | 2 | 4 |
| 10am | | 2 | 3 | 3 |
| 11am | | 3 | 5 | 5 |
| 12pm | | 4 | 3 | 4 |
| 1pm | | 3 | 3 | 4 |
| 2pm | | 4 | 6 | 5 |
| 3pm | | 5 | 4 | 4 |
| 4pm | | 10 | 3 | 4 |
| 5pm | | 5 | 3 | 4 |

THORNTONS
DRAINAGE ANALYSES AND CRITERIA

The proposed development consists of removing the existing structures and impervious areas and building a proposed Thorntons convenience store. The development intends to capture storm water runoff generated by the development and send it to a regional basin located at Southside Quarry. Following are the drainage calculations as required for review and approval for support of the plan submittal:

A. WATER QUANTITY

The Thorntons site consist of 1.85 acres and is part of a larger development consisting of 4.5 acres. The entire development drains towards the ditch along Preston Highway and it contains a high point where the ditch changes direction. 4.35 acres of the development drains to the Southern edge of the property and flows through an existing 24" RCP under the road at the signalized intersection to Fishpool Creek. The remaining 0.15 acres flows towards the North. Below are the pre developed calculations:

Drainage Area 1

$$C_w = (0.35 \text{ acres} * 0.9 + 4.00 \text{ acres} * 0.3) / 4.35 \text{ acres} = (0.315 + 1.20) / 4.5 = 0.35$$

$$\text{EX Detention Calculation} = (2.9/12)(0.35)(4.35) = 0.28 \text{ AC-FT}$$

Drainage Area 2

$$C_w = 0.30$$

$$\text{EX Detention Calculation} = (2.9/12)(0.30)(.15) = .01 \text{ AC-FT}$$

Below are the post developed calculations:

Based on 80% impervious for all 3 sites.

Drainage Area 1

$$4.35 \text{ acres} * .80 = 3.48 \text{ acres impervious}$$

$$C_w = (3.48 * .90) + (0.87 * .30) / 4.35 = (3.132 + 0.261) / 4.35 = 0.78$$

$$\text{PR Detention Calculation} = (2.9/12)(0.78)(4.35) = 0.82 \text{ AC-FT}$$

Considering the existing produces 0.28 AC-FT, the developed condition will require $(0.82 - 0.28) = 0.54 \text{ AC-FT}$ of storage at Southside Quarry.

MSD has indicated they have available capacity at the Southside Quarry Regional Basin to handle the additional flow without onsite retention. Each Lot will be responsible for paying capacity credits to MSD as the lots are developed.

Below are the calculations for the Thorntons site only:

Existing $C_w = 0.34$

Proposed $C_w = 0.65$

$$\text{Detention Required} = (2.9/12)(0.65 - 0.34)(1.85) = 0.14 \text{ AC-FT}$$

There is an existing 12x7 RCBC underneath Preston Highway based on the KYTC 1987 archive plans. The 25 year flow through the culvert is 622 CFS and 742 CFS for the 100 year flow. Utilizing a Tc of 10 minutes and a 25 year storm event the developed condition will add approximately 11 CFS to the box culvert. However, due to the proximity of the site and it's relation to the box culvert the increased flow will flow through the RCBC before the max flow reaches the box culvert. Therefore, there would be negligible increase in the headwater elevation at the box culvert.

B. STORM SEWER DESIGN

The Hydraflow software Storm Sewer was used for the design of the storm sewer system. This method uses the energy-based Standard Step method that uses Bernoulli's energy equation between the downstream and upstream ends of each line in the system and Manning's equation to determine head losses due to pipe friction. This method arrives at a solution iteratively when the energy equation balances. This is the same way KYTC designs their storm sewer systems.

Peak flows were determined by using the Rational Method in conjunction with a ten (10) year design storm and checked versus a 100 year event. The IDF curve for Louisville, KY was utilized.

Submitted with this narrative are the storm sewer runs for the storm sewer systems on the development including the profiles showing the hydraulic grade lines.

C. WATER QUALITY

Water quality is provided by two proprietary structures before the outlet pipe. The water quality design report can be seen in the appendix.

Below are a list of appendices and a brief description of what they contain:

- Appendix A*.....IDF curve for Louisville, obtained from NOAA website
- Appendix B*.....Summary table for the storm sewer systems in DOT Style
- Appendix C*.....Drainage maps
- Appendix D*..... Water Quality Design Report



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

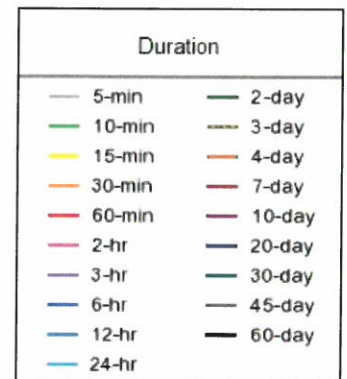
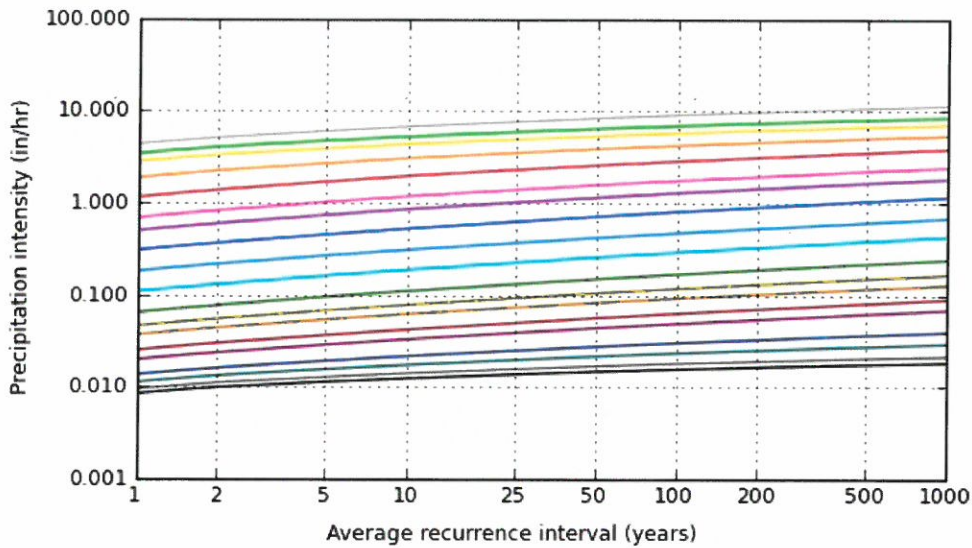
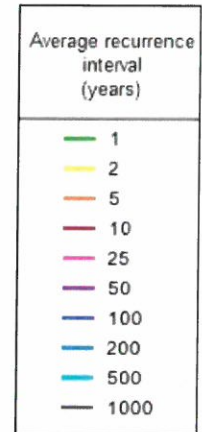
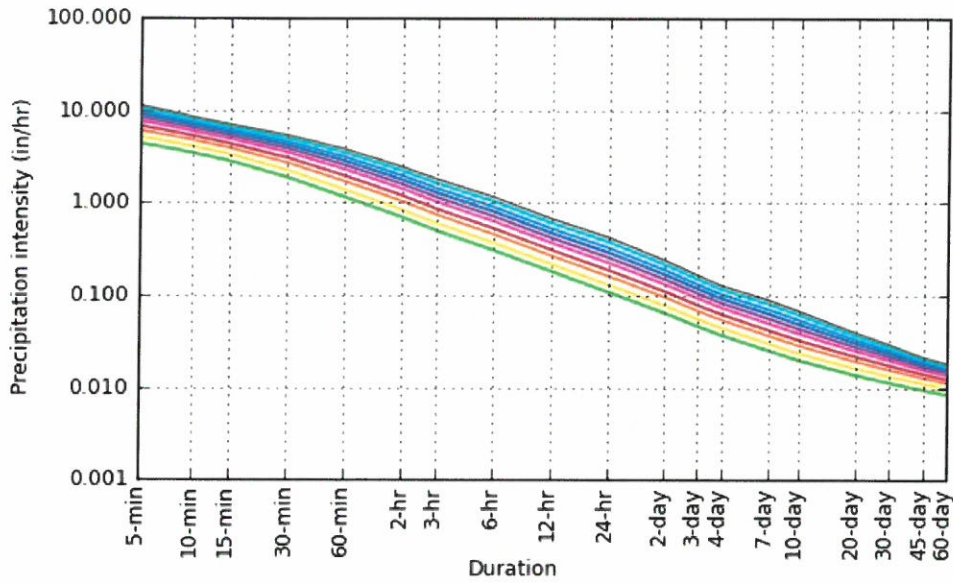
| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹ | | | | | | | | | | |
|---|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 4.39 (4.01-4.81) | 5.17 (4.73-5.68) | 6.06 (5.53-6.66) | 6.78 (6.17-7.43) | 7.66 (6.95-8.39) | 8.38 (7.56-9.17) | 9.07 (8.15-9.92) | 9.74 (8.70-10.7) | 10.6 (9.42-11.7) | 11.3 (9.98-12.4) |
| 10-min | 3.44 (3.14-3.77) | 4.07 (3.72-4.47) | 4.75 (4.33-5.21) | 5.29 (4.81-5.80) | 5.93 (5.38-6.49) | 6.43 (5.81-7.04) | 6.91 (6.21-7.57) | 7.39 (6.60-8.09) | 7.99 (7.07-8.75) | 8.43 (7.42-9.24) |
| 15-min | 2.83 (2.58-3.10) | 3.34 (3.06-3.67) | 3.92 (3.58-4.30) | 4.37 (3.98-4.79) | 4.92 (4.46-5.39) | 5.35 (4.83-5.85) | 5.76 (5.17-6.31) | 6.16 (5.50-6.74) | 6.66 (5.90-7.30) | 7.03 (6.18-7.70) |
| 30-min | 1.89 (1.73-2.07) | 2.26 (2.07-2.48) | 2.71 (2.48-2.98) | 3.07 (2.80-3.37) | 3.53 (3.20-3.86) | 3.88 (3.50-4.25) | 4.23 (3.80-4.63) | 4.58 (4.09-5.01) | 5.04 (4.46-5.52) | 5.39 (4.74-5.91) |
| 60-min | 1.16 (1.06-1.27) | 1.40 (1.27-1.53) | 1.71 (1.56-1.88) | 1.97 (1.79-2.16) | 2.30 (2.09-2.52) | 2.58 (2.33-2.82) | 2.85 (2.56-3.12) | 3.14 (2.80-3.43) | 3.52 (3.12-3.86) | 3.83 (3.37-4.20) |
| 2-hr | 0.696 (0.637-0.761) | 0.834 (0.762-0.912) | 1.03 (0.938-1.13) | 1.19 (1.08-1.29) | 1.40 (1.27-1.53) | 1.58 (1.42-1.72) | 1.76 (1.58-1.92) | 1.95 (1.74-2.13) | 2.21 (1.96-2.42) | 2.42 (2.13-2.66) |
| 3-hr | 0.503 (0.461-0.551) | 0.603 (0.552-0.661) | 0.744 (0.680-0.814) | 0.859 (0.783-0.940) | 1.02 (0.926-1.12) | 1.15 (1.04-1.26) | 1.29 (1.16-1.41) | 1.44 (1.28-1.57) | 1.65 (1.45-1.80) | 1.82 (1.59-1.99) |
| 6-hr | 0.308 (0.283-0.338) | 0.370 (0.340-0.406) | 0.455 (0.418-0.499) | 0.528 (0.483-0.577) | 0.630 (0.573-0.688) | 0.716 (0.647-0.780) | 0.807 (0.723-0.879) | 0.904 (0.805-0.985) | 1.04 (0.917-1.14) | 1.16 (1.01-1.26) |
| 12-hr | 0.182 (0.167-0.200) | 0.218 (0.200-0.240) | 0.269 (0.246-0.295) | 0.311 (0.284-0.341) | 0.371 (0.336-0.406) | 0.420 (0.379-0.461) | 0.474 (0.424-0.519) | 0.530 (0.471-0.581) | 0.611 (0.536-0.671) | 0.678 (0.588-0.747) |
| 24-hr | 0.109 (0.101-0.119) | 0.131 (0.121-0.143) | 0.162 (0.150-0.177) | 0.188 (0.173-0.206) | 0.226 (0.207-0.247) | 0.258 (0.235-0.281) | 0.292 (0.264-0.318) | 0.329 (0.295-0.359) | 0.383 (0.340-0.417) | 0.427 (0.375-0.467) |
| 2-day | 0.065 (0.060-0.070) | 0.077 (0.072-0.084) | 0.096 (0.088-0.104) | 0.111 (0.102-0.120) | 0.132 (0.121-0.143) | 0.150 (0.136-0.162) | 0.169 (0.153-0.183) | 0.189 (0.170-0.205) | 0.217 (0.193-0.236) | 0.240 (0.212-0.262) |
| 3-day | 0.046 (0.043-0.050) | 0.055 (0.051-0.060) | 0.068 (0.063-0.074) | 0.079 (0.072-0.085) | 0.093 (0.085-0.101) | 0.105 (0.096-0.114) | 0.118 (0.107-0.128) | 0.131 (0.118-0.143) | 0.150 (0.134-0.163) | 0.165 (0.146-0.180) |
| 4-day | 0.037 (0.034-0.040) | 0.044 (0.041-0.048) | 0.054 (0.050-0.059) | 0.062 (0.058-0.068) | 0.074 (0.068-0.080) | 0.083 (0.076-0.090) | 0.092 (0.084-0.100) | 0.102 (0.093-0.111) | 0.116 (0.104-0.127) | 0.127 (0.113-0.140) |
| 7-day | 0.025 (0.023-0.027) | 0.030 (0.028-0.033) | 0.037 (0.034-0.040) | 0.042 (0.039-0.046) | 0.050 (0.046-0.054) | 0.056 (0.052-0.061) | 0.063 (0.057-0.069) | 0.071 (0.064-0.077) | 0.081 (0.072-0.088) | 0.089 (0.079-0.097) |
| 10-day | 0.020 (0.018-0.022) | 0.024 (0.022-0.026) | 0.029 (0.027-0.031) | 0.033 (0.031-0.036) | 0.039 (0.036-0.042) | 0.044 (0.040-0.048) | 0.049 (0.045-0.053) | 0.054 (0.049-0.059) | 0.062 (0.056-0.067) | 0.068 (0.061-0.074) |
| 20-day | 0.014 (0.013-0.015) | 0.016 (0.015-0.017) | 0.019 (0.018-0.021) | 0.022 (0.020-0.023) | 0.025 (0.023-0.027) | 0.028 (0.026-0.030) | 0.030 (0.028-0.032) | 0.033 (0.030-0.035) | 0.037 (0.033-0.039) | 0.039 (0.036-0.042) |
| 30-day | 0.011 (0.011-0.012) | 0.013 (0.013-0.014) | 0.016 (0.015-0.017) | 0.017 (0.016-0.018) | 0.020 (0.019-0.021) | 0.022 (0.020-0.023) | 0.023 (0.022-0.025) | 0.025 (0.023-0.027) | 0.028 (0.025-0.029) | 0.029 (0.027-0.031) |
| 45-day | 0.010 (0.009-0.010) | 0.011 (0.011-0.012) | 0.013 (0.012-0.014) | 0.014 (0.013-0.015) | 0.016 (0.015-0.017) | 0.017 (0.016-0.018) | 0.018 (0.017-0.019) | 0.019 (0.018-0.020) | 0.020 (0.019-0.022) | 0.021 (0.020-0.023) |
| 60-day | 0.008 (0.008-0.009) | 0.010 (0.009-0.010) | 0.011 (0.011-0.012) | 0.012 (0.012-0.013) | 0.014 (0.013-0.014) | 0.015 (0.014-0.016) | 0.016 (0.015-0.016) | 0.016 (0.016-0.017) | 0.018 (0.016-0.019) | 0.018 (0.017-0.019) |

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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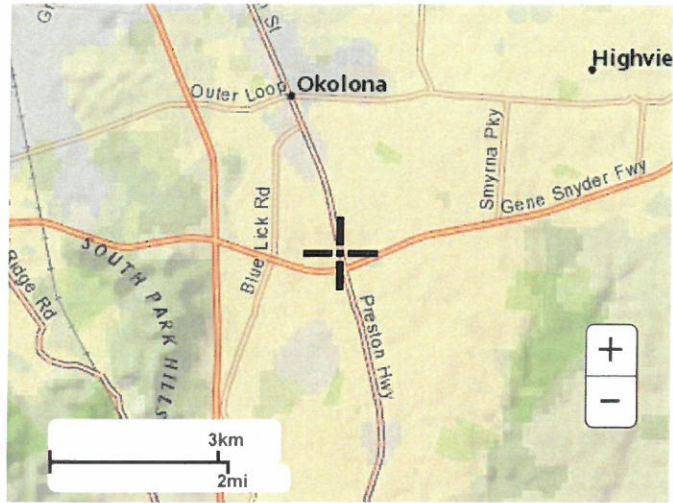
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
 Latitude: 38.1129°, Longitude: -85.6757°



Maps & aerials

Small scale terrain



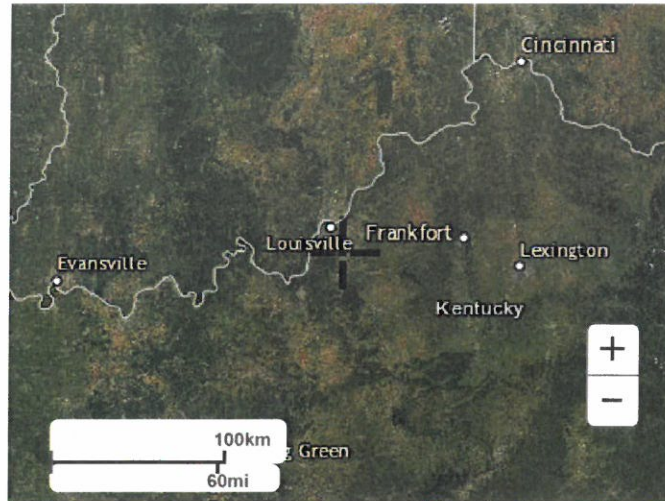
Large scale terrain



Large scale map



Large scale aerial

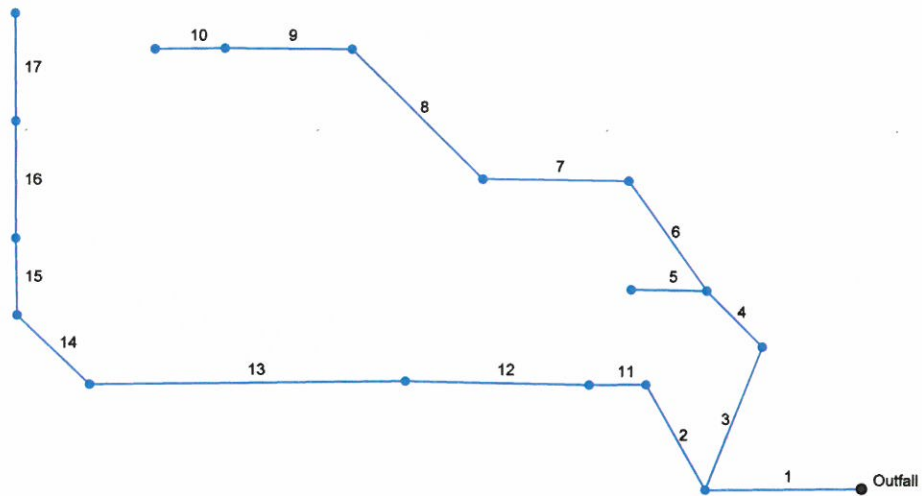


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Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: P2106.stm

Received June 6, 2022

Planning & Design Services

Number of lines: 17

Date: 3/10/2022

22-00P-0054

Storm Sewers v12.00

Storm Sewer Tabulation

| Station | | Len (ft) | Drng Area | | Rnoff coeff (C) | Area x C | | Tc | | Rain (l) (in/hr) | Total flow (cfs) | Cap full (cfs) | Vel (ft/s) | Pipe | | Invert Elev | | HGL Elev | | Grnd / Rim Elev | | Line ID |
|---------|------------|-------------|--------------|---------------|-----------------------|----------|-------|----------------|---------------|------------------------|------------------------|----------------------|---------------|--------------|--------------|-------------|------------|------------|------------|-----------------|------------|---------|
| Line | To Line | | Incr (ac) | Total (ac) | | Incr | Total | Inlet (min) | Syst (min) | | | | | Size (in) | Slope (%) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | |
| 1 | End | 81.000 | 1.31 | 5.23 | 0.45 | 0.59 | 3.71 | 5.0 | 17.3 | 4.9 | 18.02 | 28.82 | 5.50 | 30 | 0.49 | 544.00 | 544.40 | 545.78 | 545.84 | 550.00 | 547.50 | LINE 1 |
| 2 | 1 | 63.000 | 0.04 | 3.15 | 0.90 | 0.04 | 2.71 | 5.0 | 11.3 | 5.7 | 15.32 | 60.78 | 6.99 | 24 | 7.22 | 544.60 | 549.15 | 545.84 | 550.56 | 547.50 | 557.79 | LINE 2 |
| 3 | 1 | 80.000 | 0.03 | 0.77 | 0.90 | 0.03 | 0.42 | 5.0 | 16.9 | 4.9 | 2.05 | 5.88 | 3.35 | 12 | 2.72 | 544.50 | 546.68 | 545.84 | 547.29 | 547.50 | 552.24 | LINE 10 |
| 4 | 3 | 41.000 | 0.03 | 0.74 | 0.90 | 0.03 | 0.39 | 5.0 | 16.7 | 4.9 | 1.93 | 5.04 | 4.38 | 12 | 2.00 | 546.78 | 547.60 | 547.29 | 548.19 | 552.24 | 554.48 | LINE 11 |
| 5 | 4 | 39.000 | 0.23 | 0.23 | 0.90 | 0.21 | 0.21 | 5.0 | 5.0 | 6.9 | 1.43 | 4.97 | 3.66 | 12 | 1.95 | 547.70 | 548.46 | 548.19 | 548.97 | 554.48 | 555.94 | LINE 18 |
| 6 | 4 | 70.000 | 0.12 | 0.48 | 0.30 | 0.04 | 0.16 | 5.0 | 15.8 | 5.0 | 0.79 | 5.04 | 2.52 | 12 | 2.00 | 547.70 | 549.10 | 548.19 | 549.47 | 554.48 | 557.57 | LINE 12 |
| 7 | 6 | 75.000 | 0.14 | 0.36 | 0.30 | 0.04 | 0.12 | 5.0 | 14.6 | 5.2 | 0.63 | 5.04 | 3.22 | 12 | 2.00 | 549.20 | 550.70 | 549.47 | 551.03 | 557.57 | 558.44 | LINE 13 |
| 8 | 7 | 96.000 | 0.09 | 0.22 | 0.30 | 0.03 | 0.08 | 5.0 | 12.3 | 5.5 | 0.44 | 5.04 | 2.86 | 12 | 2.00 | 550.80 | 552.72 | 551.03 | 552.99 | 558.44 | 559.41 | LINE 14 |
| 9 | 8 | 66.000 | 0.11 | 0.13 | 0.35 | 0.04 | 0.05 | 5.0 | 9.9 | 5.9 | 0.31 | 5.04 | 2.84 | 12 | 2.00 | 552.82 | 554.14 | 552.99 | 554.37 | 559.41 | 560.09 | LINE 15 |
| 10 | 9 | 36.000 | 0.02 | 0.02 | 0.70 | 0.01 | 0.01 | 5.0 | 5.0 | 6.9 | 0.10 | 4.82 | 1.65 | 12 | 1.83 | 554.24 | 554.90 | 554.37 | 555.03 | 560.09 | 560.13 | LINE 16 |
| 11 | 2 | 29.000 | 0.09 | 3.11 | 0.90 | 0.08 | 2.67 | 5.0 | 11.2 | 5.7 | 15.16 | 50.58 | 6.70 | 24 | 5.00 | 549.25 | 550.70 | 550.56 | 552.10 | 557.79 | 556.88 | LINE 3 |
| 12 | 11 | 95.000 | 0.05 | 3.02 | 0.90 | 0.05 | 2.59 | 5.0 | 10.9 | 5.7 | 14.82 | 22.62 | 6.61 | 24 | 1.00 | 550.80 | 551.75 | 552.10 | 553.14 | 556.88 | 558.36 | LINE 4 |
| 13 | 12 | 163.000 | 0.06 | 2.97 | 0.90 | 0.05 | 2.54 | 5.0 | 10.4 | 5.8 | 14.78 | 22.69 | 6.65 | 24 | 1.01 | 551.85 | 553.49 | 553.14 | 554.87 | 558.36 | 558.82 | LINE 5 |
| 14 | 13 | 52.000 | 2.59 | 2.91 | 0.85 | 2.20 | 2.49 | 5.0 | 10.3 | 5.8 | 14.53 | 22.83 | 6.57 | 24 | 1.02 | 553.59 | 554.12 | 554.87 | 555.49 | 558.82 | 558.95 | LINE 6 |
| 15 | 14 | 40.000 | 0.20 | 0.32 | 0.90 | 0.18 | 0.29 | 5.0 | 10.0 | 5.9 | 1.69 | 3.56 | 2.18 | 12 | 1.00 | 554.22 | 554.62 | 555.49 | 555.57 | 558.95 | 558.82 | LINE 7 |
| 16 | 15 | 61.000 | 0.09 | 0.12 | 0.90 | 0.08 | 0.11 | 5.0 | 8.9 | 6.1 | 0.66 | 3.56 | 1.85 | 12 | 1.00 | 554.72 | 555.33 | 555.61 | 555.67 | 558.82 | 559.61 | LINE 8 |
| 17 | 16 | 56.000 | 0.03 | 0.03 | 0.90 | 0.03 | 0.03 | 5.0 | 5.0 | 6.9 | 0.19 | 3.56 | 1.65 | 12 | 1.00 | 555.43 | 555.99 | 555.67 | 556.17 | 559.61 | 560.35 | LINE 9 |

Project File: P2106.stm

Number of lines: 17

Run Date: 2/9/2022

NOTES: Intensity = 125.88 / (Inlet time + 20.40) ^ 0.90; Return period = Yrs. 10 ; c = cir e = ellip b = box

Received June 6, 2022

Planning & Design Services

22-DDP-0054

Storm Sewer Tabulation

| Station | | Len (ft) | Drng Area | | Rnoff coeff (C) | Area x C | | Tc | | Rain (l) (in/hr) | Total flow (cfs) | Cap full (cfs) | Vel (ft/s) | Pipe | | Invert Elev | | HGL Elev | | Grnd / Rim Elev | | Line ID |
|---------|------------|-------------|--------------|---------------|-----------------------|----------|-------|----------------|---------------|------------------------|------------------------|----------------------|---------------|--------------|--------------|-------------|------------|------------|------------|-----------------|------------|---------|
| Line | To Line | | Incr (ac) | Total (ac) | | Incr | Total | Inlet (min) | Syst (min) | | | | | Size (in) | Slope (%) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | |
| 1 | End | 81.000 | 1.31 | 5.23 | 0.45 | 0.59 | 3.71 | 5.0 | 14.1 | 7.3 | 27.18 | 28.82 | 6.91 | 30 | 0.49 | 544.00 | 544.40 | 545.78 | 546.37 | 550.00 | 547.50 | LINE 1 |
| 2 | 1 | 63.000 | 0.04 | 3.15 | 0.90 | 0.04 | 2.71 | 5.0 | 9.7 | 8.2 | 22.09 | 60.78 | 7.44 | 24 | 7.22 | 544.60 | 549.15 | 547.37 | 550.83 | 547.50 | 557.79 | LINE 2 |
| 3 | 1 | 80.000 | 0.03 | 0.77 | 0.90 | 0.03 | 0.42 | 5.0 | 13.8 | 7.4 | 3.08 | 5.88 | 3.93 | 12 | 2.72 | 544.50 | 546.68 | 547.37 | 547.97 | 547.50 | 552.24 | LINE 10 |
| 4 | 3 | 41.000 | 0.03 | 0.74 | 0.90 | 0.03 | 0.39 | 5.0 | 13.7 | 7.4 | 2.90 | 5.04 | 3.72 | 12 | 2.00 | 546.78 | 547.60 | 548.30 | 548.55 | 552.24 | 554.48 | LINE 11 |
| 5 | 4 | 39.000 | 0.23 | 0.23 | 0.90 | 0.21 | 0.21 | 5.0 | 5.0 | 9.3 | 1.93 | 4.97 | 3.22 | 12 | 1.95 | 547.70 | 548.46 | 548.87 | 549.05 | 554.48 | 555.94 | LINE 18 |
| 6 | 4 | 70.000 | 0.12 | 0.48 | 0.30 | 0.04 | 0.16 | 5.0 | 13.0 | 7.5 | 1.18 | 5.04 | 2.44 | 12 | 2.00 | 547.70 | 549.10 | 548.87 | 549.56 | 554.48 | 557.57 | LINE 12 |
| 7 | 6 | 75.000 | 0.14 | 0.36 | 0.30 | 0.04 | 0.12 | 5.0 | 12.1 | 7.7 | 0.93 | 5.04 | 3.41 | 12 | 2.00 | 549.20 | 550.70 | 549.56 | 551.10 | 557.57 | 558.44 | LINE 13 |
| 8 | 7 | 96.000 | 0.09 | 0.22 | 0.30 | 0.03 | 0.08 | 5.0 | 10.4 | 8.0 | 0.64 | 5.04 | 2.97 | 12 | 2.00 | 550.80 | 552.72 | 551.10 | 553.05 | 558.44 | 559.41 | LINE 14 |
| 9 | 8 | 66.000 | 0.11 | 0.13 | 0.35 | 0.04 | 0.05 | 5.0 | 8.6 | 8.4 | 0.44 | 5.04 | 2.85 | 12 | 2.00 | 552.82 | 554.14 | 553.05 | 554.41 | 559.41 | 560.09 | LINE 15 |
| 10 | 9 | 36.000 | 0.02 | 0.02 | 0.70 | 0.01 | 0.01 | 5.0 | 5.0 | 9.3 | 0.13 | 4.82 | 1.61 | 12 | 1.83 | 554.24 | 554.90 | 554.41 | 555.05 | 560.09 | 560.13 | LINE 16 |
| 11 | 2 | 29.000 | 0.09 | 3.11 | 0.90 | 0.08 | 2.67 | 5.0 | 9.6 | 8.2 | 21.83 | 50.58 | 8.01 | 24 | 5.00 | 549.25 | 550.70 | 550.83 | 552.37 | 557.79 | 556.88 | LINE 3 |
| 12 | 11 | 95.000 | 0.05 | 3.02 | 0.90 | 0.05 | 2.59 | 5.0 | 9.4 | 8.2 | 21.29 | 22.62 | 7.87 | 24 | 1.00 | 550.80 | 551.75 | 552.37 | 553.40 | 556.88 | 558.36 | LINE 4 |
| 13 | 12 | 163.000 | 0.06 | 2.97 | 0.90 | 0.05 | 2.54 | 5.0 | 9.0 | 8.3 | 21.13 | 22.69 | 7.86 | 24 | 1.01 | 551.85 | 553.49 | 553.40 | 555.13 | 558.36 | 558.82 | LINE 5 |
| 14 | 13 | 52.000 | 2.59 | 2.91 | 0.85 | 2.20 | 2.49 | 5.0 | 8.9 | 8.3 | 20.75 | 22.83 | 7.76 | 24 | 1.02 | 553.59 | 554.12 | 555.13 | 555.75 | 558.82 | 558.95 | LINE 6 |
| 15 | 14 | 40.000 | 0.20 | 0.32 | 0.90 | 0.18 | 0.29 | 5.0 | 8.7 | 8.4 | 2.41 | 3.56 | 3.07 | 12 | 1.00 | 554.22 | 554.62 | 555.75 | 555.94 | 558.95 | 558.82 | LINE 7 |
| 16 | 15 | 61.000 | 0.09 | 0.12 | 0.90 | 0.08 | 0.11 | 5.0 | 7.9 | 8.6 | 0.92 | 3.56 | 1.36 | 12 | 1.00 | 554.72 | 555.33 | 556.01 | 556.04 | 558.82 | 559.61 | LINE 8 |
| 17 | 16 | 56.000 | 0.03 | 0.03 | 0.90 | 0.03 | 0.03 | 5.0 | 5.0 | 9.3 | 0.25 | 3.56 | 1.32 | 12 | 1.00 | 555.43 | 555.99 | 556.06 | 556.20 | 559.61 | 560.35 | LINE 9 |

Project File: P2106.stm

Number of lines: 17

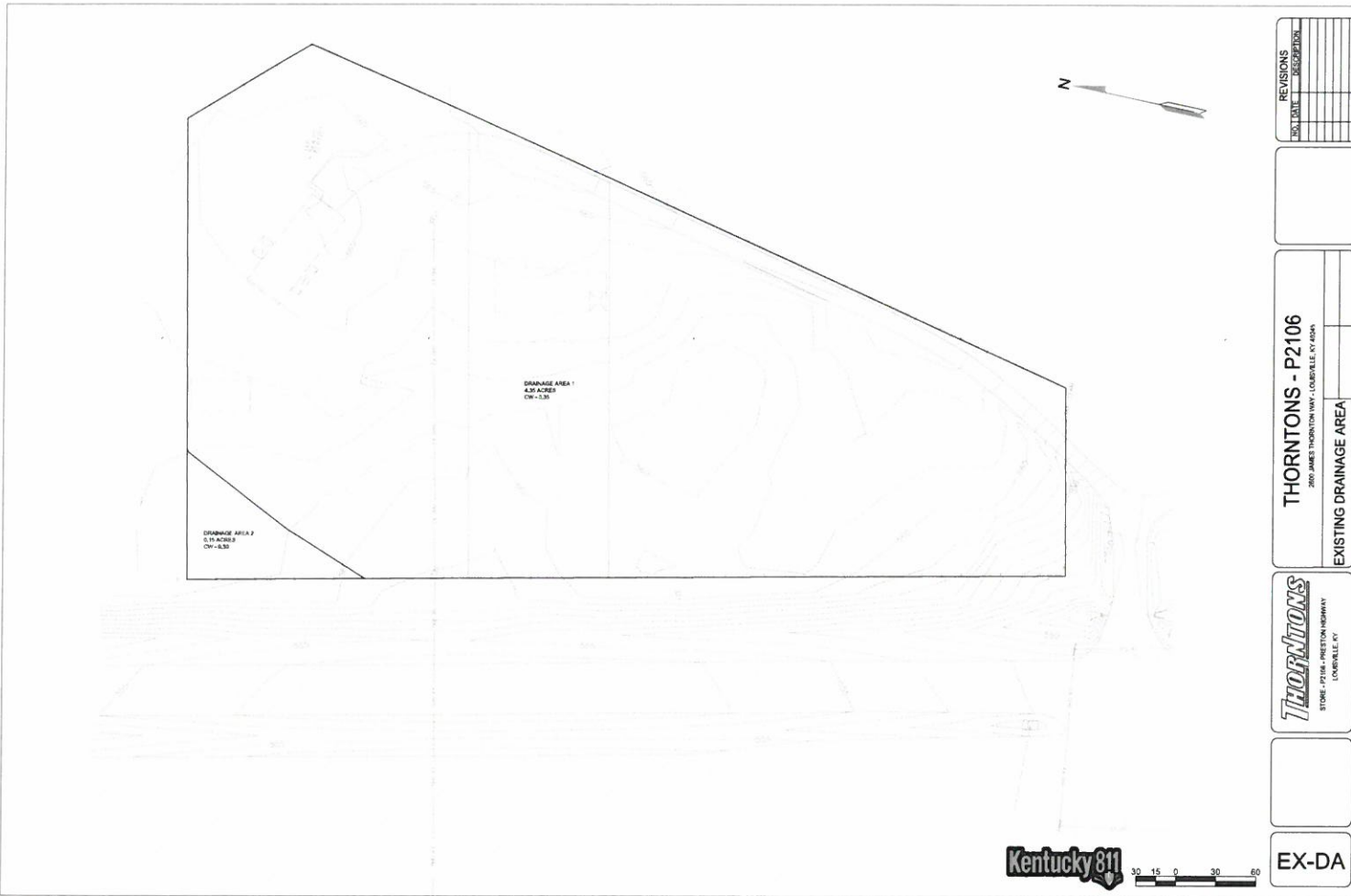
Run Date: 2/9/2022

NOTES: Intensity = 212.13 / (Inlet time + 25.20) ^ 0.92; Return period = Yrs. 100 ; c = cir e = ellip b = box

Received June 6, 2022

Planning & Design Services

22-DBP-0054



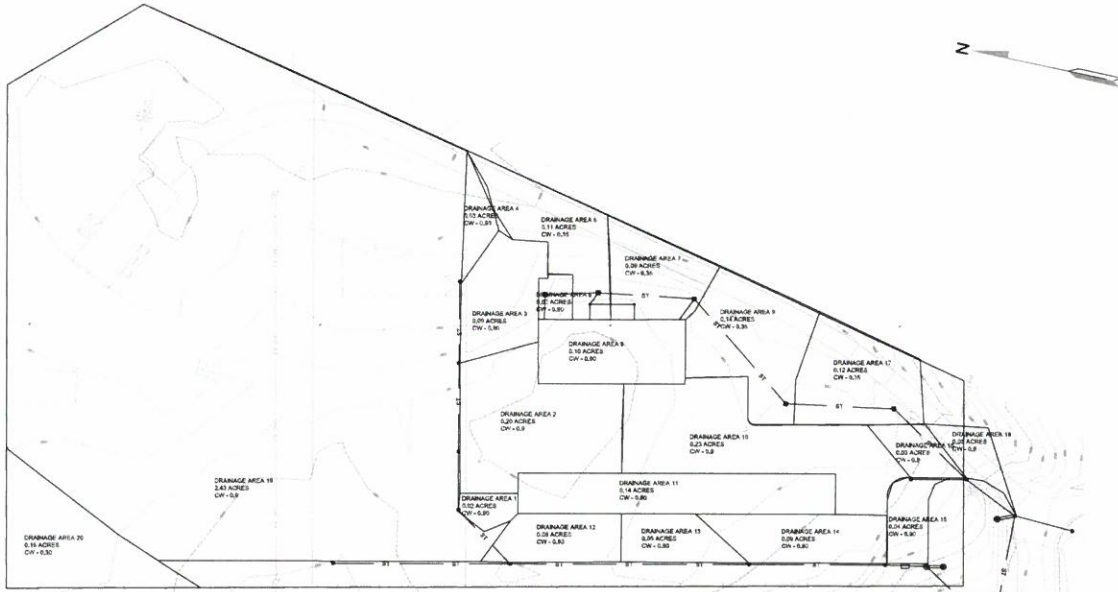
| NO. | DATE | DESCRIPTION |
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THORNTONS - P2106
2000 JAMES THORNTONS HWY, LOUISVILLE, KY 40204
EXISTING DRAINAGE AREA

Thorntons
STORE - P2106 - PRESTON HIGHWAY
LOUISVILLE, KY

Kentucky 811 30 15 0 30 60

EX-DA



| REVISIONS | DESCRIPTION |
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THORNTONS - P2106
 2800 JAMES THORNTON HWY - LOUISVILLE, KY 40241
PR DRAINAGE AREA



PR-DA

