STORMWATER MANAGEMENT REPORT
FOR
"WOODCREST STATION BUSINESS PARK"

101 Walter A. Gaines Way
Plate 7.01, Block 601, Lot 1
Amended Site Plan
Block 601, Lots 1.01, 1.02, & 1.03
Borough of Lawnside
Camden County
New Jersey

PREPARED FOR

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GENERAL

This report contains the narrative background information and design computations for the stormwater management system on proposed Block 601, Lot 1.03 following the approval of the Minor Subdivision plan. The project is being proposed by Vineland Construction Co. for two (2) warehouses, parking, drive lanes, required landscaping and lighting. The project will also construct a new road (Walter A. Gaines Way) which will provide access between Charleston Avenue and East Oak Avenue (Camden County Route #667). The entire site will also be serviced by public water and sewer onsite. The stormwater management system will consist of inlets, stormwater pipes, roof header system, and an infiltration/detention basin. The infiltration/detention basin is designed to infiltrate the entire water quality storm and the required volume to meet the groundwater recharge requirement. The basin will also be equipped with an outlet control structure to discharge runoff at a controlled rate into the unnamed tributary to Cooper River onsite.

The report has been revised to utilize the Delmarva Unit Hydrograph instead of the Standard Unit Hydrograph per NJDEP's review letter dated October 30, 2018. Minor modifications to the drainage areas have been made to address comments within the said review letter. The stormwater quality, quantity and groundwater recharge calculations have been revised to reflect the above revisions.

The Woodcrest Station Business Park site plans have been revised to combine the County Roadway Improvement into the set of plans. The stormwater analysis for the county roadway improvements had been incorporated into this report previously and complies with NJDEP Stormwater Management Regulations. The previously mentioned report for the County was created to show that the improvements proposed within the County right-of-way complied with NJDEP Stormwater Management Regulations. That report has been voided since all of the information is mentioned within this report.

The report has been revised to update the inlet drainage areas within the storm sewer design due to known locations of the roof drain cleanout.

The report has been revised to update the stormwater areas and runoff calculations per the Amended Site Plans for Woodcrest Station Business Park. Changes include layout change for Flex Building "B", routing future pad site (drainage area P2) into the basin and incorporating adjacent NJAW Operation Center basins runoff into the Woodcrest Station Business Park basin.

COMPLIANCE WITH NJDEP STORMWATER MANAGEMENT REGULATIONS

In accordance with the Stormwater Management Regulations adopted by the NJDEP on February 2, 2004, last amended on June 20, 2016 there are three major analyses that are to be conducted for the project site:

1. Groundwater Recharge
2. Stormwater Runoff Quantity
3. Stormwater Runoff Quality

GROUNDWATER RECHARGE

Groundwater Recharge is addressed at N.J.A.C. 7:8-5.4(a). Specifically, based on the current NJDEP Stormwater Management Regulation in N.J.A.C. 7:8-5.4(a)2ii the groundwater recharge requirement does not apply to projects within the "urban redevelopment area." As defined in 7:8-1.2 "Definition"

"urban redevelopment area" is defined as "previously developed portion of area (1) designated on the State Poly Map (SPPM) (see Appendix 1) as the Metropolitan Planning Area (PA1)".

Although the site falls within the Metropolitan Planning Area (PA 1), by definition "Urban Redevelopment Area", only previously developed portions of the Metropolitan Planning Area can be considered as Urban Redevelopment Area. Therefore, the groundwater recharge requirement does apply to the existing wooded areas disturbed onsite. Groundwater recharge requirement was addressed by maintaining the 100 percent of the average annual pre-construction groundwater recharge volume for the site. Using the New Jersey Groundwater Recharge Spreadsheet provided by NJDEP, the Post-Development Annual Recharge Deficit volume is 326,945 cubic feet. Based on the BMP Calculation spreadsheet, to meet the Post-Development Annual Recharge Deficit volume below the lowest control outlet requires a BMP Area of 3,720.8 square feet. The proposed basin has a bottom area of 36,435 square feet and therefore, the design of the basin exceeds the total annual recharge deficit required for the entire site. See Appendix 4 for the groundwater recharge calculations.

RUNOFF QUANTITY

The second analysis involves **Runoff Quantity**, which is addressed at N.J.A.C.7:8-5.4(a)3. For this project sub-paragraph iii is the applicable standard. It states that the stormwater management measures are to be designed "so that the post-construction peak runoff rates for the 2, 10 and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rates. These reductions apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed."

The table below shows that the total developed peak flow rates that will discharge to the existing watershed are less than the allowable peak flow rates after factoring in the required reductions of the respective pre-development peak discharge rates. Therefore, the second requirement is met.

	Peak Flow Rate (cfs)		
	2-year	10-year	100-year
Existing Site Total Outflow	1.41	6.12	19.19
Reduction Factor	50%	75%	80%
Allowable Site Outflow	**0.71**	**4.59**	**15.35**
Proposed Site Total Outflow	0.71	4.24	14.79
Reduction Difference	**0.00**	**-0.35**	**-0.56**

STORMWATER RUNOFF QUALITY

The last analysis is to verify that the design meets the **Stormwater Runoff Quality** standards which are addressed at N.J.A.C. 7:8-5.5. The regulations state that the post-construction load of Total Suspended Solids (TSS) in stormwater runoff generated from the water quality design storm is to be reduced by 80% of the anticipated load from the developed site, expressed as an annual average.

Table 4-1 on page 4-2 of the NJDEP's BMP Manual indicates that an infiltration basin with a sand bottom has a removal rate of 80%. The infiltration basin is designed to retain and infiltrate the entire volume of runoff from the water quality storm events. The total volume from the water quality storm is 1.084 acre-foot, which is below the designed infiltration volume of 1.093 acre-foot. Therefore, the basin will provide 80% TSS removal rate.

GEOGRAPHIC AREA

The site in question is Block 601, Lot 1 and is shown on the most current Borough of Lawnside Tax Map No. 7.01 containing an area of 24.033 acres. A Minor Subdivision plan will be submitted concurrently with this site plan to create three (3) lots known as Block 601, Lots 1.01, 1.02 and 1.03. The proposed lots are designated in the Redevelopment Area 2 to allow office and warehouse use under Ordinance No. 01-2018. The stormwater management basin will be located on Lot 1.03.

EXISTING CONDITIONS

As shown on the soils map attached in Appendix 1, majority of the site is wooded with several compacted dirt drives throughout the site. A small area of wetlands is located north onsite around the unnamed tributary to Copper River.

Topographic information was taken from Axis Geospacial, LLC and supplemented by an actual field survey performed by this office. The site can be found on the Runnemede Quadrangle map of the USGS 7.5 minute series map (see Appendix 1). The approximate center of the Block 601, Lot 1 is based on the NAD 1983 Northern and Eastern coordinates below:

Based on NAD1983	**Northern**	**Eastern**
Block 601, Lot 1	376,838	346,033

As shown on the Natural Resource Conservation Service (NRCS) Web Soil Survey (Appendix 1), the following soil series are mapped within the site proposed to be developed are:

Map Unit Name	**Map Unit Name**	**HSG**	**Depth to WT**
FrpB	Freehold-Downer-Urban Land Complex, 0 to 5 percent slope, well drained.	B	>80 in.
MatB	Marlton-Kresson-Urban land complex, 0 to 5 percent slopes, well drained	C	24 to 60

Based on the topography of the land and the area of interest that is being examined under proposed conditions for sizing the proposed infiltration/detention basin, the pre-developed hydrologic analysis has four (4) drainage areas. Refer to Appendix 9 for the Existing Drainage Area Map.

Shed E1 will be analyzed for rate reduction for the proposed basin. The drainage shed consists of several compacted dirt drive lanes with majority of the remaining area being wooded. The runoff from this drainage shed sheet flows North of formally Block 701, Lot 9 until it becomes a concentrated flow along the dirt drive, draining into the unnamed tributary, where it ultimately discharges into Cooper River. The area of this drainage shed is 10.626± acres, which is shown in Appendix 9.

Shed E2 is an existing drainage shed which drains southwesterly towards Charleston Avenue (C.R. 668). The area consists of wooded and open lawn area. Under proposed condition this area will entirely drain into the proposed basin. The area of this drainage shed is 3.182± acres, which is shown in Appendix 9.

Shed E3 is a large existing drainage shed consisting of onsite, offsite and East Oak Avenue county roadway. Under existing condition, the entire area drains towards East Oak Avenue (C.R. 667) and into the county's stormwater system ultimately discharging into Cooper River. Under proposed condition, this area will be developed to host NJAW Operation Center which will handle their runoff via onsite

basins which will ultimately discharge into the stormwater management basin on Block 601, Lot 1.03. The area of this drainage shed is 9.423± acres, which is shown in Appendix 9.

Shed E4 is a small drainage area onsite which drains off-site towards an unimproved Highland Avenue. This area will be captured onsite to mitigate any offsite flow downstream under proposed condition. The area of this drainage shed is 0.601± acres, which is shown in Appendix 9.

Based on the Borough's Ordinances and N.J.A.C. 7:8 requirements for Stormwater Management, the TR-55 "Urban Hydrology for Small Watersheds" (SCS) Method has been utilized for this site design. Existing and proposed condition peak discharge rates were computed using the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Method (within the *PondPack v10.0* computer software by Bentley) with a Type III rainfall distribution. The curve number and time of concentration were computed using methods described in the NRCS (formerly the Soil Conservation Service) Technical Release No. 55 (TR-55) *Urban Hydrology for Small Watersheds, June 1986*. The pre- and post-development hydrographs were calculated using the *DELMARVA* Unit Hydrograph method as included in the *Pondpack* computer software.

Appendix 2 shows the results of the runoff computations performed using the Haestad Methods "Pondpack v10.0" Program. The tables below summarize the existing areas, coverage breakdown, weighted CN values, time of concentration and existing peak flow rates for each storm event.

Existing Area Coverage Breakdown

Area	Impervious	Grass	Grass	Woods	Woods	Total	Wtd./ CN	Tc
	area	area	area	Area	Area	area		
NO.	acres	acres	acres	Acres	Acres	acres		HR
HSG	N/A	B	C	B	C			
CN value:	98	61	74	55	70	--		
E1	0.428	0.610	0.165	8.134	1.289	10.626	59	0.3769
E2	0.123		0.690	0.629	1.740	3.182	69	0.3879
E3	0.526	2.732		6.165		9.423	59	0.4172
E4					0.601	0.601	70	0.2795

Existing Area Peak Flow Rates

	Peak Flow Rate (cfs)		
Area	2 Year	10 Year	100 Year
E1	1.41	6.12	19.19
E2	1.17	3.17	7.73
E3	1.47	5.29	16.02
E4	0.28	0.73	1.76

The time of concentration for all drainage sheds were computed using the TR-55 methodology.

PROPOSED CONDITIONS

Based on the proposal before the Board, the applicant intends to construct two (2) warehouse building with associated drive lanes and parking, landscaping, lighting and other associated improvements. The project also includes the construction of a connecting roadway through the property as required by the Redevelopment Plan which will run from East Oak Avenue to Charlestown Avenue. The stormwater runoff generated from all of the improvements onsite will be handled by the proposed infiltration/detention basin which is to be maintained by the property owner. The infiltration/detention basin will discharge into an adjacent unnamed tributary to Cooper River via controlled outlet structure

through a 24" H.D.P.E. outlet pipe. The basin design includes a six (6) inch thick layer of K5 sand, consisting of a maximum of 15% fines with a minimum permeability rate of 20 inches per hour. The basin has been designed to meet all of the NJDEP Stormwater Management criteria.

Based upon the proposed grading, the runoff under proposed conditions will have three (3) drainage areas as follows:

Shed P1 is the largest drainage shed, consisting of the entire proposed development as well as the new road. The area consists of building, drive lanes, parking and open grass area. The runoff from this area will be collect via proposed inlets and discharge into the proposed stormwater management system, where it will detain and treat the required water quality storm before discharging at controlled rates. The area of this drainage shed is 16.749± acres, which is shown in Appendix 9.

Shed P2 is the future pad site (Block 601, Lot 1.01) to be developed and taken into the basin on Block 601, Lot 1.03). The future pad site accounts for approximately 55 percent impervious on Lot 1.01 to be developed. The area of this drainage shed is 2.587± acres, which is shown in Appendix 9.

Shed NJAW is the New Jersey American Water Operation Center to be developed on adjacent property Block 701, Lot 1. The runoff from the site will be collected via inlets and piped into two (2) surface detention/infiltration basin systems on their property. Outflow from these basins will discharge into the regional storm sewer system on Walter A. Gaines Way, which will discharge into the stormwater management basin located on proposed Block 601, Lot 1.03. The NJAW basin routing calculations and hydrographs were combined with this report to ensure that the stormwater management basin on proposed Lot 1.03 will continue to function properly and meet the requirements of the NJDEP Stormwater Management regulations at N.J.A.C.7:8. Routing calculation, hydrograph and basin information was provided by Jefferis Engineering Associates, LLC who is the design engineer for the NJAW Operation Center site.

The program printouts for the proposed runoff computations and basin routings are shown in Appendix 3. A summary of developed areas, coverage breakdown, weighted CN values, time of concentration and proposed peak flow rates are noted below:

Proposed Area Coverage Breakdown

Area	Impervious	Grass	Grass	Wooded	Wooded	Total	WT/ CN	Imp. Tc	Per. Tc
	area	area	area	area	area	area			
NO.	acres	acres	acres	acres	acres	acres		HR	HR
HSG	N/A	B	C	B	C				
CN value:	98	61	74	55	70	--			
P1	11.130	3.003	1.788		0.828	16.749	87	0.1885	0.1885
P2	1.400	1.187				2.587	81	0.1000	0.1667
NJAW 1	8.180	3.560		2.740		14.480	81	0.1000	0.6317
NJAW 2	0.330	2.020				2.350	66	0.1000	0.1800

Proposed Area Peak Flow Rates

	Peak Flow Rate (cfs)		
Area	2 Year	10 Year	100 Year
P1	24.05	40.37	74.73
P2	3.56	6.15	11.85
NJAW 1	19.82	31.14	55.08
NJAW 2	1.16	2.94	7.46

STORMWATER MANAGEMENT INFILTRATION/DETENTION BASIN DESIGN

The infiltration/detention basin is a stormwater management system designed to both maximize the removal of pollutants from stormwater and to promote groundwater recharge. The basin bottom will be constructed at elevation at elevation 51.50 with a six (6)-inch thick K5 sand layer to provide 80 percent TSS removal and help ensure maintenance of the design permeability rate of time, as per the NJDEP Best Management Practice Manual. The total drainage area to the infiltration/detention basin is comprised of drainage sheds P1, P2 (future pad site), and discharge from NJAW Operation Center infiltration/detention basins. These areas include the post-development improvements of the site, which include flex office and warehouse building, drive aisles and parking, sidewalks, future pad site, and NJAW Operation Center site. The infiltration/detention basin will also include an outlet control structure designed such that the developed runoff directed into this stormwater management facility for the two (2), 10 and 100-year storms will be controlled or detained in order to limit the discharge from the contributing areas of the site to 50%, 75% and 80% respectively of the pre-development peak rate of runoff for the same year storm for the corresponding existing area. The stormwater management facility is designed to meet all the requirements of the NJDEP Stormwater Management criteria.

Outflow from the basin is through an outlet structure with two (2) three inch (3") circular orifices at elevation 52.75 feet and a twelve inch high by thirteen inch wide (12" H x 13" W) rectangular orifice at elevation 54.70. A trash rack is placed at the top of the outlet structure box at elevation 58.30 feet. Discharge from the riser will be through a 24" diameter HDPE pipe into a storm manhole, which will discharge into the unnamed tributary via 30" diameter HDPE pipe, which ultimately drains into Cooper River.

Infiltration/Detention Basin Volume

Elevation (ft)	Contour Area (sf)	A1+A2+sqr (A1*A2) (sf)	Incremental Volume (ac-ft)	Volume Sum (ac-ft)
51.50	36,435	-	-	-
52.00	37,621	111,079	0.425	0.425
53.00	40,036	116,467	0.891	1.316
54.00	42,507	123,796	0.947	2.264
55.00	45,035	131,295	1.005	3.268
56.00	47,620	138,965	1.063	4.332
57.00	50,261	146,804	1.123	5.455
58.00	52,958	154,811	1.185	6.640
58.50	54,328	160,925	0.616	7.255
59.00	55,712	165,056	0.632	7.887
60.00	58,523	171,335	1.311	9.198

INFILTRATION/DETENTION BASIN SUMMARY CHECKLIST			
No.	**Parameter Description**	**Required**	**Provided**
1	Storage Volume	WQ = 1.084 ac-ft	1.093 ac-ft
2	Minimum Subsoil Design Permeability Rate	0.5 in./hr.	6.4 in./hr.
3	Maximum Design Storm Drain Time	72 - hours	2.45 hours
4	Minimum SHWT Separation	2 feet	2.1 feet
5	Minimum Sand Layer Thickness	6 inches	6 inches
6	Minimum Sand Layer Permeability Rate	20 in./hr.	20 in./hr.
7	Maximum Stored Water Depth	2 feet	1.25 feet
8	Minimum WQ Orifice Size	2.5 inches	3 inches

SEDIMENT BASIN

The proposed basin will be excavated prior to the start of construction and will act as a sediment basin during the construction phase of this project. A sediment riser will be installed and shall be connected to the proposed outlet structure while the sediment basin is in use. The calculations for the sediment basin are based on drainage shed P1 of the Flex site development. The table below highlights the results of the sediment basin calculations:

Sediment Basin #1	
Minimum Sediment Volume Required	4,948 c.f.
2-Year Inflow Volume	138,565 c.f.
Minimum Volume Required	143,513 c.f.
Volume Provided	146,998 c.f.
Top of Sediment Rise Elevation	55.10
4" Dewatering Hole Invert Elevation	51.65

The 4-inch dewatering hole shall be installed above the sediment volume noted in the table above. All silt/sediment accumulated within the sediment basin at the end of construction shall be removed and disposed in the requirements of local, county and state regulations. The sand layer will not be installed until the site is completely stabilized, construction is completed, and the silt is removed from the bottom of the basin. See Appendix 5 for the sediment basin calculations.

EMERGENCY SPILLWAY

As required by N.J.A.C. 5:21-7.6 the emergency overflow through the emergency spillway is required to be designed to safely pass the 100-year peak inflow while maintaining one-foot of freeboard. Since the proposed basin is classified as a Class IV dam under N.J.A.C. 7:20-1.8(a)4, the spillway is required to be designed to safely pass the 100-year plus 50% peak inflow while maintaining one-foot of freeboard under N.J.A.C. 7:20-1.9(a). The proposed 120-foot wide emergency spillway at the basin is set at elevation 58.50 feet with a top of berm elevation of 60.00 feet. A maximum depth of 0.50 feet was calculated through the spillway with a peak inflow of 131.15 cfs, therefore providing 1-foot of freeboard. Since the calculated velocity through the spillway is 2.15 feet per second, the spillway in the basin will be stable if vegetated per Table 18-1 under the Standard for Grassed Waterways in the Standards for Soil Erosion and Sediment Control in New Jersey. See Appendix 4 for the emergency spillway calculations.

RIP-RAP AT STORMWATER DISCHARGE POINTS

Outlet Conduit Calculations are provided in Appendix 4 of this report and conform to the Standards for Conduit Outlet Protection of "Standards for Soil Erosion and Sediment Control in New Jersey, 7th Edition dated January 2014, revised to July 2017.

PROPOSED STORM PIPING

The proposed storm sewer system collects the runoff from roofs & inlets within the roadway, driveway aisles and additional parking spaces and discharges into the proposed basin. The pipes are designed for a 25-year storm frequency to quickly drain the runoff. The storm flows at junction points are calculated based on the accumulated area and times of concentration. The storm sewer design spreadsheet from StormCAD can be found in Appendix 6 of the report.

SOIL BORINGS AND ASSOCIATED INFORMATION

Taylor Wiseman & Taylor, Blue Bell, PA office performed five (5) soil borings and five (5) tube permeameter tests in the area of the proposed infiltration/detention basin on April 12th, 2018. The test pits were excavated using a backhoe to determine soil types, depth to estimated seasonal high water table (ESHWT) if encountered and depth to groundwater (GW) if encountered. The test pits were excavated to depths of roughly eleven feet or until groundwater was encountered. A summary of the findings is shown below:

T.P. Location	Surface Elevation (ft.)	Lowest Elevation of Test Pit Excavation (ft.)	Elevation of Test (ft.)	ESHWT Elevation (ft.)	GW Elevation (ft.)	Infiltration Rate (in/hr)
TP #5	54.7	48.7	52.2	48.9	48.7	12.8
TP #6	61.2	50.4	52.2	NE	NE	14.9
TP #7	60.8	57.3	59.8	NE	NE	14.6
TP #8	60.6	49.3	52.1	NE	NE	25.3
TP #9	59.7	47.7	50.7	47.7	NE	23.2

*NE – Not Encountered

Based on the soil investigation there seems to be hard pan firm(marl) layer between test pits 6 and 7 showing signs of ponding perched water. The firm(marl) layer shall be removed during basin excavation and replaced with K4 material. The full soils report and findings of the soil types encountered is attached to this report and can be found in Appendix 7.

INFILTRATION & DRAIN TIME

The Best Management Practice Manual requires that a factor of safety of two (2) shall be applied to the field-tested permeability rate and requires that the basin drains within 72 hours. Our Blue Bell, PA office performed five (5) tube permeameter tests within the basin bottom. After applying a factor of safety of two (2) to the lowest permeability rate a design permeability rate of 6.4 inches per hour is determined. Infiltration calculations can be found in Appendix 4 of this report. The following table is a summary of the 72-hour drain time requirement.

Summary of the 100-Year Storm Drain Time

Basin	Drain Time of 100-Year Storm Below Orifice
Infiltration/Detention	2.45 hrs.

As shown above, the basin meets the NJDEP's 72-hour drain time requirement. During basin excavation if hard pan silty clay is encountered it shall be removed and replaced with K4 material to the lower limits of horizon exhibiting hard pan features prior to the placement of the six (6) inch K5 sand bottom. After construction of the basin is complete, five (5) additional test borings must be performed and soil permeability should be conducted within the most hydraulically restrictive soil horizon or substratum between the bottom of the as-built basin and the seasonal high groundwater table to ensure that the installed basin functions as designed. If the basin does not drain within the required 72 hours after a large storm event, corrective maintenance procedures must be taken to correct any silt accumulation, problems or malfunctions within the basin.

GROUNDWATER MOUNDING ANALYSIS

A groundwater mounding analysis was performed on the proposed basin using a Hantush Method Spreadsheet developed by the U.S.G.S. and published in "Scientific Investigations Report #2010-5102-Simulations of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins," U.S. Department of the Interior, U.S. Geologic Survey, which was prepared in cooperation with the New Jersey Department of Environmental Protection. The analysis assumed an infiltration depth equal to the height of the first outlet control (two 3" orifices) above the bottom of the basin and includes the following data:

Recharge (infiltration) rate (R)	12.8 inches/hour = 25.6 feet/day
Specific yield (medium sand) (S_y)	26% = 0.26
Horizontal hydraulic conductivity (K_h)	256 feet/day
Approximate ½ basin bottom dimensions	X=145', Y=70'
Infiltration depth	1.25 feet
Duration of infiltration period (t)	(1.25 feet)/(25.6 feet/day)=0.0488 days
Initial thickness of saturation zone (hi(0)) Existing ground – depth to water level	48.9 feet

Per the soil log and permeameter testing results performed by this office on April 12, 2018, a seasonal high-water table was observed at an elevation of 48.9, and therefore the analysis was modeled at an initial saturation zone of 48.9 feet. The results of the groundwater mounding analysis show that a storm event large enough to fill the recharge volume in the proposed basin below the first outfall will produce 4.05-foot mound in the center of the basin. The critical areas to check for hydraulic impacts for this project would be at the perimeter of the basin and/or the nearest wetlands lines. Based on the calculations, the mound is reduced to about 0.44 to 0.64 feet at the perimeter of the basin. Also, the nearby wetlands area will only see a 0.08-foot increase in estimated seasonal high-water table which is negligible.

NON-STRUCTURAL STORMWATER MANAGEMENT STRATEGIES

The New Jersey Stormwater Management Rules, N.J.A.C. 7:8-5.3 et seq. as published on February 2, 2004 and amended to June 20, 2016, states that "To the maximum extent practicable, the standards in N.J.A.C. 7:8-5.4 and 5.5 shall be met by incorporating nonstructural stormwater management strategies at N.J.A.C. 7:8-5.3 into the design." The nine strategies identified in N.J.A.C. 7:8-5.3 are listed below, along with how the proposed design addresses each one:

1. Protect areas that provide water quality benefits or areas particular susceptible to erosion and sediment loss.
    a. The runoff from the site is to be collected in inlets and roof headers and piped to the proposed infiltration/detention basin to prevent erosion and sediment loss.
    b. The infiltration/detention basin has been designed to meet the required TSS removal rate of 80%.
    c. The maximum proposed slope onsite is 33 percent.

2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.
    a. A minimum number of parking stalls have been provided as required by the Borough of Lawnside Ordinance.
    b. The maximum impervious coverage allowed for the site is 80 percent while only 34.4 percent is proposed.

c. There are two curb cuts proposed onsite to allow the break up and/or the disconnection of flow of runoff over impervious surfaces allowing the runoff to flow over a vegetated swale before either discharging into the stormwater sewer system or proposed basin.

3. Maximize the protection of natural drainage features and vegetation.
   a. The site disturbance will be minimized as much as possible.
   b. The 50-foot wetlands buffer and 50-foot Riparian Zone will be maintained.
   c. Silt fences and tree protection along the existing and remaining tree line will be implemented during construction phase wherever possible as shown on the Soil Erosion and Sediment Control Plan.

4. Minimize the decrease in the "time of concentration" from the pre-construction to post-construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed.
   a. The flow over grassed areas as sheet flow or shallow concentrated flow were utilized wherever possible.
   b. Stormwater pipes were designed with minimum slopes where ever possible to increase the time of concentration.

5. Minimize land disturbance including clearing and grading.
   a. The limit of disturbance, clearing and grading was minimized as much as possible without compromising the integrity of the design.
   b. Slopes of 3H:1V were used to meet grades as quickly as possible to minimize the disturbed areas.

6. Minimize soil compaction.
   a. Construction vehicles shall utilize the proposed travel ways to help minimize soil compaction to the open areas.
   b. Under no circumstance shall heavy equipment such as backhoes, dump trucks or bulldozers be permitted to operate within the footprint of BMP area.
   c. As of December 7th, 2017, Soil Restoration on Construction Site in New Jersey has been revised to address requirements for soil restoration on construction sites where soils may have become compacted. A Soil Compaction Mitigation Plan is provided to test soils throughout the site to check for compaction. In the event that testing indicate compaction in excess of the maximum thresholds indicated for the simplified testing methods, the contractor shall either perform compaction mitigation over the entire mitigation area denoted on the plan or perform more detailed tests to establish the limits of excessive compaction.

7. Provide low-maintenance landscape that encourages retention and planting of native vegetation and minimize the use of lawns, fertilizers and pesticides.
   a. The project proposes low maintenance landscape and native vegetation around the proposed BMP area as shown on the Landscape Plan.

8. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas.
   a. As mentioned previously, there are two five-foot curb cuts proposed onsite which allows runoff of impervious parking lot and/or drive aisles to flow across a vegetated swale before entering the stormwater sewer system or proposed basin onsite.

9. Provide other source controls to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runoff.
    a. Pollution prevention techniques such the emptying enclosed dumpsters will be done periodically on this site.
    b. The use of 'Eco-type' inlets with "Dump No Waste" stamps on the grates shall be utilized.
    c. Stabilization and fertilization of disturbed areas will be in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq.

PROJECT SUMMARY

Based on the above analyses, the stormwater management measures designed for this proposed development meet the requirements of the NJDEP Stormwater Management regulations at N.J.A.C.7:8.

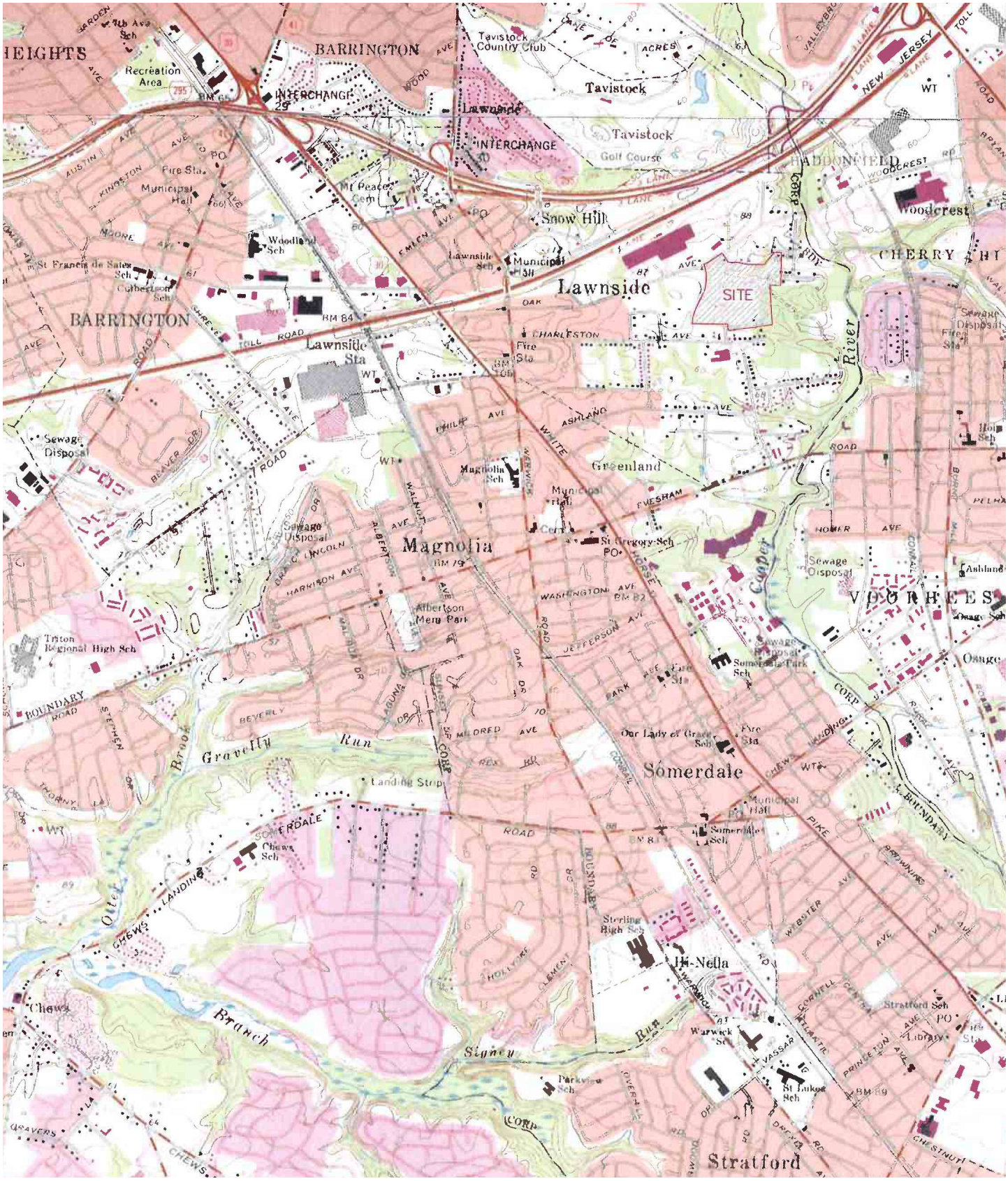
Infiltration/Detention Basin

Top of Berm = 60.00
120-foot Emergency Spillway Crest = 58.50
Top of Outlet Structure Elevation = 58.30
13" Width x 12" Height Rectangular Orifice Invert = 54.70
Two (2) 3" Orifices Invert = 52.75
6" Orifice Plug Invert = 51.50
Bottom of Basin = 51.50

	Storm Frequency			
	WQ	**2-year**	**10-year**	**100-year**
Routed Peak Inflow (cfs)	22.43	27.57	46.55	87.43
Peak Time for Inflow (hr)	1.15	12.15	12.15	12.15
Peak Outflow (cfs)	0.00	0.71	4.24	14.79
Maximum Water Elevation (ft)	52.75	54.96	55.96	58.43
Peak Storage (ac-ft)	1.084	3.224	4.284	7.173
Freeboard (To Top of Berm) (ft)	7.25	5.04	4.04	1.57

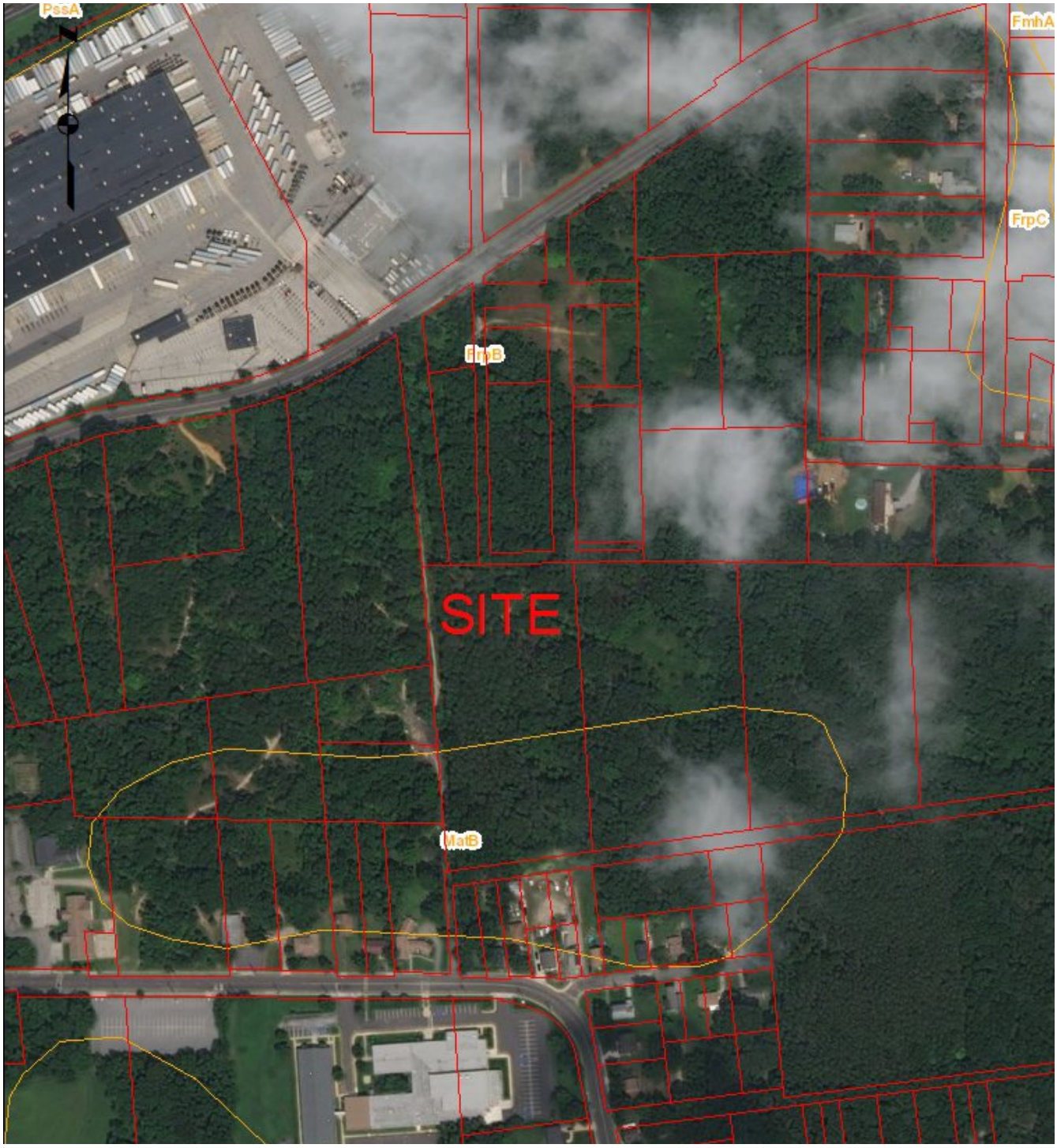
APPENDIX 1

LOCATION MAP (USGS QUAD)
SOIL SURVEY MAP (WEB SOIL SURVEY)
STATE PLAN POLICY MAP (NJ-GEOWEB)



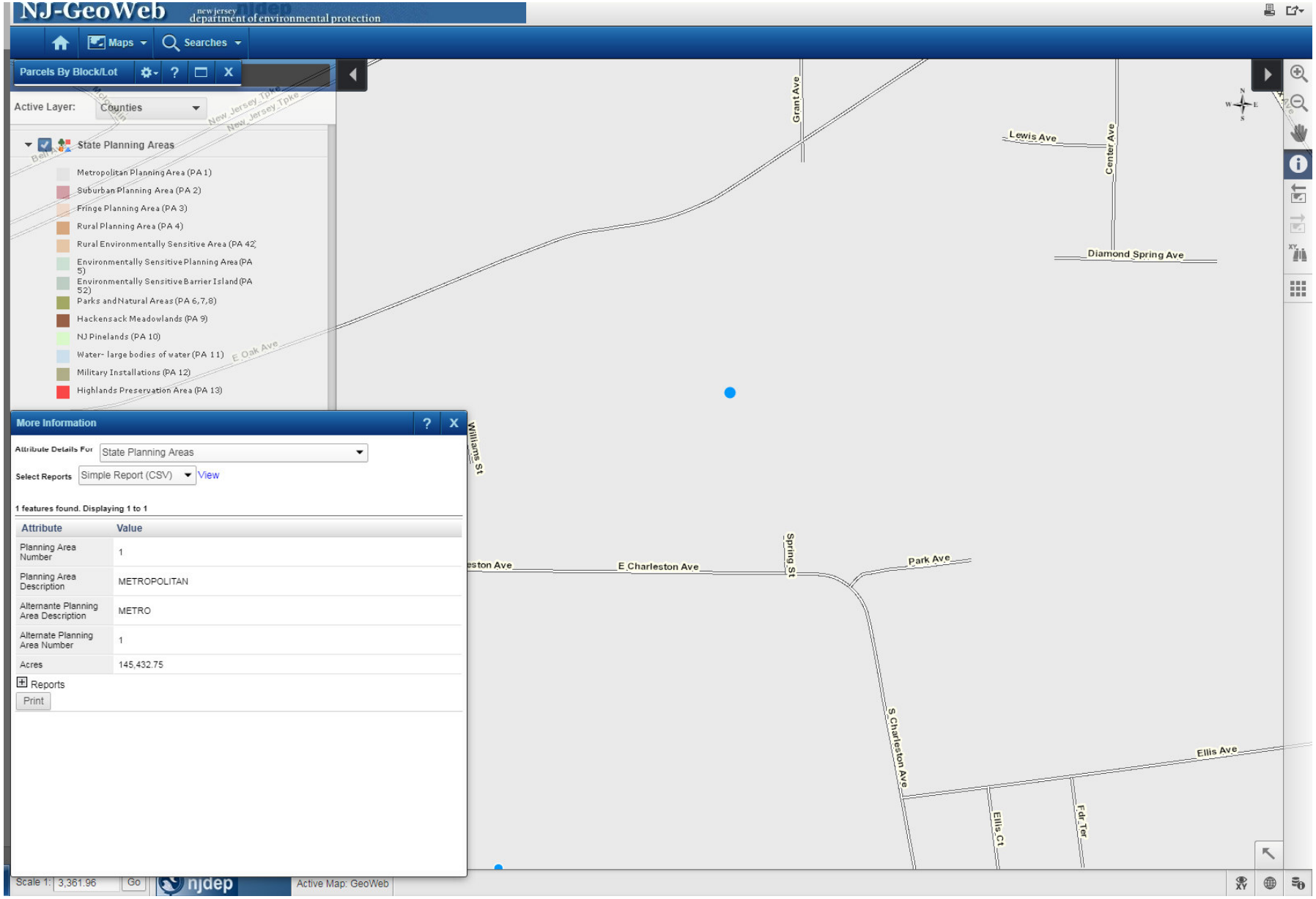
USGS Map **Figure #1** **Scale** **1” = 2,000’**	N	**Camden & Runnemede Quadrangle Map** **For** **Lawnside Flex Site** **Situate** **Proposed Plate 5 & 6, Block 601, Lot 1** **Borough of Lawnside, Camden County, New Jersey**

Taylor Wiseman & Taylor
ENGINEERS | SURVEYORS | SCIENTISTS



Map Unit Symbol	Map Unit Name	HSG	Depth to WT
FrpB:	Freehold-Downer-Urban Land Complex, 0 to 5 percent slopes, well drained.	B	>80 in.
MatB	Marlton-Kresson-Urban Land Complex, 0 to 5 percent slopes, well drained.	C	24 to 60

Soils Map **Figure #2** **Scale** **Not to Scale**	N	**Web Soil Survey Map** **For** **Lawnside Flex Site** **Situate** **Proposed Plate 5 & 6, Block 601, Lot 1** **Borough of Lawnside, Camden County, New Jersey**	TWT Taylor Wiseman & Taylor ENGINEERS | SURVEYORS | SCIENTISTS



NJ-GeoWeb Map

Figure #3

Scale Not to Scale

N

State Plan Policy Map
For
Lawnside Flex Site
Situate
Proposed Plate 5 & 6, Block 601, Lot 1
Borough of Lawnside, Camden County, New Jersey

Taylor Wiseman & Taylor
ENGINEERS | SURVEYORS | SCIENTISTS

APPENDIX 2

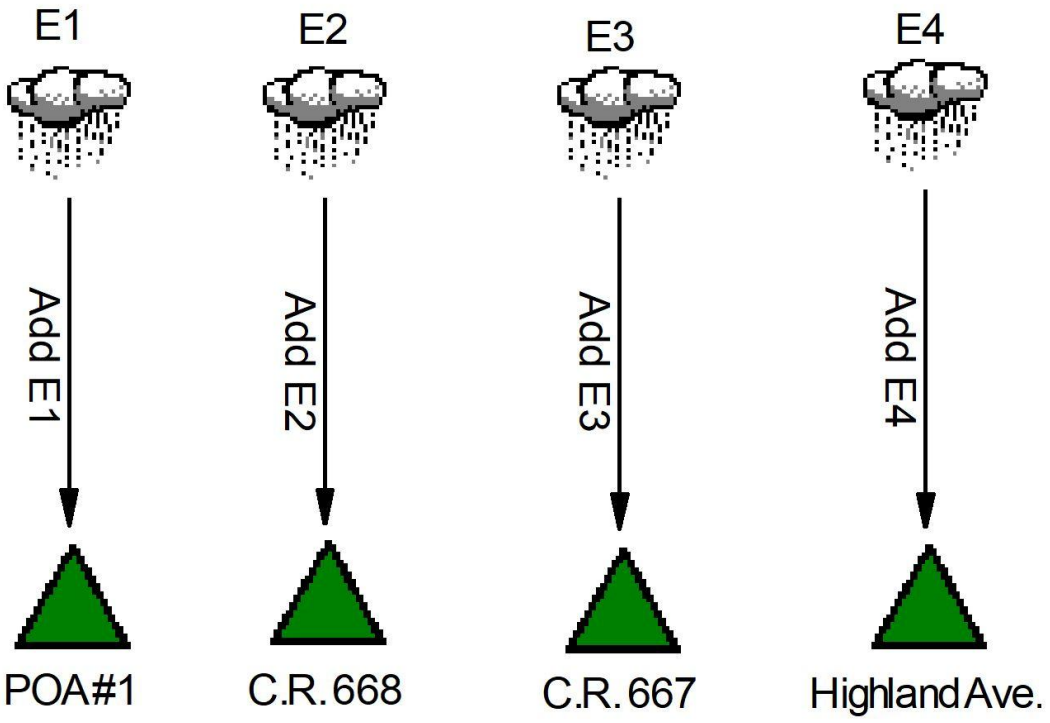
EXISTING DRAINAGE COMPUTATIONS

==========
JOB TITLE
==========

Project Date: 3/26/2018
Project Engineer: Koldomasov
Project Title: Lawnside Site Plan
Project Comments:
Borough of Lawnside
Camden County, New Jersey

Pre-Development Conditions
2-, 10-, & 100-Year Storm Events

Revision 1: Revised to utilize the Delmarva Unit Hydrograph per NJDEP review letter dated October 30, 2018.



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MASTER DESIGN STORM SUMMARY

Network Storm Collection: Borough of Lawns

Return Event	Total Depth in	Rainfall Type	RNF ID
2	3.3000	Synthetic Curve	TypeIII 24hr
10	5.1000	Synthetic Curve	TypeIII 24hr
100	8.5000	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*C.R. 667	JCT	2	.389	--	12.5000	1.47		
*C.R. 667	JCT	10	1.072		12.4500	5.29		
*C.R. 667	JCT	100	2.855		12.4000	16.02		
*C.R. 668	JCT	2	.222		12.4500	1.17		
*C.R. 668	JCT	10	.538		12.3500	3.17		
*C.R. 668	JCT	100	1.267		12.3500	7.73		
E1	AREA	2	.365		12.5500	1.41		
E1	AREA	10	1.143		12.4500	6.12		
E1	AREA	100	3.184		12.3500	19.19		
E2	AREA	2	.222		12.4500	1.17		
E2	AREA	10	.538		12.3500	3.17		
E2	AREA	100	1.267		12.3500	7.73		
E3	AREA	2	.389		12.5000	1.47		
E3	AREA	10	1.072		12.4500	5.29		
E3	AREA	100	2.855		12.4000	16.02		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
E4	AREA	2	.044		12.3000	.28		
E4	AREA	10	.106		12.2500	.73		
E4	AREA	100	.245		12.2500	1.76		
*HIGHLAND AVE.	JCT	2	.044		12.3000	.28		
*HIGHLAND AVE.	JCT	10	.106		12.2500	.73		
*HIGHLAND AVE.	JCT	100	.245		12.2500	1.76		
*POA #1	JCT	2	.365		12.5500	1.41		
*POA #1	JCT	10	1.143		12.4500	6.12		
*POA #1	JCT	100	3.184		12.3500	19.19		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 8.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall C.R. 667	JCT	2.855		12.4000	16.02	
Outfall C.R. 668	JCT	1.267		12.3500	7.73	
E1	AREA	3.184		12.3500	19.19	
E2	AREA	1.267		12.3500	7.73	
E3	AREA	2.855		12.4000	16.02	
E4	AREA	.245		12.2500	1.76	
Outfall HIGHLAND AVE.	JCT	.245		12.2500	1.76	
Outfall POA #1	JCT	3.184		12.3500	19.19	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall C.R. 667	JCT	.389		12.5000	1.47	
Outfall C.R. 668	JCT	.222		12.4500	1.17	
E1	AREA	.365		12.5500	1.41	
E2	AREA	.222		12.4500	1.17	
E3	AREA	.389		12.5000	1.47	
E4	AREA	.044		12.3000	.28	
Outfall HIGHLAND AVE.	JCT	.044		12.3000	.28	
Outfall POA #1	JCT	.365		12.5500	1.41	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall C.R. 667	JCT	1.072		12.4500	5.29	
Outfall C.R. 668	JCT	.538		12.3500	3.17	
E1	AREA	1.143		12.4500	6.12	
E2	AREA	.538		12.3500	3.17	
E3	AREA	1.072		12.4500	5.29	
E4	AREA	.106		12.2500	.73	
Outfall HIGHLAND AVE.	JCT	.106		12.2500	.73	
Outfall POA #1	JCT	1.143		12.4500	6.12	

Title... Project Date: 3/26/2018
Project Engineer: Koldomasov
Project Title: Lawnside Site Plan
Project Comments:
Borough of Lawnside
Camden County, New Jersey

Pre-Development Conditions
2-, 10-, & 100-Year Storm Events

Revision 1: Revised to utilize the Delmarva Unit Hydrograph per NJDEP review letter dated October 30, 2018.

DESIGN STORMS SUMMARY

Design Storm File,ID = Borough of Lawns

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 8.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = Borough of Lawns

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 8.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	100.00 ft
2yr, 24hr P	3.3000 in
Slope	.032000 ft/ft

Avg.Velocity .10 ft/sec

Segment #1 Time: .2920 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	896.00 ft
Slope	.033000 ft/ft
Unpaved	

Avg.Velocity 2.93 ft/sec

Segment #2 Time: .0849 hrs

==========
Total Tc: .3769 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	100.00 ft
2yr, 24hr P	3.3000 in
Slope	.021500 ft/ft

Avg.Velocity .08 ft/sec

Segment #1 Time: .3424 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	410.00 ft
Slope	.024000 ft/ft
Unpaved	

Avg.Velocity 2.50 ft/sec

Segment #2 Time: .0456 hrs

Total Tc: .3879 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	100.00 ft
2yr, 24hr P	3.3000 in
Slope	.020000 ft/ft

Avg.Velocity .08 ft/sec

Segment #1 Time: .3524 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	536.00 ft
Slope	.020300 ft/ft
Unpaved	

Avg.Velocity 2.30 ft/sec

Segment #2 Time: .0648 hrs

Total Tc: .4172 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	100.00 ft
2yr, 24hr P	3.3000 in
Slope	.037000 ft/ft

Avg.Velocity .10 ft/sec

Segment #1 Time: .2756 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	33.00 ft
Slope	.021210 ft/ft
Unpaved	

Avg.Velocity 2.35 ft/sec

Segment #2 Time: .0039 hrs

==========
Total Tc: .2795 hrs
==========

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	.428			98.00
Open space (Lawns,parks etc.) - Goo	61	.610			61.00
Open space (Lawns,parks etc.) - Goo	74	.165			74.00
Woods - good	55	8.134			55.00
Woods - good	70	1.289			70.00
COMPOSITE AREA & WEIGHTED CN --->		10.626			59.19 (59)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	.123			98.00
Open space (Lawns,parks etc.) - Goo	74	.690			74.00
Woods - good	55	.629			55.00
Woods - good	70	1.740			70.00
COMPOSITE AREA & WEIGHTED CN --->		3.182			68.98 (69)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Open space (Lawns,parks etc.) - Goo	61	2.732			61.00
Woods - good	55	6.165			55.00
COMPOSITE AREA & WEIGHTED CN --->		8.897			56.84 (57)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Woods - good	70	.601			70.00
COMPOSITE AREA & WEIGHTED CN --->		.601			70.00 (70)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E1 2
Tc = .3769 hrs
Drainage Area = 10.626 acres Runoff CN= 59

==========
Computational Time Increment = .05026 hrs
Computed Peak Time = 12.5649 hrs
Computed Peak Flow = 1.41 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.5500 hrs
Peak Flow, Interpolated Output = 1.41 cfs
==========

DRAINAGE AREA

ID:E1
CN = 59
Area = 10.626 acres
S = 6.9492 in
0.2S = 1.3898 in

Cumulative Runoff

.4119 in
.365 ac-ft

HYG Volume... .365 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .37695 hrs (ID: E1)
Computational Incr, Tm = .05026 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 18.63 cfs
Unit peak time Tp = .25130 hrs
Unit receding limb, Tr = 2.26169 hrs
Total unit time, Tb = 2.51299 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E1 10
Tc = .3769 hrs
Drainage Area = 10.626 acres Runoff CN= 59

==========
Computational Time Increment = .05026 hrs
Computed Peak Time = 12.4142 hrs
Computed Peak Flow = 6.14 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.4500 hrs
Peak Flow, Interpolated Output = 6.12 cfs
==========

DRAINAGE AREA

ID:E1
CN = 59
Area = 10.626 acres
S = 6.9492 in
0.2S = 1.3898 in

Cumulative Runoff

1.2914 in
1.144 ac-ft

HYG Volume... 1.143 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .37695 hrs (ID: E1)
Computational Incr, Tm = .05026 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 18.63 cfs
Unit peak time Tp = .25130 hrs
Unit receding limb, Tr = 2.26169 hrs
Total unit time, Tb = 2.51299 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E1 100
Tc = .3769 hrs
Drainage Area = 10.626 acres Runoff CN= 59

==========
Computational Time Increment = .05026 hrs
Computed Peak Time = 12.3639 hrs
Computed Peak Flow = 19.22 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3500 hrs
Peak Flow, Interpolated Output = 19.19 cfs
==========

DRAINAGE AREA

ID:E1
CN = 59
Area = 10.626 acres
S = 6.9492 in
0.2S = 1.3898 in

Cumulative Runoff

3.5958 in
3.184 ac-ft

HYG Volume... 3.184 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .37695 hrs (ID: E1)
Computational Incr, Tm = .05026 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 18.63 cfs
Unit peak time Tp = .25130 hrs
Unit receding limb, Tr = 2.26169 hrs
Total unit time, Tb = 2.51299 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E2 2
Tc = .3879 hrs
Drainage Area = 3.182 acres Runoff CN= 69

==========
Computational Time Increment = .05173 hrs
Computed Peak Time = 12.4143 hrs
Computed Peak Flow = 1.17 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.4500 hrs
Peak Flow, Interpolated Output = 1.17 cfs
==========

DRAINAGE AREA

ID:E2
CN = 69
Area = 3.182 acres
S = 4.4928 in
0.2S = .8986 in

Cumulative Runoff

.8365 in
.222 ac-ft

HYG Volume... .222 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .38795 hrs (ID: E2)
Computational Incr, Tm = .05173 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 5.42 cfs
Unit peak time Tp = .25863 hrs
Unit receding limb, Tr = 2.32769 hrs
Total unit time, Tb = 2.58632 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E2 10
Tc = .3879 hrs
Drainage Area = 3.182 acres Runoff CN= 69

==========
Computational Time Increment = .05173 hrs
Computed Peak Time = 12.3626 hrs
Computed Peak Flow = 3.17 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3500 hrs
Peak Flow, Interpolated Output = 3.17 cfs
==========

DRAINAGE AREA

ID:E2
CN = 69
Area = 3.182 acres
S = 4.4928 in
0.2S = .8986 in

Cumulative Runoff

2.0303 in
.538 ac-ft

HYG Volume... .538 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .38795 hrs (ID: E2)
Computational Incr, Tm = .05173 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 5.42 cfs
Unit peak time Tp = .25863 hrs
Unit receding limb, Tr = 2.32769 hrs
Total unit time, Tb = 2.58632 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E2 100
Tc = .3879 hrs
Drainage Area = 3.182 acres Runoff CN= 69

==========
Computational Time Increment = .05173 hrs
Computed Peak Time = 12.3109 hrs
Computed Peak Flow = 7.74 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3500 hrs
Peak Flow, Interpolated Output = 7.73 cfs
==========

DRAINAGE AREA

ID:E2
CN = 69
Area = 3.182 acres
S = 4.4928 in
0.2S = .8986 in

Cumulative Runoff

4.7777 in
1.267 ac-ft

HYG Volume... 1.267 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .38795 hrs (ID: E2)
Computational Incr, Tm = .05173 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 5.42 cfs
Unit peak time Tp = .25863 hrs
Unit receding limb, Tr = 2.32769 hrs
Total unit time, Tb = 2.58632 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E3 2
Tc = .4172 hrs
Pervious Area = 8.897 acres Runoff CN= 57
Imperv.Area = .526 acres Imperv.CN= 98

==========
Computational Time Increment = .05563 hrs
Computed Peak Time = 12.5160 hrs
Computed Peak Flow = 1.47 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.5000 hrs
Peak Flow, Interpolated Output = 1.47 cfs
==========

PERVIOUS AREA	DIRECTLY CONNECTED IMPERVIOUS AREA
ID:E3	
CN = 57	CN = 98
Area = 8.897 acres	Area = .526 acres
S = 7.5439 in	S = .2041 in
0.2S = 1.5088 in	0.2S = .0408 in
Cumulative Pervious Runoff	Cumulative Impervious Runoff
.3437 in	3.0671 in
.255 ac-ft	.134 ac-ft

HYG Volume...
.389 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41720 hrs (ID: E3)
Computational Incr, Tm = .05563 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 14.93 cfs
Unit peak time Tp = .27813 hrs
Unit receding limb, Tr = 2.50321 hrs
Total unit time, Tb = 2.78134 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E3 10
Tc = .4172 hrs
Pervious Area = 8.897 acres Runoff CN= 57
Imperv.Area = .526 acres Imperv.CN= 98

==========
Computational Time Increment = .05563 hrs
Computed Peak Time = 12.4604 hrs
Computed Peak Flow = 5.30 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.4500 hrs
Peak Flow, Interpolated Output = 5.29 cfs
==========

PERVIOUS AREA	DIRECTLY CONNECTED IMPERVIOUS AREA
ID:E3	
CN = 57	CN = 98
Area = 8.897 acres	Area = .526 acres
S = 7.5439 in	S = .2041 in
0.2S = 1.5088 in	0.2S = .0408 in
Cumulative Pervious Runoff	Cumulative Impervious Runoff
1.1582 in	4.8630 in
.859 ac-ft	.213 ac-ft

HYG Volume...
1.072 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41720 hrs (ID: E3)
Computational Incr, Tm = .05563 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 14.93 cfs
Unit peak time Tp = .27813 hrs
Unit receding limb, Tr = 2.50321 hrs
Total unit time, Tb = 2.78134 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E3 100
Tc = .4172 hrs
Pervious Area = 8.897 acres Runoff CN= 57
Imperv.Area = .526 acres Imperv.CN= 98

==========
Computational Time Increment = .05563 hrs
Computed Peak Time = 12.4048 hrs
Computed Peak Flow = 16.03 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.4000 hrs
Peak Flow, Interpolated Output = 16.02 cfs
==========

PERVIOUS AREA	DIRECTLY CONNECTED IMPERVIOUS AREA
ID:E3	
CN = 57	CN = 98
Area = 8.897 acres	Area = .526 acres
S = 7.5439 in	S = .2041 in
0.2S = 1.5088 in	0.2S = .0408 in
Cumulative Pervious Runoff	Cumulative Impervious Runoff
3.3627 in	8.2599 in
2.493 ac-ft	.362 ac-ft

HYG Volume...
2.855 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .41720 hrs (ID: E3)
Computational Incr, Tm = .05563 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 14.93 cfs
Unit peak time Tp = .27813 hrs
Unit receding limb, Tr = 2.50321 hrs
Total unit time, Tb = 2.78134 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E4 2
Tc = .2795 hrs
Drainage Area = .601 acres Runoff CN= 70

==========
Computational Time Increment = .03726 hrs
Computed Peak Time = 12.3333 hrs
Computed Peak Flow = .28 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = .28 cfs
==========

DRAINAGE AREA

ID:E4
CN = 70
Area = .601 acres
S = 4.2857 in
0.2S = .8571 in

Cumulative Runoff

.8869 in
.044 ac-ft

HYG Volume... .044 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .27946 hrs (ID: E4)
Computational Incr, Tm = .03726 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 1.42 cfs
Unit peak time Tp = .18630 hrs
Unit receding limb, Tr = 1.67674 hrs
Total unit time, Tb = 1.86304 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E4 10
Tc = .2795 hrs
Drainage Area = .601 acres Runoff CN= 70

==========
Computational Time Increment = .03726 hrs
Computed Peak Time = 12.2588 hrs
Computed Peak Flow = .74 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2500 hrs
Peak Flow, Interpolated Output = .73 cfs
==========

DRAINAGE AREA

ID:E4
CN = 70
Area = .601 acres
S = 4.2857 in
0.2S = .8571 in

Cumulative Runoff

2.1108 in
.106 ac-ft

HYG Volume... .106 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .27946 hrs (ID: E4)
Computational Incr, Tm = .03726 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 1.42 cfs
Unit peak time Tp = .18630 hrs
Unit receding limb, Tr = 1.67674 hrs
Total unit time, Tb = 1.86304 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5000 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - E4 100
Tc = .2795 hrs
Drainage Area = .601 acres Runoff CN= 70

==========
Computational Time Increment = .03726 hrs
Computed Peak Time = 12.2588 hrs
Computed Peak Flow = 1.76 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2500 hrs
Peak Flow, Interpolated Output = 1.76 cfs
==========

DRAINAGE AREA

ID:E4
CN = 70
Area = .601 acres
S = 4.2857 in
0.2S = .8571 in

Cumulative Runoff

4.8969 in
.245 ac-ft

HYG Volume... .245 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .27946 hrs (ID: E4)
Computational Incr, Tm = .03726 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 1.42 cfs
Unit peak time Tp = .18630 hrs
Unit receding limb, Tr = 1.67674 hrs
Total unit time, Tb = 1.86304 hrs

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----- W -----
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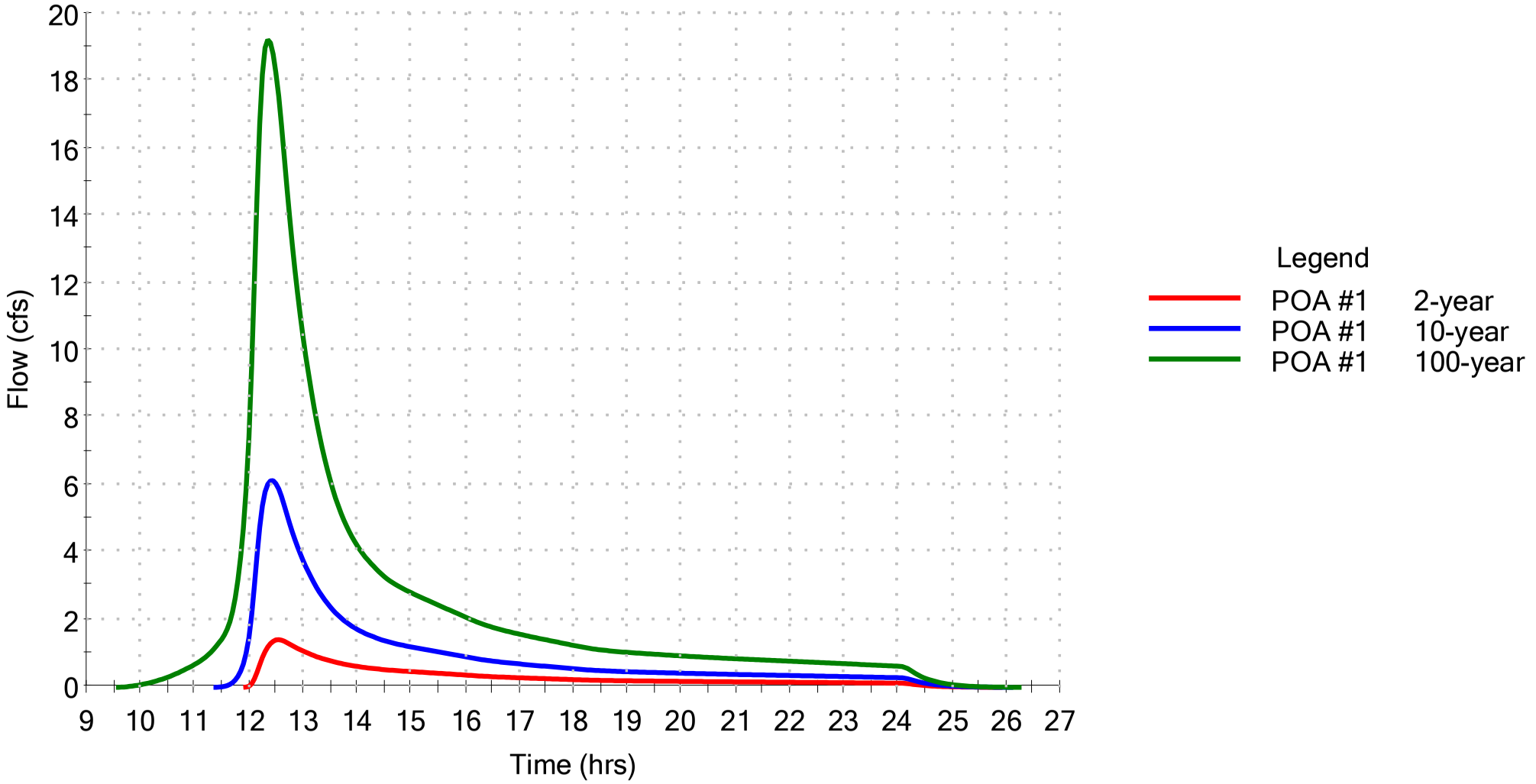
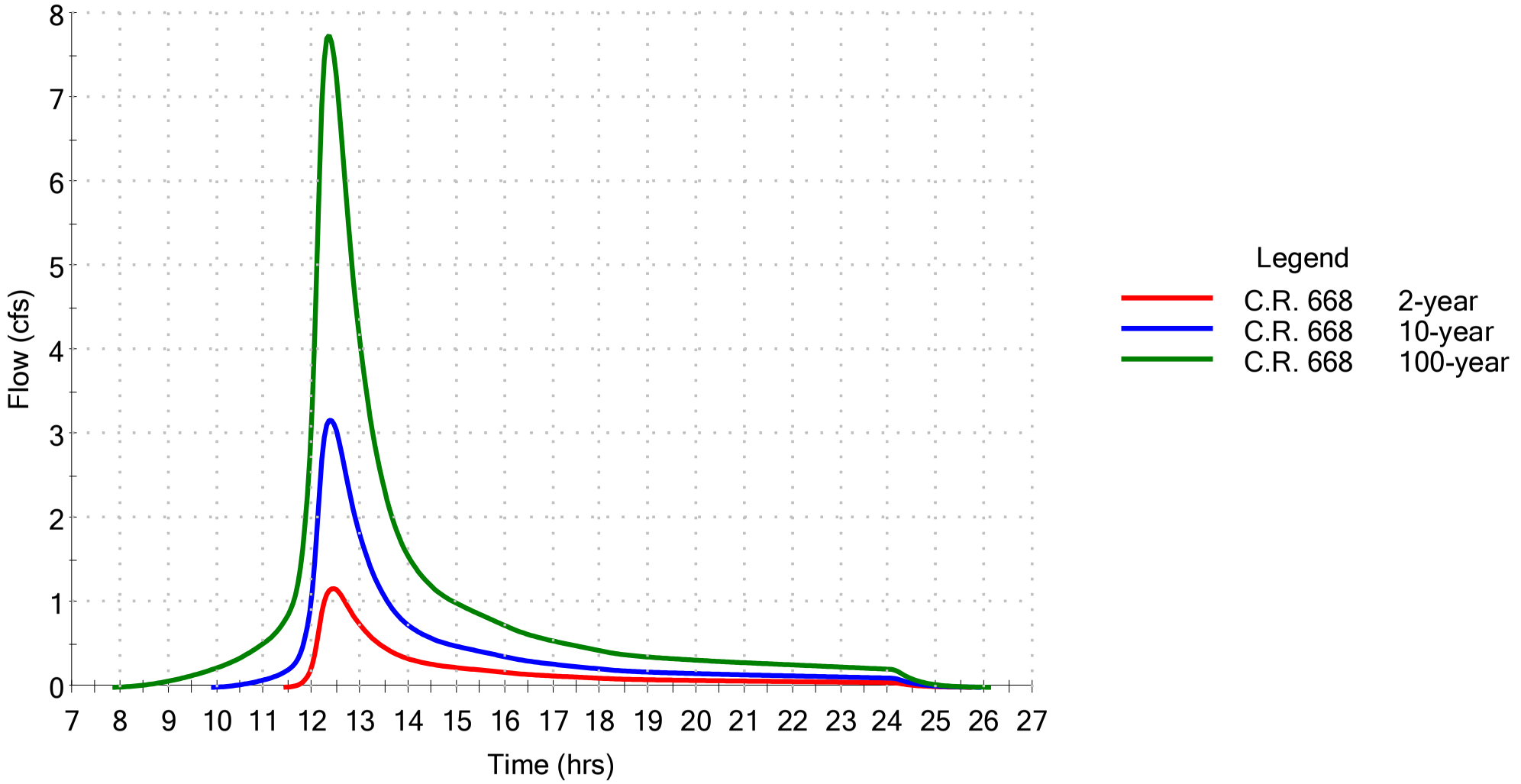
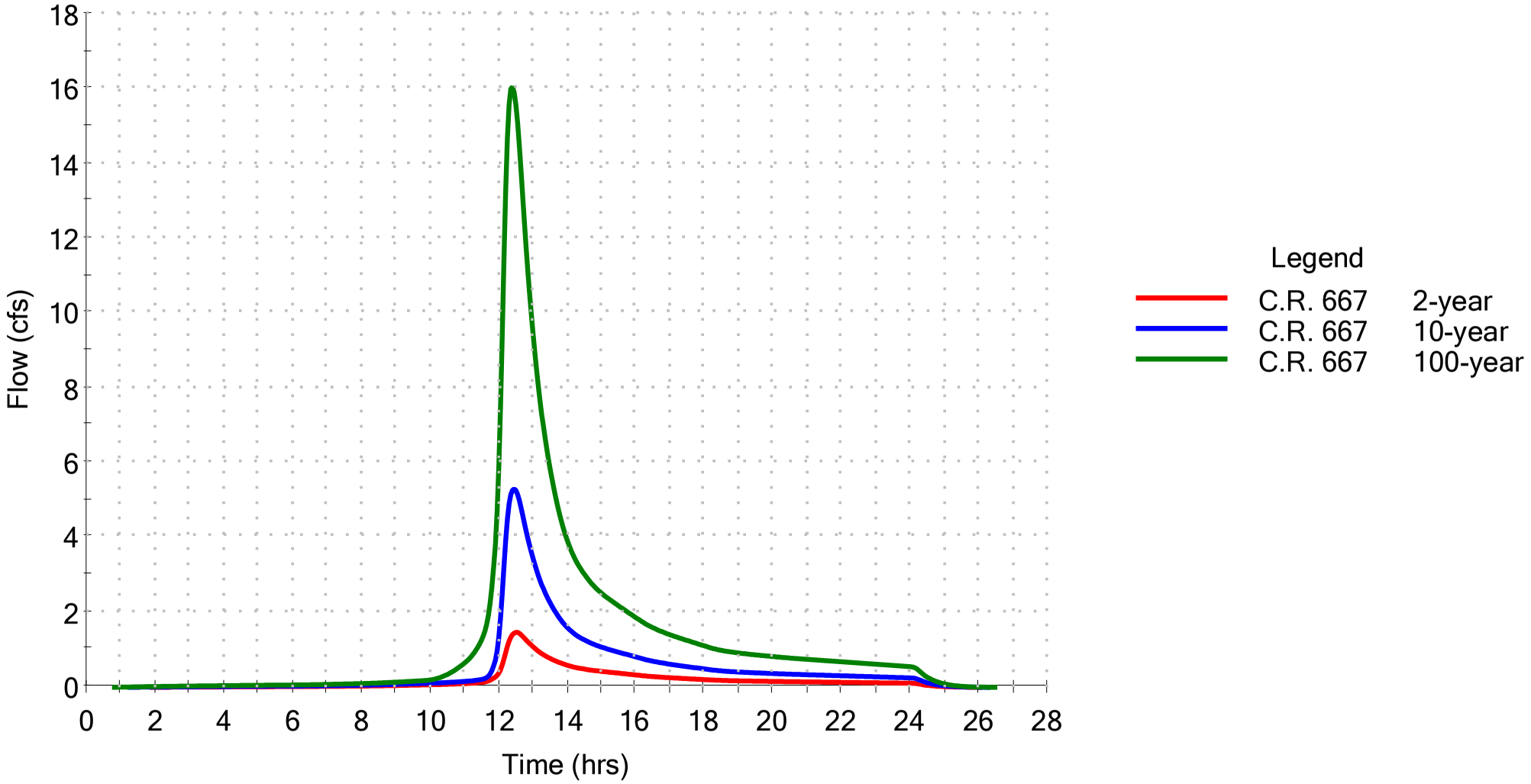
Woodcrest Station Business Park - Existing Condition
East Oak Avenue (C.R. 667)
2-, 10-, and 100- year Hydrograph



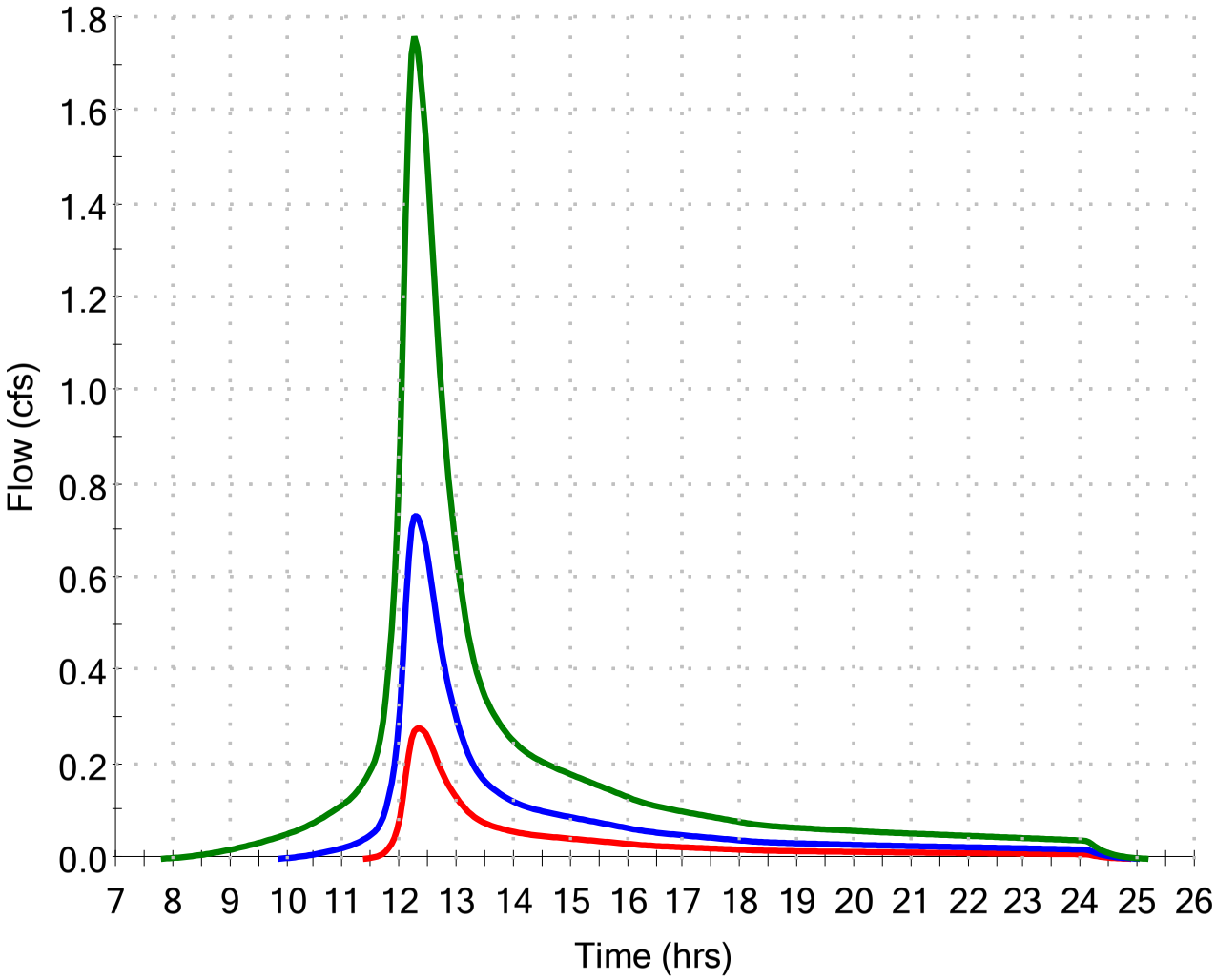
Woodcrest Station Business Park - Existing Condition
East Oak Avenue (C.R. 667)
2-, 10-, and 100-year Hydrograph



Woodcrest Station Business Park - Existing Condition
East Oak Avenue (C.R. 667)
2-, 10-, and 100-year Hydrographs



Woodcrest Station Business Park - Existing Condition
East Oak Avenue (C.R. 667)
2-, 10-, and 100-year Hydrographs



Legend

HIGHLAND AVE.	2-year
HIGHLAND AVE.	10-year
HIGHLAND AVE.	100-year

APPENDIX 3

PROPOSED DRAINAGE AND BASIN ROUTING
COMPUTATIONS

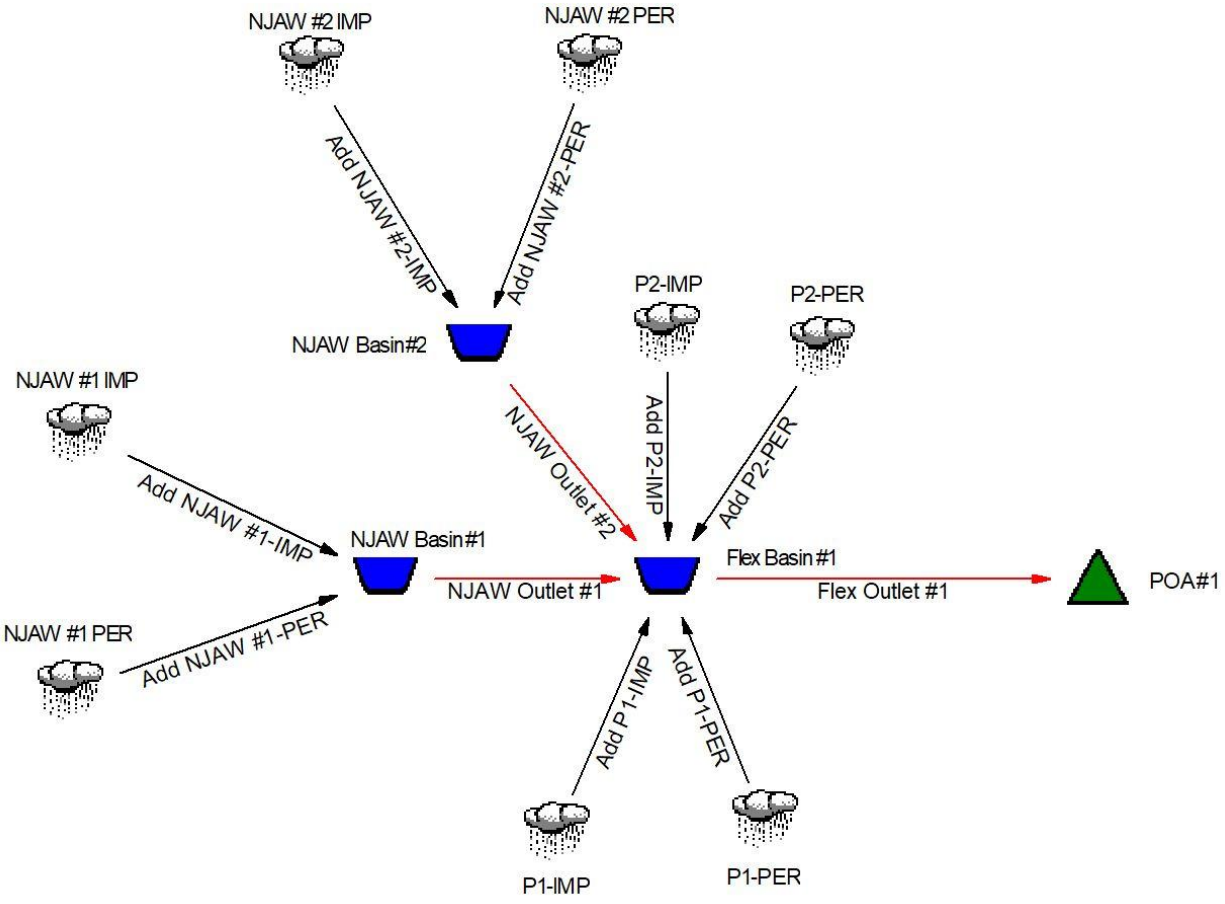
==========
JOB TITLE
==========

Project Date: 3/26/2018
Project Engineer: Koldomasov
Project Title: Lawnside Site Plan
Project Comments:
Borough of Lawnside
Camden County, New Jersey

Post-Development Conditions
WQ, 2-, 10-, & 100-Year Storm Events

Revision 1: Revised to utilise the Delmarva Unit Hydrograph and other minor revisions per NJDEP review letter dated October 30, 2018.

Revision 2: Revised to include adjacent NJAW routing, future corner pad site, and amended site plan change Building 'B' design.



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MASTER DESIGN STORM SUMMARY

Network Storm Collection: Borough of Lawns

Return Event	Total Depth in	Rainfall Type	RNF ID
1	1.2500	Time-Depth Curve	WQ
2	3.3100	Synthetic Curve	TypeIII 24hr
10	5.0600	Synthetic Curve	TypeIII 24hr
100	8.5200	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
FLEX BASIN #1IN	POND	1	1.084		1.1500	22.43		
FLEX BASIN #1IN	POND	2	4.102		12.1500	27.57		
FLEX BASIN #1IN	POND	10	8.126		12.1500	46.55		
FLEX BASIN #1IN	POND	100	17.046		12.1500	87.43		
FLEX BASIN #1OUT	POND	1	.000		.3500	.00	52.75	1.084
FLEX BASIN #1OUT	POND	2	2.337		22.2000	.71	54.96	3.224
FLEX BASIN #1OUT	POND	10	5.799		14.8500	4.24	55.96	4.284
FLEX BASIN #1OUT	POND	100	14.421		13.2500	14.79	58.43	7.173
NJAW #1 IMP	AREA	1	.705		1.1000	19.34		
NJAW #1 IMP	AREA	2	2.098		12.1000	19.78		
NJAW #1 IMP	AREA	10	3.288		12.1000	30.47		
NJAW #1 IMP	AREA	100	5.644		12.1000	51.50		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
NJAW #1 PER	AREA	1	.000		.0500	.00		
NJAW #1 PER	AREA	2	.200		12.7500	.55		
NJAW #1 PER	AREA	10	.631		12.6000	2.46		
NJAW #1 PER	AREA	100	1.834		12.5500	8.30		
NJAW #2 IMP	AREA	1	.028		1.1000	.78		
NJAW #2 IMP	AREA	2	.085		12.1000	.80		
NJAW #2 IMP	AREA	10	.133		12.1000	1.23		
NJAW #2 IMP	AREA	100	.228		12.1000	2.08		
NJAW #2 PER	AREA	1	.000		.0500	.00		
NJAW #2 PER	AREA	2	.082		12.3000	.48		
NJAW #2 PER	AREA	10	.237		12.2000	1.83		
NJAW #2 PER	AREA	100	.647		12.2000	5.51		
NJAW BASIN #1IN	POND	1	.705		1.1000	19.34		
NJAW BASIN #1IN	POND	2	2.297		12.1000	19.82		
NJAW BASIN #1IN	POND	10	3.919		12.1000	31.14		
NJAW BASIN #1IN	POND	100	7.478		12.1000	55.08		
NJAW BASIN #1OUT	POND	1	.000		.3500	.00	65.24	.705
NJAW BASIN #1OUT	POND	2	.417		23.5500	.13	66.74	2.223
NJAW BASIN #1OUT	POND	10	1.824		20.4000	.69	67.82	3.400
NJAW BASIN #1OUT	POND	100	5.137		17.7000	2.11	69.98	5.967
NJAW BASIN #2IN	POND	1	.028		1.1000	.78		
NJAW BASIN #2IN	POND	2	.167		12.1500	1.16		
NJAW BASIN #2IN	POND	10	.369		12.1500	2.94		
NJAW BASIN #2IN	POND	100	.875		12.1500	7.46		
NJAW BASIN #2OUT	POND	1	.000		.4000	.00	61.66	.028
NJAW BASIN #2OUT	POND	2	.097		15.4000	.11	62.03	.105
NJAW BASIN #2OUT	POND	10	.299		13.2000	.49	62.37	.181
NJAW BASIN #2OUT	POND	100	.805		12.5000	4.57	63.02	.335

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
P1-IMP	AREA	1	.960		1.1500	19.41		
P1-IMP	AREA	2	2.854		12.1500	22.02		
P1-IMP	AREA	10	4.473		12.1500	33.94		
P1-IMP	AREA	100	7.680		12.1500	57.39		
P1-PER	AREA	1	.004		1.8000	.08		
P1-PER	AREA	2	.327		12.2500	2.24		
P1-PER	AREA	10	.828		12.2000	6.67		
P1-PER	AREA	100	2.078		12.2000	17.58		
P2-IMP	AREA	1	.121		1.1000	3.31		
P2-IMP	AREA	2	.359		12.1000	3.39		
P2-IMP	AREA	10	.563		12.1000	5.21		
P2-IMP	AREA	100	.966		12.1000	8.81		
P2-PER	AREA	1	.000		.0500	.00		
P2-PER	AREA	2	.048		12.3000	.29		
P2-PER	AREA	10	.139		12.2000	1.11		
P2-PER	AREA	100	.380		12.1500	3.33		
*POA #1	JCT	1	.000		.0500	.00		
*POA #1	JCT	2	2.337		22.2000	.71		
*POA #1	JCT	10	5.799		14.8500	4.24		
*POA #1	JCT	100	14.421		13.2500	14.79		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 1

Data Type, File, ID = Time-Depth Curve WQ
Storm Frequency = 1 yr
Total Rainfall Depth= 1.2500 in
Duration Multiplier = 1
Resulting Duration = 2.0000 hrs
Resulting Start Time= .0000 hrs Step= .0833 hrs End= 2.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
FLEX BASIN #1IN	POND	1.084		1.1500	22.43	
FLEX BASIN #1OUT	POND	.000		.3500	.00	52.75
NJAW #1 IMP	AREA	.705		1.1000	19.34	
NJAW #1 PER	AREA	.000		.0500	.00	
NJAW #2 IMP	AREA	.028		1.1000	.78	
NJAW #2 PER	AREA	.000		.0500	.00	
NJAW BASIN #1IN	POND	.705		1.1000	19.34	
NJAW BASIN #1OUT	POND	.000		.3500	.00	65.24
NJAW BASIN #2IN	POND	.028		1.1000	.78	
NJAW BASIN #2OUT	POND	.000		.4000	.00	61.66
P1-IMP	AREA	.960		1.1500	19.41	
P1-PER	AREA	.004		1.8000	.08	
P2-IMP	AREA	.121		1.1000	3.31	
P2-PER	AREA	.000		.0500	.00	
Outfall POA #1	JCT	.000		.0500	.00	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.3100 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
FLEX BASIN #1IN	POND	4.102		12.1500	27.57	
FLEX BASIN #1OUT	POND	2.337		22.2000	.71	54.96
NJAW #1 IMP	AREA	2.098		12.1000	19.78	
NJAW #1 PER	AREA	.200		12.7500	.55	
NJAW #2 IMP	AREA	.085		12.1000	.80	
NJAW #2 PER	AREA	.082		12.3000	.48	
NJAW BASIN #1IN	POND	2.297		12.1000	19.82	
NJAW BASIN #1OUT	POND	.417		23.5500	.13	66.74
NJAW BASIN #2IN	POND	.167		12.1500	1.16	
NJAW BASIN #2OUT	POND	.097		15.4000	.11	62.03
P1-IMP	AREA	2.854		12.1500	22.02	
P1-PER	AREA	.327		12.2500	2.24	
P2-IMP	AREA	.359		12.1000	3.39	
P2-PER	AREA	.048		12.3000	.29	
Outfall POA #1	JCT	2.337		22.2000	.71	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.0600 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
FLEX BASIN #1IN	POND	8.126		12.1500	46.55	
FLEX BASIN #1OUT	POND	5.799		14.8500	4.24	55.96
NJAW #1 IMP	AREA	3.288		12.1000	30.47	
NJAW #1 PER	AREA	.631		12.6000	2.46	
NJAW #2 IMP	AREA	.133		12.1000	1.23	
NJAW #2 PER	AREA	.237		12.2000	1.83	
NJAW BASIN #1IN	POND	3.919		12.1000	31.14	
NJAW BASIN #1OUT	POND	1.824		20.4000	.69	67.82
NJAW BASIN #2IN	POND	.369		12.1500	2.94	
NJAW BASIN #2OUT	POND	.299		13.2000	.49	62.37
P1-IMP	AREA	4.473		12.1500	33.94	
P1-PER	AREA	.828		12.2000	6.67	
P2-IMP	AREA	.563		12.1000	5.21	
P2-PER	AREA	.139		12.2000	1.11	
Outfall POA #1	JCT	5.799		14.8500	4.24	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = Borough of Lawns

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 8.5200 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
FLEX BASIN #1IN	POND	17.046		12.1500	87.43	
FLEX BASIN #1OUT	POND	14.421		13.2500	14.79	58.43
NJAW #1 IMP	AREA	5.644		12.1000	51.50	
NJAW #1 PER	AREA	1.834		12.5500	8.30	
NJAW #2 IMP	AREA	.228		12.1000	2.08	
NJAW #2 PER	AREA	.647		12.2000	5.51	
NJAW BASIN #1IN	POND	7.478		12.1000	55.08	
NJAW BASIN #1OUT	POND	5.137		17.7000	2.11	69.98
NJAW BASIN #2IN	POND	.875		12.1500	7.46	
NJAW BASIN #2OUT	POND	.805		12.5000	4.57	63.02
P1-IMP	AREA	7.680		12.1500	57.39	
P1-PER	AREA	2.078		12.2000	17.58	
P2-IMP	AREA	.966		12.1000	8.81	
P2-PER	AREA	.380		12.1500	3.33	
Outfall POA #1	JCT	14.421		13.2500	14.79	

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1000 hrs

==========
Total Tc: .1000 hrs

Calculated Tc < Min.Tc:
Use Minimum Tc...
Use Tc = .1000 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .6317 hrs

Total Tc: .6317 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1000 hrs

Total Tc: .1000 hrs

Calculated Tc < Min.Tc:
Use Minimum Tc...
Use Tc = .1000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1800 hrs

Total Tc: .1800 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1885 hrs

==========
Total Tc: .1885 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1885 hrs

==========
Total Tc: .1885 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1000 hrs

==========
Total Tc: .1000 hrs

Calculated Tc < Min.Tc:
Use Minimum Tc...
Use Tc = .1000 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1667 hrs

==========
Total Tc: .1667 hrs
==========

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	8.180			98.00
COMPOSITE AREA & WEIGHTED CN --->		8.180			98.00 (98)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Open space (Lawns,parks etc.) - Goo	61	3.560			61.00
Woods - good	55	2.740			55.00
COMPOSITE AREA & WEIGHTED CN --->		6.300			58.39 (58)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	.330			98.00
COMPOSITE AREA & WEIGHTED CN --->		.330			98.00 (98)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Open space (Lawns,parks etc.) - Goo	61	2.020			61.00
COMPOSITE AREA & WEIGHTED CN --->		2.020			61.00 (61)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	11.130			98.00
COMPOSITE AREA & WEIGHTED CN --->		11.130			98.00 (98)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Open space (Lawns,parks etc.) - Goo	61	3.003			61.00
Open space (Lawns,parks etc.) - Goo	74	1.788			74.00
Woods - good	70	.828			70.00
COMPOSITE AREA & WEIGHTED CN --->		5.619			66.46 (66)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	1.400			98.00
COMPOSITE AREA & WEIGHTED CN --->		1.400			98.00 (98)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Open space (Lawns,parks etc.) - Goo	61	1.187			61.00
COMPOSITE AREA & WEIGHTED CN --->		1.187			61.00 (61)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 IMP 1
Tc (Min. Tc) = .1000 hrs
Drainage Area = 8.180 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 1.1067 hrs
Computed Peak Flow = 19.48 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 1.1000 hrs
Peak Flow, Interpolated Output = 19.34 cfs
==========

DRAINAGE AREA

ID:NJAW #1 IMP
CN = 98
Area = 8.180 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

1.0346 in
.705 ac-ft

HYG Volume... .705 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #1 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 54.07 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 IMP 2
Tc (Min. Tc) = .1000 hrs
Drainage Area = 8.180 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 20.02 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 19.78 cfs
==========

DRAINAGE AREA

ID:NJAW #1 IMP
CN = 98
Area = 8.180 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

3.0771 in
2.098 ac-ft

HYG Volume... 2.098 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #1 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 54.07 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 IMP 10
Tc (Min. Tc) = .1000 hrs
Drainage Area = 8.180 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 30.83 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 30.47 cfs
==========

DRAINAGE AREA

ID:NJAW #1 IMP
CN = 98
Area = 8.180 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

4.8231 in
3.288 ac-ft

HYG Volume... 3.288 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #1 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 54.07 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 IMP 100
Tc (Min. Tc) = .1000 hrs
Drainage Area = 8.180 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 52.11 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 51.50 cfs
==========

DRAINAGE AREA

ID:NJAW #1 IMP
CN = 98
Area = 8.180 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

8.2799 in
5.644 ac-ft

HYG Volume... 5.644 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #1 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 54.07 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 PER 1
Tc = .6317 hrs
Drainage Area = 6.300 acres Runoff CN= 58

==========
Computational Time Increment = .08422 hrs
Computed Peak Time = .0000 hrs
Computed Peak Flow = .00 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = .0000 hrs
Peak Flow, Interpolated Output = .00 cfs
==========

DRAINAGE AREA

ID:NJAW #1 PER
CN = 58
Area = 6.300 acres
S = 7.2414 in
0.2S = 1.4483 in

Cumulative Runoff

.0000 in
.000 ac-ft

HYG Volume... .000 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .63167 hrs (ID: NJAW #1 PER)
Computational Incr, Tm = .08422 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 6.59 cfs
Unit peak time Tp = .42111 hrs
Unit receding limb, Tr = 3.79000 hrs
Total unit time, Tb = 4.21111 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 PER 2
Tc = .6317 hrs
Drainage Area = 6.300 acres Runoff CN= 58

==========
Computational Time Increment = .08422 hrs
Computed Peak Time = 12.8018 hrs
Computed Peak Flow = .55 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.8000 hrs
Peak Flow, Interpolated Output = .55 cfs
==========

DRAINAGE AREA

ID:NJAW #1 PER
CN = 58
Area = 6.300 acres
S = 7.2414 in
0.2S = 1.4483 in

Cumulative Runoff

.3808 in
.200 ac-ft

HYG Volume... .200 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .63167 hrs (ID: NJAW #1 PER)
Computational Incr, Tm = .08422 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 6.59 cfs
Unit peak time Tp = .42111 hrs
Unit receding limb, Tr = 3.79000 hrs
Total unit time, Tb = 4.21111 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 PER 10
Tc = .6317 hrs
Drainage Area = 6.300 acres Runoff CN= 58

==========
Computational Time Increment = .08422 hrs
Computed Peak Time = 12.6333 hrs
Computed Peak Flow = 2.47 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.6500 hrs
Peak Flow, Interpolated Output = 2.46 cfs
==========

DRAINAGE AREA

ID:NJAW #1 PER
CN = 58
Area = 6.300 acres
S = 7.2414 in
0.2S = 1.4483 in

Cumulative Runoff

1.2019 in
.631 ac-ft

HYG Volume... .631 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .63167 hrs (ID: NJAW #1 PER)
Computational Incr, Tm = .08422 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 6.59 cfs
Unit peak time Tp = .42111 hrs
Unit receding limb, Tr = 3.79000 hrs
Total unit time, Tb = 4.21111 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #1 PER 100
Tc = .6317 hrs
Drainage Area = 6.300 acres Runoff CN= 58

==========
Computational Time Increment = .08422 hrs
Computed Peak Time = 12.5491 hrs
Computed Peak Flow = 8.30 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.5500 hrs
Peak Flow, Interpolated Output = 8.30 cfs
==========

DRAINAGE AREA

ID:NJAW #1 PER
CN = 58
Area = 6.300 acres
S = 7.2414 in
0.2S = 1.4483 in

Cumulative Runoff

3.4940 in
1.834 ac-ft

HYG Volume... 1.834 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .63167 hrs (ID: NJAW #1 PER)
Computational Incr, Tm = .08422 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 6.59 cfs
Unit peak time Tp = .42111 hrs
Unit receding limb, Tr = 3.79000 hrs
Total unit time, Tb = 4.21111 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 IMP 1
Tc (Min. Tc) = .1000 hrs
Drainage Area = .330 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 1.1067 hrs
Computed Peak Flow = .79 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 1.1000 hrs
Peak Flow, Interpolated Output = .78 cfs
==========

DRAINAGE AREA

ID:NJAW #2 IMP
CN = 98
Area = .330 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

1.0346 in
.028 ac-ft

HYG Volume... .028 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #2 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 2.18 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 IMP 2
Tc (Min. Tc) = .1000 hrs
Drainage Area = .330 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = .81 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = .80 cfs
==========

DRAINAGE AREA

ID:NJAW #2 IMP
CN = 98
Area = .330 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

3.0771 in
.085 ac-ft

HYG Volume... .085 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #2 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 2.18 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 IMP 10
Tc (Min. Tc) = .1000 hrs
Drainage Area = .330 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 1.24 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 1.23 cfs
==========

DRAINAGE AREA

ID:NJAW #2 IMP
CN = 98
Area = .330 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

4.8231 in
.133 ac-ft

HYG Volume... .133 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #2 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 2.18 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 IMP 100
Tc (Min. Tc) = .1000 hrs
Drainage Area = .330 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 2.10 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 2.08 cfs
==========

DRAINAGE AREA

ID:NJAW #2 IMP
CN = 98
Area = .330 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

8.2799 in
.228 ac-ft

HYG Volume... .228 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: NJAW #2 IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 2.18 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 PER 1
Tc = .1800 hrs
Drainage Area = 2.020 acres Runoff CN= 61

==========
Computational Time Increment = .02400 hrs
Computed Peak Time = .0000 hrs
Computed Peak Flow = .00 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = .0000 hrs
Peak Flow, Interpolated Output = .00 cfs
==========

DRAINAGE AREA

ID:NJAW #2 PER
CN = 61
Area = 2.020 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

.0000 in
.000 ac-ft

HYG Volume... .000 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18000 hrs (ID: NJAW #2 PER)
Computational Incr, Tm = .02400 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 7.42 cfs
Unit peak time Tp = .12000 hrs
Unit receding limb, Tr = 1.08000 hrs
Total unit time, Tb = 1.20000 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 PER 2
Tc = .1800 hrs
Drainage Area = 2.020 acres Runoff CN= 61

==========
Computational Time Increment = .02400 hrs
Computed Peak Time = 12.3360 hrs
Computed Peak Flow = .48 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3500 hrs
Peak Flow, Interpolated Output = .48 cfs
==========

DRAINAGE AREA

ID:NJAW #2 PER
CN = 61
Area = 2.020 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

.4898 in
.082 ac-ft

HYG Volume... .082 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18000 hrs (ID: NJAW #2 PER)
Computational Incr, Tm = .02400 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 7.42 cfs
Unit peak time Tp = .12000 hrs
Unit receding limb, Tr = 1.08000 hrs
Total unit time, Tb = 1.20000 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 PER 10
Tc = .1800 hrs
Drainage Area = 2.020 acres Runoff CN= 61

==========
Computational Time Increment = .02400 hrs
Computed Peak Time = 12.1920 hrs
Computed Peak Flow = 1.83 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 1.83 cfs
==========

DRAINAGE AREA

ID:NJAW #2 PER
CN = 61
Area = 2.020 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

1.4053 in
.237 ac-ft

HYG Volume... .237 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18000 hrs (ID: NJAW #2 PER)
Computational Incr, Tm = .02400 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 7.42 cfs
Unit peak time Tp = .12000 hrs
Unit receding limb, Tr = 1.08000 hrs
Total unit time, Tb = 1.20000 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - NJAW #2 PER 100
Tc = .1800 hrs
Drainage Area = 2.020 acres Runoff CN= 61

==========
Computational Time Increment = .02400 hrs
Computed Peak Time = 12.1680 hrs
Computed Peak Flow = 5.54 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 5.51 cfs
==========

DRAINAGE AREA

ID:NJAW #2 PER
CN = 61
Area = 2.020 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

3.8458 in
.647 ac-ft

HYG Volume... .647 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18000 hrs (ID: NJAW #2 PER)
Computational Incr, Tm = .02400 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 7.42 cfs
Unit peak time Tp = .12000 hrs
Unit receding limb, Tr = 1.08000 hrs
Total unit time, Tb = 1.20000 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-IMP 1
Tc = .1885 hrs
Drainage Area = 11.130 acres Runoff CN= 98

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 1.1561 hrs
Computed Peak Flow = 19.52 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 1.1500 hrs
Peak Flow, Interpolated Output = 19.41 cfs
==========

DRAINAGE AREA

ID:P1-IMP
CN = 98
Area = 11.130 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

1.0346 in
.960 ac-ft

HYG Volume... .960 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-IMP)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 39.03 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-IMP 2
Tc = .1885 hrs
Drainage Area = 11.130 acres Runoff CN= 98

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.1645 hrs
Computed Peak Flow = 22.18 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1500 hrs
Peak Flow, Interpolated Output = 22.02 cfs
==========

DRAINAGE AREA

ID:P1-IMP
CN = 98
Area = 11.130 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

3.0771 in
2.854 ac-ft

HYG Volume... 2.854 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-IMP)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 39.03 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-IMP 10
Tc = .1885 hrs
Drainage Area = 11.130 acres Runoff CN= 98

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.1645 hrs
Computed Peak Flow = 34.17 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1500 hrs
Peak Flow, Interpolated Output = 33.94 cfs
==========

DRAINAGE AREA

ID:P1-IMP
CN = 98
Area = 11.130 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

4.8231 in
4.473 ac-ft

HYG Volume... 4.473 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-IMP)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 39.03 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-IMP 100
Tc = .1885 hrs
Drainage Area = 11.130 acres Runoff CN= 98

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.1645 hrs
Computed Peak Flow = 57.77 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1500 hrs
Peak Flow, Interpolated Output = 57.39 cfs
==========

DRAINAGE AREA

ID:P1-IMP
CN = 98
Area = 11.130 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

8.2799 in
7.680 ac-ft

HYG Volume... 7.680 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-IMP)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 39.03 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-PER 1
Tc = .1885 hrs
Drainage Area = 5.619 acres Runoff CN= 66

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 1.8096 hrs
Computed Peak Flow = .08 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 1.8000 hrs
Peak Flow, Interpolated Output = .08 cfs
==========

DRAINAGE AREA

ID:P1-PER
CN = 66
Area = 5.619 acres
S = 5.1515 in
0.2S = 1.0303 in

Cumulative Runoff

.0090 in
.004 ac-ft

HYG Volume... .004 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-PER)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 19.70 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-PER 2
Tc = .1885 hrs
Drainage Area = 5.619 acres Runoff CN= 66

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.2651 hrs
Computed Peak Flow = 2.24 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2500 hrs
Peak Flow, Interpolated Output = 2.24 cfs
==========

DRAINAGE AREA

ID:P1-PER
CN = 66
Area = 5.619 acres
S = 5.1515 in
0.2S = 1.0303 in

Cumulative Runoff

.6994 in
.327 ac-ft

HYG Volume... .327 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-PER)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 19.70 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-PER 10
Tc = .1885 hrs
Drainage Area = 5.619 acres Runoff CN= 66

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.1897 hrs
Computed Peak Flow = 6.68 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 6.67 cfs
==========

DRAINAGE AREA

ID:P1-PER
CN = 66
Area = 5.619 acres
S = 5.1515 in
0.2S = 1.0303 in

Cumulative Runoff

1.7687 in
.828 ac-ft

HYG Volume... .828 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-PER)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 19.70 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P1-PER 100
Tc = .1885 hrs
Drainage Area = 5.619 acres Runoff CN= 66

==========
Computational Time Increment = .02513 hrs
Computed Peak Time = 12.1897 hrs
Computed Peak Flow = 17.67 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 17.58 cfs
==========

DRAINAGE AREA

ID:P1-PER
CN = 66
Area = 5.619 acres
S = 5.1515 in
0.2S = 1.0303 in

Cumulative Runoff

4.4375 in
2.078 ac-ft

HYG Volume... 2.078 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .18850 hrs (ID: P1-PER)
Computational Incr, Tm = .02513 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 19.70 cfs
Unit peak time Tp = .12567 hrs
Unit receding limb, Tr = 1.13100 hrs
Total unit time, Tb = 1.25667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-IMP 1
Tc (Min. Tc) = .1000 hrs
Drainage Area = 1.400 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 1.1067 hrs
Computed Peak Flow = 3.33 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 1.1000 hrs
Peak Flow, Interpolated Output = 3.31 cfs
==========

DRAINAGE AREA

ID:P2-IMP
CN = 98
Area = 1.400 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

1.0346 in
.121 ac-ft

HYG Volume... .121 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: P2-IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 9.25 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-IMP 2
Tc (Min. Tc) = .1000 hrs
Drainage Area = 1.400 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 3.43 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 3.39 cfs
==========

DRAINAGE AREA

ID:P2-IMP
CN = 98
Area = 1.400 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

3.0771 in
.359 ac-ft

HYG Volume... .359 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: P2-IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 9.25 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-IMP 10
Tc (Min. Tc) = .1000 hrs
Drainage Area = 1.400 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 5.28 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 5.21 cfs
==========

DRAINAGE AREA

ID:P2-IMP
CN = 98
Area = 1.400 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

4.8231 in
.563 ac-ft

HYG Volume... .563 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: P2-IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 9.25 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-IMP 100
Tc (Min. Tc) = .1000 hrs
Drainage Area = 1.400 acres Runoff CN= 98

==========
Computational Time Increment = .01333 hrs
Computed Peak Time = 12.1200 hrs
Computed Peak Flow = 8.92 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1000 hrs
Peak Flow, Interpolated Output = 8.81 cfs
==========

DRAINAGE AREA

ID:P2-IMP
CN = 98
Area = 1.400 acres
S = .2041 in
0.2S = .0408 in

Cumulative Runoff

8.2799 in
.966 ac-ft

HYG Volume... .966 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .10000 hrs (ID: P2-IMP)
Computational Incr, Tm = .01333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 9.25 cfs
Unit peak time Tp = .06667 hrs
Unit receding limb, Tr = .60000 hrs
Total unit time, Tb = .66667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 2.0000 hrs Rain Depth = 1.2500 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - WQ
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-PER 1
Tc = .1667 hrs
Drainage Area = 1.187 acres Runoff CN= 61

==========
Computational Time Increment = .02223 hrs
Computed Peak Time = .0000 hrs
Computed Peak Flow = .00 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = .0000 hrs
Peak Flow, Interpolated Output = .00 cfs
==========

DRAINAGE AREA

ID:P2-PER
CN = 61
Area = 1.187 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

.0000 in
.000 ac-ft

HYG Volume... .000 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16670 hrs (ID: P2-PER)
Computational Incr, Tm = .02223 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 4.71 cfs
Unit peak time Tp = .11113 hrs
Unit receding limb, Tr = 1.00020 hrs
Total unit time, Tb = 1.11133 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.3100 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-PER 2
Tc = .1667 hrs
Drainage Area = 1.187 acres Runoff CN= 61

==========
Computational Time Increment = .02223 hrs
Computed Peak Time = 12.3358 hrs
Computed Peak Flow = .29 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3000 hrs
Peak Flow, Interpolated Output = .29 cfs
==========

DRAINAGE AREA

ID:P2-PER
CN = 61
Area = 1.187 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

.4898 in
.048 ac-ft

HYG Volume... .048 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16670 hrs (ID: P2-PER)
Computational Incr, Tm = .02223 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 4.71 cfs
Unit peak time Tp = .11113 hrs
Unit receding limb, Tr = 1.00020 hrs
Total unit time, Tb = 1.11133 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.0600 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-PER 10
Tc = .1667 hrs
Drainage Area = 1.187 acres Runoff CN= 61

==========
Computational Time Increment = .02223 hrs
Computed Peak Time = 12.1802 hrs
Computed Peak Flow = 1.11 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.2000 hrs
Peak Flow, Interpolated Output = 1.11 cfs
==========

DRAINAGE AREA

ID:P2-PER
CN = 61
Area = 1.187 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

1.4053 in
.139 ac-ft

HYG Volume... .139 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16670 hrs (ID: P2-PER)
Computational Incr, Tm = .02223 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 4.71 cfs
Unit peak time Tp = .11113 hrs
Unit receding limb, Tr = 1.00020 hrs
Total unit time, Tb = 1.11133 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 8.5200 in
Rain Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
Rain File -ID = - TypeIII 24hr
Unit Hyd File =
HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Po
HYG File - ID = - P2-PER 100
Tc = .1667 hrs
Drainage Area = 1.187 acres Runoff CN= 61

==========
Computational Time Increment = .02223 hrs
Computed Peak Time = 12.1802 hrs
Computed Peak Flow = 3.36 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.1500 hrs
Peak Flow, Interpolated Output = 3.33 cfs
==========

DRAINAGE AREA

ID:P2-PER
CN = 61
Area = 1.187 acres
S = 6.3934 in
0.2S = 1.2787 in

Cumulative Runoff

3.8458 in
.380 ac-ft

HYG Volume... .380 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16670 hrs (ID: P2-PER)
Computational Incr, Tm = .02223 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 284.057 (22.01% under rising limb)
K = 284.06/645.333, K = .4402 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 3.5437 (solved from K = .4402)

Unit peak, qp = 4.71 cfs
Unit peak time Tp = .11113 hrs
Unit receding limb, Tr = 1.00020 hrs
Total unit time, Tb = 1.11133 hrs

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POA #1

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
FLEX OUTLET #1	FLEX BASIN #1	IN	FLEX OUTLET #1	1

INFLOWS TO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX OUTLET #1	1	.000	.3500	.00

TOTAL FLOW INTO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POA #1	1	.000	.0500	.00

TOTAL NODE INFLOW...
HYG file =
HYG ID = POA #1
HYG Tag = 1

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs			
.0000	.00	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POA #1

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
FLEX OUTLET #1	FLEX BASIN #1	IN	FLEX OUTLET #1	2

INFLOWS TO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX OUTLET #1	2	2.337	22.2000	.71

TOTAL FLOW INTO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POA #1	2	2.337	22.2000	.71

TOTAL NODE INFLOW...
HYG file =
HYG ID = POA #1
HYG Tag = 2

Peak Discharge	.71 cfs
Time to Peak	22.2000 hrs
HYG Volume	2.337 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
12.0000	.00	.01	.04	.08	.12
12.2500	.15	.17	.19	.20	.21
12.5000	.22	.23	.24	.25	.25
12.7500	.26	.26	.26	.27	.27
13.0000	.27	.27	.28	.28	.28
13.2500	.28	.28	.29	.29	.29
13.5000	.29	.29	.29	.29	.30
13.7500	.30	.30	.30	.30	.30
14.0000	.30	.30	.30	.31	.31
14.2500	.31	.31	.31	.31	.31
14.5000	.31	.31	.31	.31	.32
14.7500	.32	.32	.32	.32	.32
15.0000	.32	.32	.32	.32	.32
15.2500	.32	.32	.32	.33	.33
15.5000	.33	.33	.33	.33	.33
15.7500	.34	.34	.35	.35	.36
16.0000	.36	.37	.37	.38	.38
16.2500	.39	.39	.39	.40	.40
16.5000	.41	.41	.41	.42	.42
16.7500	.43	.43	.44	.45	.45
17.0000	.46	.46	.47	.48	.48
17.2500	.49	.49	.50	.50	.51
17.5000	.51	.52	.52	.53	.53
17.7500	.53	.54	.54	.55	.55
18.0000	.55	.56	.56	.56	.57
18.2500	.57	.57	.58	.58	.58
18.5000	.58	.59	.59	.59	.60
18.7500	.60	.60	.61	.61	.61
19.0000	.62	.62	.62	.62	.63
19.2500	.63	.63	.63	.64	.64
19.5000	.64	.64	.65	.65	.65

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.7500	.65	.66	.66	.66	.66
20.0000	.66	.67	.67	.67	.67
20.2500	.67	.67	.68	.68	.68
20.5000	.68	.68	.68	.68	.69
20.7500	.69	.69	.69	.69	.69
21.0000	.69	.69	.70	.70	.70
21.2500	.70	.70	.70	.70	.70
21.5000	.70	.70	.70	.70	.71
21.7500	.71	.71	.71	.71	.71
22.0000	.71	.71	.71	.71	.71
22.2500	.71	.71	.71	.71	.71
22.5000	.71	.71	.71	.71	.71
22.7500	.71	.71	.71	.71	.71
23.0000	.71	.71	.71	.71	.71
23.2500	.71	.71	.71	.71	.71
23.5000	.71	.71	.71	.71	.71
23.7500	.71	.71	.71	.71	.71
24.0000	.71	.71	.71	.70	.70
24.2500	.70	.70	.69	.69	.68
24.5000	.68	.68	.67	.67	.66
24.7500	.66	.66	.65	.65	.64
25.0000	.64	.64	.63	.63	.62
25.2500	.62	.62	.61	.61	.61
25.5000	.60	.60	.59	.59	.59
25.7500	.58	.58	.58	.58	.57
26.0000	.57	.57	.56	.56	.56
26.2500	.56	.55	.55	.55	.55
26.5000	.54	.54	.54	.54	.53
26.7500	.53	.53	.52	.52	.52
27.0000	.52	.51	.51	.51	.51
27.2500	.50	.50	.50	.50	.49
27.5000	.49	.49	.49	.49	.48
27.7500	.48	.48	.48	.47	.47
28.0000	.47	.47	.46	.46	.46
28.2500	.46	.46	.45	.45	.45
28.5000	.45	.45	.44	.44	.44
28.7500	.44	.43	.43	.43	.43
29.0000	.43	.42	.42	.42	.42
29.2500	.42	.42	.42	.42	.41
29.5000	.41	.41	.41	.41	.41
29.7500	.41	.41	.41	.41	.40
30.0000	.40	.40	.40	.40	.40
30.2500	.40	.40	.40	.39	.39
30.5000	.39	.39	.39	.39	.39
30.7500	.39	.39	.39	.38	.38

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
31.0000	.38	.38	.38	.38	.38
31.2500	.38	.38	.38	.37	.37
31.5000	.37	.37	.37	.37	.37
31.7500	.37	.37	.37	.37	.36
32.0000	.36	.36	.36	.36	.36
32.2500	.36	.36	.36	.36	.36
32.5000	.35	.35	.35	.35	.35
32.7500	.35	.35	.35	.35	.35
33.0000	.35	.34	.34	.34	.34
33.2500	.34	.34	.34	.34	.34
33.5000	.34	.34	.34	.33	.33
33.7500	.33	.33	.33	.33	.33
34.0000	.33	.33	.33	.33	.33
34.2500	.33	.33	.33	.33	.33
34.5000	.33	.33	.33	.33	.33
34.7500	.33	.33	.33	.33	.33
35.0000	.33	.33	.33	.33	.33
35.2500	.33	.33	.33	.33	.33
35.5000	.33	.33	.33	.33	.33
35.7500	.33	.33	.33	.33	.33
36.0000	.33	.33	.33	.32	.32
36.2500	.32	.32	.32	.32	.32
36.5000	.32	.32	.32	.32	.32
36.7500	.32	.32	.32	.32	.32
37.0000	.32	.32	.32	.32	.32
37.2500	.32	.32	.32	.32	.32
37.5000	.32	.32	.32	.32	.32
37.7500	.32	.32	.32	.32	.32
38.0000	.32	.32	.32	.32	.32
38.2500	.32	.32	.32	.32	.32
38.5000	.32	.32	.32	.32	.32
38.7500	.32	.32	.32	.32	.32
39.0000	.32	.32	.32	.32	.32
39.2500	.32	.32	.32	.32	.32
39.5000	.32	.32	.32	.32	.32
39.7500	.32	.32	.32	.32	.32
40.0000	.32	.32	.32	.32	.32
40.2500	.32	.32	.32	.32	.32
40.5000	.32	.32	.32	.32	.32
40.7500	.32	.32	.32	.32	.32
41.0000	.32	.32	.32	.32	.32
41.2500	.32	.32	.32	.32	.32
41.5000	.32	.32	.32	.32	.32
41.7500	.32	.32	.32	.32	.32
42.0000	.32	.31	.31	.31	.31

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
42.2500	.31	.31	.31	.31	.31
42.5000	.31	.31	.31	.31	.31
42.7500	.31	.31	.31	.31	.31
43.0000	.31	.31	.31	.31	.31
43.2500	.31	.31	.31	.31	.31
43.5000	.31	.31	.31	.31	.31
43.7500	.31	.31	.31	.31	.31
44.0000	.31	.31	.31	.31	.31
44.2500	.31	.31	.31	.31	.31
44.5000	.31	.31	.31	.31	.31
44.7500	.31	.31	.31	.31	.31
45.0000	.31	.31	.31	.31	.31
45.2500	.31	.31	.31	.31	.31
45.5000	.31	.31	.31	.31	.31
45.7500	.31	.31	.31	.31	.31
46.0000	.31	.31	.31	.31	.31
46.2500	.31	.31	.31	.31	.31
46.5000	.31	.31	.31	.31	.31
46.7500	.31	.31	.31	.31	.31
47.0000	.31	.31	.31	.31	.31
47.2500	.31	.31	.31	.31	.31
47.5000	.30	.30	.30	.30	.30
47.7500	.30	.30	.30	.30	.30
48.0000	.30	.30	.30	.30	.30
48.2500	.30	.30	.30	.30	.30
48.5000	.30	.30	.30	.30	.30
48.7500	.30	.30	.30	.30	.30
49.0000	.30	.30	.30	.30	.30
49.2500	.30	.30	.30	.30	.30
49.5000	.30	.30	.30	.30	.30
49.7500	.30	.30	.30	.30	.30
50.0000	.30	.30	.30	.30	.30
50.2500	.30	.30	.30	.30	.30
50.5000	.30	.30	.30	.30	.30
50.7500	.30	.30	.30	.30	.30
51.0000	.30	.30	.30	.30	.30
51.2500	.30	.30	.30	.30	.30
51.5000	.30	.30	.30	.30	.30
51.7500	.30	.30	.30	.30	.30
52.0000	.30	.30	.30	.30	.30
52.2500	.30	.30	.30	.30	.30
52.5000	.30	.30	.29	.29	.29
52.7500	.29	.29	.29	.29	.29
53.0000	.29	.29	.29	.29	.29
53.2500	.29	.29	.29	.29	.29

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
53.5000	.29	.29	.29	.29	.29
53.7500	.29	.29	.29	.29	.29
54.0000	.29	.29	.29	.29	.29
54.2500	.29	.29	.29	.29	.29
54.5000	.29	.29	.29	.29	.29
54.7500	.29	.29	.29	.29	.29
55.0000	.29	.29	.29	.29	.29
55.2500	.29	.29	.29	.29	.29
55.5000	.29	.29	.29	.29	.29
55.7500	.29	.29	.29	.29	.29
56.0000	.29	.29	.29	.29	.29
56.2500	.29	.29	.29	.29	.29
56.5000	.29	.29	.29	.29	.29
56.7500	.29	.29	.29	.29	.29
57.0000	.29	.29	.29	.29	.29
57.2500	.29	.29	.29	.29	.29
57.5000	.28	.28	.28	.28	.28
57.7500	.28	.28	.28	.28	.28
58.0000	.28	.28	.28	.28	.28
58.2500	.28	.28	.28	.28	.28
58.5000	.28	.28	.28	.28	.28
58.7500	.28	.28	.28	.28	.28
59.0000	.28	.28	.28	.28	.28
59.2500	.28	.28	.28	.28	.28
59.5000	.28	.28	.28	.28	.28
59.7500	.28	.28	.28	.28	.28
60.0000	.28	.28	.28	.28	.28
60.2500	.28	.28	.28	.28	.28
60.5000	.28	.28	.28	.28	.28
60.7500	.28	.28	.28	.28	.28
61.0000	.28	.28	.28	.28	.28
61.2500	.28	.28	.28	.28	.28
61.5000	.28	.28	.28	.28	.28
61.7500	.28	.28	.28	.28	.28
62.0000	.28	.28	.28	.28	.27
62.2500	.27	.27	.27	.27	.27
62.5000	.27	.27	.27	.27	.27
62.7500	.27	.27	.27	.27	.27
63.0000	.27	.27	.27	.27	.27
63.2500	.27	.27	.27	.27	.27
63.5000	.27	.27	.27	.27	.27
63.7500	.27	.27	.27	.27	.27
64.0000	.27	.27	.27	.27	.27
64.2500	.27	.27	.27	.27	.27
64.5000	.27	.27	.27	.27	.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
64.7500	.27	.27	.27	.27	.27
65.0000	.27	.27	.27	.27	.27
65.2500	.27	.27	.27	.27	.27
65.5000	.27	.27	.27	.27	.27
65.7500	.27	.27	.27	.27	.27
66.0000	.27	.27	.27	.27	.27
66.2500	.27	.27	.27	.27	.27
66.5000	.27	.27	.27	.27	.27
66.7500	.27	.26	.26	.26	.26
67.0000	.26	.26	.26	.26	.26
67.2500	.26	.26	.26	.26	.26
67.5000	.26	.26	.26	.26	.26
67.7500	.26	.26	.26	.26	.26
68.0000	.26	.26	.26	.26	.26
68.2500	.26	.26	.26	.26	.26
68.5000	.26	.26	.26	.26	.26
68.7500	.26	.26	.26	.26	.26
69.0000	.26	.26	.26	.26	.26
69.2500	.26	.26	.26	.26	.26
69.5000	.26	.26	.26	.26	.26
69.7500	.26	.26	.26	.26	.26
70.0000	.26	.26	.26	.26	.26
70.2500	.26	.26	.26	.26	.26
70.5000	.26	.26	.26	.26	.26
70.7500	.26	.26	.26	.26	.26
71.0000	.26	.26	.26	.26	.26
71.2500	.26	.26	.25	.25	.25
71.5000	.25	.25	.25	.25	.25
71.7500	.25	.25	.25	.25	.25
72.0000	.25	.25	.25	.25	.25
72.2500	.25	.25	.25	.25	.25
72.5000	.25	.25	.25	.25	.25
72.7500	.25	.25	.25	.25	.25
73.0000	.25	.25	.25	.25	.25
73.2500	.25	.25	.25	.25	.25
73.5000	.25	.25	.25	.25	.25
73.7500	.25	.25	.25	.25	.25
74.0000	.25	.25	.25	.25	.25
74.2500	.25	.25	.25	.25	.25
74.5000	.25	.25	.25	.25	.25
74.7500	.25	.25	.25	.25	.25
75.0000	.25	.25	.25	.25	.25
75.2500	.25	.25	.25	.25	.25
75.5000	.25	.25	.25	.25	.25
75.7500	.25	.25	.24	.24	.24

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
76.0000	.24	.24	.24	.24	.24
76.2500	.24	.24	.24	.24	.24
76.5000	.24	.24	.24	.24	.24
76.7500	.24	.24	.24	.24	.24
77.0000	.24	.24	.24	.24	.24
77.2500	.24	.24	.24	.24	.24
77.5000	.24	.24	.24	.24	.24
77.7500	.24	.24	.24	.24	.24
78.0000	.24	.24	.24	.24	.24
78.2500	.24	.24	.24	.24	.24
78.5000	.24	.24	.24	.24	.24
78.7500	.24	.24	.24	.24	.24
79.0000	.24	.24	.24	.24	.24
79.2500	.24	.24	.24	.24	.24
79.5000	.24	.24	.24	.24	.24
79.7500	.24	.24	.24	.24	.24
80.0000	.24	.24	.24	.24	.23
80.2500	.23	.23	.23	.23	.23
80.5000	.23	.23	.23	.23	.23
80.7500	.23	.23	.23	.23	.23
81.0000	.23	.23	.23	.23	.23
81.2500	.23	.23	.23	.23	.23
81.5000	.23	.23	.23	.23	.23
81.7500	.23	.23	.23	.23	.23
82.0000	.23	.23	.23	.23	.23
82.2500	.23	.23	.23	.23	.23
82.5000	.23	.23	.23	.23	.23
82.7500	.23	.23	.23	.23	.23
83.0000	.23	.23	.23	.23	.23
83.2500	.23	.23	.23	.23	.23
83.5000	.23	.23	.23	.23	.23
83.7500	.23	.23	.23	.23	.23
84.0000	.23	.23	.23	.23	.23
84.2500	.23	.23	.23	.23	.22
84.5000	.22	.22	.22	.22	.22
84.7500	.22	.22	.22	.22	.22
85.0000	.22	.22	.22	.22	.22
85.2500	.22	.22	.22	.22	.22
85.5000	.22	.22	.22	.22	.22
85.7500	.22	.22	.22	.22	.22
86.0000	.22	.22	.22	.22	.22
86.2500	.22	.22	.22	.22	.22
86.5000	.22	.22	.22	.22	.22
86.7500	.22	.22	.22	.22	.22
87.0000	.22	.22	.22	.22	.22

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
87.2500	.22	.22	.22	.22	.22
87.5000	.22	.22	.22	.22	.22
87.7500	.22	.22	.22	.22	.22
88.0000	.22	.22	.22	.22	.22
88.2500	.22	.22	.22	.22	.22
88.5000	.22	.22	.22	.22	.21
88.7500	.21	.21	.21	.21	.21
89.0000	.21	.21	.21	.21	.21
89.2500	.21	.21	.21	.21	.21
89.5000	.21	.21	.21	.21	.21
89.7500	.21	.21	.21	.21	.21
90.0000	.21	.21	.21	.21	.21
90.2500	.21	.21	.21	.21	.21
90.5000	.21	.21	.21	.21	.21
90.7500	.21	.21	.21	.21	.21
91.0000	.21	.21	.21	.21	.21
91.2500	.21	.21	.21	.21	.21
91.5000	.21	.21	.21	.21	.21
91.7500	.21	.21	.21	.21	.21
92.0000	.21	.21	.21	.21	.21
92.2500	.21	.21	.21	.21	.21
92.5000	.21	.21	.21	.21	.21
92.7500	.21	.21	.21	.21	.20
93.0000	.20	.20	.20	.20	.20
93.2500	.20	.20	.20	.20	.20
93.5000	.20	.20	.20	.20	.20
93.7500	.20	.20	.20	.20	.20
94.0000	.20	.20	.20	.20	.20
94.2500	.20	.20	.20	.20	.20
94.5000	.20	.20	.20	.20	.20
94.7500	.20	.20	.20	.20	.20
95.0000	.20	.20	.20	.20	.20
95.2500	.20	.20	.20	.20	.20
95.5000	.20	.20	.20	.20	.20
95.7500	.20	.20	.20	.20	.20
96.0000	.20	.20	.20	.20	.20
96.2500	.20	.20	.20	.20	.20
96.5000	.20	.20	.20	.20	.20
96.7500	.20	.20	.20	.20	.20
97.0000	.20	.19	.19	.19	.19
97.2500	.19	.19	.19	.19	.19
97.5000	.19	.19	.19	.19	.19
97.7500	.19	.19	.19	.19	.19
98.0000	.19	.19	.19	.19	.19
98.2500	.19	.19	.19	.19	.19

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
98.5000	.19	.19	.19	.19	.19
98.7500	.19	.19	.19	.19	.19
99.0000	.19	.19	.19	.19	.19
99.2500	.19	.19	.19	.19	.19
99.5000	.19	.19	.19	.19	.19
99.7500	.19	.19	.19	.19	.19
100.0000	.19	.19	.19	.19	.19
100.2500	.19	.19	.19	.19	.19
100.5000	.19	.19	.19	.19	.19
100.7500	.19	.19	.19	.19	.19
101.0000	.19	.19	.19	.18	.18
101.2500	.18	.18			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POA #1

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
FLEX OUTLET #1	FLEX BASIN #1	IN	FLEX OUTLET #1	10

INFLOWS TO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX OUTLET #1	10	5.799	14.8500	4.24

TOTAL FLOW INTO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POA #1	10	5.799	14.8500	4.24

TOTAL NODE INFLOW...
HYG file =
HYG ID = POA #1
HYG Tag = 10

Peak Discharge	4.24 cfs
Time to Peak	14.8500 hrs
HYG Volume	5.799 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.2000	.00	.00	.00	.01	.01
11.4500	.02	.03	.04	.05	.07
11.7000	.08	.10	.12	.13	.15
11.9500	.17	.19	.21	.24	.26
12.2000	.28	.30	.32	.35	.54
12.4500	.80	1.09	1.38	1.65	1.90
12.7000	2.12	2.32	2.50	2.65	2.80
12.9500	2.93	3.05	3.15	3.25	3.33
13.2000	3.40	3.47	3.53	3.59	3.64
13.4500	3.69	3.74	3.78	3.82	3.86
13.7000	3.89	3.93	3.96	3.99	4.01
13.9500	4.04	4.06	4.09	4.10	4.12
14.2000	4.14	4.15	4.17	4.18	4.19
14.4500	4.20	4.21	4.21	4.22	4.23
14.7000	4.23	4.23	4.24	4.24	4.24
14.9500	4.24	4.24	4.24	4.24	4.23
15.2000	4.23	4.23	4.22	4.22	4.21
15.4500	4.21	4.20	4.19	4.18	4.17
15.7000	4.16	4.15	4.14	4.13	4.12
15.9500	4.11	4.10	4.08	4.07	4.05
16.2000	4.04	4.02	4.01	3.99	3.98
16.4500	3.96	3.95	3.93	3.92	3.90
16.7000	3.89	3.87	3.86	3.84	3.83
16.9500	3.81	3.80	3.78	3.76	3.75
17.2000	3.73	3.72	3.70	3.68	3.67
17.4500	3.65	3.63	3.62	3.60	3.58
17.7000	3.56	3.55	3.53	3.51	3.50
17.9500	3.48	3.46	3.44	3.43	3.41
18.2000	3.39	3.37	3.36	3.34	3.32
18.4500	3.30	3.29	3.27	3.25	3.24
18.7000	3.22	3.20	3.19	3.17	3.15

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
18.9500	3.14	3.12	3.11	3.09	3.08
19.2000	3.06	3.05	3.03	3.02	3.00
19.4500	2.99	2.97	2.96	2.95	2.93
19.7000	2.92	2.90	2.89	2.88	2.86
19.9500	2.85	2.84	2.82	2.81	2.80
20.2000	2.79	2.77	2.76	2.75	2.73
20.4500	2.72	2.71	2.70	2.69	2.68
20.7000	2.67	2.66	2.65	2.63	2.62
20.9500	2.61	2.60	2.59	2.58	2.57
21.2000	2.56	2.55	2.54	2.53	2.52
21.4500	2.51	2.50	2.49	2.48	2.47
21.7000	2.46	2.46	2.45	2.44	2.43
21.9500	2.42	2.41	2.40	2.39	2.38
22.2000	2.37	2.36	2.35	2.35	2.34
22.4500	2.33	2.32	2.31	2.30	2.29
22.7000	2.29	2.28	2.27	2.26	2.25
22.9500	2.25	2.24	2.23	2.22	2.21
23.2000	2.21	2.20	2.19	2.18	2.17
23.4500	2.17	2.16	2.15	2.14	2.13
23.7000	2.13	2.12	2.11	2.10	2.10
23.9500	2.09	2.08	2.07	2.06	2.05
24.2000	2.04	2.03	2.01	2.00	1.99
24.4500	1.97	1.96	1.94	1.93	1.91
24.7000	1.90	1.88	1.87	1.85	1.84
24.9500	1.82	1.81	1.80	1.78	1.77
25.2000	1.75	1.74	1.73	1.71	1.70
25.4500	1.69	1.67	1.66	1.65	1.64
25.7000	1.62	1.61	1.60	1.59	1.58
25.9500	1.56	1.55	1.54	1.53	1.52
26.2000	1.51	1.50	1.48	1.47	1.46
26.4500	1.45	1.44	1.43	1.42	1.41
26.7000	1.40	1.39	1.38	1.37	1.36
26.9500	1.35	1.34	1.33	1.32	1.31
27.2000	1.30	1.30	1.29	1.28	1.27
27.4500	1.26	1.25	1.25	1.24	1.23
27.7000	1.22	1.21	1.21	1.20	1.19
27.9500	1.18	1.18	1.17	1.16	1.15
28.2000	1.15	1.14	1.13	1.12	1.12
28.4500	1.11	1.10	1.09	1.09	1.08
28.7000	1.07	1.07	1.06	1.05	1.05
28.9500	1.04	1.03	1.03	1.02	1.02
29.2000	1.01	1.01	1.00	.99	.99
29.4500	.98	.98	.97	.97	.96
29.7000	.96	.95	.95	.94	.93
29.9500	.93	.92	.92	.91	.91

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
30.2000	.90	.90	.89	.89	.88
30.4500	.88	.87	.87	.86	.86
30.7000	.86	.85	.85	.84	.84
30.9500	.83	.83	.82	.82	.81
31.2000	.81	.80	.80	.80	.79
31.4500	.79	.79	.78	.78	.77
31.7000	.77	.77	.76	.76	.76
31.9500	.75	.75	.74	.74	.74
32.2000	.73	.73	.73	.72	.72
32.4500	.72	.71	.71	.71	.70
32.7000	.70	.70	.69	.69	.69
32.9500	.68	.68	.68	.67	.67
33.2000	.67	.66	.66	.66	.65
33.4500	.65	.65	.65	.64	.64
33.7000	.64	.63	.63	.63	.62
33.9500	.62	.62	.62	.61	.61
34.2000	.61	.60	.60	.60	.60
34.4500	.59	.59	.59	.59	.58
34.7000	.58	.58	.58	.58	.57
34.9500	.57	.57	.57	.57	.56
35.2000	.56	.56	.56	.56	.55
35.4500	.55	.55	.55	.55	.54
35.7000	.54	.54	.54	.54	.54
35.9500	.53	.53	.53	.53	.53
36.2000	.52	.52	.52	.52	.52
36.4500	.52	.51	.51	.51	.51
36.7000	.51	.51	.50	.50	.50
36.9500	.50	.50	.50	.49	.49
37.2000	.49	.49	.49	.49	.48
37.4500	.48	.48	.48	.48	.48
37.7000	.47	.47	.47	.47	.47
37.9500	.47	.47	.46	.46	.46
38.2000	.46	.46	.46	.45	.45
38.4500	.45	.45	.45	.45	.45
38.7000	.44	.44	.44	.44	.44
38.9500	.44	.44	.44	.43	.43
39.2000	.43	.43	.43	.43	.43
39.4500	.42	.42	.42	.42	.42
39.7000	.42	.42	.42	.42	.42
39.9500	.42	.42	.42	.41	.41
40.2000	.41	.41	.41	.41	.41
40.4500	.41	.41	.41	.41	.41
40.7000	.41	.41	.40	.40	.40
40.9500	.40	.40	.40	.40	.40
41.2000	.40	.40	.40	.40	.40

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
41.4500	.40	.40	.40	.39	.39
41.7000	.39	.39	.39	.39	.39
41.9500	.39	.39	.39	.39	.39
42.2000	.39	.39	.39	.39	.38
42.4500	.38	.38	.38	.38	.38
42.7000	.38	.38	.38	.38	.38
42.9500	.38	.38	.38	.38	.38
43.2000	.38	.37	.37	.37	.37
43.4500	.37	.37	.37	.37	.37
43.7000	.37	.37	.37	.37	.37
43.9500	.37	.37	.37	.37	.37
44.2000	.36	.36	.36	.36	.36
44.4500	.36	.36	.36	.36	.36
44.7000	.36	.36	.36	.36	.36
44.9500	.36	.36	.36	.36	.35
45.2000	.35	.35	.35	.35	.35
45.4500	.35	.35	.35	.35	.35
45.7000	.35	.35	.35	.35	.35
45.9500	.35	.35	.35	.35	.34
46.2000	.34	.34	.34	.34	.34
46.4500	.34	.34	.34	.34	.34
46.7000	.34	.34	.34	.34	.34
46.9500	.34	.34	.34	.34	.34
47.2000	.33	.33	.33	.33	.33
47.4500	.33	.33	.33	.33	.33
47.7000	.33	.33	.33	.33	.33
47.9500	.33	.33	.33	.33	.33
48.2000	.33	.33	.33	.33	.33
48.4500	.33	.33	.33	.33	.33
48.7000	.33	.33	.33	.33	.33
48.9500	.33	.33	.33	.33	.33
49.2000	.33	.33	.33	.33	.33
49.4500	.33	.33	.33	.33	.33
49.7000	.33	.33	.33	.33	.33
49.9500	.33	.33	.33	.33	.33
50.2000	.33	.33	.33	.33	.33
50.4500	.33	.33	.33	.33	.33
50.7000	.33	.33	.33	.33	.33
50.9500	.33	.33	.33	.33	.33
51.2000	.33	.33	.33	.33	.33
51.4500	.33	.33	.33	.33	.33
51.7000	.33	.33	.32	.32	.32
51.9500	.32	.32	.32	.32	.32
52.2000	.32	.32	.32	.32	.32
52.4500	.32	.32	.32	.32	.32

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
52.7000	.32	.32	.32	.32	.32
52.9500	.32	.32	.32	.32	.32
53.2000	.32	.32	.32	.32	.32
53.4500	.32	.32	.32	.32	.32
53.7000	.32	.32	.32	.32	.32
53.9500	.32	.32	.32	.32	.32
54.2000	.32	.32	.32	.32	.32
54.4500	.32	.32	.32	.32	.32
54.7000	.32	.32	.32	.32	.32
54.9500	.32	.32	.32	.32	.32
55.2000	.32	.32	.32	.32	.32
55.4500	.32	.32	.32	.32	.32
55.7000	.32	.32	.32	.32	.32
55.9500	.32	.32	.32	.32	.32
56.2000	.32	.32	.32	.32	.32
56.4500	.32	.32	.32	.32	.32
56.7000	.32	.32	.32	.32	.32
56.9500	.32	.32	.32	.32	.32
57.2000	.32	.32	.32	.32	.32
57.4500	.32	.32	.32	.32	.32
57.7000	.32	.32	.32	.32	.32
57.9500	.32	.32	.32	.32	.32
58.2000	.32	.32	.32	.32	.32
58.4500	.32	.32	.32	.32	.32
58.7000	.32	.32	.32	.32	.32
58.9500	.32	.32	.32	.32	.32
59.2000	.32	.32	.32	.32	.32
59.4500	.32	.32	.32	.32	.32
59.7000	.32	.32	.32	.32	.32
59.9500	.32	.32	.32	.32	.32
60.2000	.32	.32	.32	.32	.32
60.4500	.32	.32	.32	.32	.32
60.7000	.32	.32	.32	.32	.32
60.9500	.32	.32	.32	.32	.32
61.2000	.32	.32	.32	.32	.32
61.4500	.32	.32	.32	.32	.32
61.7000	.32	.32	.32	.32	.31
61.9500	.31	.31	.31	.31	.31
62.2000	.31	.31	.31	.31	.31
62.4500	.31	.31	.31	.31	.31
62.7000	.31	.31	.31	.31	.31
62.9500	.31	.31	.31	.31	.31
63.2000	.31	.31	.31	.31	.31
63.4500	.31	.31	.31	.31	.31
63.7000	.31	.31	.31	.31	.31

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
63.9500	.31	.31	.31	.31	.31
64.2000	.31	.31	.31	.31	.31
64.4500	.31	.31	.31	.31	.31
64.7000	.31	.31	.31	.31	.31
64.9500	.31	.31	.31	.31	.31
65.2000	.31	.31	.31	.31	.31
65.4500	.31	.31	.31	.31	.31
65.7000	.31	.31	.31	.31	.31
65.9500	.31	.31	.31	.31	.31
66.2000	.31	.31	.31	.31	.31
66.4500	.31	.31	.31	.31	.31
66.7000	.31	.31	.31	.31	.31
66.9500	.31	.31	.31	.31	.31
67.2000	.31	.31	.31	.31	.31
67.4500	.31	.31	.31	.31	.31
67.7000	.31	.31	.31	.31	.31
67.9500	.31	.31	.31	.31	.31
68.2000	.31	.31	.31	.31	.31
68.4500	.31	.31	.31	.31	.31
68.7000	.31	.31	.31	.31	.31
68.9500	.31	.31	.31	.31	.31
69.2000	.31	.31	.31	.31	.31
69.4500	.31	.31	.31	.31	.31
69.7000	.31	.31	.31	.31	.31
69.9500	.31	.31	.31	.31	.31
70.2000	.31	.31	.31	.31	.31
70.4500	.31	.31	.31	.31	.31
70.7000	.31	.31	.31	.31	.30
70.9500	.30	.30	.30	.30	.30
71.2000	.30	.30	.30	.30	.30
71.4500	.30	.30	.30	.30	.30
71.7000	.30	.30	.30	.30	.30
71.9500	.30	.30	.30	.30	.30
72.2000	.30	.30	.30	.30	.30
72.4500	.30	.30	.30	.30	.30
72.7000	.30	.30	.30	.30	.30
72.9500	.30	.30	.30	.30	.30
73.2000	.30	.30	.30	.30	.30
73.4500	.30	.30	.30	.30	.30
73.7000	.30	.30	.30	.30	.30
73.9500	.30	.30	.30	.30	.30
74.2000	.30	.30	.30	.30	.30
74.4500	.30	.30	.30	.30	.30
74.7000	.30	.30	.30	.30	.30
74.9500	.30	.30	.30	.30	.30

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
75.2000	.30	.30	.30	.30	.30
75.4500	.30	.30	.30	.30	.30
75.7000	.30	.30	.30	.30	.30
75.9500	.30	.30	.30	.30	.30
76.2000	.30	.30	.30	.30	.30
76.4500	.30	.30	.30	.30	.30
76.7000	.30	.30	.30	.30	.30
76.9500	.30	.30	.30	.30	.30
77.2000	.30	.30	.30	.30	.30
77.4500	.30	.30	.30	.30	.30
77.7000	.30	.30	.30	.30	.30
77.9500	.30	.30	.30	.30	.30
78.2000	.30	.30	.30	.30	.30
78.4500	.30	.30	.30	.30	.30
78.7000	.30	.30	.30	.30	.30
78.9500	.30	.30	.29	.29	.29
79.2000	.29	.29	.29	.29	.29
79.4500	.29	.29	.29	.29	.29
79.7000	.29	.29	.29	.29	.29
79.9500	.29	.29	.29	.29	.29
80.2000	.29	.29	.29	.29	.29
80.4500	.29	.29	.29	.29	.29
80.7000	.29	.29	.29	.29	.29
80.9500	.29	.29	.29	.29	.29
81.2000	.29	.29	.29	.29	.29
81.4500	.29	.29	.29	.29	.29
81.7000	.29	.29	.29	.29	.29
81.9500	.29	.29	.29	.29	.29
82.2000	.29	.29	.29	.29	.29
82.4500	.29	.29	.29	.29	.29
82.7000	.29	.29	.29	.29	.29
82.9500	.29	.29	.29	.29	.29
83.2000	.29	.29	.29	.29	.29
83.4500	.29	.29	.29	.29	.29
83.7000	.29	.29	.29	.29	.29
83.9500	.29	.29	.29	.29	.29
84.2000	.29	.29	.29	.29	.29
84.4500	.29	.29	.29	.29	.29
84.7000	.29	.29	.29	.29	.29
84.9500	.29	.29	.29	.29	.29
85.2000	.29	.29	.29	.29	.29
85.4500	.29	.29	.29	.29	.29
85.7000	.29	.29	.29	.29	.29
85.9500	.29	.29	.29	.29	.29
86.2000	.29	.29	.29	.29	.29

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
86.4500	.29	.29	.28	.28	.28
86.7000	.28	.28	.28	.28	.28
86.9500	.28	.28	.28	.28	.28
87.2000	.28	.28	.28	.28	.28
87.4500	.28	.28	.28	.28	.28
87.7000	.28	.28	.28	.28	.28
87.9500	.28	.28	.28	.28	.28
88.2000	.28	.28	.28	.28	.28
88.4500	.28	.28	.28	.28	.28
88.7000	.28	.28	.28	.28	.28
88.9500	.28	.28	.28	.28	.28
89.2000	.28	.28	.28	.28	.28
89.4500	.28	.28	.28	.28	.28
89.7000	.28	.28	.28	.28	.28
89.9500	.28	.28	.28	.28	.28
90.2000	.28	.28	.28	.28	.28
90.4500	.28	.28	.28	.28	.28
90.7000	.28	.28	.28	.28	.28
90.9500	.28	.28	.28	.28	.28
91.2000	.28	.28	.28	.28	.28
91.4500	.28	.28	.28	.28	.28
91.7000	.28	.28	.28	.28	.28
91.9500	.28	.28	.28	.28	.28
92.2000	.28	.28	.28	.28	.28
92.4500	.28	.28	.28	.28	.28
92.7000	.28	.28	.28	.28	.28
92.9500	.28	.28	.28	.28	.28
93.2000	.28	.28	.28	.28	.28
93.4500	.28	.27	.27	.27	.27
93.7000	.27	.27	.27	.27	.27
93.9500	.27	.27	.27	.27	.27
94.2000	.27	.27	.27	.27	.27
94.4500	.27	.27	.27	.27	.27
94.7000	.27	.27	.27	.27	.27
94.9500	.27	.27	.27	.27	.27
95.2000	.27	.27	.27	.27	.27
95.4500	.27	.27	.27	.27	.27
95.7000	.27	.27	.27	.27	.27
95.9500	.27	.27	.27	.27	.27
96.2000	.27	.27	.27	.27	.27
96.4500	.27	.27	.27	.27	.27
96.7000	.27	.27	.27	.27	.27
96.9500	.27	.27	.27	.27	.27
97.2000	.27	.27	.27	.27	.27
97.4500	.27	.27	.27	.27	.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
97.7000	.27	.27	.27	.27	.27
97.9500	.27	.27	.27	.27	.27
98.2000	.27	.27	.27	.27	.27
98.4500	.27	.27	.27	.27	.27
98.7000	.27	.27	.27	.27	.27
98.9500	.27	.27	.27	.27	.27
99.2000	.27	.27	.27	.27	.27
99.4500	.27	.27	.27	.27	.27
99.7000	.27	.27	.27	.27	.26
99.9500	.26	.26	.26	.26	.26
100.2000	.26	.26	.26	.26	.26
100.4500	.26	.26	.26	.26	.26
100.7000	.26	.26	.26	.26	

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POA #1

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
FLEX OUTLET #1	FLEX BASIN #1IN		FLEX OUTLET #1	100

INFLOWS TO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX OUTLET #1	100	14.421	13.2500	14.79

TOTAL FLOW INTO: POA #1

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POA #1	100	14.421	13.2500	14.79

TOTAL NODE INFLOW...
HYG file =
HYG ID = POA #1
HYG Tag = 100

Peak Discharge	14.79 cfs
Time to Peak	13.2500 hrs
HYG Volume	14.421 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.3000	.00	.00	.00	.01	.01
9.5500	.02	.02	.03	.03	.04
9.8000	.05	.06	.07	.08	.09
10.0500	.10	.11	.11	.12	.12
10.3000	.13	.14	.14	.15	.15
10.5500	.16	.16	.17	.18	.18
10.8000	.19	.19	.20	.20	.21
11.0500	.21	.22	.22	.23	.23
11.3000	.24	.24	.25	.25	.26
11.5500	.27	.27	.28	.29	.30
11.8000	.31	.32	.36	.60	1.06
12.0500	1.82	2.88	4.21	5.71	6.95
12.3000	7.91	8.68	9.33	9.88	10.34
12.5500	10.72	11.03	11.28	11.49	11.66
12.8000	11.80	11.92	12.41	13.01	13.47
13.0500	13.87	14.30	14.57	14.72	14.79
13.3000	14.79	14.74	14.66	14.55	14.42
13.5500	14.27	14.12	13.95	13.78	13.66
13.8000	13.55	13.44	13.32	13.19	13.06
14.0500	12.93	12.80	12.66	12.52	12.38
14.3000	12.24	12.11	11.97	11.94	11.92
14.5500	11.90	11.88	11.86	11.84	11.82
14.8000	11.80	11.78	11.76	11.73	11.71
15.0500	11.69	11.66	11.64	11.61	11.58
15.3000	11.56	11.53	11.50	11.47	11.45
15.5500	11.42	11.39	11.36	11.32	11.29
15.8000	11.26	11.23	11.19	11.16	11.13
16.0500	11.09	11.06	11.02	10.98	10.95
16.3000	10.91	10.87	10.83	10.80	10.76
16.5500	10.72	10.68	10.64	10.60	10.56
16.8000	10.53	10.49	10.45	10.41	10.37

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.0500	10.33	10.29	10.25	10.21	10.17
17.3000	10.14	10.10	10.06	10.02	9.98
17.5500	9.94	9.90	9.86	9.82	9.78
17.8000	9.74	9.70	9.66	9.62	9.58
18.0500	9.54	9.49	9.45	9.41	9.37
18.3000	9.32	9.28	9.24	9.19	9.15
18.5500	9.11	9.06	9.02	8.98	8.94
18.8000	8.89	8.85	8.81	8.76	8.72
19.0500	8.67	8.63	8.59	8.54	8.50
19.3000	8.45	8.41	8.36	8.32	8.28
19.5500	8.23	8.19	8.14	8.10	8.06
19.8000	8.01	7.97	7.92	7.88	7.84
20.0500	7.79	7.75	7.70	7.66	7.62
20.3000	7.57	7.53	7.48	7.44	7.39
20.5500	7.35	7.31	7.26	7.22	7.18
20.8000	7.13	7.09	7.05	7.00	6.96
21.0500	6.92	6.88	6.84	6.80	6.76
21.3000	6.72	6.67	6.63	6.59	6.55
21.5500	6.51	6.47	6.44	6.40	6.36
21.8000	6.32	6.28	6.23	6.19	6.15
22.0500	6.11	6.07	6.04	6.00	5.96
22.3000	5.92	5.88	5.84	5.80	5.75
22.5500	5.71	5.67	5.63	5.60	5.56
22.8000	5.52	5.48	5.44	5.41	5.37
23.0500	5.34	5.31	5.27	5.24	5.21
23.3000	5.17	5.14	5.11	5.08	5.05
23.5500	5.02	4.99	4.96	4.93	4.90
23.8000	4.87	4.84	4.82	4.79	4.76
24.0500	4.74	4.71	4.68	4.64	4.60
24.3000	4.56	4.52	4.48	4.44	4.40
24.5500	4.36	4.31	4.27	4.23	4.19
24.8000	4.15	4.11	4.07	4.03	3.99
25.0500	3.95	3.92	3.88	3.85	3.82
25.3000	3.78	3.75	3.72	3.69	3.65
25.5500	3.62	3.59	3.56	3.53	3.51
25.8000	3.48	3.45	3.42	3.39	3.37
26.0500	3.34	3.31	3.29	3.26	3.24
26.3000	3.21	3.19	3.16	3.14	3.12
26.5500	3.09	3.07	3.05	3.03	3.01
26.8000	2.98	2.96	2.94	2.92	2.90
27.0500	2.88	2.86	2.84	2.82	2.81
27.3000	2.79	2.77	2.75	2.73	2.72
27.5500	2.70	2.68	2.67	2.65	2.64
27.8000	2.62	2.61	2.59	2.58	2.57
28.0500	2.55	2.54	2.53	2.51	2.50

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
28.3000	2.49	2.47	2.46	2.45	2.43
28.5500	2.42	2.41	2.40	2.39	2.37
28.8000	2.36	2.35	2.34	2.33	2.32
29.0500	2.31	2.30	2.29	2.27	2.26
29.3000	2.25	2.24	2.23	2.22	2.21
29.5500	2.20	2.20	2.19	2.18	2.17
29.8000	2.16	2.15	2.14	2.13	2.12
30.0500	2.11	2.10	2.10	2.09	2.08
30.3000	2.07	2.06	2.05	2.05	2.04
30.5500	2.03	2.02	2.02	2.01	2.00
30.8000	1.99	1.99	1.98	1.97	1.96
31.0500	1.96	1.95	1.94	1.94	1.93
31.3000	1.93	1.92	1.91	1.91	1.90
31.5500	1.89	1.89	1.88	1.88	1.87
31.8000	1.86	1.86	1.85	1.85	1.84
32.0500	1.84	1.83	1.83	1.82	1.81
32.3000	1.81	1.80	1.80	1.79	1.79
32.5500	1.78	1.78	1.77	1.77	1.76
32.8000	1.76	1.75	1.75	1.74	1.74
33.0500	1.73	1.73	1.72	1.72	1.71
33.3000	1.71	1.70	1.70	1.69	1.69
33.5500	1.69	1.68	1.68	1.67	1.67
33.8000	1.66	1.66	1.65	1.65	1.65
34.0500	1.64	1.64	1.63	1.63	1.63
34.3000	1.62	1.62	1.61	1.61	1.61
34.5500	1.60	1.60	1.59	1.59	1.59
34.8000	1.58	1.58	1.58	1.57	1.57
35.0500	1.56	1.56	1.56	1.55	1.55
35.3000	1.55	1.54	1.54	1.54	1.53
35.5500	1.53	1.52	1.52	1.52	1.51
35.8000	1.51	1.51	1.50	1.50	1.50
36.0500	1.49	1.49	1.49	1.48	1.48
36.3000	1.48	1.47	1.47	1.47	1.46
36.5500	1.46	1.46	1.46	1.45	1.45
36.8000	1.45	1.44	1.44	1.44	1.43
37.0500	1.43	1.43	1.42	1.42	1.42
37.3000	1.42	1.41	1.41	1.41	1.40
37.5500	1.40	1.40	1.39	1.39	1.39
37.8000	1.39	1.38	1.38	1.38	1.37
38.0500	1.37	1.37	1.37	1.36	1.36
38.3000	1.36	1.35	1.35	1.35	1.35
38.5500	1.34	1.34	1.34	1.33	1.33
38.8000	1.33	1.33	1.32	1.32	1.32
39.0500	1.32	1.31	1.31	1.31	1.31
39.3000	1.31	1.30	1.30	1.30	1.30

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
39.5500	1.29	1.29	1.29	1.29	1.28
39.8000	1.28	1.28	1.28	1.27	1.27
40.0500	1.27	1.27	1.26	1.26	1.26
40.3000	1.26	1.25	1.25	1.25	1.25
40.5500	1.25	1.24	1.24	1.24	1.24
40.8000	1.23	1.23	1.23	1.23	1.22
41.0500	1.22	1.22	1.22	1.21	1.21
41.3000	1.21	1.21	1.21	1.20	1.20
41.5500	1.20	1.20	1.19	1.19	1.19
41.8000	1.19	1.18	1.18	1.18	1.18
42.0500	1.18	1.17	1.17	1.17	1.17
42.3000	1.16	1.16	1.16	1.16	1.15
42.5500	1.15	1.15	1.15	1.15	1.14
42.8000	1.14	1.14	1.14	1.13	1.13
43.0500	1.13	1.13	1.12	1.12	1.12
43.3000	1.12	1.12	1.11	1.11	1.11
43.5500	1.11	1.10	1.10	1.10	1.10
43.8000	1.09	1.09	1.09	1.09	1.09
44.0500	1.08	1.08	1.08	1.08	1.07
44.3000	1.07	1.07	1.07	1.07	1.06
44.5500	1.06	1.06	1.06	1.05	1.05
44.8000	1.05	1.05	1.05	1.04	1.04
45.0500	1.04	1.04	1.04	1.03	1.03
45.3000	1.03	1.03	1.02	1.02	1.02
45.5500	1.02	1.02	1.01	1.01	1.01
45.8000	1.01	1.01	1.00	1.00	1.00
46.0500	1.00	1.00	.99	.99	.99
46.3000	.99	.99	.98	.98	.98
46.5500	.98	.98	.97	.97	.97
46.8000	.97	.97	.96	.96	.96
47.0500	.96	.95	.95	.95	.95
47.3000	.95	.94	.94	.94	.94
47.5500	.94	.93	.93	.93	.93
47.8000	.92	.92	.92	.92	.92
48.0500	.91	.91	.91	.91	.91
48.3000	.90	.90	.90	.90	.89
48.5500	.89	.89	.89	.89	.88
48.8000	.88	.88	.88	.87	.87
49.0500	.87	.87	.86	.86	.86
49.3000	.86	.85	.85	.85	.85
49.5500	.85	.84	.84	.84	.84
49.8000	.83	.83	.83	.83	.82
50.0500	.82	.82	.82	.81	.81
50.3000	.81	.81	.80	.80	.80
50.5500	.80	.79	.79	.79	.79

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
50.8000	.79	.78	.78	.78	.78
51.0500	.77	.77	.77	.77	.77
51.3000	.76	.76	.76	.76	.75
51.5500	.75	.75	.75	.74	.74
51.8000	.74	.74	.73	.73	.73
52.0500	.73	.73	.72	.72	.72
52.3000	.72	.71	.71	.71	.71
52.5500	.70	.70	.70	.70	.69
52.8000	.69	.69	.69	.69	.68
53.0500	.68	.68	.68	.67	.67
53.3000	.67	.67	.66	.66	.66
53.5500	.66	.65	.65	.65	.65
53.8000	.65	.64	.64	.64	.64
54.0500	.63	.63	.63	.63	.62
54.3000	.62	.62	.62	.62	.61
54.5500	.61	.61	.61	.60	.60
54.8000	.60	.60	.60	.59	.59
55.0500	.59	.59	.59	.58	.58
55.3000	.58	.58	.58	.58	.57
55.5500	.57	.57	.57	.57	.57
55.8000	.56	.56	.56	.56	.56
56.0500	.56	.55	.55	.55	.55
56.3000	.55	.55	.54	.54	.54
56.5500	.54	.54	.54	.54	.53
56.8000	.53	.53	.53	.53	.53
57.0500	.52	.52	.52	.52	.52
57.3000	.52	.51	.51	.51	.51
57.5500	.51	.51	.50	.50	.50
57.8000	.50	.50	.50	.50	.49
58.0500	.49	.49	.49	.49	.49
58.3000	.49	.48	.48	.48	.48
58.5500	.48	.48	.48	.47	.47
58.8000	.47	.47	.47	.47	.47
59.0500	.46	.46	.46	.46	.46
59.3000	.46	.46	.45	.45	.45
59.5500	.45	.45	.45	.45	.45
59.8000	.44	.44	.44	.44	.44
60.0500	.44	.44	.44	.43	.43
60.3000	.43	.43	.43	.43	.43
60.5500	.43	.42	.42	.42	.42
60.8000	.42	.42	.42	.42	.42
61.0500	.42	.42	.42	.42	.41
61.3000	.41	.41	.41	.41	.41
61.5500	.41	.41	.41	.41	.41
61.8000	.41	.41	.41	.41	.41

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
62.0500	.40	.40	.40	.40	.40
62.3000	.40	.40	.40	.40	.40
62.5500	.40	.40	.40	.40	.40
62.8000	.40	.39	.39	.39	.39
63.0500	.39	.39	.39	.39	.39
63.3000	.39	.39	.39	.39	.39
63.5500	.39	.39	.38	.38	.38
63.8000	.38	.38	.38	.38	.38
64.0500	.38	.38	.38	.38	.38
64.3000	.38	.38	.38	.38	.37
64.5500	.37	.37	.37	.37	.37
64.8000	.37	.37	.37	.37	.37
65.0500	.37	.37	.37	.37	.37
65.3000	.37	.37	.36	.36	.36
65.5500	.36	.36	.36	.36	.36
65.8000	.36	.36	.36	.36	.36
66.0500	.36	.36	.36	.36	.36
66.3000	.36	.36	.35	.35	.35
66.5500	.35	.35	.35	.35	.35
66.8000	.35	.35	.35	.35	.35
67.0500	.35	.35	.35	.35	.35
67.3000	.35	.35	.34	.34	.34
67.5500	.34	.34	.34	.34	.34
67.8000	.34	.34	.34	.34	.34
68.0500	.34	.34	.34	.34	.34
68.3000	.34	.34	.34	.34	.33
68.5500	.33	.33	.33	.33	.33
68.8000	.33	.33	.33	.33	.33
69.0500	.33	.33	.33	.33	.33
69.3000	.33	.33	.33	.33	.33
69.5500	.33	.33	.33	.33	.33
69.8000	.33	.33	.33	.33	.33
70.0500	.33	.33	.33	.33	.33
70.3000	.33	.33	.33	.33	.33
70.5500	.33	.33	.33	.33	.33
70.8000	.33	.33	.33	.33	.33
71.0500	.33	.33	.33	.33	.33
71.3000	.33	.33	.33	.33	.33
71.5500	.33	.33	.33	.33	.33
71.8000	.33	.33	.33	.33	.33
72.0500	.33	.33	.33	.33	.33
72.3000	.33	.33	.33	.33	.33
72.5500	.33	.33	.33	.33	.33
72.8000	.33	.33	.33	.33	.33
73.0500	.33	.33	.33	.33	.33

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
73.3000	.32	.32	.32	.32	.32
73.5500	.32	.32	.32	.32	.32
73.8000	.32	.32	.32	.32	.32
74.0500	.32	.32	.32	.32	.32
74.3000	.32	.32	.32	.32	.32
74.5500	.32	.32	.32	.32	.32
74.8000	.32	.32	.32	.32	.32
75.0500	.32	.32	.32	.32	.32
75.3000	.32	.32	.32	.32	.32
75.5500	.32	.32	.32	.32	.32
75.8000	.32	.32	.32	.32	.32
76.0500	.32	.32	.32	.32	.32
76.3000	.32	.32	.32	.32	.32
76.5500	.32	.32	.32	.32	.32
76.8000	.32	.32	.32	.32	.32
77.0500	.32	.32	.32	.32	.32
77.3000	.32	.32	.32	.32	.32
77.5500	.32	.32	.32	.32	.32
77.8000	.32	.32	.32	.32	.32
78.0500	.32	.32	.32	.32	.32
78.3000	.32	.32	.32	.32	.32
78.5500	.32	.32	.32	.32	.32
78.8000	.32	.32	.32	.32	.32
79.0500	.32	.32	.32	.32	.32
79.3000	.32	.32	.32	.32	.32
79.5500	.32	.32	.32	.32	.32
79.8000	.32	.32	.32	.32	.32
80.0500	.32	.32	.32	.32	.32
80.3000	.32	.32	.32	.32	.32
80.5500	.32	.32	.32	.32	.32
80.8000	.32	.32	.32	.32	.32
81.0500	.32	.32	.32	.32	.32
81.3000	.32	.32	.32	.32	.32
81.5500	.32	.32	.32	.32	.32
81.8000	.32	.32	.32	.32	.32
82.0500	.32	.32	.32	.32	.32
82.3000	.32	.32	.32	.32	.32
82.5500	.32	.32	.32	.32	.32
82.8000	.32	.32	.32	.32	.32
83.0500	.32	.32	.32	.32	.32
83.3000	.32	.32	.32	.32	.32
83.5500	.32	.32	.32	.32	.31
83.8000	.31	.31	.31	.31	.31
84.0500	.31	.31	.31	.31	.31
84.3000	.31	.31	.31	.31	.31

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
84.5500	.31	.31	.31	.31	.31
84.8000	.31	.31	.31	.31	.31
85.0500	.31	.31	.31	.31	.31
85.3000	.31	.31	.31	.31	.31
85.5500	.31	.31	.31	.31	.31
85.8000	.31	.31	.31	.31	.31
86.0500	.31	.31	.31	.31	.31
86.3000	.31	.31	.31	.31	.31
86.5500	.31	.31	.31	.31	.31
86.8000	.31	.31	.31	.31	.31
87.0500	.31	.31	.31	.31	.31
87.3000	.31	.31	.31	.31	.31
87.5500	.31	.31	.31	.31	.31
87.8000	.31	.31	.31	.31	.31
88.0500	.31	.31	.31	.31	.31
88.3000	.31	.31	.31	.31	.31
88.5500	.31	.31	.31	.31	.31
88.8000	.31	.31	.31	.31	.31
89.0500	.31	.31	.31	.31	.31
89.3000	.31	.31	.31	.31	.31
89.5500	.31	.31	.31	.31	.31
89.8000	.31	.31	.31	.31	.31
90.0500	.31	.31	.31	.31	.31
90.3000	.31	.31	.31	.31	.31
90.5500	.31	.31	.31	.31	.31
90.8000	.31	.31	.31	.31	.31
91.0500	.31	.31	.31	.31	.31
91.3000	.31	.31	.31	.31	.31
91.5500	.31	.31	.31	.31	.31
91.8000	.31	.31	.31	.31	.31
92.0500	.31	.31	.31	.31	.31
92.3000	.31	.31	.31	.31	.31
92.5500	.31	.31	.31	.31	.31
92.8000	.31	.31	.31	.31	.31
93.0500	.30	.30	.30	.30	.30
93.3000	.30	.30	.30	.30	.30
93.5500	.30	.30	.30	.30	.30
93.8000	.30	.30	.30	.30	.30
94.0500	.30	.30	.30	.30	.30
94.3000	.30	.30	.30	.30	.30
94.5500	.30	.30	.30	.30	.30
94.8000	.30	.30	.30	.30	.30
95.0500	.30	.30	.30	.30	.30
95.3000	.30	.30	.30	.30	.30
95.5500	.30	.30	.30	.30	.30

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
95.8000	.30	.30	.30	.30	.30
96.0500	.30	.30	.30	.30	.30
96.3000	.30	.30	.30	.30	.30
96.5500	.30	.30	.30	.30	.30
96.8000	.30	.30	.30	.30	.30
97.0500	.30	.30	.30	.30	.30
97.3000	.30	.30	.30	.30	.30
97.5500	.30	.30	.30	.30	.30
97.8000	.30	.30	.30	.30	.30
98.0500	.30	.30	.30	.30	.30
98.3000	.30	.30	.30	.30	.30
98.5500	.30	.30	.30	.30	.30
98.8000	.30	.30	.30	.30	.30
99.0500	.30	.30	.30	.30	.30
99.3000	.30	.30	.30	.30	.30
99.5500	.30	.30	.30	.30	.30
99.8000	.30	.30	.30	.30	.30
100.0500	.30	.30	.30	.30	.30
100.3000	.30	.30	.30	.30	.30

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (ac-ft)	Volume Sum (ac-ft)
51.50	-----	36435	0	.000	.000
52.00	-----	37621	111079	.425	.425
53.00	-----	40036	116467	.891	1.316
54.00	-----	42507	123796	.947	2.264
55.00	-----	45035	131295	1.005	3.268
56.00	-----	47620	138965	1.063	4.332
57.00	-----	50261	146804	1.123	5.455
58.00	-----	52958	154811	1.185	6.640
58.50	-----	54328	160925	.616	7.255

POND VOLUME EQUATIONS

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

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

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

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 51.50 ft
Increment = .10 ft
Max. Elev.= 58.50 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Culvert-Box	C1	--->	TW	54.700	58.500
Inlet Box	R0	--->	TW	58.300	58.500
Culvert-Circular	C0	--->	TW	52.750	58.500

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = C1
Structure Type = Culvert-Box

No. Barrels	=	1
Barrel Height	=	1.00 ft
Barrel Width	=	1.08 ft
Upstream Invert	=	54.70 ft
Dnstream Invert	=	54.70 ft
Horiz. Length	=	.50 ft
Barrel Length	=	.50 ft
Barrel Slope	=	.00000 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130
Ke	=	.5000 (forward entrance loss)
Kb	=	.029681 (per ft of full flow)
Kr	=	.5000 (reverse entrance loss)
HW Convergence	=	.001 +/- ft

INLET CONTROL DATA...

Equation form	=	2
Inlet Control K	=	.4750
Inlet Control M	=	.6670
Inlet Control c	=	.01790
Inlet Control Y	=	.9700
T1 ratio (HW/D)	=	1.095
T2 ratio (HW/D)	=	1.256
Slope Factor	=	-.500

Use unsubmerged inlet control Form 2 equ. below T1 elev.
Use submerged inlet control Form 2 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 55.80 ft ---> Flow = 3.79 cfs
At T2 Elev = 55.96 ft ---> Flow = 4.33 cfs

OUTLET STRUCTURE INPUT DATA

Structure ID = R0
Structure Type = Inlet Box

# of Openings	=	1
Invert Elev.	=	58.30 ft
Orifice Area	=	14.0000 sq.ft
Orifice Coeff.	=	.800
Weir Length	=	15.00 ft
Weir Coeff.	=	3.300
K, Reverse	=	1.000
Mannings n	=	.0000
Kev,Charged Riser	=	.000
Weir Submergence	=	No
Orifice H to crest	=	Yes

OUTLET STRUCTURE INPUT DATA

Structure ID = C0
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	.2500 ft
Upstream Invert	=	52.75 ft
Dnstream Invert	=	52.75 ft
Horiz. Length	=	.50 ft
Barrel Length	=	.50 ft
Barrel Slope	=	.00000 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130
Ke	=	.5000 (forward entrance loss)
Kb	=	.198575 (per ft of full flow)
Kr	=	.5000 (reverse entrance loss)
HW Convergence	=	.001 +/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0098
Inlet Control M	=	2.0000
Inlet Control c	=	.03980
Inlet Control Y	=	.6700
T1 ratio (HW/D)	=	1.160
T2 ratio (HW/D)	=	1.307
Slope Factor	=	-.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 53.04 ft ---> Flow = .09 cfs
At T2 Elev = 53.08 ft ---> Flow = .10 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations	=	40
Min. TW tolerance	=	.01 ft
Max. TW tolerance	=	.01 ft
Min. HW tolerance	=	.01 ft
Max. HW tolerance	=	.01 ft
Min. Q tolerance	=	.00 cfs
Max. Q tolerance	=	.00 cfs

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C1 (Culvert-Box)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
51.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.90	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.10	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.30	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.75	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.90	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C1 (Culvert-Box)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
53.10	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.30	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
53.90	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.10	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.30	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
54.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C1 (Culvert-Box)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes / Computation Messages
54.80	.08	Free Outfall		BACKWATER CONTROL.. Vh= .021ft hwDi= .068ft Lbw= .5ft Hev= .00ft
54.90	.24	Free Outfall		BACKWATER CONTROL.. Vh= .046ft hwDi= .131ft Lbw= .5ft Hev= .00ft
55.00	.45	Free Outfall		BACKWATER CONTROL.. Vh= .070ft hwDi= .195ft Lbw= .5ft Hev= .00ft
55.10	.68	Free Outfall		BACKWATER CONTROL.. Vh= .098ft hwDi= .252ft Lbw= .5ft Hev= .00ft
55.20	.96	Free Outfall		BACKWATER CONTROL.. Vh= .125ft hwDi= .313ft Lbw= .5ft Hev= .00ft
55.30	1.27	Free Outfall		BACKWATER CONTROL.. Vh= .147ft hwDi= .380ft Lbw= .5ft Hev= .00ft
55.40	1.59	Free Outfall		BACKWATER CONTROL.. Vh= .177ft hwDi= .435ft Lbw= .5ft Hev= .00ft
55.50	1.94	Free Outfall		BACKWATER CONTROL.. Vh= .201ft hwDi= .498ft Lbw= .5ft Hev= .00ft
55.60	2.31	Free Outfall		BACKWATER CONTROL.. Vh= .232ft hwDi= .552ft Lbw= .5ft Hev= .00ft
55.70	2.71	Free Outfall		BACKWATER CONTROL.. Vh= .255ft hwDi= .619ft Lbw= .5ft Hev= .00ft
55.80	3.13	Free Outfall		BACKWATER CONTROL.. Vh= .278ft hwDi= .682ft Lbw= .5ft Hev= .00ft
55.90	3.55	Free Outfall		BACKWATER CONTROL.. Vh= .312ft hwDi= .733ft Lbw= .5ft Hev= .00ft
56.00	4.01	Free Outfall		BACKWATER CONTROL.. Vh= .335ft hwDi= .798ft Lbw= .5ft Hev= .00ft
56.10	4.48	Free Outfall		BACKWATER CONTROL.. Vh= .363ft hwDi= .856ft Lbw= .5ft Hev= .00ft
56.20	4.96	Free Outfall		BACKWATER CONTROL.. Vh= .390ft hwDi= .915ft Lbw= .5ft Hev= .00ft
56.30	5.47	Free Outfall		BACKWATER CONTROL.. Vh= .413ft hwDi= .980ft Lbw= .5ft Hev= .00ft
56.40	5.91	Free Outfall		FULL FLOW...Lfull=.30ft Vh=.463ft HL=.699ft Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C1 (Culvert-Box)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes

WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
56.50	6.31	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.528ft	HL=.799ft Hev= .00ft
56.60	6.69	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.594ft	HL=.899ft Hev= .00ft
56.70	7.06	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.661ft	HL=1.001ft Hev= .00ft
56.80	7.40	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.726ft	HL=1.100ft Hev= .00ft
56.90	7.73	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.792ft	HL=1.199ft Hev= .00ft
57.00	8.05	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.858ft	HL=1.300ft Hev= .00ft
57.10	8.36	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.925ft	HL=1.401ft Hev= .00ft
57.20	8.64	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=.990ft	HL=1.499ft Hev= .00ft
57.30	8.93	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.057ft	HL=1.601ft Hev= .00ft
57.40	9.21	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.122ft	HL=1.700ft Hev= .00ft
57.50	9.47	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.188ft	HL=1.800ft Hev= .00ft
57.60	9.73	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.254ft	HL=1.900ft Hev= .00ft
57.70	9.99	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.321ft	HL=2.001ft Hev= .00ft
57.80	10.23	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.387ft	HL=2.100ft Hev= .00ft
57.90	10.47	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.452ft	HL=2.200ft Hev= .00ft
58.00	10.71	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.518ft	HL=2.300ft Hev= .00ft
58.10	10.94	Free Outfall		
		FULL FLOW...Lfull=.50ft	Vh=1.584ft	HL=2.400ft Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C1 (Culvert-Box)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes: Computation Messages
58.20	11.16	Free Outfall		FULL FLOW...Lfull=.50ft Vh=1.650ft HL=2.500ft Hev= .00ft
58.30	11.38	Free Outfall		FULL FLOW...Lfull=.50ft Vh=1.716ft HL=2.600ft Hev= .00ft
58.40	11.60	Free Outfall		FULL FLOW...Lfull=.50ft Vh=1.782ft HL=2.700ft Hev= .00ft
58.50	11.81	Free Outfall		FULL FLOW...Lfull=.50ft Vh=1.848ft HL=2.800ft Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = R0 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev Converge ft +/-ft	Computation Messages
51.50	.00	Free Outfall HW & TW < Inv.El.=58.300
51.60	.00	Free Outfall HW & TW < Inv.El.=58.300
51.70	.00	Free Outfall HW & TW < Inv.El.=58.300
51.80	.00	Free Outfall HW & TW < Inv.El.=58.300
51.90	.00	Free Outfall HW & TW < Inv.El.=58.300
52.00	.00	Free Outfall HW & TW < Inv.El.=58.300
52.10	.00	Free Outfall HW & TW < Inv.El.=58.300
52.20	.00	Free Outfall HW & TW < Inv.El.=58.300
52.30	.00	Free Outfall HW & TW < Inv.El.=58.300
52.40	.00	Free Outfall HW & TW < Inv.El.=58.300
52.50	.00	Free Outfall HW & TW < Inv.El.=58.300
52.60	.00	Free Outfall HW & TW < Inv.El.=58.300
52.70	.00	Free Outfall HW & TW < Inv.El.=58.300
52.75	.00	Free Outfall HW & TW < Inv.El.=58.300
52.80	.00	Free Outfall HW & TW < Inv.El.=58.300
52.90	.00	Free Outfall HW & TW < Inv.El.=58.300
53.00	.00	Free Outfall HW & TW < Inv.El.=58.300

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = R0 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev,Device Q Tail Water Notes

WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
53.10	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.30	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.40	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.50	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.60	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.70	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.80	.00	Free Outfall		HW & TW < Inv.El.=58.300
53.90	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.00	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.10	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.30	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.40	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.50	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.60	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.70	.00	Free Outfall		HW & TW < Inv.El.=58.300

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = R0 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev,Device Q Tail Water Notes

WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
54.80	.00	Free Outfall		HW & TW < Inv.El.=58.300
54.90	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.00	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.10	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.30	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.40	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.50	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.60	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.70	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.80	.00	Free Outfall		HW & TW < Inv.El.=58.300
55.90	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.00	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.10	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.30	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.40	.00	Free Outfall		HW & TW < Inv.El.=58.300

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = R0 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes Computation Messages
56.50	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.60	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.70	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.80	.00	Free Outfall		HW & TW < Inv.El.=58.300
56.90	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.00	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.10	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.30	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.40	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.50	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.60	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.70	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.80	.00	Free Outfall		HW & TW < Inv.El.=58.300
57.90	.00	Free Outfall		HW & TW < Inv.El.=58.300
58.00	.00	Free Outfall		HW & TW < Inv.El.=58.300
58.10	.00	Free Outfall		HW & TW < Inv.El.=58.300

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = R0 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
58.20	.00	Free Outfall		HW & TW < Inv.El.=58.300
58.30	.00	Free Outfall		Weir: H =.00ft
58.40	1.57	Free Outfall		Weir: H =.10ft
58.50	4.43	Free Outfall		Weir: H =.20ft

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
51.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
51.90	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.10	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.30	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.50	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.70	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.75	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
52.80	.00	Free Outfall		BACKWATER CONTROL.. Vh= .006ft hwDi= .040ft Lbw= .5ft Hev= .00ft
52.90	.03	Free Outfall		BACKWATER CONTROL.. Vh= .025ft hwDi= .113ft Lbw= .5ft Hev= .00ft
53.00	.07	Free Outfall		BACKWATER CONTROL.. Vh= .049ft hwDi= .176ft Lbw= .5ft Hev= .00ft

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
53.10	.11	Free Outfall		INLET CONTROL... Submerged: HW =.35
53.20	.13	Free Outfall		INLET CONTROL... Submerged: HW =.45
53.30	.15	Free Outfall		INLET CONTROL... Submerged: HW =.55
53.40	.17	Free Outfall		INLET CONTROL... Submerged: HW =.65
53.50	.19	Free Outfall		INLET CONTROL... Submerged: HW =.75
53.60	.20	Free Outfall		INLET CONTROL... Submerged: HW =.85
53.70	.22	Free Outfall		INLET CONTROL... Submerged: HW =.95
53.80	.23	Free Outfall		INLET CONTROL... Submerged: HW =1.05
53.90	.24	Free Outfall		INLET CONTROL... Submerged: HW =1.15
54.00	.26	Free Outfall		INLET CONTROL... Submerged: HW =1.25
54.10	.27	Free Outfall		INLET CONTROL... Submerged: HW =1.35
54.20	.28	Free Outfall		INLET CONTROL... Submerged: HW =1.45
54.30	.29	Free Outfall		INLET CONTROL... Submerged: HW =1.55
54.40	.30	Free Outfall		INLET CONTROL... Submerged: HW =1.65
54.50	.31	Free Outfall		INLET CONTROL... Submerged: HW =1.75
54.60	.32	Free Outfall		INLET CONTROL... Submerged: HW =1.85
54.70	.33	Free Outfall		INLET CONTROL... Submerged: HW =1.95

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes: Computation Messages
54.80	.34	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.05
54.90	.35	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.15
55.00	.36	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.25
55.10	.36	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.35
55.20	.37	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.45
55.30	.38	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.55
55.40	.39	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.65
55.50	.40	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.75
55.60	.40	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.85
55.70	.41	Free Outfall		
		INLET CONTROL...		Submerged: HW =2.95
55.80	.42	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.05
55.90	.42	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.15
56.00	.43	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.25
56.10	.44	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.35
56.20	.45	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.45
56.30	.45	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.55
56.40	.46	Free Outfall		
		INLET CONTROL...		Submerged: HW =3.65

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
56.50	.47	Free Outfall		INLET CONTROL... Submerged: HW =3.75
56.60	.47	Free Outfall		INLET CONTROL... Submerged: HW =3.85
56.70	.48	Free Outfall		INLET CONTROL... Submerged: HW =3.95
56.80	.48	Free Outfall		INLET CONTROL... Submerged: HW =4.05
56.90	.49	Free Outfall		INLET CONTROL... Submerged: HW =4.15
57.00	.50	Free Outfall		INLET CONTROL... Submerged: HW =4.25
57.10	.50	Free Outfall		INLET CONTROL... Submerged: HW =4.35
57.20	.51	Free Outfall		INLET CONTROL... Submerged: HW =4.45
57.30	.52	Free Outfall		INLET CONTROL... Submerged: HW =4.55
57.40	.52	Free Outfall		INLET CONTROL... Submerged: HW =4.65
57.50	.53	Free Outfall		INLET CONTROL... Submerged: HW =4.75
57.60	.53	Free Outfall		INLET CONTROL... Submerged: HW =4.85
57.70	.54	Free Outfall		INLET CONTROL... Submerged: HW =4.95
57.80	.54	Free Outfall		INLET CONTROL... Submerged: HW =5.05
57.90	.55	Free Outfall		INLET CONTROL... Submerged: HW =5.15
58.00	.55	Free Outfall		INLET CONTROL... Submerged: HW =5.25
58.10	.56	Free Outfall		INLET CONTROL... Submerged: HW =5.35

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = C0 (Culvert-Circular)

Mannings open channel maximum capacity: .00 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes: Computation Messages
58.20	.57	Free Outfall		
		INLET CONTROL...	Submerged:	HW =5.45
58.30	.57	Free Outfall		
		INLET CONTROL...	Submerged:	HW =5.55
58.40	.58	Free Outfall		
		INLET CONTROL...	Submerged:	HW =5.65
58.50	.58	Free Outfall		
		INLET CONTROL...	Submerged:	HW =5.75

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
51.50	.00	Free Outfall		None contributing
51.60	.00	Free Outfall		None contributing
51.70	.00	Free Outfall		None contributing
51.80	.00	Free Outfall		None contributing
51.90	.00	Free Outfall		None contributing
52.00	.00	Free Outfall		None contributing
52.10	.00	Free Outfall		None contributing
52.20	.00	Free Outfall		None contributing
52.30	.00	Free Outfall		None contributing
52.40	.00	Free Outfall		None contributing
52.50	.00	Free Outfall		None contributing
52.60	.00	Free Outfall		None contributing
52.70	.00	Free Outfall		None contributing
52.75	.00	Free Outfall		None contributing
52.80	.00	Free Outfall		C0
52.90	.03	Free Outfall		C0
53.00	.07	Free Outfall		C0
53.10	.11	Free Outfall		C0
53.20	.13	Free Outfall		C0
53.30	.15	Free Outfall		C0
53.40	.17	Free Outfall		C0
53.50	.19	Free Outfall		C0
53.60	.20	Free Outfall		C0
53.70	.22	Free Outfall		C0
53.80	.23	Free Outfall		C0
53.90	.24	Free Outfall		C0
54.00	.26	Free Outfall		C0
54.10	.27	Free Outfall		C0
54.20	.28	Free Outfall		C0
54.30	.29	Free Outfall		C0
54.40	.30	Free Outfall		C0
54.50	.31	Free Outfall		C0
54.60	.32	Free Outfall		C0
54.70	.33	Free Outfall		C0
54.80	.42	Free Outfall		C1 +C0
54.90	.59	Free Outfall		C1 +C0
55.00	.80	Free Outfall		C1 +C0
55.10	1.05	Free Outfall		C1 +C0

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
55.20	1.33	Free Outfall		C1 +C0
55.30	1.65	Free Outfall		C1 +C0
55.40	1.98	Free Outfall		C1 +C0
55.50	2.34	Free Outfall		C1 +C0
55.60	2.71	Free Outfall		C1 +C0
55.70	3.12	Free Outfall		C1 +C0
55.80	3.55	Free Outfall		C1 +C0
55.90	3.98	Free Outfall		C1 +C0
56.00	4.45	Free Outfall		C1 +C0
56.10	4.91	Free Outfall		C1 +C0
56.20	5.41	Free Outfall		C1 +C0
56.30	5.92	Free Outfall		C1 +C0
56.40	6.37	Free Outfall		C1 +C0
56.50	6.78	Free Outfall		C1 +C0
56.60	7.17	Free Outfall		C1 +C0
56.70	7.54	Free Outfall		C1 +C0
56.80	7.89	Free Outfall		C1 +C0
56.90	8.22	Free Outfall		C1 +C0
57.00	8.55	Free Outfall		C1 +C0
57.10	8.86	Free Outfall		C1 +C0
57.20	9.15	Free Outfall		C1 +C0
57.30	9.45	Free Outfall		C1 +C0
57.40	9.73	Free Outfall		C1 +C0
57.50	10.00	Free Outfall		C1 +C0
57.60	10.26	Free Outfall		C1 +C0
57.70	10.53	Free Outfall		C1 +C0
57.80	10.78	Free Outfall		C1 +C0
57.90	11.02	Free Outfall		C1 +C0
58.00	11.26	Free Outfall		C1 +C0
58.10	11.50	Free Outfall		C1 +C0
58.20	11.73	Free Outfall		C1 +C0
58.30	11.95	Free Outfall		C1 +R0 +C0
58.40	13.74	Free Outfall		C1 +R0 +C0
58.50	16.82	Free Outfall		C1 +R0 +C0

LEVEL POOL ROUTING DATA

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 1
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 1

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
51.50	.00	.000	36435	.00	.00	.00
51.60	.00	.084	36671	.00	.00	40.61
51.70	.00	.168	36907	.00	.00	81.49
51.80	.00	.253	37144	.00	.00	122.63
51.90	.00	.339	37382	.00	.00	164.03
52.00	.00	.425	37621	.00	.00	205.70
52.10	.00	.512	37859	.00	.00	247.64
52.20	.00	.599	38098	.00	.00	289.83
52.30	.00	.687	38338	.00	.00	332.30
52.40	.00	.775	38578	.00	.00	375.03
52.50	.00	.864	38819	.00	.00	418.03
52.60	.00	.953	39061	.00	.00	461.29
52.70	.00	1.043	39304	.00	.00	504.83
52.75	.00	1.088	39425	.00	.00	526.70
52.80	.00	1.134	39547	.00	.00	548.64
52.90	.03	1.225	39791	.00	.03	592.74
53.00	.07	1.316	40036	.00	.07	637.13
53.10	.11	1.408	40280	.00	.11	681.78
53.20	.13	1.501	40524	.00	.13	726.70
53.30	.15	1.594	40770	.00	.15	771.89

LEVEL POOL ROUTING DATA

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 1
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 1

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
53.40	.17	1.688	41016	.00	.17	817.34
53.50	.19	1.783	41262	.00	.19	863.07
53.60	.20	1.878	41510	.00	.20	909.07
53.70	.22	1.973	41758	.00	.22	955.34
53.80	.23	2.070	42007	.00	.23	1001.89
53.90	.24	2.166	42257	.00	.24	1048.72
54.00	.26	2.264	42507	.00	.26	1095.82
54.10	.27	2.361	42757	.00	.27	1143.20
54.20	.28	2.460	43007	.00	.28	1190.86
54.30	.29	2.559	43258	.00	.29	1238.79
54.40	.30	2.658	43509	.00	.30	1287.01
54.50	.31	2.759	43762	.00	.31	1335.50
54.60	.32	2.859	44015	.00	.32	1384.28
54.70	.33	2.961	44269	.00	.33	1433.33
54.80	.42	3.063	44524	.00	.42	1482.75
54.90	.59	3.165	44779	.00	.59	1532.54
55.00	.80	3.268	45035	.00	.80	1582.65
55.10	1.05	3.372	45290	.00	1.05	1633.07
55.20	1.33	3.476	45546	.00	1.33	1683.82
55.30	1.65	3.581	45803	.00	1.65	1734.88

LEVEL POOL ROUTING DATA

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 1
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 1

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
55.40	1.98	3.687	46060	.00	1.98	1786.25
55.50	2.34	3.793	46318	.00	2.34	1837.93
55.60	2.71	3.899	46577	.00	2.71	1889.91
55.70	3.12	4.006	46837	.00	3.12	1942.22
55.80	3.55	4.114	47097	.00	3.55	1994.83
55.90	3.98	4.223	47358	.00	3.98	2047.74
56.00	4.45	4.332	47620	.00	4.45	2100.97
56.10	4.91	4.441	47881	.00	4.91	2154.49
56.20	5.41	4.552	48143	.00	5.41	2208.34
56.30	5.92	4.662	48405	.00	5.92	2262.49
56.40	6.37	4.774	48668	.00	6.37	2316.87
56.50	6.78	4.886	48932	.00	6.78	2371.49
56.60	7.17	4.998	49196	.00	7.17	2426.40
56.70	7.54	5.112	49461	.00	7.54	2481.58
56.80	7.89	5.226	49727	.00	7.89	2537.03
56.90	8.22	5.340	49994	.00	8.22	2592.77
57.00	8.55	5.455	50261	.00	8.55	2648.79
57.10	8.86	5.571	50528	.00	8.86	2705.09
57.20	9.15	5.687	50795	.00	9.15	2761.68
57.30	9.45	5.804	51063	.00	9.45	2818.56

LEVEL POOL ROUTING DATA

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 1
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 1

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 51.50 ft
Starting Volume = .000 ac-ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
57.40	9.73	5.921	51331	.00	9.73	2875.73
57.50	10.00	6.040	51601	.00	10.00	2933.18
57.60	10.26	6.158	51871	.00	10.26	2990.93
57.70	10.53	6.278	52142	.00	10.53	3048.98
57.80	10.78	6.398	52413	.00	10.78	3107.31
57.90	11.02	6.518	52685	.00	11.02	3165.95
58.00	11.26	6.640	52958	.00	11.26	3224.88
58.10	11.50	6.762	53231	.00	11.50	3284.11
58.20	11.73	6.884	53504	.00	11.73	3343.64
58.30	11.95	7.007	53778	.00	11.95	3403.46
58.40	13.74	7.131	54053	.00	13.74	3465.16
58.50	16.82	7.255	54328	.00	16.82	3528.45

SUMMARY FOR HYDROGRAPH ADDITION
at Node: FLEX BASIN #1IN

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
NJAW OUTLET #1	NJAW BASIN #1IN		NJAW OUTLET #1	1
NJAW OUTLET #2	NJAW BASIN #2IN		NJAW OUTLET #2	1
ADD P1-IMP	P1-IMP		P1-IMP	1
ADD P1-PER	P1-PER		P1-PER	1
ADD P2-IMP	P2-IMP		P2-IMP	1
ADD P2-PER	P2-PER		P2-PER	1

INFLOWS TO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	NJAW OUTLET #1	1	.000	.3500	.00
	NJAW OUTLET #2	1	.000	.4000	.00
	P1-IMP	1	.960	1.1500	19.41
	P1-PER	1	.004	1.8000	.08
	P2-IMP	1	.121	1.1000	3.31
	P2-PER	1	.000	.0500	.00

TOTAL FLOW INTO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX BASIN #1IN	1	1.084	1.1500	22.43

TOTAL NODE INFLOW...
HYG file =
HYG ID = FLEX BASIN #1IN
HYG Tag = 1

Peak Discharge = 22.43 cfs
Time to Peak = 1.1500 hrs
HYG Volume = 1.084 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
.3000	.00	.01	.07	.20	.38
.5500	.63	.94	1.29	1.64	1.97
.8000	2.43	3.18	4.41	6.58	10.92
1.0500	16.25	20.80	22.43	21.29	19.08
1.3000	16.71	14.42	12.44	10.87	9.65
1.5500	8.62	7.68	6.86	6.18	5.63
1.8000	5.04	4.32	3.63	3.10	2.68
2.0500	2.30	1.86	1.45	1.11	.85
2.3000	.64	.49	.37	.28	.21
2.5500	.16	.12	.09	.06	.04
2.8000	.03	.02	.01	.01	.01
3.0500	.00	.00	.00	.00	

SUMMARY FOR HYDROGRAPH ADDITION
at Node: FLEX BASIN #1IN

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
NJAW OUTLET #1	NJAW BASIN #1IN		NJAW OUTLET #1	2
NJAW OUTLET #2	NJAW BASIN #2IN		NJAW OUTLET #2	2
ADD P1-IMP	P1-IMP		P1-IMP	2
ADD P1-PER	P1-PER		P1-PER	2
ADD P2-IMP	P2-IMP		P2-IMP	2
ADD P2-PER	P2-PER		P2-PER	2

INFLOWS TO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	NJAW OUTLET #1	2	.417	23.3500	.12
	NJAW OUTLET #2	2	.097	15.4000	.11
	P1-IMP	2	2.854	12.1500	22.02
	P1-PER	2	.327	12.2500	2.24
	P2-IMP	2	.359	12.1000	3.39
	P2-PER	2	.048	12.3000	.29

TOTAL FLOW INTO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX BASIN #1IN	2	4.102	12.1500	27.57

TOTAL NODE INFLOW...
HYG file =
HYG ID = FLEX BASIN #1IN
HYG Tag = 2

Peak Discharge = 27.57 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 4.102 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
1.3000	.00	.00	.00	.01	.01
1.5500	.02	.02	.02	.03	.04
1.8000	.04	.05	.05	.06	.06
2.0500	.07	.07	.08	.08	.09
2.3000	.09	.10	.10	.11	.11
2.5500	.12	.13	.13	.14	.14
2.8000	.15	.15	.16	.16	.17
3.0500	.17	.18	.18	.19	.20
3.3000	.20	.21	.21	.22	.22
3.5500	.23	.23	.24	.24	.25
3.8000	.25	.26	.26	.27	.28
4.0500	.28	.29	.29	.30	.30
4.3000	.31	.31	.32	.32	.33
4.5500	.33	.34	.34	.35	.35
4.8000	.36	.36	.37	.37	.38
5.0500	.38	.39	.39	.40	.40
5.3000	.41	.41	.42	.42	.43
5.5500	.43	.44	.44	.44	.45
5.8000	.45	.46	.46	.47	.47
6.0500	.48	.48	.49	.50	.50
6.3000	.51	.52	.53	.54	.55
6.5500	.56	.57	.58	.59	.60
6.8000	.61	.62	.63	.64	.65
7.0500	.66	.67	.69	.70	.71
7.3000	.72	.73	.74	.75	.76
7.5500	.77	.79	.80	.81	.82
7.8000	.83	.84	.85	.86	.88
8.0500	.89	.90	.92	.93	.95
8.3000	.97	.99	1.01	1.03	1.05
8.5500	1.08	1.10	1.12	1.15	1.17
8.8000	1.19	1.22	1.24	1.27	1.29

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.0500	1.31	1.34	1.36	1.39	1.41
9.3000	1.44	1.46	1.49	1.51	1.54
9.5500	1.56	1.59	1.61	1.64	1.66
9.8000	1.69	1.71	1.74	1.76	1.79
10.0500	1.81	1.84	1.87	1.91	1.95
10.3000	1.99	2.03	2.08	2.12	2.17
10.5500	2.22	2.27	2.32	2.37	2.42
10.8000	2.47	2.52	2.57	2.62	2.67
11.0500	2.73	2.80	2.89	3.00	3.13
11.3000	3.27	3.42	3.58	3.75	3.92
11.5500	4.19	4.61	5.25	6.15	7.25
11.8000	8.55	9.98	11.60	14.09	18.04
12.0500	22.22	25.72	27.57	27.10	25.55
12.3000	23.82	22.06	20.22	18.35	16.42
12.5500	14.54	12.80	11.26	9.98	8.91
12.8000	8.01	7.25	6.61	6.07	5.60
13.0500	5.20	4.86	4.56	4.32	4.12
13.3000	3.95	3.82	3.71	3.61	3.52
13.5500	3.44	3.37	3.30	3.24	3.17
13.8000	3.11	3.06	3.00	2.94	2.88
14.0500	2.83	2.77	2.72	2.68	2.64
14.3000	2.60	2.57	2.53	2.50	2.47
14.5500	2.44	2.41	2.39	2.36	2.33
14.8000	2.30	2.28	2.25	2.22	2.19
15.0500	2.17	2.14	2.11	2.09	2.06
15.3000	2.03	2.01	1.98	1.95	1.92
15.5500	1.90	1.87	1.84	1.81	1.79
15.8000	1.76	1.73	1.70	1.68	1.65
16.0500	1.62	1.59	1.57	1.55	1.53
16.3000	1.51	1.50	1.48	1.47	1.45
16.5500	1.44	1.43	1.41	1.40	1.39
16.8000	1.38	1.36	1.35	1.34	1.33
17.0500	1.32	1.30	1.29	1.28	1.27
17.3000	1.26	1.24	1.23	1.22	1.21
17.5500	1.19	1.18	1.17	1.16	1.14
17.8000	1.13	1.12	1.11	1.09	1.08
18.0500	1.07	1.06	1.05	1.04	1.03
18.3000	1.02	1.02	1.01	1.01	1.00
18.5500	1.00	.99	.99	.98	.98
18.8000	.98	.97	.97	.96	.96
19.0500	.96	.95	.95	.94	.94
19.3000	.94	.93	.93	.93	.92
19.5500	.92	.91	.91	.91	.90
19.8000	.90	.90	.89	.89	.88
20.0500	.88	.88	.87	.87	.87

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
20.3000	.86	.86	.86	.85	.85
20.5500	.85	.85	.84	.84	.84
20.8000	.83	.83	.83	.83	.82
21.0500	.82	.82	.81	.81	.81
21.3000	.81	.80	.80	.80	.79
21.5500	.79	.79	.79	.78	.78
21.8000	.78	.77	.77	.77	.77
22.0500	.76	.76	.76	.75	.75
22.3000	.75	.74	.74	.74	.74
22.5500	.73	.73	.73	.72	.72
22.8000	.72	.71	.71	.71	.71
23.0500	.70	.70	.70	.69	.69
23.3000	.69	.68	.68	.68	.68
23.5500	.67	.67	.67	.66	.66
23.8000	.66	.65	.65	.65	.64
24.0500	.62	.55	.47	.41	.36
24.3000	.32	.29	.26	.24	.23
24.5500	.21	.20	.19	.19	.18
24.8000	.18	.18	.17	.17	.17
25.0500	.17	.17	.17	.17	.16
25.3000	.16	.16	.16	.16	.16
25.5500	.16	.16	.16	.16	.16
25.8000	.16	.16	.16	.16	.16
26.0500	.16	.15	.15	.15	.15
26.3000	.15	.15	.15	.15	.15
26.5500	.15	.15	.15	.15	.15
26.8000	.15	.15	.15	.15	.15
27.0500	.15	.15	.15	.14	.14
27.3000	.14	.14	.14	.14	.14
27.5500	.14	.14	.14	.14	.14
27.8000	.14	.14	.14	.14	.14
28.0500	.14	.14	.14	.14	.14
28.3000	.14	.14	.14	.14	.14
28.5500	.13	.13	.13	.13	.13
28.8000	.13	.13	.13	.13	.13
29.0500	.13	.13	.13	.13	.13
29.3000	.13	.13	.13	.13	.13
29.5500	.13	.13	.13	.13	.13
29.8000	.13	.13	.13	.13	.13
30.0500	.13	.13	.13	.13	.12
30.3000	.12	.12	.12	.12	.12
30.5500	.12	.12	.12	.12	.12
30.8000	.12	.12	.12	.12	.12
31.0500	.12	.12	.12	.12	.12
31.3000	.12	.12	.12	.12	.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
31.5500	.12	.12	.12	.12	.12
31.8000	.12	.12	.12	.12	.12
32.0500	.12	.12	.12	.12	.12
32.3000	.12	.12	.12	.12	.12
32.5500	.12	.12	.12	.12	.12
32.8000	.12	.12	.12	.12	.12
33.0500	.12	.12	.12	.12	.12
33.3000	.12	.12	.12	.12	.11
33.5500	.11	.11	.11	.11	.11
33.8000	.11	.11	.11	.11	.11
34.0500	.11	.11	.11	.11	.11
34.3000	.11	.11	.11	.11	.11
34.5500	.11	.11	.11	.11	.11
34.8000	.11	.11	.11	.11	.11
35.0500	.11	.11	.11	.11	.11
35.3000	.11	.11	.11	.11	.11
35.5500	.11	.11	.11	.11	.11
35.8000	.11	.11	.11	.11	.11
36.0500	.11	.11	.11	.11	.11
36.3000	.11	.11	.11	.11	.11
36.5500	.11	.11	.11	.11	.11
36.8000	.11	.11	.11	.11	.11
37.0500	.11	.11	.11	.11	.11
37.3000	.10	.10	.10	.10	.10
37.5500	.10	.10	.10	.10	.10
37.8000	.10	.10	.10	.10	.10
38.0500	.10	.10	.10	.10	.10
38.3000	.10	.10	.10	.10	.10
38.5500	.10	.10	.10	.10	.10
38.8000	.10	.10	.10	.10	.10
39.0500	.10	.10	.10	.10	.10
39.3000	.10	.10	.10	.10	.10
39.5500	.10	.10	.10	.10	.10
39.8000	.10	.10	.10	.10	.10
40.0500	.10	.10	.10	.10	.10
40.3000	.10	.10	.10	.10	.10
40.5500	.10	.10	.10	.10	.10
40.8000	.10	.10	.10	.10	.10
41.0500	.10	.10	.09	.09	.09
41.3000	.09	.09	.09	.09	.09
41.5500	.09	.09	.09	.09	.09
41.8000	.09	.09	.09	.09	.09
42.0500	.09	.09	.09	.09	.09
42.3000	.09	.09	.09	.09	.09
42.5500	.09	.09	.09	.09	.09

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
42.8000	.09	.09	.09	.09	.09
43.0500	.09	.09	.09	.09	.09
43.3000	.09	.09	.09	.09	.09
43.5500	.09	.09	.09	.09	.09
43.8000	.09	.09	.09	.09	.09
44.0500	.08	.08	.08	.08	.08
44.3000	.08	.08	.08	.08	.08
44.5500	.08	.08	.08	.08	.08
44.8000	.08	.08	.08	.08	.08
45.0500	.08	.08	.08	.08	.08
45.3000	.08	.08	.08	.08	.08
45.5500	.08	.08	.08	.08	.08
45.8000	.08	.08	.08	.08	.08
46.0500	.08	.08	.08	.08	.08
46.3000	.08	.07	.07	.07	.07
46.5500	.07	.07	.07	.07	.07
46.8000	.07	.07	.07	.07	.07
47.0500	.07	.07	.07	.07	.07
47.3000	.07	.07	.07	.07	.07
47.5500	.07	.07	.07	.07	.07
47.8000	.07	.07	.07	.07	.07
48.0500	.07	.07	.07	.07	.07
48.3000	.07	.07	.07	.07	.07
48.5500	.07	.07	.07	.07	.07
48.8000	.07	.07	.07	.07	.07
49.0500	.07	.07	.07	.07	.07
49.3000	.07	.07	.07	.07	.07
49.5500	.07	.07	.07	.07	.07
49.8000	.07	.07	.07	.07	.07
50.0500	.07	.07	.07	.06	.06
50.3000	.06	.06	.06	.06	.06
50.5500	.06	.06	.06	.06	.06
50.8000	.06	.06	.06	.06	.06
51.0500	.06	.06	.06	.06	.06
51.3000	.06	.06	.06	.06	.06
51.5500	.06	.06	.06	.06	.06
51.8000	.06	.06	.06	.06	.06
52.0500	.06	.06	.06	.06	.06
52.3000	.06	.06	.06	.06	.06
52.5500	.06	.06	.06	.06	.06
52.8000	.06	.06	.06	.06	.06
53.0500	.06	.06	.06	.06	.06
53.3000	.06	.06	.06	.06	.06
53.5500	.06	.06	.06	.06	.06
53.8000	.06	.06	.06	.06	.06

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
54.0500	.06	.06	.06	.06	.06
54.3000	.06	.06	.06	.06	.06
54.5500	.06	.06	.06	.06	.05
54.8000	.05	.05	.05	.05	.05
55.0500	.05	.05	.05	.05	.05
55.3000	.05	.05	.05	.05	.05
55.5500	.05	.05	.05	.05	.05
55.8000	.05	.05	.05	.05	.05
56.0500	.05	.05	.05	.05	.05
56.3000	.05	.05	.05	.05	.05
56.5500	.05	.05	.05	.05	.05
56.8000	.05	.05	.05	.05	.05
57.0500	.05	.05	.05	.05	.05
57.3000	.05	.05	.05	.05	.05
57.5500	.05	.05	.05	.05	.05
57.8000	.05	.05	.05	.05	.05
58.0500	.05	.05	.05	.05	.05
58.3000	.05	.05	.05	.05	.05
58.5500	.05	.05	.05	.05	.05
58.8000	.05	.05	.05	.05	.05
59.0500	.05	.05	.05	.05	.05
59.3000	.05	.05	.05	.05	.05
59.5500	.05	.05	.05	.05	.05
59.8000	.05	.05	.05	.05	.05
60.0500	.05	.05	.05	.05	.05
60.3000	.05	.05	.05	.04	.04
60.5500	.04	.04	.04	.04	.04
60.8000	.04	.04	.04	.04	.04
61.0500	.04	.04	.04	.04	.04
61.3000	.04	.04	.04	.04	.04
61.5500	.04	.04	.04	.04	.04
61.8000	.04	.04	.04	.04	.04
62.0500	.04	.04	.04	.04	.04
62.3000	.04	.04	.04	.04	.04
62.5500	.04	.04	.04	.04	.04
62.8000	.04	.04	.04	.04	.04
63.0500	.04	.04	.04	.04	.04
63.3000	.04	.04	.04	.04	.04
63.5500	.04	.04	.04	.04	.04
63.8000	.04	.04	.04	.04	.04
64.0500	.04	.04	.04	.04	.04
64.3000	.04	.04	.04	.04	.04
64.5500	.04	.04	.04	.04	.04
64.8000	.04	.04	.04	.04	.04
65.0500	.04	.04	.04	.04	.04

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
65.3000	.04	.04	.04	.04	.04
65.5500	.04	.04	.04	.04	.04
65.8000	.04	.04	.04	.04	.04
66.0500	.04	.04	.04	.04	.04
66.3000	.04	.04	.04	.04	.04
66.5500	.04	.04	.04	.04	.04
66.8000	.04	.04	.04	.04	.04
67.0500	.04	.04	.04	.04	.04
67.3000	.04	.04	.04	.04	.04
67.5500	.04	.04	.04	.04	.04
67.8000	.04	.04	.04	.04	.04
68.0500	.04	.04	.04	.04	.04
68.3000	.04	.04	.04	.04	.04
68.5500	.04	.04	.04	.04	.04
68.8000	.04	.04	.04	.04	.04
69.0500	.04	.04	.04	.04	.03
69.3000	.03	.03	.03	.03	.03
69.5500	.03	.03	.03	.03	.03
69.8000	.03	.03	.03	.03	.03
70.0500	.03	.03	.03	.03	.03
70.3000	.03	.03	.03	.03	.03
70.5500	.03	.03	.03	.03	.03
70.8000	.03	.03	.03	.03	.03
71.0500	.03	.03	.03	.03	.03
71.3000	.03	.03	.03	.03	.03
71.5500	.03	.03	.03	.03	.03
71.8000	.03	.03	.03	.03	.03
72.0500	.03	.03	.03	.03	.03
72.3000	.03	.03	.03	.03	.03
72.5500	.03	.03	.03	.03	.03
72.8000	.03	.03	.03	.03	.03
73.0500	.03	.03	.03	.03	.03
73.3000	.03	.03	.03	.03	.03
73.5500	.03	.03	.03	.03	.03
73.8000	.03	.03	.03	.03	.03
74.0500	.03	.03	.03	.03	.03
74.3000	.03	.03	.03	.03	.03
74.5500	.03	.03	.03	.03	.03
74.8000	.03	.03	.03	.03	.03
75.0500	.03	.03	.03	.03	.03
75.3000	.03	.03	.03	.03	.03
75.5500	.03	.03	.03	.03	.03
75.8000	.03	.03	.03	.03	.03
76.0500	.03	.03	.03	.03	.03
76.3000	.03	.03	.03	.03	.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
76.5500	.03	.03	.03	.03	.03
76.8000	.03	.03	.03	.03	.03
77.0500	.03	.03	.03	.03	.03
77.3000	.03	.03	.03	.03	.03
77.5500	.03	.03	.03	.03	.03
77.8000	.03	.03	.03	.03	.03
78.0500	.03	.03	.03	.03	.03
78.3000	.03	.03	.03	.03	.03
78.5500	.03	.03	.03	.03	.03
78.8000	.03	.03	.03	.03	.03
79.0500	.03	.03	.03	.03	.03
79.3000	.03	.03	.03	.03	.03
79.5500	.03	.03	.03	.03	.03
79.8000	.03	.03	.03	.03	.03
80.0500	.03	.03	.03	.03	.03
80.3000	.03	.03	.03	.03	.03
80.5500	.03	.03	.03	.03	.03
80.8000	.03	.03	.03	.03	.03
81.0500	.02	.02	.02	.02	.02
81.3000	.02	.02	.02	.02	.02
81.5500	.02	.02	.02	.02	.02
81.8000	.02	.02	.02	.02	.02
82.0500	.02	.02	.02	.02	.02
82.3000	.02	.02	.02	.02	.02
82.5500	.02	.02	.02	.02	.02
82.8000	.02	.02	.02	.02	.02
83.0500	.02	.02	.02	.02	.02
83.3000	.02	.02	.02	.02	.02
83.5500	.02	.02	.02	.02	.02
83.8000	.02	.02	.02	.02	.02
84.0500	.02	.02	.02	.02	.02
84.3000	.02	.02	.02	.02	.02
84.5500	.02	.02	.02	.02	.02
84.8000	.02	.02	.02	.02	.02
85.0500	.02	.02	.02	.02	.02
85.3000	.02	.02	.02	.02	.02
85.5500	.02	.02	.02	.02	.02
85.8000	.02	.02	.02	.02	.02
86.0500	.02	.02	.02	.02	.02
86.3000	.02	.02	.02	.02	.02
86.5500	.02	.02	.02	.02	.02
86.8000	.02	.02	.02	.02	.02
87.0500	.02	.02	.02	.02	.02
87.3000	.02	.02	.02	.02	.02
87.5500	.02	.02	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
87.8000	.02	.02	.02	.02	.02
88.0500	.02	.02	.02	.02	.02
88.3000	.02	.02	.02	.02	.02
88.5500	.02	.02	.02	.02	.02
88.8000	.02	.02	.02	.02	.02
89.0500	.02	.02	.02	.02	.02
89.3000	.02	.02	.02	.02	.02
89.5500	.02	.02	.02	.02	.02
89.8000	.02	.02	.02	.02	.02
90.0500	.02	.02	.02	.02	.02
90.3000	.02	.02	.02	.02	.02
90.5500	.02	.02	.02	.02	.02
90.8000	.02	.02	.02	.02	.02
91.0500	.02	.02	.02	.02	.02
91.3000	.02	.02	.02	.02	.02
91.5500	.02	.02	.02	.02	.02
91.8000	.02	.02	.02	.02	.02
92.0500	.02	.02	.02	.02	.02
92.3000	.02	.02	.02	.02	.02
92.5500	.02	.02	.02	.02	.02
92.8000	.02	.02	.02	.02	.02
93.0500	.02	.02	.02	.02	.02
93.3000	.02	.02	.02	.02	.02
93.5500	.02	.02	.02	.02	.02
93.8000	.02	.02	.02	.02	.02
94.0500	.02	.02	.02	.02	.02
94.3000	.02	.02	.02	.02	.02
94.5500	.02	.02	.02	.02	.02
94.8000	.02	.02	.02	.02	.02
95.0500	.02	.02	.02	.02	.02
95.3000	.02	.02	.02	.02	.02
95.5500	.02	.02	.02	.02	.02
95.8000	.02	.02	.02	.02	.02
96.0500	.02	.02	.02	.02	.02
96.3000	.02	.02	.02	.02	.02
96.5500	.02	.02	.02	.02	.02
96.8000	.02	.02	.02	.02	.02
97.0500	.02	.02	.02	.02	.02
97.3000	.02	.02	.02	.02	.02
97.5500	.02	.02	.02	.02	.02
97.8000	.02	.02	.02	.02	.02
98.0500	.02	.02	.02	.02	.02
98.3000	.02	.02	.02	.02	.02
98.5500	.02	.02	.02	.02	.02
98.8000	.02	.02	.02	.02	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
99.0500	.01	.01	.01	.01	.01
99.3000	.01	.01	.01	.01	.01
99.5500	.01	.01	.01	.01	.01
99.8000	.01	.01	.01	.01	.01
100.0500	.01	.01	.01	.01	.01
100.3000	.01	.01	.01	.01	.01
100.5500	.01	.01	.01	.01	.01
100.8000	.01	.01	.01	.01	.01
101.0500	.01	.01	.01	.01	.01
101.3000	.01				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: FLEX BASIN #1IN

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
NJAW OUTLET #1	NJAW BASIN #1IN		NJAW OUTLET #1	10
NJAW OUTLET #2	NJAW BASIN #2IN		NJAW OUTLET #2	10
ADD P1-IMP	P1-IMP		P1-IMP	10
ADD P1-PER	P1-PER		P1-PER	10
ADD P2-IMP	P2-IMP		P2-IMP	10
ADD P2-PER	P2-PER		P2-PER	10

INFLOWS TO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	NJAW OUTLET #1	10	1.824	20.4000	.69
	NJAW OUTLET #2	10	.299	13.2000	.49
	P1-IMP	10	4.473	12.1500	33.94
	P1-PER	10	.828	12.2000	6.67
	P2-IMP	10	.563	12.1000	5.21
	P2-PER	10	.139	12.2000	1.11

TOTAL FLOW INTO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX BASIN #1IN	10	8.126	12.1500	46.55

TOTAL NODE INFLOW...
HYG file =
HYG ID = FLEX BASIN #1IN
HYG Tag = 10

Peak Discharge = 46.55 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 8.126 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
.8500	.00	.00	.01	.01	.02
1.1000	.03	.04	.05	.06	.07
1.3500	.08	.10	.11	.12	.13
1.6000	.14	.15	.16	.17	.18
1.8500	.19	.20	.21	.22	.23
2.1000	.23	.24	.25	.26	.27
2.3500	.28	.29	.30	.30	.31
2.6000	.32	.33	.34	.35	.36
2.8500	.37	.37	.38	.39	.40
3.1000	.41	.42	.43	.43	.44
3.3500	.45	.46	.47	.47	.48
3.6000	.49	.50	.51	.51	.52
3.8500	.53	.54	.55	.55	.56
4.1000	.57	.58	.58	.59	.60
4.3500	.61	.61	.62	.63	.64
4.6000	.64	.65	.66	.67	.67
4.8500	.68	.69	.69	.70	.71
5.1000	.72	.72	.73	.74	.74
5.3500	.75	.76	.76	.77	.78
5.6000	.78	.79	.80	.80	.81
5.8500	.82	.82	.83	.84	.84
6.1000	.85	.86	.87	.88	.90
6.3500	.91	.92	.94	.95	.97
6.6000	.98	1.00	1.02	1.03	1.05
6.8500	1.06	1.08	1.10	1.11	1.13
7.1000	1.15	1.16	1.18	1.20	1.21
7.3500	1.23	1.25	1.26	1.28	1.30
7.6000	1.32	1.33	1.35	1.37	1.38
7.8500	1.40	1.42	1.43	1.45	1.47
8.1000	1.49	1.51	1.54	1.56	1.59
8.3500	1.63	1.66	1.69	1.73	1.76

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.6000	1.80	1.83	1.87	1.90	1.94
8.8500	1.98	2.01	2.05	2.09	2.12
9.1000	2.16	2.20	2.24	2.27	2.31
9.3500	2.35	2.39	2.42	2.46	2.50
9.6000	2.54	2.57	2.61	2.65	2.69
9.8500	2.73	2.76	2.80	2.84	2.88
10.1000	2.92	2.97	3.03	3.09	3.15
10.3500	3.22	3.29	3.36	3.44	3.51
10.6000	3.60	3.68	3.76	3.85	3.93
10.8500	4.02	4.11	4.20	4.29	4.39
11.1000	4.52	4.67	4.86	5.08	5.33
11.3500	5.59	5.87	6.17	6.48	6.94
11.6000	7.68	8.77	10.31	12.20	14.41
11.8500	16.86	19.61	23.83	30.48	37.53
12.1000	43.42	46.55	45.80	43.22	40.37
12.3500	37.47	34.45	31.33	28.10	24.97
12.6000	22.05	19.47	17.31	15.51	13.99
12.8500	12.72	11.64	10.73	9.94	9.27
13.1000	8.69	8.19	7.78	7.45	7.17
13.3500	6.94	6.75	6.59	6.44	6.30
13.6000	6.18	6.06	5.95	5.85	5.74
13.8500	5.64	5.54	5.44	5.34	5.25
14.1000	5.15	5.07	4.99	4.92	4.86
14.3500	4.80	4.75	4.70	4.65	4.60
14.6000	4.55	4.50	4.46	4.41	4.37
14.8500	4.33	4.29	4.25	4.21	4.17
15.1000	4.12	4.08	4.04	4.00	3.95
15.3500	3.91	3.87	3.83	3.78	3.74
15.6000	3.70	3.66	3.62	3.57	3.53
15.8500	3.49	3.44	3.40	3.36	3.31
16.1000	3.27	3.24	3.20	3.17	3.15
16.3500	3.12	3.10	3.07	3.05	3.03
16.6000	3.00	2.98	2.96	2.94	2.91
16.8500	2.89	2.87	2.85	2.83	2.80
17.1000	2.78	2.76	2.74	2.72	2.70
17.3500	2.67	2.65	2.63	2.61	2.59
17.6000	2.56	2.54	2.52	2.50	2.47
17.8500	2.45	2.43	2.41	2.38	2.36
18.1000	2.34	2.32	2.31	2.29	2.28
18.3500	2.27	2.26	2.25	2.24	2.23
18.6000	2.22	2.21	2.20	2.19	2.19
18.8500	2.18	2.17	2.17	2.16	2.15
19.1000	2.14	2.14	2.13	2.12	2.11
19.3500	2.11	2.10	2.09	2.08	2.08
19.6000	2.07	2.06	2.05	2.05	2.04

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.8500	2.03	2.03	2.02	2.01	2.00
20.1000	2.00	1.99	1.98	1.98	1.97
20.3500	1.96	1.96	1.95	1.95	1.94
20.6000	1.93	1.93	1.92	1.92	1.91
20.8500	1.91	1.90	1.89	1.89	1.88
21.1000	1.88	1.87	1.87	1.86	1.85
21.3500	1.85	1.84	1.84	1.83	1.82
21.6000	1.82	1.81	1.81	1.80	1.80
21.8500	1.79	1.79	1.78	1.77	1.77
22.1000	1.76	1.76	1.75	1.75	1.74
22.3500	1.73	1.73	1.72	1.72	1.71
22.6000	1.71	1.70	1.69	1.69	1.68
22.8500	1.68	1.67	1.67	1.66	1.65
23.1000	1.65	1.64	1.64	1.63	1.62
23.3500	1.62	1.61	1.61	1.60	1.60
23.6000	1.59	1.58	1.58	1.57	1.57
23.8500	1.56	1.55	1.55	1.54	1.50
24.1000	1.38	1.25	1.14	1.06	.99
24.3500	.94	.89	.86	.83	.80
24.6000	.78	.77	.75	.74	.73
24.8500	.73	.72	.71	.71	.70
25.1000	.70	.69	.69	.68	.68
25.3500	.68	.67	.67	.67	.66
25.6000	.66	.65	.65	.65	.64
25.8500	.64	.64	.63	.63	.62
26.1000	.62	.62	.61	.61	.61
26.3500	.60	.60	.60	.59	.59
26.6000	.59	.58	.58	.58	.57
26.8500	.57	.56	.56	.56	.55
27.1000	.55	.55	.54	.54	.54
27.3500	.53	.53	.53	.52	.52
27.6000	.52	.51	.51	.51	.51
27.8500	.50	.50	.50	.49	.49
28.1000	.49	.48	.48	.48	.47
28.3500	.47	.47	.47	.46	.46
28.6000	.46	.45	.45	.45	.45
28.8500	.44	.44	.44	.44	.43
29.1000	.43	.43	.43	.42	.42
29.3500	.42	.42	.41	.41	.41
29.6000	.41	.40	.40	.40	.40
29.8500	.40	.40	.39	.39	.39
30.1000	.39	.39	.38	.38	.38
30.3500	.38	.38	.38	.37	.37
30.6000	.37	.37	.37	.37	.36
30.8500	.36	.36	.36	.36	.36

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
31.1000	.35	.35	.35	.35	.35
31.3500	.35	.35	.34	.34	.34
31.6000	.34	.34	.34	.33	.33
31.8500	.33	.33	.33	.33	.33
32.1000	.32	.32	.32	.32	.32
32.3500	.32	.32	.31	.31	.31
32.6000	.31	.31	.31	.31	.31
32.8500	.30	.30	.30	.30	.30
33.1000	.30	.30	.30	.29	.29
33.3500	.29	.29	.29	.29	.29
33.6000	.29	.29	.29	.29	.29
33.8500	.28	.28	.28	.28	.28
34.1000	.28	.28	.28	.28	.28
34.3500	.28	.28	.28	.28	.28
34.6000	.28	.28	.28	.28	.27
34.8500	.27	.27	.27	.27	.27
35.1000	.27	.27	.27	.27	.27
35.3500	.27	.27	.27	.27	.27
35.6000	.27	.27	.27	.27	.26
35.8500	.26	.26	.26	.26	.26
36.1000	.26	.26	.26	.26	.26
36.3500	.26	.26	.26	.26	.26
36.6000	.26	.26	.26	.26	.25
36.8500	.25	.25	.25	.25	.25
37.1000	.25	.25	.25	.25	.25
37.3500	.25	.25	.25	.25	.25
37.6000	.25	.25	.25	.25	.25
37.8500	.24	.24	.24	.24	.24
38.1000	.24	.24	.24	.24	.24
38.3500	.24	.24	.24	.24	.24
38.6000	.24	.24	.24	.24	.24
38.8500	.24	.24	.24	.24	.24
39.1000	.24	.24	.24	.24	.24
39.3500	.24	.24	.23	.23	.23
39.6000	.23	.23	.23	.23	.23
39.8500	.23	.23	.23	.23	.23
40.1000	.23	.23	.23	.23	.23
40.3500	.23	.23	.23	.23	.23
40.6000	.23	.23	.23	.23	.23
40.8500	.23	.23	.23	.23	.23
41.1000	.23	.23	.23	.23	.23
41.3500	.23	.23	.23	.23	.23
41.6000	.23	.23	.23	.23	.23
41.8500	.23	.23	.23	.23	.23
42.1000	.23	.23	.23	.23	.23

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
42.3500	.23	.23	.23	.23	.23
42.6000	.23	.23	.23	.23	.23
42.8500	.23	.23	.23	.23	.23
43.1000	.23	.23	.23	.23	.23
43.3500	.23	.23	.23	.22	.22
43.6000	.22	.22	.22	.22	.22
43.8500	.22	.22	.22	.22	.22
44.1000	.22	.22	.22	.22	.22
44.3500	.22	.22	.22	.22	.22
44.6000	.22	.22	.22	.22	.22
44.8500	.22	.22	.22	.22	.22
45.1000	.22	.22	.22	.22	.22
45.3500	.22	.22	.22	.22	.22
45.6000	.22	.22	.22	.22	.22
45.8500	.22	.22	.22	.22	.22
46.1000	.22	.22	.22	.22	.22
46.3500	.22	.22	.22	.22	.22
46.6000	.22	.22	.22	.22	.22
46.8500	.22	.22	.22	.22	.22
47.1000	.22	.22	.22	.22	.22
47.3500	.22	.22	.22	.22	.22
47.6000	.22	.21	.21	.21	.21
47.8500	.21	.21	.21	.21	.21
48.1000	.21	.21	.21	.21	.21
48.3500	.21	.21	.21	.21	.21
48.6000	.21	.21	.21	.21	.21
48.8500	.21	.21	.21	.21	.21
49.1000	.21	.21	.21	.21	.21
49.3500	.21	.21	.21	.21	.21
49.6000	.21	.21	.21	.21	.21
49.8500	.21	.21	.21	.21	.21
50.1000	.21	.21	.21	.21	.21
50.3500	.21	.21	.21	.21	.21
50.6000	.21	.21	.21	.21	.21
50.8500	.21	.21	.21	.20	.20
51.1000	.20	.20	.20	.20	.20
51.3500	.20	.20	.20	.20	.20
51.6000	.20	.20	.20	.20	.20
51.8500	.20	.20	.20	.20	.20
52.1000	.20	.20	.20	.20	.20
52.3500	.20	.20	.20	.20	.20
52.6000	.20	.20	.20	.20	.20
52.8500	.20	.20	.20	.20	.20
53.1000	.20	.20	.20	.20	.20
53.3500	.20	.20	.20	.20	.20

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
53.6000	.20	.20	.20	.20	.20
53.8500	.20	.20	.20	.20	.20
54.1000	.20	.20	.20	.20	.20
54.3500	.20	.20	.20	.20	.20
54.6000	.20	.20	.20	.20	.20
54.8500	.20	.20	.20	.20	.20
55.1000	.20	.20	.20	.20	.20
55.3500	.20	.20	.20	.20	.20
55.6000	.20	.19	.19	.19	.19
55.8500	.19	.19	.19	.19	.19
56.1000	.19	.19	.19	.19	.19
56.3500	.19	.19	.19	.19	.19
56.6000	.19	.19	.19	.19	.19
56.8500	.19	.19	.19	.19	.19
57.1000	.19	.19	.19	.19	.19
57.3500	.19	.19	.19	.19	.19
57.6000	.19	.19	.19	.19	.19
57.8500	.19	.19	.19	.19	.19
58.1000	.19	.19	.19	.19	.19
58.3500	.19	.19	.19	.19	.19
58.6000	.19	.19	.19	.19	.19
58.8500	.19	.19	.19	.19	.19
59.1000	.19	.19	.19	.19	.19
59.3500	.19	.19	.19	.19	.19
59.6000	.19	.19	.19	.19	.19
59.8500	.19	.19	.19	.19	.19
60.1000	.19	.19	.19	.19	.18
60.3500	.18	.18	.18	.18	.18
60.6000	.18	.18	.18	.18	.18
60.8500	.18	.18	.18	.18	.18
61.1000	.18	.18	.18	.18	.18
61.3500	.18	.18	.18	.18	.18
61.6000	.18	.18	.18	.18	.18
61.8500	.18	.18	.18	.18	.18
62.1000	.18	.18	.18	.18	.18
62.3500	.18	.18	.18	.18	.18
62.6000	.18	.18	.18	.18	.18
62.8500	.18	.18	.18	.18	.18
63.1000	.18	.18	.18	.18	.18
63.3500	.18	.18	.18	.18	.18
63.6000	.18	.18	.18	.18	.18
63.8500	.18	.18	.18	.18	.18
64.1000	.18	.18	.18	.18	.18
64.3500	.18	.18	.18	.18	.18
64.6000	.18	.18	.18	.18	.18

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
64.8500	.18	.18	.18	.17	.17
65.1000	.17	.17	.17	.17	.17
65.3500	.17	.17	.17	.17	.17
65.6000	.17	.17	.17	.17	.17
65.8500	.17	.17	.17	.17	.17
66.1000	.17	.17	.17	.17	.17
66.3500	.17	.17	.17	.17	.17
66.6000	.17	.17	.17	.17	.17
66.8500	.17	.17	.17	.17	.17
67.1000	.17	.17	.17	.17	.17
67.3500	.17	.17	.17	.17	.17
67.6000	.17	.17	.17	.17	.17
67.8500	.17	.17	.17	.17	.17
68.1000	.17	.17	.17	.17	.17
68.3500	.17	.17	.17	.17	.17
68.6000	.17	.17	.17	.17	.17
68.8500	.17	.17	.17	.17	.17
69.1000	.17	.17	.17	.17	.17
69.3500	.17	.17	.17	.17	.16
69.6000	.16	.16	.16	.16	.16
69.8500	.16	.16	.16	.16	.16
70.1000	.16	.16	.16	.16	.16
70.3500	.16	.16	.16	.16	.16
70.6000	.16	.16	.16	.16	.16
70.8500	.16	.16	.16	.16	.16
71.1000	.16	.16	.16	.16	.16
71.3500	.16	.16	.16	.16	.16
71.6000	.16	.16	.16	.16	.16
71.8500	.16	.16	.16	.16	.16
72.1000	.16	.16	.16	.16	.16
72.3500	.16	.16	.16	.16	.16
72.6000	.16	.16	.16	.16	.16
72.8500	.16	.16	.16	.16	.16
73.1000	.16	.16	.16	.16	.16
73.3500	.16	.16	.16	.16	.16
73.6000	.16	.16	.16	.16	.16
73.8500	.16	.16	.16	.16	.16
74.1000	.16	.16	.15	.15	.15
74.3500	.15	.15	.15	.15	.15
74.6000	.15	.15	.15	.15	.15
74.8500	.15	.15	.15	.15	.15
75.1000	.15	.15	.15	.15	.15
75.3500	.15	.15	.15	.15	.15
75.6000	.15	.15	.15	.15	.15
75.8500	.15	.15	.15	.15	.15

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
76.1000	.15	.15	.15	.15	.15
76.3500	.15	.15	.15	.15	.15
76.6000	.15	.15	.15	.15	.15
76.8500	.15	.15	.15	.15	.15
77.1000	.15	.15	.15	.15	.15
77.3500	.15	.15	.15	.15	.15
77.6000	.15	.15	.15	.15	.15
77.8500	.15	.15	.15	.15	.15
78.1000	.15	.15	.15	.15	.15
78.3500	.15	.15	.15	.15	.15
78.6000	.15	.15	.15	.15	.14
78.8500	.14	.14	.14	.14	.14
79.1000	.14	.14	.14	.14	.14
79.3500	.14	.14	.14	.14	.14
79.6000	.14	.14	.14	.14	.14
79.8500	.14	.14	.14	.14	.14
80.1000	.14	.14	.14	.14	.14
80.3500	.14	.14	.14	.14	.14
80.6000	.14	.14	.14	.14	.14
80.8500	.14	.14	.14	.14	.14
81.1000	.14	.14	.14	.14	.14
81.3500	.14	.14	.14	.14	.14
81.6000	.14	.14	.14	.14	.14
81.8500	.14	.14	.14	.14	.14
82.1000	.14	.14	.14	.14	.14
82.3500	.14	.14	.14	.14	.14
82.6000	.14	.14	.14	.14	.14
82.8500	.14	.14	.14	.14	.14
83.1000	.14	.14	.14	.14	.14
83.3500	.13	.13	.13	.13	.13
83.6000	.13	.13	.13	.13	.13
83.8500	.13	.13	.13	.13	.13
84.1000	.13	.13	.13	.13	.13
84.3500	.13	.13	.13	.13	.13
84.6000	.13	.13	.13	.13	.13
84.8500	.13	.13	.13	.13	.13
85.1000	.13	.13	.13	.13	.13
85.3500	.13	.13	.13	.13	.13
85.6000	.13	.13	.13	.13	.13
85.8500	.13	.13	.13	.13	.13
86.1000	.13	.13	.13	.13	.13
86.3500	.13	.13	.13	.13	.13
86.6000	.13	.13	.13	.13	.13
86.8500	.13	.13	.13	.13	.13
87.1000	.13	.13	.13	.13	.13

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
87.3500	.13	.13	.13	.13	.13
87.6000	.13	.13	.13	.13	.13
87.8500	.13	.13	.12	.12	.12
88.1000	.12	.12	.12	.12	.12
88.3500	.12	.12	.12	.12	.12
88.6000	.12	.12	.12	.12	.12
88.8500	.12	.12	.12	.12	.12
89.1000	.12	.12	.12	.12	.12
89.3500	.12	.12	.12	.12	.12
89.6000	.12	.12	.12	.12	.12
89.8500	.12	.12	.12	.12	.12
90.1000	.12	.12	.12	.12	.12
90.3500	.12	.12	.12	.12	.12
90.6000	.12	.12	.12	.12	.12
90.8500	.12	.12	.12	.12	.12
91.1000	.12	.12	.12	.12	.12
91.3500	.12	.12	.12	.12	.12
91.6000	.12	.12	.12	.12	.12
91.8500	.12	.12	.12	.12	.12
92.1000	.12	.12	.12	.12	.12
92.3500	.12	.12	.12	.11	.11
92.6000	.11	.11	.11	.11	.11
92.8500	.11	.11	.11	.11	.11
93.1000	.11	.11	.11	.11	.11
93.3500	.11	.11	.11	.11	.11
93.6000	.11	.11	.11	.11	.11
93.8500	.11	.11	.11	.11	.11
94.1000	.11	.11	.11	.11	.11
94.3500	.11	.11	.11	.11	.11
94.6000	.11	.11	.11	.11	.11
94.8500	.11	.11	.11	.11	.11
95.1000	.11	.11	.11	.11	.11
95.3500	.11	.11	.11	.11	.11
95.6000	.11	.11	.11	.11	.11
95.8500	.11	.11	.11	.11	.11
96.1000	.11	.11	.11	.11	.11
96.3500	.11	.11	.11	.11	.11
96.6000	.11	.11	.11	.11	.11
96.8500	.11	.11	.10	.10	.10
97.1000	.10	.10	.10	.10	.10
97.3500	.10	.10	.10	.10	.10
97.6000	.10	.10	.10	.10	.10
97.8500	.10	.10	.10	.10	.10
98.1000	.10	.10	.10	.10	.10
98.3500	.10	.10	.10	.10	.10

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
98.6000	.10	.10	.10	.10	.10
98.8500	.10	.10	.10	.10	.10
99.1000	.10	.10	.10	.10	.10
99.3500	.10	.10	.10	.10	.10
99.6000	.10	.10	.10	.10	.10
99.8500	.10	.10	.10	.10	.10
100.1000	.10	.10	.10	.10	.10
100.3500	.10	.10	.10	.10	.10
100.6000	.10	.10	.10	.10	.10
100.8500	.10				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: FLEX BASIN #1IN

HYG Directory: L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Propose

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
NJAW OUTLET #1	NJAW BASIN #1IN		NJAW OUTLET #1	100
NJAW OUTLET #2	NJAW BASIN #2IN		NJAW OUTLET #2	100
ADD P1-IMP	P1-IMP		P1-IMP	100
ADD P1-PER	P1-PER		P1-PER	100
ADD P2-IMP	P2-IMP		P2-IMP	100
ADD P2-PER	P2-PER		P2-PER	100

INFLOWS TO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	NJAW OUTLET #1	100	5.137	17.7000	2.11
	NJAW OUTLET #2	100	.805	12.5000	4.57
	P1-IMP	100	7.680	12.1500	57.39
	P1-PER	100	2.078	12.2000	17.58
	P2-IMP	100	.966	12.1000	8.81
	P2-PER	100	.380	12.1500	3.33

TOTAL FLOW INTO: FLEX BASIN #1IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	FLEX BASIN #1IN	100	17.046	12.1500	87.43

TOTAL NODE INFLOW...
HYG file =
HYG ID = FLEX BASIN #1IN
HYG Tag = 100

Peak Discharge = 87.43 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 17.046 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
.5000	.00	.00	.01	.03	.05
.7500	.07	.10	.12	.15	.18
1.0000	.21	.24	.26	.29	.32
1.2500	.34	.37	.39	.41	.43
1.5000	.45	.47	.49	.51	.53
1.7500	.54	.56	.57	.59	.60
2.0000	.61	.63	.64	.65	.66
2.2500	.68	.69	.71	.72	.73
2.5000	.75	.76	.78	.79	.81
2.7500	.82	.83	.85	.86	.87
3.0000	.89	.90	.91	.93	.94
3.2500	.95	.96	.98	.99	1.00
3.5000	1.01	1.03	1.04	1.05	1.06
3.7500	1.08	1.09	1.10	1.11	1.12
4.0000	1.13	1.15	1.16	1.17	1.18
4.2500	1.19	1.20	1.21	1.22	1.24
4.5000	1.25	1.26	1.27	1.28	1.29
4.7500	1.30	1.31	1.32	1.33	1.34
5.0000	1.35	1.36	1.37	1.38	1.39
5.2500	1.40	1.42	1.43	1.44	1.45
5.5000	1.46	1.47	1.48	1.49	1.50
5.7500	1.51	1.52	1.53	1.54	1.55
6.0000	1.55	1.57	1.58	1.59	1.61
6.2500	1.63	1.65	1.67	1.70	1.72
6.5000	1.75	1.77	1.80	1.82	1.85
6.7500	1.88	1.90	1.93	1.96	1.99
7.0000	2.01	2.04	2.07	2.10	2.12
7.2500	2.15	2.18	2.21	2.24	2.26
7.5000	2.29	2.32	2.35	2.37	2.40
7.7500	2.43	2.46	2.48	2.51	2.54
8.0000	2.57	2.60	2.63	2.67	2.71

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.2500	2.76	2.81	2.86	2.92	2.98
8.5000	3.04	3.10	3.17	3.23	3.30
8.7500	3.37	3.44	3.51	3.58	3.65
9.0000	3.72	3.80	3.87	3.94	4.02
9.2500	4.09	4.17	4.24	4.32	4.40
9.5000	4.48	4.55	4.63	4.71	4.79
9.7500	4.87	4.96	5.04	5.12	5.20
10.0000	5.28	5.37	5.47	5.57	5.69
10.2500	5.81	5.95	6.09	6.23	6.38
10.5000	6.54	6.70	6.86	7.02	7.18
10.7500	7.35	7.52	7.69	7.86	8.03
11.0000	8.20	8.40	8.64	8.94	9.30
11.2500	9.72	10.19	10.69	11.23	11.79
11.5000	12.39	13.27	14.66	16.73	19.65
11.7500	23.24	27.43	32.08	37.33	45.28
12.0000	57.70	70.85	81.74	87.43	86.03
12.2500	81.30	76.53	72.67	67.86	62.53
12.5000	56.54	50.48	44.70	39.60	35.28
12.7500	31.61	28.52	25.90	23.68	21.81
13.0000	20.19	18.80	17.61	16.58	15.74
13.2500	15.07	14.52	14.08	13.70	13.36
13.5000	13.06	12.79	12.54	12.31	12.08
13.7500	11.87	11.67	11.47	11.27	11.07
14.0000	10.88	10.69	10.51	10.34	10.19
14.2500	10.06	9.93	9.81	9.69	9.58
14.5000	9.48	9.39	9.30	9.21	9.13
14.7500	9.04	8.96	8.87	8.79	8.70
15.0000	8.62	8.54	8.45	8.37	8.28
15.2500	8.20	8.11	8.02	7.94	7.85
15.5000	7.77	7.68	7.59	7.51	7.42
15.7500	7.33	7.25	7.16	7.07	6.98
16.0000	6.89	6.81	6.73	6.65	6.59
16.2500	6.52	6.47	6.42	6.36	6.32
16.5000	6.27	6.23	6.18	6.14	6.13
16.7500	6.13	6.12	6.11	6.10	6.08
17.0000	6.06	6.05	6.03	6.00	5.98
17.2500	5.95	5.92	5.89	5.86	5.83
17.5000	5.79	5.76	5.72	5.68	5.64
17.7500	5.60	5.56	5.51	5.47	5.42
18.0000	5.38	5.33	5.28	5.24	5.21
18.2500	5.17	5.14	5.11	5.08	5.05
18.5000	5.02	5.00	4.97	4.94	4.92
18.7500	4.89	4.87	4.84	4.82	4.79
19.0000	4.77	4.74	4.72	4.69	4.67
19.2500	4.64	4.62	4.59	4.57	4.54

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
19.5000	4.52	4.49	4.47	4.44	4.42
19.7500	4.39	4.37	4.35	4.32	4.30
20.0000	4.28	4.27	4.25	4.24	4.22
20.2500	4.21	4.20	4.18	4.17	4.16
20.5000	4.14	4.13	4.12	4.11	4.09
20.7500	4.08	4.07	4.05	4.04	4.03
21.0000	4.02	4.01	4.00	3.98	3.97
21.2500	3.96	3.95	3.93	3.92	3.91
21.5000	3.90	3.88	3.87	3.86	3.85
21.7500	3.83	3.82	3.81	3.79	3.78
22.0000	3.76	3.75	3.74	3.72	3.71
22.2500	3.70	3.68	3.67	3.66	3.65
22.5000	3.63	3.62	3.61	3.60	3.59
22.7500	3.57	3.56	3.55	3.53	3.52
23.0000	3.51	3.50	3.48	3.47	3.46
23.2500	3.45	3.44	3.42	3.41	3.40
23.5000	3.39	3.38	3.37	3.36	3.34
23.7500	3.33	3.32	3.31	3.30	3.28
24.0000	3.27	3.19	2.99	2.76	2.57
24.2500	2.42	2.30	2.20	2.12	2.06
24.5000	2.01	1.97	1.94	1.91	1.89
24.7500	1.87	1.85	1.84	1.83	1.82
25.0000	1.81	1.81	1.80	1.79	1.79
25.2500	1.78	1.78	1.77	1.77	1.76
25.5000	1.76	1.75	1.75	1.75	1.74
25.7500	1.74	1.73	1.73	1.72	1.72
26.0000	1.72	1.71	1.71	1.71	1.70
26.2500	1.70	1.69	1.69	1.69	1.69
26.5000	1.68	1.68	1.68	1.67	1.67
26.7500	1.67	1.66	1.66	1.66	1.66
27.0000	1.65	1.65	1.65	1.64	1.64
27.2500	1.64	1.64	1.63	1.63	1.63
27.5000	1.62	1.62	1.62	1.62	1.61
27.7500	1.61	1.61	1.61	1.60	1.60
28.0000	1.60	1.60	1.59	1.59	1.59
28.2500	1.58	1.58	1.58	1.58	1.57
28.5000	1.57	1.57	1.57	1.56	1.56
28.7500	1.56	1.56	1.55	1.55	1.55
29.0000	1.55	1.54	1.54	1.54	1.54
29.2500	1.53	1.53	1.53	1.53	1.52
29.5000	1.52	1.52	1.52	1.51	1.51
29.7500	1.51	1.51	1.50	1.50	1.50
30.0000	1.50	1.49	1.49	1.49	1.49
30.2500	1.49	1.48	1.48	1.48	1.48
30.5000	1.47	1.47	1.47	1.47	1.46

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
30.7500	1.46	1.46	1.46	1.45	1.45
31.0000	1.45	1.45	1.45	1.44	1.44
31.2500	1.44	1.44	1.43	1.43	1.43
31.5000	1.43	1.42	1.42	1.42	1.42
31.7500	1.42	1.41	1.41	1.41	1.41
32.0000	1.40	1.40	1.40	1.40	1.40
32.2500	1.39	1.39	1.39	1.39	1.38
32.5000	1.38	1.38	1.38	1.37	1.37
32.7500	1.37	1.37	1.37	1.36	1.36
33.0000	1.36	1.36	1.35	1.35	1.35
33.2500	1.35	1.35	1.34	1.34	1.34
33.5000	1.34	1.33	1.33	1.33	1.33
33.7500	1.33	1.32	1.32	1.32	1.32
34.0000	1.31	1.31	1.31	1.31	1.31
34.2500	1.30	1.30	1.30	1.30	1.30
34.5000	1.29	1.29	1.29	1.29	1.29
34.7500	1.28	1.28	1.28	1.28	1.27
35.0000	1.27	1.27	1.27	1.27	1.26
35.2500	1.26	1.26	1.26	1.26	1.25
35.5000	1.25	1.25	1.25	1.25	1.24
35.7500	1.24	1.24	1.24	1.23	1.23
36.0000	1.23	1.23	1.23	1.22	1.22
36.2500	1.22	1.22	1.22	1.21	1.21
36.5000	1.21	1.21	1.20	1.20	1.20
36.7500	1.20	1.20	1.19	1.19	1.19
37.0000	1.19	1.19	1.18	1.18	1.18
37.2500	1.18	1.17	1.17	1.17	1.17
37.5000	1.17	1.16	1.16	1.16	1.16
37.7500	1.16	1.15	1.15	1.15	1.15
38.0000	1.14	1.14	1.14	1.14	1.14
38.2500	1.13	1.13	1.13	1.13	1.13
38.5000	1.12	1.12	1.12	1.12	1.11
38.7500	1.11	1.11	1.11	1.11	1.10
39.0000	1.10	1.10	1.10	1.10	1.09
39.2500	1.09	1.09	1.09	1.08	1.08
39.5000	1.08	1.08	1.08	1.07	1.07
39.7500	1.07	1.07	1.06	1.06	1.06
40.0000	1.06	1.06	1.05	1.05	1.05
40.2500	1.05	1.05	1.04	1.04	1.04
40.5000	1.04	1.03	1.03	1.03	1.03
40.7500	1.03	1.02	1.02	1.02	1.02
41.0000	1.01	1.01	1.01	1.01	1.01
41.2500	1.00	1.00	1.00	1.00	1.00
41.5000	.99	.99	.99	.99	.98
41.7500	.98	.98	.98	.98	.97

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
42.0000	.97	.97	.97	.96	.96
42.2500	.96	.96	.95	.95	.95
42.5000	.95	.95	.94	.94	.94
42.7500	.94	.94	.93	.93	.93
43.0000	.93	.92	.92	.92	.92
43.2500	.92	.91	.91	.91	.91
43.5000	.90	.90	.90	.90	.89
43.7500	.89	.89	.89	.89	.88
44.0000	.88	.88	.88	.87	.87
44.2500	.87	.87	.87	.86	.86
44.5000	.86	.86	.85	.85	.85
44.7500	.85	.84	.84	.84	.84
45.0000	.84	.83	.83	.83	.83
45.2500	.82	.82	.82	.82	.81
45.5000	.81	.81	.81	.80	.80
45.7500	.80	.80	.80	.79	.79
46.0000	.79	.79	.78	.78	.78
46.2500	.78	.78	.77	.77	.77
46.5000	.77	.76	.76	.76	.76
46.7500	.75	.75	.75	.75	.74
47.0000	.74	.74	.74	.73	.73
47.2500	.73	.73	.72	.72	.72
47.5000	.72	.71	.71	.71	.71
47.7500	.71	.70	.70	.70	.70
48.0000	.69	.69	.69	.69	.69
48.2500	.68	.68	.68	.67	.67
48.5000	.66	.66	.66	.65	.65
48.7500	.65	.65	.64	.64	.64
49.0000	.63	.63	.63	.62	.62
49.2500	.62	.61	.61	.61	.60
49.5000	.60	.60	.59	.59	.59
49.7500	.58	.58	.58	.57	.57
50.0000	.57	.57	.56	.56	.56
50.2500	.55	.55	.55	.55	.54
50.5000	.54	.54	.53	.53	.53
50.7500	.52	.52	.52	.52	.51
51.0000	.51	.51	.50	.50	.50
51.2500	.50	.49	.49	.49	.48
51.5000	.48	.48	.48	.47	.47
51.7500	.47	.47	.46	.46	.46
52.0000	.46	.45	.45	.45	.44
52.2500	.44	.44	.44	.43	.43
52.5000	.43	.43	.43	.42	.42
52.7500	.42	.42	.41	.41	.41
53.0000	.41	.40	.40	.40	.40

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
53.2500	.39	.39	.39	.39	.39
53.5000	.39	.38	.38	.38	.38
53.7500	.38	.38	.37	.37	.37
54.0000	.37	.37	.37	.37	.36
54.2500	.36	.36	.36	.36	.36
54.5000	.36	.35	.35	.35	.35
54.7500	.35	.35	.34	.34	.34
55.0000	.34	.34	.34	.34	.34
55.2500	.33	.33	.33	.33	.33
55.5000	.33	.33	.32	.32	.32
55.7500	.32	.32	.32	.32	.32
56.0000	.31	.31	.31	.31	.31
56.2500	.31	.31	.30	.30	.30
56.5000	.30	.30	.30	.30	.30
56.7500	.29	.29	.29	.29	.29
57.0000	.29	.29	.29	.29	.28
57.2500	.28	.28	.28	.28	.28
57.5000	.28	.28	.28	.28	.28
57.7500	.28	.28	.28	.27	.27
58.0000	.27	.27	.27	.27	.27
58.2500	.27	.27	.27	.27	.27
58.5000	.27	.27	.27	.27	.27
58.7500	.27	.27	.27	.26	.26
59.0000	.26	.26	.26	.26	.26
59.2500	.26	.26	.26	.26	.26
59.5000	.26	.26	.26	.26	.26
59.7500	.26	.26	.26	.26	.25
60.0000	.25	.25	.25	.25	.25
60.2500	.25	.25	.25	.25	.25
60.5000	.25	.25	.25	.25	.25
60.7500	.25	.25	.25	.25	.25
61.0000	.24	.24	.24	.24	.24
61.2500	.24	.24	.24	.24	.24
61.5000	.24	.24	.24	.24	.24
61.7500	.24	.24	.24	.24	.24
62.0000	.24	.24	.24	.23	.23
62.2500	.23	.23	.23	.23	.23
62.5000	.23	.23	.23	.23	.23
62.7500	.23	.23	.23	.23	.23
63.0000	.23	.23	.23	.23	.23
63.2500	.23	.23	.23	.23	.23
63.5000	.23	.23	.23	.23	.23
63.7500	.23	.23	.23	.23	.23
64.0000	.23	.23	.23	.23	.23
64.2500	.23	.23	.23	.23	.23

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
64.5000	.23	.23	.23	.23	.23
64.7500	.23	.23	.23	.23	.23
65.0000	.23	.23	.23	.23	.23
65.2500	.23	.23	.22	.22	.22
65.5000	.22	.22	.22	.22	.22
65.7500	.22	.22	.22	.22	.22
66.0000	.22	.22	.22	.22	.22
66.2500	.22	.22	.22	.22	.22
66.5000	.22	.22	.22	.22	.22
66.7500	.22	.22	.22	.22	.22
67.0000	.22	.22	.22	.22	.22
67.2500	.22	.22	.22	.22	.22
67.5000	.22	.22	.22	.22	.22
67.7500	.22	.22	.22	.22	.22
68.0000	.22	.22	.22	.22	.22
68.2500	.22	.22	.22	.22	.22
68.5000	.22	.22	.22	.22	.22
68.7500	.22	.22	.22	.22	.22
69.0000	.22	.22	.22	.22	.22
69.2500	.22	.22	.22	.22	.22
69.5000	.22	.22	.22	.22	.22
69.7500	.22	.22	.22	.22	.22
70.0000	.22	.22	.21	.21	.21
70.2500	.21	.21	.21	.21	.21
70.5000	.21	.21	.21	.21	.21
70.7500	.21	.21	.21	.21	.21
71.0000	.21	.21	.21	.21	.21
71.2500	.21	.21	.21	.21	.21
71.5000	.21	.21	.21	.21	.21
71.7500	.21	.21	.21	.21	.21
72.0000	.21	.21	.21	.21	.21
72.2500	.21	.21	.21	.21	.21
72.5000	.21	.21	.21	.21	.21
72.7500	.21	.21	.21	.21	.21
73.0000	.21	.21	.21	.21	.21
73.2500	.21	.21	.21	.21	.21
73.5000	.21	.21	.21	.21	.21
73.7500	.21	.21	.21	.21	.21
74.0000	.21	.21	.21	.21	.21
74.2500	.21	.21	.21	.21	.21
74.5000	.21	.21	.21	.21	.21
74.7500	.21	.21	.20	.20	.20
75.0000	.20	.20	.20	.20	.20
75.2500	.20	.20	.20	.20	.20
75.5000	.20	.20	.20	.20	.20

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
75.7500	.20	.20	.20	.20	.20
76.0000	.20	.20	.20	.20	.20
76.2500	.20	.20	.20	.20	.20
76.5000	.20	.20	.20	.20	.20
76.7500	.20	.20	.20	.20	.20
77.0000	.20	.20	.20	.20	.20
77.2500	.20	.20	.20	.20	.20
77.5000	.20	.20	.20	.20	.20
77.7500	.20	.20	.20	.20	.20
78.0000	.20	.20	.20	.20	.20
78.2500	.20	.20	.20	.20	.20
78.5000	.20	.20	.20	.20	.20
78.7500	.20	.20	.20	.20	.20
79.0000	.20	.20	.20	.20	.20
79.2500	.20	.20	.20	.20	.20
79.5000	.19	.19	.19	.19	.19
79.7500	.19	.19	.19	.19	.19
80.0000	.19	.19	.19	.19	.19
80.2500	.19	.19	.19	.19	.19
80.5000	.19	.19	.19	.19	.19
80.7500	.19	.19	.19	.19	.19
81.0000	.19	.19	.19	.19	.19
81.2500	.19	.19	.19	.19	.19
81.5000	.19	.19	.19	.19	.19
81.7500	.19	.19	.19	.19	.19
82.0000	.19	.19	.19	.19	.19
82.2500	.19	.19	.19	.19	.19
82.5000	.19	.19	.19	.19	.19
82.7500	.19	.19	.19	.19	.19
83.0000	.19	.19	.19	.19	.19
83.2500	.19	.19	.19	.19	.19
83.5000	.19	.19	.19	.19	.19
83.7500	.19	.19	.19	.19	.19
84.0000	.19	.19	.19	.18	.18
84.2500	.18	.18	.18	.18	.18
84.5000	.18	.18	.18	.18	.18
84.7500	.18	.18	.18	.18	.18
85.0000	.18	.18	.18	.18	.18
85.2500	.18	.18	.18	.18	.18
85.5000	.18	.18	.18	.18	.18
85.7500	.18	.18	.18	.18	.18
86.0000	.18	.18	.18	.18	.18
86.2500	.18	.18	.18	.18	.18
86.5000	.18	.18	.18	.18	.18
86.7500	.18	.18	.18	.18	.18

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
87.0000	.18	.18	.18	.18	.18
87.2500	.18	.18	.18	.18	.18
87.5000	.18	.18	.18	.18	.18
87.7500	.18	.18	.18	.18	.18
88.0000	.18	.18	.18	.18	.18
88.2500	.18	.18	.18	.18	.18
88.5000	.18	.18	.18	.18	.18
88.7500	.18	.18	.17	.17	.17
89.0000	.17	.17	.17	.17	.17
89.2500	.17	.17	.17	.17	.17
89.5000	.17	.17	.17	.17	.17
89.7500	.17	.17	.17	.17	.17
90.0000	.17	.17	.17	.17	.17
90.2500	.17	.17	.17	.17	.17
90.5000	.17	.17	.17	.17	.17
90.7500	.17	.17	.17	.17	.17
91.0000	.17	.17	.17	.17	.17
91.2500	.17	.17	.17	.17	.17
91.5000	.17	.17	.17	.17	.17
91.7500	.17	.17	.17	.17	.17
92.0000	.17	.17	.17	.17	.17
92.2500	.17	.17	.17	.17	.17
92.5000	.17	.17	.17	.17	.17
92.7500	.17	.17	.17	.17	.17
93.0000	.17	.17	.17	.17	.17
93.2500	.17	.17	.17	.17	.16
93.5000	.16	.16	.16	.16	.16
93.7500	.16	.16	.16	.16	.16
94.0000	.16	.16	.16	.16	.16
94.2500	.16	.16	.16	.16	.16
94.5000	.16	.16	.16	.16	.16
94.7500	.16	.16	.16	.16	.16
95.0000	.16	.16	.16	.16	.16
95.2500	.16	.16	.16	.16	.16
95.5000	.16	.16	.16	.16	.16
95.7500	.16	.16	.16	.16	.16
96.0000	.16	.16	.16	.16	.16
96.2500	.16	.16	.16	.16	.16
96.5000	.16	.16	.16	.16	.16
96.7500	.16	.16	.16	.16	.16
97.0000	.16	.16	.16	.16	.16
97.2500	.16	.16	.16	.16	.16
97.5000	.16	.16	.16	.16	.16
97.7500	.16	.16	.16	.16	.16
98.0000	.16	.15	.15	.15	.15

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
98.2500	.15	.15	.15	.15	.15
98.5000	.15	.15	.15	.15	.15
98.7500	.15	.15	.15	.15	.15
99.0000	.15	.15	.15	.15	.15
99.2500	.15	.15	.15	.15	.15
99.5000	.15	.15	.15	.15	.15
99.7500	.15	.15	.15	.15	.15
100.0000	.15	.15	.15	.15	.15
100.2500	.15	.15	.15	.15	.15
100.5000	.15				

LEVEL POOL ROUTING SUMMARY

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 1
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 1

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	22.43 cfs	at	1.1500 hrs
Peak Outflow	=	.00 cfs	at	.3500 hrs
Peak Elevation	=	52.75 ft		
Peak Storage	=	1.084 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	1.084
- Infiltration	=	.000
- HYG Vol OUT	=	.000
- Retained Vol	=	1.084
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 2
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 2

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	27.57 cfs	at	12.1500 hrs
Peak Outflow	=	.71 cfs	at	22.2000 hrs
Peak Elevation	=	54.96 ft		
Peak Storage	=	3.224 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	4.102
- Infiltration	=	.000
- HYG Vol OUT	=	2.337
- Retained Vol	=	1.765
Unrouted Vol	=	-.000 ac-ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 10
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 10

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	46.55 cfs	at	12.1500 hrs
Peak Outflow	=	4.24 cfs	at	14.8500 hrs
Peak Elevation	=	55.96 ft		
Peak Storage	=	4.284 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	8.126
- Infiltration	=	.000
- HYG Vol OUT	=	5.799
- Retained Vol	=	2.327
Unrouted Vol	=	-.000 ac-ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = L:\Work\17800\17854-Lawnside\DATA\2018 Site Plan Drainage\Pondpack\Pro
Inflow HYG file = NONE STORED - FLEX BASIN #1IN 100
Outflow HYG file = NONE STORED - FLEX BASIN #1OUT 100

Pond Node Data = FLEX BASIN #1
Pond Volume Data = FLEX BASIN #1
Pond Outlet Data = Flex Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	51.50 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	87.43 cfs	at	12.1500 hrs
Peak Outflow	=	14.79 cfs	at	13.2500 hrs
Peak Elevation	=	58.43 ft		
Peak Storage	=	7.173 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	17.046
- Infiltration	=	.000
- HYG Vol OUT	=	14.421
- Retained Vol	=	2.625
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

Index of Starting Page Numbers for ID Names

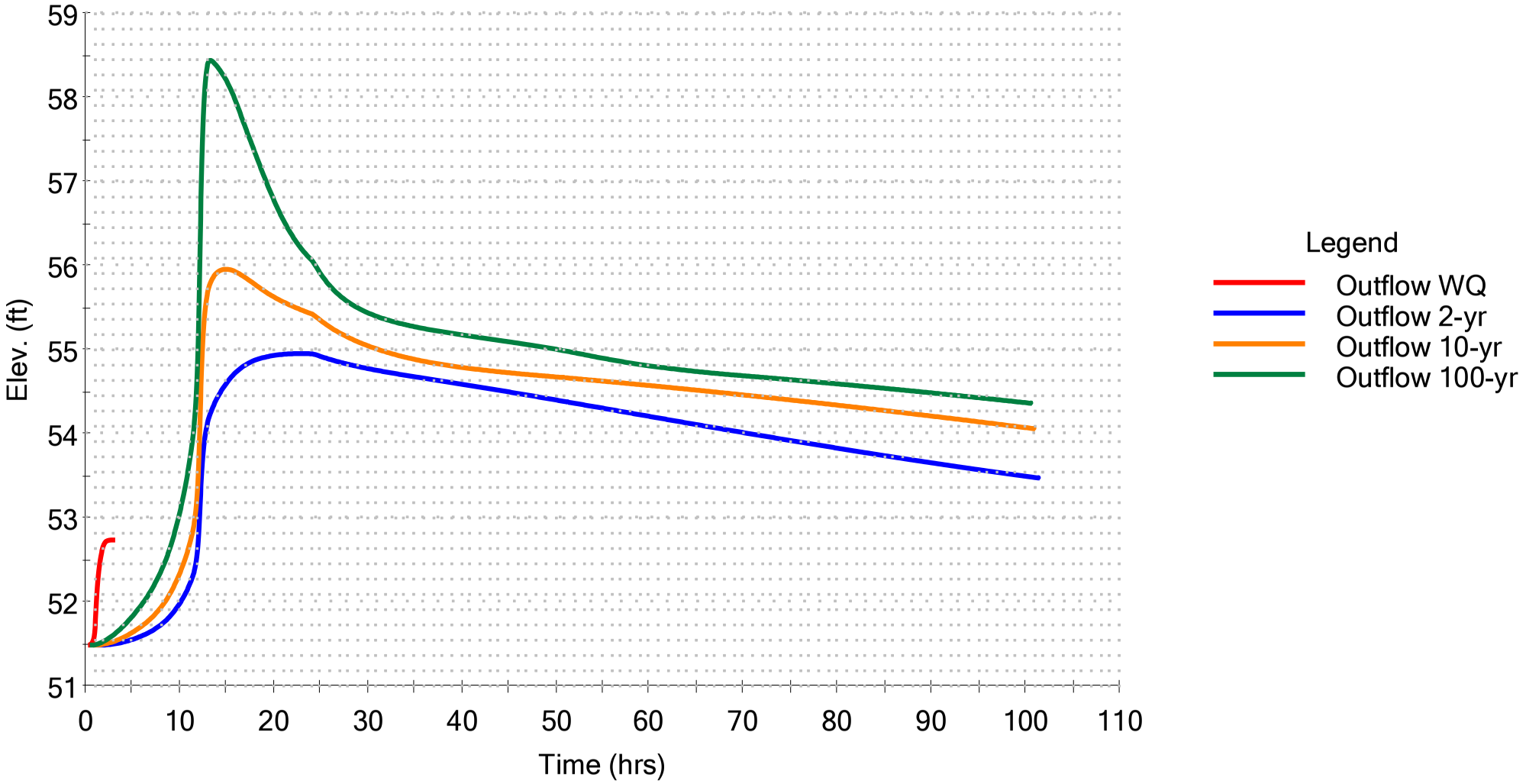
----- F -----
FLEX BASIN #1... 7.01, 9.01
FLEX BASIN #1IN 1... 9.05, 9.07,
9.18, 9.29, 9.40, 9.41, 9.42,
9.43
Flex Outlet 1... 8.01, 8.05, 8.20

----- N -----
NJAW #1 IMP... 3.01, 4.01, 5.01,
5.02, 5.03, 5.04
NJAW #1 PER... 3.02, 4.02, 5.05,
5.06, 5.07, 5.08
NJAW #2 IMP... 3.03, 4.03, 5.09,
5.10, 5.11, 5.12
NJAW #2 PER... 3.04, 4.04, 5.13,
5.14, 5.15, 5.16

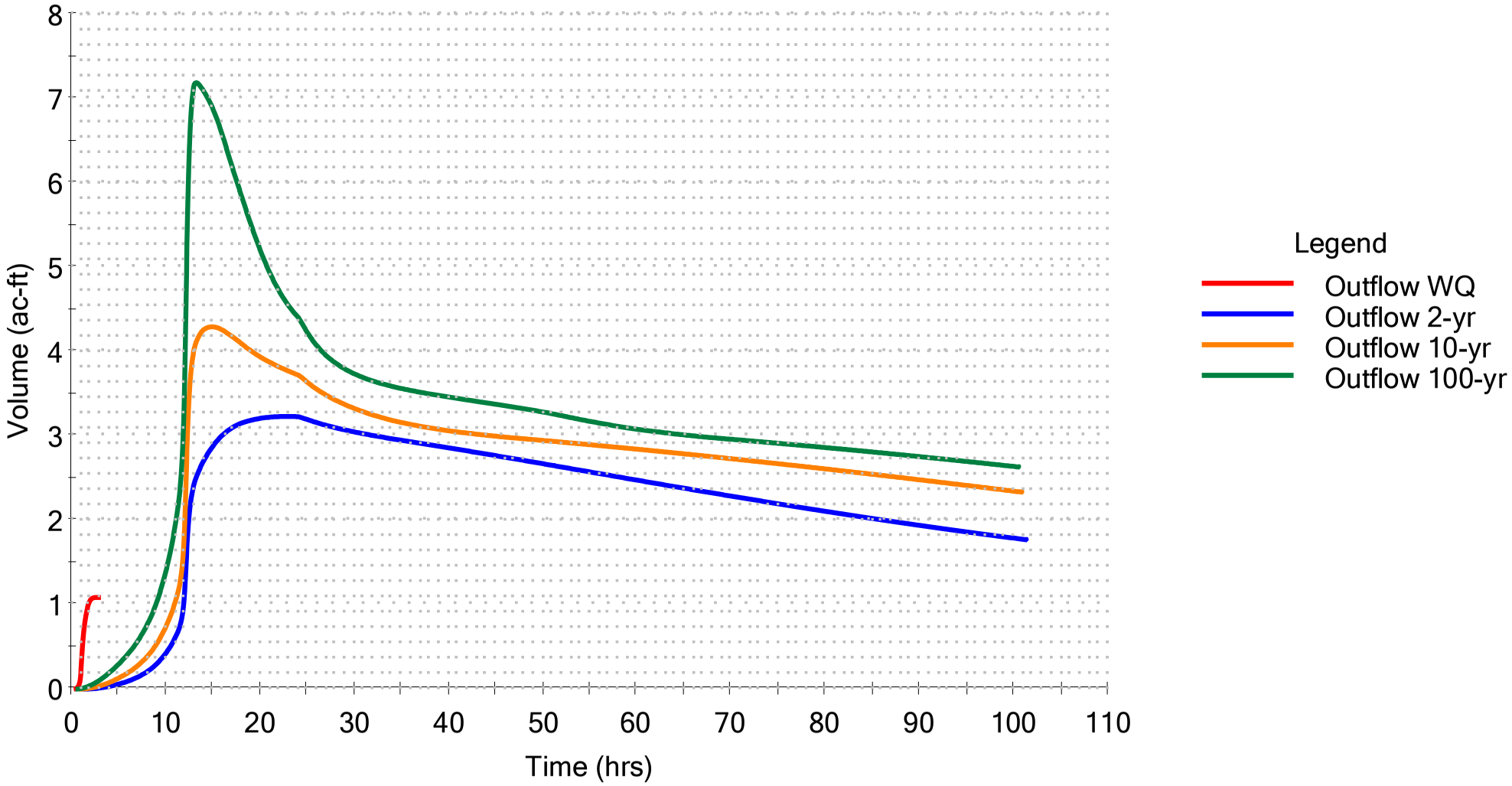
----- P -----
P1-IMP... 3.05, 4.05, 5.17, 5.18,
5.19, 5.20
P1-PER... 3.06, 4.06, 5.21, 5.22,
5.23, 5.24
P2-IMP... 3.07, 4.07, 5.25, 5.26,
5.27, 5.28
P2-PER... 3.08, 4.08, 5.29, 5.30,
5.31, 5.32
POA #1 1... 6.01, 6.03, 6.13, 6.23

----- W -----
Watershed... 1.01, 2.01, 2.02, 2.03,
2.04

Woodcrest Station Business Park
Infiltration/Detention Basin
Elevation vs. Time



Woodcrest Station Business Park
Infiltration/Detention Basin
Volume vs. Time



APPENDIX 4

EMERGENCY SPILLWAY, INFILTRATION TIME NJGRS CALCULATIONS & RIP-RAP APRON CALCULATIONS

Weir Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Tuesday, Aug 11 2020

120' Emergency Spillway

Trapezoidal Weir

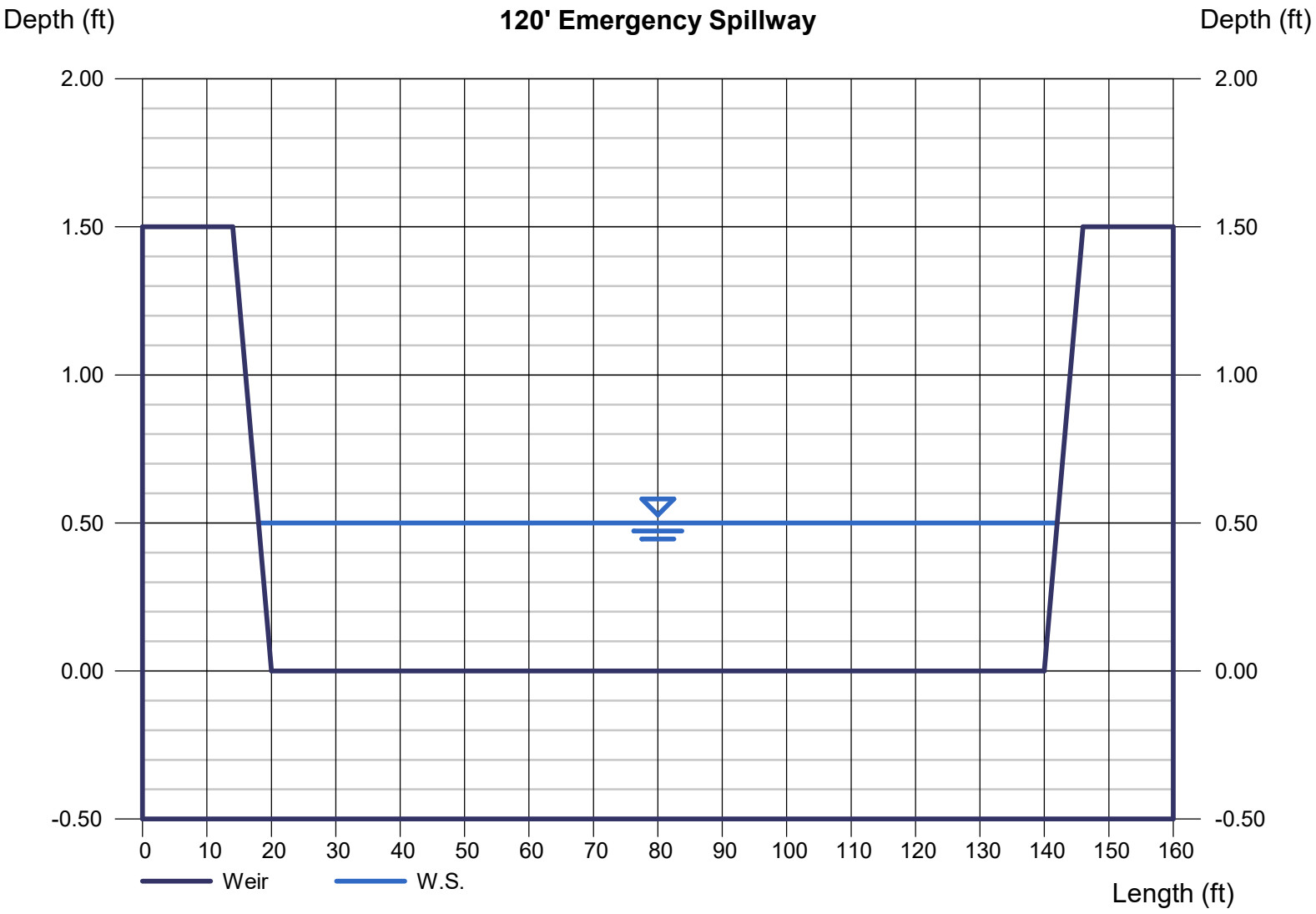
Crest	= Sharp
Bottom Length (ft)	= 120.00
Total Depth (ft)	= 1.50
Side Slope (z:1)	= 4.00

Calculations

Weir Coeff. Cw	= 3.10
Compute by:	Known Q
Known Q (cfs)	= 131.15

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 131.15
Area (sqft)	= 61.00
Velocity (ft/s)	= 2.15
Top Width (ft)	= 124.00



Taylor Wiseman & Taylor
124 Gaither Drive, Suite 150
Mount Laurel, New Jersey 08054
Phone: 856-235-7200
Fax: 856-722-9250

Revised: 11/13/2018
Proj No.: 17854.1010.00 Date: 6/26/2018
East Oak Avenue, Lawnside Borough, NJ By: V.K.
Infiltration/Detention Basin Calculations

Test Pit #	Perc. Rate (in/hr)
5	12.8
6	14.9
7	14.6
8	25.3
9	23.2
Min. Perc. Rate	12.8 in/hr

Use: **6.4** in/hr - 12.8 in/hr as per Infiltration Test
with a factor of safety of 2
Minimum Design Permeability Rate = 0.50 in/hr
Maximum Design Permeability Rate = 10 in/hr

Basin bottom Area = 36,435 s.f.

Rate = 6.4 in/hr * 1ft/12in * 36,435 s.f. = 19,432 cuft/hr

Volume below 3" Orifices Inv. = 47,611 cuft

$$\frac{47{,}611 \text{ cuft}}{19{,}432 \text{ cuft/hr}} = 2.45 \text{ hrs}$$ **< 72 hours OKAY**

New Jersey Groundwater Recharge Spreadsheet Version 2.0 November 2003

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓	Average Annual P (in)	Climatic Factor
CAMDEN CO., LAWNSIDE BORO	45.0	1.36

Project Name:	Woodcrest Station Business Park
Description:	Flex site development
Analysis Date:	11/07/18

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.766	Impervious areas	Freehold	0.0	-
2	1.549	Open space	Freehold	11.7	65,871
3	0.804	Open space	Marlton	11.1	32,376
4	17.145	Woods	Freehold	11.5	718,108
5	5.663	Woods	Marlton	10.6	218,328
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	25.9			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				11.0	1,034,683

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	8.913	Impervious areas	Freehold	0.0	-
2	6.155	Open space	Freehold	11.7	261,740
3	1.173	Open space	Marlton	11.1	47,235
4	7.606	Woods	Freehold	11.5	318,573
5	2.08	Woods	Marlton	10.6	80,191
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	25.9			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				7.5	707,738

Annual Recharge Requirements Calculation ↓

% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft) 388,250
Post-Development Annual Recharge Deficit=	*326,945*	(cubic feet)

Recharge Efficiency Parameters Calculations (area averages)

RWC=	5.96	(in)	DRWC=	0.13	(in)
ERWC =	1.91	(in)	EDRWC=	0.04	(in)

Procedure to fill the Pre-Development and Post-Development Conditions Tables

For each land segment, first enter the area, then select TR-55 Land Cover, then select Soil. Start from the top of the table and proceed downward. Don't leave blank rows (with A=0) in between your segment entries. Rows with A=0 will not be displayed or used in calculations. For impervious areas outside of standard lots select "Impervious Areas" as the Land Cover. Soil type for impervious areas are only required if an infiltration facility will be built within these areas.

Project Name	Description	Analysis Date	BMP or LID Type
Woodcrest Station Busine	Flex site development	11/07/18	Infiltration/Detention Basin

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	3720.8	sq.ft
BMP Effective Depth, this is the design variable	dBMP	15.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	69.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	84.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	1.91	in
ERWC Modified to consider dEXC	EDRWC	0.04	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.03	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.14	in
Inches of Rainfall to capture	Pdesign	0.20	in
Recharge Provided Avg. over Imp. Area		9.6	in
Runoff Captured Avg. over imp. Area		9.6	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.01	unitless
BMP Volume	VBMP	4,651	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	326,945	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	410,205	sq.ft
Root Zone Water Capacity	RWC	5.96	in
RWC Modified to consider dEXC	DRWC	0.13	in
Climatic Factor	C-factor	1.36	no units
Average Annual P	Pavg	45.0	in
Recharge Requirement over Imp. Area	dr	10.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		326,945	cu.ft
Avg BMP Recharge Efficiency		99.8%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.8%	%
%Runoff Infiltrated		27.4%	%
%Runoff Recharged		28.9%	%
%Rainfall Recharged		22.5%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

CONDUIT OUTLET PROTECTION WORKSHEET
Horizontal Riprap Apron Headwall #: 121

PROJECT: Lawnside Flex Site **BY: vak**
JOB NUMBER: 17854 **DATE: 7/13/18**

Length: 29'
Width: 20'
Riprap: 6"

Culvert Height (D_0) = 2.50'
Culvert Width (W_0) = 2.50' (Circular Pipe)
Design or 25-Year Storm Discharge (Q_0) = 38.07cfs
2-Year Storm Elevation (T_w) = 2.71'

Apron Dimensions: Tw >= .5D0

Length

$$L_a = 3\frac{q}{\sqrt{D_0}}$$

q = 38.07/2.50 = 15.23
D_0 = 2.50
L_a = 28.90' (Use 29')

Width

$$W = 3W_0 + 0.4La$$

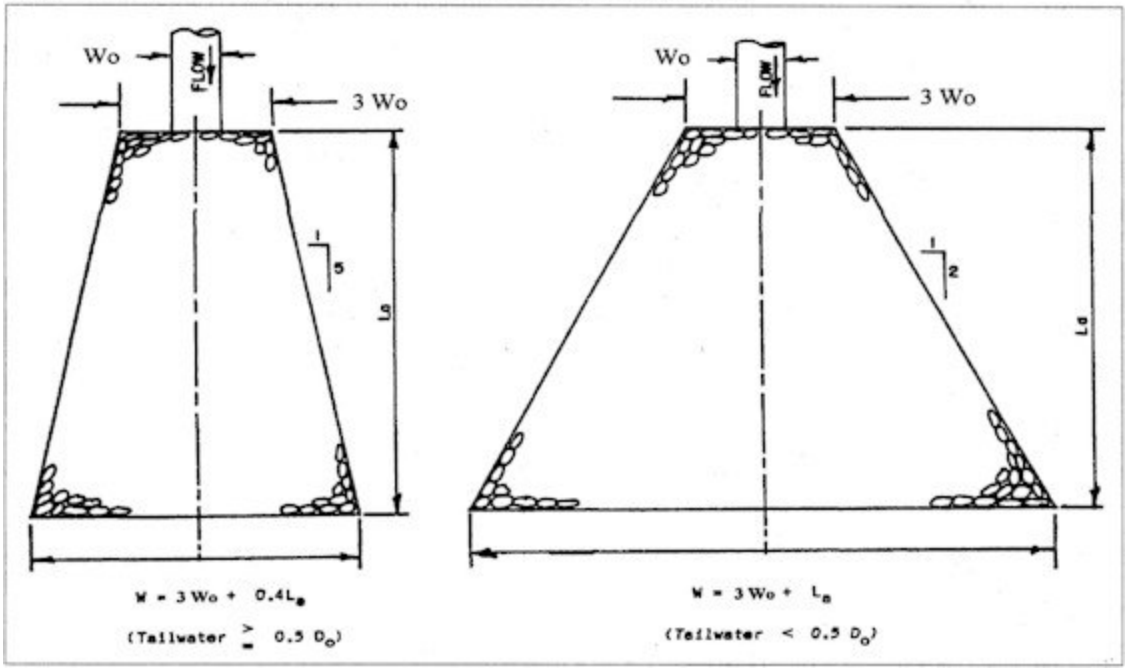
W_0 = 2.50
L_a = 28.90
W = 19.06' (Use 20')

Riprap (Median Stone Diameter (D50)):

$$D_0 = \frac{0.020}{Tw}q^{1.33}$$

q = 38.07/2.50 = 15.23
T_w = 2.71
D_{50} = 0.28' (Use 6")

Figure 12-1 Configuration of Conduit Outlet Protection



From the Conduit Outlet Protection Standard, "Standards for Soil Erosion and Sediment Control in New Jersey", January 2014 (Pages 12-1 through 12-6)

Taylor Wiseman & Taylor
ENGINEERS | SURVEYORS | SCIENTISTS

CALCULATIONS

CONDUIT OUTLET PROTECTION WORKSHEET
Horizontal Riprap Apron Headwall #: 217

PROJECT: Woodcrest Station Building B **BY: VAK**
JOB NUMBER: 17854 **DATE: 8/8/20**

Length: 32'
Width: 21'
Riprap: 6"

Culvert Height (D_0) = 2.50'
Culvert Width (W_0) = 2.50' (Circular Pipe)
Design or 25-Year Storm Discharge (Q_0) = 41.23cfs
2-Year Storm Elevation (T_w) = 3.24'

Apron Dimensions: Tw >= .5D0

Length

$$L_a = 3\frac{q}{\sqrt{D_0}}$$

q = 41.23/2.50 = 16.49
D_0 = 2.50
L_a = 31.29' (Use 32')

Width

$$W = 3W_0 + 0.4La$$

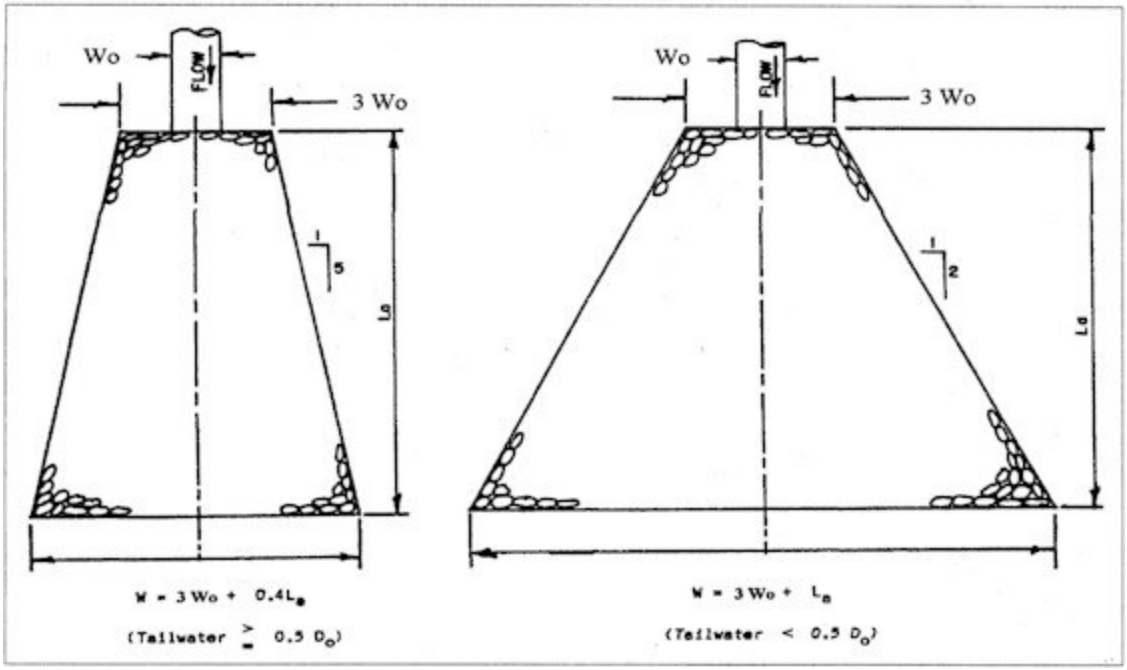
W_0 = 2.50
L_a = 31.29
W = 20.02' (Use 21')

Riprap (Median Stone Diameter (D50)):

$$D_0 = \frac{0.020}{Tw} q^{1.33}$$

q = 41.23/2.50 = 16.49
T_w = 3.24
D_{50} = 0.26' (Use 6")

Figure 12-1 Configuration of Conduit Outlet Protection



From the Conduit Outlet Protection Standard, "Standards for Soil Erosion and Sediment Control in New Jersey", January 2014 (Pages 12-1 through 12-6)

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CONDUIT OUTLET PROTECTION WORKSHEET
Preformed Scour Hole Headwall #: 208

PROJECT: Lawnside Flex Site **BY: vak**
JOB NUMBER: 17854 **DATE: 7/13/18**

Length: 15'
Width: 13'
Riprap: 12"

Culvert Height (D_0) = 2.50'
Culvert Width (W_0) = 2.50' (Circular Pipe)
25-Year Storm Discharge (Q_0) = 41.30cfs
2-Year Storm Elevation (T_w) = 0.5'

Scour Hole Dimensions:

Length

$$L = 3D_0 + 2(3Y)$$

Y = 1.25'
D_0 = 2.50
L = 15.00' (Use 15')

Width

$$W = 2W_0 + 2(3Y)$$

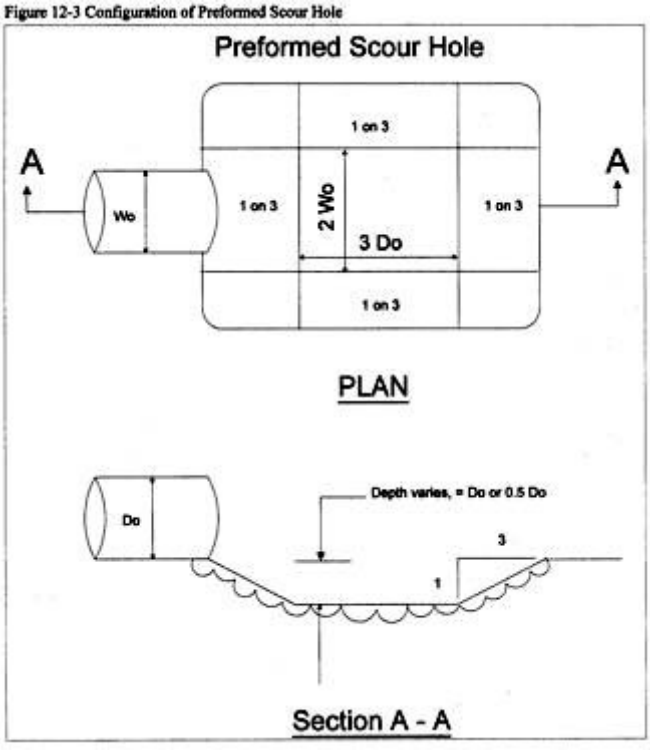
Y = 1.25'
W_0 = 2.50
W = 12.50' (Use 13')

Riprap (Median Stone Diameter (D50)): Y = .5Do

$$D_{50} = \frac{0.0125}{Tw} q^{1.33}$$

q = Qo/Do = 41.30/2.50 = 16.52
T_w = 0.5
D_{50} = 1.04'(Use 12")

Figure 12-3 Configuration of Preformed Scour Hole



From the Conduit Outlet Protection Standard, "Standards for Soil Erosion and Sediment Control in New Jersey", January 2014 (Pages 12-1 through 12-6)

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CALCULATIONS

CONDUIT OUTLET PROTECTION WORKSHEET
Horizontal Riprap Apron Headwall #: 306

PROJECT: Lawnside Flex Site **BY: vak**
JOB NUMBER: 17854 **DATE: 7/13/18**

Length: 10'
Width: 10'
Riprap: 6"

Culvert Height (D_0) = 2.00'
Culvert Width (W_0) = 2.00' (Circular Pipe)
Design or 25-Year Storm Discharge (Q_0) = 9.02cfs
2-Year Storm Elevation (T_w) = 2.71'

Apron Dimensions: Tw >= .5D0

Length

$$L_a = 3\frac{q}{\sqrt{D_0}}$$

q = 9.02/2.00 = 4.51
D_0 = 2.00
L_a = 9.57' (Use 10')

Width

$$W = 3W_0 + 0.4La$$

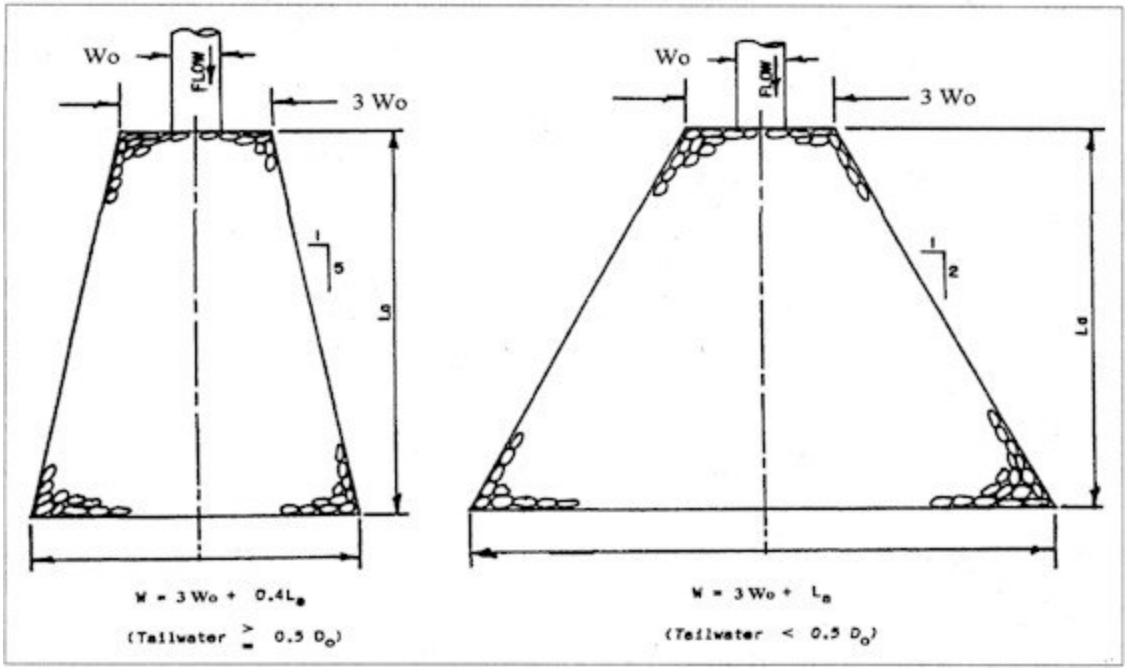
W_0 = 2.00
L_a = 9.57
W = 9.83' (Use 10')

Riprap (Median Stone Diameter (D50)):

$$D_0 = \frac{0.020}{Tw} q^{1.33}$$

q = 9.02/2.00 = 4.51
T_w = 2.71
D_{50} = 0.05' (Use 6")

Figure 12-1 Configuration of Conduit Outlet Protection



From the Conduit Outlet Protection Standard, "Standards for Soil Erosion and Sediment Control in New Jersey", January 2014 (Pages 12-1 through 12-6)

APPENDIX 5

SEDIMENT BASIN CALCULATION

Project: Lawnside Flex Site | **Date:** 06/27/18
Location: Borough of Lawnside, Camden County, N.J. | **By:** VK

Sediment Basin Calculations | **Revised:** 08/11/20 | **By:** VK

Basin ID: A

Sediment Basin Volume:

The volume in the sediment basin below the crest elevation of the emergency spillway shall be the larger of:

Method #1: The volume necessary to obtain 70% trap efficiency at the start of the basin's useful life ('C')

Method #2: The volume necessary to provide sediment storage capacity and provide for temporary stormwater runoff storage from a 2-year frequency, 24-hour duration, Type III storm (V)

Method #1: Trap Efficiency

Trap Efficiency =	70	%
Efficiency Reduction =	5	% (10% for silt, clay and fine grains, 5% for sand and coarse grained)
Adjusted Trap Efficiency (TE) =	75	%

C/I = Ratio of capacity of basin to annual flow

Where:

C = Required Volume of Sediment Basin (AcFt)
A = 16.749 Acres, Total Drainage Area
R = 18 inches, Average Surface Rainfall (fig 24-1)
I = Average Annual Surface Runoff (AcFt)
= (A)(R)(1ft/12in)
= **25.12 AcFt**

C/I = 0.045 Ratio of Capacity to Annual Inflow (curve 24-1) where TE = 75 %
C = (I)(C/I)
= **1.13** AcFt
Minimum Required Volume = 49,247 CF
(or 1.131 acre-feet)
***Volume Provided* = *146,998* Cubic Feet @ Elev= 55.10**

Method #2: Sediment Storage Capacity

Determine (DA)(A)

DA = Acres, Drainage Area
A = ton/ac/yr, Avg. Annual Erosion (chart on pg 24-4)

First = 1.0 year(s)

	DA	A	(DA)(A), yrs
Developed Areas	0	1.0	0.00
Construction	16.749	50	837.45
		Sub-total	837.45 tons/yr

Second = 0.5 year(s)

	DA	A	(DA)(A), tons/yr
Developed Areas	16.749	1.0	8.37
Construction	0	50	0.00
		Sub-total	8.37 tons/yr

Total (DA)(A)= 845.82 tons/yr

Determine DR, Delivery Ratio

A = 16.749 Acres, Total Drainage Area
= 0.026 square miles
From Curve 24-2 DR= 33.15 % Delivery Ratio for sand

Determine γs, Saturated density of sediment (Table 24-1)

$\gamma_{a,}$ = 85 lb/cf for aerated sand

Determine Volume of Sediment Trapped for planned life of structure (ac-ft/yr)
where:

$V(sed) = (DA)(A)(DR)(TE)(1/\gamma_s)(2000 \text{ lbs/ton})(1/43560 \text{ sf/acre})$

Where: V = Volume of Sediment Trapped for planned life of structure (ac-ft/yr)
(DA)(A) = 845.82 tons/yr
DR = 33 % Delivery Ratio for sand
TE = 75 %
γ_s = 85 lb/cf for aerated sand

V(sed) = 4,948 cf, Required Storage for Trapped Sediment

Minimum Req'd Sediment Volume = 4,948 cubic feet @ Elev= 51.63
2 yr. Inflow Volume = 138,565 cubic feet
Minimum Volume Required = 143,513 cubic feet @ Elev= 55.02
Volume Provided = 146,998 cubic feet @ Elev= 55.10

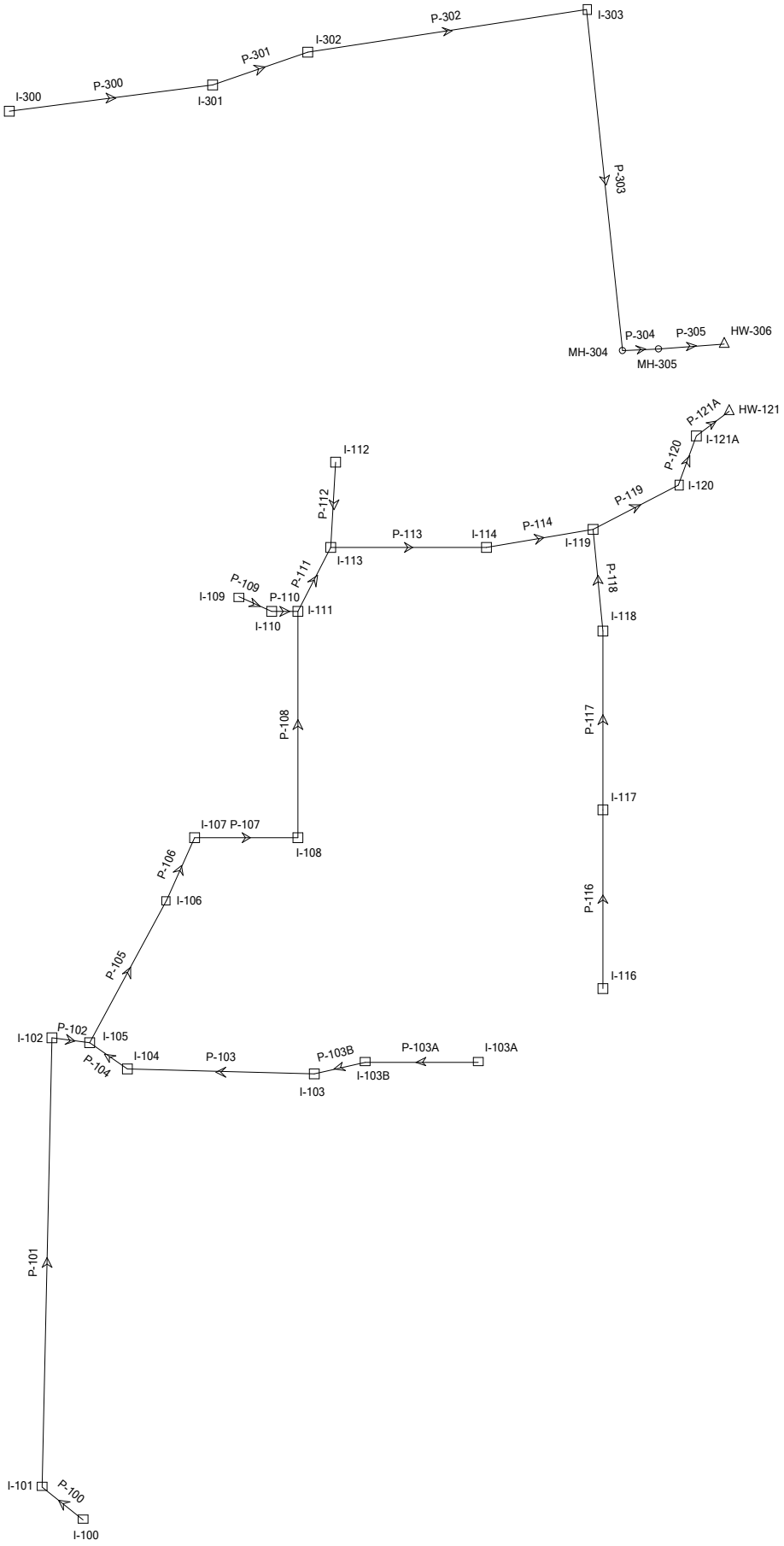
Set 4" dewatering hole at 51.65 and top of riser at 55.10.

(Reference: Standards for Soil Erosion and Sediment Control in New Jersey, January 2014, Revised July 2017)

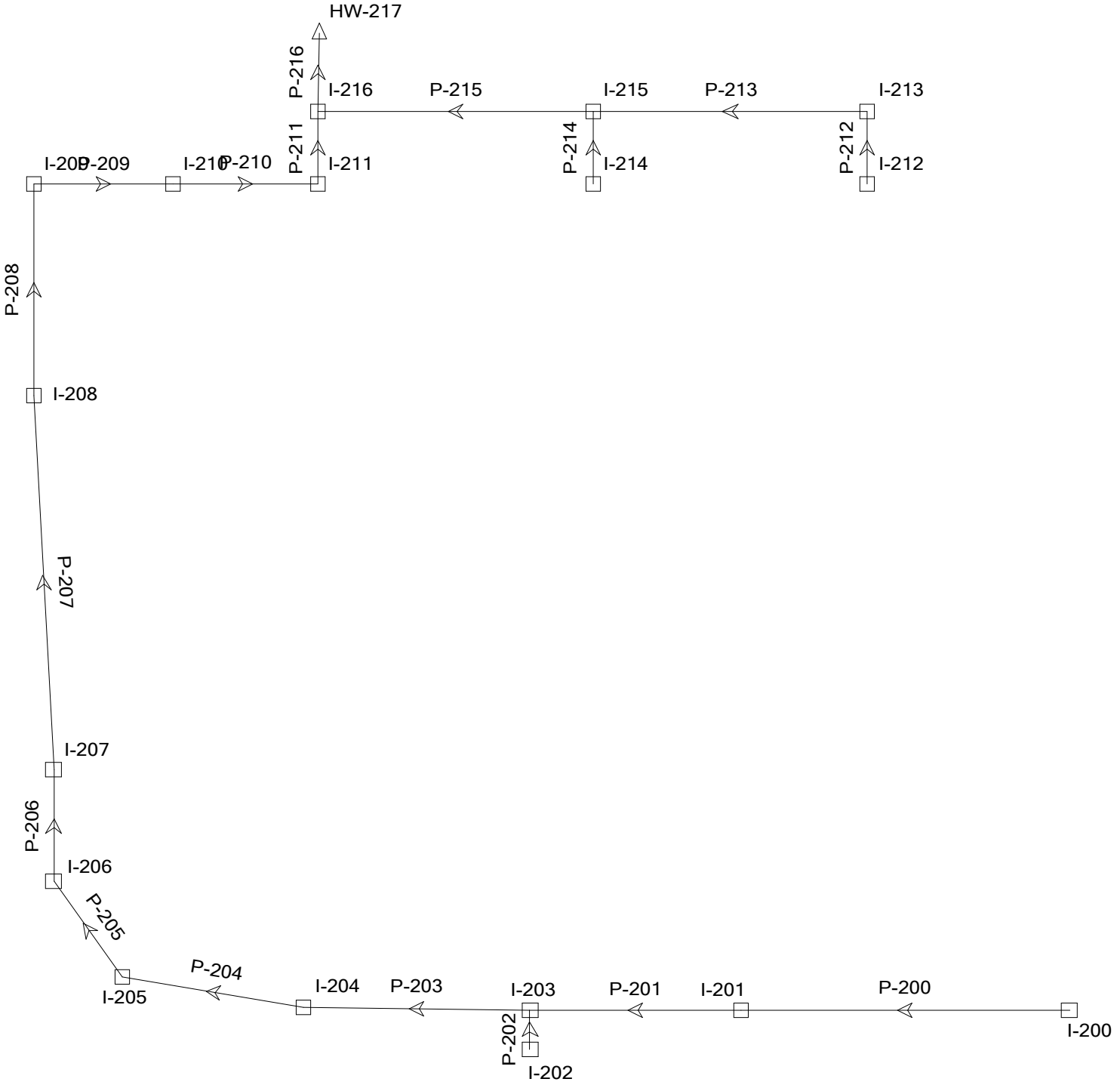
APPENDIX 6

WEIGHTED ‘C’, TC AND RUNOFF CALCULATIONS
STORMWATER PIPING SYSTEM

Scenario: Lawnside Flex Site 25-year Storm Event



Scenario: Lawnside Flex Site 25-year Storm Event



Computational Table - Storm Sewer Design

Project: Woodcrest Station Business
County: Borough of Lawnside, Camden County, New Jersey

PROJ. #: 17854.1010.00
PROJ. Name: Woodcrest Station Business Park
BY: V.A.K.
DATE: 6/26/2018 (Rev. 8/12/2020)

STORM TABLE (Computed in StormCAD)

Label	Upstream Node	Downstream Node	Upstream Inlet Area (acres)	Upstream Inlet Rat. Coefficient	Upstream Inlet CA (acres)	Upstream Calculated System CA (acres)	System Flow Time (min)	System Intensity (in/hr)	Total System Flow (cfs)	Length (feet)	Constructed Slope (ft/ft)	Section Size	Mannings (n)	Full Capacity (cfs)	Upstream Invert Elevation (feet)	Downstream Invert Elevation (feet)	Upstream Ground Elevation (feet)	Upstream Cover (feet)	Downstream Cover (feet)	Hydraulic Grade Line In (feet)	Hydraulic Grade Line Out (feet)	Average Velocity (ft/s)
P-100	I-100	I-101	0.86	0.34	0.29	0.29	6.00	7.08	2.06	44	0.0080	12 inch	0.015	2.75	65.43	65.08	67.60	1.17	1.62	66.08	65.69	3.85
P-101	I-101	I-102	0.08	0.99	0.08	0.37	6.19	7.02	2.61	376	0.0060	15 inch	0.015	4.34	64.83	62.57	67.70	1.62	5.33	65.53	63.51	3.70
P-102	I-102	I-105	0.08	0.99	0.08	0.45	7.89	6.51	4.03	33	0.0060	15 inch	0.015	4.34	62.57	62.37	69.15	5.33	5.48	63.51	63.25	4.01
P-103	I-103	I-104	0.26	0.71	0.18	0.23	7.03	6.77	1.56	157	0.0150	12 inch	0.015	3.79	68.86	66.50	73.15	3.29	2.20	69.39	66.95	4.59
P-103A	I-103A	I-103B	0.14	0.25	0.04	0.04	6.00	7.08	0.25	95	0.0050	10 inch	0.012	1.68	69.73	69.25	73.00	2.44	2.91	69.95	69.49	2.21
P-103B	I-103B	I-103	0.04	0.25	0.01	0.05	6.72	6.86	0.31	44	0.0050	10 inch	0.012	1.68	69.25	69.03	73.00	2.92	3.29	69.49	69.39	2.35
P-104	I-104	I-105	0.28	0.59	0.17	0.39	7.60	6.60	2.63	38	0.0150	15 inch	0.015	6.86	66.25	65.68	69.70	2.20	2.17	66.90	66.22	5.22
P-105	I-105	I-106	0.36	0.52	0.19	1.03	8.02	6.47	7.80	135	0.0040	21 inch	0.015	8.68	61.87	61.33	69.10	5.48	6.42	63.25	62.86	4.08
P-106	I-106	I-107	0.20	0.95	0.19	1.22	8.57	6.31	8.84	57	0.0040	21 inch	0.015	8.72	61.33	61.10	69.50	6.42	6.15	62.86	62.65	4.13
P-107	I-107	I-108	0.33	0.74	0.25	1.46	8.80	6.24	10.30	87	0.0040	21 inch	0.015	8.71	61.10	60.75	69.00	6.15	9.75	62.65	61.96	4.28
P-108	I-108	I-111				1.46	9.14	6.14	10.15	190	0.0033	24 inch	0.015	11.29	60.50	59.87	72.25	9.75	8.63	61.96	61.20	4.07
P-109	I-109	I-110	0.14	0.99	0.14	0.14	6.00	7.08	0.99	30	0.0100	12 inch	0.015	3.09	63.20	62.90	66.40	2.20	2.50	63.62	63.41	3.50
P-110	I-110	I-111	0.70	0.51	0.36	0.50	6.14	7.04	3.54	23	0.0100	15 inch	0.015	5.60	62.65	62.42	66.40	2.50	6.83	63.41	63.14	4.83
P-111	I-111	I-113				1.96	9.92	5.90	12.77	61	0.0033	27 inch	0.015	15.37	59.62	59.42	70.50	8.63	9.73	61.20	61.01	4.32
P-112	I-112	I-113	0.15	0.74	0.11	0.11	6.00	7.08	0.80	72	0.0151	12 inch	0.015	3.79	64.05	62.97	67.30	2.25	7.44	64.42	63.28	3.82
P-113	I-113	I-114	0.13	0.93	0.12	2.20	10.16	5.85	14.04	130	0.0038	27 inch	0.015	16.48	59.42	58.93	71.40	9.73	11.52	61.01	60.49	4.65
P-114	I-114	I-119	0.14	0.88	0.12	2.32	10.62	5.77	14.57	91	0.0041	27 inch	0.015	17.11	58.93	58.56	72.70	11.52	10.19	60.49	59.89	4.83
P-116	I-116	I-117	0.39	0.93	0.36	0.36	6.00	7.08	2.60	150	0.0050	18 inch	0.015	6.44	65.97	65.22	69.70	2.23	2.98	66.63	65.83	3.45
P-117	I-117	I-118	1.15	0.96	1.11	1.47	6.73	6.86	10.19	150	0.0060	27 inch	0.015	20.79	64.47	63.57	69.70	2.98	3.88	65.58	64.78	5.20
P-118	I-118	I-119	0.41	0.83	0.34	1.81	7.21	6.72	12.28	86	0.0094	27 inch	0.015	26.05	63.57	62.76	69.70	3.88	5.99	64.78	63.85	6.45
P-119	I-119	I-120	0.72	0.99	0.71	4.85	10.94	5.71	28.98	81	0.0050	24x38 inch	0.015	27.46	52.30	51.90	71.00	16.70	14.31	57.97	57.52	5.68
P-120	I-120	I-121A	1.22	0.95	1.16	6.01	11.17	5.67	35.41	44	0.0050	30 inch	0.015	25.13	51.90	51.68	68.20	13.81	5.08	57.52	57.08	7.21
P-121A	I-121A	HW-121	0.24	0.25	0.06	6.07	11.27	5.65	35.64	35	0.0050	30 inch	0.015	25.13	51.68	51.50	59.25	5.08	1.00	57.08	56.73	7.26
P-300	I-300	I-301	0.44	0.69	0.3	0.3	6.00	7.08	2.16	172	0.0100	15 inch	0.015	5.60	57.98	56.26	61.43	2.20	3.32	58.57	57.93	4.27
P-301	I-301	I-302	0.71	0.41	0.29	0.59	6.67	6.88	4.79	85	0.0100	15 inch	0.015	5.60	56.26	55.41	60.83	3.32	3.87	57.93	57.3	3.90
P-302	I-302	I-303	0.45	0.56	0.25	0.84	7.04	6.77	6.44	237	0.0021	19x30 inch	0.015	10.01	55.08	54.58	60.53	3.85	1.32	57.3	57.1	1.95
P-303	I-303	MH-304	0.24	0.25	0.06	0.9	9.06	6.16	6.29	288	0.002	19x30 inch	0.015	10.03	54.58	53.97	57.50	1.32	4.43	57.1	56.86	1.91
P-304	MH-304	MH-305	N/A	N/A	N/A	0.9	11.58	5.59	5.78	30	0.005	15 inch	0.015	7.92	53.97	53.82	60.00	4.78	4.83	56.86	56.78	2.35
P-305	MH-305	HW-306	N/A	N/A	N/A	0.9	11.79	5.55	5.74	55	0.0285	24 inch	0.015	33.12	53.07	51.50	59.90	4.83	1.00	56.78	56.73	1.83

Taylor Wiseman & Taylor
ENGINEERS | SURVEYORS | SCIENTISTS

Computational Table - Storm Sewer Design

Project: Woodcrest Station Business
County: Borough of Lawnside, Camden County, New Jersey

PROJ. #: 17854.1010.00
PROJ. Name: Woodcrest Station Business Park
BY: V.A.K.
DATE: 8/12/2020

STORM TABLE (Computed in StormCAD)

Label	Upstream Node	Downstream Node	Upstream Inlet Area (acres)	Upstream Inlet Rat. Coefficient	Upstream Inlet CA (acres)	Upstream Calculated System CA (acres)	System Flow Time (min)	System Intensity (in/hr)	Total System Flow (cfs)	Length (feet)	Constructed Slope (ft/ft)	Section Size	Mannings (n)	Full Capacity (cfs)	Upstream Invert Elevation (feet)	Downstream Invert Elevation (feet)	Upstream Ground Elevation (feet)	Upstream Cover (feet)	Downstream Cover (feet)	Hydraulic Grade Line In (feet)	Hydraulic Grade Line Out (feet)	Average Velocity (ft/s)
P-200	I-200	I-201	0.54	0.79	0.43	0.43	6.00	7.08	3.06	179	0.0045	18 inch	0.015	6.12	67.70	66.89	70.80	1.60	2.41	68.45	67.89	3.47
P-201	I-201	I-203	0.32	0.84	0.27	0.70	6.86	6.82	4.80	115	0.0045	18 inch	0.015	6.12	66.89	66.37	70.80	2.41	2.93	67.89	67.24	3.83
P-202	I-202	I-203	0.42	0.73	0.31	0.31	6.00	7.08	2.18	21	0.0081	15 inch	0.015	5.04	66.79	66.62	71.40	3.36	2.93	67.38	67.24	3.96
P-203	I-203	I-204	0.34	0.82	0.28	1.28	7.36	6.67	8.62	124	0.0035	24 inch	0.015	11.54	65.87	65.44	70.80	2.93	4.66	67.24	66.97	4.03
P-204	I-204	I-205	0.44	0.78	0.34	1.63	7.87	6.52	10.69	100	0.0035	24 inch	0.015	11.60	65.44	65.09	72.10	4.66	5.71	66.97	66.64	4.19
P-205	I-205	I-206	0.12	0.67	0.08	1.71	8.27	6.40	11.01	64	0.0034	24 inch	0.015	11.49	65.09	64.87	72.80	5.71	6.13	66.64	66.41	4.17
P-206	I-206	I-207	1.76	0.98	1.72	3.43	8.53	6.32	21.86	61	0.0070	27 inch	0.015	22.53	64.62	64.19	73.00	6.13	5.56	66.41	66.00	6.46
P-207	I-207	I-208	0.13	0.51	0.07	3.50	8.68	6.27	22.11	204	0.0070	27 inch	0.015	22.47	64.19	62.76	72.00	5.56	5.79	66.00	64.44	6.44
P-208	I-208	I-209	0.17	0.25	0.04	3.54	9.21	6.12	21.82	115	0.0080	27 inch	0.015	24.01	62.76	61.84	70.80	5.79	5.11	64.44	63.53	6.84
P-209	I-209	I-210	0.29	0.25	0.07	3.61	9.49	6.03	21.96	76	0.0080	27 inch	0.015	24.05	61.84	61.23	69.20	5.11	5.12	63.53	62.87	6.86
P-210	I-210	I-211	0.65	0.99	0.64	4.25	9.68	5.98	25.63	79	0.0070	30 inch	0.015	29.66	60.98	60.43	68.60	5.12	4.57	62.77	62.34	6.80
P-211	I-211	I-216	0.42	0.99	0.42	4.67	9.87	5.92	27.87	40	0.0070	30 inch	0.015	29.74	60.43	60.15	67.50	4.57	3.85	62.34	61.95	6.89
P-212	I-212	I-213	0.35	0.99	0.35	0.35	6.00	7.08	2.47	40	0.0060	15 inch	0.015	4.34	63.44	63.20	67.50	2.81	1.95	64.12	63.83	3.65
P-213	I-213	I-215	0.13	0.88	0.11	0.46	6.18	7.03	3.26	150	0.0050	18 inch	0.015	6.44	62.95	62.20	66.40	1.95	2.50	63.71	63.14	3.65
P-214	I-214	I-215	1.51	0.99	1.49	1.49	6.00	7.08	10.67	40	0.0050	24 inch	0.015	13.86	61.90	61.70	67.50	3.60	2.50	63.28	63.14	4.87
P-215	I-215	I-216	0.14	0.83	0.12	2.07	6.87	6.82	14.24	150	0.0070	24 inch	0.015	16.40	61.70	60.65	66.20	2.50	3.85	63.14	62.01	5.88
P-216	I-216	HW-217	0.22	0.92	0.20	6.95	9.97	5.89	41.23	43	0.0200	30 inch	0.015	50.27	52.36	51.50	66.50	11.64	1.00	57.31	56.73	8.39

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APPENDIX 7

SOIL BORING AND ASSOCIATED INFORMATION

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5 Valley Square, Suite 100, Blue Bell, PA 19422
267-956-1020 phone 267-956-1019 fax
www.taylorwiseman.com

SOIL LOG & PERMEAMETER TESTING RESULTS

Project Name: Lawnside
Test Pit #: TP-5
Location: See Plan
Ground Elevation: 54.7'

Project Number: 17854
Date: April 12, 2018
Soils Described by: J. DiFrank
Test Elevation: 52.2'

Site Information: Block 507, Lot 2 | Borough of Lawnside, Camden County, NJ

SOIL LOG

Bedrock Geology: Belleplain Member (Tkb)
Surficial Geology: Weathered Coastal Plan Formations (Qwcp)

DEPTH (in)	HORIZON	DESCRIPTION (USDA)
0 – 8	A	Top Soil, Root Layer
8 – 72	B	Strong Brown (7.5 YR 5/8), loamy sand, medium, subangular blocky structure, friable w/ weathered rock observed at 66".

Depth to Seasonal High Water Table: Not Encountered to 72"
Depth to Soil Saturation: Approximately 70"
Depth to Standing Water: Approximately 72"

PERMEAMETER TESTING RESULTS

Methodology Used to Obtain Soil Permeability: Undisturbed, Tube Permeameter Test
Sample Testing Depth: 30 inches
Calculated Soil Permeability Rate: 12.8 inches per hour

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SOIL LOG & PERMEAMETER TESTING RESULTS

Project Name: Lawnside
Test Pit #: TP-6
Location: See Plan
Ground Elevation: 61.2'

Project Number: 17854
Date: April 12, 2018
Soils Described by: J. DiFrank
Test Elevation: 52.2'

Site Information: Block 509, Lot 3 | Borough of Lawnside, Camden County, NJ

SOIL LOG

Bedrock Geology: Belleplain Member (Tkb)
Surficial Geology: Weathered Coastal Plan Formations (Qwcp)

DEPTH (in)	HORIZON	DESCRIPTION (USDA)
0 – 8	A	Top Soil, Root Layer
8 – 41	B	Brown (7.5 YR 4/2), silt loam, medium, subangular blocky structure, firm.
41 – 52	-	Dark Blueish Grey (GLEY 2 - 4/10 BG), silty clay loam, medium/coarse, subangular blocky structure, firm (marl).
52 – 130	B	Strong Brown (7.5 YR 5/8), sandy loam, medium, subangular blocky structure, firm.

*Perched water observed above marl (silty clay loam layer).

Depth to Seasonal High Water Table:	Not Encountered to 130"
Depth to Soil Saturation:	Not Encountered to 130"
Depth to Standing Water:	Not Encountered to 130"

PERMEAMETER TESTING RESULTS

Methodology Used to Obtain Soil Permeability:	Undisturbed, Tube Permeameter Test
Sample Testing Depth:	108 inches
Calculated Soil Permeability Rate:	14.9 inches per hour

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SOIL LOG & PERMEAMETER TESTING RESULTS

Project Name: Lawnside
Test Pit #: TP-7
Location: See Plan
Ground Elevation: 60 8'

Project Number: 17854
Date: April 12, 2018
Soils Described by: J. DiFrank
Test Elevation: 59.8'

Site Information: Block 509, Lot 3 | Borough of Lawnside, Camden County, NJ

SOIL LOG

Bedrock Geology: Belleplain Member (Tkb)
Surficial Geology: Weathered Coastal Plan Formations (Qwcp)

DEPTH (in)	HORIZON	DESCRIPTION (USDA)
0 – 8	A	Top Soil, Root Layer
8 – 36	B	Brown (7.5 YR 4/2), silt loam, medium, subangular blocky structure, firm.
36 – 42	B	Dark Blueish Grey (GLEY 2 - 4/10 BG), silty clay loam, medium/coarse, subangular blocky structure, firm (marl).

*Test pit could be advanced below 42" due to water filing the excavation.

Depth to Seasonal High Water Table: Not Encountered to 42"
Depth to Soil Saturation: Approximately 30"
Depth to Standing Water: Approximately 36"

PERMEAMETER TESTING RESULTS

Methodology Used to Obtain Soil Permeability: Undisturbed, Tube Permeameter Test
Sample Testing Depth: 12 inches
Calculated Soil Permeability Rate: 14.6 inches per hour

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SOIL LOG & PERMEAMETER TESTING RESULTS

Project Name: Lawnside
Test Pit #: TP-8
Location: See Plan
Ground Elevation: 60.6'

Project Number: 17854
Date: April 12, 2018
Soils Described by: J. DiFrank
Test Elevation: 52.1'

Site Information: Block 509, Lot 3 | Borough of Lawnside, Camden County, NJ

SOIL LOG

Bedrock Geology: Belleplain Member (Tkb)
Surficial Geology: Weathered Coastal Plan Formations (Qwcp)

DEPTH (in)	HORIZON	DESCRIPTION (USDA)
0 – 10	A	Top Soil, Root Layer
10 – 48	B	Very Dark Brown (7.5 YR 3/2), loamy sand, fine to medium, subangular blocky structure, friable.
48 – 136	B	Brownish Yellow (10 YR 6/8), loamy sand, fine, subangular blocky structure, friable.

Depth to Seasonal High Water Table: Not Encountered to 136"
Depth to Soil Saturation: Not Encountered to 136"
Depth to Standing Water: Not Encountered to 136"

PERMEAMETER TESTING RESULTS

Methodology Used to Obtain Soil Permeability: Undisturbed, Tube Permeameter Test
Sample Testing Depth: 102 inches
Calculated Soil Permeability Rate: 25.3 inches per hour

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SOIL LOG & PERMEAMETER TESTING RESULTS

Project Name: Lawnside
Test Pit #: TP-9
Location: See Plan
Ground Elevation: 59.7'

Project Number: 17854
Date: April 12, 2018
Soils Described by: J. DiFrank
Test Elevation: 50.7'

Site Information: Block 510, Lot 16 | Borough of Lawnside, Camden County, NJ

SOIL LOG

Bedrock Geology: Belleplain Member (Tkb)
Surficial Geology: Weathered Coastal Plan Formations (Qwcp)

DEPTH (in)	HORIZON	DESCRIPTION (USDA)
0 – 20	A	Top Soil, Root Layer
20 – 36	B	Very Dark Brown (7.5 YR 3/2), loamy sand, fine to medium, subangular blocky structure, friable.
36 – 67	B	Dark Greenish Grey (GLEY 1 - 4/10Y), silty loam, fine, subangular blocky structure, firm.
67 – 144	B	Very Dark Brown (7.5 YR 3/2), loamy sand, fine, subangular blocky structure, friable. Moist at 144".

Depth to Seasonal High Water Table: Not Encountered to 144"
Depth to Soil Saturation: Approximately 144"
Depth to Standing Water: Not Encountered to 144"

PERMEAMETER TESTING RESULTS

Methodology Used to Obtain Soil Permeability: Undisturbed, Tube Permeameter Test
Sample Testing Depth: 108 inches
Calculated Soil Permeability Rate: 23.2 inches per hour

APPENDIX 8

LOW IMPACT DEVELOPMENT CHECKLIST

New Jersey Stormwater Best Management Practices Manual

February 2004

APPENDIX A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: Borough of Lawnside

County: Camden Date: July 20, 2018

Review board or agency: Borough of Lawnside Planning Board

Proposed land development name: Woodcrest Station Business Park

Lot(s): Proposed Lot 1 Block(s): Proposed Block 601

Project or application number: Taylor Wiseman & Taylor Project #17854.1010.00

Applicant's name: Vineland Construction Co.

Applicant's address: 228 West Landis Avenue, Suite 300, P.O. Box 1517, Vineland, New Jersey 08362

Telephone: (856) 794-4706 Fax: (856) 794-4721

Email address: Timothy.France@VinelandConstruction.com

Designer's name: Edward P. Brady, P.E. --- Taylor Wiseman & Taylor

Designer's address: 124 Gaither Drive, Suite 150, Mt. Laurel, New Jersey 08054

Telephone: (856) 235-7200 Fax: (856) 722-9250

Email address: brady@taylorwiseman.com

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

The site which will be developed currently contains several heavily compacted dirt travel ways between Charleston Avenue and East Oak Avenue. The project site consists of several block and lots and will be consolidated as one lot under proposed conditions via major subdivision being submitted concurrently with this site plan. The site lie within Redevelopment Area 2 to allow flex/office planning under approved Borough of Lawnside Ordinance No. 01-2018. The proposed project will consist of constructing two (2) warehouse buildings, parking, drive lanes and an access drive between Charleston Avenue and East Oak Avenue, while leaving approximately 10.9± acres undisturbed.

The amount of impervious coverage on the site has been limited to the maximum extent possible. The parking on-site has been limited based on the the Borough's Ordinance for allowable amount. Additionally, the maximum impervious coverage permitted within the site is 80%, while the project only proposes 37.8%. The design of the site focuses on minimizing the land disturbance to the maximum extent by using 3:1 side slopes to tie back into existing surface to reduce the amount of land grading.

The decrease in the 'time of concentration' (Tc) was limited by providing mild slopes throughout the development. A maximum 3:1 slopes were used within the basin area and at the edge of the parking to tie back into existing grades. Additionally, the stormwater management basin has been designed as an extended basin to increase the water quality benefits.

Areas not covered by drive aisles, parking or building will be re-vegetated with grasses and landscaping.

Although groundwater recharge is not required for this site, since it falls within the PA1 Planning Area, the proposed infiltration/detention basin has been designed to retain and infiltrate the entire water quality storm to promote water quality and groundwater recharge for the entire site. Additionally, every inlet utilized in this design is in compliance with the NJPDES storm drain inlet criteria for the removal of large debris.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

N.J.A.C. 7:8 --- Date last amended June 20, 2016

Do regulations include nonstructural requirements? Yes: _____ No: X

If yes, briefly describe: _____

List LID-BMPs prohibited by local regulations: _____

Pre-design meeting held? Yes: _____ Date: _____ No: X

Meeting held with: _____

Pre-design site walk held? Yes: _____ Date: _____ No: X

Site walk held with: _____

Other agencies with stormwater review jurisdiction:

Name: Camden County Planning Board

Required approval: Planning Board Approval

Name: Camden County Soil Conservation District

Required approval: SESC Certification

Name: New Jersey Department of Environmental Protection

Required approval: IP for a stormwater outfall structure

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: _____ No: X

If yes, was this inventory a factor in the site's layout and design? Yes: _____ No: _____

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: X No: _____ If yes, specify % of site: 42%

Native ground cover? Yes: X No: _____ If yes, specify % of site: 42%

Vegetated buffers? Yes: X No: _____ If yes, specify % of site: 42%

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: X If yes, specify % of site: _____

Native ground cover? Yes: _____ No: X If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: X If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions:

Reduce runoff volume increases through lower runoff coefficient: Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment: Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas: Yes: _____ No: _____

3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed? Yes: X No: _____

If yes, were these inventories factors in the site's layout and design? Yes: X No: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners? Yes: X No: _____

If yes, how: Heavy wooded area onsite located on the eastern portion of the site, as well as freshwater wetlands and wetlands buffers.

Restrict temporary site disturbance during construction? Yes: X No: _____

If yes, how: Silt Fence and Reinforced Silt Fence

Consider soils and slopes in selecting disturbance limits? Yes: X No: _____

If yes, how: Wetlands soils were avoided as part of this design except where the basin outflow pipe discharges.

C. Specify percentage of site to be cleared: 58% Regraded: 58%

D. Specify percentage of cleared areas done so for buildings: 21.5%

For driveways and parking: 30.4% For roadways: 6%

For lawn and basin: 42.1%

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above?

Reducing the square footage of the proposed building, the number of parking stalls and associated drive aisles would reduce the percentages.

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: _____ HSG B: 74.4% HSG C: 25.6% HSG D: _____

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: _____ HSG B: 56.7% HSG C: 67.9% HSG D: _____

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

Majority of the site falls within HSG B. An infiltration/detention basin has been incorporated into the design to retain and infiltrate the entire water quality volume generate from the proposed impervious surface to promote groundwater recharge within the site.

I. Does the site include Karst topography? Yes: _____ No: X

If yes, discuss measures taken to limit Karst impacts:

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: 3% Proposed: 37.8%

B. Specify maximum site impervious coverage allowed by regulations: 80%

C. Compare proposed street cartway widths with those required by regulations:

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity		
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane	Varies between 24', 30' and 36'	28'
Minor collector – with two parking lanes		
Minor collector – without parking		
Major collector		

D. Compare proposed parking space dimensions with those required by regulations:

Proposed: 9' x 18' Regulations: 9' x 18'

E. Compare proposed number of parking spaces with those required by regulations:

Proposed: 213 Regulations: 213

F. Specify percentage of total site impervious cover created by buildings: 35.9%

By driveways and parking: 54.1% By roadways: 10%

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

Using gravel surface for the parking lot.

H. Specify percentage of total impervious area that will be unconnected:

Total site: 0% Buildings: 0% Driveways and parking: 0% Roads: N/A

I. Specify percentage of total impervious area that will be porous:

Total site: 0% Buildings: 0% Driveways and parking: 0% Roads: N/A

J. Specify percentage of total building roof area that will be vegetated: 0%

K. Specify percentage of total parking area located beneath buildings: 0%

L. Specify percentage of total parking located within multi-level parking deck: 0%

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: 92.8% Vegetated swale: _____ Natural channel: _____

Stormwater management facility: 7.2% Other: _____

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

The requirement of curbed drive aisles and sidewalks as per the Borough's Ordinance eliminate the use of swales.

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: By reducing the slopes and tie in closer to the property lines.

Increase overland flow roughness: Using gravel rather than asphalt in parking areas and drive aisles.

Using meadow-grass rather than lawn-grass would also maximize overland roughness.

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: 2

Specify the spacing between the trash receptacles: N/A

Compare trash receptacles proposed with those required by regulations:

Proposed: 2 Regulations: 2

B. Pet Waste Stations

Specify the number of pet waste stations provided: N/A

Specify the spacing between the pet waste stations: N/A

Compare pet waste stations proposed with those required by regulations:

Proposed: N/A Regulations: N/A

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: 100%

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: Unknown Regulations: Unknown

Litter collection: Proposed: Weekly Regulations: Weekly

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

Type 'N-Eco' curb pieces have been provided on all curb inlets which will prevent trash from entering the system. Additionally, a trash rack has been provided on the outlet structure to prevent large debris from entering downstream waterways.

E. Prevention and Containment of Spills N/A

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	X	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.	X	
3.	Maximize the protection of natural drainage features and vegetation.	X	
4.	Minimize the decrease in the pre-construction time of concentration.	X	
5.	Minimize land disturbance including clearing and grading.	X	
6.	Minimize soil compaction.	X	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	X	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.	X	
9.	Provide preventative source controls.	X	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

N/A

APPENDIX 9

DRAINAGE AREA MAPS

APPENDIX 10

GROUNDWATER MOUNDING ANALYSIS

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
25.6000	*R*	**Recharge (infiltration) rate (feet/day)**
0.260	Sy	**Specific yield, Sy (dimensionless, between 0 and 1)**
256.00	K	**Horizontal hydraulic conductivity, Kh (feet/day)***
145.000	x	**1/2 length of basin (x direction, in feet)**
70.000	y	**1/2 width of basin (y direction, in feet)**
0.049	t	**duration of infiltration period (days)**
48.900	hi(0)	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

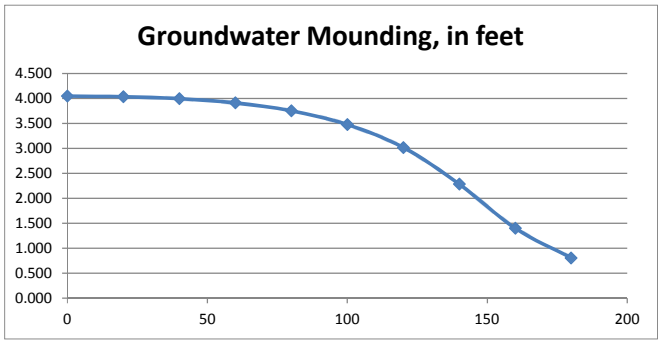
hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

52.949	h(max)	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
4.049	Δh(max)	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.049	0
4.038	20
3.998	40
3.913	60
3.755	80
3.479	100
3.018	120
2.287	140
1.402	160
0.808	180

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.