THE STERLING CO.

Harvest at Hopewell – Phase 2

STORMWATER MANAGEMENT FACILITIES REPORT: Calculations

Prepared For:
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TABLE OF CONTENTS

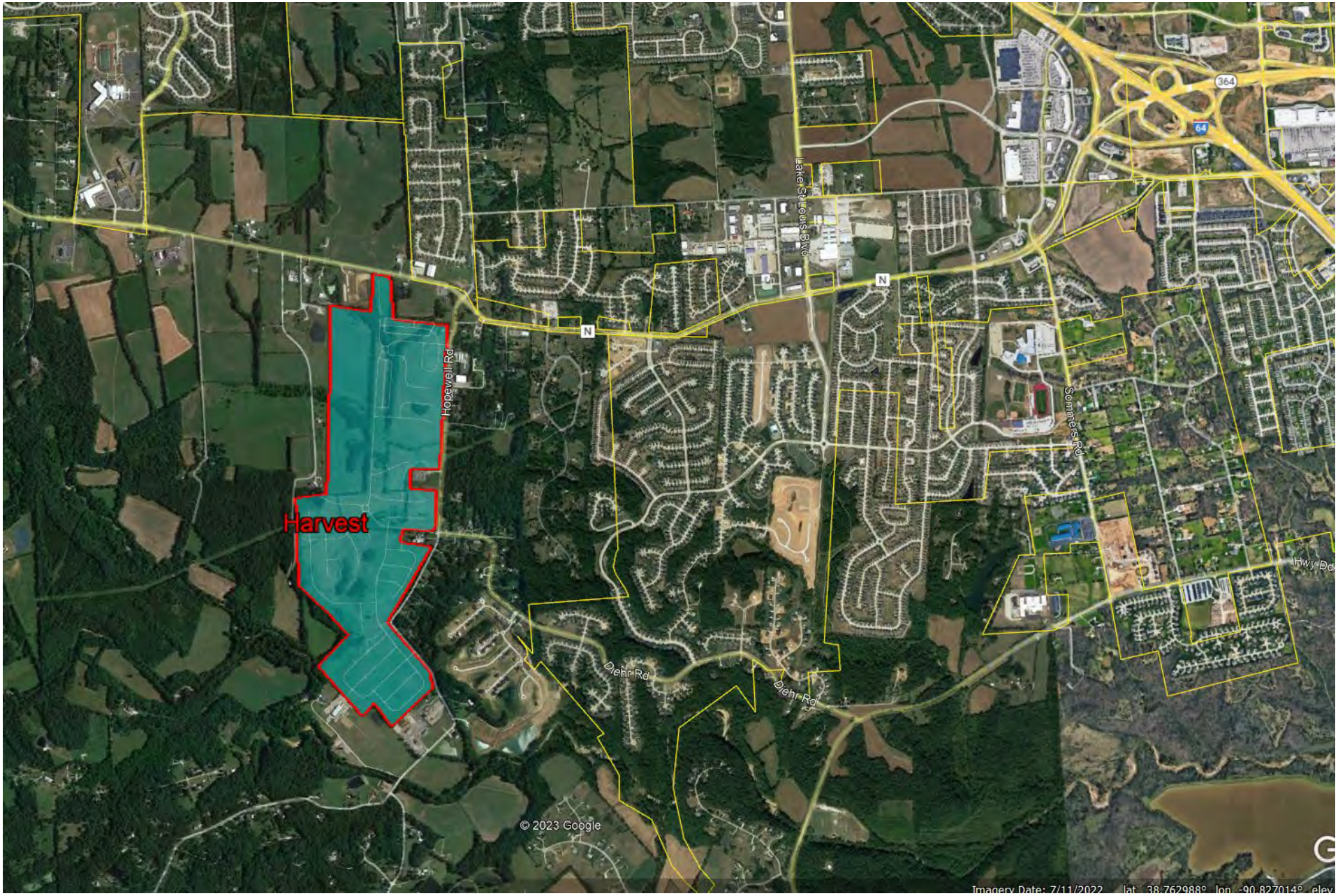
INTRODUCTION:

Harvest is a large planned residential development located in the southwestern corner of the City of O'Fallon, St. Charles County, MO. The overall site stretches to State Highway N on its north side and is adjacent to Hopewell Road on its west side for approximately a mile and a half from Hopewell Roads intersection with State Highway N. A location map of the site is included on the following page. The overall property is approximately 267.5 acres and will ultimately include numerous width lots. Most of the development will be unattached single-family housing and approximately 15% consisting of attached units located on the north end of the development.

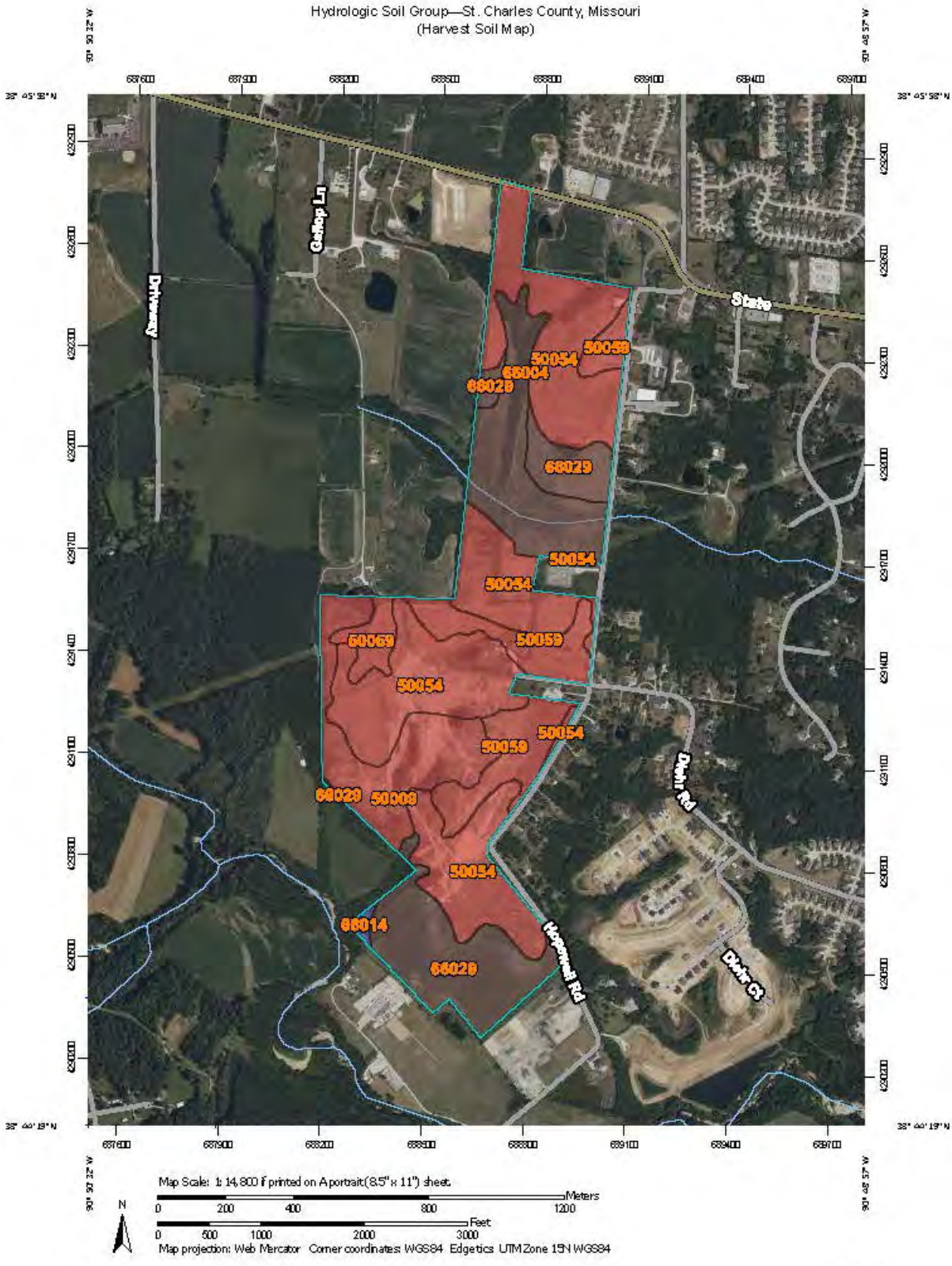
The overall development will ultimately include 896 residential units. This report will detail the stormwater requirements and calculations for Phase 2 of the development, which includes pre and post development flow analysis to numerous outfall points along the property boundary. Also included is the analysis for the water quality requirements of Phase 2.

The existing soil hydrologic soil group was determined using the NRCS Web Soil mapping tool. Under existing conditions the soil groups present on the overall site were determined to be Groups B and D with varying types of cover, including crop tilling and woods. Nearly all of the existing soil within the Phase 2 Area was determined to be Soil Group D. Further details of the existing disposition of the site are included later in the report. A map displaying the existing soil groups is included on Page 3. For post developed conditions, all disturbed areas are modeled assuming soil group D for disturbed areas due to the changes to soil structure caused by the compaction introduced during construction. All post developed undisturbed areas are modeled as the same soil group as under existing conditions.

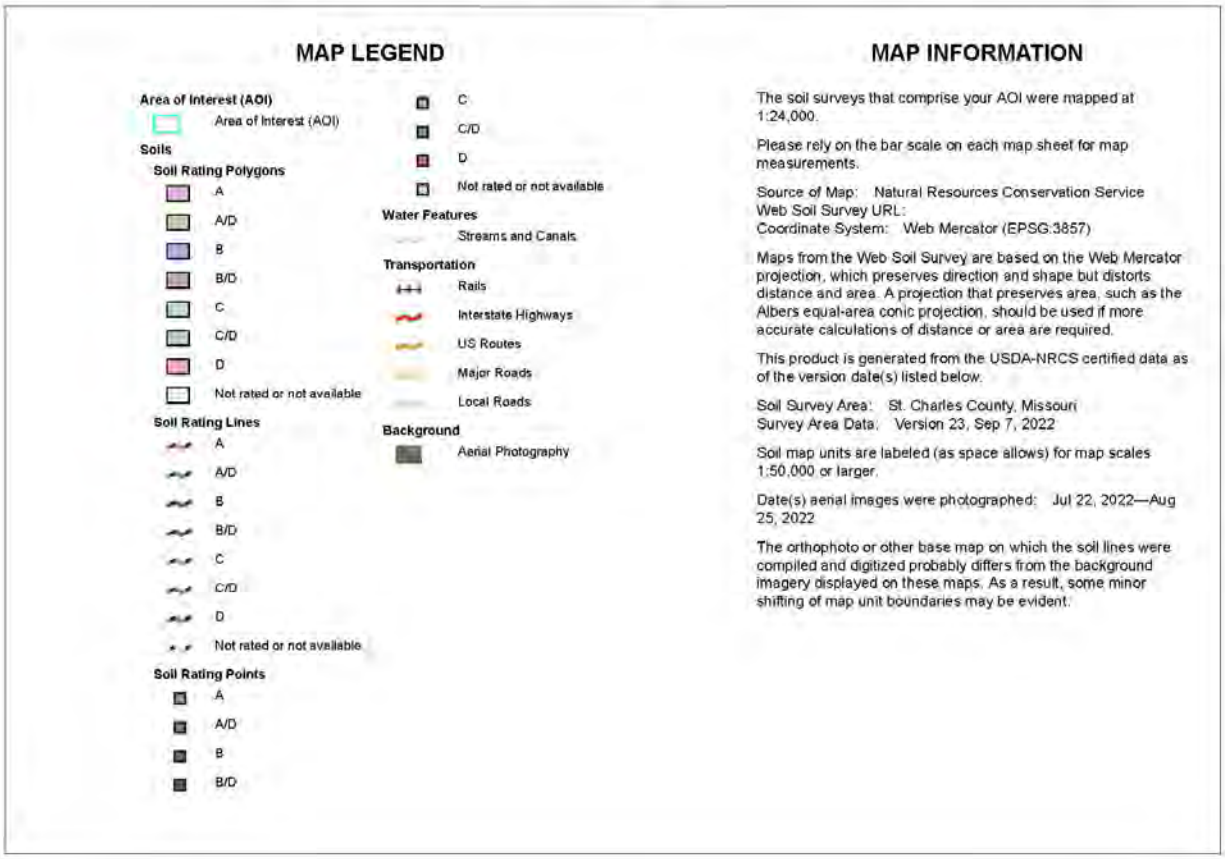
Two lakes and four dry detention basins are proposed throughout Phase 2 as outlined in this report to provide the required detention per City ordinances. The lakes will also provide the necessary water quality requirements for the contributing areas draining into them. Details of these requirements and calculations are included in the following sections and appendices of this report. Six hydrodynamic separator structures are proposed across Phase 2 that are designed to provide water quality requirements for the portions of the drainage areas contributory to them. Calculations and details related to the structures are also included in this report.



Location Map



NRCS Web Soil Survey



NRCS Web Soil Survey

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
50009	Keswick silt loam, 9 to 14 percent slopes, eroded	D	31.9	11.8%
50054	Armster silt loam, 2 to 7 percent slopes	D	119.3	44.0%
50059	Mexico silt loam, 1 to 4 percent slopes, eroded	D	40.3	14.9%
66004	Dockery silt loam, 0 to 2 percent slopes, frequently flooded	B/D	33.1	12.2%
66014	Haymond silt loam, 0 to 3 percent slopes, frequently flooded	B	1.1	0.4%
66029	Dockery silt loam, 0 to 2 percent slopes, occasionally flooded	B/D	45.3	16.7%
Totals for Area of Interest			271.1	100.0%

NRCS Web Soil Survey

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NRCS Web Soil Survey

WATER QUALITY

Water quality for the proposed improvements associated within Phase 2 will be provided within one of two lakes being constructed or by hydrodynamic separator structures included in the design of the storm sewer systems. Details and calculations for each lake or separator structure are included in the following sections. The following design considerations and calculations are taken from either the City of O'Fallon ordinances or from the Georgia Stormwater Manual, version 2016.

DRAINAGE AREA H-1

Drainage Area H-1 contributes flow towards Downstream Defender H-1 and includes portions of the pavement of Oak Barrel Drive and also encompasses portions of lots 767 - 771. The limits of Drainage Area H-1 are delineated on the exhibit on page 15.

Hydrodynamic Separator DD H-1:

A 4 foot diameter Downstream Defender Structure has been selected to provide the treatment for the contributory drainage area H-1 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 2.33 Acres, 0.62 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the Downstream Defender structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 26.61%
$R_v = 0.28949$
$Q_a = 1.14 \times 0.28949 = 0.3300186$
$CN \approx 88$
$I_a = (200/CN) - 2 = 0.272727272$
$I_a/P = 0.239234449$

The time of concentration (t_c) was determined to be 13 minutes, see the stormwater detention sections for more information concerning the time of concentration calculations. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 705 csm/in is determined. Q_p is then determined from the following equation:

$$Q_p = q_u \times A \times Q_a$$

Where A is the drainage area in square miles or for drainage area H-1 =2.33/640 = 0.003640625 sq. miles.
Therefore peak water quality; $Q_p = 705 \times 0.003640625 \times 0.3300186 =$ **0.85 cfs**.

Per the structure manufacturer a four-foot diameter Downstream Defender structure produced by Hydro International is able to treat a maximum flowrate of 3 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD G-2 at AI H 8. The high flow bypass pipe flowline elevation is set equal to the crown elevation of the outgoing pipe to the hydrodynamic separator.

DRAINAGE AREA K

Drainage Area K contributes flow into Lake K and encompasses portions of Oak Barrel Drive and Court, Rocking Chair Drive and Country House Drive. The area also includes portions of lots 753-766, 772-786 and 861–882. The limits of Drainage Area K is delineated on the drainage area exhibit on page 15.

The total area of Drainage Area K is 13.80 acres. Of that acreage 6.36 acres are impervious in coverage and the remaining area is grass coverage. The drainage area and coverage information is used below to calculate the required water quality volumes of Drainage Area K. Additionally Lake K has one forebay located at the southwest corner of the basin. The one pipe discharge into the lake at FE K4 is into the proposed forebay.

Lake K:

From above the total area contributory to Lake K is 13.80 acres and also has an impervious coverage percentage of 46.09%. From this information the required water quality volume for the lake was determined:

WQ_v = $(P)(R_v)(A)/12$

R_v = $0.05 + 0.009(I)$; $0.05+0.009(46.09\%)= 0.46481$

WQ_v = $[(1.14)(0.46481)(13.80)]/12 = 0.60936591$

= 0.60936591 ac. ft. x 43,560 sq. ft./ac = **26,544 ft^3** Req'd Volume

Per the Georgia Stormwater Manual the permanent pool of the lake must be sized to have a volume equal to or larger than the calculated water quality volume. Lake K has a permanent pool volume of 101,603 ft^3, significantly more than the calculated water quality volume of 26,544 ft^3. Therefore the lake meets the overall water quality volume requirement.

Additionally the proposed forebays must meet a volume requirement of 0.1 inches per impervious acre of contributing drainage area. The total impervious area contributory to the forebay is 5.58 acres. Thus the forebay must meet the following volume requirement:

WQ_{FW} = $[(0.1 \text{ in.} \times 5.58 \text{ ac.}) \div 12 \text{in./ft}] \times 43{,}560 \text{ ft}^2/\text{ac.} = 2{,}026 \text{ ft}^3$

The forebay has a total pool volume of 5,465 ft^3. Additionally the forebay is 4.5 feet deep. The forebay is separated from the permanent pool by a submerged berm that will be planted with native water grass species and rushes that will extend above the surface

of the water. The pretreatment requirements outlined in the Georgia Stormwater Manual are thus met by the design for the western forebay of Lake K.

Details of Lake K and its outfall structure are provided on an exhibit plan sheet on Page 17.

DRAINAGE AREA L

The total area of Drainage Area K is 46.62 acres. Of that acreage 18.03 acres are impervious in coverage and the remaining area is grass coverage. The limits of the drainage area are shown on the drainage area exhibit on page 15. The drainage area and coverage information is used below to calculate the required water quality volumes of Drainage Area L. Additionally Lake L has one forebay located at the northern end of the lake. All pipe discharges into the basin are into the forebay.

Lake L:

From above the total area contributory to Lake L is 46.62 acres and also has an impervious coverage percentage of 38.67%. From this information the required water quality volume for the lake was determined:

WQ_v = $(P)(R_v)(A)/12$
R_v = $0.05 + 0.009(I)$; $0.05+0.009(38.67\%)= 0.39803$
WQ_v = $[(1.14)(0.39803)(46.62)]/12 = 1.762835067$
= 1.762835067 ac. ft. x 43,560 sq. ft./ac = **76,789 ft^3** Req'd Volume

Per the Georgia Stormwater Manual the permanent pool of the lake must be sized to have a volume equal to or larger than the calculated water quality volume. Lake L has a permanent pool volume of 290,803 ft^3, significantly more than the calculated water quality volume of 76,789 ft^3. Therefore the lake meets the overall water quality volume requirement.

Additionally the proposed forebay must meet a volume requirement of 0.1 inches per impervious acre of contributing drainage area. The total impervious area contributory to the forebay is 16.36 acres. Thus the forebay must meet the following volume requirement:

WQ_{FW} = $[(0.1 \text{ in. x } 16.36 \text{ ac.}) \div 12 \text{in./ft}] \text{ x } 43{,}560 \text{ ft}^2/\text{ac.} = 5{,}939 \text{ ft}^3$

The forebay has a total pool volume of 17,651 ft^3. Additionally the forebay is 4 feet deep. The forebay is separated from the permanent pool by a submerged berm that will be planted with native water grass species and rushes that will extend above the surface of the water. The pretreatment requirements outlined in the Georgia Stormwater Manual are thus met by the design for the western forebay of Lake L.

Details of Lake L and its outfall structure are provided on the exhibit plan sheet on Page 18.

DRAINAGE AREA M-1

Drainage Area M-1 contributes flow towards Downstream Defender M and includes portions of the pavement of Oak Barrel Drive and also encompasses portions of lots 745-752 and 787-802. The limits of Drainage Area M-1 are delineated on the drainage area exhibit on page 15.

Hydrodynamic Separator DD M:

A 6 foot diameter Downstream Defender Structure has been selected to provide the treatment for the contributory drainage area M-1 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 5.49 Acres, 2.70 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the Downstream Defender structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 49.18%
$R_v = 0.49262$
$Q_a = 1.14 \times 0.49262 = 0.5615868$
$CN \approx 93$
$I_a = (200/CN) - 2 = 0.150537634$
$I_a/P = 0.132050556$

The time of concentration (t_c) was determined to be 16 minutes, see the stormwater detention sections for more information concerning the time of concentration calculations. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 710 csm/in is determined. Q_p is then determined from the following equation:

$$Q_p = q_u \times A \times Q_a$$

Where A is the drainage area in square miles or for drainage area M-1 =5.49/640 = 0.008578125 sq. miles.
Therefore peak water quality; $Q_p = 710 \times 0.0085781255 \times 0.5615868 =$ **3.42 cfs**.

Per the structure manufacturer a six-foot diameter Downstream Defender structure produced by Hydro International is able to treat a maximum flowrate of 8 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD M-1 at DCI M5. The high flow bypass pipe flowline elevation is set equal to the crown elevation of the outgoing pipe to the hydrodynamic separator.

DRAINAGE AREA N-1

Drainage Area N-1 contributes flow towards Downstream Defender N and includes portions of the pavement of Stream View Court, Grindstone Drive and Duckett Creek Lane as well as encompassing portions of lots 725-729 and 730-742. The limits of Drainage Area N-1 are delineated on the exhibit on page 15.

Hydrodynamic Separator DD N:

A 4 foot diameter Downstream Defender Structure has been selected to provide the treatment for the contributory drainage area N-1 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 4.27 Acres, 2.06 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the Downstream Defender structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 48.24%
$R_v = 0.48416$
$Q_a = 1.14 \times 0.48416 = 0.5519424$
$CN \approx 93$
$I_a = (200/CN) - 2 = 0.150537634$
$I_a/P = 0.132050556$

The time of concentration (t_c) was determined to be 14 minutes, see the stormwater detention sections for more information concerning the time of concentration calculations. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 720 csm/in is determined. Q_p is then determined from the following equation:

$$Q_p = q_u \times A \times Q_a$$

Where A is the drainage area in square miles or for drainage area N-1 =4.27/640 = 0.006671875 sq. miles.
Therefore peak water quality; $Q_p = 720 \times 0.006671875 \times 0.5519424 =$ **2.65 cfs**.

Per the structure manufacturer a four-foot diameter Downstream Defender structure produced by Hydro International is able to treat a maximum flowrate of 3 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD N at MH N5. The high flow bypass pipe flowline elevation is set equal to the crown elevation of the outgoing pipe to the hydrodynamic separator.

DRAINAGE AREA P-1

Drainage Area P-1 contributes flow towards Downstream Defender P1 and includes portions of the pavement of Apple Orchard Lane, Grindstone Drive, Yellow Birch Drive and Fence Row Drive as well as lots along these streets. The limits of Drainage Area P-1 are delineated on the drainage area exhibit on page 15.

Hydrodynamic Separator DD P-1:

A 6 foot diameter Downstream Defender Structure has been selected to provide the treatment for the contributory drainage area P-1 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 8.78 Acres, 4.23 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the Downstream Defender structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 48.18%
$R_v = 0.48362$
$Q_a = 1.14 \times 0.48362 = 0.5513268$
$CN \approx 93$
$I_a = (200/CN) - 2 = 0.150537634$
$I_a/P = 0.132050556$

The time of concentration (t_c) was determined to be 14 minutes, see the stormwater detention sections for more information concerning the time of concentration calculations. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 720 csm/in is determined. Q_p is then determined from the following equation:

$$Q_p = q_u \times A \times Q_a$$

Where A is the drainage area in square miles or for drainage area P-1 =8.78/640 = 0.01371875 sq. miles.
Therefore peak water quality; $Q_p = 720 \times 0.01371875 \times 0.5513268 =$ **5.45 cfs**.

Per the structure manufacturer a six-foot diameter Downstream Defender structure produced by Hydro International is able to treat a maximum flowrate of 8 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD P-1 at AI P11. The high flow bypass pipe flowline elevation is set equal to the crown elevation of the outgoing pipe to the hydrodynamic separator.

DRAINAGE AREA P-2

Drainage Area P-2 contributes flow towards Downstream Defender P2 and includes portions of the pavement of Apple Orchard Lane as well as lots along the street. The limits of Drainage Area P-2 are delineated on the exhibit on page 15.

Hydrodynamic Separator DD P-2:

A 4 foot diameter Downstream Defender Structure has been selected to provide the treatment for the contributory drainage area P-2 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 5.17 Acres, 1.81 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the Downstream Defender structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 35.01%
$R_v = 0.36509$
$Q_a = 1.14 \times 0.36509 = 0.4162026$
$CN \approx 90$
$I_a = (200/CN) - 2 = 0.2222222$
$I_a/P = 0.194931773$

The time of concentration (t_c) was determined to be 19 minutes, see the stormwater detention sections for more information concerning the time of concentration calculations. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 625 csm/in is determined. Q_p is then determined from the following equation:

$$Q_p = q_u \times A \times Q_a$$

Where A is the drainage area in square miles or for drainage area P-1 =5.17/640 = 0.008078125 sq. miles.
Therefore peak water quality; $Q_p = 625 \times 0.008078125 \times 0.4162026 =$ **2.10 cfs**.

Per the structure manufacturer a four-foot diameter Downstream Defender structure produced by Hydro International is able to treat a maximum flowrate of 3 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD P-2 at AI P29. The high flow bypass pipe flowline elevation is set equal to the crown elevation of the outgoing pipe to the hydrodynamic separator.

DRAINAGE AREA P-3

Drainage Area P-3 contributes flow towards Hydrodynamic separator P3 and includes portions of the pavement of Grindstone Drive as well as lots along the street. The limits of Drainage Area P-3 are delineated on the exhibit on page 15.

Hydrodynamic Separator DD P-3:

A 4 foot diameter Hydrodynamic Separator Structure has been selected to provide the treatment for the contributory drainage area P-3 based upon the manufacturer sizing guidelines. Its location is labeled on the following water quality drainage area map. The total area to the structure is 0.85 Acres, 0.50 acres of that area is comprised of impervious areas such as roof, pavement and sidewalk areas. To determine the adequacy of the structure the peak water quality flow from Drainage Area was calculated. This was done by using the method outlined in Volume 2, section 3.1.7.2 of the Georgia Stormwater Design Manual and is shown in the following equations:

$$CN = \frac{1000}{[10 + 5P + 10Q_a - 10\sqrt{Q_a^2 + 1.25Q_aP}]}$$

Where P =1.14(90% rainfall in St. Louis Metro as established by MSD)and $Q_a = P \times R_v$
$R_v = 0.05 + 0.009\ (I)$: I = (impervious percentage of drainage area) = 58.82%
$R_v = 0.57938$
$Q_a = 1.14 \times 0.57938 = 0.6604932$
$CN \approx 95$
$I_a = (200/CN) - 2 = 0.105263157$
$I_a/P = 0.092336103$

The time of concentration (t_c) was assumed to be 5 minutes. From the t_c and I_a/P, the q_u can be determined from Figure 2.1.5-6 from the Georgia Stormwater Design Manual. From the Figure a q_u of 1000 csm/in is determined. Q_p is then determined from the following equation:

$Q_p = q_u \times A \times Q_a$

Where A is the drainage area in square miles or for drainage area P-1 =0.85/640 = 0.001328125 sq. miles.
Therefore peak water quality; $Q_p = 1000 \times 0.001328125 \times 0.6604932 =$ **0.88 cfs**.

Per the structure manufacturer a four-foot diameter Barracuda structure produced by Hydro International is able to treat a maximum flowrate of 1.52 cfs. A high flow bypass is proposed to be installed in the structure upstream of DD P-3 at MH P6.

Date	08/14/2023
Job Number	20-09-327
Designed:	
Drawn:	
Checked:	EXB
Sheet	

Date:
License No.
Civil Engineer

HARVEST AT HOPEWELL
PHASE 2
POST DEVELOPED CONDITIONS
WATER QUALITY DRAINAGE AREA MAP

THE STERLING CO.
ENGINEERS & SURVEYORS
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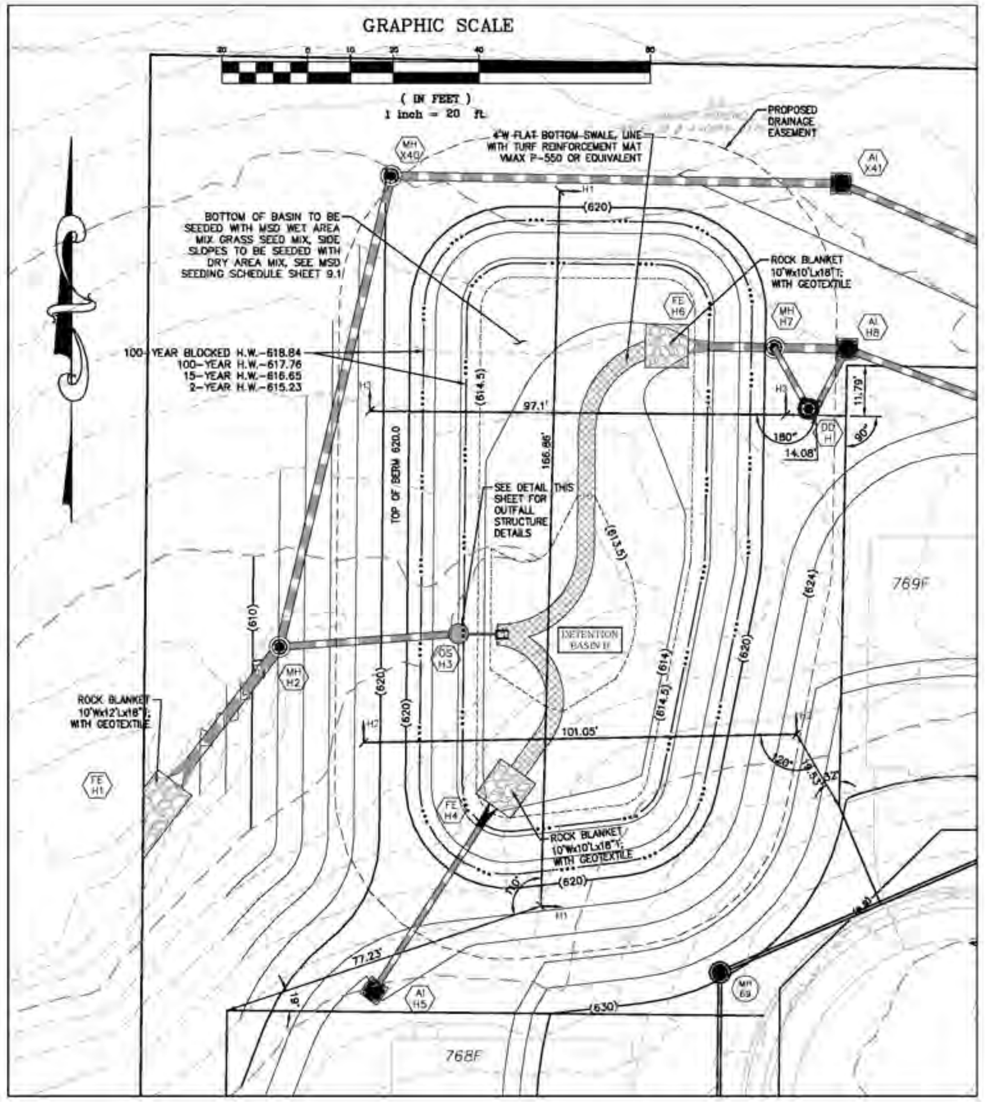
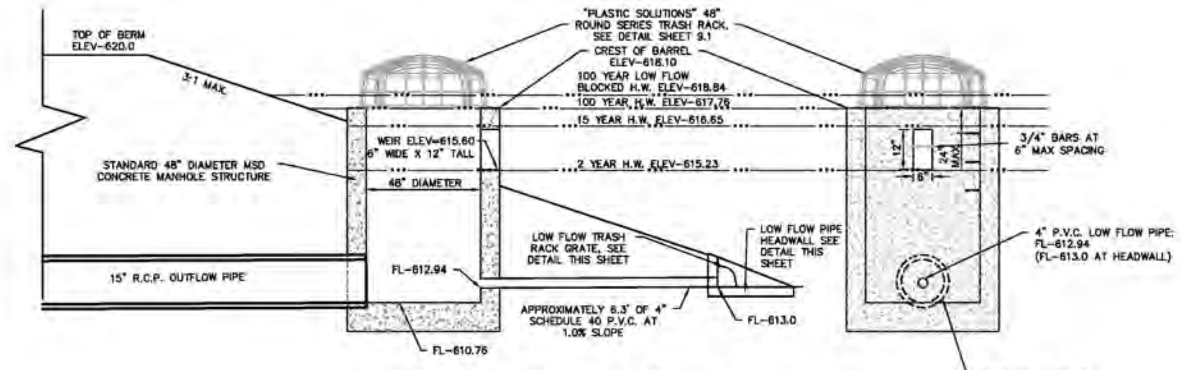
Corporate Certificate of Authority #001348

ELITE DEVELOPMENT SERVICES
17415 NORTH OUTER 40 ROAD
CHESTERFIELD, MO 63005

ISSUE	REMARKS/DATE
1	

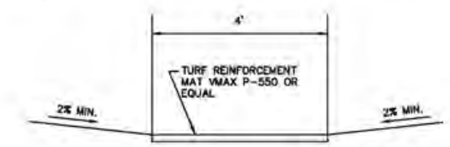
ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH 2





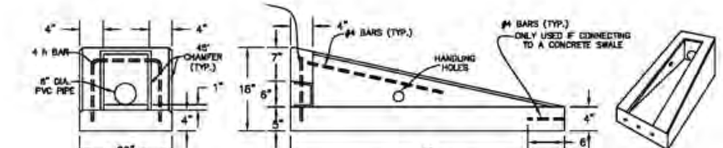
OUTFALL STRUCTURE H3
SIDE AND FRONT SECTION
N.T.S.

LOW FLOW TRASH RACK DETAIL



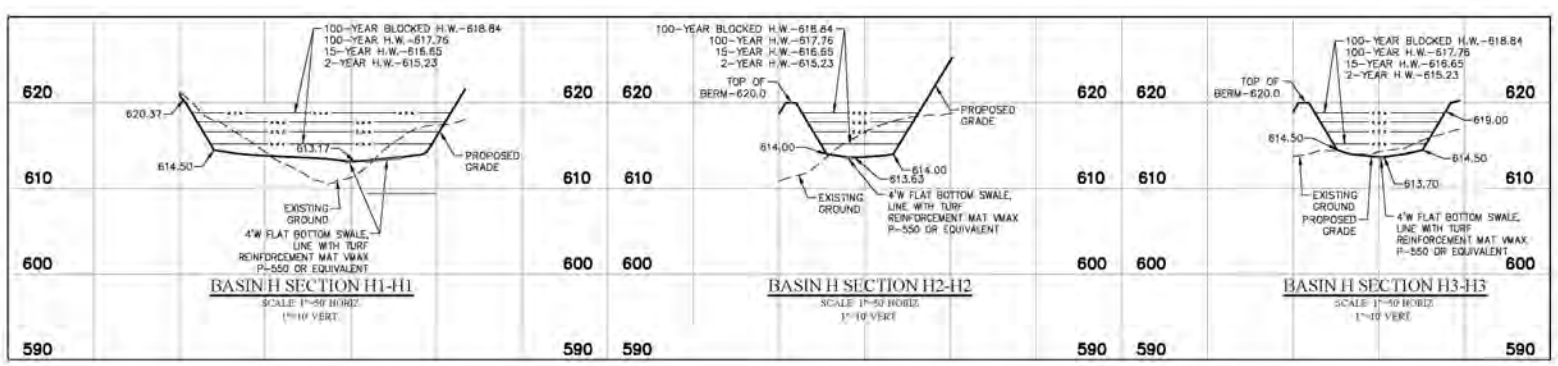
4' WIDE FLAT BOTTOM DITCH DETAIL
N.T.S.

NOTE:
1. MINIMUM 2% SLOPE LATERALLY TO SWALE AND 1% LONGITUDINALLY ALONG SWALE TO PREVENT STANDING WATER.
2. SWALE SHALL BE LINED WITH VMAX P-550 TURF REINFORCEMENT MAT OR APPROVED EQUAL.
4. SWALE SHALL BE SEEDED WITH WET SEED MIX PER MSD SEEDING TABLE.



NOTE:
REFER TO ILLINOIS DEPARTMENT OF TRANSPORTATION DRAWING STANDARD 2302-1 FOR ADDITIONAL INFORMATION.

LOW FLOW PIPE HEADWALL DETAIL
N.T.S.



PROJECT TITLE

HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

NOT APPROVED FOR CONSTRUCTION!

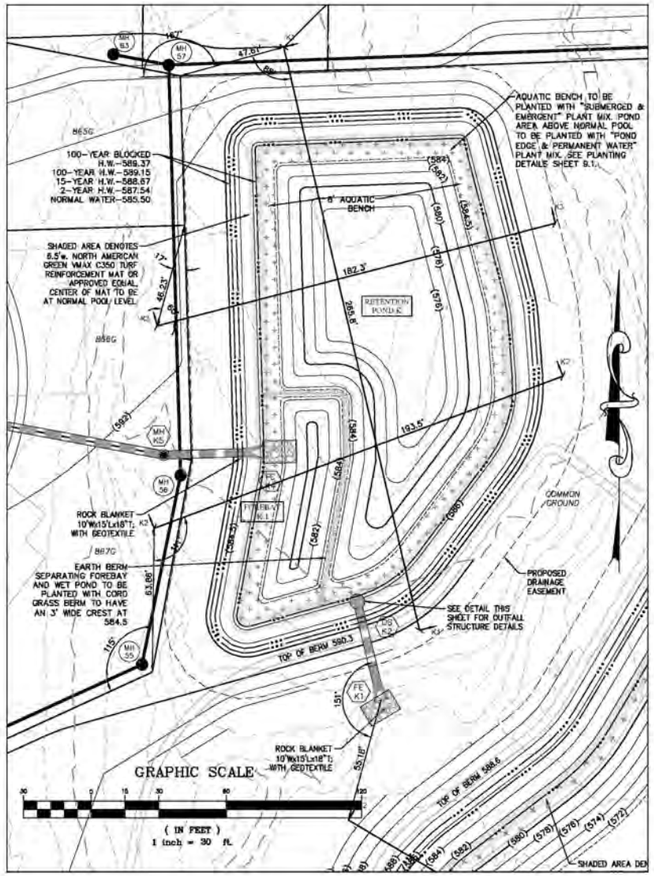
Date: 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

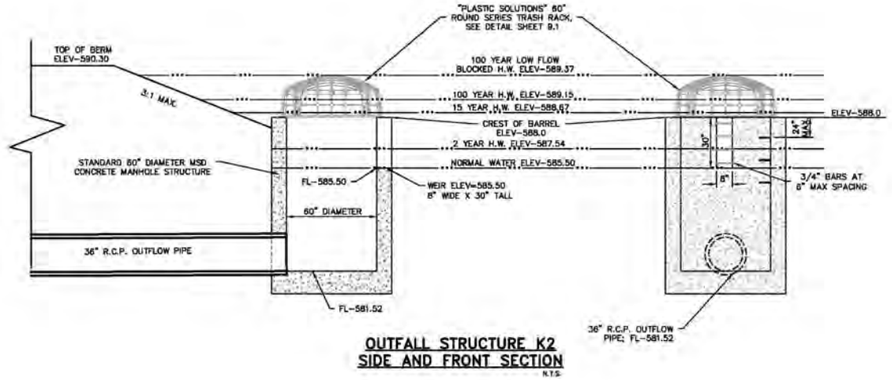
HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DETENTION BASIN H DETAILS

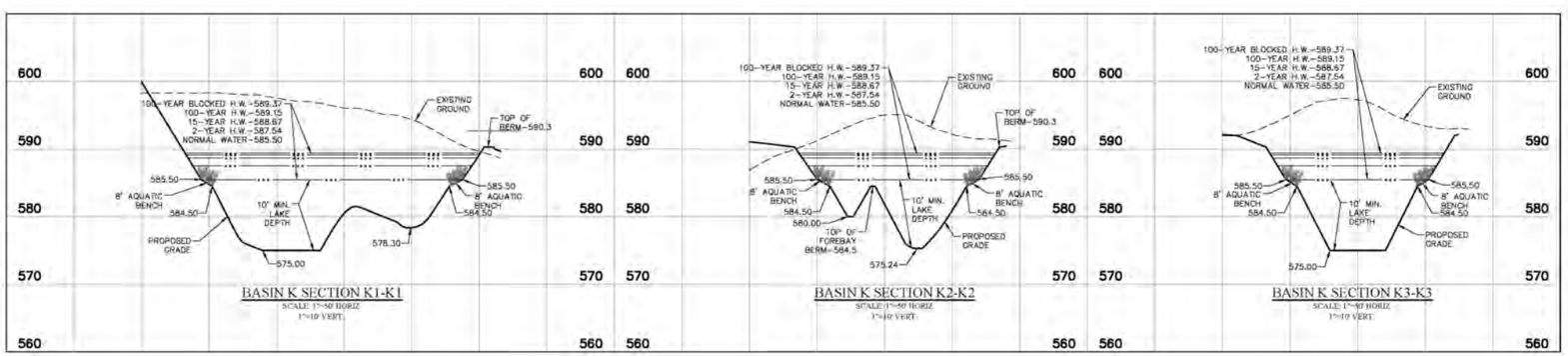
P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

Page No.
9.8
IMP





OUTFALL STRUCTURE K2 SIDE AND FRONT SECTION
N.T.S.



BASIN K SECTION K1-K1
SCALE 1"=50' HORIZ
1"=10' VERT.

BASIN K SECTION K2-K2
SCALE 1"=50' HORIZ
1"=10' VERT.

BASIN K SECTION K3-K3
SCALE 1"=50' HORIZ
1"=10' VERT.

ISSUE REMARKS/DATE
1 2024-08-13 INITIAL SUBMITTAL CITY PH 2

PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-2424 Fax 314-487-8944
www.sterling-inc.com
Corporate Certificate of Authority #001348

NOT APPROVED FOR CONSTRUCTION!

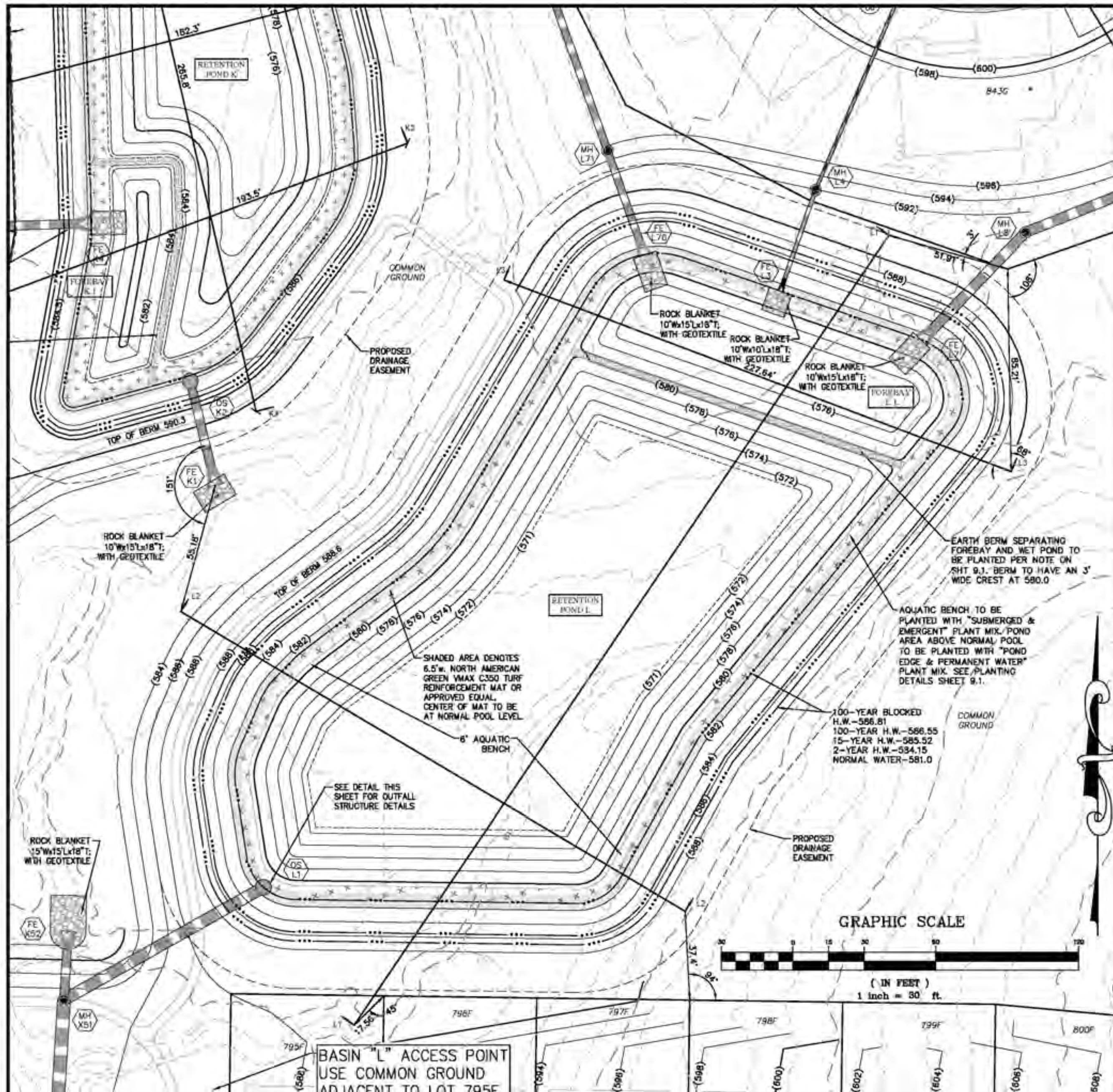
Date: 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

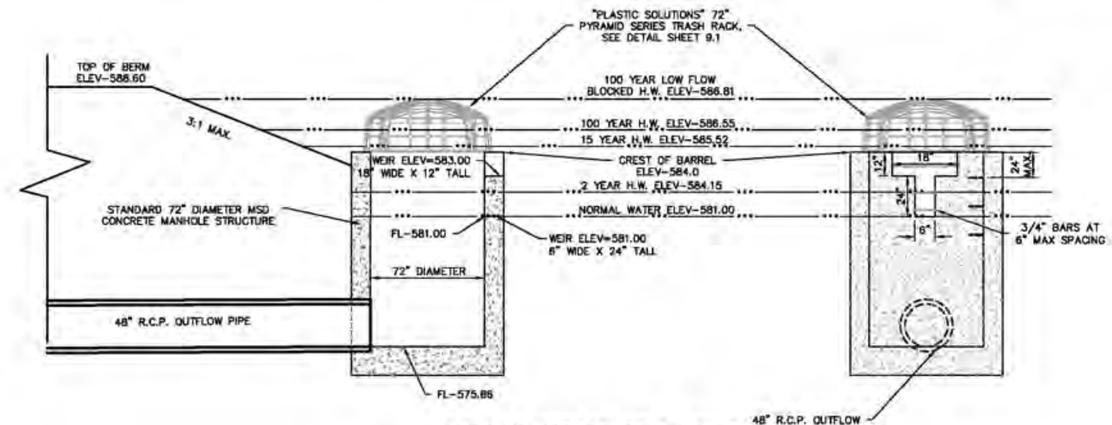
HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

RETENTION BASIN K DETAILS

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

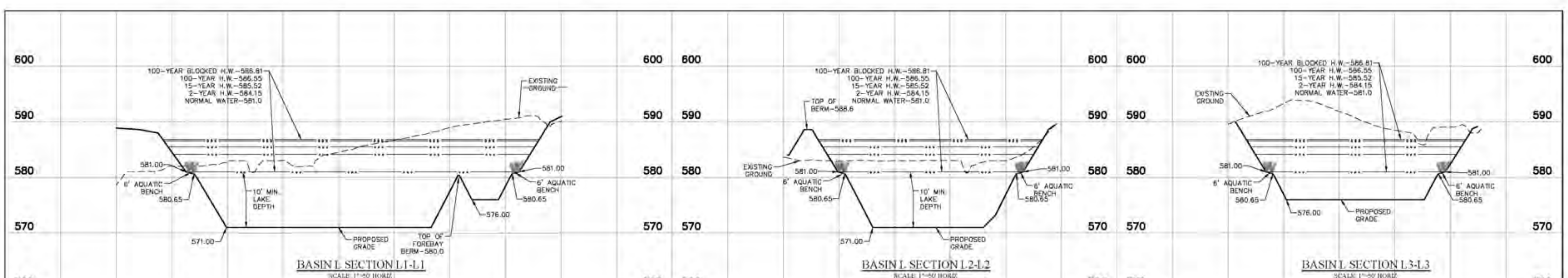
Page No.
9.9
IMP





OUTFALL STRUCTURE L1 SIDE AND FRONT SECTION

N.T.S.



ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH.2

PROJECT TITLE

HARVEST AT HOPEWELL

O'Fallon, Missouri

O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
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Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001346

NOT APPROVED FOR CONSTRUCTION!

Date 08-13-2024
Michael G. Boerding
License No. MO E-28843
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

RETENTION BASIN L DETAILS

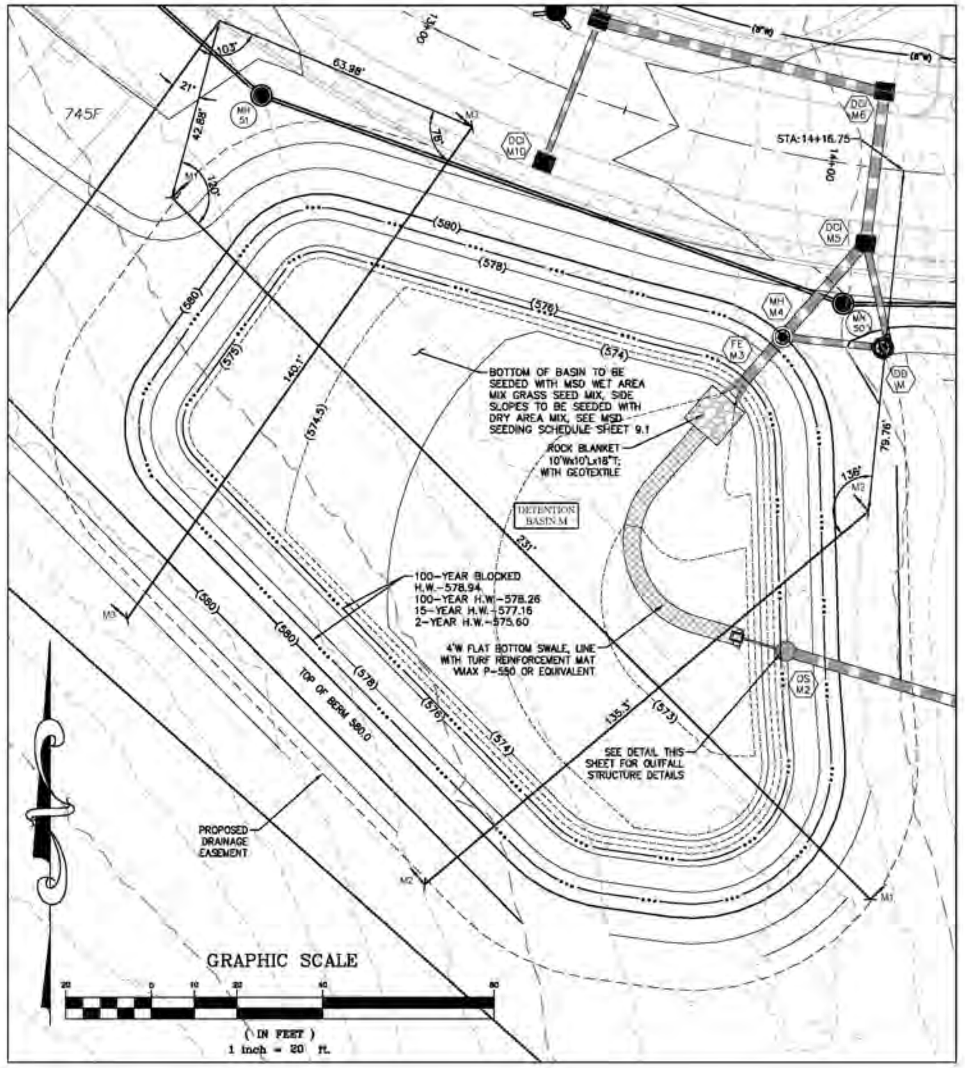
P+Z No.	21-004994
City No.	21-011444
Date:	08-13-2024
Job No.	20-09-327

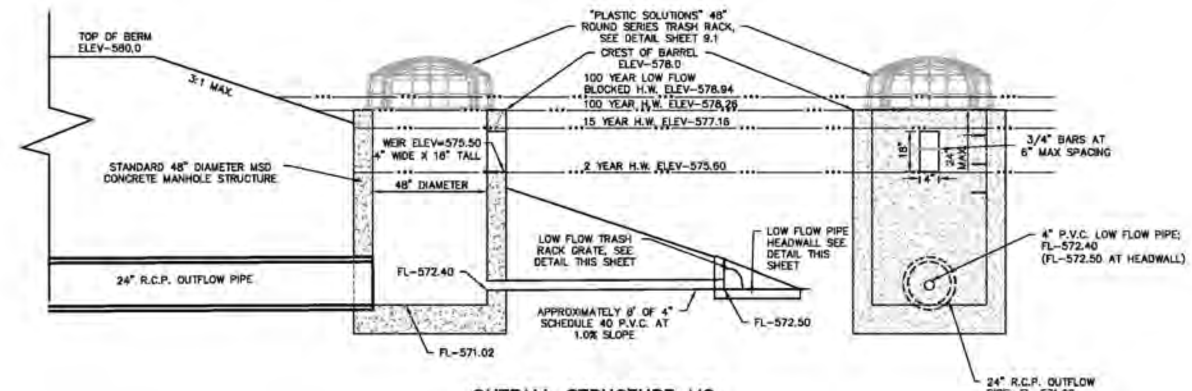
Page No.

9.10

IMP

ISSUE REMARKS/DATE
1 2024-08-13. INITIAL SUBMITTAL CITY PH.2

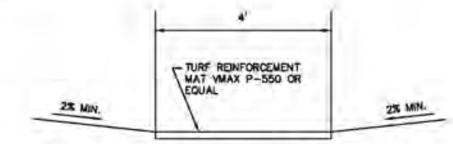




OUTFALL STRUCTURE M2 SIDE AND FRONT SECTION

N.T.S.

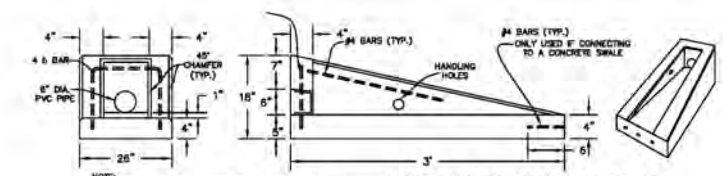
LOW FLOW TRASH RACK DETAIL



4' WIDE FLAT BOTTOM DITCH DETAIL

N.T.S.

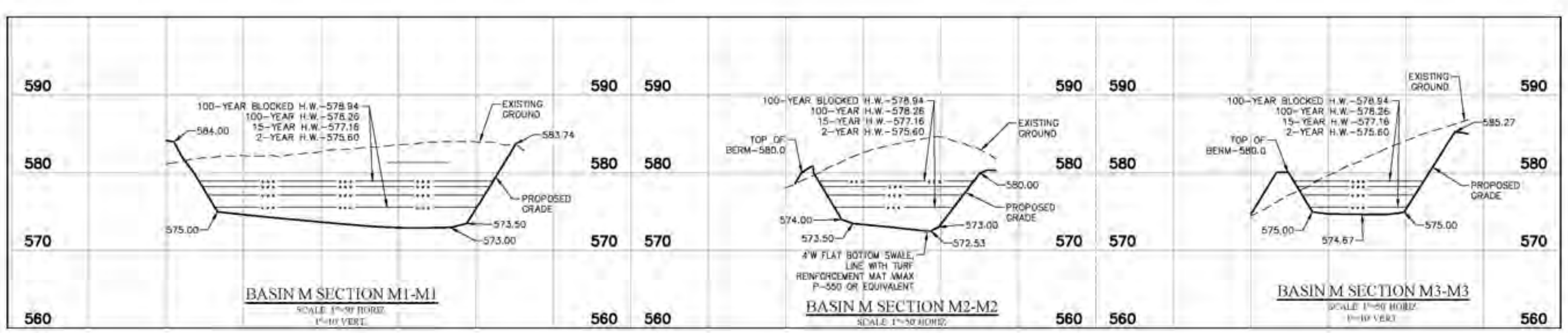
NOTE:
1. MINIMUM 2% SLOPE LATERALLY TO SWALE AND 1% LONGITUDINALLY ALONG SWALE TO PREVENT STANDING WATER.
2. SWALE SHALL BE LINED WITH VMAX P-550 TURF REINFORCEMENT MAT OR APPROVED EQUAL.
4. SWALE SHALL BE SEEDED WITH WET SEED MIX PER MSD SEEDING TABLE.



NOTE: REFER TO ILLINOIS DEPARTMENT OF TRANSPORTATION DRAWING STANDARD 2362-1 FOR ADDITIONAL INFORMATION.

LOW FLOW PIPE HEADWALL DETAIL

N.T.S.



PROJECT TITLE

HARVEST AT HOPEWELL

O'Fallon, Missouri

O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

NOT APPROVED FOR CONSTRUCTION!

Date: 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

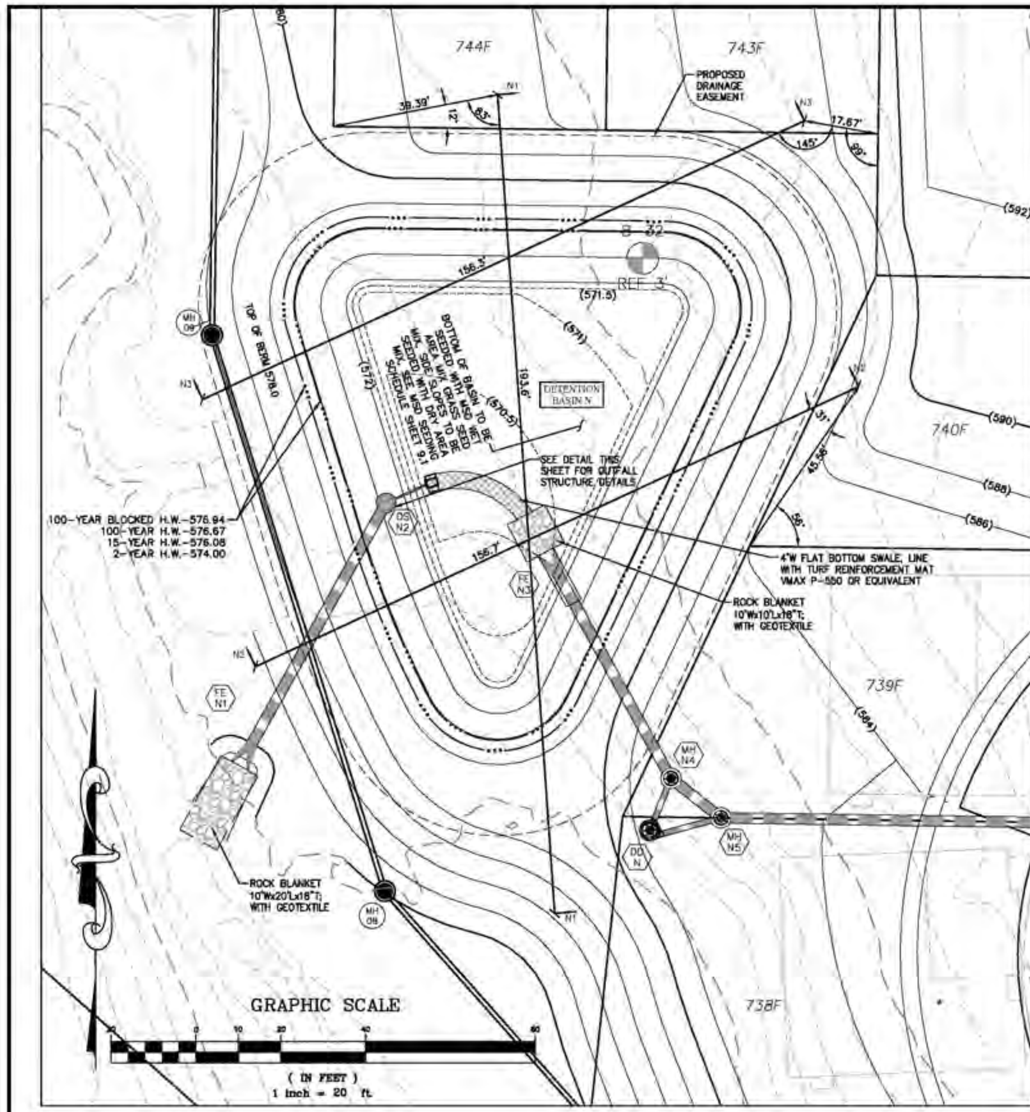
HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

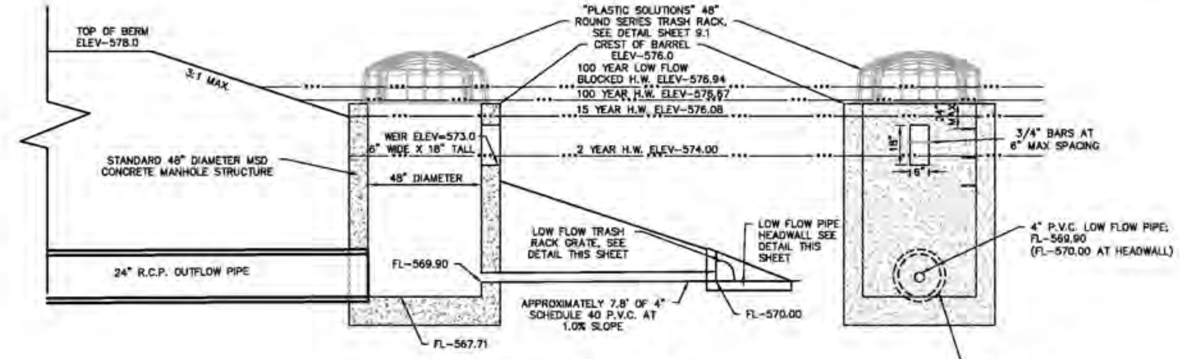
DETENTION BASIN M DETAILS

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

Page No.
9.11
IMP

ISSUE	REMARKS/DATE
1	2024-08-13 INITIAL SUBMITTAL CITY PH.2
2	2024-11-06 REVISED PER CITY COMMENTS
3	2025-01-03 REVISED PER CITY COMMENTS

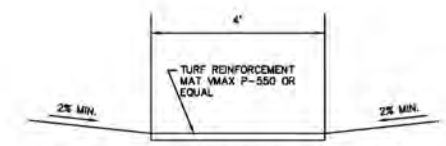




OUTFALL STRUCTURE N2
SIDE AND FRONT SECTION
N.T.S.

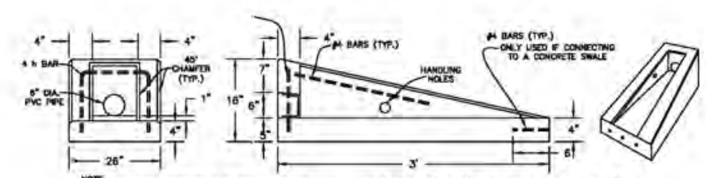
SHOP DRAWING REQUIRED

LOW FLOW TRASH RACK DETAIL



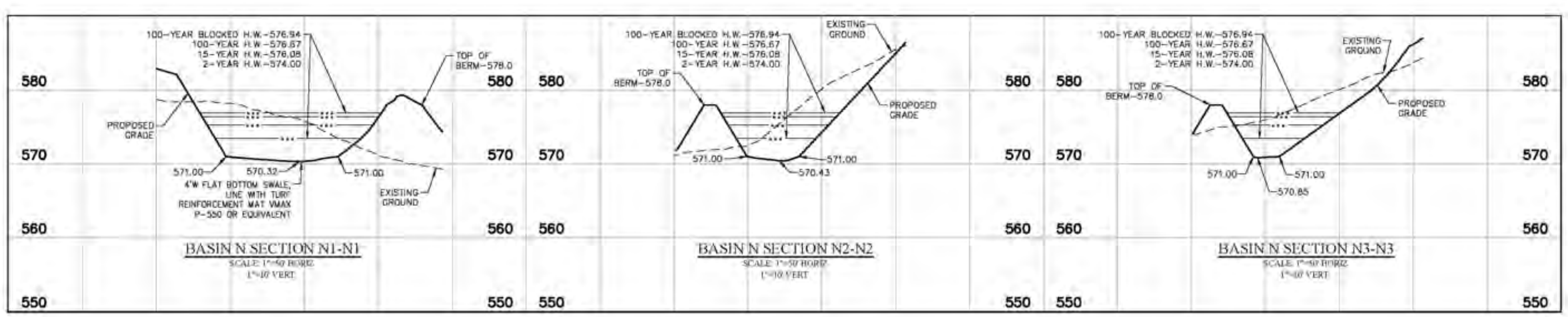
4' WIDE FLAT BOTTOM DITCH DETAIL
N.T.S.

NOTE:
1. MINIMUM 2% SLOPE LATERALLY TO SWALE AND 1% LONGITUDINALLY ALONG SWALE TO PREVENT STANDING WATER.
2. SWALE SHALL BE LINED WITH VMAX P-550 TURF REINFORCEMENT MAT OR APPROVED EQUAL.
4. SWALE SHALL BE SEEDED WITH WET SEED MIX PER MSD SEEDING TABLE.



NOTE:
REFER TO ILLINOIS DEPARTMENT OF TRANSPORTATION DRAWING STANDARD 2382-1 FOR ADDITIONAL INFORMATION.

LOW FLOW PIPE HEADWALL DETAIL
N.T.S.



PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

Date: 01-03-2025
Michael G. Boerding
License No. MO E-28643
Professional Engineer

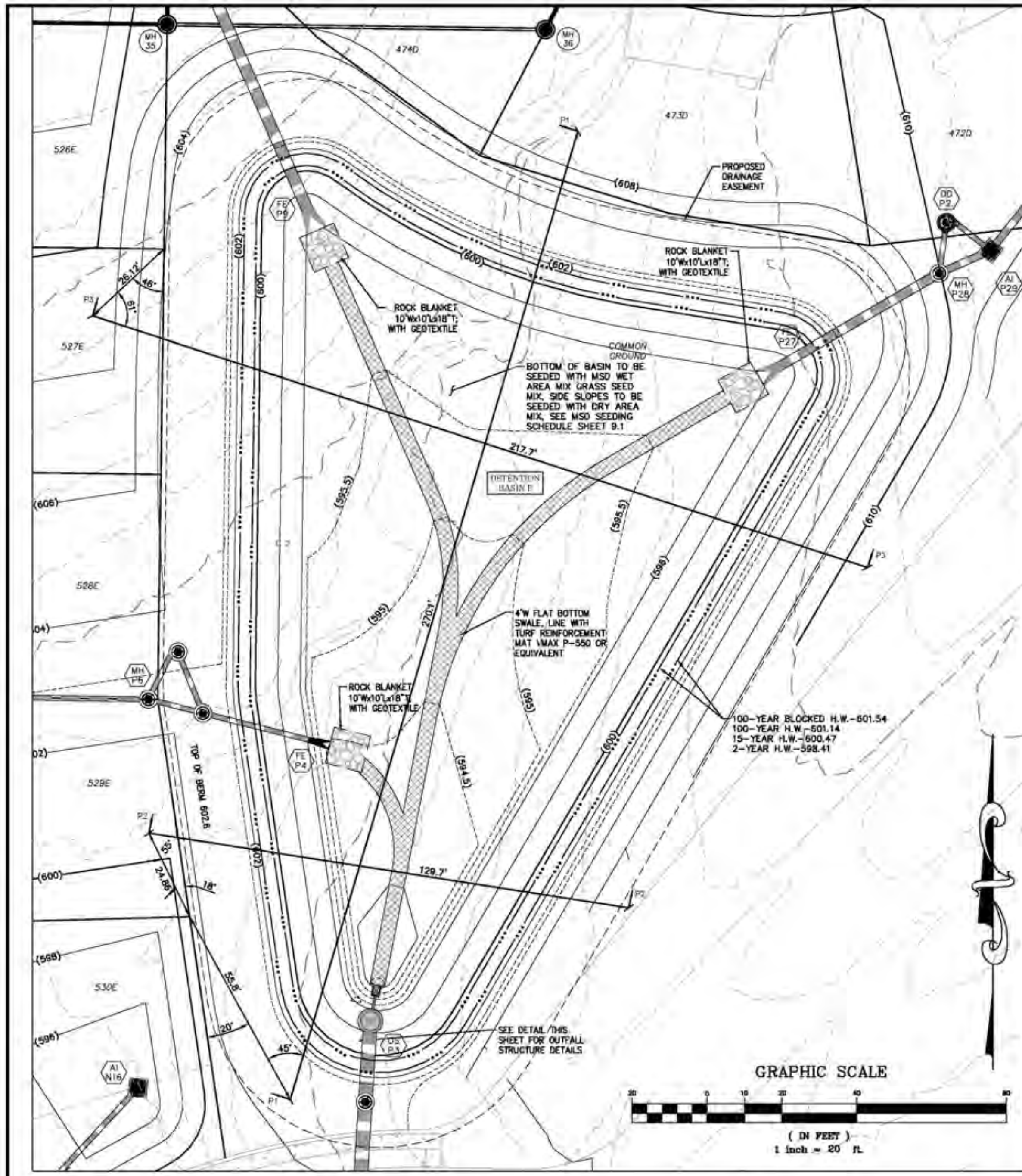
HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

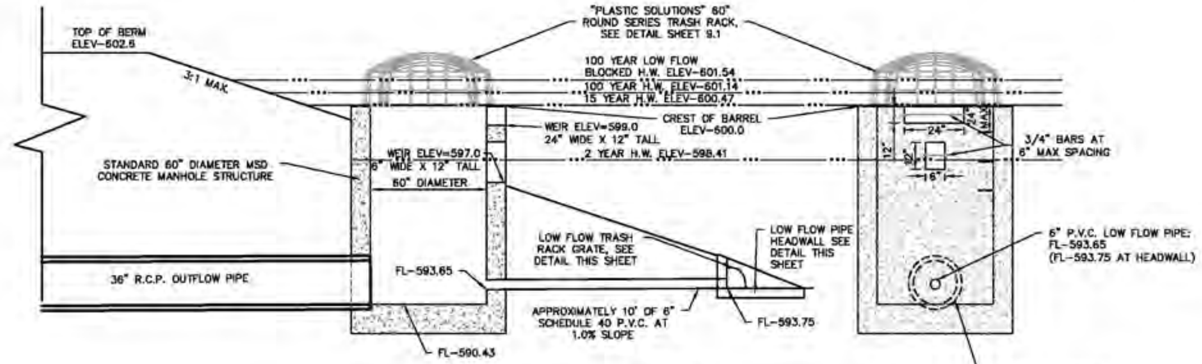
DETENTION BASIN N DETAILS

P+Z No.	21-004994
City No.	21-011444
Date	01-03-2025
Job No.	20-09-327

Page No.
9.12
IMP

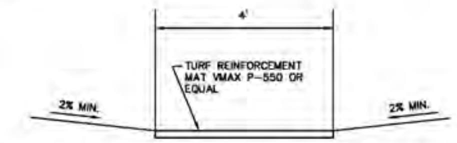
ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH.2





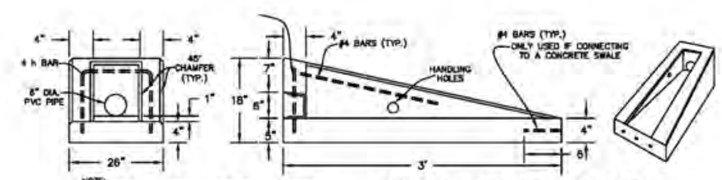
OUTFALL STRUCTURE P3
SIDE AND FRONT SECTION
N.T.S.

LOW FLOW TRASH RACK DETAIL



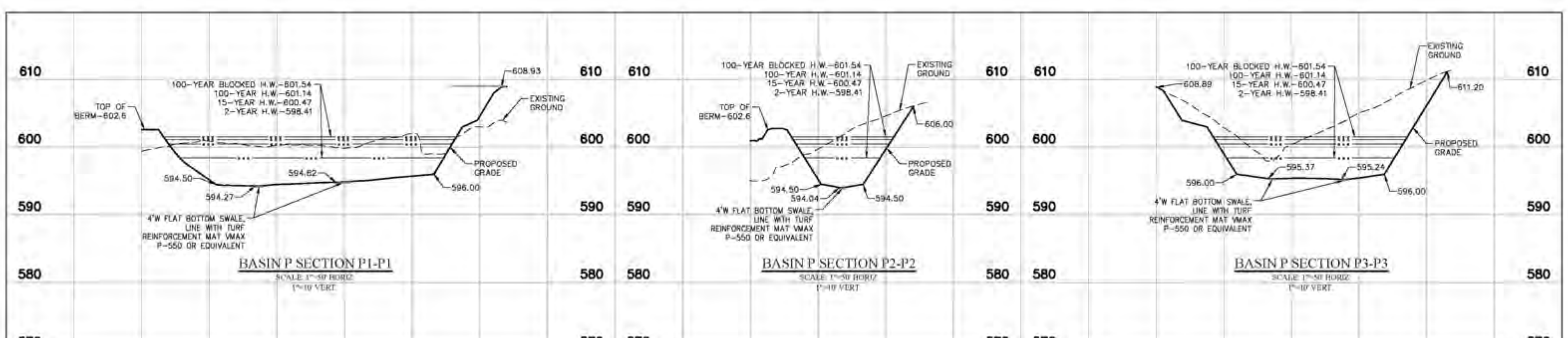
4' WIDE FLAT BOTTOM DITCH DETAIL
N.T.S.

NOTE:
1. MINIMUM 2% SLOPE LATERALLY TO SWALE AND 1% LONGITUDINALLY ALONG SWALE TO PREVENT STANDING WATER.
2. SWALE SHALL BE LINED WITH VMAX P-550 TURF REINFORCEMENT MAT OR APPROVED EQUAL.
4. SWALE SHALL BE SEEDED WITH WET SEED MIX PER MSD SEEDING TABLE.



NOTE:
REFER TO ILLINOIS DEPARTMENT OF TRANSPORTATION DRAWING STANDARD 2382-1 FOR ADDITIONAL INFORMATION.

LOW FLOW PIPE HEADWALL DETAIL
N.T.S.



PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #000148

NOT APPROVED FOR CONSTRUCTION!

Date 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DETENTION BASIN P DETAILS

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

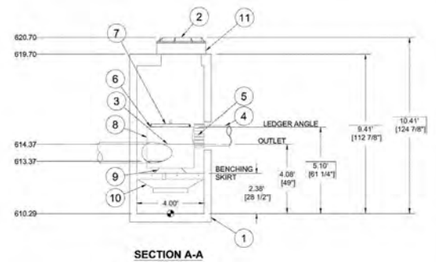
Page No.
9.13
IMP

PARTS LIST: 4' DOWNSTREAM DEFENDER

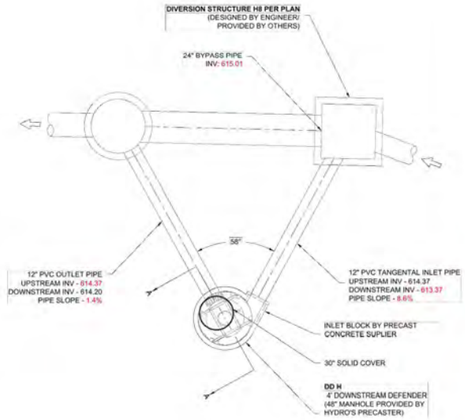
ITEM	SIZE (IN)	MATERIAL	DESCRIPTION
1	48	CONCRETE	I.D. PRECAST MANHOLE
2	30	-	FRAME & COVER
3	12	PVC	INLET PIPE (BY OTHERS)
4	12	PVC	OUTLET PIPE (BY OTHERS)
5	12	-	PIPE COUPLING (BY OTHERS)
6	-	-	LEDGER ANGLE
7	-	-	SUPPORT FRAME
8	-	-	DIP PLATE
9	-	-	CENTER SHAFT & CONE
10	-	-	BENCHING SKIRT
11	-	-	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)

NOTES:

- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.



SECTION A-A
1/4" = 1'



PLAN VIEW
1" = 5'

HARVEST AT HOPEWELL
DD H
WENTZVILLE, MO
DATE: 12/17/22 DRAWN: AGC
PROJECT #: S339330 CHECKED: VAU

DESCRIPTION	DRWN./CHKD.	DATE

Hydro International
4640 TRUEMAN BLVD
HILLIARD, OH 43026
AS NOTED
SHEET 2 OF 2

ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH.2

PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterlingcompanies.com
Corporate Certificate of Authority #001348

NOT APPROVED FOR CONSTRUCTION!

Date: 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DOWNSTREAM DEFENDER DETAIL - H1

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

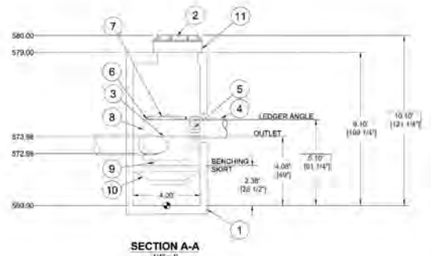
Page No.
9.19
IMP

PARTS LIST: 4' DOWNSTREAM DEFENDER

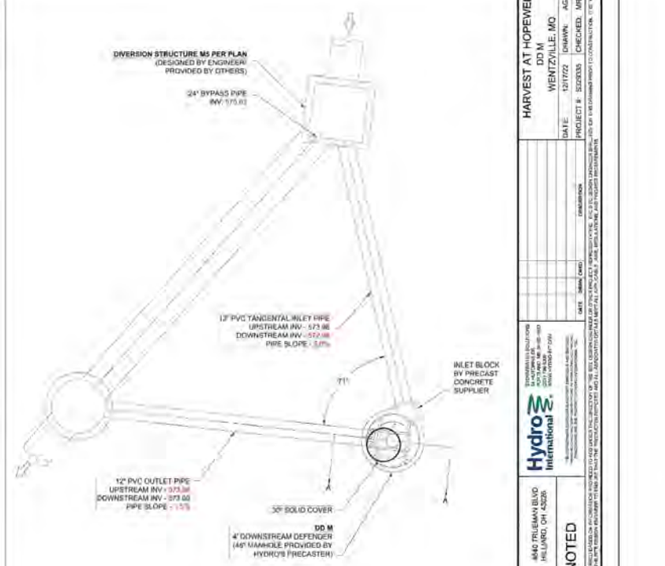
ITEM	SIZE (IN)	MATERIAL	DESCRIPTION
1	48	CONCRETE	I.D. PRECAST MANHOLE
2	30	-	FRAME & COVER
3	12	PVC	INLET PIPE (BY OTHERS)
4	12	PVC	OUTLET PIPE (BY OTHERS)
5	12	-	PIPE COUPLING (BY OTHERS)
6	-	-	LEDGER ANGLE
7	-	-	SUPPORT FRAME
8	-	-	DIP PLATE
9	-	-	CENTER SHAFT & CONE
10	-	-	BENCHING SKIRT
11	-	-	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)

NOTES:

- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE.
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO H320-44 LOAD RATINGS.



SECTION A-A
1/4" = 1'



PLAN VIEW
1" = 5'

HARVEST AT HOPEWELL
DD M
WENTZVILLE, MO

DATE	DESCRIPTION
12/17/22	DRAWN: AGC
PROJECT #: 20-09-327	CHECKED: MRJ

Hydro International

4640 TRUEMAN BLVD
HILLIARD, OH 43026

//ADS

AS NOTED

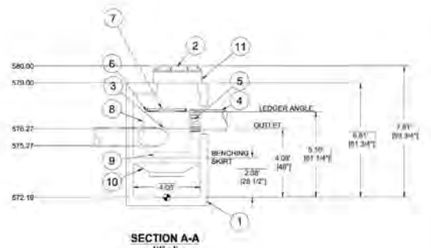
2 SHEET OF 2

PARTS LIST: 4' DOWNSTREAM DEFENDER

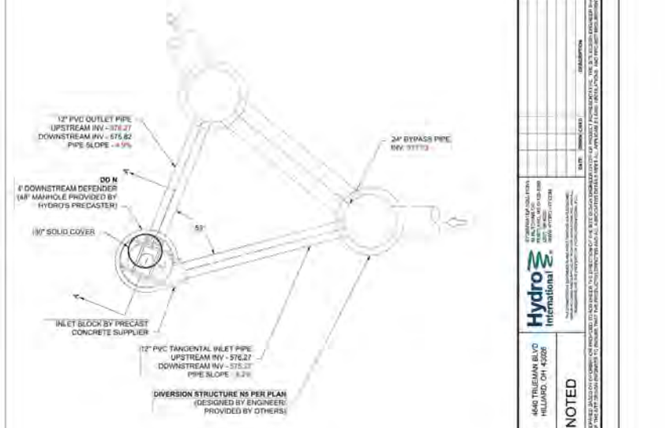
ITEM	SIZE (IN)	MATERIAL	DESCRIPTION
1	48	CONCRETE	I.D. PRECAST MANHOLE
2	30	-	FRAME & COVER
3	12	PVC	INLET PIPE (BY OTHERS)
4	12	PVC	OUTLET PIPE (BY OTHERS)
5	12	-	PIPE COUPLING (BY OTHERS)
6	-	-	LEDGER ANGLE
7	-	-	SUPPORT FRAME
8	-	-	DIP PLATE
9	-	-	CENTER SHAFT & CONE
10	-	-	BENCHING SKIRT
11	-	-	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)

NOTES:

- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE.
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.



SECTION A-A
1/4" = 1'



PLAN VIEW
1" = 5'

HARVEST AT HOPEWELL
DD N
WENTZVILLE, MO

DATE	DESCRIPTION
12/17/22	DRAWN: AGC
PROJECT #: 20-09-327	CHECKED: MRJ

Hydro International

4640 TRUEMAN BLVD
HILLIARD, OH 43026

//ADS

AS NOTED

2 SHEET OF 2

ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH.2

PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE **STERLING** CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

The Professional Engineer's seal and signature affixed to this sheet applies only to the material and data shown on this sheet. All drawings, instruments or other documents not bearing the seal and signature of the Professional Engineer prepared by the engineer, and the engineer expressly disclaims any and all responsibility for such plans, drawings or documents not bearing the seal and signature.

NOT APPROVED FOR CONSTRUCTION!

Date: 08-13-2024
Michael G. Boerding
License No. MO E-28843
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DOWNSTREAM DEFENDER DETAIL - M1 & N1

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

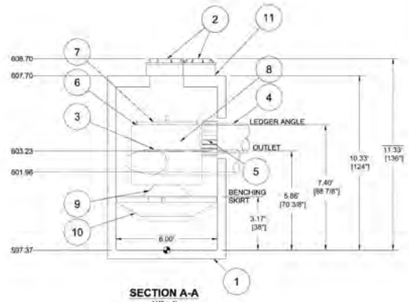
Page No.
9.20
IMP

ISSUE REMARKS/DATE
1 2024-08-13, INITIAL SUBMITTAL CITY PH.2

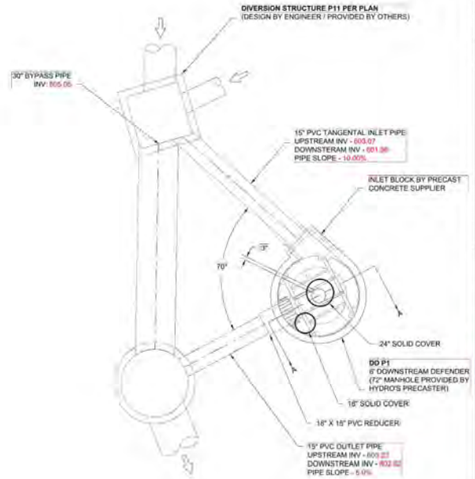
PARTS LIST: 6' DOWNSTREAM DEFENDER

ITEM	SIZE (IN)	MATERIAL	DESCRIPTION
1	72	CONCRETE	I.D. PRECAST MANHOLE
2	18 & 24	-	FRAME & COVER
3	15	PVC	INLET PIPE (BY OTHERS)
4	15	PVC	OUTLET PIPE (BY OTHERS)
5	18	-	PIPE COUPLING (BY OTHERS)
6	-	-	LEDGER ANGLE
7	-	-	SUPPORT FRAME
8	-	-	DIP PLATE
9	-	-	CENTER SHAFT & CONE
10	-	-	BENCHING SKIRT
11	-	-	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)

NOTES:
- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.



SECTION A-A
1/4" = 1'



PLAN VIEW
1" = 5'

HARVEST AT HOPEWELL
DD P1
WENTZVILLE, MO
DATE: 12/17/22 | DRAWN: AGC
PROJECT #: S320533 | CHECKED: MRJ

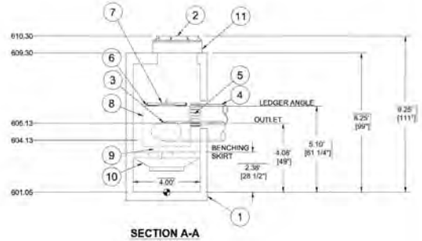
DATE	DRWG. CHKD	DESCRIPTION

Hydro International
4640 TRUEMAN BLVD
HILLIARD, OH 43026
ADS
AS NOTED
2 SHEET OF 2

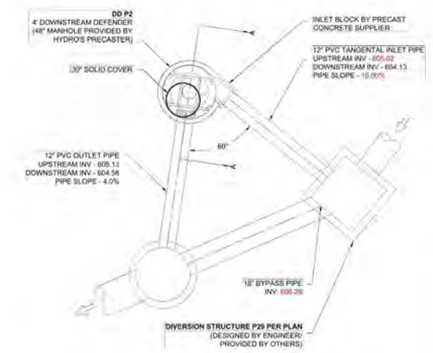
PARTS LIST: 4' DOWNSTREAM DEFENDER

ITEM	SIZE (IN)	MATERIAL	DESCRIPTION
1	48	CONCRETE	I.D. PRECAST MANHOLE
2	30	-	FRAME & COVER
3	12	PVC	INLET PIPE (BY OTHERS)
4	12	PVC	OUTLET PIPE (BY OTHERS)
5	12	-	PIPE COUPLING (BY OTHERS)
6	-	-	LEDGER ANGLE
7	-	-	SUPPORT FRAME
8	-	-	DIP PLATE
9	-	-	CENTER SHAFT & CONE
10	-	-	BENCHING SKIRT
11	-	-	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)

NOTES:
- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.



SECTION A-A
1/4" = 1'



PLAN VIEW
1" = 5'

HARVEST AT HOPEWELL
DD P2
WENTZVILLE, MO
DATE: 12/17/22 | DRAWN: AGC
PROJECT #: S320533 | CHECKED: MRJ

DATE	DRWG. CHKD	DESCRIPTION

Hydro International
4640 TRUEMAN BLVD
HILLIARD, OH 43026
ADS
AS NOTED
2 SHEET OF 2

PROJECT TITLE
HARVEST AT HOPEWELL
O'Fallon, Missouri
O'FALLON PHASE 2

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001346

The Professional Engineer's seal and signature affixed to this sheet applies only to the material shall have shown on this sheet. All drawing, instruments or other documents not exhibiting this seal and signature shall not be considered authorized by the engineer. The engineer hereby disclaims any and all responsibility for such plans, drawings or documents not exhibiting this seal and signature.

NOT APPROVED FOR CONSTRUCTION!

Date: 08-13-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DOWNSTREAM DEFENDER DETAIL - P1 & P2

P+Z No. 21-004994
City No. 21-011444
Date: 08-13-2024
Job No. 20-09-327

Page No.
9.21
IMP

Stormwater Detention

Per City of O'Fallon Regulations/Ordinances stormwater detention is provided for the development. Due to the overall size of the ultimate development the site will be analyzed for the 2, 15 and 100 year twenty four hour design storms. The post developed flows will be equal to or less than the pre-developed conditions flows to several outfall points associated with Phase 2 improvements. Five outfall points were identified across the boundary of Phase 2 during the pre-developed condition analysis.

In addition to making sure the post developed flows are less than the existing flows, each basin will be modeled assuming that the outfall structure has become blocked and water within the basin/lake is ponded to the crest of the outfall structure. Using this starting scenario a 100 year, 24 hour storm is routed thru the basin and the highwater observed will be recorded as the maximum ponding or low flow blocked elevation. From this elevation the basin/lakes top of berm elevation will be one foot higher, thereby providing one foot of freeboard within each basin using the worst-case scenario.

Predeveloped Conditions:

The above discussed predeveloped conditions analysis was completed to determine the existing flows at each of the five outfall points mentioned above. Each outfall point is labeled on the following Pre-Developed Condition Drainage Area Map.

Each contributing drainage area was broken down into coverage types and soils types which are also delineated/labeled on the following Pre-Developed Drainage Area Map. Additionally the time of concentration flowpaths for each drainage area are delineated on the following maps. The drainage area information shown on the following map for each drainage area was input into the Pondpack stormwater modeling program and the following pre-developed condition flows were found for the specified design storms towards each outfall point:

Pre-Developed Condition Flows

Outfall 2

2 Year, 24 Hour Discharge: 119.21 cfs
15 Year, 24 Hour Discharge: 276.75 cfs
100 Year, 24 Hour Discharge: 418.04 cfs

Outfall 4

2 Year, 24 Hour Discharge: 11.10 cfs
15 Year, 24 Hour Discharge: 27.00 cfs
100 Year, 24 Hour Discharge: 41.74 cfs

Outfall 5

2 Year, 24 Hour Discharge: 6.53 cfs
15 Year, 24 Hour Discharge: 15.04 cfs
100 Year, 24 Hour Discharge: 22.65 cfs

Outfall 6

2 Year, 24 Hour Discharge: 7.87 cfs
15 Year, 24 Hour Discharge: 18.94 cfs
100 Year, 24 Hour Discharge: 28.97 cfs

Outfall 7

2 Year, 24 Hour Discharge: 9.62 cfs
15 Year, 24 Hour Discharge: 24.12 cfs
100 Year, 24 Hour Discharge: 37.46 cfs

Pondpack software input/output is included in Appendix A.

ISSUE	REMARKS/DATE
1	

ELITE DEVELOPMENT SERVICES
17415 NORTH OUTER 40 ROAD
CHESTERFIELD, MO 63005

THE STERLING CO.
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www.sterling-engr.com
Corporate Certificate of Authority #001348

HARVEST ATHOPEWELL

PRE DEVELOPED CONDITIONS DRAINAGE AREA MAP

Date:_____

License No.
Civil Engineer

Job Number	20-09-327
Date	06/26/2023
Designed: JD	Sheet
Drawn:	
Checked:	EXB

Post Developed Conditions

Under post developed conditions, flood control for the development will be provided by the combination of two lakes(Lake K and L) and four dry basins (Basins H, M, N, P) that are constructed during Phase 2 improvements. The post developed conditions are modeled assuming a Hydrologic Soil Group of D for all disturbed areas. The Post Developed Drainage Area Map provided on the following page delineates the limits of the drainage areas to each lake/basin and each area is labeled with the overall area and the breakdown of that area in different land cover dispositions of the post developed condition. In addition the direct runoff areas to each outfall point are also delineated on the following maps and labeled with their areas and cover types. Finally the time of concentration flowpath and its components for each drainage area are also identified/labeled on the following drainage area map.

The above discussed drainage area information/coverage disposition, time of concentration flowpath data, basin volumes and the geometry of the outfall structures within each lake/basin were input into the Pond V8i software package to determine the peak flows to all of the previously identified outfall points and identify the highwater elevations within each stormwater facility.

From the Pond V8i software the following post developed peak flows to all Outfall Points were determined and are summarized below:

Post-Developed Condition Flows

Outfall 2

2 Year, 24 Hour Discharge: 33.43 cfs
15 Year, 24 Hour Discharge: 221.09 cfs
100 Year, 24 Hour Discharge: 381.27 cfs

Outfall 4

2 Year, 24 Hour Discharge: 4.63 cfs
15 Year, 24 Hour Discharge: 10.23 cfs
100 Year, 24 Hour Discharge: 15.31 cfs

Outfall 5

2 Year, 24 Hour Discharge: 1.61 cfs
15 Year, 24 Hour Discharge: 3.58 cfs
100 Year, 24 Hour Discharge: 5.31 cfs

Outfall 6

2 Year, 24 Hour Discharge: 2.05 cfs
15 Year, 24 Hour Discharge: 4.37 cfs
100 Year, 24 Hour Discharge: 6.40 cfs

Outfall 7

2 Year, 24 Hour Discharge: 6.60 cfs
15 Year, 24 Hour Discharge: 15.63 cfs
100 Year, 24 Hour Discharge: 25.04 cfs

Pondpack software input/output is included in Appendix B for the Post Developed routing condition. Comparing the peak outfalls above to the Pre-Developed condition routing results, it is apparent the peak flows are less under Post Developed conditions and thus the stormwater volume requirements of the city are met by the proposed basins and stormwater structures.

In addition to the peak flows the highwater surface for each storm frequency within each basin was determined from the Pondpack output and is summarized below:

Lake/Basin Highwater Elevations

Basin H

2-Year Highwater Elevation:	**615.23**
15-Year Highwater Elevation:	**616.65**
100-Year Highwater Elevation:	**617.76**

Lake K

2-Year Highwater Elevation:	**587.54**
15-Year Highwater Elevation:	**588.67**
100-Year Highwater Elevation:	**589.15**

Lake L

2-Year Highwater Elevation:	**584.15**
15-Year Highwater Elevation:	**585.52**
100-Year Highwater Elevation:	**586.55**

Basin M

2-Year Highwater Elevation:	**575.60**
15-Year Highwater Elevation:	**577.16**
100-Year Highwater Elevation:	**578.26**

Basin N

2-Year Highwater Elevation:	**574.00**
15-Year Highwater Elevation:	**576.08**
100-Year Highwater Elevation:	**576.67**

Basin P

2-Year Highwater Elevation:	**598.41**
15-Year Highwater Elevation:	**600.47**
100-Year Highwater Elevation:	**601.14**

Pondpack software input/output is included in Appendix B for the Post Developed routing condition that includes the water levels summarized above.

In addition to the standard routing scenarios discussed above, each stormwater facility will be routed to determine a maximum probable ponding elevation. The maximum ponding event analyzes the 100 year, 24 hour event in the stormwater facility assuming the outfall structure has become partially blocked so that all openings other than the crest of the structure are eliminated. In addition it is assumed the starting water surface elevation in the stormwater facility is ponded to the crest of the structure within that facility. This information was input into the PondPack software and the resulting 100 year event highwater elevations in each basin are:

100 Year, 24 Hour Low Flow Blocked Highwaters

Basin H

100-Year Highwater Elevation-Low Flow Blocked Condition:	**618.84**
Top of Berm:	**620.0**
Freeboard provided:	**1.16'**

Lake K

100-Year Highwater Elevation-Low Flow Blocked Condition:	**589.37**
Top of Berm:	**590.5**
Freeboard provided:	**1.13'**

Lake L

100-Year Highwater Elevation-Low Flow Blocked Condition:	**586.81**
Top of Berm:	**588.6**
Freeboard provided:	**1.79'**

Basin M

100-Year Highwater Elevation-Low Flow Blocked Condition:	**578.94**
Top of Berm:	**580.0**
Freeboard provided:	**1.06'**

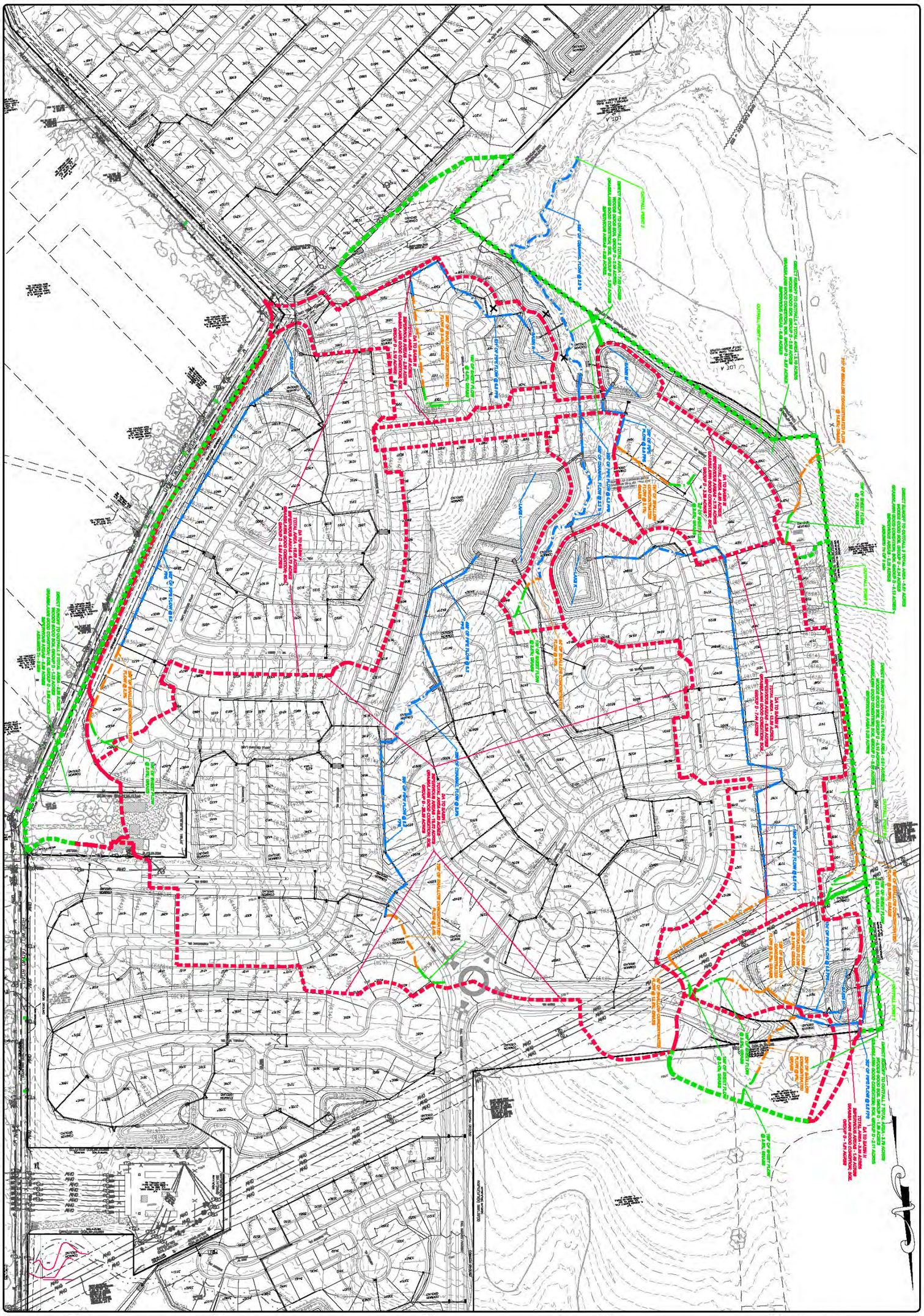
Basin N

100-Year Highwater Elevation-Low Flow Blocked Condition:	**576.94**
Top of Berm:	**578.0**
Freeboard provided:	**1.06'**

Basin P

100-Year Highwater Elevation-Low Flow Blocked Condition:	**601.54**
Top of Berm:	**602.6**
Freeboard provided:	**1.06'**

The input and output from the PondPack analysis for low flow blocked condition is included in Appendix C.



Checked:	EXB
Drawn:	
Designed: JD	
Date	09/27/2024
Job Number	20-09-327
Sheet	

Date:
License No.
Civil Engineer

HARVEST AT HOPEWELL
PHASE 2
POST DEVELOPED CONDITIONS
DRAINAGE AREA MAP

THE STERLING CO.
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ELITE DEVELOPMENT SERVICES
17415 NORTH OUTER 40 ROAD
CHESTERFIELD, MO 63005

ISSUE	REMARKS/DATE
1	

Appendix

A

Pond V8i Routing of 2, 15 and 100 Year, 24 Hour Storm for Pre-Developed Conditions Analysis

Table of Contents

Table of Contents

Pre Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Exist Cond Area 2.1	Pre-Development 2 Year, 24 Hour	2	443,234.000	726.000	119.21
Exist Cond Area 2.1	Pre-Development 15 Year, 24 Hour	15	1,018,923.000	726.000	276.75
Exist Cond Area 2.1	Pre-Development 100 Year, 24 Hour	100	1,553,546.000	726.000	418.04
Exist Cond Area 7.1	Pre-Development 2 Year, 24 Hour	2	29,383.000	723.000	9.62
Exist Cond Area 7.1	Pre-Development 15 Year, 24 Hour	15	72,695.000	723.000	24.12
Exist Cond Area 7.1	Pre-Development 100 Year, 24 Hour	100	114,080.000	723.000	37.46
Exist Cond Area 6.1	Pre-Development 2 Year, 24 Hour	2	24,769.000	723.000	7.87
Exist Cond Area 6.1	Pre-Development 15 Year, 24 Hour	15	59,019.000	723.000	18.94
Exist Cond Area 6.1	Pre-Development 100 Year, 24 Hour	100	91,268.000	723.000	28.97
Exist Cond Area 5.1	Pre-Development 2 Year, 24 Hour	2	20,870.000	723.000	6.53
Exist Cond Area 5.1	Pre-Development 15 Year, 24 Hour	15	47,963.000	723.000	15.04
Exist Cond Area 5.1	Pre-Development 100 Year, 24 Hour	100	73,120.000	723.000	22.65
Exist Cond Area 4.1	Pre-Development 2 Year, 24 Hour	2	31,827.000	723.000	11.10
Exist Cond Area 4.1	Pre-Development 15 Year, 24 Hour	15	77,248.000	720.000	27.00
Exist Cond Area 4.1	Pre-Development 100 Year, 24 Hour	100	120,323.000	720.000	41.74

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Outfall Point 2	Pre-Development 2 Year, 24 Hour	2	443,234.000	726.000	119.21
Outfall Point 2	Pre-Development 15 Year, 24 Hour	15	1,018,923.000	726.000	276.75
Outfall Point 2	Pre-Development 100 Year, 24 Hour	100	1,553,546.000	726.000	418.04
Outfall Point 4	Pre-Development 2 Year, 24 Hour	2	31,827.000	723.000	11.10
Outfall Point 4	Pre-Development 15 Year, 24 Hour	15	77,248.000	720.000	27.00

Pre Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft^3)	Time to Peak (min)	Peak Flow (ft^3/s)
Outfall Point 4	Pre-Development 100 Year, 24 Hour	100	120,323.000	720.000	41.74
Outfall Point 5	Pre-Development 2 Year, 24 Hour	2	20,870.000	723.000	6.53
Outfall Point 5	Pre-Development 15 Year, 24 Hour	15	47,963.000	723.000	15.04
Outfall Point 5	Pre-Development 100 Year, 24 Hour	100	73,120.000	723.000	22.65
Outfall Point 6	Pre-Development 2 Year, 24 Hour	2	24,769.000	723.000	7.87
Outfall Point 6	Pre-Development 15 Year, 24 Hour	15	59,019.000	723.000	18.94
Outfall Point 6	Pre-Development 100 Year, 24 Hour	100	91,268.000	723.000	28.97
Outfall Point 7	Pre-Development 2 Year, 24 Hour	2	29,383.000	723.000	9.62
Outfall Point 7	Pre-Development 15 Year, 24 Hour	15	72,695.000	723.000	24.12
Outfall Point 7	Pre-Development 100 Year, 24 Hour	100	114,080.000	723.000	37.46

Pre Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 2.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	461.00ft
Is Paved?	False
Slope	0.065ft/ft
Average Velocity	4.11ft/s
Segment Time of Concentration	1.868min

Segment #3: TR-55 Channel Flow	
Flow Area	27.480ft²
Hydraulic Length	1,571.00ft
Manning's n	0.035
Slope	0.029ft/ft
Wetted Perimeter	34.85ft
Average Velocity	6.19ft/s
Segment Time of Concentration	4.232min

Segment #4: TR-55 Channel Flow	
Flow Area	24.640ft²
Hydraulic Length	1,105.00ft
Manning's n	0.035
Slope	0.020ft/ft
Wetted Perimeter	20.28ft
Average Velocity	6.86ft/s
Segment Time of Concentration	2.687min

Time of Concentration (Composite)	
Time of Concentration (Composite)	23.285min

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 2.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Pre Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 4.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.042ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.15ft/s
Segment Time of Concentration	10.776min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	410.00ft
Is Paved?	False
Slope	0.070ft/ft
Average Velocity	4.27ft/s
Segment Time of Concentration	1.601min

Segment #3: TR-55 Channel Flow	
Flow Area	24.640ft²
Hydraulic Length	295.00ft
Manning's n	0.035
Slope	0.070ft/ft
Wetted Perimeter	20.28ft
Average Velocity	12.82ft/s
Segment Time of Concentration	0.383min

Time of Concentration (Composite)	
Time of Concentration (Composite)	12.760min

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 4.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Pre Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 5.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	675.00ft
Is Paved?	False
Slope	0.070ft/ft
Average Velocity	4.27ft/s
Segment Time of Concentration	2.635min

Time of Concentration (Composite)	
Time of Concentration (Composite)	17.134min

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 5.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Return Event: 2 years
Label: Exist Cond Area 6.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.022ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.12ft/s
Segment Time of Concentration	13.956min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	600.00ft
Is Paved?	False
Slope	0.061ft/ft
Average Velocity	3.98ft/s
Segment Time of Concentration	2.509min

Time of Concentration (Composite)	
Time of Concentration (Composite)	16.466min

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 6.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 7.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.028ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.13ft/s
Segment Time of Concentration	12.673min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	658.00ft
Is Paved?	False
Slope	0.072ft/ft
Average Velocity	4.33ft/s
Segment Time of Concentration	2.533min

Time of Concentration (Composite)	
Time of Concentration (Composite)	15.206min

Subsection: Time of Concentration Calculations
Label: Exist Cond Area 7.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Exist Cond Area 2.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	32.310	0.0	0.0	77.000
Row crops - SR + Crop residue, good - Soil D	85.000	44.740	0.0	0.0	85.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	6.220	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil D	98.000	0.960	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	84.230	(N/A)	(N/A)	81.710

Pre Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Exist Cond Area 4.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	5.290	0.0	0.0	77.000
Row crops - SR + Crop residue, good - Soil D	85.000	1.680	0.0	0.0	85.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	6.970	(N/A)	(N/A)	78.928

Pre Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Exist Cond Area 5.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	1.540	0.0	0.0	77.000
Row crops - SR + Crop residue, good - Soil D	85.000	2.420	0.0	0.0	85.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.960	(N/A)	(N/A)	81.889

Pre Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Exist Cond Area 6.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	0.280	0.0	0.0	77.000
Row crops - C&T + Crop residue, good - Soil D	80.000	4.890	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5.170	(N/A)	(N/A)	79.838

Pre Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Exist Cond Area 7.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	4.590	0.0	0.0	77.000
Row crops - C&T + Crop residue, good - Soil D	80.000	2.180	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	6.770	(N/A)	(N/A)	77.966

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 2.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	23.285min
Area (User Defined)	84.230acres

Computational Time Increment	3.105min
Time to Peak (Computed)	726.477min
Flow (Peak, Computed)	120.58ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	726.000min
Flow (Peak Interpolated Output)	119.21ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	84.230acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.4581in
Runoff Volume (Pervious)	445,836.034ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	443,234.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	23.285min
Computational Time Increment	3.105min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Exist Cond Area 2.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	245.92ft³/s
Unit peak time, Tp	15.523min
Unit receding limb, Tr	62.092min
Total unit time, Tb	77.615min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 2.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	23.285min
Area (User Defined)	84.230acres

Computational Time Increment	3.105min
Time to Peak (Computed)	726.477min
Flow (Peak, Computed)	279.10ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	726.000min
Flow (Peak Interpolated Output)	276.75ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	84.230acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3488in
Runoff Volume (Pervious)	1,023,910.386ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,018,923.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	23.285min
Computational Time Increment	3.105min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 2.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	245.92ft³/s
Unit peak time, Tp	15.523min
Unit receding limb, Tr	62.092min
Total unit time, Tb	77.615min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 2.1
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	23.285min
Area (User Defined)	84.230acres

Computational Time Increment	3.105min
Time to Peak (Computed)	726.477min
Flow (Peak, Computed)	421.13ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	726.000min
Flow (Peak Interpolated Output)	418.04ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	84.230acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1039in
Runoff Volume (Pervious)	1,560,555.126ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,553,546.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	23.285min
Computational Time Increment	3.105min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Exist Cond Area 2.1
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	245.92ft³/s
Unit peak time, Tp	15.523min
Unit receding limb, Tr	62.092min
Total unit time, Tb	77.615min

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 4.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	12.760min
Area (User Defined)	6.970acres

Computational Time Increment	1.701min
Time to Peak (Computed)	721.345min
Flow (Peak, Computed)	11.21ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	11.10ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	6.970acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2621in
Runoff Volume (Pervious)	31,932.977ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,827.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.760min
Computational Time Increment	1.701min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Exist Cond Area 4.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	37.14ft³/s
Unit peak time, Tp	8.506min
Unit receding limb, Tr	34.026min
Total unit time, Tb	42.532min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 4.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	12.760min
Area (User Defined)	6.970acres

Computational Time Increment	1.701min
Time to Peak (Computed)	721.345min
Flow (Peak, Computed)	27.38ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	27.00ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	6.970acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0616in
Runoff Volume (Pervious)	77,462.949ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	77,248.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.760min
Computational Time Increment	1.701min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Exist Cond Area 4.1
Storm Event: 15 Year, 24 Hour Storm
Scenario: Pre-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	37.14ft³/s
Unit peak time, Tp	8.506min
Unit receding limb, Tr	34.026min
Total unit time, Tb	42.532min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 4.1
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	12.760min
Area (User Defined)	6.970acres

Computational Time Increment	1.701min
Time to Peak (Computed)	721.345min
Flow (Peak, Computed)	42.11ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	41.74ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	6.970acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.7678in
Runoff Volume (Pervious)	120,631.370ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	120,323.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.760min
Computational Time Increment	1.701min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Exist Cond Area 4.1
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	37.14ft³/s
Unit peak time, Tp	8.506min
Unit receding limb, Tr	34.026min
Total unit time, Tb	42.532min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 5.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	17.134min
Area (User Defined)	3.960acres

Computational Time Increment	2.285min
Time to Peak (Computed)	724.197min
Flow (Peak, Computed)	6.64ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	6.53ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	3.960acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.4581in
Runoff Volume (Pervious)	20,960.590ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,870.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	17.134min
Computational Time Increment	2.285min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Exist Cond Area 5.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.71ft³/s
Unit peak time, Tp	11.423min
Unit receding limb, Tr	45.691min
Total unit time, Tb	57.113min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 5.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	17.134min
Area (User Defined)	3.960acres

Computational Time Increment	2.285min
Time to Peak (Computed)	724.197min
Flow (Peak, Computed)	15.16ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	15.04ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	3.960acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3488in
Runoff Volume (Pervious)	48,138.245ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	47,963.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	17.134min
Computational Time Increment	2.285min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Exist Cond Area 5.1
Storm Event: 15 Year, 24 Hour Storm
Scenario: Pre-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.71ft³/s
Unit peak time, Tp	11.423min
Unit receding limb, Tr	45.691min
Total unit time, Tb	57.113min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 5.1
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	17.134min
Area (User Defined)	3.960acres

Computational Time Increment	2.285min
Time to Peak (Computed)	724.197min
Flow (Peak, Computed)	22.76ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	22.65ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	3.960acres
Maximum Retention (Pervious)	2.1951in
Maximum Retention (Pervious, 20 percent)	0.4390in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1039in
Runoff Volume (Pervious)	73,368.138ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	73,120.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	17.134min
Computational Time Increment	2.285min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Exist Cond Area 5.1
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	15.71ft³/s
Unit peak time, Tp	11.423min
Unit receding limb, Tr	45.691min
Total unit time, Tb	57.113min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 6.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	16.466min
Area (User Defined)	5.170acres

Computational Time Increment	2.195min
Time to Peak (Computed)	724.491min
Flow (Peak, Computed)	7.95ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	7.87ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	5.170acres
Maximum Retention (Pervious)	2.5000in
Maximum Retention (Pervious, 20 percent)	0.5000in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3255in
Runoff Volume (Pervious)	24,876.050ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	24,769.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.466min
Computational Time Increment	2.195min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Exist Cond Area 6.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.35ft³/s
Unit peak time, Tp	10.977min
Unit receding limb, Tr	43.909min
Total unit time, Tb	54.886min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 6.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	16.466min
Area (User Defined)	5.170acres

Computational Time Increment	2.195min
Time to Peak (Computed)	722.295min
Flow (Peak, Computed)	18.95ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	18.94ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	5.170acres
Maximum Retention (Pervious)	2.5000in
Maximum Retention (Pervious, 20 percent)	0.5000in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1562in
Runoff Volume (Pervious)	59,232.930ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	59,019.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.466min
Computational Time Increment	2.195min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Exist Cond Area 6.1
Storm Event: 15 Year, 24 Hour Storm
Scenario: Pre-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.35ft³/s
Unit peak time, Tp	10.977min
Unit receding limb, Tr	43.909min
Total unit time, Tb	54.886min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 6.1
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	16.466min
Area (User Defined)	5.170acres

Computational Time Increment	2.195min
Time to Peak (Computed)	722.295min
Flow (Peak, Computed)	29.05ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	28.97ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	5.170acres
Maximum Retention (Pervious)	2.5000in
Maximum Retention (Pervious, 20 percent)	0.5000in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.8794in
Runoff Volume (Pervious)	91,572.462ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	91,268.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.466min
Computational Time Increment	2.195min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Exist Cond Area 6.1
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	21.35ft³/s
Unit peak time, Tp	10.977min
Unit receding limb, Tr	43.909min
Total unit time, Tb	54.886min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 7.1
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	15.206min
Area (User Defined)	6.770acres

Computational Time Increment	2.027min
Time to Peak (Computed)	723.803min
Flow (Peak, Computed)	9.68ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	9.62ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	6.770acres
Maximum Retention (Pervious)	2.8205in
Maximum Retention (Pervious, 20 percent)	0.5641in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2006in
Runoff Volume (Pervious)	29,504.796ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	29,383.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.206min
Computational Time Increment	2.027min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Exist Cond Area 7.1
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	30.27ft³/s
Unit peak time, Tp	10.137min
Unit receding limb, Tr	40.549min
Total unit time, Tb	50.687min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 7.1
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	15.206min
Area (User Defined)	6.770acres

Computational Time Increment	2.027min
Time to Peak (Computed)	721.776min
Flow (Peak, Computed)	24.17ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	24.12ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	6.770acres
Maximum Retention (Pervious)	2.8205in
Maximum Retention (Pervious, 20 percent)	0.5641in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9682in
Runoff Volume (Pervious)	72,944.243ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	72,695.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.206min
Computational Time Increment	2.027min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Exist Cond Area 7.1
Storm Event: 15 Year, 24 Hour Storm
Scenario: Pre-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	30.27ft³/s
Unit peak time, Tp	10.137min
Unit receding limb, Tr	40.549min
Total unit time, Tb	50.687min

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Exist Cond Area 7.1
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	15.206min
Area (User Defined)	6.770acres

Computational Time Increment	2.027min
Time to Peak (Computed)	721.776min
Flow (Peak, Computed)	37.69ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	37.46ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	6.770acres
Maximum Retention (Pervious)	2.8205in
Maximum Retention (Pervious, 20 percent)	0.5641in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.6567in
Runoff Volume (Pervious)	114,439.098ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	114,080.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.206min
Computational Time Increment	2.027min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Pre Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Exist Cond Area 7.1
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	30.27ft³/s
Unit peak time, Tp	10.137min
Unit receding limb, Tr	40.549min
Total unit time, Tb	50.687min

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 2.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 2.1	443,234.285	726.000	119.21
Flow (In)	Outfall Point 2	443,234.285	726.000	119.21

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 2.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 2.1	1,018,922.810	726.000	276.75
Flow (In)	Outfall Point 2	1,018,922.810	726.000	276.75

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 2.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 2.1	1,553,546.146	726.000	418.04
Flow (In)	Outfall Point 2	1,553,546.146	726.000	418.04

Subsection: Addition Summary
Return Event: 2 years
Label: Outfall Point 4
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 4.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 4.1	31,826.520	723.000	11.10
Flow (In)	Outfall Point 4	31,826.520	723.000	11.10

Subsection: Addition Summary
Label: Outfall Point 4
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 4.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 4.1	77,248.187	720.000	27.00
Flow (In)	Outfall Point 4	77,248.187	720.000	27.00

Subsection: Addition Summary
Label: Outfall Point 4
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 4.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 4.1	120,323.417	720.000	41.74
Flow (In)	Outfall Point 4	120,323.417	720.000	41.74

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 5.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 5.1	20,870.231	723.000	6.53
Flow (In)	Outfall Point 5	20,870.231	723.000	6.53

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 5.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 5.1	47,962.524	723.000	15.04
Flow (In)	Outfall Point 5	47,962.524	723.000	15.04

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 5.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 5.1	73,119.503	723.000	22.65
Flow (In)	Outfall Point 5	73,119.503	723.000	22.65

Subsection: Addition Summary
Return Event: 2 years
Label: Outfall Point 6
Storm Event: 2 Year, 24 Hour Storm
Scenario: Pre-Development 2 Year, 24 Hour

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 6.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 6.1	24,768.588	723.000	7.87
Flow (In)	Outfall Point 6	24,768.588	723.000	7.87

Subsection: Addition Summary
Label: Outfall Point 6
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 6.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 6.1	59,019.257	723.000	18.94
Flow (In)	Outfall Point 6	59,019.257	723.000	18.94

Subsection: Addition Summary
Return Event: 100 years
Label: Outfall Point 6
Storm Event: 100 Year, 24 Hour Storm
Scenario: Pre-Development 100 Year, 24 Hour

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 6.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 6.1	91,267.776	723.000	28.97
Flow (In)	Outfall Point 6	91,267.776	723.000	28.97

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Pre-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 7.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 7.1	29,383.036	723.000	9.62
Flow (In)	Outfall Point 7	29,383.036	723.000	9.62

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Pre-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 7.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 7.1	72,695.295	723.000	24.12
Flow (In)	Outfall Point 7	72,695.295	723.000	24.12

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Pre-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Exist Cond Area 7.1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Exist Cond Area 7.1	114,080.419	723.000	37.46
Flow (In)	Outfall Point 7	114,080.419	723.000	37.46

Pre Developed Conditions Routing For Phase 2

Index

E

Pre Developed Conditions Routing For Phase 2

Appendix

B

Pond V8i Routing of 2, 15 and 100 Year, 24 Hour Storm of the Post Developed Conditions

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Post Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
DAM to Basin H	Post-Development 2 Year, 24 Hour	2	19,096.000	720.000	6.67
DAM to Basin H	Post-Development 15 Year, 24 Hour	15	42,367.000	720.000	14.69
DAM to Basin H	Post-Development 100 Year, 24 Hour	100	63,696.000	720.000	21.76
DAM to Basin K	Post-Development 2 Year, 24 Hour	2	95,208.000	723.000	30.13
DAM to Basin K	Post-Development 15 Year, 24 Hour	15	197,486.000	723.000	61.03
DAM to Basin K	Post-Development 100 Year, 24 Hour	100	289,088.000	723.000	87.65
DAM to Basin L	Post-Development 2 Year, 24 Hour	2	307,960.000	726.000	91.66
DAM to Basin L	Post-Development 15 Year, 24 Hour	15	649,500.000	726.000	188.52
DAM to Basin L	Post-Development 100 Year, 24 Hour	100	957,044.000	723.000	273.03
DAM to Basin P	Post-Development 2 Year, 24 Hour	2	109,381.000	723.000	33.09
DAM to Basin P	Post-Development 15 Year, 24 Hour	15	230,688.000	723.000	68.75
DAM to Basin P	Post-Development 100 Year, 24 Hour	100	339,922.000	723.000	99.66
DAM to Basin M	Post-Development 2 Year, 24 Hour	2	41,954.000	723.000	13.69
DAM to Basin M	Post-Development 15 Year, 24 Hour	15	87,022.000	723.000	27.62
DAM to Basin M	Post-Development 100 Year, 24 Hour	100	127,385.000	723.000	39.61
DAM to Basin N	Post-Development 2 Year, 24 Hour	2	37,625.000	723.000	12.72
DAM to Basin N	Post-Development 15 Year, 24 Hour	15	78,037.000	720.000	25.68
DAM to Basin N	Post-Development 100 Year, 24 Hour	100	114,230.000	720.000	36.94
Direct Runoff To Outfall 7	Post-Development 2 Year, 24 Hour	2	16,901.000	720.000	6.12
Direct Runoff To Outfall 7	Post-Development 15 Year, 24 Hour	15	41,018.000	720.000	14.99
Direct Runoff To Outfall 7	Post-Development 100 Year, 24 Hour	100	63,890.000	720.000	23.07
Direct Runoff to Outfall 6	Post-Development 2 Year, 24 Hour	2	5,511.000	720.000	2.05
Direct Runoff to Outfall 6	Post-Development 15 Year, 24 Hour	15	12,018.000	720.000	4.37

Post Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Direct Runoff to Outfall 6	Post-Development 100 Year, 24 Hour	100	17,945.000	720.000	6.40
Direct Runoff to Outfall Point 5	Post-Development 2 Year, 24 Hour	2	3,884.000	714.000	1.61
Direct Runoff to Outfall Point 5	Post-Development 15 Year, 24 Hour	15	8,615.000	714.000	3.58
Direct Runoff to Outfall Point 5	Post-Development 100 Year, 24 Hour	100	12,951.000	714.000	5.31
Direct Runoff to Outfall 4	Post-Development 2 Year, 24 Hour	2	12,116.000	720.000	4.63
Direct Runoff to Outfall 4	Post-Development 15 Year, 24 Hour	15	27,350.000	717.000	10.23
Direct Runoff to Outfall 4	Post-Development 100 Year, 24 Hour	100	41,400.000	717.000	15.31
Direct Runoff to Outfall 2	Post-Development 2 Year, 24 Hour	2	39,668.000	735.000	8.23
Direct Runoff to Outfall 2	Post-Development 15 Year, 24 Hour	15	92,885.000	735.000	19.59
Direct Runoff to Outfall 2	Post-Development 100 Year, 24 Hour	100	142,654.000	735.000	29.86

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Outfall Point 2	Post-Development 2 Year, 24 Hour	2	538,624.000	756.000	33.43
Outfall Point 2	Post-Development 15 Year, 24 Hour	15	1,192,140.000	738.000	221.09
Outfall Point 2	Post-Development 100 Year, 24 Hour	100	1,800,787.000	735.000	381.27
Outfall Point 4	Post-Development 2 Year, 24 Hour	2	12,116.000	720.000	4.63
Outfall Point 4	Post-Development 15 Year, 24 Hour	15	27,350.000	717.000	10.23
Outfall Point 4	Post-Development 100 Year, 24 Hour	100	41,400.000	717.000	15.31
Outfall Point 5	Post-Development 2 Year, 24 Hour	2	3,884.000	714.000	1.61
Outfall Point 5	Post-Development 15 Year, 24 Hour	15	8,615.000	714.000	3.58
Outfall Point 5	Post-Development 100 Year, 24 Hour	100	12,951.000	714.000	5.31
Outfall Point 6	Post-Development 2 Year, 24 Hour	2	5,511.000	720.000	2.05

Post Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Outfall Point 6	Post-Development 15 Year, 24 Hour	15	12,018.000	720.000	4.37
Outfall Point 6	Post-Development 100 Year, 24 Hour	100	17,945.000	720.000	6.40
Outfall Point 7	Post-Development 2 Year, 24 Hour	2	35,966.000	720.000	6.60
Outfall Point 7	Post-Development 15 Year, 24 Hour	15	80,824.000	720.000	15.63
Outfall Point 7	Post-Development 100 Year, 24 Hour	100	122,640.000	720.000	25.04
MH X51	Post-Development 2 Year, 24 Hour	2	244,076.000	756.000	16.12
MH X51	Post-Development 15 Year, 24 Hour	15	565,781.000	735.000	124.93
MH X51	Post-Development 100 Year, 24 Hour	100	862,464.000	735.000	178.69
FE K1	Post-Development 2 Year, 24 Hour	2	86,496.000	750.000	5.86
FE K1	Post-Development 15 Year, 24 Hour	15	184,977.000	732.000	37.18
FE K1	Post-Development 100 Year, 24 Hour	100	273,770.000	729.000	68.80
MH P2	Post-Development 2 Year, 24 Hour	2	100,650.000	765.000	4.28
MH P2	Post-Development 15 Year, 24 Hour	15	208,799.000	738.000	31.09
MH P2	Post-Development 100 Year, 24 Hour	100	311,911.000	732.000	76.19
FE M1	Post-Development 2 Year, 24 Hour	2	31,997.000	825.000	0.75
FE M1	Post-Development 15 Year, 24 Hour	15	67,702.000	759.000	3.18
FE M1	Post-Development 100 Year, 24 Hour	100	104,786.000	744.000	9.57
FE N1	Post-Development 2 Year, 24 Hour	2	36,755.000	747.000	2.34
FE N1	Post-Development 15 Year, 24 Hour	15	73,461.000	735.000	8.53
FE N1	Post-Development 100 Year, 24 Hour	100	107,014.000	729.000	27.72

Pond Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin H (IN)	Post-Development 2 Year, 24 Hour	2	19,096.000	720.000	6.67	(N/A)	(N/A)
Basin H (OUT)	Post-Development 2 Year, 24 Hour	2	19,065.000	771.000	0.60	615.23	8,576.000
Basin H (IN)	Post-Development 15 Year, 24 Hour	15	42,367.000	720.000	14.69	(N/A)	(N/A)
Basin H (OUT)	Post-Development 15 Year, 24 Hour	15	39,806.000	744.000	2.57	616.65	18,909.000
Basin H (IN)	Post-Development 100 Year, 24 Hour	100	63,696.000	720.000	21.76	(N/A)	(N/A)
Basin H (OUT)	Post-Development 100 Year, 24 Hour	100	58,751.000	744.000	4.00	617.76	28,497.000
Basin K (IN)	Post-Development 2 Year, 24 Hour	2	95,208.000	723.000	30.13	(N/A)	(N/A)
Basin K (OUT)	Post-Development 2 Year, 24 Hour	2	86,496.000	750.000	5.86	587.54	44,733.000
Basin K (IN)	Post-Development 15 Year, 24 Hour	15	197,486.000	723.000	61.03	(N/A)	(N/A)
Basin K (OUT)	Post-Development 15 Year, 24 Hour	15	184,977.000	732.000	37.18	588.67	72,887.000
Basin K (IN)	Post-Development 100 Year, 24 Hour	100	289,088.000	723.000	87.65	(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin K (OUT)	Post-Development 100 Year, 24 Hour	100	273,770.000	729.000	68.80	589.15	85,447.000
Basin L (IN)	Post-Development 2 Year, 24 Hour	2	307,960.000	726.000	91.66	(N/A)	(N/A)
Basin L (OUT)	Post-Development 2 Year, 24 Hour	2	244,076.000	756.000	16.12	584.15	157,410.000
Basin L (IN)	Post-Development 15 Year, 24 Hour	15	649,500.000	726.000	188.52	(N/A)	(N/A)
Basin L (OUT)	Post-Development 15 Year, 24 Hour	15	565,781.000	735.000	124.93	585.52	235,087.000
Basin L (IN)	Post-Development 100 Year, 24 Hour	100	957,044.000	723.000	273.03	(N/A)	(N/A)
Basin L (OUT)	Post-Development 100 Year, 24 Hour	100	862,464.000	735.000	178.69	586.55	296,546.000
Basin M (IN)	Post-Development 2 Year, 24 Hour	2	41,954.000	723.000	13.69	(N/A)	(N/A)
Basin M (OUT)	Post-Development 2 Year, 24 Hour	2	31,997.000	825.000	0.75	575.60	22,680.000
Basin M (IN)	Post-Development 15 Year, 24 Hour	15	87,022.000	723.000	27.62	(N/A)	(N/A)
Basin M (OUT)	Post-Development 15 Year, 24 Hour	15	67,702.000	759.000	3.18	577.16	44,777.000

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin M (IN)	Post-Development 100 Year, 24 Hour	100	127,385.000	723.000	39.61	(N/A)	(N/A)
Basin M (OUT)	Post-Development 100 Year, 24 Hour	100	104,786.000	744.000	9.57	578.26	62,466.000
Basin N (IN)	Post-Development 2 Year, 24 Hour	2	37,625.000	723.000	12.72	(N/A)	(N/A)
Basin N (OUT)	Post-Development 2 Year, 24 Hour	2	36,755.000	747.000	2.34	574.00	16,347.000
Basin N (IN)	Post-Development 15 Year, 24 Hour	15	78,037.000	720.000	25.68	(N/A)	(N/A)
Basin N (OUT)	Post-Development 15 Year, 24 Hour	15	73,461.000	735.000	8.53	576.08	31,926.000
Basin N (IN)	Post-Development 100 Year, 24 Hour	100	114,230.000	720.000	36.94	(N/A)	(N/A)
Basin N (OUT)	Post-Development 100 Year, 24 Hour	100	107,014.000	729.000	27.72	576.67	37,272.000
Basin P (IN)	Post-Development 2 Year, 24 Hour	2	109,381.000	723.000	33.09	(N/A)	(N/A)
Basin P (OUT)	Post-Development 2 Year, 24 Hour	2	100,650.000	765.000	4.28	598.41	50,881.000
Basin P (IN)	Post-Development 15 Year, 24 Hour	15	230,688.000	723.000	68.75	(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin P (OUT)	Post-Development 15 Year, 24 Hour	15	208,799.000	738.000	31.09	600.47	92,723.000
Basin P (IN)	Post-Development 100 Year, 24 Hour	100	339,922.000	723.000	99.66	(N/A)	(N/A)
Basin P (OUT)	Post-Development 100 Year, 24 Hour	100	311,911.000	732.000	76.19	601.14	108,161.000

Subsection: Time of Concentration Calculations
Label: DAM to Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.035ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.14ft/s
Segment Time of Concentration	11.591min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	125.00ft
Is Paved?	False
Slope	0.093ft/ft
Average Velocity	4.92ft/s
Segment Time of Concentration	0.423min

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	100.00ft
Is Paved?	False
Slope	0.038ft/ft
Average Velocity	3.12ft/s
Segment Time of Concentration	0.533min

Segment #4: User Defined Tc	
Time of Concentration	0.340min

Time of Concentration (Composite)	
Time of Concentration (Composite)	12.888min

Subsection: Time of Concentration Calculations
Label: DAM to Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.030ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.14ft/s
Segment Time of Concentration	12.328min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	69.00ft
Is Paved?	False
Slope	0.057ft/ft
Average Velocity	3.85ft/s
Segment Time of Concentration	0.299min

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	25.00ft
Is Paved?	True
Slope	0.015ft/ft
Average Velocity	2.49ft/s
Segment Time of Concentration	0.167min

Segment #4: User Defined Tc	
Time of Concentration	4.110min

Time of Concentration (Composite)	
Time of Concentration (Composite)	16.904min

Subsection: Time of Concentration Calculations
Label: DAM to Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Return Event: 2 years
Label: DAM to Basin L
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	206.00ft
Is Paved?	False
Slope	0.034ft/ft
Average Velocity	2.98ft/s
Segment Time of Concentration	1.154min

Segment #3: User Defined Tc	
Time of Concentration	3.720min

Time of Concentration (Composite)	
Time of Concentration (Composite)	19.373min

Subsection: Time of Concentration Calculations
Label: DAM to Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	93.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	13.681min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	197.00ft
Is Paved?	False
Slope	0.021ft/ft
Average Velocity	2.34ft/s
Segment Time of Concentration	1.404min

Segment #3: User Defined Tc	
Time of Concentration	0.660min

Time of Concentration (Composite)	
Time of Concentration (Composite)	15.745min

Subsection: Time of Concentration Calculations
Label: DAM to Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.040ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.15ft/s
Segment Time of Concentration	10.988min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	280.00ft
Is Paved?	False
Slope	0.034ft/ft
Average Velocity	2.98ft/s
Segment Time of Concentration	1.569min

Segment #3: User Defined Tc	
Time of Concentration	1.360min

Time of Concentration (Composite)	
Time of Concentration (Composite)	13.916min

Subsection: Time of Concentration Calculations
Label: DAM to Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Return Event: 2 years
Label: DAM to Basin P
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	260.00ft
Is Paved?	False
Slope	0.023ft/ft
Average Velocity	2.45ft/s
Segment Time of Concentration	1.771min

Segment #3: User Defined Tc	
Time of Concentration	2.300min

Time of Concentration (Composite)	
Time of Concentration (Composite)	18.570min

Subsection: Time of Concentration Calculations
Label: DAM to Basin P
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.025ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.13ft/s
Segment Time of Concentration	13.261min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	54.00ft
Is Paved?	False
Slope	0.160ft/ft
Average Velocity	6.45ft/s
Segment Time of Concentration	0.139min

Segment #3: TR-55 Channel Flow	
Flow Area	24.640ft²
Hydraulic Length	450.00ft
Manning's n	0.035
Slope	0.023ft/ft
Wetted Perimeter	20.28ft
Average Velocity	7.35ft/s
Segment Time of Concentration	1.020min

Segment #4: User Defined Tc	
Time of Concentration	0.600min

Segment #5: TR-55 Channel Flow	
Flow Area	27.480ft²
Hydraulic Length	950.00ft
Manning's n	0.240
Slope	0.020ft/ft
Wetted Perimeter	34.55ft
Average Velocity	0.75ft/s
Segment Time of Concentration	21.007min

Time of Concentration (Composite)

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration (Composite)	
Time of Concentration (Composite)	36.028min

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where: Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.073ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.19ft/s
Segment Time of Concentration	8.638min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	210.00ft
Is Paved?	False
Slope	0.148ft/ft
Average Velocity	6.21ft/s
Segment Time of Concentration	0.564min

Time of Concentration (Composite)	
Time of Concentration (Composite)	9.202min

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.051ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.17ft/s
Segment Time of Concentration	9.970min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	180.00ft
Is Paved?	False
Slope	0.095ft/ft
Average Velocity	4.97ft/s
Segment Time of Concentration	0.603min

Time of Concentration (Composite)	
Time of Concentration (Composite)	10.574min

Subsection: Time of Concentration Calculations
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.058ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.18ft/s
Segment Time of Concentration	9.470min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	230.00ft
Is Paved?	False
Slope	0.090ft/ft
Average Velocity	4.84ft/s
Segment Time of Concentration	0.792min

Segment #3: User Defined Tc	
Time of Concentration	0.930min

Time of Concentration (Composite)	
Time of Concentration (Composite)	11.192min

Subsection: Time of Concentration Calculations
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600
Where: R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.710	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	2.590	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.300	(N/A)	(N/A)	83.873

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	6.360	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	7.440	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	13.800	(N/A)	(N/A)	88.296

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	18.030	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	28.590	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	46.620	(N/A)	(N/A)	86.961

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	2.700	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	3.380	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	6.080	(N/A)	(N/A)	87.993

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	2.350	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	3.100	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5.450	(N/A)	(N/A)	87.761

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin P
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	6.720	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	9.840	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	16.560	(N/A)	(N/A)	87.304

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	2.000	0.0	0.0	77.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	5.000	0.0	0.0	80.000
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.930	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	7.930	(N/A)	(N/A)	81.354

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	0.860	0.0	0.0	77.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	0.870	0.0	0.0	80.000
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.460	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	2.190	(N/A)	(N/A)	82.603

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	0.100	0.0	0.0	77.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	0.560	0.0	0.0	80.000
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.250	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.910	(N/A)	(N/A)	84.615

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	1.590	0.0	0.0	77.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	2.110	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.700	(N/A)	(N/A)	78.711

Post Developed Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: Direct Runoff to Outfall Point 5
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil D	77.000	0.340	0.0	0.0	77.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	0.130	0.0	0.0	80.000
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.200	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.670	(N/A)	(N/A)	83.851

Subsection: Unit Hydrograph Summary
Label: DAM to Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	12.888min
Area (User Defined)	3.300acres

Computational Time Increment	1.718min
Time to Peak (Computed)	721.703min
Flow (Peak, Computed)	6.78ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	6.67ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	3.300acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.5990in
Runoff Volume (Pervious)	19,154.077ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	19,096.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.888min
Computational Time Increment	1.718min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	17.41ft³/s
Unit peak time, Tp	8.592min
Unit receding limb, Tr	34.367min
Total unit time, Tb	42.959min

Subsection: Unit Hydrograph Summary
Label: DAM to Basin H
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	12.888min
Area (User Defined)	3.300acres

Computational Time Increment	1.718min
Time to Peak (Computed)	721.703min
Flow (Peak, Computed)	14.76ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	14.69ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	3.300acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.5460in
Runoff Volume (Pervious)	42,477.771ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	42,367.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.888min
Computational Time Increment	1.718min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin H
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	17.41ft³/s
Unit peak time, Tp	8.592min
Unit receding limb, Tr	34.367min
Total unit time, Tb	42.959min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	12.888min
Area (User Defined)	3.300acres

Computational Time Increment	1.718min
Time to Peak (Computed)	721.703min
Flow (Peak, Computed)	21.76ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	21.76ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	3.300acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3302in
Runoff Volume (Pervious)	63,850.952ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	63,696.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.888min
Computational Time Increment	1.718min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin H
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	17.41ft³/s
Unit peak time, Tp	8.592min
Unit receding limb, Tr	34.367min
Total unit time, Tb	42.959min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	16.904min
Area (User Defined)	13.800acres

Computational Time Increment	2.254min
Time to Peak (Computed)	723.482min
Flow (Peak, Computed)	30.33ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	30.13ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	13.800acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.9074in
Runoff Volume (Pervious)	95,547.472ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	95,208.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.904min
Computational Time Increment	2.254min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: DAM to Basin K
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	55.50ft³/s
Unit peak time, Tp	11.269min
Unit receding limb, Tr	45.077min
Total unit time, Tb	56.346min

Subsection: Unit Hydrograph Summary
Label: DAM to Basin K
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	16.904min
Area (User Defined)	13.800acres

Computational Time Increment	2.254min
Time to Peak (Computed)	723.482min
Flow (Peak, Computed)	61.30ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	61.03ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	13.800acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9546in
Runoff Volume (Pervious)	198,104.128ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	197,486.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.904min
Computational Time Increment	2.254min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin K
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	55.50ft³/s
Unit peak time, Tp	11.269min
Unit receding limb, Tr	45.077min
Total unit time, Tb	56.346min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	16.904min
Area (User Defined)	13.800acres

Computational Time Increment	2.254min
Time to Peak (Computed)	723.482min
Flow (Peak, Computed)	87.96ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	87.65ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	13.800acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	289,943.470ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	289,088.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.904min
Computational Time Increment	2.254min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	55.50ft³/s
Unit peak time, Tp	11.269min
Unit receding limb, Tr	45.077min
Total unit time, Tb	56.346min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	19.373min
Area (User Defined)	46.620acres

Computational Time Increment	2.583min
Time to Peak (Computed)	725.827min
Flow (Peak, Computed)	92.07ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	726.000min
Flow (Peak Interpolated Output)	91.66ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	46.620acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8267in
Runoff Volume (Pervious)	309,139.058ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	307,960.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	19.373min
Computational Time Increment	2.583min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	163.60ft³/s
Unit peak time, Tp	12.915min
Unit receding limb, Tr	51.660min
Total unit time, Tb	64.575min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin L
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	19.373min
Area (User Defined)	46.620acres

Computational Time Increment	2.583min
Time to Peak (Computed)	725.827min
Flow (Peak, Computed)	189.45ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	726.000min
Flow (Peak Interpolated Output)	188.52ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	46.620acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.8507in
Runoff Volume (Pervious)	651,655.657ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	649,500.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	19.373min
Computational Time Increment	2.583min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin L
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	163.60ft³/s
Unit peak time, Tp	12.915min
Unit receding limb, Tr	51.660min
Total unit time, Tb	64.575min

Subsection: Unit Hydrograph Summary
Label: DAM to Basin L
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	19.373min
Area (User Defined)	46.620acres

Computational Time Increment	2.583min
Time to Peak (Computed)	723.244min
Flow (Peak, Computed)	274.70ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	273.03ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	46.620acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6729in
Runoff Volume (Pervious)	960,031.729ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	957,044.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	19.373min
Computational Time Increment	2.583min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin L
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	163.60ft³/s
Unit peak time, Tp	12.915min
Unit receding limb, Tr	51.660min
Total unit time, Tb	64.575min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	15.745min
Area (User Defined)	6.080acres

Computational Time Increment	2.099min
Time to Peak (Computed)	722.174min
Flow (Peak, Computed)	13.75ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	13.69ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	6.080acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.9074in
Runoff Volume (Pervious)	42,096.276ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	41,954.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.745min
Computational Time Increment	2.099min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: DAM to Basin M
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.25ft³/s
Unit peak time, Tp	10.497min
Unit receding limb, Tr	41.987min
Total unit time, Tb	52.484min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin M
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	15.745min
Area (User Defined)	6.080acres

Computational Time Increment	2.099min
Time to Peak (Computed)	722.174min
Flow (Peak, Computed)	27.84ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	27.62ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	6.080acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9546in
Runoff Volume (Pervious)	87,280.660ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	87,022.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.745min
Computational Time Increment	2.099min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin M
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.25ft³/s
Unit peak time, Tp	10.497min
Unit receding limb, Tr	41.987min
Total unit time, Tb	52.484min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	15.745min
Area (User Defined)	6.080acres

Computational Time Increment	2.099min
Time to Peak (Computed)	722.174min
Flow (Peak, Computed)	39.97ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	39.61ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	6.080acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	127,743.228ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	127,385.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.745min
Computational Time Increment	2.099min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Subsection: Unit Hydrograph Summary
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.25ft³/s
Unit peak time, Tp	10.497min
Unit receding limb, Tr	41.987min
Total unit time, Tb	52.484min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	13.916min
Area (User Defined)	5.450acres

Computational Time Increment	1.856min
Time to Peak (Computed)	721.801min
Flow (Peak, Computed)	12.93ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	12.72ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	5.450acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.9074in
Runoff Volume (Pervious)	37,734.328ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	37,625.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	13.916min
Computational Time Increment	1.856min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: DAM to Basin N
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.62ft³/s
Unit peak time, Tp	9.278min
Unit receding limb, Tr	37.111min
Total unit time, Tb	46.388min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin N
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	13.916min
Area (User Defined)	5.450acres

Computational Time Increment	1.856min
Time to Peak (Computed)	721.801min
Flow (Peak, Computed)	26.06ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	25.68ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	5.450acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9546in
Runoff Volume (Pervious)	78,236.775ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	78,037.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	13.916min
Computational Time Increment	1.856min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin N
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.62ft³/s
Unit peak time, Tp	9.278min
Unit receding limb, Tr	37.111min
Total unit time, Tb	46.388min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin N
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	13.916min
Area (User Defined)	5.450acres

Computational Time Increment	1.856min
Time to Peak (Computed)	721.801min
Flow (Peak, Computed)	37.36ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	36.94ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	5.450acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	114,506.677ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	114,230.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	13.916min
Computational Time Increment	1.856min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin N
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.62ft³/s
Unit peak time, Tp	9.278min
Unit receding limb, Tr	37.111min
Total unit time, Tb	46.388min

Subsection: Unit Hydrograph Summary
Label: DAM to Basin P
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	18.570min
Area (User Defined)	16.560acres

Computational Time Increment	2.476min
Time to Peak (Computed)	725.449min
Flow (Peak, Computed)	33.37ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	33.09ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	16.560acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8267in
Runoff Volume (Pervious)	109,810.066ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	109,381.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	18.570min
Computational Time Increment	2.476min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: DAM to Basin P
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.63ft³/s
Unit peak time, Tp	12.380min
Unit receding limb, Tr	49.519min
Total unit time, Tb	61.898min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin P
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	18.570min
Area (User Defined)	16.560acres

Computational Time Increment	2.476min
Time to Peak (Computed)	722.973min
Flow (Peak, Computed)	68.75ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	68.75ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	16.560acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.8507in
Runoff Volume (Pervious)	231,476.134ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	230,688.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	18.570min
Computational Time Increment	2.476min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: DAM to Basin P
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.63ft³/s
Unit peak time, Tp	12.380min
Unit receding limb, Tr	49.519min
Total unit time, Tb	61.898min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin P
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	18.570min
Area (User Defined)	16.560acres

Computational Time Increment	2.476min
Time to Peak (Computed)	722.973min
Flow (Peak, Computed)	99.67ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	99.66ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	16.560acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6729in
Runoff Volume (Pervious)	341,015.133ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	339,922.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	18.570min
Computational Time Increment	2.476min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin P
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.63ft³/s
Unit peak time, Tp	12.380min
Unit receding limb, Tr	49.519min
Total unit time, Tb	61.898min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	36.028min
Area (User Defined)	7.930acres

Computational Time Increment	4.804min
Time to Peak (Computed)	734.961min
Flow (Peak, Computed)	8.24ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	735.000min
Flow (Peak Interpolated Output)	8.23ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	7.930acres
Maximum Retention (Pervious)	2.3457in
Maximum Retention (Pervious, 20 percent)	0.4691in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3908in
Runoff Volume (Pervious)	40,036.530ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	39,668.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	36.028min
Computational Time Increment	4.804min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Direct Runoff to Outfall 2
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.96ft³/s
Unit peak time, Tp	24.018min
Unit receding limb, Tr	96.073min
Total unit time, Tb	120.092min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	36.028min
Area (User Defined)	7.930acres

Computational Time Increment	4.804min
Time to Peak (Computed)	734.961min
Flow (Peak, Computed)	19.60ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	735.000min
Flow (Peak Interpolated Output)	19.59ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	7.930acres
Maximum Retention (Pervious)	2.3457in
Maximum Retention (Pervious, 20 percent)	0.4691in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2519in
Runoff Volume (Pervious)	93,609.623ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	92,885.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	36.028min
Computational Time Increment	4.804min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Direct Runoff to Outfall 2
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.96ft³/s
Unit peak time, Tp	24.018min
Unit receding limb, Tr	96.073min
Total unit time, Tb	120.092min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 2
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	36.028min
Area (User Defined)	7.930acres

Computational Time Increment	4.804min
Time to Peak (Computed)	734.961min
Flow (Peak, Computed)	29.88ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	735.000min
Flow (Peak Interpolated Output)	29.86ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	7.930acres
Maximum Retention (Pervious)	2.3457in
Maximum Retention (Pervious, 20 percent)	0.4691in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.9915in
Runoff Volume (Pervious)	143,683.482ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	142,654.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	36.028min
Computational Time Increment	4.804min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Direct Runoff to Outfall 2
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	14.96ft³/s
Unit peak time, Tp	24.018min
Unit receding limb, Tr	96.073min
Total unit time, Tb	120.092min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	9.202min
Area (User Defined)	2.190acres

Computational Time Increment	1.227min
Time to Peak (Computed)	718.965min
Flow (Peak, Computed)	4.67ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	4.63ft³/s

Drainage Area	
SCS CN (Composite)	83.000
Area (User Defined)	2.190acres
Maximum Retention (Pervious)	2.0482in
Maximum Retention (Pervious, 20 percent)	0.4096in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.5275in
Runoff Volume (Pervious)	12,143.202ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,116.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	9.202min
Computational Time Increment	1.227min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Direct Runoff to Outfall 4
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	16.18ft³/s
Unit peak time, Tp	6.135min
Unit receding limb, Tr	24.538min
Total unit time, Tb	30.673min

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	9.202min
Area (User Defined)	2.190acres

Computational Time Increment	1.227min
Time to Peak (Computed)	717.739min
Flow (Peak, Computed)	10.40ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	717.000min
Flow (Peak Interpolated Output)	10.23ft³/s

Drainage Area	
SCS CN (Composite)	83.000
Area (User Defined)	2.190acres
Maximum Retention (Pervious)	2.0482in
Maximum Retention (Pervious, 20 percent)	0.4096in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.4468in
Runoff Volume (Pervious)	27,401.212ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	27,350.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	9.202min
Computational Time Increment	1.227min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Direct Runoff to Outfall 4
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	16.18ft³/s
Unit peak time, Tp	6.135min
Unit receding limb, Tr	24.538min
Total unit time, Tb	30.673min

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 4
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	9.202min
Area (User Defined)	2.190acres

Computational Time Increment	1.227min
Time to Peak (Computed)	717.739min
Flow (Peak, Computed)	15.52ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	717.000min
Flow (Peak Interpolated Output)	15.31ft³/s

Drainage Area	
SCS CN (Composite)	83.000
Area (User Defined)	2.190acres
Maximum Retention (Pervious)	2.0482in
Maximum Retention (Pervious, 20 percent)	0.4096in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.2169in
Runoff Volume (Pervious)	41,472.565ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	41,400.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	9.202min
Computational Time Increment	1.227min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Direct Runoff to Outfall 4
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	16.18ft³/s
Unit peak time, Tp	6.135min
Unit receding limb, Tr	24.538min
Total unit time, Tb	30.673min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	10.574min
Area (User Defined)	0.910acres

Computational Time Increment	1.410min
Time to Peak (Computed)	720.414min
Flow (Peak, Computed)	2.05ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	2.05ft³/s

Drainage Area	
SCS CN (Composite)	85.000
Area (User Defined)	0.910acres
Maximum Retention (Pervious)	1.7647in
Maximum Retention (Pervious, 20 percent)	0.3529in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6726in
Runoff Volume (Pervious)	5,525.152ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,511.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	10.574min
Computational Time Increment	1.410min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Direct Runoff to Outfall 6
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.85ft³/s
Unit peak time, Tp	7.049min
Unit receding limb, Tr	28.196min
Total unit time, Tb	35.245min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	10.574min
Area (User Defined)	0.910acres

Computational Time Increment	1.410min
Time to Peak (Computed)	719.004min
Flow (Peak, Computed)	4.39ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	4.37ft³/s

Drainage Area	
SCS CN (Composite)	85.000
Area (User Defined)	0.910acres
Maximum Retention (Pervious)	1.7647in
Maximum Retention (Pervious, 20 percent)	0.3529in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6464in
Runoff Volume (Pervious)	12,045.125ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,018.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	10.574min
Computational Time Increment	1.410min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Direct Runoff to Outfall 6
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.85ft³/s
Unit peak time, Tp	7.049min
Unit receding limb, Tr	28.196min
Total unit time, Tb	35.245min

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall 6
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	10.574min
Area (User Defined)	0.910acres

Computational Time Increment	1.410min
Time to Peak (Computed)	719.004min
Flow (Peak, Computed)	6.44ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	6.40ft³/s

Drainage Area	
SCS CN (Composite)	85.000
Area (User Defined)	0.910acres
Maximum Retention (Pervious)	1.7647in
Maximum Retention (Pervious, 20 percent)	0.3529in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4440in
Runoff Volume (Pervious)	17,983.304ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	17,945.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	10.574min
Computational Time Increment	1.410min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Direct Runoff to Outfall 6
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.85ft³/s
Unit peak time, Tp	7.049min
Unit receding limb, Tr	28.196min
Total unit time, Tb	35.245min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	11.192min
Area (User Defined)	3.700acres

Computational Time Increment	1.492min
Time to Peak (Computed)	720.785min
Flow (Peak, Computed)	6.19ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	6.12ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	3.700acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2621in
Runoff Volume (Pervious)	16,951.510ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	16,901.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	11.192min
Computational Time Increment	1.492min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 2 years
Label: Direct Runoff To Outfall 7
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.47ft³/s
Unit peak time, Tp	7.462min
Unit receding limb, Tr	29.846min
Total unit time, Tb	37.308min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	11.192min
Area (User Defined)	3.700acres

Computational Time Increment	1.492min
Time to Peak (Computed)	720.785min
Flow (Peak, Computed)	15.01ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	14.99ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	3.700acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0616in
Runoff Volume (Pervious)	41,120.934ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	41,018.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	11.192min
Computational Time Increment	1.492min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Direct Runoff To Outfall 7
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.47ft³/s
Unit peak time, Tp	7.462min
Unit receding limb, Tr	29.846min
Total unit time, Tb	37.308min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff To Outfall 7
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	11.192min
Area (User Defined)	3.700acres

Computational Time Increment	1.492min
Time to Peak (Computed)	719.292min
Flow (Peak, Computed)	23.10ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	23.07ft³/s

Drainage Area	
SCS CN (Composite)	79.000
Area (User Defined)	3.700acres
Maximum Retention (Pervious)	2.6582in
Maximum Retention (Pervious, 20 percent)	0.5316in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.7678in
Runoff Volume (Pervious)	64,036.739ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	63,890.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	11.192min
Computational Time Increment	1.492min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Direct Runoff To Outfall 7
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	22.47ft³/s
Unit peak time, Tp	7.462min
Unit receding limb, Tr	29.846min
Total unit time, Tb	37.308min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall Point 5
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Storm Event	2 Year, 24 Hour Storm
Return Event	2years
Duration	1,440.000min
Depth	3.1000in
Time of Concentration (Composite)	5.000min
Area (User Defined)	0.670acres

Computational Time Increment	0.667min
Time to Peak (Computed)	715.333min
Flow (Peak, Computed)	1.69ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	714.000min
Flow (Peak Interpolated Output)	1.61ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.670acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.5990in
Runoff Volume (Pervious)	3,888.856ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,884.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	5.000min
Computational Time Increment	0.667min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall Point 5
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	9.11ft³/s
Unit peak time, Tp	3.333min
Unit receding limb, Tr	13.333min
Total unit time, Tb	16.667min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall Point 5
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Storm Event	15 Year, 24 Hour Storm
Return Event	15years
Duration	1,440.000min
Depth	5.3001in
Time of Concentration (Composite)	5.000min
Area (User Defined)	0.670acres

Computational Time Increment	0.667min
Time to Peak (Computed)	715.333min
Flow (Peak, Computed)	3.70ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	714.000min
Flow (Peak Interpolated Output)	3.58ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.670acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.5460in
Runoff Volume (Pervious)	8,624.274ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,615.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	5.000min
Computational Time Increment	0.667min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 15 years
Label: Direct Runoff to Outfall Point 5
Storm Event: 15 Year, 24 Hour Storm
Scenario: Post-Development 15 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	9.11ft³/s
Unit peak time, Tp	3.333min
Unit receding limb, Tr	13.333min
Total unit time, Tb	16.667min

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: Direct Runoff to Outfall Point 5
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	5.000min
Area (User Defined)	0.670acres

Computational Time Increment	0.667min
Time to Peak (Computed)	715.333min
Flow (Peak, Computed)	5.45ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	714.000min
Flow (Peak Interpolated Output)	5.31ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.670acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3302in
Runoff Volume (Pervious)	12,963.680ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,951.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	5.000min
Computational Time Increment	0.667min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: Direct Runoff to Outfall Point 5
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	9.11ft³/s
Unit peak time, Tp	3.333min
Unit receding limb, Tr	13.333min
Total unit time, Tb	16.667min

Post Developed Conditions Routing For Phase 2

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
Travel Time From Basin L to Outfall 2	MH X51
<Catchment to Outflow Node>	Direct Runoff to Outfall 2
Travel Time From Basin M	FE M1
Travel Time From Basin N to Outfall 2	FE N1
Travel Time to Basin P	MH P2
Travel Time From Basin K to Outfall 2	FE K1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Travel Time From Basin L to Outfall 2	244,075.591	759.000	16.12
Flow (From)	Direct Runoff to Outfall 2	39,667.537	735.000	8.23
Flow (From)	Travel Time From Basin M	31,996.624	828.000	0.75
Flow (From)	Travel Time From Basin N to Outfall 2	36,754.745	750.000	2.34
Flow (From)	Travel Time to Basin P	100,649.918	768.000	4.28
Flow (From)	Travel Time From Basin K to Outfall 2	86,496.275	756.000	5.86
Flow (In)	Outfall Point 2	538,624.281	756.000	33.43

Post Developed Conditions Routing For Phase 2

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
Travel Time From Basin L to Outfall 2	MH X51
<Catchment to Outflow Node>	Direct Runoff to Outfall 2
Travel Time From Basin M	FE M1
Travel Time From Basin N to Outfall 2	FE N1
Travel Time to Basin P	MH P2
Travel Time From Basin K to Outfall 2	FE K1

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (min)	Flow (Peak) (ft^3/s)
Flow (From)	Travel Time From Basin L to Outfall 2	565,780.648	738.000	124.93
Flow (From)	Direct Runoff to Outfall 2	92,884.618	735.000	19.59
Flow (From)	Travel Time From Basin M	67,702.222	762.000	3.18
Flow (From)	Travel Time From Basin N to Outfall 2	73,460.865	738.000	8.53
Flow (From)	Travel Time to Basin P	208,799.049	741.000	31.09
Flow (From)	Travel Time From Basin K to Outfall 2	184,977.457	738.000	37.18
Flow (In)	Outfall Point 2	1,192,139.606	738.000	221.09

Subsection: Addition Summary
Label: Outfall Point 2
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 2'

Upstream Link	Upstream Node
Travel Time From Basin L to Outfall 2	MH X51
<Catchment to Outflow Node>	Direct Runoff to Outfall 2
Travel Time From Basin M	FE M1
Travel Time From Basin N to Outfall 2	FE N1
Travel Time to Basin P	MH P2
Travel Time From Basin K to Outfall 2	FE K1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Travel Time From Basin L to Outfall 2	862,463.938	738.000	178.69
Flow (From)	Direct Runoff to Outfall 2	142,654.082	735.000	29.86
Flow (From)	Travel Time From Basin M	104,786.383	747.000	9.57
Flow (From)	Travel Time From Basin N to Outfall 2	107,014.209	732.000	27.72
Flow (From)	Travel Time to Basin P	311,910.850	735.000	76.19
Flow (From)	Travel Time From Basin K to Outfall 2	273,769.959	735.000	68.80
Flow (In)	Outfall Point 2	1,800,786.540	735.000	381.27

Subsection: Addition Summary
Label: Outfall Point 4
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 4

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 4	12,116.190	720.000	4.63
Flow (In)	Outfall Point 4	12,116.190	720.000	4.63

Subsection: Addition Summary
Label: Outfall Point 4
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 4

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 4	27,349.611	717.000	10.23
Flow (In)	Outfall Point 4	27,349.611	717.000	10.23

Subsection: Addition Summary
Label: Outfall Point 4
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 4

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 4	41,400.057	717.000	15.31
Flow (In)	Outfall Point 4	41,400.057	717.000	15.31

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall Point 5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (min)	Flow (Peak) (ft^3/s)
Flow (From)	Direct Runoff to Outfall Point 5	3,883.718	714.000	1.61
Flow (In)	Outfall Point 5	3,883.718	714.000	1.61

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall Point 5

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (min)	Flow (Peak) (ft^3/s)
Flow (From)	Direct Runoff to Outfall Point 5	8,614.881	714.000	3.58
Flow (In)	Outfall Point 5	8,614.881	714.000	3.58

Subsection: Addition Summary
Label: Outfall Point 5
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 5'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall Point 5

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall Point 5	12,950.745	714.000	5.31
Flow (In)	Outfall Point 5	12,950.745	714.000	5.31

Subsection: Addition Summary
Label: Outfall Point 6
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 6

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 6	5,511.005	720.000	2.05
Flow (In)	Outfall Point 6	5,511.005	720.000	2.05

Subsection: Addition Summary
Label: Outfall Point 6
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 6

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 6	12,018.101	720.000	4.37
Flow (In)	Outfall Point 6	12,018.101	720.000	4.37

Subsection: Addition Summary
Label: Outfall Point 6
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 6'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff to Outfall 6

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff to Outfall 6	17,945.277	720.000	6.40
Flow (In)	Outfall Point 6	17,945.277	720.000	6.40

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff To Outfall 7
Outlet-8	Basin H

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff To Outfall 7	16,900.550	720.000	6.12
Flow (From)	Outlet-8	19,065.073	771.000	0.60
Flow (In)	Outfall Point 7	35,965.623	720.000	6.60

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff To Outfall 7
Outlet-8	Basin H

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff To Outfall 7	41,018.262	720.000	14.99
Flow (From)	Outlet-8	39,806.230	744.000	2.57
Flow (In)	Outfall Point 7	80,824.492	720.000	15.63

Subsection: Addition Summary
Label: Outfall Point 7
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Summary for Hydrograph Addition at 'Outfall Point 7'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	Direct Runoff To Outfall 7
Outlet-8	Basin H

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (min)	Flow (Peak) (ft³/s)
Flow (From)	Direct Runoff To Outfall 7	63,889.618	720.000	23.07
Flow (From)	Outlet-8	58,750.829	744.000	4.00
Flow (In)	Outfall Point 7	122,640.447	720.000	25.04

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
613.00	0.035	0.000	0.000	0.000	0.000
613.50	8.243	0.027	0.029	212.000	212.000
614.00	30.069	0.099	0.179	1,297.000	1,509.000
614.50	40.410	0.134	0.348	2,528.000	4,037.000
615.00	43.868	0.145	0.418	3,033.000	7,070.000
616.00	51.069	0.169	0.470	6,829.000	13,899.000
617.00	58.674	0.194	0.544	7,895.000	21,794.000
618.00	66.667	0.220	0.621	9,018.000	30,813.000
619.00	75.056	0.248	0.702	10,198.000	41,011.000
620.00	83.833	0.277	0.787	11,434.000	52,445.000

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
585.50	139.368	0.461	0.000	0.000	0.000
586.00	145.590	0.481	1.413	10,258.000	10,258.000
587.00	158.333	0.523	1.507	21,876.000	32,134.000
588.00	171.465	0.567	1.635	23,739.000	55,873.000
589.00	184.993	0.612	1.767	25,659.000	81,532.000
590.00	198.910	0.658	1.903	27,635.000	109,167.000
590.30	203.160	0.672	1.994	8,685.000	117,851.000

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
581.00	317.583	1.050	0.000	0.000	0.000
582.00	336.403	1.112	3.242	47,080.000	47,080.000
583.00	355.611	1.176	3.431	49,819.000	96,899.000
584.00	375.208	1.240	3.623	52,613.000	149,512.000
585.00	395.201	1.306	3.820	55,463.000	204,975.000
586.00	415.590	1.374	4.020	58,371.000	263,346.000
587.00	436.368	1.443	4.224	61,335.000	324,681.000
588.00	457.542	1.513	4.432	64,355.000	389,036.000
588.60	483.694	1.599	4.667	40,656.000	429,692.000

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
572.50	0.035	0.000	0.000	0.000	0.000
573.00	9.187	0.030	0.032	235.000	235.000
573.50	34.319	0.113	0.203	1,470.000	1,705.000
574.00	56.007	0.185	0.444	3,220.000	4,925.000
574.50	71.556	0.237	0.631	4,581.000	9,506.000
575.00	85.153	0.281	0.776	5,634.000	15,141.000
576.00	94.444	0.312	0.890	12,925.000	28,066.000
577.00	104.132	0.344	0.984	14,292.000	42,358.000
578.00	114.215	0.378	1.082	15,715.000	58,073.000
579.00	124.687	0.412	1.184	17,195.000	75,268.000
580.00	135.556	0.448	1.290	18,732.000	94,001.000

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
570.00	0.035	0.000	0.000	0.000	0.000
570.50	7.299	0.024	0.026	188.000	188.000
571.00	22.674	0.075	0.142	1,028.000	1,216.000
571.50	29.125	0.096	0.256	1,860.000	3,076.000
572.00	32.083	0.106	0.303	2,203.000	5,279.000
573.00	38.285	0.127	0.348	5,060.000	10,339.000
574.00	44.882	0.148	0.412	5,982.000	16,320.000
575.00	51.875	0.171	0.479	6,960.000	23,281.000
576.00	59.257	0.196	0.551	7,996.000	31,276.000
577.00	67.035	0.222	0.626	9,087.000	40,364.000
578.00	75.201	0.249	0.705	10,235.000	50,599.000

Post Developed Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin P
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
593.75	0.069	0.000	0.000	0.000	0.000
594.00	2.035	0.007	0.008	30.000	30.000
594.50	13.597	0.045	0.069	501.000	531.000
595.00	33.069	0.109	0.224	1,629.000	2,160.000
595.50	64.451	0.213	0.475	3,449.000	5,609.000
596.00	99.153	0.328	0.805	5,845.000	11,454.000
597.00	111.028	0.367	1.042	15,125.000	26,579.000
598.00	123.160	0.407	1.161	16,854.000	43,433.000
599.00	135.681	0.449	1.283	18,629.000	62,062.000
600.00	148.597	0.491	1.409	20,461.000	82,523.000
601.00	161.903	0.535	1.539	22,349.000	104,872.000
602.00	175.604	0.581	1.673	24,294.000	129,166.000
602.60	184.014	0.608	1.783	15,534.000	144,700.000

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS H3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	613.00ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	620.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Slot as Orifice	Forward	Outlet Culvert	616.60	620.00
Rectangular Weir	Slot in Struc	Forward	Outlet Culvert	615.60	616.60
Stand Pipe	Structure Crest	Forward	Outlet Culvert	618.10	620.00
Orifice-Circular	Low Flow Pipe	Forward	Outlet Culvert	613.00	620.00
Culvert-Circular	Outlet Culvert	Forward	TW	610.76	620.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS H3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.00in
Length	42.00ft
Length (Computed Barrel)	42.41ft
Slope (Computed)	0.140ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.090
T2 ratio (HW/D)	1.237
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	612.12ft	T1 Flow	4.80ft³/s
T2 Elevation	612.31ft	T2 Flow	5.49ft³/s

Subsection: Outlet Input Data
Label: OS H3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Low Flow Pipe Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	613.00ft
Orifice Diameter	4.00in
Orifice Coefficient	0.600

Structure ID: Slot in Struc Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	615.60ft
Weir Length	0.50ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Slot as Orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	615.60ft
Orifice Area	0.500ft²
Top Elevation	616.60ft
Datum Elevation	616.10ft
Orifice Coefficient	0.600

Structure ID: Structure Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	618.10ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel

Subsection: Outlet Input Data
Label: OS H3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: TW Structure Type: TW Setup, DS Channel	
Catalog Conduit	24 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	604.90ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS K2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	585.50ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	590.30ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Slot In Struc as Orifice	Forward	Outlet Culvert	588.00	590.30
Stand Pipe	Struc Crest	Forward	Outlet Culvert	588.00	590.30
Rectangular Weir	Slot In Face of Struc	Forward	Outlet Culvert	585.50	588.00
Culvert-Circular	Outlet Culvert	Forward	TW	581.52	590.30
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 2 years
Label: OS K2
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	36.00in
Length	45.00ft
Length (Computed Barrel)	45.00ft
Slope (Computed)	0.012ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.007
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	0.000
T2 ratio (HW/D)	1.301
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	581.52ft	T1 Flow	42.85ft³/s
T2 Elevation	585.42ft	T2 Flow	48.97ft³/s

Subsection: Outlet Input Data
Label: OS K2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Slot In Struc as Orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	585.50ft
Orifice Area	1.680ft²
Top Elevation	588.00ft
Datum Elevation	586.75ft
Orifice Coefficient	0.600

Structure ID: Slot In Face of Struc Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	585.50ft
Weir Length	0.67ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	588.00ft
Diameter	60.00in
Orifice Area	19.635ft²
Orifice Coefficient	0.600
Weir Length	15.71ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft

Subsection: Outlet Input Data
Label: OS K2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Convergence Tolerances	
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS K2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
585.50	0.00	(N/A)	0.00
585.60	0.06	(N/A)	0.00
585.70	0.18	(N/A)	0.00
585.80	0.33	(N/A)	0.00
585.90	0.51	(N/A)	0.00
586.00	0.71	(N/A)	0.00
586.10	0.93	(N/A)	0.00
586.20	1.18	(N/A)	0.00
586.30	1.44	(N/A)	0.00
586.40	1.72	(N/A)	0.00
586.50	2.01	(N/A)	0.00
586.60	2.32	(N/A)	0.00
586.70	2.64	(N/A)	0.00
586.80	2.98	(N/A)	0.00
586.90	3.33	(N/A)	0.00
587.00	3.69	(N/A)	0.00
587.10	4.07	(N/A)	0.00
587.20	4.46	(N/A)	0.00
587.30	4.85	(N/A)	0.00
587.40	5.26	(N/A)	0.00
587.50	5.69	(N/A)	0.00
587.60	6.12	(N/A)	0.00
587.70	6.56	(N/A)	0.00
587.80	7.01	(N/A)	0.00
587.90	7.47	(N/A)	0.00
588.00	9.04	(N/A)	0.00
588.10	10.89	(N/A)	0.00
588.20	13.95	(N/A)	0.00
588.30	17.80	(N/A)	0.00
588.40	22.31	(N/A)	0.00
588.50	27.37	(N/A)	0.00
588.60	32.90	(N/A)	0.00
588.70	38.89	(N/A)	0.00
588.80	45.31	(N/A)	0.00
588.90	52.09	(N/A)	0.00
589.00	59.25	(N/A)	0.00
589.10	66.07	(N/A)	0.00
589.20	71.98	(N/A)	0.00
589.30	77.77	(N/A)	0.00
589.40	83.12	(N/A)	0.00
589.50	86.69	(N/A)	0.00
589.60	87.42	(N/A)	0.00

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve | Return Event: 2 years
Label: OS K2 | Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
589.70	88.13	(N/A)	0.00
589.80	88.85	(N/A)	0.00
589.90	89.55	(N/A)	0.00
590.00	90.24	(N/A)	0.00
590.10	90.93	(N/A)	0.00
590.20	91.62	(N/A)	0.00
590.30	92.30	(N/A)	0.00

Contributing Structures
(no Q: Slot In Struc as Orifice,Struc Crest,Slot In Face of Struc,Outlet Culvert)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)

Composite Outflow Summary

Contributing Structures
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)

Subsection: Composite Rating Curve | Return Event: 2 years

Label: OS K2 | Storm Event: 2 Year, 24 Hour Storm

Scenario: Post-Development 2 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Face of Struc,Outlet Culvert (no Q: Slot In Struc as Orifice,Struc Crest)
Slot In Struc as Orifice,Outlet Culvert (no Q: Struc Crest,Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)

Composite Outflow Summary

Contributing Structures
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Slot In Struc as Orifice,Struc Crest,Outlet Culvert (no Q: Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS K2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Contributing Structures
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot In Struc as Orifice,Slot In Face of Struc)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS L1
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	581.00ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	588.60ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	6" wide slot in face	Forward	Outlet Culvert	581.00	583.00
Orifice-Area	Secondary slot as orifice	Forward	Outlet Culvert	584.00	588.60
Rectangular Weir	Weir Expansion to 18" Total	Forward	Outlet Culvert	583.00	584.00
Stand Pipe	Structure Crest	Forward	Outlet Culvert	584.00	588.60
Orifice-Area	6" Slot as Orifice	Forward	Outlet Culvert	583.00	588.60
Culvert-Circular	Outlet Culvert	Forward	TW	575.86	588.60
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS L1
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.00in
Length	90.00ft
Length (Computed Barrel)	90.02ft
Slope (Computed)	0.020ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.005
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.150
T2 ratio (HW/D)	1.297
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	580.46ft	T1 Flow	87.96ft³/s
T2 Elevation	581.05ft	T2 Flow	100.53ft³/s

Subsection: Outlet Input Data
Label: OS L1
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: 6" wide slot in face Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	581.00ft
Weir Length	0.50ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Weir Expansion to 18" Total Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	583.00ft
Weir Length	1.50ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: 6" Slot as Orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	581.00ft
Orifice Area	1.000ft²
Top Elevation	583.00ft
Datum Elevation	582.00ft
Orifice Coefficient	0.600

Structure ID: Secondary slot as orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	583.00ft
Orifice Area	1.500ft²
Top Elevation	584.00ft
Datum Elevation	583.50ft
Orifice Coefficient	0.600

Structure ID: Structure Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	584.00ft
Diameter	72.00in
Orifice Area	28.274ft²
Orifice Coefficient	0.600
Weir Length	18.85ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS L1
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Structure Crest Structure Type: Stand Pipe	
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	60 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	574.06ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	572.50ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	580.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Slot as Orifice	Forward	Outlet Culvert	577.00	580.00
Rectangular Weir	Slot in Struc Face	Forward	Outlet Culvert	575.50	577.00
Stand Pipe	Struc Crest	Forward	Outlet Culvert	578.00	580.00
Orifice-Circular	Low Flow Pipe	Forward	Outlet Culvert	572.50	580.00
Culvert-Circular	Outlet Culvert	Forward	TW	571.02	580.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.00in
Length	54.57ft
Length (Computed Barrel)	54.57ft
Slope (Computed)	0.010ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.155
T2 ratio (HW/D)	1.302
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	573.33ft	T1 Flow	15.55ft³/s
T2 Elevation	573.62ft	T2 Flow	17.77ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Low Flow Pipe Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	572.50ft
Orifice Diameter	4.00in
Orifice Coefficient	0.600

Structure ID: Slot in Struc Face Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	575.50ft
Weir Length	0.33ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Slot as Orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	575.50ft
Orifice Area	0.500ft²
Top Elevation	577.00ft
Datum Elevation	576.25ft
Orifice Coefficient	0.600

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	578.00ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 2 years
Label: OS M2
Storm Event: 2 Year, 24 Hour
Scenario: Post-Development 2 Year, 24 Hour

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
572.50	0.00	(N/A)	0.00
572.60	0.02	(N/A)	0.00
572.70	0.07	(N/A)	0.00
572.80	0.14	(N/A)	0.00
572.90	0.20	(N/A)	0.00
573.00	0.24	(N/A)	0.00
573.10	0.28	(N/A)	0.00
573.20	0.31	(N/A)	0.00
573.30	0.33	(N/A)	0.00
573.40	0.36	(N/A)	0.00
573.50	0.38	(N/A)	0.00
573.60	0.41	(N/A)	0.00
573.70	0.43	(N/A)	0.00
573.80	0.45	(N/A)	0.00
573.90	0.46	(N/A)	0.00
574.00	0.48	(N/A)	0.00
574.10	0.50	(N/A)	0.00
574.20	0.52	(N/A)	0.00
574.30	0.54	(N/A)	0.00
574.40	0.55	(N/A)	0.00
574.50	0.57	(N/A)	0.00
574.60	0.58	(N/A)	0.00
574.70	0.60	(N/A)	0.00
574.80	0.61	(N/A)	0.00
574.90	0.63	(N/A)	0.00
575.00	0.64	(N/A)	0.00
575.10	0.66	(N/A)	0.00
575.20	0.67	(N/A)	0.00
575.30	0.68	(N/A)	0.00
575.40	0.69	(N/A)	0.00
575.50	0.71	(N/A)	0.00
575.60	0.75	(N/A)	0.00
575.70	0.82	(N/A)	0.00
575.80	0.91	(N/A)	0.00
575.90	1.01	(N/A)	0.00
576.00	1.12	(N/A)	0.00
576.10	1.24	(N/A)	0.00
576.20	1.38	(N/A)	0.00
576.30	1.52	(N/A)	0.00
576.40	1.67	(N/A)	0.00
576.50	1.82	(N/A)	0.00
576.60	1.99	(N/A)	0.00

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
576.70	2.16	(N/A)	0.00
576.80	2.33	(N/A)	0.00
576.90	2.52	(N/A)	0.00
577.00	2.96	(N/A)	0.00
577.10	3.10	(N/A)	0.00
577.20	3.24	(N/A)	0.00
577.30	3.37	(N/A)	0.00
577.40	3.49	(N/A)	0.00
577.50	3.61	(N/A)	0.00
577.60	3.73	(N/A)	0.00
577.70	3.84	(N/A)	0.00
577.80	3.95	(N/A)	0.00
577.90	4.05	(N/A)	0.00
578.00	4.15	(N/A)	0.00
578.10	5.44	(N/A)	0.00
578.20	7.72	(N/A)	0.00
578.30	10.61	(N/A)	0.00
578.40	14.01	(N/A)	0.00
578.50	17.85	(N/A)	0.00
578.60	22.07	(N/A)	0.00
578.70	26.61	(N/A)	0.00
578.80	31.41	(N/A)	0.00
578.90	35.57	(N/A)	0.00
579.00	39.44	(N/A)	0.00
579.10	40.91	(N/A)	0.00
579.20	41.21	(N/A)	0.00
579.30	41.51	(N/A)	0.00
579.40	41.81	(N/A)	0.00
579.50	42.10	(N/A)	0.00
579.60	42.40	(N/A)	0.00
579.70	42.69	(N/A)	0.00
579.80	42.98	(N/A)	0.00
579.90	43.27	(N/A)	0.00
580.00	43.55	(N/A)	0.00

Contributing Structures

(no Q: Slot as Orifice,Slot in Struc Face,Struc Crest,Low Flow Pipe,Outlet Culvert)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve — Return Event: 2 years
Label: OS M2 — Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)

Composite Outflow Summary

Contributing Structures
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve | Return Event: 2 years
Label: OS M2 | Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)

Composite Outflow Summary

Contributing Structures
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot in Struc Face,Low Flow Pipe,Outlet Culvert (no Q: Slot as Orifice,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)

Composite Outflow Summary

Contributing Structures
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face,Struc Crest)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve | Return Event: 2 years
Label: OS M2 | Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Slot as Orifice,Struc Crest,Low Flow Pipe,Outlet Culvert (no Q: Slot in Struc Face)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Contributing Structures
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)
Struc Crest,Outlet Culvert (no Q: Slot as Orifice,Slot in Struc Face,Low Flow Pipe)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS N2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	570.00ft
Increment (Headwater)	0.50ft
Maximum (Headwater)	578.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Slot as orifice	Forward	Outlet Culvert	574.50	578.00
Rectangular Weir	Slot in Face of Struc	Forward	Outlet Culvert	573.00	574.50
Stand Pipe	Struc Crest	Forward	Outlet Culvert	576.00	578.00
Orifice-Circular	Low Flow pipe	Forward	Outlet Culvert	570.00	578.00
Culvert-Circular	Outlet Culvert	Forward	TW	567.71	578.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS N2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.00in
Length	71.00ft
Length (Computed Barrel)	71.00ft
Slope (Computed)	0.010ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.155
T2 ratio (HW/D)	1.302
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	570.02ft	T1 Flow	15.55ft³/s
T2 Elevation	570.31ft	T2 Flow	17.77ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS N2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Low Flow pipe Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	570.00ft
Orifice Diameter	4.00in
Orifice Coefficient	0.600

Structure ID: Slot in Face of Struc Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	573.00ft
Weir Length	0.50ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Slot as orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	573.00ft
Orifice Area	0.750ft²
Top Elevation	574.50ft
Datum Elevation	573.75ft
Orifice Coefficient	0.600

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	576.00ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 2 years
Label: OS N2
Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS N2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
570.00	0.00	(N/A)	0.00
570.50	0.24	(N/A)	0.00
571.00	0.38	(N/A)	0.00
571.50	0.48	(N/A)	0.00
572.00	0.57	(N/A)	0.00
572.50	0.64	(N/A)	0.00
573.00	0.70	(N/A)	0.00
573.50	1.30	(N/A)	0.00
574.00	2.32	(N/A)	0.00
574.50	4.00	(N/A)	0.00
575.00	4.96	(N/A)	0.00
575.50	5.75	(N/A)	0.00
576.00	6.42	(N/A)	0.00
576.50	20.31	(N/A)	0.00
577.00	41.68	(N/A)	0.00
577.50	45.80	(N/A)	0.00
578.00	47.14	(N/A)	0.00

Contributing Structures

(no Q: Slot as orifice,Slot in Face of Struc,Struc Crest,Low Flow pipe,Outlet Culvert)
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)

Post Developed Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS N2
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Composite Outflow Summary

Contributing Structures
Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Struc Crest)
Slot in Face of Struc,Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Struc Crest)
Slot in Face of Struc,Low Flow pipe,Outlet Culvert (no Q: Slot as orifice,Struc Crest)
Slot as orifice,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc,Struc Crest)
Slot as orifice,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc,Struc Crest)
Slot as orifice,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc,Struc Crest)
Slot as orifice,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc,Struc Crest)
Slot as orifice,Struc Crest,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc)
Slot as orifice,Struc Crest,Low Flow pipe,Outlet Culvert (no Q: Slot in Face of Struc)
Struc Crest,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Low Flow pipe)
Struc Crest,Outlet Culvert (no Q: Slot as orifice,Slot in Face of Struc,Low Flow pipe)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	593.75ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	602.60ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Area	Slot 1 as Orifice	Forward	Outlet Culvert	598.00	602.60
Rectangular Weir	1st slot in Face	Forward	Outlet Culvert	597.00	598.00
Orifice-Area	2nd Slot as orifice	Forward	Outlet Culvert	600.00	602.60
Rectangular Weir	2nd Slot in Face	Forward	Outlet Culvert	599.00	600.00
Stand Pipe	Struc Crest	Forward	Outlet Culvert	600.00	602.60
Orifice-Circular	Low Flow Pipe	Forward	Outlet Culvert	593.75	602.60
Culvert-Circular	Outlet Culvert	Forward	TW	590.43	602.60
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	36.00in
Length	105.00ft
Length (Computed Barrel)	105.13ft
Slope (Computed)	0.050ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.007
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.135
T2 ratio (HW/D)	1.282
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	593.84ft	T1 Flow	42.85ft³/s
T2 Elevation	594.28ft	T2 Flow	48.97ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Low Flow Pipe Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	593.75ft
Orifice Diameter	6.00in
Orifice Coefficient	0.600

Structure ID: 1st slot in Face Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	597.00ft
Weir Length	0.50ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: Slot 1 as Orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	597.00ft
Orifice Area	0.500ft²
Top Elevation	598.00ft
Datum Elevation	597.50ft
Orifice Coefficient	0.600

Structure ID: 2nd Slot in Face Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	599.00ft
Weir Length	2.00ft
Weir Coefficient	3.00(ft^0.5)/s

Structure ID: 2nd Slot as orifice Structure Type: Orifice-Area	
Number of Openings	1
Elevation	599.00ft
Orifice Area	2.000ft²
Top Elevation	600.00ft
Datum Elevation	599.50ft
Orifice Coefficient	0.600

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1

Post Developed Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Structure ID: Struc Crest Structure Type: Stand Pipe	
Elevation	600.00ft
Diameter	60.00in
Orifice Area	19.635ft²
Orifice Coefficient	0.600
Weir Length	15.71ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	36 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	585.18ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin H
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	613.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
613.00	0.00	0.000	0.000	0.00	0.00	0.00
613.10	0.02	3.325	0.002	0.00	0.02	0.06
613.20	0.07	17.834	0.005	0.00	0.07	0.27
613.30	0.14	51.832	0.011	0.00	0.14	0.72
613.40	0.20	113.622	0.018	0.00	0.20	1.46
613.50	0.24	211.506	0.027	0.00	0.24	2.59
613.60	0.28	353.119	0.038	0.00	0.28	4.20
613.70	0.31	545.797	0.051	0.00	0.31	6.37
613.80	0.33	797.405	0.065	0.00	0.33	9.19
613.90	0.36	1,115.803	0.081	0.00	0.36	12.76
614.00	0.38	1,508.855	0.099	0.00	0.38	17.15
614.10	0.40	1,955.794	0.106	0.00	0.40	22.14
614.20	0.43	2,431.194	0.112	0.00	0.43	27.44
614.30	0.45	2,935.935	0.119	0.00	0.45	33.07
614.40	0.47	3,470.895	0.126	0.00	0.47	39.03
614.50	0.48	4,036.953	0.134	0.00	0.48	45.34
614.60	0.50	4,623.745	0.136	0.00	0.50	51.88
614.70	0.52	5,220.374	0.138	0.00	0.52	58.52
614.80	0.54	5,826.921	0.140	0.00	0.54	65.28
614.90	0.55	6,443.470	0.143	0.00	0.55	72.15
615.00	0.57	7,070.102	0.145	0.00	0.57	79.13
615.10	0.58	7,706.803	0.147	0.00	0.58	86.21
615.20	0.60	8,353.559	0.150	0.00	0.60	93.42
615.30	0.61	9,010.449	0.152	0.00	0.61	100.73
615.40	0.63	9,677.551	0.154	0.00	0.63	108.15
615.50	0.64	10,354.944	0.157	0.00	0.64	115.70
615.60	0.65	11,042.708	0.159	0.00	0.65	123.35
615.70	0.72	11,740.920	0.161	0.00	0.72	131.17
615.80	0.82	12,449.660	0.164	0.00	0.82	139.14

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin H Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
615.90	0.94	13,169.006	0.166	0.00	0.94	147.26
616.00	1.09	13,899.037	0.169	0.00	1.09	155.52
616.10	1.25	14,639.735	0.171	0.00	1.25	163.91
616.20	1.43	15,391.079	0.174	0.00	1.43	172.44
616.30	1.62	16,153.145	0.176	0.00	1.62	181.10
616.40	1.83	16,926.009	0.179	0.00	1.83	189.90
616.50	2.05	17,709.747	0.181	0.00	2.05	198.82
616.60	2.48	18,504.435	0.184	0.00	2.48	208.08
616.70	2.65	19,310.149	0.186	0.00	2.65	217.21
616.80	2.81	20,126.965	0.189	0.00	2.81	226.45
616.90	2.97	20,954.959	0.191	0.00	2.97	235.80
617.00	3.11	21,794.207	0.194	0.00	3.11	245.26
617.10	3.24	22,644.690	0.197	0.00	3.24	254.84
617.20	3.37	23,506.390	0.199	0.00	3.37	264.55
617.30	3.49	24,379.379	0.202	0.00	3.49	274.37
617.40	3.61	25,263.731	0.204	0.00	3.61	284.32
617.50	3.72	26,159.520	0.207	0.00	3.72	294.39
617.60	3.83	27,066.819	0.210	0.00	3.83	304.57
617.70	3.94	27,985.701	0.212	0.00	3.94	314.89
617.80	4.04	28,916.241	0.215	0.00	4.04	325.34
617.90	4.14	29,858.510	0.218	0.00	4.14	335.90
618.00	4.24	30,812.584	0.220	0.00	4.24	346.60
618.10	4.34	31,778.457	0.223	0.00	4.34	357.43
618.20	5.62	32,756.124	0.226	0.00	5.62	369.57
618.30	7.89	33,745.656	0.229	0.00	7.89	382.84
618.40	10.67	34,747.124	0.231	0.00	10.67	396.75
618.50	13.63	35,760.602	0.234	0.00	13.63	410.97
618.60	15.61	36,786.159	0.237	0.00	15.61	424.34
618.70	16.49	37,823.868	0.240	0.00	16.49	436.76
618.80	16.61	38,873.800	0.242	0.00	16.61	448.54
618.90	16.72	39,936.027	0.245	0.00	16.72	460.46
619.00	16.84	41,010.620	0.248	0.00	16.84	472.51
619.10	16.95	42,097.577	0.251	0.00	16.95	484.70
619.20	17.06	43,196.894	0.254	0.00	17.06	497.02
619.30	17.17	44,308.642	0.257	0.00	17.17	509.49
619.40	17.28	45,432.890	0.260	0.00	17.28	522.09
619.50	17.39	46,569.708	0.262	0.00	17.39	534.83
619.60	17.50	47,719.166	0.265	0.00	17.50	547.71
619.70	17.60	48,881.334	0.268	0.00	17.60	560.73
619.80	17.71	50,056.282	0.271	0.00	17.71	573.89
619.90	17.82	51,244.079	0.274	0.00	17.82	587.20
620.00	17.92	52,444.796	0.277	0.00	17.92	600.64

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin H (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	613.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	6.67ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	0.60ft³/s	Time to Peak (Flow, Outlet)	771.000min

Elevation (Water Surface, Peak)	615.23ft
Volume (Peak)	8,575.844ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	19,096.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	19,065.000ft³
Volume (Retained)	16.000ft³
Volume (Unrouted)	-15.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin H (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	613.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	14.69ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	2.57ft³/s	Time to Peak (Flow, Outlet)	744.000min

Elevation (Water Surface, Peak)	616.65ft
Volume (Peak)	18,909.115ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	42,367.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	39,806.000ft³
Volume (Retained)	2,482.000ft³
Volume (Unrouted)	-79.000ft³
Error (Mass Balance)	0.2%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin H (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	613.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	21.76ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	4.00ft³/s	Time to Peak (Flow, Outlet)	744.000min

Elevation (Water Surface, Peak)	617.76ft
Volume (Peak)	28,496.678ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	63,696.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	58,751.000ft³
Volume (Retained)	4,852.000ft³
Volume (Unrouted)	-93.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin K
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	585.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
585.50	0.00	0.000	0.461	0.00	0.00	0.00
585.60	0.06	2,015.775	0.465	0.00	0.06	22.46
585.70	0.18	4,049.353	0.469	0.00	0.18	45.17
585.80	0.33	6,100.812	0.473	0.00	0.33	68.12
585.90	0.51	8,170.229	0.477	0.00	0.51	91.29
586.00	0.71	10,257.685	0.481	0.00	0.71	114.68
586.10	0.93	12,363.180	0.485	0.00	0.93	138.30
586.20	1.18	14,486.718	0.490	0.00	1.18	162.14
586.30	1.44	16,628.374	0.494	0.00	1.44	186.20
586.40	1.72	18,788.227	0.498	0.00	1.72	210.47
586.50	2.01	20,966.353	0.502	0.00	2.01	234.97
586.60	2.32	23,162.828	0.506	0.00	2.32	259.68
586.70	2.64	25,377.731	0.511	0.00	2.64	284.62
586.80	2.98	27,611.137	0.515	0.00	2.98	309.77
586.90	3.33	29,863.125	0.519	0.00	3.33	335.14
587.00	3.69	32,133.770	0.523	0.00	3.69	360.73
587.10	4.07	34,423.050	0.528	0.00	4.07	386.55
587.20	4.46	36,730.938	0.532	0.00	4.46	412.58
587.30	4.85	39,057.509	0.536	0.00	4.85	438.83
587.40	5.26	41,402.841	0.541	0.00	5.26	465.30
587.50	5.69	43,767.007	0.545	0.00	5.69	491.99
587.60	6.12	46,150.083	0.549	0.00	6.12	518.90
587.70	6.56	48,552.144	0.554	0.00	6.56	546.02
587.80	7.01	50,973.266	0.558	0.00	7.01	573.38
587.90	7.47	53,413.524	0.562	0.00	7.47	600.96
588.00	9.04	55,872.993	0.567	0.00	9.04	629.85
588.10	10.89	58,351.661	0.571	0.00	10.89	659.24
588.20	13.95	60,849.512	0.576	0.00	13.95	690.06
588.30	17.80	63,366.622	0.580	0.00	17.80	721.88

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin K Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
588.40	22.31	65,903.064	0.585	0.00	22.31	754.57
588.50	27.37	68,458.912	0.589	0.00	27.37	788.02
588.60	32.90	71,034.240	0.593	0.00	32.90	822.17
588.70	38.89	73,629.121	0.598	0.00	38.89	856.99
588.80	45.31	76,243.631	0.602	0.00	45.31	892.46
588.90	52.09	78,877.843	0.607	0.00	52.09	928.51
589.00	59.25	81,531.830	0.612	0.00	59.25	965.16
589.10	66.07	84,205.581	0.616	0.00	66.07	1,001.68
589.20	71.98	86,899.081	0.621	0.00	71.98	1,037.52
589.30	77.77	89,612.402	0.625	0.00	77.77	1,073.47
589.40	83.12	92,345.619	0.630	0.00	83.12	1,109.19
589.50	86.69	95,098.802	0.634	0.00	86.69	1,143.34
589.60	87.42	97,872.026	0.639	0.00	87.42	1,174.88
589.70	88.13	100,665.363	0.644	0.00	88.13	1,206.64
589.80	88.85	103,478.884	0.648	0.00	88.85	1,238.61
589.90	89.55	106,312.664	0.653	0.00	89.55	1,270.80
590.00	90.24	109,166.774	0.658	0.00	90.24	1,303.21
590.10	90.93	112,041.233	0.662	0.00	90.93	1,335.84
590.20	91.62	114,936.055	0.667	0.00	91.62	1,368.69
590.30	92.30	117,851.313	0.672	0.00	92.30	1,401.76

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin K (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	585.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	30.13ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	5.86ft³/s	Time to Peak (Flow, Outlet)	750.000min

Elevation (Water Surface, Peak)	587.54ft
Volume (Peak)	44,733.497ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	95,208.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	86,496.000ft³
Volume (Retained)	8,610.000ft³
Volume (Unrouted)	-102.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin K (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	585.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	61.03ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	37.18ft³/s	Time to Peak (Flow, Outlet)	732.000min

Elevation (Water Surface, Peak)	588.67ft
Volume (Peak)	72,886.705ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	197,486.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	184,977.000ft³
Volume (Retained)	12,339.000ft³
Volume (Unrouted)	-170.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin K (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	585.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	87.65ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	68.80ft³/s	Time to Peak (Flow, Outlet)	729.000min

Elevation (Water Surface, Peak)	589.15ft
Volume (Peak)	85,446.959ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	289,088.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	273,770.000ft³
Volume (Retained)	15,089.000ft³
Volume (Unrouted)	-229.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin L
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	581.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
581.00	0.00	0.000	1.050	0.00	0.00	0.00
581.10	0.05	4,586.568	1.056	0.00	0.05	51.01
581.20	0.13	9,199.924	1.062	0.00	0.13	102.36
581.30	0.25	13,840.146	1.068	0.00	0.25	154.03
581.40	0.38	18,507.312	1.075	0.00	0.38	206.02
581.50	0.53	23,201.500	1.081	0.00	0.53	258.32
581.60	0.70	27,922.788	1.087	0.00	0.70	310.95
581.70	0.88	32,671.254	1.093	0.00	0.88	363.89
581.80	1.07	37,446.976	1.099	0.00	1.07	417.15
581.90	1.28	42,250.032	1.106	0.00	1.28	470.73
582.00	1.50	47,080.500	1.112	0.00	1.50	524.62
582.10	1.73	51,938.351	1.118	0.00	1.73	578.82
582.20	1.97	56,823.554	1.125	0.00	1.97	633.34
582.30	2.22	61,736.188	1.131	0.00	2.22	688.18
582.40	2.48	66,676.327	1.137	0.00	2.48	743.33
582.50	2.76	71,644.050	1.144	0.00	2.76	798.80
582.60	3.04	76,639.433	1.150	0.00	3.04	854.59
582.70	3.32	81,662.553	1.156	0.00	3.32	910.69
582.80	3.62	86,713.486	1.163	0.00	3.62	967.11
582.90	3.93	91,792.310	1.169	0.00	3.93	1,023.85
583.00	4.81	96,899.101	1.176	0.00	4.81	1,081.47
583.10	5.19	102,033.834	1.182	0.00	5.19	1,138.90
583.20	5.68	107,196.485	1.188	0.00	5.68	1,196.75
583.30	6.23	112,387.128	1.195	0.00	6.23	1,254.97
583.40	6.83	117,605.841	1.201	0.00	6.83	1,313.56
583.50	7.47	122,852.697	1.208	0.00	7.47	1,372.50
583.60	8.18	128,127.774	1.214	0.00	8.18	1,431.82
583.70	8.90	133,431.146	1.221	0.00	8.90	1,491.47
583.80	9.67	138,762.889	1.227	0.00	9.67	1,551.48

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin L Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
583.90	10.48	144,123.080	1.234	0.00	10.48	1,611.84
584.00	11.91	149,511.793	1.240	0.00	11.91	1,673.16
584.10	14.35	154,929.014	1.247	0.00	14.35	1,735.78
584.20	18.24	160,374.726	1.253	0.00	18.24	1,800.18
584.30	23.06	165,849.003	1.260	0.00	23.06	1,865.83
584.40	28.62	171,351.922	1.267	0.00	28.62	1,932.53
584.50	34.83	176,883.555	1.273	0.00	34.83	2,000.20
584.60	41.62	182,443.978	1.280	0.00	41.62	2,068.78
584.70	48.94	188,033.266	1.286	0.00	48.94	2,138.20
584.80	56.75	193,651.494	1.293	0.00	56.75	2,208.43
584.90	65.02	199,298.736	1.300	0.00	65.02	2,279.46
585.00	73.73	204,975.066	1.306	0.00	73.73	2,351.23
585.10	82.86	210,680.474	1.313	0.00	82.86	2,423.75
585.20	92.36	216,414.946	1.320	0.00	92.36	2,496.97
585.30	102.25	222,178.557	1.326	0.00	102.25	2,570.90
585.40	112.50	227,971.380	1.333	0.00	112.50	2,645.51
585.50	122.71	233,793.490	1.340	0.00	122.71	2,720.41
585.60	132.74	239,644.959	1.347	0.00	132.74	2,795.46
585.70	142.64	245,525.862	1.353	0.00	142.64	2,870.70
585.80	151.37	251,436.273	1.360	0.00	151.37	2,945.11
585.90	159.86	257,376.265	1.367	0.00	159.86	3,019.60
586.00	167.67	263,345.913	1.374	0.00	167.67	3,093.74
586.10	173.45	269,345.202	1.381	0.00	173.45	3,166.17
586.20	174.78	275,374.120	1.387	0.00	174.78	3,234.50
586.30	175.93	281,432.739	1.394	0.00	175.93	3,302.96
586.40	177.05	287,521.132	1.401	0.00	177.05	3,371.73
586.50	178.17	293,639.372	1.408	0.00	178.17	3,440.83
586.60	179.27	299,787.532	1.415	0.00	179.27	3,510.24
586.70	180.36	305,965.685	1.422	0.00	180.36	3,579.98
586.80	181.46	312,173.904	1.429	0.00	181.46	3,650.06
586.90	182.56	318,412.261	1.436	0.00	182.56	3,720.47
587.00	183.65	324,680.831	1.443	0.00	183.65	3,791.22
587.10	184.73	330,979.607	1.449	0.00	184.73	3,862.28
587.20	185.80	337,308.585	1.456	0.00	185.80	3,933.67
587.30	186.85	343,667.836	1.463	0.00	186.85	4,005.38
587.40	187.92	350,057.432	1.470	0.00	187.92	4,077.45
587.50	188.97	356,477.446	1.477	0.00	188.97	4,149.83
587.60	190.02	362,927.951	1.484	0.00	190.02	4,222.55
587.70	191.06	369,409.017	1.491	0.00	191.06	4,295.60
587.80	192.09	375,920.718	1.498	0.00	192.09	4,368.99
587.90	193.12	382,463.125	1.505	0.00	193.12	4,442.71
588.00	194.14	389,036.312	1.513	0.00	194.14	4,516.77
588.10	195.17	395,655.908	1.527	0.00	195.17	4,591.35

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin L Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
588.20	196.17	402,337.688	1.541	0.00	196.17	4,666.59
588.30	197.20	409,081.945	1.555	0.00	197.20	4,742.55
588.40	198.20	415,888.969	1.570	0.00	198.20	4,819.19
588.50	199.20	422,759.050	1.584	0.00	199.20	4,896.52
588.60	200.18	429,692.479	1.599	0.00	200.18	4,974.54

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin L (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	581.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	91.66ft³/s	Time to Peak (Flow, In)	726.000min
Flow (Peak Outlet)	16.12ft³/s	Time to Peak (Flow, Outlet)	756.000min

Elevation (Water Surface, Peak)	584.15ft
Volume (Peak)	157,410.483ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	307,960.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	244,076.000ft³
Volume (Retained)	63,463.000ft³
Volume (Unrouted)	-422.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin L (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	581.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	188.52ft³/s	Time to Peak (Flow, In)	726.000min
Flow (Peak Outlet)	124.93ft³/s	Time to Peak (Flow, Outlet)	735.000min

Elevation (Water Surface, Peak)	585.52ft
Volume (Peak)	235,087.046ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	649,500.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	565,781.000ft³
Volume (Retained)	83,099.000ft³
Volume (Unrouted)	-620.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin L (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	581.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	273.03ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	178.69ft³/s	Time to Peak (Flow, Outlet)	735.000min

Elevation (Water Surface, Peak)	586.55ft
Volume (Peak)	296,546.404ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	957,044.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	862,464.000ft³
Volume (Retained)	93,795.000ft³
Volume (Unrouted)	-786.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin M
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	572.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
572.50	0.00	0.000	0.000	0.00	0.00	0.00
572.60	0.02	3.580	0.002	0.00	0.02	0.06
572.70	0.07	19.537	0.006	0.00	0.07	0.29
572.80	0.14	57.192	0.012	0.00	0.14	0.77
572.90	0.20	125.868	0.020	0.00	0.20	1.60
573.00	0.24	234.889	0.030	0.00	0.24	2.85
573.10	0.28	393.403	0.043	0.00	0.28	4.65
573.20	0.31	610.486	0.057	0.00	0.31	7.09
573.30	0.33	895.345	0.074	0.00	0.33	10.28
573.40	0.36	1,257.188	0.093	0.00	0.36	14.33
573.50	0.38	1,705.223	0.113	0.00	0.38	19.33
573.60	0.41	2,227.355	0.126	0.00	0.41	25.15
573.70	0.43	2,807.382	0.140	0.00	0.43	31.62
573.80	0.45	3,448.347	0.154	0.00	0.45	38.76
573.90	0.46	4,153.293	0.169	0.00	0.46	46.61
574.00	0.48	4,925.266	0.185	0.00	0.48	55.21
574.10	0.50	5,752.969	0.195	0.00	0.50	64.42
574.20	0.52	6,623.808	0.205	0.00	0.52	74.12
574.30	0.54	7,538.880	0.215	0.00	0.54	84.30
574.40	0.55	8,499.279	0.226	0.00	0.55	94.99
574.50	0.57	9,506.102	0.237	0.00	0.57	106.19
574.60	0.58	10,555.344	0.245	0.00	0.58	117.87
574.70	0.60	11,642.725	0.254	0.00	0.60	129.96
574.80	0.61	12,768.926	0.263	0.00	0.61	142.49
574.90	0.63	13,934.627	0.272	0.00	0.63	155.46
575.00	0.64	15,140.510	0.281	0.00	0.64	168.87
575.10	0.66	16,373.238	0.284	0.00	0.66	182.58
575.20	0.67	17,619.069	0.288	0.00	0.67	196.44
575.30	0.68	18,878.073	0.291	0.00	0.68	210.44

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin M Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
575.40	0.69	20,150.318	0.294	0.00	0.69	224.59
575.50	0.71	21,435.873	0.297	0.00	0.71	238.88
575.60	0.75	22,734.809	0.300	0.00	0.75	253.36
575.70	0.82	24,047.194	0.303	0.00	0.82	268.01
575.80	0.91	25,373.098	0.306	0.00	0.91	282.83
575.90	1.01	26,712.589	0.309	0.00	1.01	297.82
576.00	1.12	28,065.737	0.312	0.00	1.12	312.96
576.10	1.24	29,432.553	0.315	0.00	1.24	328.27
576.20	1.38	30,813.047	0.318	0.00	1.38	343.74
576.30	1.52	32,207.286	0.322	0.00	1.52	359.37
576.40	1.67	33,615.340	0.325	0.00	1.67	375.17
576.50	1.82	35,037.275	0.328	0.00	1.82	391.13
576.60	1.99	36,473.160	0.331	0.00	1.99	407.24
576.70	2.16	37,923.063	0.334	0.00	2.16	423.53
576.80	2.33	39,387.053	0.338	0.00	2.33	439.97
576.90	2.52	40,865.196	0.341	0.00	2.52	456.58
577.00	2.96	42,357.563	0.344	0.00	2.96	473.60
577.10	3.10	43,864.166	0.348	0.00	3.10	490.48
577.20	3.24	45,385.021	0.351	0.00	3.24	507.52
577.30	3.37	46,920.195	0.354	0.00	3.37	524.71
577.40	3.49	48,469.755	0.357	0.00	3.49	542.05
577.50	3.61	50,033.767	0.361	0.00	3.61	559.54
577.60	3.73	51,612.300	0.364	0.00	3.73	577.20
577.70	3.84	53,205.419	0.367	0.00	3.84	595.01
577.80	3.95	54,813.193	0.371	0.00	3.95	612.98
577.90	4.05	56,435.688	0.374	0.00	4.05	631.12
578.00	4.15	58,072.972	0.378	0.00	4.15	649.41
578.10	5.44	59,725.057	0.381	0.00	5.44	669.06
578.20	7.72	61,391.959	0.384	0.00	7.72	689.85
578.30	10.61	63,073.741	0.388	0.00	10.61	711.43
578.40	14.01	64,770.472	0.391	0.00	14.01	733.68
578.50	17.85	66,482.216	0.395	0.00	17.85	756.54
578.60	22.07	68,209.041	0.398	0.00	22.07	779.94
578.70	26.61	69,951.011	0.402	0.00	26.61	803.84
578.80	31.41	71,708.194	0.405	0.00	31.41	828.16
578.90	35.57	73,480.655	0.409	0.00	35.57	852.02
579.00	39.44	75,268.461	0.412	0.00	39.44	875.76
579.10	40.91	77,071.633	0.416	0.00	40.91	897.26
579.20	41.21	78,890.194	0.419	0.00	41.21	917.77
579.30	41.51	80,724.209	0.423	0.00	41.51	938.45
579.40	41.81	82,573.743	0.426	0.00	41.81	959.30
579.50	42.10	84,438.861	0.430	0.00	42.10	980.31
579.60	42.40	86,319.630	0.434	0.00	42.40	1,001.51

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin M Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
579.70	42.69	88,216.114	0.437	0.00	42.69	1,022.87
579.80	42.98	90,128.379	0.441	0.00	42.98	1,044.41
579.90	43.27	92,056.489	0.444	0.00	43.27	1,066.12
580.00	43.55	94,000.512	0.448	0.00	43.55	1,088.00

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin M (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	572.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	13.69ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	0.75ft³/s	Time to Peak (Flow, Outlet)	825.000min

Elevation (Water Surface, Peak)	575.60ft
Volume (Peak)	22,679.658ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	41,954.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	31,997.000ft³
Volume (Retained)	9,850.000ft³
Volume (Unrouted)	-108.000ft³
Error (Mass Balance)	0.3%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin M (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	572.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	27.62ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	3.18ft³/s	Time to Peak (Flow, Outlet)	759.000min

Elevation (Water Surface, Peak)	577.16ft
Volume (Peak)	44,777.054ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	87,022.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	67,702.000ft³
Volume (Retained)	19,195.000ft³
Volume (Unrouted)	-125.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin M (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	572.50ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	39.61ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	9.57ft³/s	Time to Peak (Flow, Outlet)	744.000min

Elevation (Water Surface, Peak)	578.26ft
Volume (Peak)	62,466.128ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	127,385.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	104,786.000ft³
Volume (Retained)	22,463.000ft³
Volume (Unrouted)	-135.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin N
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	570.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
570.00	0.00	0.000	0.000	0.00	0.00	0.00
570.50	0.24	188.082	0.024	0.00	0.24	2.33
571.00	0.38	1,216.154	0.075	0.00	0.38	13.90
571.50	0.48	3,076.065	0.096	0.00	0.48	34.66
572.00	0.57	5,278.706	0.106	0.00	0.57	59.22
572.50	0.64	7,697.046	0.116	0.00	0.64	86.16
573.00	0.70	10,338.635	0.127	0.00	0.70	115.58
573.50	1.30	13,210.740	0.137	0.00	1.30	148.08
574.00	2.32	16,320.345	0.148	0.00	2.32	183.66
574.50	4.00	19,674.684	0.160	0.00	4.00	222.61
575.00	4.96	23,280.772	0.171	0.00	4.96	263.63
575.50	5.75	27,145.702	0.183	0.00	5.75	307.36
576.00	6.42	31,276.382	0.196	0.00	6.42	353.94
576.50	20.31	35,680.005	0.209	0.00	20.31	416.76
577.00	41.68	40,363.628	0.222	0.00	41.68	490.16
577.50	45.80	45,334.312	0.235	0.00	45.80	549.52
578.00	47.14	50,598.997	0.249	0.00	47.14	609.35

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin N (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	570.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	12.72ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	2.34ft³/s	Time to Peak (Flow, Outlet)	747.000min

Elevation (Water Surface, Peak)	574.00ft
Volume (Peak)	16,346.580ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	37,625.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	36,755.000ft³
Volume (Retained)	676.000ft³
Volume (Unrouted)	-194.000ft³
Error (Mass Balance)	0.5%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin N (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	570.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	25.68ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	8.53ft³/s	Time to Peak (Flow, Outlet)	735.000min

Elevation (Water Surface, Peak)	576.08ft
Volume (Peak)	31,926.079ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	78,037.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	73,461.000ft³
Volume (Retained)	4,455.000ft³
Volume (Unrouted)	-122.000ft³
Error (Mass Balance)	0.2%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin N (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	570.00ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	36.94ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	27.72ft³/s	Time to Peak (Flow, Outlet)	729.000min

Elevation (Water Surface, Peak)	576.67ft
Volume (Peak)	37,272.209ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	114,230.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	107,014.000ft³
Volume (Retained)	7,083.000ft³
Volume (Unrouted)	-133.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Basin P
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	593.75ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
593.75	0.00	0.000	0.000	0.00	0.00	0.00
593.85	0.02	3.804	0.002	0.00	0.02	0.07
593.95	0.09	17.370	0.005	0.00	0.09	0.28
594.05	0.19	46.856	0.009	0.00	0.19	0.71
594.15	0.31	97.923	0.015	0.00	0.31	1.40
594.25	0.47	176.400	0.022	0.00	0.47	2.43
594.35	0.56	288.178	0.030	0.00	0.56	3.76
594.45	0.63	439.145	0.040	0.00	0.63	5.51
594.55	0.70	634.645	0.050	0.00	0.70	7.75
594.65	0.76	876.922	0.061	0.00	0.76	10.51
594.75	0.82	1,170.375	0.074	0.00	0.82	13.82
594.85	0.87	1,519.909	0.087	0.00	0.87	17.76
594.95	0.92	1,930.426	0.102	0.00	0.92	22.37
595.05	0.96	2,407.740	0.118	0.00	0.96	27.72
595.15	1.01	2,962.618	0.137	0.00	1.01	33.93
595.25	1.05	3,601.899	0.157	0.00	1.05	41.08
595.35	1.10	4,331.561	0.178	0.00	1.10	49.23
595.45	1.14	5,157.579	0.201	0.00	1.14	58.44
595.55	1.18	6,083.880	0.223	0.00	1.18	68.78
595.65	1.21	7,103.522	0.245	0.00	1.21	80.14
595.75	1.25	8,218.815	0.267	0.00	1.25	92.57
595.85	1.29	9,434.049	0.291	0.00	1.29	106.11
595.95	1.32	10,753.511	0.315	0.00	1.32	120.80
596.05	1.35	12,169.647	0.330	0.00	1.35	136.57
596.15	1.38	13,614.116	0.334	0.00	1.38	152.65
596.25	1.42	15,075.346	0.337	0.00	1.42	168.92
596.35	1.45	16,553.435	0.341	0.00	1.45	185.38
596.45	1.48	18,048.479	0.345	0.00	1.48	202.02
596.55	1.51	19,560.574	0.349	0.00	1.51	218.85

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin P Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft^3/s)	Storage (ft^3)	Area (acres)	Infiltration (ft^3/s)	Flow (Total) (ft^3/s)	2S/t + O (ft^3/s)
596.65	1.53	21,089.818	0.353	0.00	1.53	235.87
596.75	1.57	22,636.307	0.357	0.00	1.57	253.08
596.85	1.60	24,200.137	0.361	0.00	1.60	270.49
596.95	1.62	25,781.406	0.365	0.00	1.62	288.08
597.00	1.63	26,578.610	0.367	0.00	1.63	296.95
597.05	1.67	27,380.139	0.369	0.00	1.67	305.89
597.15	1.76	28,996.005	0.373	0.00	1.76	323.94
597.25	1.89	30,629.025	0.377	0.00	1.89	342.21
597.35	2.04	32,279.288	0.381	0.00	2.04	360.70
597.45	2.21	33,946.885	0.385	0.00	2.21	379.40
597.55	2.39	35,631.906	0.389	0.00	2.39	398.30
597.65	2.59	37,334.443	0.393	0.00	2.59	417.42
597.75	2.80	39,054.586	0.397	0.00	2.80	436.74
597.85	3.03	40,792.426	0.401	0.00	3.03	456.28
597.95	3.27	42,548.052	0.405	0.00	3.27	476.02
598.05	3.69	44,321.514	0.409	0.00	3.69	496.15
598.15	3.86	46,112.655	0.413	0.00	3.86	516.23
598.25	4.03	47,921.521	0.417	0.00	4.03	536.49
598.35	4.19	49,748.198	0.421	0.00	4.19	556.95
598.45	4.34	51,592.775	0.426	0.00	4.34	577.59
598.55	4.48	53,455.337	0.430	0.00	4.48	598.42
598.65	4.62	55,335.974	0.434	0.00	4.62	619.46
598.75	4.74	57,234.771	0.438	0.00	4.74	640.69
598.85	4.88	59,151.817	0.442	0.00	4.88	662.12
598.95	5.00	61,087.197	0.446	0.00	5.00	683.75
599.00	5.06	62,061.791	0.449	0.00	5.06	694.63
599.05	5.19	63,040.965	0.451	0.00	5.19	705.64
599.15	5.58	65,012.988	0.455	0.00	5.58	727.95
599.25	6.10	67,003.315	0.459	0.00	6.10	750.58
599.35	6.70	69,012.031	0.463	0.00	6.70	773.50
599.45	7.37	71,039.220	0.468	0.00	7.37	796.69
599.55	8.12	73,084.966	0.472	0.00	8.12	820.17
599.65	8.91	75,149.355	0.476	0.00	8.91	843.90
599.75	9.78	77,232.471	0.480	0.00	9.78	867.92
599.85	10.67	79,334.398	0.485	0.00	10.67	892.16
599.95	11.64	81,455.221	0.489	0.00	11.64	916.70
600.00	12.92	82,522.745	0.491	0.00	12.92	929.84
600.05	13.82	83,594.990	0.493	0.00	13.82	942.65
600.15	16.76	85,753.584	0.498	0.00	16.76	969.58
600.25	20.56	87,931.050	0.502	0.00	20.56	997.58
600.35	25.08	90,127.471	0.506	0.00	25.08	1,026.50
600.45	30.14	92,342.929	0.511	0.00	30.14	1,056.17
600.55	35.71	94,577.505	0.515	0.00	35.71	1,086.57

Post Developed Conditions Routing For Phase 2

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 2 years
Label: Basin P Storm Event: 2 Year, 24 Hour Storm
Scenario: Post-Development 2 Year, 24 Hour

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
600.65	41.69	96,831.283	0.520	0.00	41.69	1,117.60
600.75	48.08	99,104.344	0.524	0.00	48.08	1,149.24
600.85	54.84	101,396.770	0.528	0.00	54.84	1,181.47
600.95	61.87	103,708.644	0.533	0.00	61.87	1,214.19
601.05	69.25	106,040.017	0.537	0.00	69.25	1,247.47
601.15	76.94	108,390.790	0.542	0.00	76.94	1,281.28
601.25	84.54	110,761.012	0.546	0.00	84.54	1,315.22
601.35	91.98	113,150.764	0.551	0.00	91.98	1,349.21
601.45	97.86	115,560.126	0.555	0.00	97.86	1,381.86
601.55	102.55	117,989.178	0.560	0.00	102.55	1,413.54
601.65	106.44	120,438.000	0.564	0.00	106.44	1,444.64
601.75	108.54	122,906.672	0.569	0.00	108.54	1,474.17
601.85	109.12	125,395.274	0.574	0.00	109.12	1,502.41
601.95	109.70	127,903.887	0.578	0.00	109.70	1,530.85
602.05	110.27	130,432.567	0.583	0.00	110.27	1,559.52
602.15	110.83	132,981.257	0.587	0.00	110.83	1,588.40
602.25	111.40	135,550.012	0.592	0.00	111.40	1,617.51
602.35	111.96	138,138.912	0.597	0.00	111.96	1,646.84
602.45	112.52	140,748.033	0.601	0.00	112.52	1,676.39
602.55	113.08	143,377.457	0.606	0.00	113.08	1,706.16
602.60	113.36	144,699.806	0.608	0.00	113.36	1,721.13

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin P (IN)
Scenario: Post-Development 2 Year, 24 Hour

Return Event: 2 years
Storm Event: 2 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	593.75ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	33.09ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	4.28ft³/s	Time to Peak (Flow, Outlet)	765.000min

Elevation (Water Surface, Peak)	598.41ft
Volume (Peak)	50,880.952ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	109,381.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	100,650.000ft³
Volume (Retained)	8,494.000ft³
Volume (Unrouted)	-236.000ft³
Error (Mass Balance)	0.2%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin P (IN)
Scenario: Post-Development 15 Year, 24 Hour

Return Event: 15 years
Storm Event: 15 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	593.75ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	68.75ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	31.09ft³/s	Time to Peak (Flow, Outlet)	738.000min

Elevation (Water Surface, Peak)	600.47ft
Volume (Peak)	92,722.505ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	230,688.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	208,799.000ft³
Volume (Retained)	21,608.000ft³
Volume (Unrouted)	-281.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin P (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	593.75ft
Volume (Initial)	0.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	99.66ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	76.19ft³/s	Time to Peak (Flow, Outlet)	732.000min

Elevation (Water Surface, Peak)	601.14ft
Volume (Peak)	108,161.042ft³

Mass Balance (ft³)	
Volume (Initial)	0.000ft³
Volume (Total Inflow)	339,922.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	311,911.000ft³
Volume (Retained)	27,704.000ft³
Volume (Unrouted)	-307.000ft³
Error (Mass Balance)	0.1%

Post Developed Conditions Routing For Phase 2

Index

B

Post Developed Conditions Routing For Phase 2

Post Developed Conditions Routing For Phase 2

Pond V8i Routing of 100 Year,
24 Hour Storm for
Low Flow Blocked Conditions

Appendix C

Table of Contents

Table of Contents

Table of Contents

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
DAM to Basin H	Post-Development 100 Year, 24 Hour	100	63,696.000	720.000	21.76
DAM to Basin K	Post-Development 100 Year, 24 Hour	100	289,088.000	723.000	87.65
DAM to Basin L	Post-Development 100 Year, 24 Hour	100	957,044.000	723.000	273.03
DAM to Basin M	Post-Development 100 Year, 24 Hour	100	127,385.000	723.000	39.61
DAM to Basin N	Post-Development 100 Year, 24 Hour	100	114,230.000	720.000	36.94
DAM to Basin P	Post-Development 100 Year, 24 Hour	100	339,922.000	723.000	99.66
Direct Runoff To Outfall 7	Post-Development 100 Year, 24 Hour	100	63,890.000	720.000	23.07
Direct Runoff to Outfall 2	Post-Development 100 Year, 24 Hour	100	142,654.000	735.000	29.86
Direct Runoff to Outfall 4	Post-Development 100 Year, 24 Hour	100	41,400.000	717.000	15.31
Direct Runoff to Outfall 6	Post-Development 100 Year, 24 Hour	100	17,945.000	720.000	6.40
Direct Runoff to Outfall Point 5	Post-Development 100 Year, 24 Hour	100	12,951.000	714.000	5.31

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
FE K1	Post-Development 100 Year, 24 Hour	100	287,250.000	729.000	75.78
FE M1	Post-Development 100 Year, 24 Hour	100	126,713.000	726.000	34.42
FE N1	Post-Development 100 Year, 24 Hour	100	114,089.000	723.000	34.81
MH P2	Post-Development 100 Year, 24 Hour	100	338,085.000	729.000	90.08
MH X51	Post-Development 100 Year, 24 Hour	100	948,406.000	735.000	181.56
Outfall Point 2	Post-Development 100 Year, 24 Hour	100	1,955,727.000	732.000	438.88
Outfall Point 4	Post-Development 100 Year, 24 Hour	100	41,400.000	717.000	15.31
Outfall Point 5	Post-Development 100 Year, 24 Hour	100	12,951.000	714.000	5.31
Outfall Point 6	Post-Development 100 Year, 24 Hour	100	17,945.000	720.000	6.40

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)
Outfall Point 7	Post-Development 100 Year, 24 Hour	100	127,376.000	720.000	39.56

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin H (IN)	Post-Development 100 Year, 24 Hour	100	63,696.000	720.000	21.76	(N/A)	(N/A)
Basin H (OUT)	Post-Development 100 Year, 24 Hour	100	63,487.000	726.000	16.65	618.84	39,276.000
Basin K (IN)	Post-Development 100 Year, 24 Hour	100	289,088.000	723.000	87.65	(N/A)	(N/A)
Basin K (OUT)	Post-Development 100 Year, 24 Hour	100	287,250.000	729.000	75.78	589.37	91,584.000
Basin L (IN)	Post-Development 100 Year, 24 Hour	100	957,044.000	723.000	273.03	(N/A)	(N/A)
Basin L (OUT)	Post-Development 100 Year, 24 Hour	100	948,406.000	735.000	181.56	586.81	312,715.000
Basin M (IN)	Post-Development 100 Year, 24 Hour	100	127,385.000	723.000	39.61	(N/A)	(N/A)
Basin M (OUT)	Post-Development 100 Year, 24 Hour	100	126,713.000	726.000	34.42	578.94	74,204.000
Basin N (IN)	Post-Development 100 Year, 24 Hour	100	114,230.000	720.000	36.94	(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (min)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Basin N (OUT)	Post-Development 100 Year, 24 Hour	100	114,089.000	723.000	34.81	576.94	39,794.000
Basin P (IN)	Post-Development 100 Year, 24 Hour	100	339,922.000	723.000	99.66	(N/A)	(N/A)
Basin P (OUT)	Post-Development 100 Year, 24 Hour	100	338,085.000	729.000	90.08	601.54	117,749.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.035ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.14ft/s
Segment Time of Concentration	11.591min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	125.00ft
Is Paved?	False
Slope	0.093ft/ft
Average Velocity	4.92ft/s
Segment Time of Concentration	0.423min

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	100.00ft
Is Paved?	False
Slope	0.038ft/ft
Average Velocity	3.12ft/s
Segment Time of Concentration	0.533min

Segment #4: User Defined Tc	
Time of Concentration	0.340min

Time of Concentration (Composite)	
Time of Concentration (Composite)	12.888min

Subsection: Time of Concentration Calculations
Label: DAM to Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.030ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.14ft/s
Segment Time of Concentration	12.328min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	69.00ft
Is Paved?	False
Slope	0.057ft/ft
Average Velocity	3.85ft/s
Segment Time of Concentration	0.299min

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	25.00ft
Is Paved?	True
Slope	0.015ft/ft
Average Velocity	2.49ft/s
Segment Time of Concentration	0.167min

Segment #4: User Defined Tc	
Time of Concentration	4.110min

Time of Concentration (Composite)	
Time of Concentration (Composite)	16.904min

Subsection: Time of Concentration Calculations
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin L
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	206.00ft
Is Paved?	False
Slope	0.034ft/ft
Average Velocity	2.98ft/s
Segment Time of Concentration	1.154min

Segment #3: User Defined Tc	
Time of Concentration	3.720min

Time of Concentration (Composite)	
Time of Concentration (Composite)	19.373min

Subsection: Time of Concentration Calculations
Label: DAM to Basin L
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	93.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	13.681min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	197.00ft
Is Paved?	False
Slope	0.021ft/ft
Average Velocity	2.34ft/s
Segment Time of Concentration	1.404min

Segment #3: User Defined Tc	
Time of Concentration	0.660min

Time of Concentration (Composite)	
Time of Concentration (Composite)	15.745min

Subsection: Time of Concentration Calculations
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Return Event: 100 years
Label: DAM to Basin N
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.040ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.15ft/s
Segment Time of Concentration	10.988min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	280.00ft
Is Paved?	False
Slope	0.034ft/ft
Average Velocity	2.98ft/s
Segment Time of Concentration	1.569min

Segment #3: User Defined Tc	
Time of Concentration	1.360min

Time of Concentration (Composite)	
Time of Concentration (Composite)	13.916min

Subsection: Time of Concentration Calculations
Label: DAM to Basin N
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Time of Concentration Calculations
Return Event: 100 years
Label: DAM to Basin P
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00ft
Manning's n	0.240
Slope	0.020ft/ft
2 Year 24 Hour Depth	3.1000in
Average Velocity	0.11ft/s
Segment Time of Concentration	14.499min

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	260.00ft
Is Paved?	False
Slope	0.023ft/ft
Average Velocity	2.45ft/s
Segment Time of Concentration	1.771min

Segment #3: User Defined Tc	
Time of Concentration	2.300min

Time of Concentration (Composite)	
Time of Concentration (Composite)	18.570min

Subsection: Time of Concentration Calculations
Label: DAM to Basin P
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

= = = = User Defined

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

= = = = SCS Channel Flow

Tc =	R = Qa / Wp V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n (Lf / V) / 3600
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	0.710	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	2.590	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.300	(N/A)	(N/A)	83.873

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	6.360	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	7.440	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	13.800	(N/A)	(N/A)	88.296

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin L
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	18.030	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	28.590	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	46.620	(N/A)	(N/A)	86.961

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	2.700	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	3.380	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	6.080	(N/A)	(N/A)	87.993

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin N
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	2.350	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	3.100	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5.450	(N/A)	(N/A)	87.761

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Runoff CN-Area
Label: DAM to Basin P
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved; curbs and storm sewers - Soil D	98.000	6.720	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	9.840	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	16.560	(N/A)	(N/A)	87.304

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	12.888min
Area (User Defined)	3.300acres

Computational Time Increment	1.718min
Time to Peak (Computed)	721.703min
Flow (Peak, Computed)	21.76ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	21.76ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	3.300acres
Maximum Retention (Pervious)	1.9048in
Maximum Retention (Pervious, 20 percent)	0.3810in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3302in
Runoff Volume (Pervious)	63,850.952ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	63,696.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	12.888min
Computational Time Increment	1.718min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin H
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	17.41ft³/s
Unit peak time, Tp	8.592min
Unit receding limb, Tr	34.367min
Total unit time, Tb	42.959min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	16.904min
Area (User Defined)	13.800acres

Computational Time Increment	2.254min
Time to Peak (Computed)	723.482min
Flow (Peak, Computed)	87.96ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	87.65ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	13.800acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	289,943.470ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	289,088.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	16.904min
Computational Time Increment	2.254min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin K
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	55.50ft³/s
Unit peak time, Tp	11.269min
Unit receding limb, Tr	45.077min
Total unit time, Tb	56.346min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin L
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	19.373min
Area (User Defined)	46.620acres

Computational Time Increment	2.583min
Time to Peak (Computed)	723.244min
Flow (Peak, Computed)	274.70ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	273.03ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	46.620acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6729in
Runoff Volume (Pervious)	960,031.729ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	957,044.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	19.373min
Computational Time Increment	2.583min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin L
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	163.60ft³/s
Unit peak time, Tp	12.915min
Unit receding limb, Tr	51.660min
Total unit time, Tb	64.575min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	15.745min
Area (User Defined)	6.080acres

Computational Time Increment	2.099min
Time to Peak (Computed)	722.174min
Flow (Peak, Computed)	39.97ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	39.61ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	6.080acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	127,743.228ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	127,385.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	15.745min
Computational Time Increment	2.099min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin M
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.25ft³/s
Unit peak time, Tp	10.497min
Unit receding limb, Tr	41.987min
Total unit time, Tb	52.484min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin N
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	13.916min
Area (User Defined)	5.450acres

Computational Time Increment	1.856min
Time to Peak (Computed)	721.801min
Flow (Peak, Computed)	37.36ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	720.000min
Flow (Peak Interpolated Output)	36.94ft³/s

Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	5.450acres
Maximum Retention (Pervious)	1.3636in
Maximum Retention (Pervious, 20 percent)	0.2727in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.7880in
Runoff Volume (Pervious)	114,506.677ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	114,230.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	13.916min
Computational Time Increment	1.856min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin N
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	26.62ft³/s
Unit peak time, Tp	9.278min
Unit receding limb, Tr	37.111min
Total unit time, Tb	46.388min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Label: DAM to Basin P
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Storm Event	100 Year, 24 Hour Storm
Return Event	100years
Duration	1,440.000min
Depth	7.2001in
Time of Concentration (Composite)	18.570min
Area (User Defined)	16.560acres

Computational Time Increment	2.476min
Time to Peak (Computed)	722.973min
Flow (Peak, Computed)	99.67ft³/s
Output Increment	3.000min
Time to Flow (Peak Interpolated Output)	723.000min
Flow (Peak Interpolated Output)	99.66ft³/s

Drainage Area	
SCS CN (Composite)	87.000
Area (User Defined)	16.560acres
Maximum Retention (Pervious)	1.4943in
Maximum Retention (Pervious, 20 percent)	0.2989in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6729in
Runoff Volume (Pervious)	341,015.133ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	339,922.000ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	18.570min
Computational Time Increment	2.476min
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Unit Hydrograph Summary
Return Event: 100 years
Label: DAM to Basin P
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.63ft³/s
Unit peak time, Tp	12.380min
Unit receding limb, Tr	49.519min
Total unit time, Tb	61.898min

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin H
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
613.00	0.035	0.000	0.000	0.000	0.000
613.50	8.243	0.027	0.029	212.000	212.000
614.00	30.069	0.099	0.179	1,297.000	1,509.000
614.50	40.410	0.134	0.348	2,528.000	4,037.000
615.00	43.868	0.145	0.418	3,033.000	7,070.000
616.00	51.069	0.169	0.470	6,829.000	13,899.000
617.00	58.674	0.194	0.544	7,895.000	21,794.000
618.00	66.667	0.220	0.621	9,018.000	30,813.000
619.00	75.056	0.248	0.702	10,198.000	41,011.000
620.00	83.833	0.277	0.787	11,434.000	52,445.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin K
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
585.50	139.368	0.461	0.000	0.000	0.000
586.00	145.590	0.481	1.413	10,258.000	10,258.000
587.00	158.333	0.523	1.507	21,876.000	32,134.000
588.00	171.465	0.567	1.635	23,739.000	55,873.000
589.00	184.993	0.612	1.767	25,659.000	81,532.000
590.00	198.910	0.658	1.903	27,635.000	109,167.000
590.30	203.160	0.672	1.994	8,685.000	117,851.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin L
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
581.00	317.583	1.050	0.000	0.000	0.000
582.00	336.403	1.112	3.242	47,080.000	47,080.000
583.00	355.611	1.176	3.431	49,819.000	96,899.000
584.00	375.208	1.240	3.623	52,613.000	149,512.000
585.00	395.201	1.306	3.820	55,463.000	204,975.000
586.00	415.590	1.374	4.020	58,371.000	263,346.000
587.00	436.368	1.443	4.224	61,335.000	324,681.000
588.00	457.542	1.513	4.432	64,355.000	389,036.000
588.60	483.694	1.599	4.667	40,656.000	429,692.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin M
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
572.50	0.035	0.000	0.000	0.000	0.000
573.00	9.187	0.030	0.032	235.000	235.000
573.50	34.319	0.113	0.203	1,470.000	1,705.000
574.00	56.007	0.185	0.444	3,220.000	4,925.000
574.50	71.556	0.237	0.631	4,581.000	9,506.000
575.00	85.153	0.281	0.776	5,634.000	15,141.000
576.00	94.444	0.312	0.890	12,925.000	28,066.000
577.00	104.132	0.344	0.984	14,292.000	42,358.000
578.00	114.215	0.378	1.082	15,715.000	58,073.000
579.00	124.687	0.412	1.184	17,195.000	75,268.000
580.00	135.556	0.448	1.290	18,732.000	94,001.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Label: Basin N
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
570.00	0.035	0.000	0.000	0.000	0.000
570.50	7.299	0.024	0.026	188.000	188.000
571.00	22.674	0.075	0.142	1,028.000	1,216.000
571.50	29.125	0.096	0.256	1,860.000	3,076.000
572.00	32.083	0.106	0.303	2,203.000	5,279.000
573.00	38.285	0.127	0.348	5,060.000	10,339.000
574.00	44.882	0.148	0.412	5,982.000	16,320.000
575.00	51.875	0.171	0.479	6,960.000	23,281.000
576.00	59.257	0.196	0.551	7,996.000	31,276.000
577.00	67.035	0.222	0.626	9,087.000	40,364.000
578.00	75.201	0.249	0.705	10,235.000	50,599.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Planimeter Volume Curve
Return Event: 100 years
Label: Basin P
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Pond Volume Calculations

Scale (Planimeter): 1.000 ft/in

Elevation (ft)	Planimeter (ft^2)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ft^3)	Volume (Total) (ft^3)
593.75	0.069	0.000	0.000	0.000	0.000
594.00	2.035	0.007	0.008	30.000	30.000
594.50	13.597	0.045	0.069	501.000	531.000
595.00	33.069	0.109	0.224	1,629.000	2,160.000
595.50	64.451	0.213	0.475	3,449.000	5,609.000
596.00	99.153	0.328	0.805	5,845.000	11,454.000
597.00	111.028	0.367	1.042	15,125.000	26,579.000
598.00	123.160	0.407	1.161	16,854.000	43,433.000
599.00	135.681	0.449	1.283	18,629.000	62,062.000
600.00	148.597	0.491	1.409	20,461.000	82,523.000
601.00	161.903	0.535	1.539	22,349.000	104,872.000
602.00	175.604	0.581	1.673	24,294.000	129,166.000
602.60	184.014	0.608	1.783	15,534.000	144,700.000

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS H3 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	613.00ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	620.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Structure Crest	Forward	Outlet Culvert	618.10	620.00
Culvert-Circular	Outlet Culvert	Forward	TW	610.76	620.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS H3 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.00in
Length	42.00ft
Length (Computed Barrel)	42.41ft
Slope (Computed)	0.140ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.023
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.090
T2 ratio (HW/D)	1.237
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	612.12ft	T1 Flow	4.80ft³/s
T2 Elevation	612.31ft	T2 Flow	5.49ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS H3 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Structure Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	618.10ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	24 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	604.90ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS K2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	585.50ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	590.30ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Struc Crest	Forward	Outlet Culvert	588.00	590.30
Culvert-Circular	Outlet Culvert	Forward	TW	581.52	590.30
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 100 years
Label: OS K2 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	36.00in
Length	45.00ft
Length (Computed Barrel)	45.00ft
Slope (Computed)	0.012ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.007
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.154
T2 ratio (HW/D)	1.301
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	584.98ft	T1 Flow	42.85ft³/s
T2 Elevation	585.42ft	T2 Flow	48.97ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS K2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	588.00ft
Diameter	60.00in
Orifice Area	19.635ft²
Orifice Coefficient	0.600
Weir Length	15.71ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS K2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
585.50	0.00	(N/A)	0.00
585.60	0.00	(N/A)	0.00
585.70	0.00	(N/A)	0.00
585.80	0.00	(N/A)	0.00
585.90	0.00	(N/A)	0.00
586.00	0.00	(N/A)	0.00
586.10	0.00	(N/A)	0.00
586.20	0.00	(N/A)	0.00
586.30	0.00	(N/A)	0.00
586.40	0.00	(N/A)	0.00
586.50	0.00	(N/A)	0.00
586.60	0.00	(N/A)	0.00
586.70	0.00	(N/A)	0.00
586.80	0.00	(N/A)	0.00
586.90	0.00	(N/A)	0.00
587.00	0.00	(N/A)	0.00
587.10	0.00	(N/A)	0.00
587.20	0.00	(N/A)	0.00
587.30	0.00	(N/A)	0.00
587.40	0.00	(N/A)	0.00
587.50	0.00	(N/A)	0.00
587.60	0.00	(N/A)	0.00
587.70	0.00	(N/A)	0.00
587.80	0.00	(N/A)	0.00
587.90	0.00	(N/A)	0.00
588.00	0.00	(N/A)	0.00
588.10	1.49	(N/A)	0.00
588.20	4.21	(N/A)	0.00
588.30	7.74	(N/A)	0.00
588.40	11.92	(N/A)	0.00
588.50	16.66	(N/A)	0.00
588.60	21.91	(N/A)	0.00
588.70	27.61	(N/A)	0.00
588.80	33.71	(N/A)	0.00
588.90	40.24	(N/A)	0.00
589.00	47.11	(N/A)	0.00
589.10	54.36	(N/A)	0.00
589.20	61.94	(N/A)	0.00
589.30	69.86	(N/A)	0.00
589.40	78.06	(N/A)	0.00
589.50	86.57	(N/A)	0.00
589.60	87.40	(N/A)	0.00

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS K2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
589.70	88.13	(N/A)	0.00
589.80	88.85	(N/A)	0.00
589.90	89.55	(N/A)	0.00
590.00	90.24	(N/A)	0.00
590.10	90.93	(N/A)	0.00
590.20	91.62	(N/A)	0.00
590.30	92.30	(N/A)	0.00

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
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Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Return Event: 100 years
Label: OS K2 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
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Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS L1 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	581.00ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	588.60ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Structure Crest	Forward	Outlet Culvert	584.00	588.60
Culvert-Circular	Outlet Culvert	Forward	TW	575.86	588.60
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 100 years
Label: OS L1 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.00in
Length	90.00ft
Length (Computed Barrel)	90.02ft
Slope (Computed)	0.020ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.005
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.150
T2 ratio (HW/D)	1.297
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	580.46ft	T1 Flow	87.96ft³/s
T2 Elevation	581.05ft	T2 Flow	100.53ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS L1 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Structure Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	584.00ft
Diameter	72.00in
Orifice Area	28.274ft²
Orifice Coefficient	0.600
Weir Length	18.85ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	60 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	574.06ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS M2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	572.50ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	580.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Struc Crest	Forward	Outlet Culvert	578.00	580.00
Culvert-Circular	Outlet Culvert	Forward	TW	571.12	580.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 100 years
Label: OS M2 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.00in
Length	54.57ft
Length (Computed Barrel)	54.57ft
Slope (Computed)	0.011ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.155
T2 ratio (HW/D)	1.301
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	573.43ft	T1 Flow	15.55ft³/s
T2 Elevation	573.72ft	T2 Flow	17.77ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS M2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	578.00ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
572.50	0.00	(N/A)	0.00
572.60	0.00	(N/A)	0.00
572.70	0.00	(N/A)	0.00
572.80	0.00	(N/A)	0.00
572.90	0.00	(N/A)	0.00
573.00	0.00	(N/A)	0.00
573.10	0.00	(N/A)	0.00
573.20	0.00	(N/A)	0.00
573.30	0.00	(N/A)	0.00
573.40	0.00	(N/A)	0.00
573.50	0.00	(N/A)	0.00
573.60	0.00	(N/A)	0.00
573.70	0.00	(N/A)	0.00
573.80	0.00	(N/A)	0.00
573.90	0.00	(N/A)	0.00
574.00	0.00	(N/A)	0.00
574.10	0.00	(N/A)	0.00
574.20	0.00	(N/A)	0.00
574.30	0.00	(N/A)	0.00
574.40	0.00	(N/A)	0.00
574.50	0.00	(N/A)	0.00
574.60	0.00	(N/A)	0.00
574.70	0.00	(N/A)	0.00
574.80	0.00	(N/A)	0.00
574.90	0.00	(N/A)	0.00
575.00	0.00	(N/A)	0.00
575.10	0.00	(N/A)	0.00
575.20	0.00	(N/A)	0.00
575.30	0.00	(N/A)	0.00
575.40	0.00	(N/A)	0.00
575.50	0.00	(N/A)	0.00
575.60	0.00	(N/A)	0.00
575.70	0.00	(N/A)	0.00
575.80	0.00	(N/A)	0.00
575.90	0.00	(N/A)	0.00
576.00	0.00	(N/A)	0.00
576.10	0.00	(N/A)	0.00
576.20	0.00	(N/A)	0.00
576.30	0.00	(N/A)	0.00
576.40	0.00	(N/A)	0.00
576.50	0.00	(N/A)	0.00
576.60	0.00	(N/A)	0.00

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
576.70	0.00	(N/A)	0.00
576.80	0.00	(N/A)	0.00
576.90	0.00	(N/A)	0.00
577.00	0.00	(N/A)	0.00
577.10	0.00	(N/A)	0.00
577.20	0.00	(N/A)	0.00
577.30	0.00	(N/A)	0.00
577.40	0.00	(N/A)	0.00
577.50	0.00	(N/A)	0.00
577.60	0.00	(N/A)	0.00
577.70	0.00	(N/A)	0.00
577.80	0.00	(N/A)	0.00
577.90	0.00	(N/A)	0.00
578.00	0.00	(N/A)	0.00
578.10	1.19	(N/A)	0.00
578.20	3.37	(N/A)	0.00
578.30	6.19	(N/A)	0.00
578.40	9.53	(N/A)	0.00
578.50	13.33	(N/A)	0.00
578.60	17.52	(N/A)	0.00
578.70	22.08	(N/A)	0.00
578.80	26.98	(N/A)	0.00
578.90	32.19	(N/A)	0.00
579.00	37.70	(N/A)	0.00
579.10	40.61	(N/A)	0.00
579.20	40.91	(N/A)	0.00
579.30	41.22	(N/A)	0.00
579.40	41.52	(N/A)	0.00
579.50	41.82	(N/A)	0.00
579.60	42.11	(N/A)	0.00
579.70	42.40	(N/A)	0.00
579.80	42.69	(N/A)	0.00
579.90	42.99	(N/A)	0.00
580.00	43.27	(N/A)	0.00

Contributing Structures

(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve | Return Event: 100 years
Label: OS M2 Blocked | Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Composite Outflow Summary

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
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(no Q: Struc Crest,Outlet Culvert)
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(no Q: Struc Crest,Outlet Culvert)
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Composite Outflow Summary

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
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(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS M2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
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Struc Crest,Outlet Culvert

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS N2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	570.00ft
Increment (Headwater)	0.50ft
Maximum (Headwater)	578.00ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Struc Crest	Forward	Outlet Culvert	576.00	578.00
Culvert-Circular	Outlet Culvert	Forward	TW	567.71	578.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 100 years
Label: OS N2 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	24.00in
Length	71.00ft
Length (Computed Barrel)	71.00ft
Slope (Computed)	0.010ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.012
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.155
T2 ratio (HW/D)	1.302
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	570.02ft	T1 Flow	15.55ft³/s
T2 Elevation	570.31ft	T2 Flow	17.77ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS N2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	576.00ft
Diameter	48.00in
Orifice Area	12.566ft²
Orifice Coefficient	0.600
Weir Length	12.57ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS N2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
570.00	0.00	(N/A)	0.00
570.50	0.00	(N/A)	0.00
571.00	0.00	(N/A)	0.00
571.50	0.00	(N/A)	0.00
572.00	0.00	(N/A)	0.00
572.50	0.00	(N/A)	0.00
573.00	0.00	(N/A)	0.00
573.50	0.00	(N/A)	0.00
574.00	0.00	(N/A)	0.00
574.50	0.00	(N/A)	0.00
575.00	0.00	(N/A)	0.00
575.50	0.00	(N/A)	0.00
576.00	0.00	(N/A)	0.00
576.50	13.33	(N/A)	0.00
577.00	37.70	(N/A)	0.00
577.50	45.80	(N/A)	0.00
578.00	47.14	(N/A)	0.00

Contributing Structures
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)
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(no Q: Struc Crest,Outlet Culvert)
(no Q: Struc Crest,Outlet Culvert)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Composite Rating Curve
Label: OS N2 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Composite Outflow Summary

Contributing Structures
Struc Crest,Outlet Culvert
Struc Crest,Outlet Culvert
Struc Crest,Outlet Culvert
Struc Crest,Outlet Culvert

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Requested Pond Water Surface Elevations	
Minimum (Headwater)	593.75ft
Increment (Headwater)	0.10ft
Maximum (Headwater)	602.60ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Struc Crest	Forward	Outlet Culvert	600.00	602.60
Culvert-Circular	Outlet Culvert	Forward	TW	590.43	602.60
Tailwater Settings	Tailwater			(N/A)	(N/A)

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Label: OS P3 Blocked
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Structure ID: Outlet Culvert Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	36.00in
Length	105.00ft
Length (Computed Barrel)	105.13ft
Slope (Computed)	0.050ft/ft

Outlet Control Data	
Manning's n	0.013
Ke	0.500
Kb	0.007
Kr	0.000
Convergence Tolerance	0.00ft

Inlet Control Data	
Equation Form	Form 1
K	0.0098
M	2.0000
C	0.0398
Y	0.6700
T1 ratio (HW/D)	1.135
T2 ratio (HW/D)	1.282
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	593.84ft	T1 Flow	42.85ft³/s
T2 Elevation	594.28ft	T2 Flow	48.97ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Outlet Input Data
Return Event: 100 years
Label: OS P3 Blocked
Storm Event: 100 Year, 24 Hour Storm
Scenario: Post-Development 100 Year, 24 Hour

Structure ID: Struc Crest Structure Type: Stand Pipe	
Number of Openings	1
Elevation	600.00ft
Diameter	60.00in
Orifice Area	19.635ft²
Orifice Coefficient	0.600
Weir Length	15.71ft
Weir Coefficient	3.00(ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	36 inch
Channel Slope	0.010ft/ft
Channel Invert Elevation	585.18ft

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01ft
Tailwater Tolerance (Maximum)	0.50ft
Headwater Tolerance (Minimum)	0.01ft
Headwater Tolerance (Maximum)	0.50ft
Flow Tolerance (Minimum)	0.001ft³/s
Flow Tolerance (Maximum)	10.000ft³/s

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin H (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	618.10ft
Volume (Initial)	31,778.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	21.76ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	16.65ft³/s	Time to Peak (Flow, Outlet)	726.000min

Elevation (Water Surface, Peak)	618.84ft
Volume (Peak)	39,275.897ft³

Mass Balance (ft³)	
Volume (Initial)	31,778.000ft³
Volume (Total Inflow)	63,696.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	63,487.000ft³
Volume (Retained)	31,946.000ft³
Volume (Unrouted)	-42.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin K (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	588.00ft
Volume (Initial)	55,873.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	87.65ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	75.78ft³/s	Time to Peak (Flow, Outlet)	729.000min

Elevation (Water Surface, Peak)	589.37ft
Volume (Peak)	91,584.038ft³

Mass Balance (ft³)	
Volume (Initial)	55,873.000ft³
Volume (Total Inflow)	289,088.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	287,250.000ft³
Volume (Retained)	57,521.000ft³
Volume (Unrouted)	-191.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin L (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	584.00ft
Volume (Initial)	149,512.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	273.03ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	181.56ft³/s	Time to Peak (Flow, Outlet)	735.000min

Elevation (Water Surface, Peak)	586.81ft
Volume (Peak)	312,714.709ft³

Mass Balance (ft³)	
Volume (Initial)	149,512.000ft³
Volume (Total Inflow)	957,044.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	948,406.000ft³
Volume (Retained)	157,511.000ft³
Volume (Unrouted)	-639.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin M (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	578.00ft
Volume (Initial)	58,073.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	39.61ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	34.42ft³/s	Time to Peak (Flow, Outlet)	726.000min

Elevation (Water Surface, Peak)	578.94ft
Volume (Peak)	74,204.200ft³

Mass Balance (ft³)	
Volume (Initial)	58,073.000ft³
Volume (Total Inflow)	127,385.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	126,713.000ft³
Volume (Retained)	58,661.000ft³
Volume (Unrouted)	-84.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin N (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	576.00ft
Volume (Initial)	31,276.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	36.94ft³/s	Time to Peak (Flow, In)	720.000min
Flow (Peak Outlet)	34.81ft³/s	Time to Peak (Flow, Outlet)	723.000min

Elevation (Water Surface, Peak)	576.94ft
Volume (Peak)	39,794.134ft³

Mass Balance (ft³)	
Volume (Initial)	31,276.000ft³
Volume (Total Inflow)	114,230.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	114,089.000ft³
Volume (Retained)	31,355.000ft³
Volume (Unrouted)	-63.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Subsection: Level Pool Pond Routing Summary
Label: Basin P (IN)
Scenario: Post-Development 100 Year, 24 Hour

Return Event: 100 years
Storm Event: 100 Year, 24 Hour Storm

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	600.00ft
Volume (Initial)	82,523.000ft³
Flow (Initial Outlet)	0.00ft³/s
Flow (Initial Infiltration)	0.00ft³/s
Flow (Initial, Total)	0.00ft³/s
Time Increment	3.000min

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	99.66ft³/s	Time to Peak (Flow, In)	723.000min
Flow (Peak Outlet)	90.08ft³/s	Time to Peak (Flow, Outlet)	729.000min

Elevation (Water Surface, Peak)	601.54ft
Volume (Peak)	117,748.963ft³

Mass Balance (ft³)	
Volume (Initial)	82,523.000ft³
Volume (Total Inflow)	339,922.000ft³
Volume (Total Infiltration)	0.000ft³
Volume (Total Outlet Outflow)	338,085.000ft³
Volume (Retained)	84,142.000ft³
Volume (Unrouted)	-218.000ft³
Error (Mass Balance)	0.1%

Post Developed Low Flow Blocked Conditions Routing For Phase 2

Index

Post Developed Low Flow Blocked Conditions Routing For Phase 2