Stormwater Management Report
Property of Village Apartments, LLC
15 Jerome Avenue, 82 Jerome Road And 232 Route 32
Uncasville-Montville, Connecticut

March 11, 2021

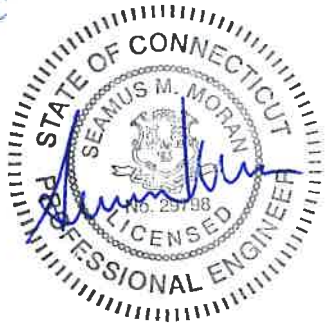
Prepared for:

Village Apartments, LLC and

Connecticut Multifamily Equities II, LLC

1099 North Street

White Plains, NY 10605



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TECHNICAL APPENDIX

1.0 INTRODUCTION

Village Apartments, LLC proposes to construct three new multi-family apartment buildings at the existing Village Apartments complex located 232 Norwich-New London Turnpike, 82 Jerome Road and 15 Jerome Avenue in Uncasville-Montville, CT, as shown on Figure 1 – Site Location Map. The project includes construction of retaining walls, new parking areas, a new storm drainage system with underground detention/infiltration systems and a bioretention basin and the extension of new electric, cable TV, telephone and water and sewer utilities to the buildings.

This report presents the basis of the project hydrologic and hydraulic analysis of the site, the design for the new site drainage systems, and Best Management Practices (BMPs) incorporated into the site design to mitigate peak rates of runoff and treat stormwater in accordance with the 2004 CTDEEP Stormwater Quality Manual (SQM).

2.0 EXISTING CONDITIONS

The 12.02-acre parcel of property is bordered by residential development to the north, south and west along Jerome Avenue and Jerome Road and residential and commercial development to the east along Norwich-New London Turnpike (CT RT 32). Existing site improvements include two three-story apartment buildings and associated parking areas and a house that will be demolished. The site exhibits steep topography extending from the northeast portion of the property down to gently sloped terraces along an unnamed watercourse and adjacent wetlands and the residential properties along Jerome Avenue. The inland wetlands drain northerly into Oxoboxo Brook, a tributary of the Thames River.

Per the CTDEEP Water Quality Classification Maps, groundwater at the site is classified as GA, defined as groundwater suitable for private and potential public supplies of drinking water without treatment, and as base flow for hydraulically-connected surface water bodies. Groundwater at the site is also classified as GAA defined as groundwater suitable for existing or potential public drinking water supply without treatment. This designation is likely the result of a former public water supply system that serviced Village Apartments.

The site is located in FEMA Flood Hazard Zone ‘AE’ and ‘X’ per the Flood Insurance Rate Map (FIRM) New London County, Connecticut All Jurisdictions Panel 361 of 554, Community-Panel Number 09011C 0361J, map revised August 5, 2013 (See Figure 2 – FIRMette).

Per the soil survey for New London County, soils at the site consist of Charlton-Chatfield-Rock Outcrop soil (Hydrologic Soil Group D) at the higher elevations of the site, well drained Hinckley loamy sand (Hydrologic Soil Group A) along the lower elevations of the site and

Timakwa and Natchaug soils, (Hydrologic Soil Group B/D) along the wetlands. A geotechnical investigation of the site confirmed these classifications.

At the location of the stormwater management facilities along the lower elevations of the site, test pits indicated up to 40" of medium sand underlain by 30 inches of coarse sand and gravel. Laboratory testing of undisturbed soil samples from the test pits located at the stormwater management facilities indicated a permeability of the sandy soils of approximately 60 ft/day (see Technical Appendix).

3.0 PURPOSE OF REPORT

As noted, this report presents the basis of design for stormwater management including drainage and stormwater treatment. The report demonstrates that the development:

- Does not increase peak rates of runoff from watersheds encompassing the new buildings and parking areas.
- Does not degrade the quality of receiving groundwater, wetlands or watercourses.
- Complies with the CTDEEP General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit).

4.0 BASIS OF DESIGN

The layout, grading and drainage design for the project are shown on the Site Development Plans. The basis of the grading and drainage design is as follows:

1. Rainfall data is from the National Weather Service NOAA Atlas 14, Volume 10, Version 3.

2. Drainage systems are designed to meet the greatest extent practical water quality and peak rate of runoff goals established in the CTDEEP Stormwater Quality Manual (SQM).

3. Building roof drainage systems are designed to convey runoff from a 100-year storm event and the parking lot drainage system is designed for a 25-year event. The drainage system for the new access road off of Jerome Avenue is designed for a 25-year event for conveyance and a 100-year event for gutter flow with minor bypass flow discharging to Jerome Avenue.

4. Low Impact Design (LID) features include infiltration of the Water Quality Volume (WQV) and Groundwater Recharge Volume where feasible (see Technical Appendix).

5. Stormwater treatment Best Management Practices (BMP) are designed to remove pollutants, such as nutrients, solids, metals, pathogens, pesticides and hydrocarbons from stormwater runoff and to reduce temperatures of runoff from paved surfaces during hot weather.

6. BMPs for this project include deep sumps on catch basins, a bioretention basin, underground infiltration/detention systems with isolator rows and Contech CDS stormwater pre-treatment units.

7. The bioretention basin is a primary treatment practice that provides 80% reduction of TSS and removes pollutants such as phosphorus, nitrogen, metals and pathogens via physical straining, adsorption of pollutants onto soil particles, microbial breakdown and plant uptake. A Contech CDS unit is used in place of a sediment forebay to remove sediments reducing TSS.

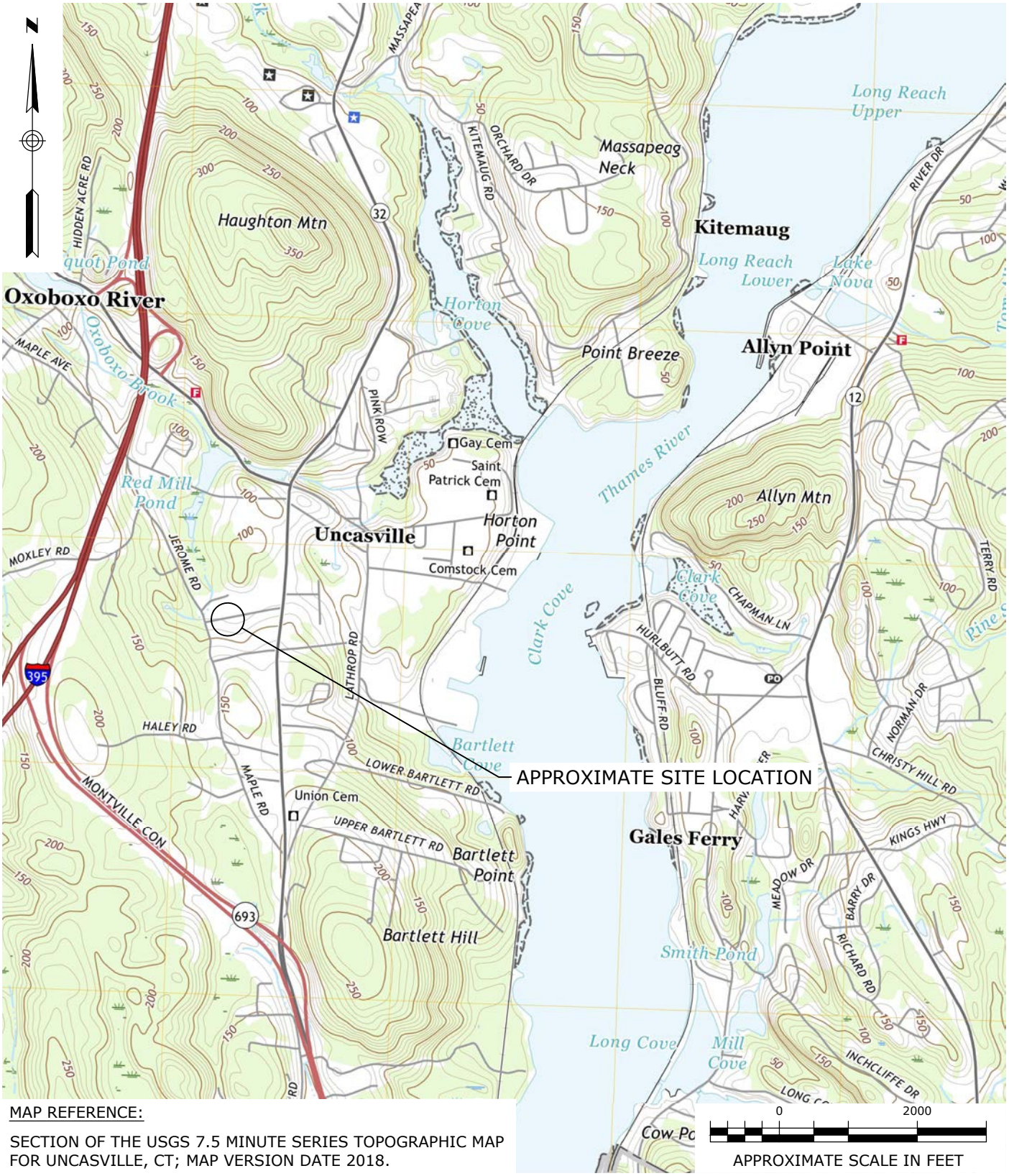
8. Guidance regarding the bioretention basin design soil mix is provided in the Rhode Island Stormwater Design and Installation Standards Manual which specifies USDA loamy sand to sandy loam classification with the 85- 88% sand, 8-12% silt, 0-2% clay and 3-5% organic matter (leaf compost) with a design permeability of 1.0 in/hr. The design permeability used to model exfiltration at the bioretention basins is 1.0 in/hr.

9. The bioretention basin is designed to contain the 100-year storm event with 1.0' of freeboard and no overflow onto Jerome Avenue (see Stormwater BMPs – Stage and Storage Summaries, Technical Appendix).

10. The underground infiltration/detention systems are secondary treatment practices which, in combination with the Contech CDS units, provide 80% reduction of TSS and remove pollutants such as free oils and nutrients adsorbed onto soil particles. The system chambers are sized to infiltrate the WQV and mitigate post-development discharges (see Stormwater BMPs – Stage and Storage Summaries, Technical Appendix).

11. Except for the area encompassing the existing Building 1 roof and parking lot, infiltration of 100% of the WQV for the remaining site area will be achieved via the underground detention/infiltration systems and the bioretention basin. The permeability of the soils underlying were measured via laboratory testing of soil samples (see Soil Permeability Test Results, Technical Appendix) and reduced by a safety factor of 2.0 per the SQM. Design infiltration rates of 9.8 (TP-7), 21.5 (TP-6) and 5.0 in/hr (TP-17) were used for underground detention/Infiltration systems 1, 2 and 3 respectively.

12. Rip-rap aprons are located at all stormwater outlets to reduce velocities and have been sized for the 25-year storm event. The aprons are designed in accordance with State of Connecticut Department of Transportation Drainage Manual, dated October 2000 (Technical Appendix).



MAP REFERENCE:

SECTION OF THE USGS 7.5 MINUTE SERIES TOPOGRAPHIC MAP FOR UNCASVILLE, CT; MAP VERSION DATE 2018.

APPROXIMATE SCALE IN FEET

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DRAINAGE REPORT
FIGURE 1
SITE LOCATION MAP

SCALE
1" = 2,000'±

VILLAGE APARTMENTS PHASE - III
JEROME RD & JEROME AVE, UNCASVILLE - MONTVILLE, CT

COMM. NO.
88VA9.01

PREPARED FOR:
VILLAGE APARTMENTS LLC
1099 NORTH STREET, WHITE PLAINS, NY

DATE
3/11/2021

1

V:\CT\MONTVILLE\JEROME RD-00\E&S PHASE III\DWGS\FIGURES\FIGURE 1 - SITE LOCATION MAP.DWG Tab: FIGURE 1 Saved: 1/6/2022 9:20 AM Plotted: 1/6/2022 9:20 AM

National Flood Hazard Layer FIRMette

FEMA

72°7'6"W 41°26'8"N

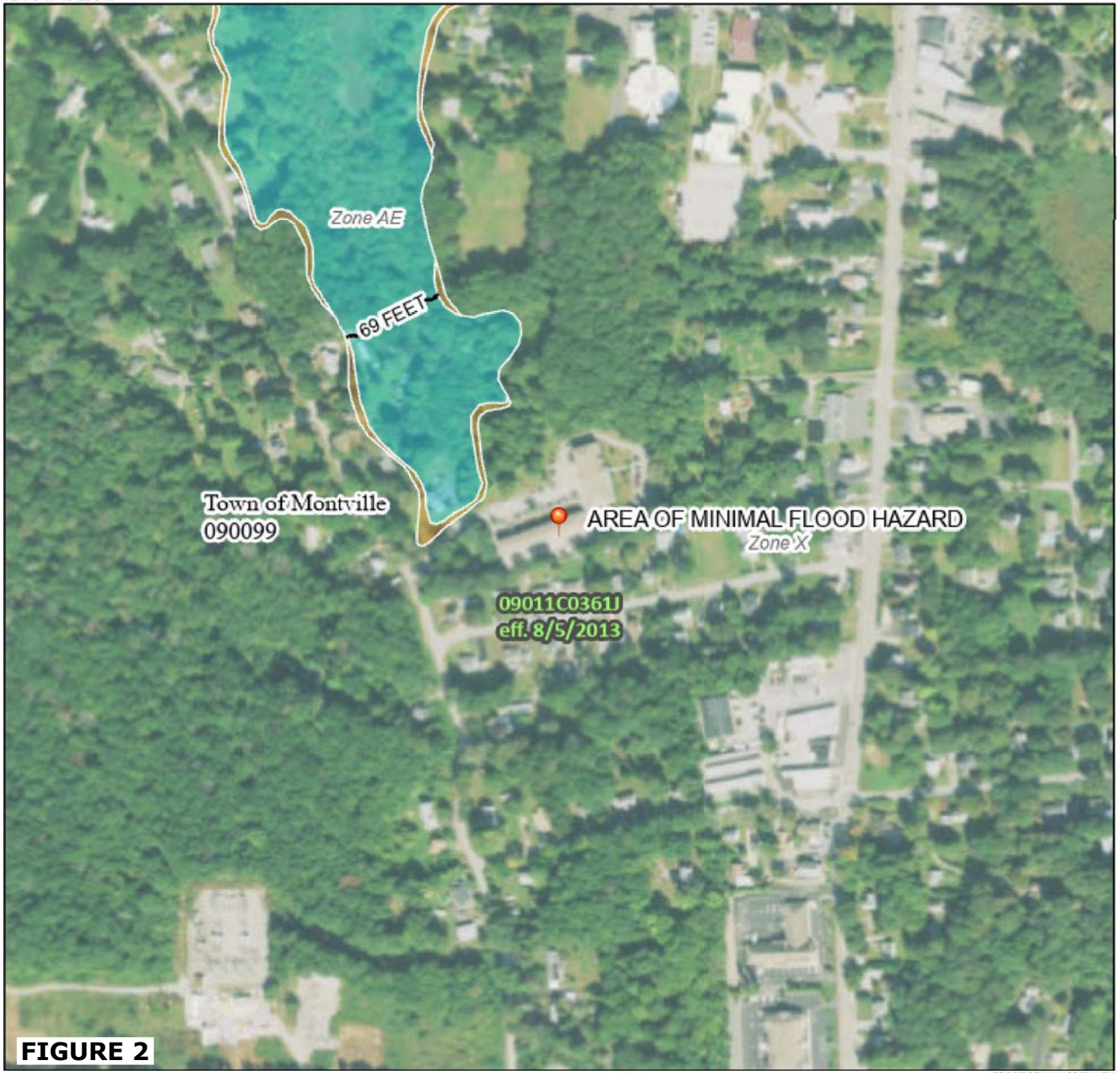

FIGURE 2

72°6'28"W 41°25'41"N

0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/2/2021 at 5:04 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

5.0 HYDROLOGIC AND HYDRAULIC METHODS

Hydrologic and hydraulic analysis was completed in accordance with the Connecticut Department of Transportation Hydraulics and Drainage Manual using the following methods:

1. Pre and post-development hydrology were modeled using the HydroCAD computer program and the NRCS-Curve Number (CN) Method.

2. The design of drainage pipes was completed using the StormCAD computer program with the sub-catchment discharges to each inlet were estimated using the Rational Method or from the results of the HydroCAD model.

Output data from all computer analysis and design are provided in the Technical Appendix.

6.0 STORMWATER MANAGEMENT

Site improvements will increase impervious areas and the rate and volume of stormwater runoff from developed portions of the property. Hydrologic analysis of pre and post-development conditions was completed to assess these increases and to design mitigation measures to reduce post-development discharges as follows.

Existing Condition Drainage Areas and Analysis Points

The site is located at the top of a watershed and the property encompasses five sub-watershed areas that drain east, west and south as shown on the Figure 3 – Existing Conditions Watershed Area Map (Map Pocket) and described as follows:

- **DA1**: Approximately 4.05 acres in the northern portion of the property exhibiting steep to moderately sloped wooded upland with some grassed areas that drains west toward the wetlands and watercourse.

  Analysis Point #1: the eastern edge of the wetland to which runoff from DA1 discharges.

- **DA2**: Approximately 3.26 acres in the southwestern portion of the site comprised of moderately sloped wooded upland, the driveway from Jerome Road, Buildings 1 and 2 paved parking and adjacent grass area and the building roofs that drains either to an existing drainage system discharging to the wetlands or directly to the wetland via sheet flow.

  Analysis Point #2: the outlet of the 36” RCP driveway culvert to which DA2 discharges.

  For analysis purposes the DA2 is assumed to discharge at the 36” culvert and Analysis Points #1 and #2 are combined to model the total discharge to the wetland bordering the development.

- **DA3**: Approximately 2.65 acres in the eastern portion of the property that exhibits moderately sloped wooded upland, grass areas, small areas of pavement and building roofs that drain southeast towards abutting property.

  Analysis Point #3: the southeastern property boundary to which DA3 discharges.

- **DA4**: Approximately 0.17 acres in the eastern corner of the property of pavement comprised of woods and grass that drains onto the abutting property.

  Analysis Point #4: the east property boundary to which DA4 discharges.

- **DA5**: Approximately 1.08 acres in the southern portion of the property fronting Jerome Avenue, and a portion of the abutting properties along Jerome Avenue comprised of woods, grassed areas and building roofs that drain south to Jerome Avenue.

  Analysis Point #5: the south property boundary fronting Jerome Avenue to which DA5 drains.

  Modeling results for these subarea watersheds are provided in Figure 5 – Stormwater Summary and the hydrologic and hydraulic modeling parameters are provided in the HydroCAD printouts (Technical Appendix).

Proposed Condition Drainage Areas and Analysis Points

The proposed development results in the modification of some drainage areas and conversion of woods to approximately 3.5 acres of impervious building roof, paved parking lot and roadway surfaces with 2.0 acres of lawn. These conditions are shown on Figure 4 – Post-Development Drainage Area Map, and described as follows:

DA1: For analysis purposes the proposed condition DA1 was subdivide into 3 subareas.

- **DA1.1**: Approximately 2.03 acres of uncontrolled wooded upland and new lawn areas that drain west to the wetlands.

- **DA1.2**: Approximately 3.06 acres of controlled wooded upland, paved parking, building roofs and lawn that drains to a new drainage system and underground detention/infiltration system 2.

- **DA1.3**: Approximately 0.42 acres of controlled paved parking and lawn areas that drains to a new drainage system and underground detention/infiltration system 3.

  The hydrographs from these subareas are routed through the underground infiltration/detention systems and outflow hydrographs are combined at Link AP1 at Analysis Point #1 with subsequent discharge to wetland Link WL.

DA2: For analysis purposes the proposed condition DA2 was subdivide into 2 subareas.

- **DA2.1**: Approximately 0.83 acres of controlled paved parking, building roofs and lawn that drains to a new drainage system and underground detention/infiltration system 3.

- **DA2.2** – Approximately 1.42 acres portion of uncontrolled woods, the Building 1 roof and associated paved parking and lawn that drains to the wetland at the outlet of the existing 36" RCP culvert.

  The hydrographs from DA2.1 are routed through the underground infiltration/detention systems and the outflow hydrographs are combined with the DA1 hydrographs at Link AP1, Analysis Point #1 with subsequent discharge to wetland Link 6L.

  The hydrographs from DA2.2 discharge to Link AP2, Analysis Point #2 with subsequent discharge to wetland Link WL.

DA3: For analysis purposes the proposed condition DA3 was subdivide into 3 subareas.

- **DA3.1**: Approximately 1.01 acres of controlled portions of existing drainage areas DA3 and DA4 comprised of upland, lawn and existing paved driveway that drains to a new drainage system and underground detention/infiltration system 1.
- **DA3.2**: Approximately 0.15 acres of uncontrolled lawn area that drains onto abutting property.
- **DA3.3**: Approximately 0.82 acres controlled paved parking and lawn area that drains to a new drainage system and underground detention/infiltration system 1.
- **DA3.4**: Approximately 0.60 acres of controlled paved parking and lawn area that drains to a new drainage system and underground detention/infiltration system 2.

  The hydrographs from DA3.1 and DA3.3 are routed through the underground infiltration/detention system and the outflow hydrographs are combined at the bioretention basin Node B1, with subsequent discharge to Link AP5, Analysis Point #5 at Jerome Avenue.

  The hydrographs from DA3.4 discharges to Link AP3, Analysis Point #3.

DA4: Approximately 0.03-acre uncontrolled portion of lawn that drains onto the abutting property at Link AP4, Analysis Point #4.

DA5: For analysis purposes the proposed condition DA5 was subdivide into 2 subareas.

- **DA5.1**: Approximately 0.92 acres of controlled paved parking, driveway and lawn that drains to new drainage systems and the bioretention basin.
- **DA5.2**: Approximately 0.07 acres of uncontrolled portion of new paved drive and adjacent lawn area that drains to Jerome Avenue.

  The hydrographs from DA5.1 are routed through the bioretention basin with subsequent discharge to Link AP5, Analysis Point #5 at Jerome Avenue.

  The hydrographs from DA5.2 discharges to Link AP5, Analysis Point #5.

Modeling results for these subarea watersheds are provided in Figure 5 – Stormwater Summary and the hydrologic and hydraulic modeling parameters are provided in the HydroCAD printouts (Technical Appendix). The results indicate a reduction in post development discharges for all watersheds and all storm events equal to or less than pre-development conditions.

Stormdrain System Outlet Locations

Two new storm drain outlets are proposed as shown on the Site Development Plan.

A new onsite outfall is proposed to replace the existing site storm drain outfall that discharges to the wetland/watercourse. The new outfall is a 24" HDPE with a flared end-section and riprap apron located in the vicinity of wetland flag WF #18.

The new outlet at Jerome Avenue consists of a new 12" HDPE extending from the bioretention basin outlet control structure to an existing catch basin just west of the new driveway into the site.

Pre-treatment will be provided prior to each underground detention/infiltration systems in the form of a Contech CDS hydrodynamic separator, as noted in section 4.0 Basis of Design.

A summary of the stage and storage volume for the bioretention basin and each of the underground detention/infiltration systems is shown in the Technical Appendix.

7.0 MS4 GENERAL PERMIT

In accordance with the MS4 General Permit the town has implemented a stormwater management plan intended to reduce the discharge of pollutants from municipal storm sewers. The plan requires that new developments be designed to reduce runoff and pollutant discharges to the maximum extent practical and to control construction site stormwater runoff in accordance with the CTDEEP General Permit for the Discharge of Construction and Dewatering Wastewaters.

For this project the General Permit requires that new developments meet the runoff reduction standards in the CTDEEP SQM and to retain the entire WQV for the entire 12.02-acre site to the greatest extent achievable. As previously noted runoff reduction has been met and, except for subarea DA2.2 (1.4 acres) encompassing the existing Building 1 roof and parking lot, 100% retention the WQV for the remaining 10.6 acre site area has been met.

PEAK RATE OF RUNOFF (CFS) SUMMARY

STORM FREQUENCY	WETLANDS - ANALYSIS POINTS #1 AND #2			ANALYSIS POINT #3		
	EXISTING	PROPOSED	CHANGE	EXISTING	PROPOSED	CHANGE
2 YEAR	2.93	2.62	-0.31	0.01	0.00	-0.01
10 YEAR	6.21	5.59	-0.62	0.19	0.01	-0.18
25 YEAR	8.96	8.23	-0.73	0.53	0.03	-0.5
100 YEAR	14.00	13.83	-0.17	1.36	0.12	-1.24

STORM FREQUENCY	ANALYSIS POINT #4			ANALYSIS POINT #5		
	EXISTING	PROPOSED	CHANGE	EXISTING	PROPOSED	CHANGE
2 YEAR	0.02	0.00	-0.02	0.01	0.00	-0.01
10 YEAR	0.16	0.00	-0.16	0.14	0.10	-0.04
25 YEAR	0.28	0.01	-0.27	0.34	0.31	-0.03
100 YEAR	0.50	0.02	-0.48	0.79	0.74	-0.05

RUNOFF VOLUME (ACRE-FEET) SUMMARY

STORM FREQUENCY	WETLANDS - ANALYSIS POINTS #1 AND #2			ANALYSIS POINT #3		
	EXISTING	PROPOSED	CHANGE	EXISTING	PROPOSED	CHANGE
2 YEAR	0.384	0.199	-0.185	0.007	0.000	-0.007
10 YEAR	0.862	0.545	-0.317	0.076	0.003	-0.073
25 YEAR	1.222	0.828	-0.394	0.147	0.006	-0.141
100 YEAR	1.850	1.349	-0.501	0.292	0.013	-0.279

STORM FREQUENCY	ANALYSIS POINT #4			ANALYSIS POINT #5		
	EXISTING	PROPOSED	CHANGE	EXISTING	PROPOSED	CHANGE
2 YEAR	0.004	0.000	-0.004	0.006	0.001	-0.005
10 YEAR	0.014	0.001	-0.013	0.039	0.024	-0.015
25 YEAR	0.022	0.001	-0.021	0.072	0.090	0.018
100 YEAR	0.036	0.003	-0.033	0.136	0.238	0.103

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DRAINAGE REPORT
FIGURE 5 - STORMWATER SUMMARY - STORMWATER RUNOFF

VILLAGE APARTMENTS PHASE - III
JEROME RD & JEROME AVE, UNCASVILLE - MONTVILLE, CT
PREPARED FOR:
VILLAGE APARTMENTS LLC
1099 NORTH STREET, WHITE PLAINS, NY

SCALE **N.T.S.**
COMM. NO. **88VA9.01**
DATE **3/11/2021**

5

8.0 SOURCE CONTROL AND POLLUTION PREVENTION MAINTENANCE AND OPERATION

Source control and pollution prevention practices for this project are intended to eliminate the generation of pollutants at their source, reduce the types and concentration of pollutants in stormwater runoff and to assure that the BMPs continue to function to remove oil and grease and TSS. The site property managers will be responsible for maintaining the stormwater management system and the goal of this section is to inform managers about system operations.

The following maintenance and operation measures are recommended for source control.

Parking Lots

Parking lots will be swept, at a minimum, in the spring to remove winter accumulations of road sand.

Landscaping

Normal landscaping maintenance shall consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

Trees will be fertilized no more than once in the spring with an organic fertilizer. Shrubs and lawn will be fertilized with an organic slow-release fertilizer each spring. Liming of lawn areas to control pH will also be done in the spring if soil testing indicates that it is necessary.

Pesticides will only be used as a control method when a problem has been clearly identified and other natural control methods are not successful. All pesticide applications shall be by licensed applicators, where necessary.

Trash Collection

Trash receptacles service the facility and a dumpster exists on-site. The pickup of trash will occur on a regular basis and all trash will be disposed of legally off-site.

Outdoor Storage

There will be no outdoor storage of hazardous chemicals, fertilizer, pesticides, or herbicides anywhere on site.

Snow Removal & Storage

Snow shall be shoveled and plowed from sidewalk and parking areas as soon as practical during and after winter storms and deposited in snow storage areas on the site or removed.

Catch Basins and Manholes

A Connecticut-Licensed hauler shall pump the sumps of onsite catch basins and manholes, and shall dispose of the sand legally.

For the first three years each catch basin and manhole shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum “Vactor” type of maintenance equipment. After the first three years the inspection schedule may be adjusted to meet actual operating conditions however, one inspection shall always be conducted in April.

Stormtech Isolator Rows

The isolator row shall be cleaned at the end of construction once the contributing areas are fully stabilized. For the first year of operation following construction, the chamber rows shall be inspected once every 6 months.

After the first year of operation, the chambers shall be inspected a minimum of once per year. If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of the sediment. When the average depth of accumulation exceeds 3", a clean-out should be performed and properly disposed off-site. Clean-out should be accomplished using a jetvac process.

A detailed maintenance logbook shall be kept onsite for the units by the property owner/manager. Information is to include, but not be limited to, the date of inspection, record of sediment depth, general observations, and date of cleaning performed.

Bioretention Basin Inspection, Maintenance & Repair

Basin maintenance shall be performed by the site property managers. For the first three years, inspections shall be conducted every six months and/or after storm events of 2 inches of rainfall or greater. After three years, the basins shall be inspected at a minimum of once per year. The required inspections are listed below:

1. Check for sediment accumulation, trash, and debris in basins.
2. Check for blockages, structural integrity, and evidence of erosion at inlets, outlets, and overflow spillways.
3. Check that the trash rack at the inlet is clear and the outlet is functioning properly.
4. If there is an accumulation of organic debris or sediment on the floor of the basin, or if ponded water is regularly observed more than 48 hours after a rainfall event, the top 6" shall be removed and the exposed soil surface rototilled to a depth of 12". Sedimentation should be removed when it is visibly dry and readily separates from the basin floor to minimize smearing. After this work has been done, the bottom of the basin shall be

restored to its original condition including creating the same bottom of basin soil mix and seeding with the original seed mixture.

5. Vegetation along the basin floor and side slopes shall be mowed to 6" to 8" height as necessary. Grass clippings, leaves and accumulated sediment shall be removed at least twice per year. Mowing should not be performed when ground is soft to avoid creation of ruts and compaction.
6. Any woody vegetation shall be removed.
7. No pesticides or non-organic fertilizers shall be used within the basins.
8. Sediment removal in the in-line forebays shall occur at a minimum of once per year or when the sediment accumulation reaches 12" deep.
9. Bottom of basins shall have the top several inches of the filter bed material removed and replaced annually.
10. Sediment accumulation greater than 1.5" over the filter bed shall be removed annually or as necessary.
11. Inspect soil and repair eroded areas seasonally or as necessary.
12. Reinforce seed as needed or after two years to maintain 80% coverage.
13. Remove litter and debris seasonally or as necessary.

Hydrodynamic Separators

The separator shall be cleaned periodically during construction, and at the end of construction once the landscaped areas are fully stabilized.

For the first year of operation following construction, the separator shall be inspected once every 4 months for the months of November, March, and July. A graduated measuring device shall be inserted into manhole and measurements of any accumulations will be recorded. Cleaning will occur when debris has accumulated to a depth of 20” or greater.

After the first year of operation, the separator shall be inspected a minimum of twice per year in the same manner as described above. When the depth of accumulation reaches 20", a clean-out should be performed and sediment properly disposed of off-site. Debris will be removed by vacuum “Vactor” type of equipment. The manhole should then be pressure washed to remove remaining sediment and debris and the water should then be vacuumed out. Once cleaning is complete the manhole should be refilled with water.

A detailed maintenance logbook shall be kept for the unit. Information is to include the date of inspection, record of grit depth, condition of tank, observation of any floatable debris, and date of cleaning performed.

9.0 CONCLUSION

The new site improvements are consistent with the applicable zoning regulations. BMPs were incorporated in the site design that attenuate post-development runoff rates, treat the WQV and infiltrate the WQV and GRV from the development.

PROPERTY BOUNDARY LINE (TYP)

LONGEST TRAVEL PATH (TYP)

INLAND WETLAND

ANALYSIS POINT 1 EDGE OF WETLANDS

EXISTING OUTFALL 15" HDPE PIPE WITH FLARED END-SECTION

ANALYSIS POINT 2 DOWNSTREAM END OF 36" RCP CULVERT

EDGE OF INLAND WETLAND (TYP)

DRAINAGE AREA BOUNDARY (TYP)

DA1
(4.046 AC.)

DA2
(3.262 AC.)

DA3
(2.645 AC.)

DA4
(0.172 AC.)

DA5
(1.081 AC.)

ANALYSIS POINT 3 PROPERTY LINE

ANALYSIS POINT 4 PROPERTY LINE

ANALYSIS POINT 5 PROPERTY LINE ALONG JEROME AVE

0 60
SCALE IN FEET

REV.	DESCRIPTION OF REVISION	DATE	APPR.

STAMP

Loureiro Engineering Associates, Inc.
Engineers ▪ Surveyors ▪ Scientists ▪ Mapping
Water ▪ Facility Services ▪ Laboratory
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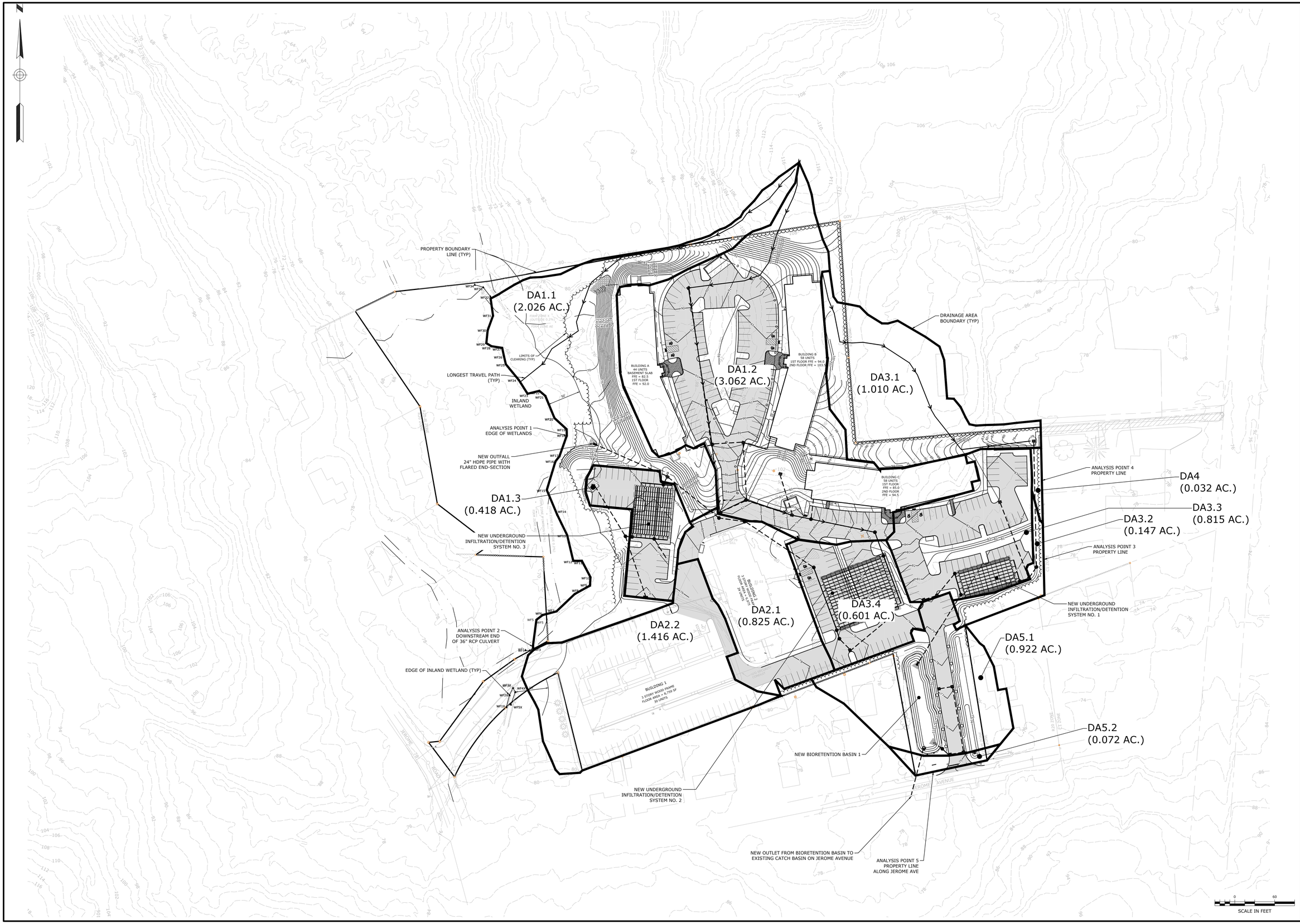
An Employee Owned Company ▪ www.Loureiro.com

SCALE: 1" = 60'
COMM. NO.: 880A9-01
DRAWN BY: BJM
DATE: 11/15/2021
APPROVED BY: SMM
DATE: 11/15/2021

DRAINAGE REPORT
FIGURE 3
EXISTING CONDITIONS DRAINAGE AREA MAP
VILLAGE APARTMENTS PHASE - III
15 JEROME AVENUE, 82 JEROME ROAD AND 232 ROUTE 32, UNCASVILLE - MONTVILLE, CT
Prepared for:
VILLAGE APARTMENTS LLC AND CONNECTICUT MULTIFAMILY EQUITIES II, LLC
C/O MONTVILLE JEROME RD/ROBBS, LLC
1 LONG WHARF DRIVE, 5TH FLOOR, NEW HAVEN, CT 06511

DRAWING
FIGURE 3
SHEET NO.
NO. OF SHEETS



REV.	DESCRIPTION OF REVISION	DATE	APPR.

STAMP

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SCALE	COMM. NO.	DATE	DRAWN BY	DATE	APPROVED BY
1" = 60'	86V49.01	11/15/2021	BJM	11/15/2021	SMM

DRAINAGE REPORT
FIGURE 4
POST-DEVELOPMENT DRAINAGE AREA MAP
VILLAGE APARTMENTS PHASE - III
15 JEROME AVENUE, 82 JEROME ROAD AND 232 ROUTE 32, UNCASVILLE - MONTVILLE, CT
PREPARED FOR
VILLAGE APARTMENTS LLC AND CONNECTICUT MULTIFAMILY EQUITIES II, LLC

DRAWING
FIGURE 4

SHEET NO.

NO. OF SHEETS

V:\CT\MONTVILLE\JEROME RD 2020\ESS PHASE III\DWGS\CAD\ESS\PROPOSED HYDRO\ESS PROPOSED HYDRO.dwg, 11/15/2021 2:24:34 PM, Plotted: 11/5/2021 2:24 AM

Technical Appendices

for

Stormwater Management Report

Property of Village Apartments, LLC

15 Jerome Avenue, 82 Jerome Road And 232 Route 32

Uncasville-Montville, Connecticut

March 11, 2021

Prepared for:

Village Apartments, LLC and

Connecticut Multifamily Equities II, LLC

1099 North Street

White Plains, NY 10605

Loureiro

Engineering • Construction • EH&S • Energy

Waste • Facility Services • Laboratory

Formerly

DiCESARE BENTLEY

ENGINEERS / SURVEYORS / PLANNERS

Loureiro Engineering Associates, Inc.

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An Employee-Owned Company

Comm. No. 88VA9.01

SOIL PERMEABILITY TEST RESULTS

PARKING SUMMARY
46+85+136=267 SPACES
- 31 REPLACEMENT SPACES EAST OF BUILDING 2
NET INCREASE IN SPACES = 236 SPACES

BLDG A
BASEMENT SLAB = 84.5
1ST FLOOR FFE = 94.0

BLDG B
1ST FLOOR FFE = 94.0
2ND FLOOR FFE = 103.5

BLDG C
1ST FLOOR FFE = 84.5
2ND FLOOR FFE = 94.0

BUILDING 1
3 STORY WOOD FRAME
FLOOR AREA = 8,759 S.F

BUILDING 2
3 STORY WOOD FRAME
FLOOR AREA = 6,975 S.F

85 SPACES
46 SPACES
136 SPACES

TOTAL AREA=
523,707 SF M/L
12.02 AC M/L

TEST BORING LOCATIONS

TEST PIT LOCATIONS

CLARENCE WELTI ASSOCIATES, INC.
OCTOBER, 2020

SCALE IN FEET

REV.	DESCRIPTION OF REVISION	DATE	APPR.

STAMP

Loureiro Engineering Associates, Inc.
100 Northfield Street • Greenwich, CT 06830
Phone: 860-448-4200 • Fax: 860-448-3899
An Employee Owned Company • www.LoureiroEng.com

PRELIMINARY SITE LAYOUT

VILLAGE APARTMENTS PHASE III
JEROME ROAD, MONTVILLE, CT
VILLAGE APARTMENTS LLC
73 COGNEWAUGH ROAD, STAMFORD, CT

SCALE	COMM. NO.	DATE	DRAWN BY	APPROVED BY
1" = 40	86VA9.01	08/12/2020	BJM	DATE

DRAWING 1
SHEET NO.
NO. OF SHEETS

X:\CT\MONTVILLE\JEROME RD - ACCESS PHASE III\DWGS\PRELIMINARY SITE LAYOUT V2.DWG, 8/12/2020 4:13 PM, BRIAN MENARD, 1:40

Proposed Apartment Buildings at Village III
Village Apartment Road, Montville, CT

Falling Head Permeability Test
10/26/20

Sample #	Permeability (ft/day)	Sample #	Permeability (ft/day)
TP-1, 5'-8'	109	TP-11, 5'-8'	3.2
TP-2, 5'-8'	9.1	TP-12, 3.5'-8'	1.1
TP-3, 4'-8'	86	TP-13, 1.5'-6'	2.9
TP-4, 4'-9'	155	TP-14, 6"-4'[	97
TP-5, 4.5'-8'	243	TP-15, 3"- 3.8'	332
TP-6, 5'-8'	86	TP-16, 6.5' - 8'	16
TP-7, 4.5'-8'	39	TP-17, 4'-7'	20
TP-8, 4'-8'	49	TP-18, 6"-6'	112
TP-9, 5'-8'	194	TP-19, 4.3'-8'	0.68
TP-10, 5'-8.5'	5.6		

WATER QUALITY VOLUME CALCULATIONS

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

11.35	ac	A = Area draining to the practice
5.37	ac	A_I = Impervious area draining to the practice
0.47	decimal	I = Percent impervious area draining to the practice, in decimal form
0.48	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
5.40	ac-in	WQV= 1" x Rv x A
19,604	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.48	inches	Q = Water quality depth. Q = WQV/A
93	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.7	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.139	inches	Ia = Initial abstraction. Ia = 0.2S
	minutes	T_c = Time of Concentration
	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
-	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: Total Site Water Quality Volume for MS4

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

1.62	ac	A = Area draining to the practice
0.59	ac	A_I = Impervious area draining to the practice
0.36	decimal	I = Percent impervious area draining to the practice, in decimal form
0.38	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.61	ac-in	WQV= 1" x Rv x A
2,222	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.38	inches	Q = Water quality depth. Q = WQV/A
91	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.9	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.188	inches	Ia = Initial abstraction. Ia = 0.2S
10.0	minutes	T_c = Time of Concentration
550.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
0.526	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: CDS-1

Impervious area, total area draining to practice, and time of concentration from StormCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.10	ac	A = Area draining to the practice
0.10	ac	A_I = Impervious area draining to the practice
1.00	decimal	I = Percent impervious area draining to the practice, in decimal form
0.95	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.10	ac-in	WQV= 1" x Rv x A
359	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.95	inches	Q = Water quality depth. Q = WQV/A
100	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.0	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.009	inches	Ia = Initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
650.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
0.100	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: CDS-2

Impervious area, total area draining to practice, and time of concentration from StormCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.44	ac	A = Area draining to the practice
0.21	ac	A_I = Impervious area draining to the practice
0.46	decimal	I = Percent impervious area draining to the practice, in decimal form
0.47	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.21	ac-in	WQV= 1" x Rv x A
750	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.47	inches	Q = Water quality depth. Q = WQV/A
93	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.7	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.143	inches	Ia = Initial abstraction. Ia = 0.2S
10.0	minutes	T_c = Time of Concentration
560.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
0.181	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: CDS-3

Impervious area, total area draining to practice, and time of concentration from StormCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.60	ac	A = Area draining to the practice
0.51	ac	A_I = Impervious area draining to the practice
0.85	decimal	I = Percent impervious area draining to the practice, in decimal form
0.82	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.49	ac-in	WQV= 1" x Rv x A
1,779	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.82	inches	Q = Water quality depth. Q = WQV/A
98	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.2	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.035	inches	Ia = Initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
650.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
0.498	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: CDS-4

Impervious area, total area draining to practice, and time of concentration from HydroCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

3.06	ac	A = Area draining to the practice
2.10	ac	A_I = Impervious area draining to the practice
0.69	decimal	I = Percent impervious area draining to the practice, in decimal form
0.67	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
2.04	ac-in	WQV= 1" x Rv x A
7,416	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.67	inches	Q = Water quality depth. Q = WQV/A
97	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.4	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.072	inches	Ia = Initial abstraction. Ia = 0.2S
20.0	minutes	T_c = Time of Concentration
480.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
1.532	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: CDS-5

Impervious area, total area draining to practice, and time of concentration from HydroCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

0.42	ac	A = Area draining to the practice
0.36	ac	A_I = Impervious area draining to the practice
0.85	decimal	I = Percent impervious area draining to the practice, in decimal form
0.81	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.34	ac-in	WQV= 1" x Rv x A
1,236	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.81	inches	Q = Water quality depth. Q = WQV/A
98	unitless	CN = Unit peak discharge curve number. $CN = 1000/(10+5P+10Q-10*[Q^2 + 1.25*Q*P]^{0.5})$
0.2	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.036	inches	Ia = Initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
650.0	$cfs/mi^2/in$	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
0.346	cfs	WQF = q_u x WQV. Conversion: to convert "$cfs/mi^2/in$ * ac-in" to "cfs" multiply by $1mi^2/640ac$.

Designer's Notes: CDS-6

Impervious area, total area draining to practice, and time of concentration from HydroCAD model

Unit peak discharge interpolated from TR-55 exhibit 4-III

Hydrodynamic Separation Product Calculator

Village Apartments

HDS1

CDS CDS2020-5-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS1			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	0.53	**Peak Flow (cfs)**	4.50
Groundwater Depth (ft)	10 - 15	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	Yes	**Grate Inlet Required?**	Yes	**Pipe Size (in)**	18.00
Required Particle Size Distribution?	No	**90° between two inlets?**	Yes		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS2020-5-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

Hydrodynamic Separation Product Calculator

Village Apartments

HDS2

CDS CDS1515-3-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS2			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	0.10	**Peak Flow (cfs)**	0.80
Groundwater Depth (ft)	10 - 15	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	10 - 15
Multiple Inlets?	No	**Grate Inlet Required?**	Yes	**Pipe Size (in)**	12.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS1515-3-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

Hydrodynamic Separation Product Calculator

Village Apartments

HDS3

CDS CDS1515-3-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS3			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	0.18	**Peak Flow (cfs)**	1.99
Groundwater Depth (ft)	10 - 15	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	No	**Grate Inlet Required?**	No	**Pipe Size (in)**	12.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS1515-3-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

Hydrodynamic Separation Product Calculator

Village Apartments

HDS2

CDS CDS1515-3-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS2			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	0.10	**Peak Flow (cfs)**	0.80
Groundwater Depth (ft)	10 - 15	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	10 - 15
Multiple Inlets?	No	**Grate Inlet Required?**	Yes	**Pipe Size (in)**	12.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS1515-3-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

Hydrodynamic Separation Product Calculator

Village Apartments

HDS5

CDS CDS3035-6-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS5			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	1.53	**Peak Flow (cfs)**	12.50
Groundwater Depth (ft)	>15	**Pipe Invert Depth (ft)**	10 - 15	**Bedrock Depth (ft)**	>15
Multiple Inlets?	No	**Grate Inlet Required?**	No	**Pipe Size (in)**	24.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS3035-6-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

Hydrodynamic Separation Product Calculator

Village Apartments

HDS6

CDS CDS2015-4-C

Project Information					
Project Name	Village Apartments			**Option #**	A
Country	UNITED_STATES	**State**	Connecticut	**City**	Uncasville

Contact Information			
First Name	Benjamin	**Last Name**	Miller
Company	Loureiro Engineering	**Phone #**	603-621-5718
Email	bjmiller@loureiro.com		

Design Criteria					
Site Designation	HDS6			**Sizing Method**	Treatment Flow Rate
Screening Required?	No	**Treatment Flow Rate**	0.35	**Peak Flow (cfs)**	3.00
Groundwater Depth (ft)	10 - 15	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	Yes	**Grate Inlet Required?**	No	**Pipe Size (in)**	15.00
Required Particle Size Distribution?	No	**90° between two inlets?**	No		

Treatment Selection				
Treatment Unit	CDS	**System Model**	CDS2015-4-C	
Target Removal	80%	**Particle Size Distribution (PSD)**	50	

GROUNDWATER RECHARGE VOLUME CALCULATIONS

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

2.79	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
2.36	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
-	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.33	inches	Rd = Weighted groundwater recharge depth	
1.7056	ac-in	GRV = AI * Rd	
6,191	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

STORMWATER BMPS - STAGE AND STORAGE SUMMARIES

BIORETENTION BASIN 1

STORM FREQUENCY	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (CF)
WQV	72.00	1
2 YEAR	72.10	210
10 YEAR	72.71	1,700
25 YEAR	73.18	3,051
100 YEAR	73.98	5,879

BASIN ELEVATIONS:
TOP OF BASIN ELEV. = 75.00
BOTTOM OF BASIN ELEV. = 72.00

OUTLET CONTROL STRUCTURE ELEVATIONS:
TOP OF FRAME ELEV. = 74.75
4" ORIFICE INV. ELEV. = 73.50
4" ORIFICE INV. ELEV. = 72.50
12" INV. OUT ELEV. = 72.50

UNDERGROUND DETENTION/INFILTRATION SYSTEM 1- STORMTECH SC-740

STORM FREQUENCY	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (CF)
WQV	73.01	12
2 YEAR	73.38	557
10 YEAR	74.10	2,512
25 YEAR	74.67	4,118
100 YEAR	75.78	6,729

UNDERGROUND DETENTION/INFILTRATION SYSTEM ELEVATIONS:
TOP OF STONE ELEV. = 76.5
TOP OF CHAMBER ELEV. = 76.0
BOTTOM OF CHAMBER ELEV. = 73.5
BOTTOM OF STONE ELEV. = 73.0

OUTLET CONTROL STRUCTURE ELEVATIONS:
TOP OF FRAME ELEV. = 80.10
RECTANGULAR WEIR INV. ELEV. = 76.00
4" ORIFICE INV. ELEV. = 74.75
4" ORIFICE INV. ELEV. = 73.75
12" INV. OUT ELEV. = 73.50

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DRAINAGE REPORT
TECHNICAL APPENDIX - STORMWATER BMPS - STAGE AND STORAGE SUMMARIES

VILLAGE APARTMENTS PHASE - III
JEROME RD & JEROME AVE, UNCASVILLE - MONTVILLE, CT
PREPARED FOR:
VILLAGE APARTMENTS LLC
1099 NORTH STREET, WHITE PLAINS, NY

SCALE
N.T.S.
COMM. NO.
88VA9.01
DATE
3/11/2021

UNDERGROUND DETENTION/INFILTRATION SYSTEM 2 - STORMTECH SC-740

STORM FREQUENCY	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (CF)
WQV	72.51	18
2 YEAR	73.02	1,696
10 YEAR	73.85	7,095
25 YEAR	74.48	10,866
100 YEAR	75.78	16,483

UNDERGROUND DETENTION/INFILTRATION SYSTEM ELEVATIONS:
TOP OF STONE ELEV. = 76.0
TOP OF CHAMBER ELEV. = 75.5
BOTTOM OF CHAMBER ELEV. = 73.0
BOTTOM OF STONE ELEV. = 72.5

OUTLET CONTROL STRUCTURE ELEVATIONS:
TOP OF FRAME ELEV. = 79.60
RECTANGULAR WEIR INV. ELEV. = 75.50
8" ORIFICE INV. ELEV. = 73.00
15" INV. OUT ELEV. = 73.00

UNDERGROUND DETENTION/INFILTRATION SYSTEM 3 - STORMTECH SC-310

STORM FREQUENCY	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (CF)
WQV	70.69	329
2 YEAR	71.38	2,156
10 YEAR	71.81	3,475
25 YEAR	72.07	4,156
100 YEAR	72.52	4,997

UNDERGROUND DETENTION/INFILTRATION SYSTEM ELEVATIONS:
TOP OF STONE ELEV. = 72.83
TOP OF CHAMBER ELEV. = 72.33
BOTTOM OF CHAMBER ELEV. = 71.0
BOTTOM OF STONE ELEV. = 70.5

OUTLET CONTROL STRUCTURE ELEVATIONS:
TOP OF FRAME ELEV. = 78.45
18" INV. OUT ELEV. = 71.10

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DRAINAGE REPORT
TECHNICAL APPENDIX - STORMWATER BMPS - STAGE AND STORAGE SUMMARIES

VILLAGE APARTMENTS PHASE - III
JEROME RD & JEROME AVE, UNCASVILLE - MONTVILLE, CT
PREPARED FOR:
VILLAGE APARTMENTS LLC
1099 NORTH STREET, WHITE PLAINS, NY

SCALE
N.T.S.
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3/11/2021

RIPRAP APRON DESIGN

Outlet Protection Design Outlet 1

Reference: Connecticut Department of Transportation Drainage Manual, Dated October 2000

A. Apron width at culvert end (W_1) = 3 Sp where Sp = outlet pipe diameter

B. Apron length (La) = $\frac{3\,(Q-5)}{(Sp)^{3/2}} + 10$

C. Apron width at downstream end (W) = 3Sp + 0.7La where La = apron length

Type B Riprap Apron (Tailwater Condition) : TW>0.5 dia of outlet

Peak Q(25yr)= 0.37 cfs PIPE DIA= 1 ft

A. W_1= 3(Sp) = ft 3 ft

B. La = $\frac{3\,(Q-5)}{(Sp)^{1.5}} + 10$ = ft 10 ft

*Use Min. La=10 ft

(Table 11-13.1 of Drainage Manual)

C. W_2 = 3(Sp) + 0.7(La) = ft 10 ft

Table 11.11 Allowable Outlet Velocities for Type A and B Riprap Aprons

Outlet Velocity - mps (fps)	Riprap Specification
0-2.44 (0-8)	Modified
2.44-3.05 (8-10)	Intermediate
3.05-4.27 (10-14)	Standard

V(25yr)= 3.67 fps Therfore; Use Modified Riprap

Outlet Protection Design Outlet 2

Reference: Connecticut Department of Transportation Drainage Manual, Dated October 2000

A. Apron width at culvert end (W_1) = 3 Sp where Sp = outlet pipe diameter

B. Apron length (La) = $\frac{3\,(Q-5)}{(Sp)^{3/2}} + 10$

C. Apron width at downstream end (W) = 3Sp + 0.7La where La = apron length

Type B Riprap Apron (Tailwater Condition) : TW>0.5 dia of outlet

Peak Q(25yr)= 1.97 cfs PIPE DIA= 1 ft

A. W_1= 3(Sp) = ft 3 ft

B. La = $\frac{3\,(Q-5)}{(Sp)^{1.5}} + 10$ = ft 10 ft

*Use Min. La=10 ft

(Table 11-13.1 of Drainage Manual)

C. W_2 = 3(Sp) + 0.7(La) = ft 10 ft

Table 11.11 Allowable Outlet Velocities for Type A and B Riprap Aprons

Outlet Velocity - mps (fps)	Riprap Specification
0-2.44 (0-8)	Modified
2.44-3.05 (8-10)	Intermediate
3.05-4.27 (10-14)	Standard

V(25yr)= 2.53 fps Therfore; Use Modified Riprap

Outlet Protection Design Outlet 3

Reference: Connecticut Department of Transportation Drainage Manual, Dated October 2000

A. Apron width at culvert end (W_1) = 3 Sp where Sp = outlet pipe diameter

B. Apron length (La) = $\frac{1.8\,(Q-5)}{(Sp)^{3/2}} + 10$

C. Apron width at downstream end (W) = 3Sp + 0.7La where La = apron length

Type A Riprap Apron (Tailwater Condition) : TW<0.5 dia of outlet

Peak Q(25yr)= 4.94 cfs PIPE DIA= 1.5 ft

A. W_1= 3(Sp) = ft 5 ft

B. La = $\frac{1.8\,(Q-5)}{(Sp)^{1.5}} + 10$ = ft 12 ft

*Use Min. La=12 ft

(Table 11-12.1 of Drainage Manual)

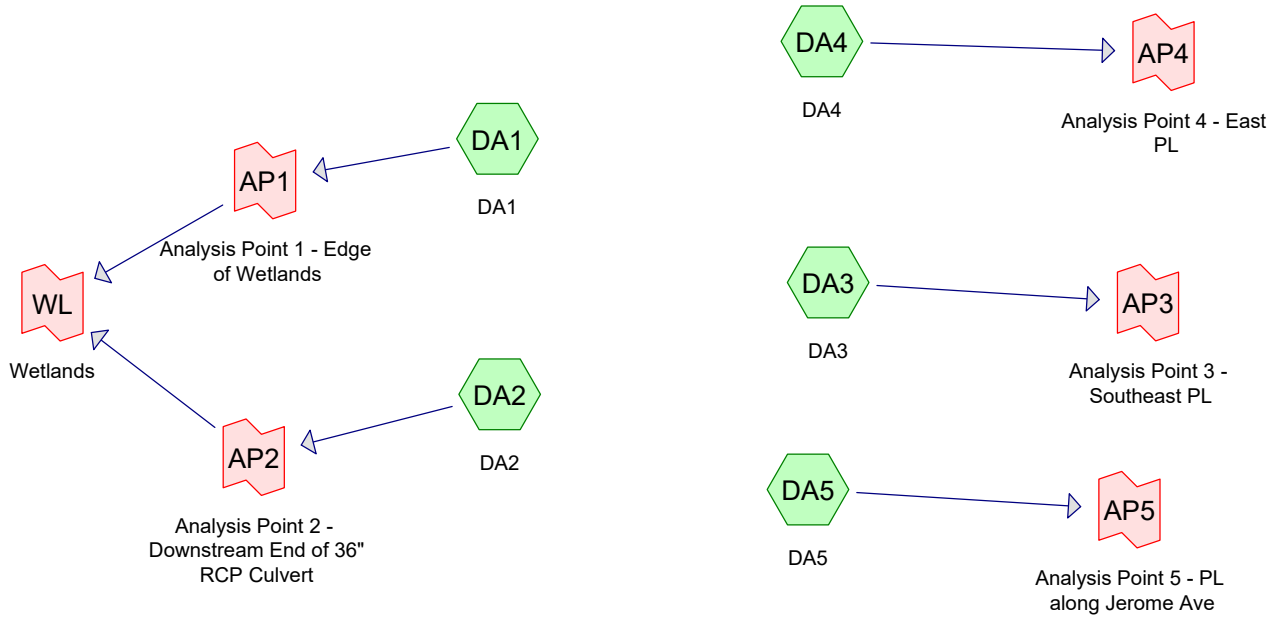
C. W_2 = 3(Sp) + 0.7(La) = ft 13 ft

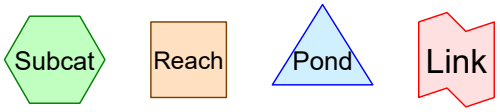
Table 11.11 Allowable Outlet Velocities for Type A and B Riprap Aprons

Outlet Velocity - mps (fps)	Riprap Specification
0-2.44 (0-8)	Modified
2.44-3.05 (8-10)	Intermediate
3.05-4.27 (10-14)	Standard

V(25yr)= 4.5 fps Therfore; Use Modified Riprap

EXISTING CONDITIONS HYDROCAD REPORT





Routing Diagram for Existing Hydrology
Prepared by {enter your company name here}, Printed 2/19/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.999	39	>75% Grass cover, Good HSG A (DA1, DA2, DA3, DA4, DA5)
0.593	61	>75% Grass cover, Good HSG B (DA1, DA2, DA3, DA5)
1.010	98	Paved parking HSG A (DA2, DA3, DA4)
0.385	98	Paved parking HSG B (DA2, DA3)
0.352	98	Roofs HSG A (DA2, DA3, DA5)
0.158	98	Roofs HSG B (DA2, DA5)
3.051	30	Woods, Good HSG A (DA1, DA2, DA3, DA4, DA5)
3.636	55	Woods, Good HSG B (DA1, DA2, DA3, DA5)
0.022	77	Woods, Good HSG D (DA1)
11.206	**53**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.412	HSG A	DA1, DA2, DA3, DA4, DA5
4.772	HSG B	DA1, DA2, DA3, DA5
0.000	HSG C	
0.022	HSG D	DA1
0.000	Other	
11.206		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.999	0.593	0.000	0.000	0.000	2.592	>75% Grass cover, Good	DA1, DA2, DA3, DA4, DA5
1.010	0.385	0.000	0.000	0.000	1.395	Paved parking	DA2, DA3, DA4
0.352	0.158	0.000	0.000	0.000	0.510	Roofs	DA2, DA3, DA5
3.051	3.636	0.000	0.022	0.000	6.709	Woods, Good	DA1, DA2, DA3, DA4, DA5
6.412	**4.772**	**0.000**	**0.022**	**0.000**	**11.206**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	DA2	0.00	0.00	553.0	0.0100	0.012	15.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1: DA1 Runoff Area=4.046 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=573' Tc=30.6 min CN=44 Runoff=0.03 cfs 0.021 af

Subcatchment DA2: DA2 Runoff Area=3.262 ac 52.79% Impervious Runoff Depth=1.34"
Flow Length=845' Tc=27.3 min CN=76 Runoff=2.93 cfs 0.363 af

Subcatchment DA3: DA3 Runoff Area=2.645 ac 2.50% Impervious Runoff Depth=0.03"
Flow Length=700' Tc=50.5 min CN=42 Runoff=0.01 cfs 0.007 af

Subcatchment DA4: DA4 Runoff Area=0.172 ac 29.07% Impervious Runoff Depth=0.30"
Tc=5.0 min CN=54 Runoff=0.02 cfs 0.004 af

Subcatchment DA5: DA5 Runoff Area=1.081 ac 6.20% Impervious Runoff Depth=0.06"
Flow Length=261' Tc=37.8 min CN=44 Runoff=0.01 cfs 0.006 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=0.03 cfs 0.021 af
Primary=0.03 cfs 0.021 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=2.93 cfs 0.363 af
Primary=2.93 cfs 0.363 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.01 cfs 0.007 af
Primary=0.01 cfs 0.007 af

Link AP4: Analysis Point 4 - East PL Inflow=0.02 cfs 0.004 af
Primary=0.02 cfs 0.004 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Link WL: Wetlands Inflow=2.93 cfs 0.384 af
Primary=2.93 cfs 0.384 af

Total Runoff Area = 11.206 ac Runoff Volume = 0.401 af Average Runoff Depth = 0.43"
83.00% Pervious = 9.301 ac 17.00% Impervious = 1.905 ac

Summary for Subcatchment DA1: DA1

Runoff = 0.03 cfs @ 15.47 hrs, Volume= 0.021 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
1.557	30	Woods, Good HSG A
0.022	77	Woods, Good HSG D
1.988	55	Woods, Good HSG B
0.373	39	>75% Grass cover, Good HSG A
0.106	61	>75% Grass cover, Good HSG B
4.046	44	Weighted Average
4.046		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	100	0.0876	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.7	473	0.0870	0.74		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
30.6	573	Total			

Summary for Subcatchment DA2: DA2

Runoff = 2.93 cfs @ 12.41 hrs, Volume= 0.363 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.923	98	Paved parking HSG A
*	0.384	98	Paved parking HSG B
*	0.157	98	Roofs HSG B
*	0.258	98	Roofs HSG A
*	0.113	30	Woods, Good HSG A
*	0.675	55	Woods, Good HSG B
*	0.400	39	>75% Grass cover, Good HSG A
*	0.352	61	>75% Grass cover, Good HSG B
	3.262	76	Weighted Average
	1.540		47.21% Pervious Area
	1.722		52.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0577	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.9	119	0.1822	1.07		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.6	553	0.0100	5.70	7.00	**Pipe Channel, Pipe Flow** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.3	73	0.0444	3.61	57.70	**Trap/Vee/Rect Channel Flow, Channel Flow** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.100 Earth, dense brush, high stage
27.3	845	Total			

Summary for Subcatchment DA3: DA3

Runoff = 0.01 cfs @ 17.34 hrs, Volume= 0.007 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	1.167	30	Woods, Good HSG A
*	0.001	98	Paved parking HSG B
*	0.037	98	Paved parking HSG A
*	0.028	98	Roofs HSG A
*	0.913	55	Woods, Good HSG B
*	0.467	39	>75% Grass cover, Good HSG A
*	0.032	61	>75% Grass cover, Good HSG B
	2.645	42	Weighted Average
	2.579		97.50% Pervious Area
	0.066		2.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.9	100	0.0291	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
3.4	131	0.0645	0.63		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc. Flow** Paved Kv= 20.3 fps
1.8	197	0.0689	1.84		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
13.1	135	0.0047	0.17		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
50.5	700	Total			

Summary for Subcatchment DA4: DA4

Runoff = 0.02 cfs @ 12.29 hrs, Volume= 0.004 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.050	98	Paved parking HSG A
0.048	30	Woods, Good HSG A
0.074	39	>75% Grass cover, Good HSG A
0.172	54	Weighted Average
0.122		70.93% Pervious Area
0.050		29.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min.Tc for Paved Areas**

Summary for Subcatchment DA5: DA5

Runoff = 0.01 cfs @ 15.58 hrs, Volume= 0.006 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.166	30	Woods, Good HSG A
*	0.001	98	Roofs HSG B
*	0.066	98	Roofs HSG A
*	0.060	55	Woods, Good HSG B
*	0.685	39	>75% Grass cover, Good HSG A
*	0.103	61	>75% Grass cover, Good HSG B
	1.081	44	Weighted Average
	1.014		93.80% Pervious Area
	0.067		6.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	97	0.0328	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.3	3	0.0025	0.04		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
7.7	161	0.0025	0.35		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
37.8	261	Total			

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 4.046 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2-Year event
Inflow = 0.03 cfs @ 15.47 hrs, Volume= 0.021 af
Primary = 0.03 cfs @ 15.47 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 3.262 ac, 52.79% Impervious, Inflow Depth = 1.34" for 2-Year event
Inflow = 2.93 cfs @ 12.41 hrs, Volume= 0.363 af
Primary = 2.93 cfs @ 12.41 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 2.645 ac, 2.50% Impervious, Inflow Depth = 0.03" for 2-Year event
Inflow = 0.01 cfs @ 17.34 hrs, Volume= 0.007 af
Primary = 0.01 cfs @ 17.34 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.172 ac, 29.07% Impervious, Inflow Depth = 0.30" for 2-Year event
Inflow = 0.02 cfs @ 12.29 hrs, Volume= 0.004 af
Primary = 0.02 cfs @ 12.29 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 1.081 ac, 6.20% Impervious, Inflow Depth = 0.06" for 2-Year event
Inflow = 0.01 cfs @ 15.58 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 15.58 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 7.308 ac, 23.56% Impervious, Inflow Depth = 0.63" for 2-Year event
Inflow = 2.93 cfs @ 12.41 hrs, Volume= 0.384 af
Primary = 2.93 cfs @ 12.41 hrs, Volume= 0.384 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1: DA1 Runoff Area=4.046 ac 0.00% Impervious Runoff Depth=0.43"
Flow Length=573' Tc=30.6 min CN=44 Runoff=0.56 cfs 0.146 af

Subcatchment DA2: DA2 Runoff Area=3.262 ac 52.79% Impervious Runoff Depth=2.63"
Flow Length=845' Tc=27.3 min CN=76 Runoff=5.92 cfs 0.716 af

Subcatchment DA3: DA3 Runoff Area=2.645 ac 2.50% Impervious Runoff Depth=0.34"
Flow Length=700' Tc=50.5 min CN=42 Runoff=0.19 cfs 0.076 af

Subcatchment DA4: DA4 Runoff Area=0.172 ac 29.07% Impervious Runoff Depth=0.98"
Tc=5.0 min CN=54 Runoff=0.16 cfs 0.014 af

Subcatchment DA5: DA5 Runoff Area=1.081 ac 6.20% Impervious Runoff Depth=0.43"
Flow Length=261' Tc=37.8 min CN=44 Runoff=0.14 cfs 0.039 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=0.56 cfs 0.146 af
Primary=0.56 cfs 0.146 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=5.92 cfs 0.716 af
Primary=5.92 cfs 0.716 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.19 cfs 0.076 af
Primary=0.19 cfs 0.076 af

Link AP4: Analysis Point 4 - East PL Inflow=0.16 cfs 0.014 af
Primary=0.16 cfs 0.014 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.14 cfs 0.039 af
Primary=0.14 cfs 0.039 af

Link WL: Wetlands Inflow=6.21 cfs 0.862 af
Primary=6.21 cfs 0.862 af

Total Runoff Area = 11.206 ac Runoff Volume = 0.991 af Average Runoff Depth = 1.06"
83.00% Pervious = 9.301 ac 17.00% Impervious = 1.905 ac

Summary for Subcatchment DA1: DA1

Runoff = 0.56 cfs @ 12.68 hrs, Volume= 0.146 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
1.557	30	Woods, Good HSG A
0.022	77	Woods, Good HSG D
1.988	55	Woods, Good HSG B
0.373	39	>75% Grass cover, Good HSG A
0.106	61	>75% Grass cover, Good HSG B
4.046	44	Weighted Average
4.046		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	100	0.0876	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.7	473	0.0870	0.74		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
30.6	573	Total			

Summary for Subcatchment DA2: DA2

Runoff = 5.92 cfs @ 12.38 hrs, Volume= 0.716 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.923	98	Paved parking HSG A
*	0.384	98	Paved parking HSG B
*	0.157	98	Roofs HSG B
*	0.258	98	Roofs HSG A
*	0.113	30	Woods, Good HSG A
*	0.675	55	Woods, Good HSG B
*	0.400	39	>75% Grass cover, Good HSG A
*	0.352	61	>75% Grass cover, Good HSG B
	3.262	76	Weighted Average
	1.540		47.21% Pervious Area
	1.722		52.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0577	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.9	119	0.1822	1.07		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.6	553	0.0100	5.70	7.00	**Pipe Channel, Pipe Flow** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.3	73	0.0444	3.61	57.70	**Trap/Vee/Rect Channel Flow, Channel Flow** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.100 Earth, dense brush, high stage
27.3	845	Total			

Summary for Subcatchment DA3: DA3

Runoff = 0.19 cfs @ 13.08 hrs, Volume= 0.076 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	1.167	30	Woods, Good HSG A
*	0.001	98	Paved parking HSG B
*	0.037	98	Paved parking HSG A
*	0.028	98	Roofs HSG A
*	0.913	55	Woods, Good HSG B
*	0.467	39	>75% Grass cover, Good HSG A
*	0.032	61	>75% Grass cover, Good HSG B
	2.645	42	Weighted Average
	2.579		97.50% Pervious Area
	0.066		2.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.9	100	0.0291	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
3.4	131	0.0645	0.63		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc. Flow** Paved Kv= 20.3 fps
1.8	197	0.0689	1.84		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
13.1	135	0.0047	0.17		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
50.5	700	Total			

Summary for Subcatchment DA4: DA4

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.050	98	Paved parking HSG A
0.048	30	Woods, Good HSG A
0.074	39	>75% Grass cover, Good HSG A
0.172	54	Weighted Average
0.122		70.93% Pervious Area
0.050		29.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min.Tc for Paved Areas**

Summary for Subcatchment DA5: DA5

Runoff = 0.14 cfs @ 12.80 hrs, Volume= 0.039 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.166	30	Woods, Good HSG A
*	0.001	98	Roofs HSG B
*	0.066	98	Roofs HSG A
*	0.060	55	Woods, Good HSG B
*	0.685	39	>75% Grass cover, Good HSG A
*	0.103	61	>75% Grass cover, Good HSG B
	1.081	44	Weighted Average
	1.014		93.80% Pervious Area
	0.067		6.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	97	0.0328	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.3	3	0.0025	0.04		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
7.7	161	0.0025	0.35		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
37.8	261	Total			

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 4.046 ac, 0.00% Impervious, Inflow Depth = 0.43" for 10-Year event
Inflow = 0.56 cfs @ 12.68 hrs, Volume= 0.146 af
Primary = 0.56 cfs @ 12.68 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 3.262 ac, 52.79% Impervious, Inflow Depth = 2.63" for 10-Year event
Inflow = 5.92 cfs @ 12.38 hrs, Volume= 0.716 af
Primary = 5.92 cfs @ 12.38 hrs, Volume= 0.716 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 2.645 ac, 2.50% Impervious, Inflow Depth = 0.34" for 10-Year event
Inflow = 0.19 cfs @ 13.08 hrs, Volume= 0.076 af
Primary = 0.19 cfs @ 13.08 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.172 ac, 29.07% Impervious, Inflow Depth = 0.98" for 10-Year event
Inflow = 0.16 cfs @ 12.09 hrs, Volume= 0.014 af
Primary = 0.16 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 1.081 ac, 6.20% Impervious, Inflow Depth = 0.43" for 10-Year event
Inflow = 0.14 cfs @ 12.80 hrs, Volume= 0.039 af
Primary = 0.14 cfs @ 12.80 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 7.308 ac, 23.56% Impervious, Inflow Depth = 1.42" for 10-Year event
Inflow = 6.21 cfs @ 12.41 hrs, Volume= 0.862 af
Primary = 6.21 cfs @ 12.41 hrs, Volume= 0.862 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1: DA1 Runoff Area=4.046 ac 0.00% Impervious Runoff Depth=0.80"
Flow Length=573' Tc=30.6 min CN=44 Runoff=1.38 cfs 0.268 af

Subcatchment DA2: DA2 Runoff Area=3.262 ac 52.79% Impervious Runoff Depth=3.51"
Flow Length=845' Tc=27.3 min CN=76 Runoff=7.91 cfs 0.954 af

Subcatchment DA3: DA3 Runoff Area=2.645 ac 2.50% Impervious Runoff Depth=0.67"
Flow Length=700' Tc=50.5 min CN=42 Runoff=0.53 cfs 0.147 af

Subcatchment DA4: DA4 Runoff Area=0.172 ac 29.07% Impervious Runoff Depth=1.52"
Tc=5.0 min CN=54 Runoff=0.28 cfs 0.022 af

Subcatchment DA5: DA5 Runoff Area=1.081 ac 6.20% Impervious Runoff Depth=0.80"
Flow Length=261' Tc=37.8 min CN=44 Runoff=0.34 cfs 0.072 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=1.38 cfs 0.268 af
Primary=1.38 cfs 0.268 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=7.91 cfs 0.954 af
Primary=7.91 cfs 0.954 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.53 cfs 0.147 af
Primary=0.53 cfs 0.147 af

Link AP4: Analysis Point 4 - East PL Inflow=0.28 cfs 0.022 af
Primary=0.28 cfs 0.022 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.34 cfs 0.072 af
Primary=0.34 cfs 0.072 af

Link WL: Wetlands Inflow=8.96 cfs 1.222 af
Primary=8.96 cfs 1.222 af

Total Runoff Area = 11.206 ac Runoff Volume = 1.463 af Average Runoff Depth = 1.57"
83.00% Pervious = 9.301 ac 17.00% Impervious = 1.905 ac

Summary for Subcatchment DA1: DA1

Runoff = 1.38 cfs @ 12.58 hrs, Volume= 0.268 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
1.557	30	Woods, Good HSG A
0.022	77	Woods, Good HSG D
1.988	55	Woods, Good HSG B
0.373	39	>75% Grass cover, Good HSG A
0.106	61	>75% Grass cover, Good HSG B
4.046	44	Weighted Average
4.046		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	100	0.0876	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.7	473	0.0870	0.74		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
30.6	573	Total			

Summary for Subcatchment DA2: DA2

Runoff = 7.91 cfs @ 12.38 hrs, Volume= 0.954 af, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.923	98	Paved parking HSG A
*	0.384	98	Paved parking HSG B
*	0.157	98	Roofs HSG B
*	0.258	98	Roofs HSG A
*	0.113	30	Woods, Good HSG A
*	0.675	55	Woods, Good HSG B
*	0.400	39	>75% Grass cover, Good HSG A
*	0.352	61	>75% Grass cover, Good HSG B
	3.262	76	Weighted Average
	1.540		47.21% Pervious Area
	1.722		52.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0577	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.9	119	0.1822	1.07		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.6	553	0.0100	5.70	7.00	**Pipe Channel, Pipe Flow** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.3	73	0.0444	3.61	57.70	**Trap/Vee/Rect Channel Flow, Channel Flow** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.100 Earth, dense brush, high stage
27.3	845	Total			

Summary for Subcatchment DA3: DA3

Runoff = 0.53 cfs @ 12.91 hrs, Volume= 0.147 af, Depth= 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	1.167	30	Woods, Good HSG A
*	0.001	98	Paved parking HSG B
*	0.037	98	Paved parking HSG A
*	0.028	98	Roofs HSG A
*	0.913	55	Woods, Good HSG B
*	0.467	39	>75% Grass cover, Good HSG A
*	0.032	61	>75% Grass cover, Good HSG B
	2.645	42	Weighted Average
	2.579		97.50% Pervious Area
	0.066		2.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.9	100	0.0291	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
3.4	131	0.0645	0.63		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc. Flow** Paved Kv= 20.3 fps
1.8	197	0.0689	1.84		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
13.1	135	0.0047	0.17		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
50.5	700	Total			

Summary for Subcatchment DA4: DA4

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.050	98	Paved parking HSG A
0.048	30	Woods, Good HSG A
0.074	39	>75% Grass cover, Good HSG A
0.172	54	Weighted Average
0.122		70.93% Pervious Area
0.050		29.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min.Tc for Paved Areas**

Summary for Subcatchment DA5: DA5

Runoff = 0.34 cfs @ 12.69 hrs, Volume= 0.072 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.166	30	Woods, Good HSG A
*	0.001	98	Roofs HSG B
*	0.066	98	Roofs HSG A
*	0.060	55	Woods, Good HSG B
*	0.685	39	>75% Grass cover, Good HSG A
*	0.103	61	>75% Grass cover, Good HSG B
	1.081	44	Weighted Average
	1.014		93.80% Pervious Area
	0.067		6.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	97	0.0328	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.3	3	0.0025	0.04		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
7.7	161	0.0025	0.35		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
37.8	261	Total			

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 4.046 ac, 0.00% Impervious, Inflow Depth = 0.80" for 25-Year event
Inflow = 1.38 cfs @ 12.58 hrs, Volume= 0.268 af
Primary = 1.38 cfs @ 12.58 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 3.262 ac, 52.79% Impervious, Inflow Depth = 3.51" for 25-Year event
Inflow = 7.91 cfs @ 12.38 hrs, Volume= 0.954 af
Primary = 7.91 cfs @ 12.38 hrs, Volume= 0.954 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 2.645 ac, 2.50% Impervious, Inflow Depth = 0.67" for 25-Year event
Inflow = 0.53 cfs @ 12.91 hrs, Volume= 0.147 af
Primary = 0.53 cfs @ 12.91 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.172 ac, 29.07% Impervious, Inflow Depth = 1.52" for 25-Year event
Inflow = 0.28 cfs @ 12.09 hrs, Volume= 0.022 af
Primary = 0.28 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 1.081 ac, 6.20% Impervious, Inflow Depth = 0.80" for 25-Year event
Inflow = 0.34 cfs @ 12.69 hrs, Volume= 0.072 af
Primary = 0.34 cfs @ 12.69 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 7.308 ac, 23.56% Impervious, Inflow Depth = 2.01" for 25-Year event
Inflow = 8.96 cfs @ 12.41 hrs, Volume= 1.222 af
Primary = 8.96 cfs @ 12.41 hrs, Volume= 1.222 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1: DA1 Runoff Area=4.046 ac 0.00% Impervious Runoff Depth=1.51"
Flow Length=573' Tc=30.6 min CN=44 Runoff=3.25 cfs 0.509 af

Subcatchment DA2: DA2 Runoff Area=3.262 ac 52.79% Impervious Runoff Depth=4.93"
Flow Length=845' Tc=27.3 min CN=76 Runoff=11.08 cfs 1.340 af

Subcatchment DA3: DA3 Runoff Area=2.645 ac 2.50% Impervious Runoff Depth=1.32"
Flow Length=700' Tc=50.5 min CN=42 Runoff=1.36 cfs 0.292 af

Subcatchment DA4: DA4 Runoff Area=0.172 ac 29.07% Impervious Runoff Depth=2.51"
Tc=5.0 min CN=54 Runoff=0.50 cfs 0.036 af

Subcatchment DA5: DA5 Runoff Area=1.081 ac 6.20% Impervious Runoff Depth=1.51"
Flow Length=261' Tc=37.8 min CN=44 Runoff=0.79 cfs 0.136 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=3.25 cfs 0.509 af
Primary=3.25 cfs 0.509 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=11.08 cfs 1.340 af
Primary=11.08 cfs 1.340 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=1.36 cfs 0.292 af
Primary=1.36 cfs 0.292 af

Link AP4: Analysis Point 4 - East PL Inflow=0.50 cfs 0.036 af
Primary=0.50 cfs 0.036 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.79 cfs 0.136 af
Primary=0.79 cfs 0.136 af

Link WL: Wetlands Inflow=14.00 cfs 1.850 af
Primary=14.00 cfs 1.850 af

Total Runoff Area = 11.206 ac Runoff Volume = 2.314 af Average Runoff Depth = 2.48"
83.00% Pervious = 9.301 ac 17.00% Impervious = 1.905 ac

Summary for Subcatchment DA1: DA1

Runoff = 3.25 cfs @ 12.51 hrs, Volume= 0.509 af, Depth= 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.75"

Area (ac)	CN	Description
1.557	30	Woods, Good HSG A
0.022	77	Woods, Good HSG D
1.988	55	Woods, Good HSG B
0.373	39	>75% Grass cover, Good HSG A
0.106	61	>75% Grass cover, Good HSG B
4.046	44	Weighted Average
4.046		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	100	0.0876	0.08		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.7	473	0.0870	0.74		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
30.6	573	Total			

Summary for Subcatchment DA2: DA2

Runoff = 11.08 cfs @ 12.37 hrs, Volume= 1.340 af, Depth= 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.75"

	Area (ac)	CN	Description
*	0.923	98	Paved parking HSG A
*	0.384	98	Paved parking HSG B
*	0.157	98	Roofs HSG B
*	0.258	98	Roofs HSG A
*	0.113	30	Woods, Good HSG A
*	0.675	55	Woods, Good HSG B
*	0.400	39	>75% Grass cover, Good HSG A
*	0.352	61	>75% Grass cover, Good HSG B
	3.262	76	Weighted Average
	1.540		47.21% Pervious Area
	1.722		52.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5	100	0.0577	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.9	119	0.1822	1.07		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.6	553	0.0100	5.70	7.00	**Pipe Channel, Pipe Flow** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.3	73	0.0444	3.61	57.70	**Trap/Vee/Rect Channel Flow, Channel Flow** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.100 Earth, dense brush, high stage
27.3	845	Total			

Summary for Subcatchment DA3: DA3

Runoff = 1.36 cfs @ 12.85 hrs, Volume= 0.292 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.75"

	Area (ac)	CN	Description
*	1.167	30	Woods, Good HSG A
*	0.001	98	Paved parking HSG B
*	0.037	98	Paved parking HSG A
*	0.028	98	Roofs HSG A
*	0.913	55	Woods, Good HSG B
*	0.467	39	>75% Grass cover, Good HSG A
*	0.032	61	>75% Grass cover, Good HSG B
	2.645	42	Weighted Average
	2.579		97.50% Pervious Area
	0.066		2.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.9	100	0.0291	0.05		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
3.4	131	0.0645	0.63		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc. Flow** Paved Kv= 20.3 fps
1.8	197	0.0689	1.84		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
13.1	135	0.0047	0.17		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
50.5	700	Total			

Summary for Subcatchment DA4: DA4

Runoff = 0.50 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.75"

Area (ac)	CN	Description
0.050	98	Paved parking HSG A
0.048	30	Woods, Good HSG A
0.074	39	>75% Grass cover, Good HSG A
0.172	54	Weighted Average
0.122		70.93% Pervious Area
0.050		29.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min.Tc for Paved Areas**

Summary for Subcatchment DA5: DA5

Runoff = 0.79 cfs @ 12.64 hrs, Volume= 0.136 af, Depth= 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.75"

	Area (ac)	CN	Description
*	0.166	30	Woods, Good HSG A
*	0.001	98	Roofs HSG B
*	0.066	98	Roofs HSG A
*	0.060	55	Woods, Good HSG B
*	0.685	39	>75% Grass cover, Good HSG A
*	0.103	61	>75% Grass cover, Good HSG B
	1.081	44	Weighted Average
	1.014		93.80% Pervious Area
	0.067		6.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	97	0.0328	0.06		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
1.3	3	0.0025	0.04		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
7.7	161	0.0025	0.35		**Shallow Concentrated Flow, Shallow Conc. Flow** Short Grass Pasture Kv= 7.0 fps
37.8	261	Total			

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 4.046 ac, 0.00% Impervious, Inflow Depth = 1.51" for 100-Year event
Inflow = 3.25 cfs @ 12.51 hrs, Volume= 0.509 af
Primary = 3.25 cfs @ 12.51 hrs, Volume= 0.509 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 3.262 ac, 52.79% Impervious, Inflow Depth = 4.93" for 100-Year event
Inflow = 11.08 cfs @ 12.37 hrs, Volume= 1.340 af
Primary = 11.08 cfs @ 12.37 hrs, Volume= 1.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 2.645 ac, 2.50% Impervious, Inflow Depth = 1.32" for 100-Year event
Inflow = 1.36 cfs @ 12.85 hrs, Volume= 0.292 af
Primary = 1.36 cfs @ 12.85 hrs, Volume= 0.292 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.172 ac, 29.07% Impervious, Inflow Depth = 2.51" for 100-Year event
Inflow = 0.50 cfs @ 12.08 hrs, Volume= 0.036 af
Primary = 0.50 cfs @ 12.08 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 1.081 ac, 6.20% Impervious, Inflow Depth = 1.51" for 100-Year event
Inflow = 0.79 cfs @ 12.64 hrs, Volume= 0.136 af
Primary = 0.79 cfs @ 12.64 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

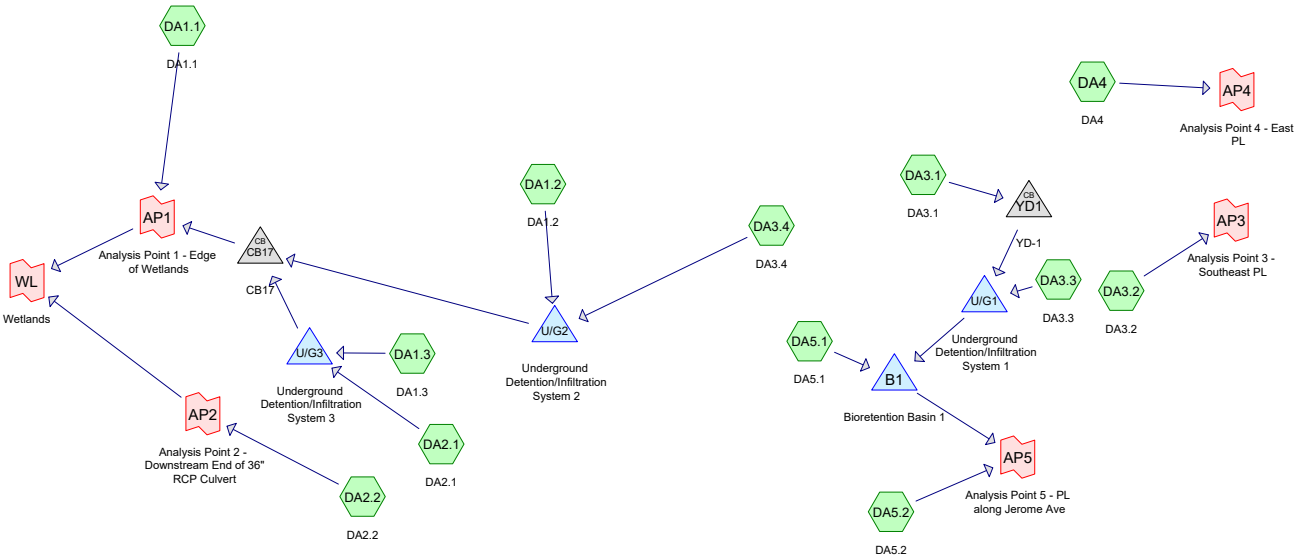
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 7.308 ac, 23.56% Impervious, Inflow Depth = 3.04" for 100-Year event
Inflow = 14.00 cfs @ 12.41 hrs, Volume= 1.850 af
Primary = 14.00 cfs @ 12.41 hrs, Volume= 1.850 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

POST-CONSTRUCTION HYDROCAD REPORT



Subcat Reach Pond Link

Routing Diagram for Proposed Hydrology

Prepared by {enter your company name here}, Printed 2/19/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.696	39	>75% Grass cover, Good HSG A (DA1.1, DA1.2, DA1.3, DA2.1, DA2.2, DA3.1, DA3.2, DA3.3, DA3.4, DA4, DA5.1, DA5.2)
1.864	61	>75% Grass cover, Good HSG B (DA1.1, DA1.2, DA1.3, DA2.1, DA3.1, DA3.4, DA5.1)
0.001	80	>75% Grass cover, Good HSG D (DA1.1)
2.248	98	Paved parking HSG A (DA1.1, DA1.2, DA1.3, DA2.1, DA2.2, DA3.1, DA3.3, DA3.4, DA5.1, DA5.2)
1.639	98	Paved parking HSG B (DA1.1, DA1.2, DA1.3, DA2.1, DA3.1, DA3.4, DA5.1)
0.576	98	Roofs HSG A (DA1.2, DA2.1, DA2.2, DA3.1, DA5.1)
0.902	98	Roofs HSG B (DA1.2, DA2.1, DA5.1)
0.906	30	Woods, Good HSG A (DA1.1, DA2.2, DA3.1)
0.493	55	Woods, Good HSG B (DA1.1, DA1.2, DA3.1)
0.021	77	Woods, Good HSG D (DA1.1)
11.346	**71**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.426	HSG A	DA1.1, DA1.2, DA1.3, DA2.1, DA2.2, DA3.1, DA3.2, DA3.3, DA3.4, DA4, DA5.1, DA5.2
4.898	HSG B	DA1.1, DA1.2, DA1.3, DA2.1, DA3.1, DA3.4, DA5.1
0.000	HSG C	
0.022	HSG D	DA1.1
0.000	Other	
11.346		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.696	1.864	0.000	0.001	0.000	4.561	>75% Grass cover, Good	DA1.1, DA1.2, DA1.3, DA2.1, DA2.2, DA3.1, DA3.2, DA3.3, DA3.4, DA4, DA5.1, DA5.2
2.248	1.639	0.000	0.000	0.000	3.887	Paved parking	DA1.1, DA1.2, DA1.3, DA2.1, DA2.2, DA3.1, DA3.3, DA3.4, DA5.1, DA5.2
0.576	0.902	0.000	0.000	0.000	1.478	Roofs	DA1.2, DA2.1, DA2.2, DA3.1, DA5.1
0.906	0.493	0.000	0.021	0.000	1.420	Woods, Good	DA1.1, DA1.2, DA2.2, DA3.1
6.426	**4.898**	**0.000**	**0.022**	**0.000**	**11.346**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	DA1.2	0.00	0.00	630.0	0.0200	0.012	18.0	0.0	0.0
2	B1	72.50	72.14	71.0	0.0051	0.012	12.0	0.0	0.0
3	CB17	70.50	69.90	120.0	0.0050	0.012	24.0	0.0	0.0
4	U/G1	73.50	72.00	125.0	0.0120	0.012	12.0	0.0	0.0
5	U/G2	73.00	71.75	251.0	0.0050	0.012	15.0	0.0	0.0
6	U/G3	71.10	71.00	20.0	0.0050	0.012	18.0	0.0	0.0
7	YD1	76.40	75.30	221.0	0.0050	0.012	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1.1: DA1.1 Runoff Area=2.026 ac 0.10% Impervious Runoff Depth=0.02"
Flow Length=557' Tc=28.7 min CN=41 Runoff=0.01 cfs 0.004 af

Subcatchment DA1.2: DA1.2 Runoff Area=3.062 ac 68.71% Impervious Runoff Depth=2.06"
Flow Length=899' Tc=20.3 min CN=86 Runoff=4.96 cfs 0.526 af

Subcatchment DA1.3: DA1.3 Runoff Area=0.418 ac 84.93% Impervious Runoff Depth=2.41"
Tc=5.0 min CN=90 Runoff=1.21 cfs 0.084 af

Subcatchment DA2.1: DA2.1 Runoff Area=0.825 ac 60.00% Impervious Runoff Depth=1.75"
Tc=5.0 min CN=82 Runoff=1.75 cfs 0.120 af

Subcatchment DA2.2: DA2.2 Runoff Area=1.416 ac 68.29% Impervious Runoff Depth=1.53"
Tc=5.0 min CN=79 Runoff=2.62 cfs 0.181 af

Subcatchment DA3.1: DA3.1 Runoff Area=1.010 ac 7.23% Impervious Runoff Depth=0.24"
Flow Length=416' Tc=19.1 min CN=52 Runoff=0.08 cfs 0.020 af

Subcatchment DA3.2: DA3.2 Runoff Area=0.147 ac 0.00% Impervious Runoff Depth=0.01"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment DA3.3: DA3.3 Runoff Area=0.815 ac 75.71% Impervious Runoff Depth=1.90"
Tc=5.0 min CN=84 Runoff=1.89 cfs 0.129 af

Subcatchment DA3.4: DA3.4 Runoff Area=0.601 ac 85.02% Impervious Runoff Depth=2.50"
Tc=5.0 min CN=91 Runoff=1.79 cfs 0.125 af

Subcatchment DA4: DA4 Runoff Area=0.032 ac 0.00% Impervious Runoff Depth=0.01"
Tc=10.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment DA5.1: DA5.1 Runoff Area=0.922 ac 24.84% Impervious Runoff Depth=0.37"
Tc=10.0 min CN=56 Runoff=0.16 cfs 0.028 af

Subcatchment DA5.2: DA5.2 Runoff Area=0.072 ac 16.67% Impervious Runoff Depth=0.16"
Tc=5.0 min CN=49 Runoff=0.00 cfs 0.001 af

Pond B1: Bioretention Basin 1 Peak Elev=72.10' Storage=210 cf Inflow=0.16 cfs 0.028 af
Discarded=0.05 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.028 af

Pond CB17: CB17 Peak Elev=70.75' Inflow=0.30 cfs 0.014 af
24.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=0.30 cfs 0.014 af

Pond U/G1: Underground Detention/Infiltration Peak Elev=73.38' Storage=557 cf Inflow=1.89 cfs 0.149 af
Discarded=0.82 cfs 0.149 af Primary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.149 af

Pond U/G2: Underground Peak Elev=73.02' Storage=1,696 cf Inflow=5.69 cfs 0.652 af
Discarded=3.94 cfs 0.652 af Primary=0.00 cfs 0.000 af Outflow=3.94 cfs 0.652 af

Pond U/G3: Underground Peak Elev=71.38' Storage=2,156 cf Inflow=2.96 cfs 0.204 af
Discarded=0.50 cfs 0.191 af Primary=0.30 cfs 0.014 af Outflow=0.80 cfs 0.204 af

Pond YD1: YD-1 Peak Elev=76.55' Inflow=0.08 cfs 0.020 af
12.0" Round Culvert n=0.012 L=221.0' S=0.0050 '/' Outflow=0.08 cfs 0.020 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=0.30 cfs 0.017 af
Primary=0.30 cfs 0.017 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=2.62 cfs 0.181 af
Primary=2.62 cfs 0.181 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link AP4: Analysis Point 4 - East PL Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link WL: Wetlands Inflow=2.62 cfs 0.199 af
Primary=2.62 cfs 0.199 af

Total Runoff Area = 11.346 ac Runoff Volume = 1.220 af Average Runoff Depth = 1.29"
52.71% Pervious = 5.981 ac 47.29% Impervious = 5.365 ac

Summary for Subcatchment DA1.1: DA1.1

Runoff = 0.01 cfs @ 17.57 hrs, Volume= 0.004 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.729	30	Woods, Good HSG A
*	0.021	77	Woods, Good HSG D
*	0.125	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG A
*	0.001	98	Paved parking HSG B
*	0.813	39	>75% Grass cover, Good HSG A
*	0.335	61	>75% Grass cover, Good HSG B
*	0.001	80	>75% Grass cover, Good HSG D
	2.026	41	Weighted Average
	2.024		99.90% Pervious Area
	0.002		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.1082	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.4	457	0.0854	0.73		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
28.7	557	Total			

Summary for Subcatchment DA1.2: DA1.2

Runoff = 4.96 cfs @ 12.28 hrs, Volume= 0.526 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.228	98	Roofs HSG A
*	0.744	98	Roofs HSG B
*	0.095	55	Woods, Good HSG B
*	0.034	98	Paved parking HSG A
*	1.098	98	Paved parking HSG B
*	0.011	39	>75% Grass cover, Good HSG A
*	0.852	61	>75% Grass cover, Good HSG B
	3.062	86	Weighted Average
	0.958		31.29% Pervious Area
	2.104		68.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	90	0.0968	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
0.5	10	0.2845	0.32		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
0.3	54	0.2455	3.47		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.7	115	0.0183	2.75		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
1.2	630	0.0200	9.11	16.09	**Pipe Channel, Pipe Flow** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
20.3	899	Total			

Summary for Subcatchment DA1.3: DA1.3

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.084 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.298	98	Paved parking HSG A
0.057	98	Paved parking HSG B
0.040	39	>75% Grass cover, Good HSG A
0.023	61	>75% Grass cover, Good HSG B
0.418	90	Weighted Average
0.063		15.07% Pervious Area
0.355		84.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.1: DA2.1

Runoff = 1.75 cfs @ 12.08 hrs, Volume= 0.120 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.059	98	Roofs HSG A
0.124	98	Paved parking HSG B
0.155	98	Paved parking HSG A
0.157	98	Roofs HSG B
0.060	39	>75% Grass cover, Good HSG A
0.270	61	>75% Grass cover, Good HSG B
0.825	82	Weighted Average
0.330		40.00% Pervious Area
0.495		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.2: DA2.2

Runoff = 2.62 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.768	98	Paved parking HSG A
0.199	98	Roofs HSG A
0.113	30	Woods, Good HSG A
0.336	39	>75% Grass cover, Good HSG A
1.416	79	Weighted Average
0.449		31.71% Pervious Area
0.967		68.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.1: DA3.1

Runoff = 0.08 cfs @ 12.55 hrs, Volume= 0.020 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.064	30	Woods, Good HSG A
*	0.273	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG B
*	0.048	98	Paved parking HSG A
*	0.024	98	Roofs HSG A
*	0.349	39	>75% Grass cover, Good HSG A
*	0.251	61	>75% Grass cover, Good HSG B
	1.010	52	Weighted Average
	0.937		92.77% Pervious Area
	0.073		7.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	57	0.0572	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
10.9	43	0.0724	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
2.2	74	0.0492	0.55		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
0.8	105	0.0906	2.11		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
19.1	416	Total			

Summary for Subcatchment DA3.2: DA3.2

Runoff = 0.00 cfs @ 22.85 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.000	98	Paved parking HSG A
0.147	39	>75% Grass cover, Good HSG A
0.147	39	Weighted Average
0.147		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.3: DA3.3

Runoff = 1.89 cfs @ 12.07 hrs, Volume= 0.129 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.617	98	Paved parking HSG A
0.198	39	>75% Grass cover, Good HSG A
0.815	84	Weighted Average
0.198		24.29% Pervious Area
0.617		75.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.4: DA3.4

Runoff = 1.79 cfs @ 12.07 hrs, Volume= 0.125 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.154	98	Paved parking HSG A
0.357	98	Paved parking HSG B
0.042	39	>75% Grass cover, Good HSG A
0.048	61	>75% Grass cover, Good HSG B
0.601	91	Weighted Average
0.090		14.98% Pervious Area
0.511		85.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA4: DA4

Runoff = 0.00 cfs @ 22.90 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

	Area (ac)	CN	Description
*	0.000	98	Paved parking HSG A
*	0.032	39	>75% Grass cover, Good HSG A
	0.032	39	Weighted Average
	0.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.1: DA5.1

Runoff = 0.16 cfs @ 12.32 hrs, Volume= 0.028 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.001	98	Roofs HSG B
0.066	98	Roofs HSG A
0.161	98	Paved parking HSG A
0.001	98	Paved parking HSG B
0.608	39	>75% Grass cover, Good HSG A
0.085	61	>75% Grass cover, Good HSG B
0.922	56	Weighted Average
0.693		75.16% Pervious Area
0.229		24.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.2: DA5.2

Runoff = 0.00 cfs @ 12.43 hrs, Volume= 0.001 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.46"

Area (ac)	CN	Description
0.012	98	Paved parking HSG A
0.060	39	>75% Grass cover, Good HSG A
0.072	49	Weighted Average
0.060		83.33% Pervious Area
0.012		16.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond B1: Bioretention Basin 1

Inflow Area = 2.747 ac, 33.45% Impervious, Inflow Depth = 0.12" for 2-Year event
Inflow = 0.16 cfs @ 12.32 hrs, Volume= 0.028 af
Outflow = 0.05 cfs @ 13.32 hrs, Volume= 0.028 af, Atten= 70%, Lag= 60.1 min
Discarded = 0.05 cfs @ 13.32 hrs, Volume= 0.028 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 72.10' @ 13.32 hrs Surf.Area= 2,156 sf Storage= 210 cf

Plug-Flow detention time= 36.2 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 36.2 min (973.3 - 937.1)

Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	10,356 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.00	2,067	0	0
73.00	2,957	2,512	2,512
74.00	3,907	3,432	5,944
75.00	4,917	4,412	10,356

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.14' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	72.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	73.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	74.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Discarded	72.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.05 cfs @ 13.32 hrs HW=72.10' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=72.00' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond B1: Bioretention Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.00	2,067	0
72.05	2,111	104
72.10	2,156	211
72.15	2,201	320
72.20	2,245	431
72.25	2,290	545
72.30	2,334	660
72.35	2,378	778
72.40	2,423	898
72.45	2,468	1,020
72.50	2,512	1,145
72.55	2,556	1,271
72.60	2,601	1,400
72.65	2,646	1,532
72.70	2,690	1,665
72.75	2,735	1,801
72.80	2,779	1,938
72.85	2,823	2,078
72.90	2,868	2,221
72.95	2,913	2,365
73.00	2,957	2,512
73.05	3,004	2,661
73.10	3,052	2,812
73.15	3,100	2,966
73.20	3,147	3,122
73.25	3,195	3,281
73.30	3,242	3,442
73.35	3,289	3,605
73.40	3,337	3,771
73.45	3,385	3,939
73.50	3,432	4,109
73.55	3,479	4,282
73.60	3,527	4,457
73.65	3,575	4,635
73.70	3,622	4,815
73.75	3,670	4,997
73.80	3,717	5,182
73.85	3,764	5,369
73.90	3,812	5,558
73.95	3,860	5,750
74.00	3,907	5,944
74.05	3,957	6,141
74.10	4,008	6,340
74.15	4,059	6,541
74.20	4,109	6,746
74.25	4,160	6,952
74.30	4,210	7,162
74.35	4,260	7,373
74.40	4,311	7,588
74.45	4,362	7,804
74.50	4,412	8,024
74.55	4,462	8,246
74.60	4,513	8,470
74.65	4,564	8,697
74.70	4,614	8,926
74.75	4,665	9,158
74.80	4,715	9,393
74.85	4,765	9,630
74.90	4,816	9,869
74.95	4,867	10,111
75.00	**4,917**	**10,356**

Summary for Pond CB17: CB17

Inflow Area = 4.906 ac, 70.63% Impervious, Inflow Depth = 0.03" for 2-Year event
Inflow = 0.30 cfs @ 12.44 hrs, Volume= 0.014 af
Outflow = 0.30 cfs @ 12.44 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.44 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 70.75' @ 12.44 hrs
Flood Elev= 80.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.50'	**24.0" Round Culvert** L= 120.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 70.50' / 69.90' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.30 cfs @ 12.44 hrs HW=70.75' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.30 cfs @ 2.04 fps)

Stage-Area-Storage for Pond CB17: CB17

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
70.50	**0**	75.80	0
70.60	0	75.90	0
70.70	0	76.00	0
70.80	0	76.10	0
70.90	0	76.20	0
71.00	0	76.30	0
71.10	0	76.40	0
71.20	0	76.50	0
71.30	0	76.60	0
71.40	0	76.70	0
71.50	0	76.80	0
71.60	0	76.90	0
71.70	0	77.00	0
71.80	0	77.10	0
71.90	0	77.20	0
72.00	0	77.30	0
72.10	0	77.40	0
72.20	0	77.50	0
72.30	0	77.60	0
72.40	0	77.70	0
72.50	0	77.80	0
72.60	0	77.90	0
72.70	0	78.00	0
72.80	0	78.10	0
72.90	0	78.20	0
73.00	0	78.30	0
73.10	0	78.40	0
73.20	0	78.50	0
73.30	0	78.60	0
73.40	0	78.70	0
73.50	0	78.80	0
73.60	0	78.90	0
73.70	0	79.00	0
73.80	0	79.10	0
73.90	0	79.20	0
74.00	0	79.30	0
74.10	0	79.40	0
74.20	0	79.50	0
74.30	0	79.60	0
74.40	0	79.70	0
74.50	0	79.80	0
74.60	0	79.90	0
74.70	0	80.00	0
74.80	0		
74.90	0		
75.00	0		
75.10	0		
75.20	0		
75.30	0		
75.40	0		
75.50	0		
75.60	0		
75.70	0		

Summary for Pond U/G1: Underground Detention/Infiltration System 1

Inflow Area = 1.825 ac, 37.81% Impervious, Inflow Depth = 0.98" for 2-Year event
Inflow = 1.89 cfs @ 12.08 hrs, Volume= 0.149 af
Outflow = 0.82 cfs @ 12.01 hrs, Volume= 0.149 af, Atten= 56%, Lag= 0.0 min
Discarded = 0.82 cfs @ 12.01 hrs, Volume= 0.149 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 73.38' @ 12.28 hrs Surf.Area= 3,626 sf Storage= 557 cf

Plug-Flow detention time= 2.8 min calculated for 0.149 af (100% of inflow)
Center-of-Mass det. time= 2.7 min (848.4 - 845.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	3,257 cf	**44.25'W x 81.94'L x 3.50'H Field A** 12,690 cf Overall - 4,548 cf Embedded = 8,142 cf x 40.0% Voids
#2A	73.50'	4,548 cf	**ADS_StormTech SC-740 +Cap** x 99 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 99 Chambers in 9 Rows
		7,805 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**12.0" Round Culvert** L= 125.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 72.00' S= 0.0120 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	73.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	74.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	76.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#5	Discarded	73.00'	**9.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.82 cfs @ 12.01 hrs HW=73.04' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.82 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=72.00' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond U/G1: Underground Detention/Infiltration System 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

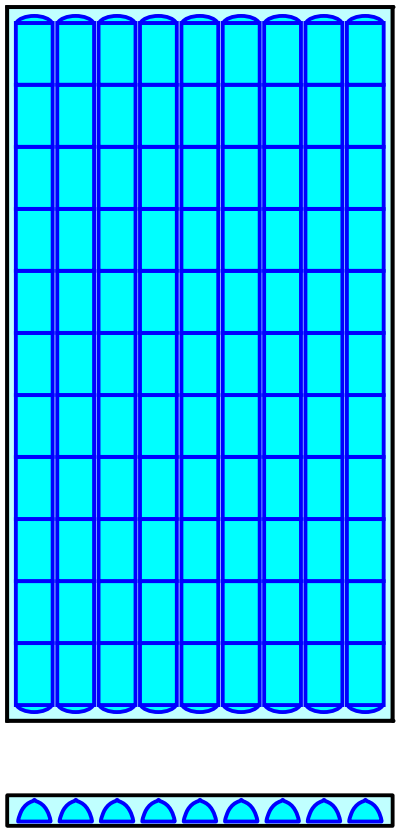
11 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 79.94' Row Length +12.0" End Stone x 2 = 81.94' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

99 Chambers x 45.9 cf = 4,548.1 cf Chamber Storage

12,689.9 cf Field - 4,548.1 cf Chambers = 8,141.9 cf Stone x 40.0% Voids = 3,256.8 cf Stone Storage

Chamber Storage + Stone Storage = 7,804.8 cf = 0.179 af
Overall Storage Efficiency = 61.5%
Overall System Size = 81.94' x 44.25' x 3.50'

99 Chambers
470.0 cy Field
301.6 cy Stone



Stage-Area-Storage for Pond U/G1: Underground Detention/Infiltration System 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
73.00	**3,626**	0
73.05	3,626	73
73.10	3,626	145
73.15	3,626	218
73.20	3,626	290
73.25	3,626	363
73.30	3,626	435
73.35	3,626	508
73.40	3,626	580
73.45	3,626	653
73.50	3,626	725
73.55	3,626	876
73.60	3,626	1,027
73.65	3,626	1,178
73.70	3,626	1,329
73.75	3,626	1,479
73.80	3,626	1,628
73.85	3,626	1,777
73.90	3,626	1,926
73.95	3,626	2,073
74.00	3,626	2,221
74.05	3,626	2,367
74.10	3,626	2,513
74.15	3,626	2,659
74.20	3,626	2,803
74.25	3,626	2,947
74.30	3,626	3,090
74.35	3,626	3,232
74.40	3,626	3,374
74.45	3,626	3,514
74.50	3,626	3,654
74.55	3,626	3,793
74.60	3,626	3,931
74.65	3,626	4,068
74.70	3,626	4,203
74.75	3,626	4,338
74.80	3,626	4,472
74.85	3,626	4,604
74.90	3,626	4,735
74.95	3,626	4,865
75.00	3,626	4,993
75.05	3,626	5,120
75.10	3,626	5,246
75.15	3,626	5,370
75.20	3,626	5,492
75.25	3,626	5,612
75.30	3,626	5,731
75.35	3,626	5,847
75.40	3,626	5,962
75.45	3,626	6,074
75.50	3,626	6,184
75.55	3,626	6,291
75.60	3,626	6,395
75.65	3,626	6,496
75.70	3,626	6,593
75.75	3,626	6,684
75.80	3,626	6,770
75.85	3,626	6,851
75.90	3,626	6,930
75.95	3,626	7,006
76.00	3,626	7,080
76.05	3,626	7,152
76.10	3,626	7,225
76.15	3,626	7,297
76.20	3,626	7,370
76.25	3,626	7,442
76.30	3,626	7,515
76.35	3,626	7,587
76.40	3,626	7,660
76.45	3,626	7,732
76.50	3,626	**7,805**

Summary for Pond U/G2: Underground Detention/Infiltration System 2

Inflow Area = 3.663 ac, 71.39% Impervious, Inflow Depth = 2.14" for 2-Year event
Inflow = 5.69 cfs @ 12.26 hrs, Volume= 0.652 af
Outflow = 3.94 cfs @ 12.48 hrs, Volume= 0.652 af, Atten= 31%, Lag= 13.2 min
Discarded = 3.94 cfs @ 12.10 hrs, Volume= 0.652 af
Primary = 0.00 cfs @ 12.48 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 73.02' @ 12.48 hrs Surf.Area= 7,911 sf Storage= 1,696 cf

Plug-Flow detention time= 1.7 min calculated for 0.652 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (827.6 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	72.50'	7,014 cf	**82.25'W x 96.18'L x 3.50'H Field A** 27,687 cf Overall - 10,153 cf Embedded = 17,534 cf x 40.0% Voids
#2A	73.00'	10,153 cf	**ADS_StormTech SC-740 +Cap** x 221 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 221 Chambers in 17 Rows
		17,166 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**15.0" Round Culvert** L= 251.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 71.75' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	73.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	75.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	72.50'	**21.500 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=3.94 cfs @ 12.10 hrs HW=72.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 3.94 cfs)

Primary OutFlow Max=0.00 cfs @ 12.48 hrs HW=73.02' TW=70.74' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.00 cfs @ 0.36 fps)
  ├**2=Orifice/Grate** (Passes 0.00 cfs of 0.00 cfs potential flow)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond U/G2: Underground Detention/Infiltration System 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

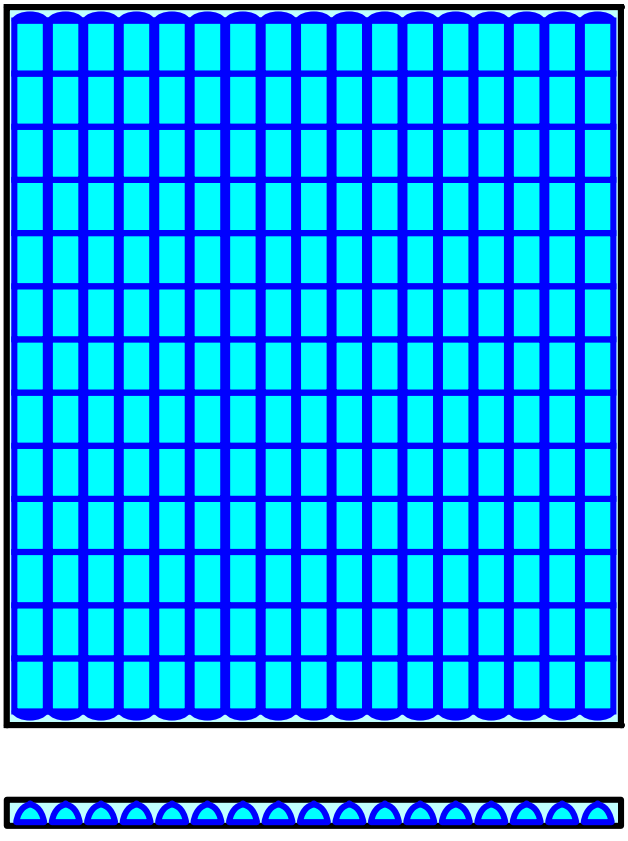
13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length
17 Rows x 51.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 82.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

221 Chambers x 45.9 cf = 10,152.7 cf Chamber Storage

27,686.9 cf Field - 10,152.7 cf Chambers = 17,534.1 cf Stone x 40.0% Voids = 7,013.6 cf Stone Storage

Chamber Storage + Stone Storage = 17,166.4 cf = 0.394 af
Overall Storage Efficiency = 62.0%
Overall System Size = 96.18' x 82.25' x 3.50'

221 Chambers
1,025.4 cy Field
649.4 cy Stone



Stage-Area-Storage for Pond U/G2: Underground Detention/Infiltration System 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.50	**7,911**	0
72.55	7,911	158
72.60	7,911	316
72.65	7,911	475
72.70	7,911	633
72.75	7,911	791
72.80	7,911	949
72.85	7,911	1,107
72.90	7,911	1,266
72.95	7,911	1,424
73.00	7,911	1,582
73.05	7,911	1,916
73.10	7,911	2,249
73.15	7,911	2,582
73.20	7,911	2,915
73.25	7,911	3,246
73.30	7,911	3,576
73.35	7,911	3,905
73.40	7,911	4,233
73.45	7,911	4,559
73.50	7,911	4,884
73.55	7,911	5,208
73.60	7,911	5,530
73.65	7,911	5,851
73.70	7,911	6,170
73.75	7,911	6,487
73.80	7,911	6,803
73.85	7,911	7,117
73.90	7,911	7,429
73.95	7,911	7,739
74.00	7,911	8,048
74.05	7,911	8,354
74.10	7,911	8,658
74.15	7,911	8,960
74.20	7,911	9,259
74.25	7,911	9,556
74.30	7,911	9,850
74.35	7,911	10,142
74.40	7,911	10,431
74.45	7,911	10,717
74.50	7,911	11,000
74.55	7,911	11,280
74.60	7,911	11,557
74.65	7,911	11,830
74.70	7,911	12,099
74.75	7,911	12,364
74.80	7,911	12,624
74.85	7,911	12,881
74.90	7,911	13,133
74.95	7,911	13,380
75.00	7,911	13,621
75.05	7,911	13,857
75.10	7,911	14,086
75.15	7,911	14,307
75.20	7,911	14,519
75.25	7,911	14,719
75.30	7,911	14,907
75.35	7,911	15,086
75.40	7,911	15,257
75.45	7,911	15,423
75.50	7,911	15,584
75.55	7,911	15,742
75.60	7,911	15,901
75.65	7,911	16,059
75.70	7,911	16,217
75.75	7,911	16,375
75.80	7,911	16,534
75.85	7,911	16,692
75.90	7,911	16,850
75.95	7,911	17,008
76.00	7,911	**17,166**

Summary for Pond U/G3: Underground Detention/Infiltration System 3

Inflow Area = 1.243 ac, 68.38% Impervious, Inflow Depth = 1.97" for 2-Year event
Inflow = 2.96 cfs @ 12.07 hrs, Volume= 0.204 af
Outflow = 0.80 cfs @ 12.44 hrs, Volume= 0.204 af, Atten= 73%, Lag= 22.0 min
Discarded = 0.50 cfs @ 11.78 hrs, Volume= 0.191 af
Primary = 0.30 cfs @ 12.44 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.38' @ 12.44 hrs Surf.Area= 4,328 sf Storage= 2,156 cf

Plug-Flow detention time= 21.2 min calculated for 0.204 af (100% of inflow)
Center-of-Mass det. time= 21.2 min (841.0 - 819.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	70.50'	3,037 cf	**58.17'W x 74.40'L x 2.33'H Field A - Volume of Voids** 10,098 cf Overall - 2,506 cf Embedded = 7,592 cf x 40.0% Voids
#2A	71.00'	2,506 cf	**ADS_StormTech SC-310 +Cap** x 170 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 170 Chambers in 17 Rows
		5,543 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	71.10'	**18.0" Round Culvert** L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 71.10' / 71.00' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Discarded	70.50'	**5.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.50 cfs @ 11.78 hrs HW=70.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.50 cfs)

Primary OutFlow Max=0.30 cfs @ 12.44 hrs HW=71.38' TW=70.75' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.30 cfs @ 1.98 fps)

Pond U/G3: Underground Detention/Infiltration System 3 - Chamber Wizard Field A - Volume of Voids

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

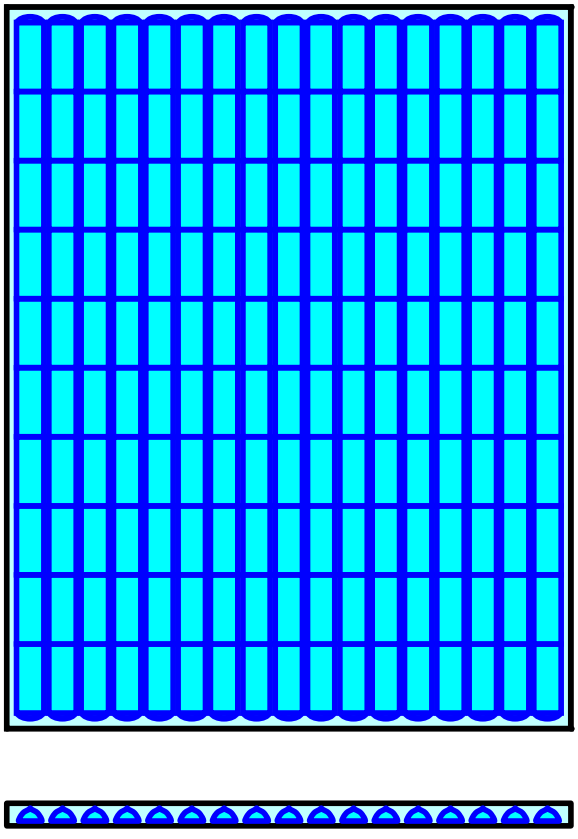
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length
17 Rows x 34.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 58.17' Base Width
6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

170 Chambers x 14.7 cf = 2,506.1 cf Chamber Storage

10,097.7 cf Field - 2,506.1 cf Chambers = 7,591.6 cf Stone x 40.0% Voids = 3,036.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,542.8 cf = 0.127 af
Overall Storage Efficiency = 54.9%
Overall System Size = 74.40' x 58.17' x 2.33'

170 Chambers
374.0 cy Field
281.2 cy Stone



Stage-Area-Storage for Pond U/G3: Underground Detention/Infiltration System 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
70.50	**4,328**	0
70.55	4,328	87
70.60	4,328	173
70.65	4,328	260
70.70	4,328	346
70.75	4,328	433
70.80	4,328	519
70.85	4,328	606
70.90	4,328	692
70.95	4,328	779
71.00	4,328	866
71.05	4,328	1,039
71.10	4,328	1,213
71.15	4,328	1,385
71.20	4,328	1,556
71.25	4,328	1,726
71.30	4,328	1,894
71.35	4,328	2,060
71.40	4,328	2,225
71.45	4,328	2,387
71.50	4,328	2,547
71.55	4,328	2,705
71.60	4,328	2,861
71.65	4,328	3,014
71.70	4,328	3,165
71.75	4,328	3,313
71.80	4,328	3,457
71.85	4,328	3,598
71.90	4,328	3,734
71.95	4,328	3,867
72.00	4,328	3,994
72.05	4,328	4,115
72.10	4,328	4,228
72.15	4,328	4,333
72.20	4,328	4,432
72.25	4,328	4,527
72.30	4,328	4,618
72.35	4,328	4,706
72.40	4,328	4,793
72.45	4,328	4,879
72.50	4,328	4,966
72.55	4,328	5,052
72.60	4,328	5,139
72.65	4,328	5,225
72.70	4,328	5,312
72.75	4,328	5,399
72.80	4,328	**5,485**

Summary for Pond YD1: YD-1

Inflow Area = 1.010 ac, 7.23% Impervious, Inflow Depth = 0.24" for 2-Year event
Inflow = 0.08 cfs @ 12.55 hrs, Volume= 0.020 af
Outflow = 0.08 cfs @ 12.55 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.55 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 76.55' @ 12.55 hrs
Flood Elev= 78.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	76.40'	**12.0" Round Culvert** L= 221.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 76.40' / 75.30' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.08 cfs @ 12.55 hrs HW=76.55' TW=73.25' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.08 cfs @ 1.51 fps)

Stage-Area-Storage for Pond YD1: YD-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
76.40	**0**	77.46	0
76.42	0	77.48	0
76.44	0	77.50	0
76.46	0	77.52	0
76.48	0	77.54	0
76.50	0	77.56	0
76.52	0	77.58	0
76.54	0	77.60	0
76.56	0	77.62	0
76.58	0	77.64	0
76.60	0	77.66	0
76.62	0	77.68	0
76.64	0	77.70	0
76.66	0	77.72	0
76.68	0	77.74	0
76.70	0	77.76	0
76.72	0	77.78	0
76.74	0	77.80	0
76.76	0	77.82	0
76.78	0	77.84	0
76.80	0	77.86	0
76.82	0	77.88	0
76.84	0	77.90	0
76.86	0	77.92	0
76.88	0	77.94	0
76.90	0	77.96	0
76.92	0	77.98	0
76.94	0	78.00	0
76.96	0		
76.98	0		
77.00	0		
77.02	0		
77.04	0		
77.06	0		
77.08	0		
77.10	0		
77.12	0		
77.14	0		
77.16	0		
77.18	0		
77.20	0		
77.22	0		
77.24	0		
77.26	0		
77.28	0		
77.30	0		
77.32	0		
77.34	0		
77.36	0		
77.38	0		
77.40	0		
77.42	0		
77.44	0		

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 6.932 ac, 50.01% Impervious, Inflow Depth = 0.03" for 2-Year event
Inflow = 0.30 cfs @ 12.44 hrs, Volume= 0.017 af
Primary = 0.30 cfs @ 12.44 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 1.416 ac, 68.29% Impervious, Inflow Depth = 1.53" for 2-Year event
Inflow = 2.62 cfs @ 12.08 hrs, Volume= 0.181 af
Primary = 2.62 cfs @ 12.08 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 0.147 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 22.85 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 22.85 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.032 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 22.90 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 22.90 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 2.819 ac, 33.03% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 12.43 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 12.43 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 8.348 ac, 53.11% Impervious, Inflow Depth = 0.29" for 2-Year event
Inflow = 2.62 cfs @ 12.08 hrs, Volume= 0.199 af
Primary = 2.62 cfs @ 12.08 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1.1: DA1.1 Runoff Area=2.026 ac 0.10% Impervious Runoff Depth=0.30"
Flow Length=557' Tc=28.7 min CN=41 Runoff=0.14 cfs 0.051 af

Subcatchment DA1.2: DA1.2 Runoff Area=3.062 ac 68.71% Impervious Runoff Depth=3.58"
Flow Length=899' Tc=20.3 min CN=86 Runoff=8.52 cfs 0.913 af

Subcatchment DA1.3: DA1.3 Runoff Area=0.418 ac 84.93% Impervious Runoff Depth=3.99"
Tc=5.0 min CN=90 Runoff=1.95 cfs 0.139 af

Subcatchment DA2.1: DA2.1 Runoff Area=0.825 ac 60.00% Impervious Runoff Depth=3.19"
Tc=5.0 min CN=82 Runoff=3.19 cfs 0.219 af

Subcatchment DA2.2: DA2.2 Runoff Area=1.416 ac 68.29% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=79 Runoff=5.00 cfs 0.343 af

Subcatchment DA3.1: DA3.1 Runoff Area=1.010 ac 7.23% Impervious Runoff Depth=0.86"
Flow Length=416' Tc=19.1 min CN=52 Runoff=0.51 cfs 0.072 af

Subcatchment DA3.2: DA3.2 Runoff Area=0.147 ac 0.00% Impervious Runoff Depth=0.22"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.003 af

Subcatchment DA3.3: DA3.3 Runoff Area=0.815 ac 75.71% Impervious Runoff Depth=3.38"
Tc=5.0 min CN=84 Runoff=3.32 cfs 0.230 af

Subcatchment DA3.4: DA3.4 Runoff Area=0.601 ac 85.02% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=91 Runoff=2.86 cfs 0.205 af

Subcatchment DA4: DA4 Runoff Area=0.032 ac 0.00% Impervious Runoff Depth=0.22"
Tc=10.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment DA5.1: DA5.1 Runoff Area=0.922 ac 24.84% Impervious Runoff Depth=1.10"
Tc=10.0 min CN=56 Runoff=0.86 cfs 0.085 af

Subcatchment DA5.2: DA5.2 Runoff Area=0.072 ac 16.67% Impervious Runoff Depth=0.69"
Tc=5.0 min CN=49 Runoff=0.04 cfs 0.004 af

Pond B1: Bioretention Basin 1 Peak Elev=72.71' Storage=1,700 cf Inflow=0.87 cfs 0.094 af
Discarded=0.06 cfs 0.074 af Primary=0.09 cfs 0.020 af Outflow=0.15 cfs 0.094 af

Pond CB17: CB17 Peak Elev=71.23' Inflow=2.52 cfs 0.151 af
24.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=2.52 cfs 0.151 af

Pond U/G1: Underground Peak Elev=74.10' Storage=2,512 cf Inflow=3.42 cfs 0.302 af
Discarded=0.82 cfs 0.292 af Primary=0.18 cfs 0.009 af Outflow=1.00 cfs 0.302 af

Pond U/G2: Underground Peak Elev=73.85' Storage=7,095 cf Inflow=9.69 cfs 1.119 af
Discarded=3.94 cfs 1.054 af Primary=1.20 cfs 0.065 af Outflow=5.14 cfs 1.119 af

Pond U/G3: Underground Peak Elev=71.81' Storage=3,475 cf Inflow=5.14 cfs 0.358 af
Discarded=0.50 cfs 0.272 af Primary=1.69 cfs 0.086 af Outflow=2.19 cfs 0.358 af

Pond YD1: YD-1 Peak Elev=76.80' Inflow=0.51 cfs 0.072 af
12.0" Round Culvert n=0.012 L=221.0' S=0.0050 '/' Outflow=0.51 cfs 0.072 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=2.56 cfs 0.202 af
Primary=2.56 cfs 0.202 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=5.00 cfs 0.343 af
Primary=5.00 cfs 0.343 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.01 cfs 0.003 af
Primary=0.01 cfs 0.003 af

Link AP4: Analysis Point 4 - East PL Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.10 cfs 0.024 af
Primary=0.10 cfs 0.024 af

Link WL: Wetlands Inflow=5.59 cfs 0.545 af
Primary=5.59 cfs 0.545 af

Total Runoff Area = 11.346 ac Runoff Volume = 2.265 af Average Runoff Depth = 2.40"
52.71% Pervious = 5.981 ac 47.29% Impervious = 5.365 ac

Summary for Subcatchment DA1.1: DA1.1

Runoff = 0.14 cfs @ 12.73 hrs, Volume= 0.051 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.729	30	Woods, Good HSG A
*	0.021	77	Woods, Good HSG D
*	0.125	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG A
*	0.001	98	Paved parking HSG B
*	0.813	39	>75% Grass cover, Good HSG A
*	0.335	61	>75% Grass cover, Good HSG B
*	0.001	80	>75% Grass cover, Good HSG D
	2.026	41	Weighted Average
	2.024		99.90% Pervious Area
	0.002		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.1082	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.4	457	0.0854	0.73		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
28.7	557	Total			

Summary for Subcatchment DA1.2: DA1.2

Runoff = 8.52 cfs @ 12.27 hrs, Volume= 0.913 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.228	98	Roofs HSG A
*	0.744	98	Roofs HSG B
*	0.095	55	Woods, Good HSG B
*	0.034	98	Paved parking HSG A
*	1.098	98	Paved parking HSG B
*	0.011	39	>75% Grass cover, Good HSG A
*	0.852	61	>75% Grass cover, Good HSG B
	3.062	86	Weighted Average
	0.958		31.29% Pervious Area
	2.104		68.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	90	0.0968	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
0.5	10	0.2845	0.32		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
0.3	54	0.2455	3.47		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.7	115	0.0183	2.75		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
1.2	630	0.0200	9.11	16.09	**Pipe Channel, Pipe Flow** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
20.3	899	Total			

Summary for Subcatchment DA1.3: DA1.3

Runoff = 1.95 cfs @ 12.07 hrs, Volume= 0.139 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.298	98	Paved parking HSG A
0.057	98	Paved parking HSG B
0.040	39	>75% Grass cover, Good HSG A
0.023	61	>75% Grass cover, Good HSG B
0.418	90	Weighted Average
0.063		15.07% Pervious Area
0.355		84.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.1: DA2.1

Runoff = 3.19 cfs @ 12.07 hrs, Volume= 0.219 af, Depth= 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.059	98	Roofs HSG A
0.124	98	Paved parking HSG B
0.155	98	Paved parking HSG A
0.157	98	Roofs HSG B
0.060	39	>75% Grass cover, Good HSG A
0.270	61	>75% Grass cover, Good HSG B
0.825	82	Weighted Average
0.330		40.00% Pervious Area
0.495		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.2: DA2.2

Runoff = 5.00 cfs @ 12.07 hrs, Volume= 0.343 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.768	98	Paved parking HSG A
0.199	98	Roofs HSG A
0.113	30	Woods, Good HSG A
0.336	39	>75% Grass cover, Good HSG A
1.416	79	Weighted Average
0.449		31.71% Pervious Area
0.967		68.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.1: DA3.1

Runoff = 0.51 cfs @ 12.34 hrs, Volume= 0.072 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.064	30	Woods, Good HSG A
*	0.273	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG B
*	0.048	98	Paved parking HSG A
*	0.024	98	Roofs HSG A
*	0.349	39	>75% Grass cover, Good HSG A
*	0.251	61	>75% Grass cover, Good HSG B
	1.010	52	Weighted Average
	0.937		92.77% Pervious Area
	0.073		7.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	57	0.0572	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
10.9	43	0.0724	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
2.2	74	0.0492	0.55		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
0.8	105	0.0906	2.11		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
19.1	416	Total			

Summary for Subcatchment DA3.2: DA3.2

Runoff = 0.01 cfs @ 12.44 hrs, Volume= 0.003 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.000	98	Paved parking HSG A
0.147	39	>75% Grass cover, Good HSG A
0.147	39	Weighted Average
0.147		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.3: DA3.3

Runoff = 3.32 cfs @ 12.07 hrs, Volume= 0.230 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.617	98	Paved parking HSG A
0.198	39	>75% Grass cover, Good HSG A
0.815	84	Weighted Average
0.198		24.29% Pervious Area
0.617		75.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.4: DA3.4

Runoff = 2.86 cfs @ 12.07 hrs, Volume= 0.205 af, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.154	98	Paved parking HSG A
0.357	98	Paved parking HSG B
0.042	39	>75% Grass cover, Good HSG A
0.048	61	>75% Grass cover, Good HSG B
0.601	91	Weighted Average
0.090		14.98% Pervious Area
0.511		85.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA4: DA4

Runoff = 0.00 cfs @ 12.52 hrs, Volume= 0.001 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

	Area (ac)	CN	Description
*	0.000	98	Paved parking HSG A
*	0.032	39	>75% Grass cover, Good HSG A
	0.032	39	Weighted Average
	0.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.1: DA5.1

Runoff = 0.86 cfs @ 12.16 hrs, Volume= 0.085 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.001	98	Roofs HSG B
0.066	98	Roofs HSG A
0.161	98	Paved parking HSG A
0.001	98	Paved parking HSG B
0.608	39	>75% Grass cover, Good HSG A
0.085	61	>75% Grass cover, Good HSG B
0.922	56	Weighted Average
0.693		75.16% Pervious Area
0.229		24.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.2: DA5.2

Runoff = 0.04 cfs @ 12.11 hrs, Volume= 0.004 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.12"

Area (ac)	CN	Description
0.012	98	Paved parking HSG A
0.060	39	>75% Grass cover, Good HSG A
0.072	49	Weighted Average
0.060		83.33% Pervious Area
0.012		16.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond B1: Bioretention Basin 1

Inflow Area = 2.747 ac, 33.45% Impervious, Inflow Depth = 0.41" for 10-Year event
Inflow = 0.87 cfs @ 12.17 hrs, Volume= 0.094 af
Outflow = 0.15 cfs @ 13.18 hrs, Volume= 0.094 af, Atten= 82%, Lag= 60.7 min
Discarded = 0.06 cfs @ 13.18 hrs, Volume= 0.074 af
Primary = 0.09 cfs @ 13.18 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 72.71' @ 13.18 hrs Surf.Area= 2,701 sf Storage= 1,700 cf

Plug-Flow detention time= 227.1 min calculated for 0.094 af (100% of inflow)
Center-of-Mass det. time= 227.0 min (1,104.3 - 877.2)

Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	10,356 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.00	2,067	0	0
73.00	2,957	2,512	2,512
74.00	3,907	3,432	5,944
75.00	4,917	4,412	10,356

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.14' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	72.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	73.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	74.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Discarded	72.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.06 cfs @ 13.18 hrs HW=72.71' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.09 cfs @ 13.18 hrs HW=72.71' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.09 cfs of 0.15 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.57 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond B1: Bioretention Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.00	2,067	0
72.05	2,111	104
72.10	2,156	211
72.15	2,201	320
72.20	2,245	431
72.25	2,290	545
72.30	2,334	660
72.35	2,378	778
72.40	2,423	898
72.45	2,468	1,020
72.50	2,512	1,145
72.55	2,556	1,271
72.60	2,601	1,400
72.65	2,646	1,532
72.70	2,690	1,665
72.75	2,735	1,801
72.80	2,779	1,938
72.85	2,823	2,078
72.90	2,868	2,221
72.95	2,913	2,365
73.00	2,957	2,512
73.05	3,004	2,661
73.10	3,052	2,812
73.15	3,100	2,966
73.20	3,147	3,122
73.25	3,195	3,281
73.30	3,242	3,442
73.35	3,289	3,605
73.40	3,337	3,771
73.45	3,385	3,939
73.50	3,432	4,109
73.55	3,479	4,282
73.60	3,527	4,457
73.65	3,575	4,635
73.70	3,622	4,815
73.75	3,670	4,997
73.80	3,717	5,182
73.85	3,764	5,369
73.90	3,812	5,558
73.95	3,860	5,750
74.00	3,907	5,944
74.05	3,957	6,141
74.10	4,008	6,340
74.15	4,059	6,541
74.20	4,109	6,746
74.25	4,160	6,952
74.30	4,210	7,162
74.35	4,260	7,373
74.40	4,311	7,588
74.45	4,362	7,804
74.50	4,412	8,024
74.55	4,462	8,246
74.60	4,513	8,470
74.65	4,564	8,697
74.70	4,614	8,926
74.75	4,665	9,158
74.80	4,715	9,393
74.85	4,765	9,630
74.90	4,816	9,869
74.95	4,867	10,111
75.00	**4,917**	**10,356**

Summary for Pond CB17: CB17

Inflow Area = 4.906 ac, 70.63% Impervious, Inflow Depth = 0.37" for 10-Year event
Inflow = 2.52 cfs @ 12.40 hrs, Volume= 0.151 af
Outflow = 2.52 cfs @ 12.40 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min
Primary = 2.52 cfs @ 12.40 hrs, Volume= 0.151 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.23' @ 12.40 hrs
Flood Elev= 80.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.50'	**24.0" Round Culvert** L= 120.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 70.50' / 69.90' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.52 cfs @ 12.40 hrs HW=71.23' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.52 cfs @ 3.62 fps)

Stage-Area-Storage for Pond CB17: CB17

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
70.50	**0**	75.80	0
70.60	0	75.90	0
70.70	0	76.00	0
70.80	0	76.10	0
70.90	0	76.20	0
71.00	0	76.30	0
71.10	0	76.40	0
71.20	0	76.50	0
71.30	0	76.60	0
71.40	0	76.70	0
71.50	0	76.80	0
71.60	0	76.90	0
71.70	0	77.00	0
71.80	0	77.10	0
71.90	0	77.20	0
72.00	0	77.30	0
72.10	0	77.40	0
72.20	0	77.50	0
72.30	0	77.60	0
72.40	0	77.70	0
72.50	0	77.80	0
72.60	0	77.90	0
72.70	0	78.00	0
72.80	0	78.10	0
72.90	0	78.20	0
73.00	0	78.30	0
73.10	0	78.40	0
73.20	0	78.50	0
73.30	0	78.60	0
73.40	0	78.70	0
73.50	0	78.80	0
73.60	0	78.90	0
73.70	0	79.00	0
73.80	0	79.10	0
73.90	0	79.20	0
74.00	0	79.30	0
74.10	0	79.40	0
74.20	0	79.50	0
74.30	0	79.60	0
74.40	0	79.70	0
74.50	0	79.80	0
74.60	0	79.90	0
74.70	0	80.00	0
74.80	0		
74.90	0		
75.00	0		
75.10	0		
75.20	0		
75.30	0		
75.40	0		
75.50	0		
75.60	0		
75.70	0		

Summary for Pond U/G1: Underground Detention/Infiltration System 1

Inflow Area = 1.825 ac, 37.81% Impervious, Inflow Depth = 1.98" for 10-Year event
Inflow = 3.42 cfs @ 12.08 hrs, Volume= 0.302 af
Outflow = 1.00 cfs @ 12.53 hrs, Volume= 0.302 af, Atten= 71%, Lag= 27.4 min
Discarded = 0.82 cfs @ 11.87 hrs, Volume= 0.292 af
Primary = 0.18 cfs @ 12.53 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 74.10' @ 12.53 hrs Surf.Area= 3,626 sf Storage= 2,512 cf

Plug-Flow detention time= 15.1 min calculated for 0.302 af (100% of inflow)
Center-of-Mass det. time= 15.1 min (849.1 - 834.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	3,257 cf	**44.25'W x 81.94'L x 3.50'H Field A** 12,690 cf Overall - 4,548 cf Embedded = 8,142 cf x 40.0% Voids
#2A	73.50'	4,548 cf	**ADS_StormTech SC-740 +Cap** x 99 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 99 Chambers in 9 Rows
		7,805 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**12.0" Round Culvert** L= 125.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 72.00' S= 0.0120 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	73.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	74.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	76.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#5	Discarded	73.00'	**9.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.82 cfs @ 11.87 hrs HW=73.04' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.82 cfs)

Primary OutFlow Max=0.18 cfs @ 12.53 hrs HW=74.10' TW=72.55' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.18 cfs of 1.30 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.18 cfs @ 2.06 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond U/G1: Underground Detention/Infiltration System 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

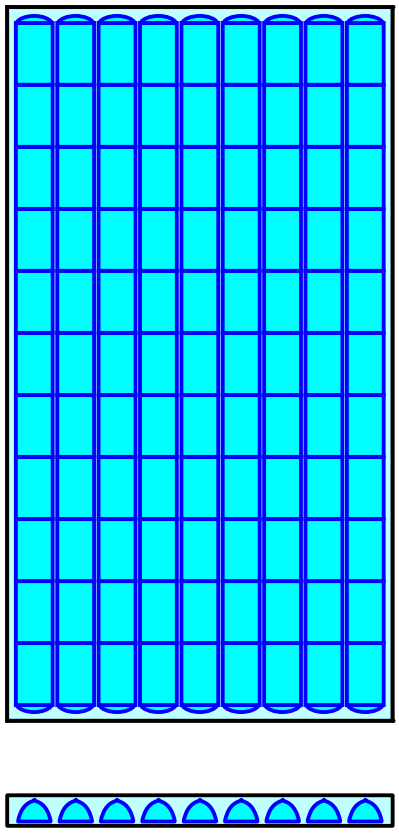
11 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 79.94' Row Length +12.0" End Stone x 2 = 81.94' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

99 Chambers x 45.9 cf = 4,548.1 cf Chamber Storage

12,689.9 cf Field - 4,548.1 cf Chambers = 8,141.9 cf Stone x 40.0% Voids = 3,256.8 cf Stone Storage

Chamber Storage + Stone Storage = 7,804.8 cf = 0.179 af
Overall Storage Efficiency = 61.5%
Overall System Size = 81.94' x 44.25' x 3.50'

99 Chambers
470.0 cy Field
301.6 cy Stone



Stage-Area-Storage for Pond U/G1: Underground Detention/Infiltration System 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
73.00	**3,626**	0
73.05	3,626	73
73.10	3,626	145
73.15	3,626	218
73.20	3,626	290
73.25	3,626	363
73.30	3,626	435
73.35	3,626	508
73.40	3,626	580
73.45	3,626	653
73.50	3,626	725
73.55	3,626	876
73.60	3,626	1,027
73.65	3,626	1,178
73.70	3,626	1,329
73.75	3,626	1,479
73.80	3,626	1,628
73.85	3,626	1,777
73.90	3,626	1,926
73.95	3,626	2,073
74.00	3,626	2,221
74.05	3,626	2,367
74.10	3,626	2,513
74.15	3,626	2,659
74.20	3,626	2,803
74.25	3,626	2,947
74.30	3,626	3,090
74.35	3,626	3,232
74.40	3,626	3,374
74.45	3,626	3,514
74.50	3,626	3,654
74.55	3,626	3,793
74.60	3,626	3,931
74.65	3,626	4,068
74.70	3,626	4,203
74.75	3,626	4,338
74.80	3,626	4,472
74.85	3,626	4,604
74.90	3,626	4,735
74.95	3,626	4,865
75.00	3,626	4,993
75.05	3,626	5,120
75.10	3,626	5,246
75.15	3,626	5,370
75.20	3,626	5,492
75.25	3,626	5,612
75.30	3,626	5,731
75.35	3,626	5,847
75.40	3,626	5,962
75.45	3,626	6,074
75.50	3,626	6,184
75.55	3,626	6,291
75.60	3,626	6,395
75.65	3,626	6,496
75.70	3,626	6,593
75.75	3,626	6,684
75.80	3,626	6,770
75.85	3,626	6,851
75.90	3,626	6,930
75.95	3,626	7,006
76.00	3,626	7,080
76.05	3,626	7,152
76.10	3,626	7,225
76.15	3,626	7,297
76.20	3,626	7,370
76.25	3,626	7,442
76.30	3,626	7,515
76.35	3,626	7,587
76.40	3,626	7,660
76.45	3,626	7,732
76.50	3,626	**7,805**

Summary for Pond U/G2: Underground Detention/Infiltration System 2

Inflow Area = 3.663 ac, 71.39% Impervious, Inflow Depth = 3.66" for 10-Year event
Inflow = 9.69 cfs @ 12.25 hrs, Volume= 1.119 af
Outflow = 5.14 cfs @ 12.57 hrs, Volume= 1.119 af, Atten= 47%, Lag= 19.1 min
Discarded = 3.94 cfs @ 11.99 hrs, Volume= 1.054 af
Primary = 1.20 cfs @ 12.57 hrs, Volume= 0.065 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 73.85' @ 12.57 hrs Surf.Area= 7,911 sf Storage= 7,095 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 7.4 min (818.3 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	72.50'	7,014 cf	**82.25'W x 96.18'L x 3.50'H Field A** 27,687 cf Overall - 10,153 cf Embedded = 17,534 cf x 40.0% Voids
#2A	73.00'	10,153 cf	**ADS_StormTech SC-740 +Cap** x 221 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 221 Chambers in 17 Rows
		17,166 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**15.0" Round Culvert** L= 251.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 71.75' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	73.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	75.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	72.50'	**21.500 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=3.94 cfs @ 11.99 hrs HW=72.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 3.94 cfs)

Primary OutFlow Max=1.20 cfs @ 12.57 hrs HW=73.85' TW=71.18' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.20 cfs of 2.40 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.20 cfs @ 3.45 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond U/G2: Underground Detention/Infiltration System 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

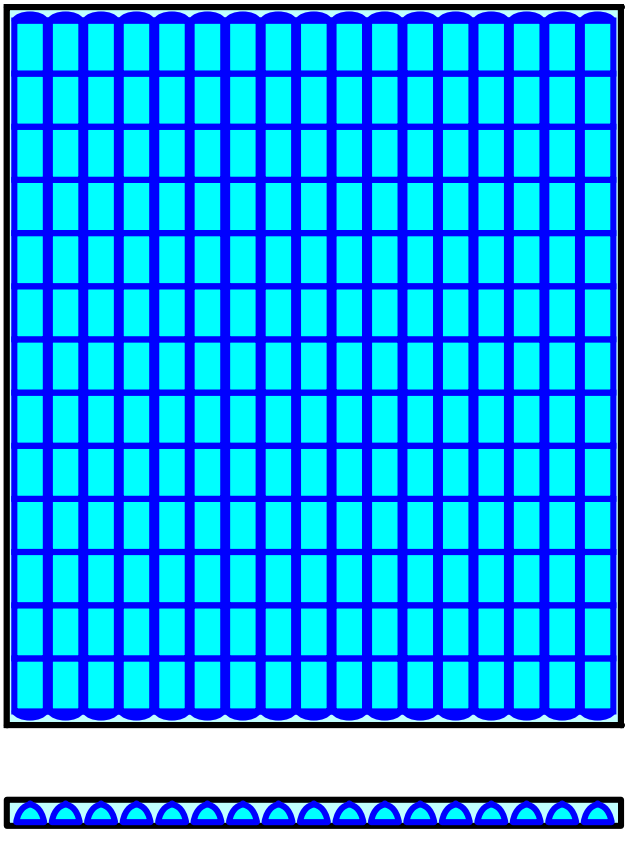
13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length
17 Rows x 51.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 82.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

221 Chambers x 45.9 cf = 10,152.7 cf Chamber Storage

27,686.9 cf Field - 10,152.7 cf Chambers = 17,534.1 cf Stone x 40.0% Voids = 7,013.6 cf Stone Storage

Chamber Storage + Stone Storage = 17,166.4 cf = 0.394 af
Overall Storage Efficiency = 62.0%
Overall System Size = 96.18' x 82.25' x 3.50'

221 Chambers
1,025.4 cy Field
649.4 cy Stone



Stage-Area-Storage for Pond U/G2: Underground Detention/Infiltration System 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.50	**7,911**	0
72.55	7,911	158
72.60	7,911	316
72.65	7,911	475
72.70	7,911	633
72.75	7,911	791
72.80	7,911	949
72.85	7,911	1,107
72.90	7,911	1,266
72.95	7,911	1,424
73.00	7,911	1,582
73.05	7,911	1,916
73.10	7,911	2,249
73.15	7,911	2,582
73.20	7,911	2,915
73.25	7,911	3,246
73.30	7,911	3,576
73.35	7,911	3,905
73.40	7,911	4,233
73.45	7,911	4,559
73.50	7,911	4,884
73.55	7,911	5,208
73.60	7,911	5,530
73.65	7,911	5,851
73.70	7,911	6,170
73.75	7,911	6,487
73.80	7,911	6,803
73.85	7,911	7,117
73.90	7,911	7,429
73.95	7,911	7,739
74.00	7,911	8,048
74.05	7,911	8,354
74.10	7,911	8,658
74.15	7,911	8,960
74.20	7,911	9,259
74.25	7,911	9,556
74.30	7,911	9,850
74.35	7,911	10,142
74.40	7,911	10,431
74.45	7,911	10,717
74.50	7,911	11,000
74.55	7,911	11,280
74.60	7,911	11,557
74.65	7,911	11,830
74.70	7,911	12,099
74.75	7,911	12,364
74.80	7,911	12,624
74.85	7,911	12,881
74.90	7,911	13,133
74.95	7,911	13,380
75.00	7,911	13,621
75.05	7,911	13,857
75.10	7,911	14,086
75.15	7,911	14,307
75.20	7,911	14,519
75.25	7,911	14,719
75.30	7,911	14,907
75.35	7,911	15,086
75.40	7,911	15,257
75.45	7,911	15,423
75.50	7,911	15,584
75.55	7,911	15,742
75.60	7,911	15,901
75.65	7,911	16,059
75.70	7,911	16,217
75.75	7,911	16,375
75.80	7,911	16,534
75.85	7,911	16,692
75.90	7,911	16,850
75.95	7,911	17,008
76.00	7,911	**17,166**

Summary for Pond U/G3: Underground Detention/Infiltration System 3

Inflow Area = 1.243 ac, 68.38% Impervious, Inflow Depth = 3.46" for 10-Year event
Inflow = 5.14 cfs @ 12.07 hrs, Volume= 0.358 af
Outflow = 2.19 cfs @ 12.26 hrs, Volume= 0.358 af, Atten= 57%, Lag= 11.2 min
Discarded = 0.50 cfs @ 11.64 hrs, Volume= 0.272 af
Primary = 1.69 cfs @ 12.26 hrs, Volume= 0.086 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.81' @ 12.26 hrs Surf.Area= 4,328 sf Storage= 3,475 cf

Plug-Flow detention time= 22.0 min calculated for 0.358 af (100% of inflow)
Center-of-Mass det. time= 22.0 min (826.5 - 804.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	70.50'	3,037 cf	**58.17'W x 74.40'L x 2.33'H Field A - Volume of Voids** 10,098 cf Overall - 2,506 cf Embedded = 7,592 cf x 40.0% Voids
#2A	71.00'	2,506 cf	**ADS_StormTech SC-310 +Cap** x 170 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 170 Chambers in 17 Rows
		5,543 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	71.10'	**18.0" Round Culvert** L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 71.10' / 71.00' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Discarded	70.50'	**5.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.50 cfs @ 11.64 hrs HW=70.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.50 cfs)

Primary OutFlow Max=1.69 cfs @ 12.26 hrs HW=71.81' TW=71.16' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.69 cfs @ 3.03 fps)

Pond U/G3: Underground Detention/Infiltration System 3 - Chamber Wizard Field A - Volume of Voids

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

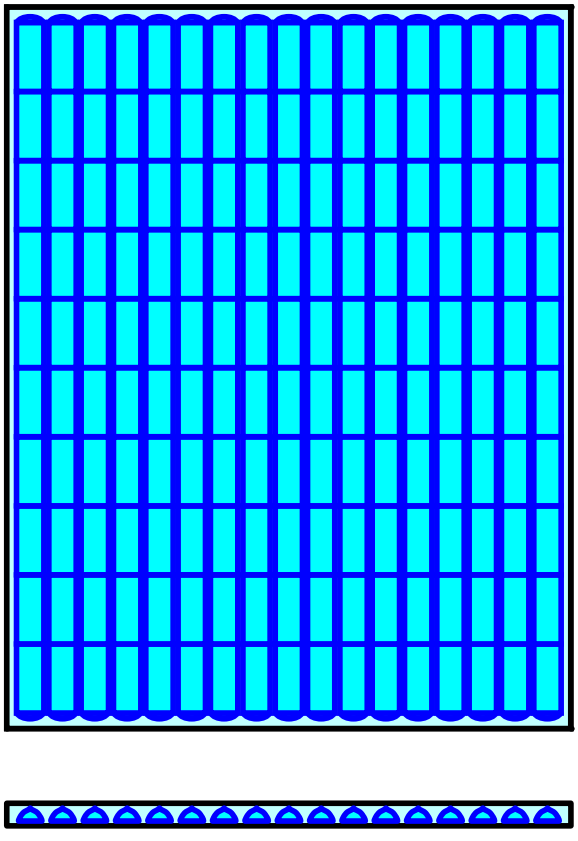
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length
17 Rows x 34.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 58.17' Base Width
6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

170 Chambers x 14.7 cf = 2,506.1 cf Chamber Storage

10,097.7 cf Field - 2,506.1 cf Chambers = 7,591.6 cf Stone x 40.0% Voids = 3,036.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,542.8 cf = 0.127 af
Overall Storage Efficiency = 54.9%
Overall System Size = 74.40' x 58.17' x 2.33'

170 Chambers
374.0 cy Field
281.2 cy Stone



Stage-Area-Storage for Pond U/G3: Underground Detention/Infiltration System 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
70.50	**4,328**	0
70.55	4,328	87
70.60	4,328	173
70.65	4,328	260
70.70	4,328	346
70.75	4,328	433
70.80	4,328	519
70.85	4,328	606
70.90	4,328	692
70.95	4,328	779
71.00	4,328	866
71.05	4,328	1,039
71.10	4,328	1,213
71.15	4,328	1,385
71.20	4,328	1,556
71.25	4,328	1,726
71.30	4,328	1,894
71.35	4,328	2,060
71.40	4,328	2,225
71.45	4,328	2,387
71.50	4,328	2,547
71.55	4,328	2,705
71.60	4,328	2,861
71.65	4,328	3,014
71.70	4,328	3,165
71.75	4,328	3,313
71.80	4,328	3,457
71.85	4,328	3,598
71.90	4,328	3,734
71.95	4,328	3,867
72.00	4,328	3,994
72.05	4,328	4,115
72.10	4,328	4,228
72.15	4,328	4,333
72.20	4,328	4,432
72.25	4,328	4,527
72.30	4,328	4,618
72.35	4,328	4,706
72.40	4,328	4,793
72.45	4,328	4,879
72.50	4,328	4,966
72.55	4,328	5,052
72.60	4,328	5,139
72.65	4,328	5,225
72.70	4,328	5,312
72.75	4,328	5,399
72.80	4,328	**5,485**

Summary for Pond YD1: YD-1

Inflow Area = 1.010 ac, 7.23% Impervious, Inflow Depth = 0.86" for 10-Year event
Inflow = 0.51 cfs @ 12.34 hrs, Volume= 0.072 af
Outflow = 0.51 cfs @ 12.34 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.34 hrs, Volume= 0.072 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 76.80' @ 12.34 hrs
Flood Elev= 78.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	76.40'	**12.0" Round Culvert** L= 221.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 76.40' / 75.30' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.34 hrs HW=76.80' TW=74.01' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.51 cfs @ 2.60 fps)

Stage-Area-Storage for Pond YD1: YD-1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
76.40	**0**	77.46	0
76.42	0	77.48	0
76.44	0	77.50	0
76.46	0	77.52	0
76.48	0	77.54	0
76.50	0	77.56	0
76.52	0	77.58	0
76.54	0	77.60	0
76.56	0	77.62	0
76.58	0	77.64	0
76.60	0	77.66	0
76.62	0	77.68	0
76.64	0	77.70	0
76.66	0	77.72	0
76.68	0	77.74	0
76.70	0	77.76	0
76.72	0	77.78	0
76.74	0	77.80	0
76.76	0	77.82	0
76.78	0	77.84	0
76.80	0	77.86	0
76.82	0	77.88	0
76.84	0	77.90	0
76.86	0	77.92	0
76.88	0	77.94	0
76.90	0	77.96	0
76.92	0	77.98	0
76.94	0	78.00	0
76.96	0		
76.98	0		
77.00	0		
77.02	0		
77.04	0		
77.06	0		
77.08	0		
77.10	0		
77.12	0		
77.14	0		
77.16	0		
77.18	0		
77.20	0		
77.22	0		
77.24	0		
77.26	0		
77.28	0		
77.30	0		
77.32	0		
77.34	0		
77.36	0		
77.38	0		
77.40	0		
77.42	0		
77.44	0		

Summary for Link AP1: Analysis Point 1 - Edge of Wetlands

Inflow Area = 6.932 ac, 50.01% Impervious, Inflow Depth = 0.35" for 10-Year event
Inflow = 2.56 cfs @ 12.41 hrs, Volume= 0.202 af
Primary = 2.56 cfs @ 12.41 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert

Inflow Area = 1.416 ac, 68.29% Impervious, Inflow Depth = 2.91" for 10-Year event
Inflow = 5.00 cfs @ 12.07 hrs, Volume= 0.343 af
Primary = 5.00 cfs @ 12.07 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP3: Analysis Point 3 - Southeast PL

Inflow Area = 0.147 ac, 0.00% Impervious, Inflow Depth = 0.22" for 10-Year event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 12.44 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP4: Analysis Point 4 - East PL

Inflow Area = 0.032 ac, 0.00% Impervious, Inflow Depth = 0.22" for 10-Year event
Inflow = 0.00 cfs @ 12.52 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 12.52 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link AP5: Analysis Point 5 - PL along Jerome Ave

Inflow Area = 2.819 ac, 33.03% Impervious, Inflow Depth = 0.10" for 10-Year event
Inflow = 0.10 cfs @ 13.17 hrs, Volume= 0.024 af
Primary = 0.10 cfs @ 13.17 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link WL: Wetlands

Inflow Area = 8.348 ac, 53.11% Impervious, Inflow Depth = 0.78" for 10-Year event
Inflow = 5.59 cfs @ 12.09 hrs, Volume= 0.545 af
Primary = 5.59 cfs @ 12.09 hrs, Volume= 0.545 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA1.1: DA1.1 Runoff Area=2.026 ac 0.10% Impervious Runoff Depth=0.61"
Flow Length=557' Tc=28.7 min CN=41 Runoff=0.45 cfs 0.102 af

Subcatchment DA1.2: DA1.2 Runoff Area=3.062 ac 68.71% Impervious Runoff Depth=4.55"
Flow Length=899' Tc=20.3 min CN=86 Runoff=10.74 cfs 1.162 af

Subcatchment DA1.3: DA1.3 Runoff Area=0.418 ac 84.93% Impervious Runoff Depth=4.99"
Tc=5.0 min CN=90 Runoff=2.41 cfs 0.174 af

Subcatchment DA2.1: DA2.1 Runoff Area=0.825 ac 60.00% Impervious Runoff Depth=4.13"
Tc=5.0 min CN=82 Runoff=4.10 cfs 0.284 af

Subcatchment DA2.2: DA2.2 Runoff Area=1.416 ac 68.29% Impervious Runoff Depth=3.81"
Tc=5.0 min CN=79 Runoff=6.54 cfs 0.450 af

Subcatchment DA3.1: DA3.1 Runoff Area=1.010 ac 7.23% Impervious Runoff Depth=1.37"
Flow Length=416' Tc=19.1 min CN=52 Runoff=0.93 cfs 0.115 af

Subcatchment DA3.2: DA3.2 Runoff Area=0.147 ac 0.00% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=39 Runoff=0.03 cfs 0.006 af

Subcatchment DA3.3: DA3.3 Runoff Area=0.815 ac 75.71% Impervious Runoff Depth=4.34"
Tc=5.0 min CN=84 Runoff=4.23 cfs 0.295 af

Subcatchment DA3.4: DA3.4 Runoff Area=0.601 ac 85.02% Impervious Runoff Depth=5.10"
Tc=5.0 min CN=91 Runoff=3.52 cfs 0.256 af

Subcatchment DA4: DA4 Runoff Area=0.032 ac 0.00% Impervious Runoff Depth=0.49"
Tc=10.0 min CN=39 Runoff=0.01 cfs 0.001 af

Subcatchment DA5.1: DA5.1 Runoff Area=0.922 ac 24.84% Impervious Runoff Depth=1.69"
Tc=10.0 min CN=56 Runoff=1.44 cfs 0.130 af

Subcatchment DA5.2: DA5.2 Runoff Area=0.072 ac 16.67% Impervious Runoff Depth=1.14"
Tc=5.0 min CN=49 Runoff=0.08 cfs 0.007 af

Pond B1: Bioretention Basin 1 Peak Elev=73.18' Storage=3,051 cf Inflow=1.61 cfs 0.168 af
Discarded=0.07 cfs 0.085 af Primary=0.30 cfs 0.083 af Outflow=0.37 cfs 0.168 af

Pond CB17: CB17 Peak Elev=71.42' Inflow=3.82 cfs 0.276 af
24.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=3.82 cfs 0.276 af

Pond U/G1: Underground Peak Elev=74.67' Storage=4,118 cf Inflow=4.53 cfs 0.410 af
Discarded=0.82 cfs 0.371 af Primary=0.36 cfs 0.039 af Outflow=1.19 cfs 0.410 af

Pond U/G2: Underground Peak Elev=74.48' Storage=10,866 cf Inflow=12.18 cfs 1.417 af
Discarded=3.94 cfs 1.281 af Primary=1.80 cfs 0.136 af Outflow=5.73 cfs 1.417 af

Pond U/G3: Underground Peak Elev=72.07' Storage=4,156 cf Inflow=6.51 cfs 0.458 af
Discarded=0.50 cfs 0.318 af Primary=2.95 cfs 0.139 af Outflow=3.45 cfs 0.458 af

Pond YD1: YD-1 Peak Elev=76.95' Inflow=0.93 cfs 0.115 af
12.0" Round Culvert n=0.012 L=221.0' S=0.0050 '/' Outflow=0.93 cfs 0.115 af

Link AP1: Analysis Point 1 - Edge of Wetlands Inflow=4.03 cfs 0.378 af
Primary=4.03 cfs 0.378 af

Link AP2: Analysis Point 2 - Downstream End of 36" RCP Culvert Inflow=6.54 cfs 0.450 af
Primary=6.54 cfs 0.450 af

Link AP3: Analysis Point 3 - Southeast PL Inflow=0.03 cfs 0.006 af
Primary=0.03 cfs 0.006 af

Link AP4: Analysis Point 4 - East PL Inflow=0.01 cfs 0.001 af
Primary=0.01 cfs 0.001 af

Link AP5: Analysis Point 5 - PL along Jerome Ave Inflow=0.31 cfs 0.090 af
Primary=0.31 cfs 0.090 af

Link WL: Wetlands Inflow=8.23 cfs 0.828 af
Primary=8.23 cfs 0.828 af

Total Runoff Area = 11.346 ac Runoff Volume = 2.980 af Average Runoff Depth = 3.15"
52.71% Pervious = 5.981 ac 47.29% Impervious = 5.365 ac

Summary for Subcatchment DA1.1: DA1.1

Runoff = 0.45 cfs @ 12.60 hrs, Volume= 0.102 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.729	30	Woods, Good HSG A
*	0.021	77	Woods, Good HSG D
*	0.125	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG A
*	0.001	98	Paved parking HSG B
*	0.813	39	>75% Grass cover, Good HSG A
*	0.335	61	>75% Grass cover, Good HSG B
*	0.001	80	>75% Grass cover, Good HSG D
	2.026	41	Weighted Average
	2.024		99.90% Pervious Area
	0.002		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	100	0.1082	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
10.4	457	0.0854	0.73		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
28.7	557	Total			

Summary for Subcatchment DA1.2: DA1.2

Runoff = 10.74 cfs @ 12.27 hrs, Volume= 1.162 af, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.228	98	Roofs HSG A
*	0.744	98	Roofs HSG B
*	0.095	55	Woods, Good HSG B
*	0.034	98	Paved parking HSG A
*	1.098	98	Paved parking HSG B
*	0.011	39	>75% Grass cover, Good HSG A
*	0.852	61	>75% Grass cover, Good HSG B
	3.062	86	Weighted Average
	0.958		31.29% Pervious Area
	2.104		68.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	90	0.0968	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
0.5	10	0.2845	0.32		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
0.3	54	0.2455	3.47		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.7	115	0.0183	2.75		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
1.2	630	0.0200	9.11	16.09	**Pipe Channel, Pipe Flow** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
20.3	899	Total			

Summary for Subcatchment DA1.3: DA1.3

Runoff = 2.41 cfs @ 12.07 hrs, Volume= 0.174 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.298	98	Paved parking HSG A
0.057	98	Paved parking HSG B
0.040	39	>75% Grass cover, Good HSG A
0.023	61	>75% Grass cover, Good HSG B
0.418	90	Weighted Average
0.063		15.07% Pervious Area
0.355		84.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.1: DA2.1

Runoff = 4.10 cfs @ 12.07 hrs, Volume= 0.284 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.059	98	Roofs HSG A
0.124	98	Paved parking HSG B
0.155	98	Paved parking HSG A
0.157	98	Roofs HSG B
0.060	39	>75% Grass cover, Good HSG A
0.270	61	>75% Grass cover, Good HSG B
0.825	82	Weighted Average
0.330		40.00% Pervious Area
0.495		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA2.2: DA2.2

Runoff = 6.54 cfs @ 12.07 hrs, Volume= 0.450 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.768	98	Paved parking HSG A
0.199	98	Roofs HSG A
0.113	30	Woods, Good HSG A
0.336	39	>75% Grass cover, Good HSG A
1.416	79	Weighted Average
0.449		31.71% Pervious Area
0.967		68.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.1: DA3.1

Runoff = 0.93 cfs @ 12.31 hrs, Volume= 0.115 af, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.064	30	Woods, Good HSG A
*	0.273	55	Woods, Good HSG B
*	0.001	98	Paved parking HSG B
*	0.048	98	Paved parking HSG A
*	0.024	98	Roofs HSG A
*	0.349	39	>75% Grass cover, Good HSG A
*	0.251	61	>75% Grass cover, Good HSG B
	1.010	52	Weighted Average
	0.937		92.77% Pervious Area
	0.073		7.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	57	0.0572	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.46"
10.9	43	0.0724	0.07		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 3.46"
2.2	74	0.0492	0.55		**Shallow Concentrated Flow, Shallow Conc. Flow** Forest w/Heavy Litter Kv= 2.5 fps
1.1	87	0.0359	1.33		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0285	3.43		**Shallow Concentrated Flow, Shallow Conc.** Paved Kv= 20.3 fps
0.8	105	0.0906	2.11		**Shallow Concentrated Flow, Shallow Conc.** Short Grass Pasture Kv= 7.0 fps
19.1	416	Total			

Summary for Subcatchment DA3.2: DA3.2

Runoff = 0.03 cfs @ 12.31 hrs, Volume= 0.006 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.000	98	Paved parking HSG A
0.147	39	>75% Grass cover, Good HSG A
0.147	39	Weighted Average
0.147		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.3: DA3.3

Runoff = 4.23 cfs @ 12.07 hrs, Volume= 0.295 af, Depth= 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.617	98	Paved parking HSG A
0.198	39	>75% Grass cover, Good HSG A
0.815	84	Weighted Average
0.198		24.29% Pervious Area
0.617		75.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA3.4: DA3.4

Runoff = 3.52 cfs @ 12.07 hrs, Volume= 0.256 af, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.154	98	Paved parking HSG A
0.357	98	Paved parking HSG B
0.042	39	>75% Grass cover, Good HSG A
0.048	61	>75% Grass cover, Good HSG B
0.601	91	Weighted Average
0.090		14.98% Pervious Area
0.511		85.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment DA4: DA4

Runoff = 0.01 cfs @ 12.39 hrs, Volume= 0.001 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

	Area (ac)	CN	Description
*	0.000	98	Paved parking HSG A
*	0.032	39	>75% Grass cover, Good HSG A
	0.032	39	Weighted Average
	0.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.1: DA5.1

Runoff = 1.44 cfs @ 12.15 hrs, Volume= 0.130 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.001	98	Roofs HSG B
0.066	98	Roofs HSG A
0.161	98	Paved parking HSG A
0.001	98	Paved parking HSG B
0.608	39	>75% Grass cover, Good HSG A
0.085	61	>75% Grass cover, Good HSG B
0.922	56	Weighted Average
0.693		75.16% Pervious Area
0.229		24.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Summary for Subcatchment DA5.2: DA5.2

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.007 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.15"

Area (ac)	CN	Description
0.012	98	Paved parking HSG A
0.060	39	>75% Grass cover, Good HSG A
0.072	49	Weighted Average
0.060		83.33% Pervious Area
0.012		16.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond B1: Bioretention Basin 1

Inflow Area = 2.747 ac, 33.45% Impervious, Inflow Depth = 0.74" for 25-Year event
Inflow = 1.61 cfs @ 12.17 hrs, Volume= 0.168 af
Outflow = 0.37 cfs @ 13.53 hrs, Volume= 0.168 af, Atten= 77%, Lag= 81.6 min
Discarded = 0.07 cfs @ 13.53 hrs, Volume= 0.085 af
Primary = 0.30 cfs @ 13.53 hrs, Volume= 0.083 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 73.18' @ 13.53 hrs Surf.Area= 3,125 sf Storage= 3,051 cf

Plug-Flow detention time= 180.4 min calculated for 0.168 af (100% of inflow)
Center-of-Mass det. time= 180.4 min (1,032.8 - 852.4)

Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	10,356 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.00	2,067	0	0
73.00	2,957	2,512	2,512
74.00	3,907	3,432	5,944
75.00	4,917	4,412	10,356

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.14' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	72.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	73.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	74.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Discarded	72.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.07 cfs @ 13.53 hrs HW=73.18' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.30 cfs @ 13.53 hrs HW=73.18' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.30 cfs of 1.27 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 3.44 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Stage-Area-Storage for Pond B1: Bioretention Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.00	2,067	0
72.05	2,111	104
72.10	2,156	211
72.15	2,201	320
72.20	2,245	431
72.25	2,290	545
72.30	2,334	660
72.35	2,378	778
72.40	2,423	898
72.45	2,468	1,020
72.50	2,512	1,145
72.55	2,556	1,271
72.60	2,601	1,400
72.65	2,646	1,532
72.70	2,690	1,665
72.75	2,735	1,801
72.80	2,779	1,938
72.85	2,823	2,078
72.90	2,868	2,221
72.95	2,913	2,365
73.00	2,957	2,512
73.05	3,004	2,661
73.10	3,052	2,812
73.15	3,100	2,966
73.20	3,147	3,122
73.25	3,195	3,281
73.30	3,242	3,442
73.35	3,289	3,605
73.40	3,337	3,771
73.45	3,385	3,939
73.50	3,432	4,109
73.55	3,479	4,282
73.60	3,527	4,457
73.65	3,575	4,635
73.70	3,622	4,815
73.75	3,670	4,997
73.80	3,717	5,182
73.85	3,764	5,369
73.90	3,812	5,558
73.95	3,860	5,750
74.00	3,907	5,944
74.05	3,957	6,141
74.10	4,008	6,340
74.15	4,059	6,541
74.20	4,109	6,746
74.25	4,160	6,952
74.30	4,210	7,162
74.35	4,260	7,373
74.40	4,311	7,588
74.45	4,362	7,804
74.50	4,412	8,024
74.55	4,462	8,246
74.60	4,513	8,470
74.65	4,564	8,697
74.70	4,614	8,926
74.75	4,665	9,158
74.80	4,715	9,393
74.85	4,765	9,630
74.90	4,816	9,869
74.95	4,867	10,111
75.00	**4,917**	**10,356**

Summary for Pond CB17: CB17

Inflow Area = 4.906 ac, 70.63% Impervious, Inflow Depth = 0.67" for 25-Year event
Inflow = 3.82 cfs @ 12.30 hrs, Volume= 0.276 af
Outflow = 3.82 cfs @ 12.30 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min
Primary = 3.82 cfs @ 12.30 hrs, Volume= 0.276 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.42' @ 12.30 hrs
Flood Elev= 80.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.50'	**24.0" Round Culvert** L= 120.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 70.50' / 69.90' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.82 cfs @ 12.30 hrs HW=71.42' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.82 cfs @ 4.00 fps)

Stage-Area-Storage for Pond CB17: CB17

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
70.50	**0**	75.80	0
70.60	0	75.90	0
70.70	0	76.00	0
70.80	0	76.10	0
70.90	0	76.20	0
71.00	0	76.30	0
71.10	0	76.40	0
71.20	0	76.50	0
71.30	0	76.60	0
71.40	0	76.70	0
71.50	0	76.80	0
71.60	0	76.90	0
71.70	0	77.00	0
71.80	0	77.10	0
71.90	0	77.20	0
72.00	0	77.30	0
72.10	0	77.40	0
72.20	0	77.50	0
72.30	0	77.60	0
72.40	0	77.70	0
72.50	0	77.80	0
72.60	0	77.90	0
72.70	0	78.00	0
72.80	0	78.10	0
72.90	0	78.20	0
73.00	0	78.30	0
73.10	0	78.40	0
73.20	0	78.50	0
73.30	0	78.60	0
73.40	0	78.70	0
73.50	0	78.80	0
73.60	0	78.90	0
73.70	0	79.00	0
73.80	0	79.10	0
73.90	0	79.20	0
74.00	0	79.30	0
74.10	0	79.40	0
74.20	0	79.50	0
74.30	0	79.60	0
74.40	0	79.70	0
74.50	0	79.80	0
74.60	0	79.90	0
74.70	0	80.00	0
74.80	0		
74.90	0		
75.00	0		
75.10	0		
75.20	0		
75.30	0		
75.40	0		
75.50	0		
75.60	0		
75.70	0		

Summary for Pond U/G1: Underground Detention/Infiltration System 1

Inflow Area = 1.825 ac, 37.81% Impervious, Inflow Depth = 2.69" for 25-Year event
Inflow = 4.53 cfs @ 12.08 hrs, Volume= 0.410 af
Outflow = 1.19 cfs @ 12.59 hrs, Volume= 0.410 af, Atten= 74%, Lag= 31.0 min
Discarded = 0.82 cfs @ 11.78 hrs, Volume= 0.371 af
Primary = 0.36 cfs @ 12.59 hrs, Volume= 0.039 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 74.67' @ 12.59 hrs Surf.Area= 3,626 sf Storage= 4,118 cf

Plug-Flow detention time= 23.7 min calculated for 0.410 af (100% of inflow)
Center-of-Mass det. time= 23.7 min (852.1 - 828.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	3,257 cf	**44.25'W x 81.94'L x 3.50'H Field A** 12,690 cf Overall - 4,548 cf Embedded = 8,142 cf x 40.0% Voids
#2A	73.50'	4,548 cf	**ADS_StormTech SC-740 +Cap** x 99 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 99 Chambers in 9 Rows
		7,805 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**12.0" Round Culvert** L= 125.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 72.00' S= 0.0120 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	73.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	74.75'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	76.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#5	Discarded	73.00'	**9.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.82 cfs @ 11.78 hrs HW=73.04' (Free Discharge)
└**5=Exfiltration** (Exfiltration Controls 0.82 cfs)

Primary OutFlow Max=0.36 cfs @ 12.59 hrs HW=74.67' TW=72.96' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.36 cfs of 3.09 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.36 cfs @ 4.17 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond U/G1: Underground Detention/Infiltration System 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

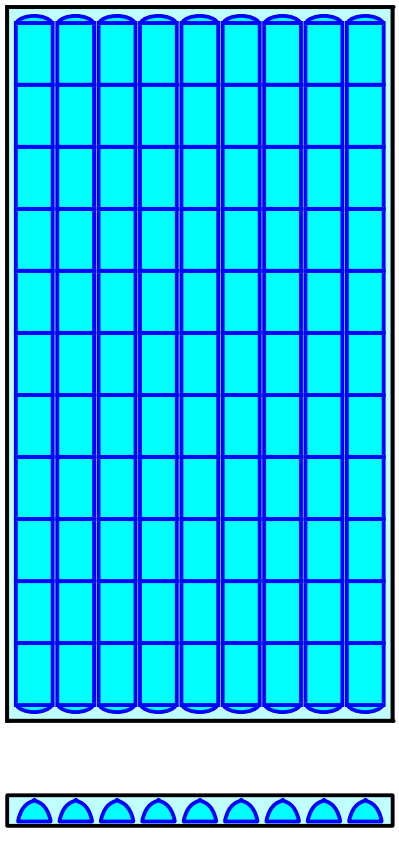
11 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 79.94' Row Length +12.0" End Stone x 2 = 81.94' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

99 Chambers x 45.9 cf = 4,548.1 cf Chamber Storage

12,689.9 cf Field - 4,548.1 cf Chambers = 8,141.9 cf Stone x 40.0% Voids = 3,256.8 cf Stone Storage

Chamber Storage + Stone Storage = 7,804.8 cf = 0.179 af
Overall Storage Efficiency = 61.5%
Overall System Size = 81.94' x 44.25' x 3.50'

99 Chambers
470.0 cy Field
301.6 cy Stone



Stage-Area-Storage for Pond U/G1: Underground Detention/Infiltration System 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
73.00	**3,626**	0
73.05	3,626	73
73.10	3,626	145
73.15	3,626	218
73.20	3,626	290
73.25	3,626	363
73.30	3,626	435
73.35	3,626	508
73.40	3,626	580
73.45	3,626	653
73.50	3,626	725
73.55	3,626	876
73.60	3,626	1,027
73.65	3,626	1,178
73.70	3,626	1,329
73.75	3,626	1,479
73.80	3,626	1,628
73.85	3,626	1,777
73.90	3,626	1,926
73.95	3,626	2,073
74.00	3,626	2,221
74.05	3,626	2,367
74.10	3,626	2,513
74.15	3,626	2,659
74.20	3,626	2,803
74.25	3,626	2,947
74.30	3,626	3,090
74.35	3,626	3,232
74.40	3,626	3,374
74.45	3,626	3,514
74.50	3,626	3,654
74.55	3,626	3,793
74.60	3,626	3,931
74.65	3,626	4,068
74.70	3,626	4,203
74.75	3,626	4,338
74.80	3,626	4,472
74.85	3,626	4,604
74.90	3,626	4,735
74.95	3,626	4,865
75.00	3,626	4,993
75.05	3,626	5,120
75.10	3,626	5,246
75.15	3,626	5,370
75.20	3,626	5,492
75.25	3,626	5,612
75.30	3,626	5,731
75.35	3,626	5,847
75.40	3,626	5,962
75.45	3,626	6,074
75.50	3,626	6,184
75.55	3,626	6,291
75.60	3,626	6,395
75.65	3,626	6,496
75.70	3,626	6,593
75.75	3,626	6,684
75.80	3,626	6,770
75.85	3,626	6,851
75.90	3,626	6,930
75.95	3,626	7,006
76.00	3,626	7,080
76.05	3,626	7,152
76.10	3,626	7,225
76.15	3,626	7,297
76.20	3,626	7,370
76.25	3,626	7,442
76.30	3,626	7,515
76.35	3,626	7,587
76.40	3,626	7,660
76.45	3,626	7,732
76.50	3,626	**7,805**

Summary for Pond U/G2: Underground Detention/Infiltration System 2

Inflow Area = 3.663 ac, 71.39% Impervious, Inflow Depth = 4.64" for 25-Year event
Inflow = 12.18 cfs @ 12.25 hrs, Volume= 1.417 af
Outflow = 5.73 cfs @ 12.61 hrs, Volume= 1.417 af, Atten= 53%, Lag= 21.5 min
Discarded = 3.94 cfs @ 11.92 hrs, Volume= 1.281 af
Primary = 1.80 cfs @ 12.61 hrs, Volume= 0.136 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 74.48' @ 12.61 hrs Surf.Area= 7,911 sf Storage= 10,866 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.7 min (815.3 - 804.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	72.50'	7,014 cf	**82.25'W x 96.18'L x 3.50'H Field A** 27,687 cf Overall - 10,153 cf Embedded = 17,534 cf x 40.0% Voids
#2A	73.00'	10,153 cf	**ADS_StormTech SC-740 +Cap** x 221 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 221 Chambers in 17 Rows
		17,166 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**15.0" Round Culvert** L= 251.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 71.75' S= 0.0050 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	73.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	75.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Discarded	72.50'	**21.500 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=3.94 cfs @ 11.92 hrs HW=72.54' (Free Discharge)
└**4=Exfiltration** (Exfiltration Controls 3.94 cfs)

Primary OutFlow Max=1.80 cfs @ 12.61 hrs HW=74.48' TW=71.30' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.80 cfs of 5.05 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.80 cfs @ 5.15 fps)
  └**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)