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# *Drainage Memorandum*

| | | | |
|---|---|---|---|
| **To:** | Rick Nardella, Malibu Investments LLC | **Date:** | October 27, 2022; Revised October 2023 |
| **CC:** | Steve Medeiros, Malibu Investments LLC | **Project:** | Post Road Retail & Contractor Units |
| **From:** | Joseph A. Casali, PE, MBA | **Re:** | Phase II Modifications |

## Introduction / Purpose

Joe Casali Engineering, Inc., (JCE) has prepared this drainage memorandum summarizing changes to the site layout, grading and drainage design, and utility design for the Proposed Retail & Contractor Units, located at 2826 Post Road in Warwick, Rhode Island (Tax Assessor's Plat Map (AP) 267, Lot 217).

This project was originally designed to be constructed in three phases. Phase I of the construction was completed in Summer of 2022. Phases II and III are now proposed to be combined and incorporate some changes to the building size and layout, which caused modifications to the drainage design and the utility design for the project. Phase I included the project consisted of six (6) self-storage buildings with a total of 152,900 sq. ft. of building area and a 1,600 sq. ft. office building along the southern portion of the project area. Phase I construction was completed in early Summer 2022. Phase II previously included the construction of a 19,500 sq. ft. two-story mixed-use building along with four (4) additional storage buildings ranging in size from 8,000 sq. ft. to 10,800 sq. ft. The Applicant proposes modifications to Phase II which is now proposed to include a 9,500 sq. ft. mixed-use building along with two (2) 24,000 sq. ft. contractor rental unit buildings and one (1) 6,900 sq. ft. mini-storage building.

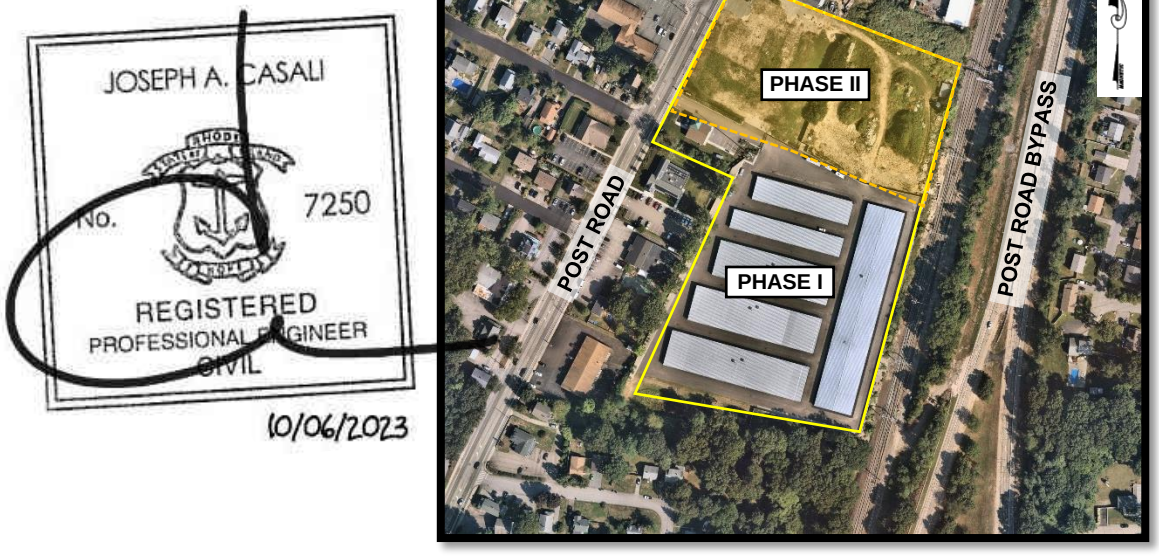


***Figure 1 – General Locus Map (Existing Conditions – Phase I Complete)***

NOT TO SCALE

This project was previously approved by the Rhode Island Department of Environmental Management (RIDEM) for a RIPDES permit on June 8, 2018 (RIPDES No. RIR101718), WQC No. 18-037, UIC No. 001834). A wetlands permit was not required. In addition, this project was previously approved by the Rhode Island Department of Transportation for a Physical Alteration Permit (PAPA No. 18-0314). The Applicant has received approved permit modifications to both the RIDEM and RIDOT permits as of January 2023.

## History

This project was originally designed and permitted by Cherenzia & Associates, Ltd. (Cherenzia). As noted above, the project has received the requisite permit approvals from RIDEM and RIDOT. Cherenzia has provided JCE with digital and hard copy files including the following:

- *Stormwater Management Report, Malibu Investments, LLC, Retail and Mini Storage Facility, 2826 Post Road, Warwick, Rhode Island,* prepared by Cherenzia & Associates Ltd., stamped by Sergio F. Cherenzia, PE, dated May 2018.

- Drainage Memorandum, prepared by Cherenzia & Associates Ltd., dated September 2018.

- Site Plans titled *Retail & Mini Storage Facility, 2826 Post Road, AP 267, Lot 217, 218 & 219, Warwick, Rhode Island, Issued for Permitting,* prepared by Cherenzia & Associates Ltd., stamped by Sergio F. Cherenzia, PE, dated September 20, 2018.

These documents were used as a basis for the design modifications and incorporate the original survey, hydrologic modeling, etc.

## Proposed Phase II Development Modifications

Phase I included the project consisted of six (6) storage buildings with a total of 152,900 sq. ft. of building area and a 1,600 sq. ft. office building along the southern portion of the project area. Phase I construction was completed in early Summer 2022. Phase II previously included the construction of a 19,500 sq. ft. two-story mixed-use building along with four (4) additional storage buildings ranging in size from 8,000 sq. ft. to 10,800 sq. ft. The Applicant proposes modifications to Phase II which is now proposed to include a 9,500 sq. ft. mixed-use building along with two (2) 24,000 sq. ft. contractor rental unit buildings and one (1) 6,900 sq. ft. mini-storage building.

The project was previously approved by the Rhode Island Department of Environmental Management (RIDEM) on June 18, 2018 via RIPDES Permit No. RIR101718, WQC No. 18-037 and UIC No. 001834 and by the Rhode Island Department of Transportation (RIDOT) under Physical Alteration Permit No. 18-0314. The scope of this report and application is to modify these two permits based on the modifications proposed to Phase II and to file for and obtain Preliminary Plan and Final Plan approval from the City of Warwick for Phase II.

As noted above, the changes between the previously approved overall project (including Phase II) and the currently proposed Phase II scope includes the following significant changes:

- Reduction in the overall size and scope of the proposed mixed-use building from 19,500 sq. ft. (previously approved) to 9,500 sq. ft. (currently proposed).

- Increase in the overall size and scope of the proposed storage buildings from 37,100 sq. ft. (previously approved) to 54,900 sq. ft. buildings for contractor rental units and mini-storage (currently proposed). The three (3) proposed buildings will contain a total of 46 contractor units and 23 mini-storage units.

- Modifications to the site design and layout to accommodate the building footprint modifications described above; including modifications to curb cut locations along Post Road, and modifications to sewer and water utilities.

- Modifications to the stormwater management system design and layout.

Access to the development will be provided utilizing one of two new curb cuts along Post Road. With respect to parking, the City of Warwick Zoning Ordinance does not have a parking requirement for contractor rental units; instead noting that the Building Official is responsible for determining parking requirements. Per the Building Official, one (1) parking space is required per 500 sq. ft. of building area. The total square footage of storage space is 172,685 sq. ft. globally (Phases I & II) necessitating 338 spaces. The storage facility office requires 1 space per 250 sq. ft.; therefore 6 additional spaces are required.

With respect to parking for the proposed mixed-use building; the City of Warwick Zoning Ordinance has varied parking requirements for the anticipated uses including 1 space per 200 sq. ft. for medical uses; 1 space per 250 sq. ft. of business uses; 1 space per 200 sq. ft. of retail uses; and 1 space per 100 sq. ft. of restaurant uses. Tenants are not yet known, so the parking requirements presented below are theoretical varied mixed-uses in the proposed building:

- 1,850 sq. ft. medical use (1 space / 200 sq. ft.) = 9 spaces required
- 2,750 sq. ft. business use (1 space / 250 sq. ft.) = 11 spaces required
- 2,500 sq. ft. other retail use (1 space / 200 sq. ft.) = 13 spaces required
- 2,400 sq. ft. restaurant use (1 space / 100 sq. ft.) = 24 spaces required

As shown above, the total parking spaces required for the proposed mixed-use building is approximately 57 spaces. Sitewide, a total of 401 spaces is required and a total of 199 spaces are proposed. Requisite accessible parking spaces are provided in all areas in accordance with the Americans with Disabilities Act (ADA). The project received approval from the Zoning Board of Review for less than the required parking at the September 2023 meeting. Additional variances for landscaping were also approved.

All exterior lighting will be dark sky complaint, downward facing lighting designed to minimize negative impacts on neighboring properties. Glare from outdoor lights, signs, and from the movement of vehicles on site will be shielded from the view of adjacent properties.

### Phase II Utility Modifications

Water: The proposed Phase II scope includes providing domestic water to all buildings via a new domestic water service from Post Road. The new service will be routed into a utility room at the north corner of the mixed-use building, within 100-ft of the property line, therefore not necessitating an above-ground heated enclosure. Review and approval of the Phase II water modifications will be required by the Warwick Water District.

Sewer: The proposed Phase II scope includes sewer services from the mixed-use building and the center contractor unit building, Building #4. The eastern and southern-most Phase II building will not have restrooms and therefore do not require sewer services. Sewer service from the mixed-use building will be routed via gravity to an existing sewer manhole on site. Sewer service from Building #4 will be routed to an Environmental One sewer pump station chamber; the outlet from the pump station will be tied into the existing stub routed to the sewer main in Post Road. No new sewer service taps are proposed as part of the Phase II development. Review and approval of the Phase II sewer modifications will be required by the Warwick Sewer Authority.

Gas: The proposed Phase II scope includes a new gas service from the main within Post Road to the proposed mixed-use building. Coordination with RI Energy will be required.

Electric/Communications: The proposed Phase II scope includes coordination with RI Energy and telecommunications providers to provide primary electric service and communications services to the proposed buildings. Services are anticipated to be routed from the existing transformer pad located to the east of the office building to the various buildings.

Stormwater: The design of the original project included an infiltration basin at the southwestern portion of the property and four (4) underground infiltration chamber systems dispersed throughout the development. One (1) of the underground infiltration chamber systems and the infiltration basin were constructed as part of Phase I. The remaining systems have been modified to accommodate the proposed changes to the development design. Under the new design, six (6) new underground infiltration chamber systems are proposed for water quality and attenuation of peak stormwater runoff rates and volumes. Review of the proposed stormwater management system design will be required by the Rhode Island Department of Environmental Management. Stormwater management design is further discussed below.

## Stormwater Design Modifications

The proposed development is subject to the requirements of the Rhode Island Stormwater Design and Installation Standards Manual (RISDISM), implemented in December 2010, amended March 2015, by both the Rhode Island Department of Environmental Management (RIDEM) and the Rhode Island Coastal Resources Management Council (CRMC). As discussed previously, the original design included an infiltration basin and four (4) underground infiltration chamber systems dispersed throughout the development. One (1) of the underground infiltration chamber systems and the infiltration basin were constructed as part of Phase I.

The remaining systems have been modified to accommodate the proposed changes to the development design. Under the new design, six (6) new underground infiltration chamber systems are proposed. In general, most stormwater runoff from the site sheet flows in a southeasterly direction where it enters swales and ultimately discharges to an off-site wetland, Design Point 1 (DP-1). Stormwater runoff from a small portion of the property along Post Road overflows to Post Road and ultimately discharges into the existing closed drainage system within Post Road, Design Point 2 (DP-2).

The site's proposed stormwater management system has been designed to generally mimic existing conditions. The stormwater management design adheres to all State (RIDEM) and local (City of Warwick) standards. The proposed Stormwater Management Plan improves the overall quality of stormwater leaving the site by using Best Management Practices (BMPs). These water quality BMPs incorporate low-impact development techniques, including six (6) underground infiltration systems. Pre-treatment has been included with the BMP designs to help reduce overall maintenance and to extend the design life of the BMPs. Pre-treatment practices include an isolator row within each individual Underground Infiltration Chamber (UIC) system. The isolator rows have been designed to meet the minimum pre-treatment requirements for the initial 1.2-inch (water quality) design storm event.

The pre-existing conditions, as described in Cherenzia's original Stormwater Report, have not been modified and are mimic what was presented in the original report. The proposed conditions take into account work completed as part of the Phase I construction as well as the proposed modifications proposed to Phase II. As shown throughout the remainder of the report, the Phase II modifications improve upon the conditions that were previously approved by the various authorities having jurisdiction. Note only Standards where changes have occurred are presented below.

**Standard 2: Groundwater Recharge**

Stormwater must be recharged within the same sub-watershed to maintain base flow at pre-development recharge levels to the maximum extent practicable.

*Standard Met*

Groundwater recharge is being provided within six (6) separate subwatersheds through six (6) new underground infiltration chamber (UIC) systems for this portion of the project. The following calculations were completed in accordance with Section 3.3.2 of the RISDISM using the following formula:

$$Rev=(1")(F)(I)/12$$

Based on the results from the soil evaluations, a recharge factor of 0.60 was used for Hydrologic Soil Group A.

***Table 1: Groundwater Recharge Requirements***

| Subwatershed | 1A & 1B | 2A & 2B | 3A & 3B | 4A & 4B | 5A & 5B | 6A & 6B |
|---|---|---|---|---|---|---|
| Treatment System | UIC #1 | UIC #2 | UIC #3 | UIC #4 | UIC #5 | UIC #6 |
| Impervious Area (SF) | 32,528 | 16,691 | 15,324 | 23,191 | 21,940 | 43,398 |
| Recharge factor (in) | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 | 0.60 |
| Required Recharge Volume (CF) | 1,626 | 835 | 766 | 1,160 | 1,097 | 2,170 |
| Provided Recharge Volume (CF) | 7,089 | 4,372 | 3,814 | 4,931 | 4,936 | 10,769 |
| Recharge Requirement Met? | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: 1. Refer to Proposed Watershed Map located in Appendix D for BMP locations.
2. Based on Routing Analysis of $WQ_v$, the entire volume is infiltrated.
3. Recharge Volumes are calculated as the Static Storage Volume.

**Standard 3: Water Quality**

The stormwater runoff from the site must be treated prior to discharge.

*Standard Met*

Because the site is not considered a redevelopment, 100% treatment for water quality volume and recharge must be provided. Treatment for water quality volume will be met using six (6) new underground infiltration chamber systems (UICs). The underground infiltration chamber systems have been sized to capture and treat the required water quality volume prior to discharge. Pre-treatment will be provided via the proposed isolator rows with the UICs. Water Quality Volume (WQv) is met through isolator rows for the UICs. Calculations were completed in accordance with Section 3.3.3 of the RISDISM using the following formula:

$$WQ_v = (1'') (I) /12 \text{ in/ft}$$

Tables 2 and 3 below provide sizing calculations for the Water Quality Volume ($WQ_v$) of the pretreatment area and the treatment area, respectively.

***Table 2: Water Quality - Pretreatment Area Requirements***

| Subwatershed | 1B | 2B | 3B | 4B | 5B | 6B |
|---|---|---|---|---|---|---|
| Treatment System | Isolator Row | Isolator Row | Isolator Row | Isolator Row | Isolator Row | Isolator Row |
| Impervious Area (SF) | 23,528 | 10,191 | 8,824 | 10,191 | 8,940 | 23,498 |
| Water Quality Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Required $WQ_v$ (CF) | 1,961 | 849 | 735 | 849 | 745 | 1,958 |
| Req. Static Volume (CF) for Pretreatment (25% of $WQ_v$) | 490 | 212 | 184 | 212 | 186 | 490 |
| Prov. Static Storage Volume for Infiltration System (CF) | 728 | 374 | 374 | 374 | 374 | 1,436 |
| Treatment Requirement Met? | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: 1. Rooftop areas are excluded from pre-treatment requirements.
2. Isolator Row added to Infiltration Chambers for Pretreatment.
3. Static Storage Volume = Volume of Chambers + Volume of Voids in Stone

*Table 3: Water Quality – Treatment Area Requirements*

| Subwatershed | 1A | 2A | 3A | 4A | 5A | 6A |
|---|---|---|---|---|---|---|
| Treatment Type | UIC #1 | UIC #2 | UIC #3 | UIC #4 | UIC #5 | UIC #6 |
| Impervious Area (SF) | 32,528 | 16,691 | 15,324 | 23,191 | 21,940 | 43,398 |
| Water Quality Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Req. Water Quality Volume (CF) | 2,711 | 1,391 | 1,277 | 1,933 | 1,828 | 3,617 |
| Required Static Volume for Treatment (CF)(100% for UIC) | 2,711 | 1,391 | 1,277 | 1,933 | 1,828 | 3,617 |
| Provided Static Storage Volume for Treatment (CF) | 7,089 | 4,372 | 3,814 | 4,931 | 4,936 | 10,769 |
| Treatment Requirement Met? | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: 1. Refer to Proposed Watershed Map located in Appendix G for watershed locations.
2. Based on Routing Analysis, the entire volume is contained up to and including the 1-yr storm.

As shown in Tables 1 through 3 above, the site's proposed stormwater management system greatly exceeds the requirements for groundwater recharge volume, water quality pre-treatment volume and water quality treatment volume. This is in accordance with all RISDISM and City of Warwick standards, and ultimately helps reduce stormwater flows into the State drainage system and the adjacent wetland.

## Drainage Analysis

The comparative pre- versus post-development hydrologic analysis was performed using the Soil Conservation Service, Technical Release 20 and 55 (TR-20 and TR-55) methodology. The 1-, 2-, 10-, 25-, and 100-year storm events were modeled for a 24-hour, Type III storm utilizing HydroCAD version 10.00. HydroCAD modeling reports for the proposed conditions are attached.

The original design included an infiltration basin and four (4) underground infiltration chamber systems dispersed throughout the development. One (1) of the underground infiltration chamber systems and the infiltration basin were constructed as part of Phase I. The remaining systems have been modified to accommodate the proposed changes to the development design. Under the new design, six (6) new underground infiltration chamber systems are proposed. In general, all stormwater runoff from the majority of the site sheet flows in a southeasterly direction where it enters swales and ultimately discharges to an off-site wetland, Design Point 1 (DP-1). Stormwater runoff from a small portion of the property along Post Road overflows to Post Road and ultimately discharges into the existing closed drainage system within Post Road, Design Point 2 (DP-2). As shown in the following sections, the stormwater runoff rates, and volumes have been reduced for all design storm events for both design points. In general, existing conditions and proposed conditions associated with Phase I have been mimicked as originally designed by Cherenzia & Associates, Ltd.

### Proposed Watershed Modifications

In general, the proposed drainage patterns mimic existing conditions, discharging to the same design points as under existing conditions. Water quality is achieved by means of infiltration practices. Stormwater runoff from the project area is conveyed through proposed drainage infrastructure in addition to the infiltration basin and UIC installed as part of Phase I, and discharges to the southern and western property lines (DP-1). The drainage systems will treat stormwater runoff pollutants and reduce peak stormwater runoff rates and volumes. These conditions are shown in detail on the Proposed Conditions Watershed Map included in Appendix G.

*Design Point 1 – Southern and Western Property Lines*

Subwatershed 1A: This subwatershed consists of 9,500 sq. ft. of rooftop area associated with the proposed mixed-use building. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with this building will discharge via underground piping to proposed UIC #1. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 1B: Consists of 30,994 sq. ft. of a paved parking area associated with the proposed mixed-use building and landscaped areas associated with the project site. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 84. Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #1. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 1D: This subwatershed includes Buildings #3 and #5 though #12 and surrounding pavement completed under Phase I. This area consists of 286,475 sq. ft. of mostly impervious area. Runoff from this area is collected by a network of catch basins into a closed drainage system and into a series of underground infiltration chamber systems. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 88. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 1E: This subwatershed includes a portion of Building #12 and surrounding pavement completed under Phase I. This area consists of 76,715 sq. ft. of mostly impervious area. Runoff from this area sheet flows and via roof drains to Surface Infiltration Basin (P-1E), constructed during Phase I. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 80. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 1F: This subwatershed includes the un-detained areas along the southern project limits of Phase I. This area consists of 20,166 sq. ft. of entirely pervious area. Runoff from this area flows directly to Design Point 1, un-detained. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 42.

Subwatershed 2A: This subwatershed consists of 6,500 sq. ft. of rooftop area associated with a portion of the proposed Building #4. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with this building will discharge via underground piping to proposed UIC #2. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 2B: Consists of 11,917 sq. ft. of a paved parking area to the north and northwest of proposed Building #4 and landscaped areas associated with the project site. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 89. Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #2. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 3A: This subwatershed consists of 6,500 sq. ft. of rooftop area associated with a portion of the proposed Building #4. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with this building will discharge via underground piping to proposed UIC #3. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 3B: Consists of 8,824 sq. ft. of a paved parking area to the west of proposed Building #4. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98.

Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #3. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 4A: This subwatershed consists of 13,000 sq. ft. of rooftop area associated with a portion of the proposed Buildings #4 and #5. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with these buildings will discharge via underground piping to proposed UIC #4. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 4B: Consists of 13,602 sq. ft. of a paved parking area to in-between proposed Buildings #4 and #5. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 83. Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #4. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 5A: This subwatershed consists of 13,000 sq. ft. of rooftop area associated with a portion of the proposed Buildings #4 and #5. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with these buildings will discharge via underground piping to proposed UIC #5. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 5B: Consists of 8,940 sq. ft. of a paved parking area to in-between proposed Buildings #4 and #5. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #5. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 6A: This subwatershed consists of 19,900 sq. ft. of rooftop area associated with a portion of the proposed Buildings #5 and all of #6. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 98. The roof drains associated with these buildings will discharge via underground piping to proposed UIC #6. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

Subwatershed 6B: Consists of 29,236 sq. ft. of a paved parking area behind proposed Building #5 and some landscaped areas. This subwatershed has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 86. Stormwater runoff associated with the new parking lot is captured within catch basins and conveyed to UIC #6. Ultimately, excess stormwater runoff is conveyed towards the off-site wetlands to the south, Design Point 1.

*Design Point 2 – Post Road*

Subwatershed 2: Consists of 4,854 sq. ft. of the western portion of the project site along Post Road. This watershed area consists mostly of impervious area. Runoff from this area sheet flows to Design Point 2, Post Road, which ultimately discharges to the existing closed drainage system within Post Road. This watershed area has a minimum TC of 6.0 minutes and a composite CN Runoff Number of 82.

## Results

A runoff analysis of the pre- and post-construction conditions was completed using the TR-20 methodology and is summarized in Table 4 below. Supporting calculations for the pre-construction condition are included in Cherenzia's original report; supporting calculations for the post-construction conditions are attached.

*Table 4: Watershed Characteristics*

| | Area (SF) | CN | Tc (min.) |
|---|---|---|---|
| ***Existing Conditions*** | | | |
| Watershed 1 | 544,237 | 47 | 51.7 |
| Watershed 2 | 15,386 | 82 | 6.0 |
| **Existing Total** | **559,623** | **48** | **--** |
| ***Proposed Conditions*** | | | |
| Subwatershed 1A | 9,000 | 98 | 6.0 |
| Subwatershed 1B | 30,994 | 84 | 6.0 |
| Subwatershed 1D | 286,475 | 88 | 6.0 |
| Subwatershed 1E | 76,715 | 80 | 6.0 |
| Subwatershed 1F | 20,166 | 42 | 6.0 |
| Subwatershed 2A | 6,500 | 98 | 6.0 |
| Subwatershed 2B | 11,917 | 89 | 6.0 |
| Subwatershed 3A | 6,500 | 98 | 6.0 |
| Subwatershed 3B | 8,824 | 98 | 6.0 |
| Subwatershed 4A | 13,000 | 98 | 6.0 |
| Subwatershed 4B | 13,602 | 83 | 6.0 |
| Subwatershed 5A | 13,000 | 98 | 6.0 |
| Subwatershed 5B | 8,940 | 98 | 6.0 |
| Subwatershed 6A | 19,900 | 98 | 6.0 |
| Subwatershed 6B | 29,236 | 86 | 6.0 |
| Watershed 2 | 4,854 | 86 | 6.0 |
| **Proposed Total** | **559,623** | **86** | **--** |

As shown in Table 4 above, the overall watershed area remains unchanged when comparing existing to proposed conditions. However, due to the increase in impervious areas associated with the proposed development, the CN value has been increased by 38 when comparing existing to proposed conditions.

*Table 5: Stormwater Runoff Discharge Summary*

| | Peak Discharge (cfs) to Design Point | | | | |
|---|---|---|---|---|---|
| | 1-Year | 2-Year | 10-Year | 25-Year | 100-Year |
| Existing DP #1 | 0.0 | 0.2 | 1.6 | 4.8 | 13.3 |
| Approved DP #1 | 0.0 | 0.0 | 1.6 | 4.8 | 13.2 |
| Revised DP #1 | 0.0 | 0.0 | 1.1 | 3.9 | 12.4 |
| ***ΔQ*** | ***0.0*** | ***-0.2*** | ***-0.5*** | ***-0.9*** | ***-0.9*** |
| Existing DP #2 | 0.5 | 0.7 | 1.2 | 1.7 | 2.6 |
| Approved DP #2 | 0.2 | 0.3 | 0.4 | 0.6 | 0.9 |
| Revised DP #2 | 0.2 | 0.2 | 0.4 | 0.6 | 0.8 |
| ***ΔQ*** | ***-0.3*** | ***-0.5*** | ***-0.8*** | ***-1.1*** | ***-1.8*** |

*Table 6: Total Stormwater Runoff Volume Summary*

| | Total Runoff Volume (ac-ft) to Design Point | | | | |
|---|---|---|---|---|---|
| | 1-yr | 2-yr | 10-yr | 25-yr | 100-yr |
| Existing DP #1 | 0.02 | 0.09 | 0.49 | 1.06 | 2.44 |
| Approved DP #1 | 0.00 | 0.00 | 0.10 | 0.38 | 1.09 |
| Revised DP #1 | 0.00 | 0.00 | 0.06 | 0.27 | 0.88 |
| ***ΔV*** | ***-0.02*** | ***-0.09*** | ***-0.43*** | ***-0.79*** | ***-1.56*** |
| Existing DP #2 | 0.03 | 0.05 | 0.09 | 0.12 | 0.19 |
| Approved DP #2 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 |
| Revised DP #2 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 |
| ***ΔV*** | ***-0.02*** | ***-0.03*** | ***-0.06*** | ***-0.08*** | ***-0.13*** |

As shown in Tables 5 and 6, the peak stormwater runoff rates and total stormwater runoff volumes realized at Design Point 1 (Southern and Western Property Lines) and Design Point 2 (Post Road) have been reduced for all design storm events. Reductions have been further improved upon when compared to the previously approved condition. This will result in a reduction of stormwater routed onto adjacent properties and will reduce stress on the public drainage system within Post Road.

## Conclusion

As discussed previously, the original design included an infiltration basin and four (4) underground infiltration chamber systems dispersed throughout the development. One (1) of the underground infiltration chamber systems and the infiltration basin were constructed as part of Phase I. The remaining systems have been modified to accommodate the proposed changes to the development design and layout. Under the new design, six (6) new underground infiltration chamber systems are proposed. The proposed drainage system has been designed to minimize impacts of the proposed site development on adjacent properties and the public right-of-way.

As shown above, the proposed stormwater management system has been designed in order to minimize impacts of the proposed site development by attenuating peak stormwater runoff rates and volumes for the 1-, 2-, 10, 25-, and 100-year design storm events. The proposed underground infiltration chamber systems have been designed to hold up to and including the 25-year design storm. The site's proposed stormwater management system greatly exceeds the requirements for groundwater recharge volume, water quality pre-treatment volume and water quality treatment volume. This is in accordance with all RISDISM and City of Warwick standards, and ultimately helps reduce stormwater flows into the State drainage system and adjacent properties.

# ATTACHMENT 1

## MODIFIED POST-CONSTRUCTION WATERSHED MAP

LEGEND

PROPERTY LINE

SUBCATCHMENT BOUNDARY

TIME OF CONCENTRATION

EX-1 SUBCATCHMENT AREA

DP-1 DESIGN POINT

P-1 STORMWATER POND

DESIGN POINT 1 (DP-1)
SOUTHERN & EASTERN
PROPERTY LINE

DESIGN POINT 2 (DP-2):
EDGE OF POST ROAD

SCALE (FEET)

0 50 100 200 400

1 INCH = 100 FT


JCE

JOE CASALI ENGINEERING, INC.
CIVIL · SITE DEVELOPMENT · TRANSPORTATION
DRAINAGE · WATER SUPPLY · WASTEWATER
300 POST ROAD, WARWICK, RI 02888
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**MIXED-USE DEVELOPMENT**

*2826 POST ROAD*
*WARWICK, RHODE ISLAND*
*AP 267, LOT 217*

REVISIONS:

| NO. | DATE. | DESCRIPTION |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | SD |
| DRAWN BY: | SD |
| CHECKED BY: | JAC |
| DATE: | SEPT. 2022 |
| PROJECT NO: | 03-64e |

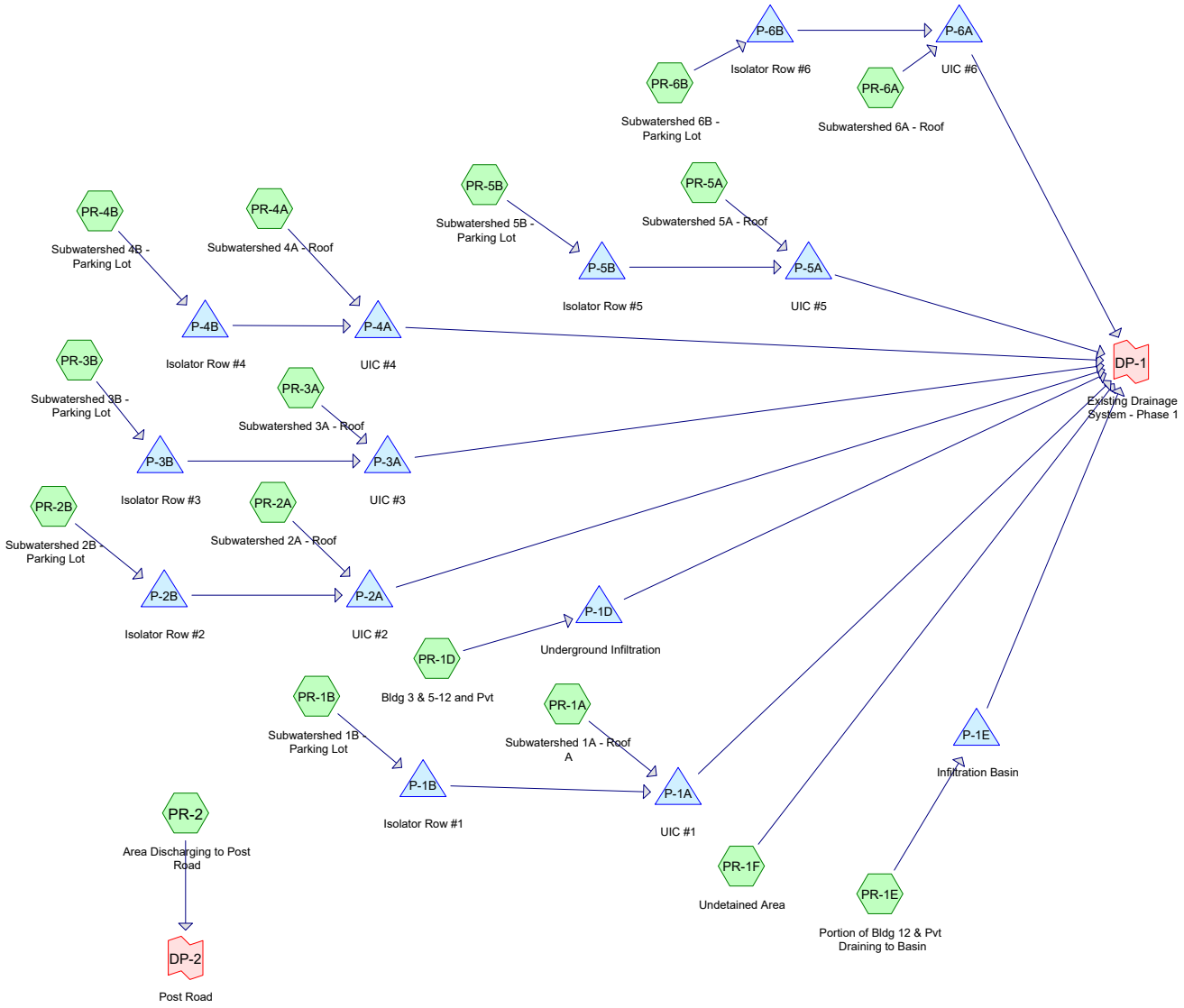
STORMWATER REPORT

**PROPOSED CONDITIONS WATERSHED MAP**

**SHEET 1 OF 1**

# ATTACHMENT 2

## MODIFIED PROPOSED HYDROCAD CALCULATIONS




Subcat Reach Pond Link

**Routing Diagram for 2826 Post Road Phase II Modifications - Proposed**

Prepared by {enter your company name here}, Printed 10/6/2022

## Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 16,907 | 68 | <50% Grass cover, Poor, HSG A (PR-1D, PR-1E) |
| 66,517 | 39 | >75% Grass cover, Good, HSG A (PR-1B, PR-1D, PR-1E, PR-1F, PR-2, PR-2B, PR-4B, PR-6B) |
| 536 | 61 | >75% Grass cover, Good, HSG B (PR-1D, PR-1F) |
| 1,253 | 80 | >75% Grass cover, Good, HSG D (PR-2) |
| 5,130 | 72 | Dirt roads, HSG A (PR-1D, PR-1E) |
| 85,172 | 98 | Paved parking and sidewalks, HSG A (PR-1B, PR-2B, PR-3B, PR-4B, PR-5B, PR-6B) |
| 144,295 | 98 | Paved parking, HSG A (PR-1D, PR-1E, PR-2) |
| 2,111 | 98 | Paved parking, HSG B (PR-1D) |
| 2,135 | 98 | Paved parking, HSG D (PR-2) |
| 202,787 | 98 | Roofs, HSG A (PR-1A, PR-1D, PR-1E, PR-2A, PR-3A, PR-4A, PR-5A, PR-6A) |
| 1,705 | 98 | Roofs, HSG B (PR-1D) |
| 12,907 | 36 | Woods, Fair, HSG A (PR-1E, PR-1F) |
| 3,966 | 60 | Woods, Fair, HSG B (PR-1F) |
| 3,402 | 30 | Woods, Good, HSG A (PR-1D, PR-1E) |
| 10,736 | 32 | Woods/grass comb., Good, HSG A (PR-1D, PR-1E) |
| **559,558** | **86** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 547,852 | HSG A | PR-1A, PR-1B, PR-1D, PR-1E, PR-1F, PR-2, PR-2A, PR-2B, PR-3A, PR-3B, PR-4A, PR-4B, PR-5A, PR-5B, PR-6A, PR-6B |
| 8,318 | HSG B | PR-1D, PR-1F |
| 0 | HSG C | |
| 3,388 | HSG D | PR-2 |
| 0 | Other | |
| **559,558** | | **TOTAL AREA** |

## Ground Covers (all nodes)

| HSG-A (sq-ft) | HSG-B (sq-ft) | HSG-C (sq-ft) | HSG-D (sq-ft) | Other (sq-ft) | Total (sq-ft) | Ground Cover |
|---|---|---|---|---|---|---|
| 16,907 | 0 | 0 | 0 | 0 | 16,907 | <50% Grass cover, Poor |
| 66,517 | 536 | 0 | 1,253 | 0 | 68,307 | >75% Grass cover, Good |
| 5,130 | 0 | 0 | 0 | 0 | 5,130 | Dirt roads |
| 144,295 | 2,111 | 0 | 2,135 | 0 | 148,541 | Paved parking |
| 85,172 | 0 | 0 | 0 | 0 | 85,172 | Paved parking and sidewalks |
| 202,787 | 1,705 | 0 | 0 | 0 | 204,492 | Roofs |
| 12,907 | 3,966 | 0 | 0 | 0 | 16,873 | Woods, Fair |
| 3,402 | 0 | 0 | 0 | 0 | 3,402 | Woods, Good |
| 10,736 | 0 | 0 | 0 | 0 | 10,736 | Woods/grass comb., Good |
| **547,852** | **8,318** | **0** | **3,388** | **0** | **559,558** | **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 | P-1D | 31.40 | 31.00 | 25.0 | 0.0160 | 0.012 | 24.0 | 0.0 | 0.0 |

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.53 cfs 1,852 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=1.27"
Tc=6.0 min CN=84 Runoff=1.04 cfs 3,289 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=1.55"
Tc=6.0 min CN=88 Runoff=11.74 cfs 37,102 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=80 Runoff=2.04 cfs 6,583 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=42 Runoff=0.00 cfs 0 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=86 Runoff=0.18 cfs 562 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.38 cfs 1,338 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=1.63"
Tc=6.0 min CN=89 Runoff=0.51 cfs 1,620 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.38 cfs 1,338 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.52 cfs 1,816 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.76 cfs 2,675 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=1.21"
Tc=6.0 min CN=83 Runoff=0.43 cfs 1,371 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.76 cfs 2,675 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=0.52 cfs 1,840 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=98 Runoff=1.16 cfs 4,095 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=86 Runoff=1.09 cfs 3,432 cf

**Pond P-1A: UIC #1** Peak Elev=46.68' Storage=251 cf Inflow=1.56 cfs 4,360 cf
Discarded=0.83 cfs 4,355 cf Primary=0.00 cfs 0 cf Outflow=0.83 cfs 4,355 cf

**Pond P-1B: Isolator Row #1** Peak Elev=49.35' Storage=746 cf Inflow=1.04 cfs 3,289 cf
Outflow=1.07 cfs 2,508 cf

**Pond P-1D: Underground Infiltration** Peak Elev=45.25' Storage=4,827 cf Inflow=11.74 cfs 37,102 cf
Discarded=4.86 cfs 37,102 cf Primary=0.00 cfs 0 cf Outflow=4.86 cfs 37,102 cf

**Pond P-1E: Infiltration Basin** Peak Elev=45.29' Storage=1,070 cf Inflow=2.04 cfs 6,583 cf
Discarded=0.74 cfs 6,583 cf Primary=0.00 cfs 0 cf Outflow=0.74 cfs 6,583 cf

**Pond P-2A: UIC #2** Peak Elev=46.77' Storage=208 cf Inflow=0.89 cfs 2,570 cf
Discarded=0.47 cfs 2,571 cf Primary=0.00 cfs 0 cf Outflow=0.47 cfs 2,571 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.34' Storage=383 cf Inflow=0.51 cfs 1,620 cf
Outflow=0.51 cfs 1,232 cf

**Pond P-3A: UIC #3** Peak Elev=46.94' Storage=294 cf Inflow=0.89 cfs 2,781 cf
Discarded=0.41 cfs 2,774 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 2,774 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.34' Storage=383 cf Inflow=0.52 cfs 1,816 cf
Outflow=0.51 cfs 1,443 cf

**Pond P-4A: UIC #4** Peak Elev=46.74' Storage=210 cf Inflow=0.89 cfs 3,653 cf
Discarded=0.53 cfs 3,644 cf Primary=0.00 cfs 0 cf Outflow=0.53 cfs 3,644 cf

**Pond P-4B: Isolator Row #4** Peak Elev=49.31' Storage=380 cf Inflow=0.43 cfs 1,371 cf
Outflow=0.33 cfs 977 cf

**Pond P-5A: UIC #5** Peak Elev=47.02' Storage=477 cf Inflow=1.28 cfs 4,140 cf
Discarded=0.54 cfs 4,135 cf Primary=0.00 cfs 0 cf Outflow=0.54 cfs 4,135 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.34' Storage=383 cf Inflow=0.52 cfs 1,840 cf
Outflow=0.52 cfs 1,464 cf

**Pond P-6A: UIC #6** Peak Elev=45.05' Storage=90 cf Inflow=1.16 cfs 6,069 cf
Discarded=0.99 cfs 6,075 cf Primary=0.00 cfs 0 cf Outflow=0.99 cfs 6,075 cf

**Pond P-6B: Isolator Row #6** Peak Elev=47.81' Storage=1,458 cf Inflow=1.09 cfs 3,432 cf
Outflow=0.55 cfs 1,973 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

**Link DP-2: Post Road** Inflow=0.18 cfs 562 cf
Primary=0.18 cfs 562 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 71,588 cf Average Runoff Depth = 1.54"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 1,852 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 3,289 cf, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 11.74 cfs @ 12.09 hrs, Volume= 37,102 cf, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 2.04 cfs @ 12.10 hrs, Volume= 6,583 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 562 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 1,338 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 0.51 cfs @ 12.09 hrs, Volume= 1,620 cf, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 1,338 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 1,816 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 2,675 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 0.43 cfs @ 12.10 hrs, Volume= 1,371 cf, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 2,675 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 1,840 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 1.16 cfs @ 12.09 hrs, Volume= 4,095 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 3,432 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 1.31" for 1-Year event
Inflow = 1.56 cfs @ 12.12 hrs, Volume= 4,360 cf
Outflow = 0.83 cfs @ 12.25 hrs, Volume= 4,355 cf, Atten= 47%, Lag= 7.8 min
Discarded = 0.83 cfs @ 12.25 hrs, Volume= 4,355 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.68' @ 12.25 hrs Surf.Area= 4,161 sf Storage= 251 cf

Plug-Flow detention time= 2.7 min calculated for 4,355 cf (100% of inflow)
Center-of-Mass det. time= 1.9 min ( 831.6 - 829.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.83 cfs @ 12.25 hrs HW=46.68' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.83 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 1.27" for 1-Year event
Inflow = 1.04 cfs @ 12.09 hrs, Volume= 3,289 cf
Outflow = 1.07 cfs @ 12.12 hrs, Volume= 2,508 cf, Atten= 0%, Lag= 1.5 min
Primary = 1.07 cfs @ 12.12 hrs, Volume= 2,508 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.35' @ 12.10 hrs Surf.Area= 468 sf Storage= 746 cf

Plug-Flow detention time= 130.0 min calculated for 2,503 cf (76% of inflow)
Center-of-Mass det. time= 43.5 min ( 881.1 - 837.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=0.93 cfs @ 12.12 hrs HW=49.34' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.93 cfs @ 1.00 fps)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 1.55" for 1-Year event
Inflow = 11.74 cfs @ 12.09 hrs, Volume= 37,102 cf
Outflow = 4.86 cfs @ 12.33 hrs, Volume= 37,102 cf, Atten= 59%, Lag= 14.2 min
Discarded = 4.86 cfs @ 12.33 hrs, Volume= 37,102 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 45.25' @ 12.33 hrs Surf.Area= 23,713 sf Storage= 4,827 cf

Plug-Flow detention time= 5.7 min calculated for 37,036 cf (100% of inflow)
Center-of-Mass det. time= 5.7 min ( 827.9 - 822.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=4.86 cfs @ 12.33 hrs HW=45.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 4.86 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=44.70' (Free Discharge)
└**4=Culvert** (Passes 0.00 cfs of 41.88 cfs potential flow)
  ├**2=Orifice/Grate** ( Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 1.03" for 1-Year event
Inflow = 2.04 cfs @ 12.10 hrs, Volume= 6,583 cf
Outflow = 0.74 cfs @ 12.42 hrs, Volume= 6,583 cf, Atten= 64%, Lag= 19.3 min
Discarded = 0.74 cfs @ 12.42 hrs, Volume= 6,583 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 45.29' @ 12.42 hrs Surf.Area= 3,843 sf Storage= 1,070 cf

Plug-Flow detention time= 9.2 min calculated for 6,572 cf (100% of inflow)
Center-of-Mass det. time= 9.2 min ( 861.1 - 851.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=0.74 cfs @ 12.42 hrs HW=45.29' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.74 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 1.67" for 1-Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 2,570 cf
Outflow = 0.47 cfs @ 12.24 hrs, Volume= 2,571 cf, Atten= 47%, Lag= 8.8 min
Discarded = 0.47 cfs @ 12.24 hrs, Volume= 2,571 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.77' @ 12.24 hrs Surf.Area= 2,352 sf Storage= 208 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.4 min ( 811.9 - 809.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.47 cfs @ 12.24 hrs HW=46.77' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.47 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 1.63" for 1-Year event
Inflow = 0.51 cfs @ 12.09 hrs, Volume= 1,620 cf
Outflow = 0.51 cfs @ 12.09 hrs, Volume= 1,232 cf, Atten= 1%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.09 hrs, Volume= 1,232 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.34' @ 12.09 hrs Surf.Area= 245 sf Storage= 383 cf

Plug-Flow detention time= 130.0 min calculated for 1,232 cf (76% of inflow)
Center-of-Mass det. time= 45.1 min ( 863.1 - 818.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.50 cfs @ 12.09 hrs HW=49.34' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.50 cfs @ 0.96 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf,100.00% Impervious, Inflow Depth = 2.18" for 1-Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 2,781 cf
Outflow = 0.41 cfs @ 12.26 hrs, Volume= 2,774 cf, Atten= 54%, Lag= 10.5 min
Discarded = 0.41 cfs @ 12.26 hrs, Volume= 2,774 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.94' @ 12.26 hrs Surf.Area= 2,031 sf Storage= 294 cf

Plug-Flow detention time= 5.2 min calculated for 2,774 cf (100% of inflow)
Center-of-Mass det. time= 3.6 min ( 795.1 - 791.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.41 cfs @ 12.26 hrs HW=46.94' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 2.47" for 1-Year event
Inflow = 0.52 cfs @ 12.09 hrs, Volume= 1,816 cf
Outflow = 0.51 cfs @ 12.09 hrs, Volume= 1,443 cf, Atten= 1%, Lag= 0.2 min
Primary = 0.51 cfs @ 12.09 hrs, Volume= 1,443 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.34' @ 12.09 hrs Surf.Area= 245 sf Storage= 383 cf

Plug-Flow detention time= 136.4 min calculated for 1,440 cf (79% of inflow)
Center-of-Mass det. time= 60.4 min ( 820.6 - 760.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.50 cfs @ 12.09 hrs HW=49.34' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.50 cfs @ 0.96 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 1.65" for 1-Year event
Inflow = 0.89 cfs @ 12.15 hrs, Volume= 3,653 cf
Outflow = 0.53 cfs @ 12.29 hrs, Volume= 3,644 cf, Atten= 41%, Lag= 8.5 min
Discarded = 0.53 cfs @ 12.29 hrs, Volume= 3,644 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.74' @ 12.29 hrs Surf.Area= 2,674 sf Storage= 210 cf

Plug-Flow detention time= 3.6 min calculated for 3,644 cf (100% of inflow)
Center-of-Mass det. time= 2.1 min ( 798.5 - 796.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.53 cfs @ 12.29 hrs HW=46.74' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.53 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 1.21" for 1-Year event
Inflow = 0.43 cfs @ 12.10 hrs, Volume= 1,371 cf
Outflow = 0.33 cfs @ 12.17 hrs, Volume= 977 cf, Atten= 23%, Lag= 4.6 min
Primary = 0.33 cfs @ 12.17 hrs, Volume= 977 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.31' @ 12.15 hrs Surf.Area= 245 sf Storage= 380 cf

Plug-Flow detention time= 151.0 min calculated for 976 cf (71% of inflow)
Center-of-Mass det. time= 54.5 min ( 895.7 - 841.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.29 cfs @ 12.17 hrs HW=49.31' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.29 cfs @ 0.80 fps)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 2.26" for 1-Year event
Inflow = 1.28 cfs @ 12.09 hrs, Volume= 4,140 cf
Outflow = 0.54 cfs @ 12.29 hrs, Volume= 4,135 cf, Atten= 58%, Lag= 12.1 min
Discarded = 0.54 cfs @ 12.29 hrs, Volume= 4,135 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.02' @ 12.29 hrs Surf.Area= 2,681 sf Storage= 477 cf

Plug-Flow detention time= 5.1 min calculated for 4,135 cf (100% of inflow)
Center-of-Mass det. time= 4.2 min ( 785.6 - 781.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.54 cfs @ 12.29 hrs HW=47.02' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.54 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 2.47" for 1-Year event
Inflow = 0.52 cfs @ 12.09 hrs, Volume= 1,840 cf
Outflow = 0.52 cfs @ 12.09 hrs, Volume= 1,464 cf, Atten= 1%, Lag= 0.2 min
Primary = 0.52 cfs @ 12.09 hrs, Volume= 1,464 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.34' @ 12.09 hrs Surf.Area= 245 sf Storage= 383 cf

Plug-Flow detention time= 135.8 min calculated for 1,462 cf (79% of inflow)
Center-of-Mass det. time= 60.2 min ( 820.3 - 760.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.51 cfs @ 12.09 hrs HW=49.34' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.51 cfs @ 0.97 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 1.48" for 1-Year event
Inflow = 1.16 cfs @ 12.09 hrs, Volume= 6,069 cf
Outflow = 0.99 cfs @ 12.15 hrs, Volume= 6,075 cf, Atten= 15%, Lag= 3.8 min
Discarded = 0.99 cfs @ 12.15 hrs, Volume= 6,075 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 45.05' @ 12.13 hrs Surf.Area= 5,074 sf Storage= 90 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.9 min ( 813.6 - 812.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.99 cfs @ 12.15 hrs HW=45.05' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 1.41" for 1-Year event
Inflow = 1.09 cfs @ 12.09 hrs, Volume= 3,432 cf
Outflow = 0.55 cfs @ 12.32 hrs, Volume= 1,973 cf, Atten= 50%, Lag= 13.6 min
Primary = 0.55 cfs @ 12.32 hrs, Volume= 1,973 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.81' @ 12.30 hrs Surf.Area= 913 sf Storage= 1,458 cf

Plug-Flow detention time= 202.3 min calculated for 1,970 cf (57% of inflow)
Center-of-Mass det. time= 91.5 min ( 921.6 - 830.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=0.47 cfs @ 12.32 hrs HW=47.81' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.47 cfs @ 0.79 fps)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 1.41" for 1-Year event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 562 cf
Primary = 0.18 cfs @ 12.09 hrs, Volume= 562 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.65 cfs 2,300 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=1.77"
Tc=6.0 min CN=84 Runoff=1.44 cfs 4,562 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=2.09"
Tc=6.0 min CN=88 Runoff=15.69 cfs 49,826 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=1.48"
Tc=6.0 min CN=80 Runoff=2.97 cfs 9,457 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=0.02"
Tc=6.0 min CN=42 Runoff=0.00 cfs 34 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=1.92"
Tc=6.0 min CN=86 Runoff=0.24 cfs 767 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.47 cfs 1,661 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=2.17"
Tc=6.0 min CN=89 Runoff=0.68 cfs 2,158 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.47 cfs 1,661 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.63 cfs 2,255 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.93 cfs 3,323 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=1.69"
Tc=6.0 min CN=83 Runoff=0.61 cfs 1,917 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.93 cfs 3,323 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=0.64 cfs 2,285 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=3.07"
Tc=6.0 min CN=98 Runoff=1.43 cfs 5,086 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=1.92"
Tc=6.0 min CN=86 Runoff=1.48 cfs 4,683 cf

**Pond P-1A: UIC #1** Peak Elev=47.04' Storage=810 cf Inflow=2.08 cfs 6,127 cf
Discarded=0.86 cfs 6,136 cf Primary=0.00 cfs 0 cf Outflow=0.86 cfs 6,136 cf

**Pond P-1B: Isolator Row #1** Peak Elev=49.37' Storage=751 cf Inflow=1.44 cfs 4,562 cf
Outflow=1.44 cfs 3,827 cf

**Pond P-1D: Underground Infiltration** Peak Elev=45.47' Storage=8,898 cf Inflow=15.69 cfs 49,826 cf
Discarded=4.99 cfs 49,826 cf Primary=0.00 cfs 0 cf Outflow=4.99 cfs 49,826 cf

**Pond P-1E: Infiltration Basin** Peak Elev=45.55' Storage=2,121 cf Inflow=2.97 cfs 9,457 cf
Discarded=0.78 cfs 9,457 cf Primary=0.00 cfs 0 cf Outflow=0.78 cfs 9,457 cf

**Pond P-2A: UIC #2** Peak Elev=47.02' Storage=431 cf Inflow=1.14 cfs 3,439 cf
Discarded=0.48 cfs 3,449 cf Primary=0.00 cfs 0 cf Outflow=0.48 cfs 3,449 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.36' Storage=384 cf Inflow=0.68 cfs 2,158 cf
Outflow=0.67 cfs 1,778 cf

**Pond P-3A: UIC #3** Peak Elev=47.09' Storage=482 cf Inflow=1.10 cfs 3,541 cf
Discarded=0.42 cfs 3,539 cf Primary=0.00 cfs 0 cf Outflow=0.42 cfs 3,539 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.35' Storage=384 cf Inflow=0.63 cfs 2,255 cf
Outflow=0.63 cfs 1,880 cf

**Pond P-4A: UIC #4** Peak Elev=47.09' Storage=629 cf Inflow=1.54 cfs 4,845 cf
Discarded=0.55 cfs 4,845 cf Primary=0.00 cfs 0 cf Outflow=0.55 cfs 4,845 cf

**Pond P-4B: Isolator Row #4** Peak Elev=49.35' Storage=384 cf Inflow=0.61 cfs 1,917 cf
Outflow=0.60 cfs 1,523 cf

**Pond P-5A: UIC #5** Peak Elev=47.15' Storage=774 cf Inflow=1.57 cfs 5,234 cf
Discarded=0.55 cfs 5,235 cf Primary=0.00 cfs 0 cf Outflow=0.55 cfs 5,235 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.35' Storage=384 cf Inflow=0.64 cfs 2,285 cf
Outflow=0.64 cfs 1,911 cf

**Pond P-6A: UIC #6** Peak Elev=45.51' Storage=866 cf Inflow=2.52 cfs 8,361 cf
Discarded=1.02 cfs 8,363 cf Primary=0.00 cfs 0 cf Outflow=1.02 cfs 8,363 cf

**Pond P-6B: Isolator Row #6** Peak Elev=47.86' Storage=1,476 cf Inflow=1.48 cfs 4,683 cf
Outflow=1.23 cfs 3,274 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=0.00 cfs 34 cf
Primary=0.00 cfs 34 cf

**Link DP-2: Post Road** Inflow=0.24 cfs 767 cf
Primary=0.24 cfs 767 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 95,300 cf Average Runoff Depth = 2.04"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 2,300 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 4,562 cf, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 15.69 cfs @ 12.09 hrs, Volume= 49,826 cf, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 2.97 cfs @ 12.10 hrs, Volume= 9,457 cf, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.00 cfs @ 20.76 hrs, Volume= 34 cf, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 767 cf, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 1,661 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 2,158 cf, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 1,661 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 0.63 cfs @ 12.09 hrs, Volume= 2,255 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 0.93 cfs @ 12.09 hrs, Volume= 3,323 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 1,917 cf, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 0.93 cfs @ 12.09 hrs, Volume= 3,323 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,285 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 1.43 cfs @ 12.09 hrs, Volume= 5,086 cf, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 4,683 cf, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 1.84" for 2-Year event
Inflow = 2.08 cfs @ 12.09 hrs, Volume= 6,127 cf
Outflow = 0.86 cfs @ 12.33 hrs, Volume= 6,136 cf, Atten= 59%, Lag= 14.1 min
Discarded = 0.86 cfs @ 12.33 hrs, Volume= 6,136 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.04' @ 12.33 hrs Surf.Area= 4,161 sf Storage= 810 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.9 min ( 824.6 - 819.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.86 cfs @ 12.33 hrs HW=47.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.86 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 1.77" for 2-Year event
Inflow = 1.44 cfs @ 12.09 hrs, Volume= 4,562 cf
Outflow = 1.44 cfs @ 12.10 hrs, Volume= 3,827 cf, Atten= 1%, Lag= 0.2 min
Primary = 1.44 cfs @ 12.10 hrs, Volume= 3,827 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.37' @ 12.10 hrs Surf.Area= 468 sf Storage= 751 cf

Plug-Flow detention time= 98.0 min calculated for 3,827 cf (84% of inflow)
Center-of-Mass det. time= 29.9 min ( 858.0 - 828.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=1.42 cfs @ 12.10 hrs HW=49.37' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.42 cfs @ 1.15 fps)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 2.09" for 2-Year event
Inflow = 15.69 cfs @ 12.09 hrs, Volume= 49,826 cf
Outflow = 4.99 cfs @ 12.42 hrs, Volume= 49,826 cf, Atten= 68%, Lag= 19.4 min
Discarded = 4.99 cfs @ 12.42 hrs, Volume= 49,826 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 45.47' @ 12.42 hrs Surf.Area= 23,713 sf Storage= 8,898 cf

Plug-Flow detention time= 9.9 min calculated for 49,737 cf (100% of inflow)
Center-of-Mass det. time= 9.9 min ( 823.7 - 813.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=4.99 cfs @ 12.42 hrs HW=45.47' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 4.99 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=44.70' (Free Discharge)
└**4=Culvert** (Passes 0.00 cfs of 41.88 cfs potential flow)
  ├**2=Orifice/Grate** ( Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 1.48" for 2-Year event
Inflow = 2.97 cfs @ 12.10 hrs, Volume= 9,457 cf
Outflow = 0.78 cfs @ 12.50 hrs, Volume= 9,457 cf, Atten= 74%, Lag= 24.1 min
Discarded = 0.78 cfs @ 12.50 hrs, Volume= 9,457 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 45.55' @ 12.50 hrs Surf.Area= 4,071 sf Storage= 2,121 cf

Plug-Flow detention time= 17.2 min calculated for 9,440 cf (100% of inflow)
Center-of-Mass det. time= 17.2 min ( 858.3 - 841.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=0.78 cfs @ 12.50 hrs HW=45.55' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.78 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 2.24" for 2-Year event
Inflow = 1.14 cfs @ 12.09 hrs, Volume= 3,439 cf
Outflow = 0.48 cfs @ 12.31 hrs, Volume= 3,449 cf, Atten= 58%, Lag= 12.9 min
Discarded = 0.48 cfs @ 12.31 hrs, Volume= 3,449 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.02' @ 12.31 hrs Surf.Area= 2,352 sf Storage= 431 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.5 min ( 806.6 - 802.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.48 cfs @ 12.31 hrs HW=47.02' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.48 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 2.17" for 2-Year event
Inflow = 0.68 cfs @ 12.09 hrs, Volume= 2,158 cf
Outflow = 0.67 cfs @ 12.09 hrs, Volume= 1,778 cf, Atten= 1%, Lag= 0.2 min
Primary = 0.67 cfs @ 12.09 hrs, Volume= 1,778 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.36' @ 12.09 hrs Surf.Area= 245 sf Storage= 384 cf

Plug-Flow detention time= 106.3 min calculated for 1,778 cf (82% of inflow)
Center-of-Mass det. time= 35.6 min ( 845.4 - 809.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.66 cfs @ 12.09 hrs HW=49.35' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.66 cfs @ 1.05 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf,100.00% Impervious, Inflow Depth = 2.77" for 2-Year event
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 3,541 cf
Outflow = 0.42 cfs @ 12.33 hrs, Volume= 3,539 cf, Atten= 62%, Lag= 14.3 min
Discarded = 0.42 cfs @ 12.33 hrs, Volume= 3,539 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.09' @ 12.33 hrs Surf.Area= 2,031 sf Storage= 482 cf

Plug-Flow detention time= 6.0 min calculated for 3,539 cf (100% of inflow)
Center-of-Mass det. time= 5.6 min ( 790.6 - 785.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.42 cfs @ 12.33 hrs HW=47.09' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 3.07" for 2-Year event
Inflow = 0.63 cfs @ 12.09 hrs, Volume= 2,255 cf
Outflow = 0.63 cfs @ 12.09 hrs, Volume= 1,880 cf, Atten= 1%, Lag= 0.2 min
Primary = 0.63 cfs @ 12.09 hrs, Volume= 1,880 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.35' @ 12.09 hrs Surf.Area= 245 sf Storage= 384 cf

Plug-Flow detention time= 123.5 min calculated for 1,880 cf (83% of inflow)
Center-of-Mass det. time= 55.1 min ( 810.8 - 755.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.61 cfs @ 12.09 hrs HW=49.35' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.61 cfs @ 1.03 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 2.19" for 2-Year event
Inflow = 1.54 cfs @ 12.09 hrs, Volume= 4,845 cf
Outflow = 0.55 cfs @ 12.37 hrs, Volume= 4,845 cf, Atten= 65%, Lag= 16.8 min
Discarded = 0.55 cfs @ 12.37 hrs, Volume= 4,845 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.09' @ 12.37 hrs Surf.Area= 2,674 sf Storage= 629 cf

Plug-Flow detention time= 5.4 min calculated for 4,845 cf (100% of inflow)
Center-of-Mass det. time= 5.4 min ( 796.7 - 791.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.55 cfs @ 12.37 hrs HW=47.09' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.55 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 1.69" for 2-Year event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 1,917 cf
Outflow = 0.60 cfs @ 12.10 hrs, Volume= 1,523 cf, Atten= 0%, Lag= 0.2 min
Primary = 0.60 cfs @ 12.10 hrs, Volume= 1,523 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.35' @ 12.10 hrs Surf.Area= 245 sf Storage= 384 cf

Plug-Flow detention time= 117.0 min calculated for 1,523 cf (79% of inflow)
Center-of-Mass det. time= 37.4 min ( 868.9 - 831.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.59 cfs @ 12.10 hrs HW=49.35' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.59 cfs @ 1.02 fps)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 2.86" for 2-Year event
Inflow = 1.57 cfs @ 12.09 hrs, Volume= 5,234 cf
Outflow = 0.55 cfs @ 12.36 hrs, Volume= 5,235 cf, Atten= 65%, Lag= 16.2 min
Discarded = 0.55 cfs @ 12.36 hrs, Volume= 5,235 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.15' @ 12.36 hrs Surf.Area= 2,681 sf Storage= 774 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 6.7 min ( 782.3 - 775.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.55 cfs @ 12.36 hrs HW=47.15' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.55 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 3.07" for 2-Year event
Inflow = 0.64 cfs @ 12.09 hrs, Volume= 2,285 cf
Outflow = 0.64 cfs @ 12.09 hrs, Volume= 1,911 cf, Atten= 1%, Lag= 0.2 min
Primary = 0.64 cfs @ 12.09 hrs, Volume= 1,911 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.35' @ 12.09 hrs Surf.Area= 245 sf Storage= 384 cf

Plug-Flow detention time= 122.1 min calculated for 1,911 cf (84% of inflow)
Center-of-Mass det. time= 54.4 min ( 810.2 - 755.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.62 cfs @ 12.09 hrs HW=49.35' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.62 cfs @ 1.03 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 2.04" for 2-Year event
Inflow = 2.52 cfs @ 12.12 hrs, Volume= 8,361 cf
Outflow = 1.02 cfs @ 12.37 hrs, Volume= 8,363 cf, Atten= 59%, Lag= 15.1 min
Discarded = 1.02 cfs @ 12.37 hrs, Volume= 8,363 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 45.51' @ 12.37 hrs Surf.Area= 5,074 sf Storage= 866 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.9 min ( 807.9 - 804.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=1.02 cfs @ 12.37 hrs HW=45.51' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 1.92" for 2-Year event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 4,683 cf
Outflow = 1.23 cfs @ 12.15 hrs, Volume= 3,274 cf, Atten= 17%, Lag= 3.3 min
Primary = 1.23 cfs @ 12.15 hrs, Volume= 3,274 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.86' @ 12.15 hrs Surf.Area= 913 sf Storage= 1,476 cf

Plug-Flow detention time= 152.4 min calculated for 3,269 cf (70% of inflow)
Center-of-Mass det. time= 57.7 min ( 878.9 - 821.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=1.21 cfs @ 12.15 hrs HW=47.86' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.21 cfs @ 1.09 fps)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 20.76 hrs, Volume= 34 cf
Primary = 0.00 cfs @ 20.76 hrs, Volume= 34 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 1.92" for 2-Year event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 767 cf
Primary = 0.24 cfs @ 12.09 hrs, Volume= 767 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.95 cfs 3,423 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=3.09"
Tc=6.0 min CN=84 Runoff=2.51 cfs 7,976 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=3.48"
Tc=6.0 min CN=88 Runoff=25.69 cfs 83,061 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=2.72"
Tc=6.0 min CN=80 Runoff=5.50 cfs 17,383 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=0.26"
Tc=6.0 min CN=42 Runoff=0.04 cfs 440 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=3.28"
Tc=6.0 min CN=86 Runoff=0.41 cfs 1,309 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.68 cfs 2,472 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=3.58"
Tc=6.0 min CN=89 Runoff=1.09 cfs 3,556 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.68 cfs 2,472 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.93 cfs 3,356 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.37 cfs 4,944 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=83 Runoff=1.07 cfs 3,393 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.37 cfs 4,944 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.94 cfs 3,400 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=2.09 cfs 7,568 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=3.28"
Tc=6.0 min CN=86 Runoff=2.50 cfs 7,993 cf

**Pond P-1A: UIC #1** Peak Elev=47.50' Storage=2,357 cf Inflow=3.44 cfs 10,673 cf
Discarded=0.90 cfs 10,665 cf Primary=0.00 cfs 0 cf Outflow=0.90 cfs 10,665 cf

**Pond P-1B: Isolator Row #1** Peak Elev=49.43' Storage=760 cf Inflow=2.51 cfs 7,976 cf
Outflow=2.50 cfs 7,251 cf

**Pond P-1D: Underground Infiltration** Peak Elev=46.10' Storage=20,631 cf Inflow=25.69 cfs 83,061 cf
Discarded=5.36 cfs 80,935 cf Primary=1.03 cfs 2,126 cf Outflow=6.39 cfs 83,061 cf

**Pond P-1E: Infiltration Basin** Peak Elev=46.31' Storage=5,440 cf Inflow=5.50 cfs 17,383 cf
Discarded=0.91 cfs 17,383 cf Primary=0.00 cfs 0 cf Outflow=0.91 cfs 17,383 cf

**Pond P-2A: UIC #2** Peak Elev=47.40' Storage=1,132 cf Inflow=1.77 cfs 5,657 cf
Discarded=0.49 cfs 5,664 cf Primary=0.00 cfs 0 cf Outflow=0.49 cfs 5,664 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.40' Storage=388 cf Inflow=1.09 cfs 3,556 cf
Outflow=1.09 cfs 3,185 cf

**Pond P-3A: UIC #3** Peak Elev=47.46' Storage=1,081 cf Inflow=1.61 cfs 5,455 cf
Discarded=0.43 cfs 5,457 cf Primary=0.00 cfs 0 cf Outflow=0.43 cfs 5,457 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.38' Storage=386 cf Inflow=0.93 cfs 3,356 cf
Outflow=0.92 cfs 2,983 cf

**Pond P-4A: UIC #4** Peak Elev=47.65' Storage=1,826 cf Inflow=2.43 cfs 7,961 cf
Discarded=0.57 cfs 7,971 cf Primary=0.00 cfs 0 cf Outflow=0.57 cfs 7,971 cf

**Pond P-4B: Isolator Row #4** Peak Elev=49.39' Storage=388 cf Inflow=1.07 cfs 3,393 cf
Outflow=1.07 cfs 3,017 cf

**Pond P-5A: UIC #5** Peak Elev=47.58' Storage=1,675 cf Inflow=2.30 cfs 7,970 cf
Discarded=0.57 cfs 7,966 cf Primary=0.00 cfs 0 cf Outflow=0.57 cfs 7,966 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.38' Storage=387 cf Inflow=0.94 cfs 3,400 cf
Outflow=0.94 cfs 3,027 cf

**Pond P-6A: UIC #6** Peak Elev=46.11' Storage=3,340 cf Inflow=4.56 cfs 14,095 cf
Discarded=1.07 cfs 14,093 cf Primary=0.00 cfs 0 cf Outflow=1.07 cfs 14,093 cf

**Pond P-6B: Isolator Row #6** Peak Elev=47.93' Storage=1,497 cf Inflow=2.50 cfs 7,993 cf
Outflow=2.47 cfs 6,528 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=1.07 cfs 2,566 cf
Primary=1.07 cfs 2,566 cf

**Link DP-2: Post Road** Inflow=0.41 cfs 1,309 cf
Primary=0.41 cfs 1,309 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 157,689 cf Average Runoff Depth = 3.38"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 3,423 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 2.51 cfs @ 12.09 hrs, Volume= 7,976 cf, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 25.69 cfs @ 12.09 hrs, Volume= 83,061 cf, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 5.50 cfs @ 12.09 hrs, Volume= 17,383 cf, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.04 cfs @ 12.41 hrs, Volume= 440 cf, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 1,309 cf, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 2,472 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 3,556 cf, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 2,472 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| | 6,500 | 98 | Roofs, HSG A |
| | 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 0.93 cfs @ 12.09 hrs, Volume= 3,356 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 1.37 cfs @ 12.09 hrs, Volume= 4,944 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 1.07 cfs @ 12.09 hrs, Volume= 3,393 cf, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 1.37 cfs @ 12.09 hrs, Volume= 4,944 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 0.94 cfs @ 12.09 hrs, Volume= 3,400 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 2.09 cfs @ 12.09 hrs, Volume= 7,568 cf, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 2.50 cfs @ 12.09 hrs, Volume= 7,993 cf, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.80"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 3.20" for 10-Year event
Inflow = 3.44 cfs @ 12.09 hrs, Volume= 10,673 cf
Outflow = 0.90 cfs @ 12.47 hrs, Volume= 10,665 cf, Atten= 74%, Lag= 22.6 min
Discarded = 0.90 cfs @ 12.47 hrs, Volume= 10,665 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.50' @ 12.47 hrs Surf.Area= 4,161 sf Storage= 2,357 cf

Plug-Flow detention time= 15.2 min calculated for 10,665 cf (100% of inflow)
Center-of-Mass det. time= 14.6 min ( 820.8 - 806.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.90 cfs @ 12.47 hrs HW=47.50' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.90 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 3.09" for 10-Year event
Inflow = 2.51 cfs @ 12.09 hrs, Volume= 7,976 cf
Outflow = 2.50 cfs @ 12.09 hrs, Volume= 7,251 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.50 cfs @ 12.09 hrs, Volume= 7,251 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.43' @ 12.09 hrs Surf.Area= 468 sf Storage= 760 cf

Plug-Flow detention time= 66.1 min calculated for 7,251 cf (91% of inflow)
Center-of-Mass det. time= 21.1 min ( 833.3 - 812.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=2.45 cfs @ 12.09 hrs HW=49.43' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.45 cfs @ 1.38 fps)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 3.48" for 10-Year event
Inflow = 25.69 cfs @ 12.09 hrs, Volume= 83,061 cf
Outflow = 6.39 cfs @ 12.48 hrs, Volume= 83,061 cf, Atten= 75%, Lag= 23.1 min
Discarded = 5.36 cfs @ 12.48 hrs, Volume= 80,935 cf
Primary = 1.03 cfs @ 12.48 hrs, Volume= 2,126 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 46.10' @ 12.48 hrs Surf.Area= 23,713 sf Storage= 20,631 cf

Plug-Flow detention time= 21.7 min calculated for 82,913 cf (100% of inflow)
Center-of-Mass det. time= 21.7 min ( 821.1 - 799.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=5.36 cfs @ 12.48 hrs HW=46.10' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 5.36 cfs)

**Primary OutFlow** Max=1.03 cfs @ 12.48 hrs HW=46.10' (Free Discharge)
└**4=Culvert** (Passes 1.03 cfs of 44.21 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.03 cfs @ 2.04 fps)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 2.72" for 10-Year event
Inflow = 5.50 cfs @ 12.09 hrs, Volume= 17,383 cf
Outflow = 0.91 cfs @ 12.60 hrs, Volume= 17,383 cf, Atten= 84%, Lag= 30.2 min
Discarded = 0.91 cfs @ 12.60 hrs, Volume= 17,383 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 46.31' @ 12.60 hrs Surf.Area= 4,734 sf Storage= 5,440 cf

Plug-Flow detention time= 45.3 min calculated for 17,352 cf (100% of inflow)
Center-of-Mass det. time= 45.2 min ( 868.8 - 823.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=0.91 cfs @ 12.60 hrs HW=46.31' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.91 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 3.69" for 10-Year event
Inflow = 1.77 cfs @ 12.09 hrs, Volume= 5,657 cf
Outflow = 0.49 cfs @ 12.44 hrs, Volume= 5,664 cf, Atten= 72%, Lag= 21.0 min
Discarded = 0.49 cfs @ 12.44 hrs, Volume= 5,664 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.40' @ 12.44 hrs Surf.Area= 2,352 sf Storage= 1,132 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 12.0 min ( 802.6 - 790.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.49 cfs @ 12.44 hrs HW=47.40' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.49 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 3.58" for 10-Year event
Inflow = 1.09 cfs @ 12.09 hrs, Volume= 3,556 cf
Outflow = 1.09 cfs @ 12.09 hrs, Volume= 3,185 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.09 cfs @ 12.09 hrs, Volume= 3,185 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.40' @ 12.09 hrs Surf.Area= 245 sf Storage= 388 cf

Plug-Flow detention time= 76.5 min calculated for 3,179 cf (89% of inflow)
Center-of-Mass det. time= 27.3 min ( 823.1 - 795.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.06 cfs @ 12.09 hrs HW=49.39' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.06 cfs @ 1.24 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf,100.00% Impervious, Inflow Depth = 4.27" for 10-Year event
Inflow = 1.61 cfs @ 12.09 hrs, Volume= 5,455 cf
Outflow = 0.43 cfs @ 12.44 hrs, Volume= 5,457 cf, Atten= 73%, Lag= 21.2 min
Discarded = 0.43 cfs @ 12.44 hrs, Volume= 5,457 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.46' @ 12.44 hrs Surf.Area= 2,031 sf Storage= 1,081 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 12.5 min ( 785.8 - 773.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.43 cfs @ 12.44 hrs HW=47.46' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.93 cfs @ 12.09 hrs, Volume= 3,356 cf
Outflow = 0.92 cfs @ 12.09 hrs, Volume= 2,983 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.92 cfs @ 12.09 hrs, Volume= 2,983 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.38' @ 12.09 hrs Surf.Area= 245 sf Storage= 386 cf

Plug-Flow detention time= 97.5 min calculated for 2,978 cf (89% of inflow)
Center-of-Mass det. time= 44.9 min ( 793.6 - 748.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.90 cfs @ 12.09 hrs HW=49.38' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.90 cfs @ 1.17 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 3.59" for 10-Year event
Inflow = 2.43 cfs @ 12.09 hrs, Volume= 7,961 cf
Outflow = 0.57 cfs @ 12.49 hrs, Volume= 7,971 cf, Atten= 77%, Lag= 24.0 min
Discarded = 0.57 cfs @ 12.49 hrs, Volume= 7,971 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.65' @ 12.49 hrs Surf.Area= 2,674 sf Storage= 1,826 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 17.5 min ( 800.4 - 782.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.57 cfs @ 12.49 hrs HW=47.65' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 2.99" for 10-Year event
Inflow = 1.07 cfs @ 12.09 hrs, Volume= 3,393 cf
Outflow = 1.07 cfs @ 12.09 hrs, Volume= 3,017 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.07 cfs @ 12.09 hrs, Volume= 3,017 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.39' @ 12.09 hrs Surf.Area= 245 sf Storage= 388 cf

Plug-Flow detention time= 76.0 min calculated for 3,017 cf (89% of inflow)
Center-of-Mass det. time= 23.8 min ( 838.9 - 815.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.04 cfs @ 12.09 hrs HW=49.39' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.04 cfs @ 1.23 fps)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 4.36" for 10-Year event
Inflow = 2.30 cfs @ 12.09 hrs, Volume= 7,970 cf
Outflow = 0.57 cfs @ 12.46 hrs, Volume= 7,966 cf, Atten= 75%, Lag= 22.7 min
Discarded = 0.57 cfs @ 12.46 hrs, Volume= 7,966 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.58' @ 12.46 hrs Surf.Area= 2,681 sf Storage= 1,675 cf

Plug-Flow detention time= 15.3 min calculated for 7,951 cf (100% of inflow)
Center-of-Mass det. time= 14.9 min ( 780.5 - 765.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.57 cfs @ 12.46 hrs HW=47.58' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.94 cfs @ 12.09 hrs, Volume= 3,400 cf
Outflow = 0.94 cfs @ 12.09 hrs, Volume= 3,027 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.94 cfs @ 12.09 hrs, Volume= 3,027 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.38' @ 12.09 hrs Surf.Area= 245 sf Storage= 387 cf

Plug-Flow detention time= 97.4 min calculated for 3,027 cf (89% of inflow)
Center-of-Mass det. time= 44.6 min ( 793.3 - 748.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.91 cfs @ 12.09 hrs HW=49.38' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.91 cfs @ 1.18 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 3.44" for 10-Year event
Inflow = 4.56 cfs @ 12.09 hrs, Volume= 14,095 cf
Outflow = 1.07 cfs @ 12.49 hrs, Volume= 14,093 cf, Atten= 77%, Lag= 24.1 min
Discarded = 1.07 cfs @ 12.49 hrs, Volume= 14,093 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.11' @ 12.49 hrs Surf.Area= 5,074 sf Storage= 3,340 cf

Plug-Flow detention time= 17.8 min calculated for 14,093 cf (100% of inflow)
Center-of-Mass det. time= 17.7 min ( 810.6 - 792.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=1.07 cfs @ 12.49 hrs HW=46.11' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.07 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 3.28" for 10-Year event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 7,993 cf
Outflow = 2.47 cfs @ 12.09 hrs, Volume= 6,528 cf, Atten= 1%, Lag= 0.2 min
Primary = 2.47 cfs @ 12.09 hrs, Volume= 6,528 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.93' @ 12.09 hrs Surf.Area= 913 sf Storage= 1,497 cf

Plug-Flow detention time= 109.6 min calculated for 6,516 cf (82% of inflow)
Center-of-Mass det. time= 38.2 min ( 844.2 - 806.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=2.43 cfs @ 12.09 hrs HW=47.93' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.43 cfs @ 1.38 fps)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.06" for 10-Year event
Inflow = 1.07 cfs @ 12.47 hrs, Volume= 2,566 cf
Primary = 1.07 cfs @ 12.47 hrs, Volume= 2,566 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 3.28" for 10-Year event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 1,309 cf
Primary = 0.41 cfs @ 12.09 hrs, Volume= 1,309 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=1.23 cfs 4,471 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=4.38"
Tc=6.0 min CN=84 Runoff=3.52 cfs 11,323 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=4.82"
Tc=6.0 min CN=88 Runoff=35.01 cfs 115,036 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=3.96"
Tc=6.0 min CN=80 Runoff=7.97 cfs 25,330 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=0.69"
Tc=6.0 min CN=42 Runoff=0.18 cfs 1,152 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=86 Runoff=0.57 cfs 1,836 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=0.89 cfs 3,229 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=89 Runoff=1.48 cfs 4,895 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=0.89 cfs 3,229 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=1.20 cfs 4,384 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=1.77 cfs 6,458 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=4.28"
Tc=6.0 min CN=83 Runoff=1.51 cfs 4,848 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=1.77 cfs 6,458 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=1.22 cfs 4,441 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=5.96"
Tc=6.0 min CN=98 Runoff=2.71 cfs 9,886 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=86 Runoff=3.45 cfs 11,207 cf

**Pond P-1A: UIC #1** Peak Elev=48.04' Storage=4,063 cf Inflow=4.73 cfs 15,069 cf
Discarded=0.94 cfs 15,075 cf Primary=0.00 cfs 0 cf Outflow=0.94 cfs 15,075 cf

**Pond P-1B: Isolator Row #1** Peak Elev=49.48' Storage=767 cf Inflow=3.52 cfs 11,323 cf
Outflow=3.51 cfs 10,598 cf

**Pond P-1D: Underground Infiltration** Peak Elev=46.65' Storage=30,253 cf Inflow=35.01 cfs 115,036 cf
Discarded=5.68 cfs 104,271 cf Primary=3.75 cfs 10,765 cf Outflow=9.42 cfs 115,036 cf

**Pond P-1E: Infiltration Basin** Peak Elev=47.01' Storage=8,968 cf Inflow=7.97 cfs 25,330 cf
Discarded=1.03 cfs 25,330 cf Primary=0.00 cfs 0 cf Outflow=1.03 cfs 25,330 cf

**Pond P-2A: UIC #2** Peak Elev=47.82' Storage=1,905 cf Inflow=2.36 cfs 7,749 cf
Discarded=0.51 cfs 7,757 cf Primary=0.00 cfs 0 cf Outflow=0.51 cfs 7,757 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.43' Storage=391 cf Inflow=1.48 cfs 4,895 cf
Outflow=1.48 cfs 4,519 cf

**Pond P-3A: UIC #3** Peak Elev=47.87' Storage=1,711 cf Inflow=2.08 cfs 7,240 cf
Discarded=0.45 cfs 7,233 cf Primary=0.00 cfs 0 cf Outflow=0.45 cfs 7,233 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.41' Storage=389 cf Inflow=1.20 cfs 4,384 cf
Outflow=1.20 cfs 4,011 cf

**Pond P-4A: UIC #4** Peak Elev=48.24' Storage=2,989 cf Inflow=3.28 cfs 10,937 cf
Discarded=0.59 cfs 10,948 cf Primary=0.00 cfs 0 cf Outflow=0.59 cfs 10,948 cf

**Pond P-4B: Isolator Row #4** Peak Elev=49.43' Storage=391 cf Inflow=1.51 cfs 4,848 cf
Outflow=1.51 cfs 4,479 cf

**Pond P-5A: UIC #5** Peak Elev=48.04' Storage=2,604 cf Inflow=2.98 cfs 10,526 cf
Discarded=0.58 cfs 10,531 cf Primary=0.00 cfs 0 cf Outflow=0.58 cfs 10,531 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.41' Storage=389 cf Inflow=1.22 cfs 4,441 cf
Outflow=1.21 cfs 4,067 cf

**Pond P-6A: UIC #6** Peak Elev=46.70' Storage=5,602 cf Inflow=6.13 cfs 19,668 cf
Discarded=1.11 cfs 19,674 cf Primary=0.00 cfs 0 cf Outflow=1.11 cfs 19,674 cf

**Pond P-6B: Isolator Row #6** Peak Elev=47.97' Storage=1,511 cf Inflow=3.45 cfs 11,207 cf
Outflow=3.42 cfs 9,782 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=3.87 cfs 11,917 cf
Primary=3.87 cfs 11,917 cf

**Link DP-2: Post Road** Inflow=0.57 cfs 1,836 cf
Primary=0.57 cfs 1,836 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 218,185 cf Average Runoff Depth = 4.68"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 1.23 cfs @ 12.09 hrs, Volume= 4,471 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 3.52 cfs @ 12.09 hrs, Volume= 11,323 cf, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 35.01 cfs @ 12.09 hrs, Volume= 115,036 cf, Depth= 4.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 7.97 cfs @ 12.09 hrs, Volume= 25,330 cf, Depth= 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.18 cfs @ 12.16 hrs, Volume= 1,152 cf, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 1,836 cf, Depth= 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 3,229 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 4,895 cf, Depth= 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 3,229 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| | 6,500 | 98 | Roofs, HSG A |
| | 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 1.20 cfs @ 12.09 hrs, Volume= 4,384 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 1.77 cfs @ 12.09 hrs, Volume= 6,458 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 4,848 cf, Depth= 4.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 1.77 cfs @ 12.09 hrs, Volume= 6,458 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 1.22 cfs @ 12.09 hrs, Volume= 4,441 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 2.71 cfs @ 12.09 hrs, Volume= 9,886 cf, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 3.45 cfs @ 12.09 hrs, Volume= 11,207 cf, Depth= 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 4.52" for 25-Year event
Inflow = 4.73 cfs @ 12.09 hrs, Volume= 15,069 cf
Outflow = 0.94 cfs @ 12.53 hrs, Volume= 15,075 cf, Atten= 80%, Lag= 26.3 min
Discarded = 0.94 cfs @ 12.53 hrs, Volume= 15,075 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.04' @ 12.53 hrs Surf.Area= 4,161 sf Storage= 4,063 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 26.3 min ( 824.0 - 797.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.94 cfs @ 12.53 hrs HW=48.04' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.94 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 4.38" for 25-Year event
Inflow = 3.52 cfs @ 12.09 hrs, Volume= 11,323 cf
Outflow = 3.51 cfs @ 12.09 hrs, Volume= 10,598 cf, Atten= 0%, Lag= 0.1 min
Primary = 3.51 cfs @ 12.09 hrs, Volume= 10,598 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.48' @ 12.09 hrs Surf.Area= 468 sf Storage= 767 cf

Plug-Flow detention time= 52.0 min calculated for 10,598 cf (94% of inflow)
Center-of-Mass det. time= 17.9 min ( 820.1 - 802.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=3.43 cfs @ 12.09 hrs HW=49.47' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 3.43 cfs @ 1.55 fps)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 4.82" for 25-Year event
Inflow = 35.01 cfs @ 12.09 hrs, Volume= 115,036 cf
Outflow = 9.42 cfs @ 12.45 hrs, Volume= 115,036 cf, Atten= 73%, Lag= 21.7 min
Discarded = 5.68 cfs @ 12.45 hrs, Volume= 104,271 cf
Primary = 3.75 cfs @ 12.45 hrs, Volume= 10,765 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 46.65' @ 12.45 hrs Surf.Area= 23,713 sf Storage= 30,253 cf

Plug-Flow detention time= 26.7 min calculated for 114,831 cf (100% of inflow)
Center-of-Mass det. time= 26.7 min ( 817.0 - 790.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=5.68 cfs @ 12.45 hrs HW=46.65' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 5.68 cfs)

**Primary OutFlow** Max=3.74 cfs @ 12.45 hrs HW=46.65' (Free Discharge)
└**4=Culvert** (Passes 3.74 cfs of 45.09 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 3.74 cfs @ 3.14 fps)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 3.96" for 25-Year event
Inflow = 7.97 cfs @ 12.09 hrs, Volume= 25,330 cf
Outflow = 1.03 cfs @ 12.70 hrs, Volume= 25,330 cf, Atten= 87%, Lag= 36.7 min
Discarded = 1.03 cfs @ 12.70 hrs, Volume= 25,330 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 47.01' @ 12.70 hrs Surf.Area= 5,372 sf Storage= 8,968 cf

Plug-Flow detention time= 73.0 min calculated for 25,285 cf (100% of inflow)
Center-of-Mass det. time= 72.9 min ( 885.7 - 812.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=1.03 cfs @ 12.70 hrs HW=47.01' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.03 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 5.05" for 25-Year event
Inflow = 2.36 cfs @ 12.09 hrs, Volume= 7,749 cf
Outflow = 0.51 cfs @ 12.50 hrs, Volume= 7,757 cf, Atten= 78%, Lag= 24.8 min
Discarded = 0.51 cfs @ 12.50 hrs, Volume= 7,757 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.82' @ 12.50 hrs Surf.Area= 2,352 sf Storage= 1,905 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 20.9 min ( 804.2 - 783.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.51 cfs @ 12.50 hrs HW=47.82' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.51 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 4.93" for 25-Year event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 4,895 cf
Outflow = 1.48 cfs @ 12.09 hrs, Volume= 4,519 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.48 cfs @ 12.09 hrs, Volume= 4,519 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.43' @ 12.09 hrs Surf.Area= 245 sf Storage= 391 cf

Plug-Flow detention time= 63.1 min calculated for 4,511 cf (92% of inflow)
Center-of-Mass det. time= 23.9 min ( 811.0 - 787.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.44 cfs @ 12.09 hrs HW=49.43' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.44 cfs @ 1.37 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf,100.00% Impervious, Inflow Depth = 5.67" for 25-Year event
Inflow = 2.08 cfs @ 12.09 hrs, Volume= 7,240 cf
Outflow = 0.45 cfs @ 12.50 hrs, Volume= 7,233 cf, Atten= 79%, Lag= 24.7 min
Discarded = 0.45 cfs @ 12.50 hrs, Volume= 7,233 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.87' @ 12.50 hrs Surf.Area= 2,031 sf Storage= 1,711 cf

Plug-Flow detention time= 21.0 min calculated for 7,233 cf (100% of inflow)
Center-of-Mass det. time= 20.3 min ( 786.4 - 766.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.45 cfs @ 12.50 hrs HW=47.87' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.45 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 5.96" for 25-Year event
Inflow = 1.20 cfs @ 12.09 hrs, Volume= 4,384 cf
Outflow = 1.20 cfs @ 12.09 hrs, Volume= 4,011 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.20 cfs @ 12.09 hrs, Volume= 4,011 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.41' @ 12.09 hrs Surf.Area= 245 sf Storage= 389 cf

Plug-Flow detention time= 83.1 min calculated for 4,011 cf (91% of inflow)
Center-of-Mass det. time= 38.7 min ( 783.3 - 744.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.17 cfs @ 12.09 hrs HW=49.40' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.17 cfs @ 1.28 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 4.93" for 25-Year event
Inflow = 3.28 cfs @ 12.09 hrs, Volume= 10,937 cf
Outflow = 0.59 cfs @ 12.55 hrs, Volume= 10,948 cf, Atten= 82%, Lag= 27.5 min
Discarded = 0.59 cfs @ 12.55 hrs, Volume= 10,948 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.24' @ 12.55 hrs Surf.Area= 2,674 sf Storage= 2,989 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 30.3 min ( 807.7 - 777.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.59 cfs @ 12.55 hrs HW=48.24' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.59 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 4.28" for 25-Year event
Inflow = 1.51 cfs @ 12.09 hrs, Volume= 4,848 cf
Outflow = 1.51 cfs @ 12.09 hrs, Volume= 4,479 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.51 cfs @ 12.09 hrs, Volume= 4,479 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.43' @ 12.09 hrs Surf.Area= 245 sf Storage= 391 cf

Plug-Flow detention time= 58.6 min calculated for 4,471 cf (92% of inflow)
Center-of-Mass det. time= 19.8 min ( 824.8 - 805.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.48 cfs @ 12.09 hrs HW=49.43' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.48 cfs @ 1.38 fps)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 5.76" for 25-Year event
Inflow = 2.98 cfs @ 12.09 hrs, Volume= 10,526 cf
Outflow = 0.58 cfs @ 12.52 hrs, Volume= 10,531 cf, Atten= 80%, Lag= 25.9 min
Discarded = 0.58 cfs @ 12.52 hrs, Volume= 10,531 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.04' @ 12.52 hrs Surf.Area= 2,681 sf Storage= 2,604 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.1 min ( 783.6 - 759.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.58 cfs @ 12.52 hrs HW=48.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.58 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 5.96" for 25-Year event
Inflow = 1.22 cfs @ 12.09 hrs, Volume= 4,441 cf
Outflow = 1.21 cfs @ 12.09 hrs, Volume= 4,067 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.21 cfs @ 12.09 hrs, Volume= 4,067 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.41' @ 12.09 hrs Surf.Area= 245 sf Storage= 389 cf

Plug-Flow detention time= 81.9 min calculated for 4,060 cf (91% of inflow)
Center-of-Mass det. time= 38.4 min ( 783.1 - 744.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.18 cfs @ 12.09 hrs HW=49.40' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.18 cfs @ 1.28 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 4.80" for 25-Year event
Inflow = 6.13 cfs @ 12.09 hrs, Volume= 19,668 cf
Outflow = 1.11 cfs @ 12.55 hrs, Volume= 19,674 cf, Atten= 82%, Lag= 27.6 min
Discarded = 1.11 cfs @ 12.55 hrs, Volume= 19,674 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.70' @ 12.55 hrs Surf.Area= 5,074 sf Storage= 5,602 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 31.4 min ( 817.6 - 786.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=1.11 cfs @ 12.55 hrs HW=46.70' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.11 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 4.60" for 25-Year event
Inflow = 3.45 cfs @ 12.09 hrs, Volume= 11,207 cf
Outflow = 3.42 cfs @ 12.09 hrs, Volume= 9,782 cf, Atten= 1%, Lag= 0.2 min
Primary = 3.42 cfs @ 12.09 hrs, Volume= 9,782 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 47.97' @ 12.09 hrs Surf.Area= 913 sf Storage= 1,511 cf

Plug-Flow detention time= 88.7 min calculated for 9,782 cf (87% of inflow)
Center-of-Mass det. time= 31.6 min ( 828.1 - 796.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=3.35 cfs @ 12.09 hrs HW=47.97' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 3.35 cfs @ 1.54 fps)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.26" for 25-Year event
Inflow = 3.87 cfs @ 12.44 hrs, Volume= 11,917 cf
Primary = 3.87 cfs @ 12.44 hrs, Volume= 11,917 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 4.60" for 25-Year event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 1,836 cf
Primary = 0.57 cfs @ 12.09 hrs, Volume= 1,836 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=1.72 cfs 6,345 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=6.77"
Tc=6.0 min CN=84 Runoff=5.32 cfs 17,484 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=7.25"
Tc=6.0 min CN=88 Runoff=51.50 cfs 173,164 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=6.28"
Tc=6.0 min CN=80 Runoff=12.43 cfs 40,174 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=1.79"
Tc=6.0 min CN=42 Runoff=0.78 cfs 3,001 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=7.01"
Tc=6.0 min CN=86 Runoff=0.84 cfs 2,798 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=1.24 cfs 4,582 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=7.37"
Tc=6.0 min CN=89 Runoff=2.16 cfs 7,324 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=1.24 cfs 4,582 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=1.69 cfs 6,221 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=2.49 cfs 9,165 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=6.65"
Tc=6.0 min CN=83 Runoff=2.30 cfs 7,535 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=2.49 cfs 9,165 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=1.71 cfs 6,303 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=8.46"
Tc=6.0 min CN=98 Runoff=3.81 cfs 14,029 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=7.01"
Tc=6.0 min CN=86 Runoff=5.14 cfs 17,082 cf

**Pond P-1A: UIC #1** Peak Elev=49.27' Storage=7,225 cf Inflow=7.03 cfs 23,100 cf
Discarded=1.05 cfs 22,939 cf Primary=0.27 cfs 147 cf Outflow=1.32 cfs 23,086 cf

**Pond P-1B: Isolator Row #1** Peak Elev=49.55' Storage=778 cf Inflow=5.32 cfs 17,484 cf
Outflow=5.31 cfs 16,756 cf

**Pond P-1D: Underground Infiltration** Peak Elev=47.77' Storage=44,690 cf Inflow=51.50 cfs 173,164 cf
Discarded=6.33 cfs 138,948 cf Primary=11.23 cfs 34,216 cf Outflow=17.56 cfs 173,164 cf

**Pond P-1E: Infiltration Basin** Peak Elev=48.20' Storage=16,053 cf Inflow=12.43 cfs 40,174 cf
Discarded=1.25 cfs 40,174 cf Primary=0.00 cfs 0 cf Outflow=1.25 cfs 40,174 cf

**Pond P-2A: UIC #2** Peak Elev=48.72' Storage=3,373 cf Inflow=3.40 cfs 11,534 cf
Discarded=0.55 cfs 11,541 cf Primary=0.00 cfs 0 cf Outflow=0.55 cfs 11,541 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.48' Storage=395 cf Inflow=2.16 cfs 7,324 cf
Outflow=2.16 cfs 6,951 cf

**Pond P-3A: UIC #3** Peak Elev=48.72' Storage=2,902 cf Inflow=2.93 cfs 10,430 cf
Discarded=0.48 cfs 10,428 cf Primary=0.00 cfs 0 cf Outflow=0.48 cfs 10,428 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.45' Storage=392 cf Inflow=1.69 cfs 6,221 cf
Outflow=1.69 cfs 5,848 cf

**Pond P-4A: UIC #4** Peak Elev=49.36' Storage=4,733 cf Inflow=4.79 cfs 16,326 cf
Discarded=0.64 cfs 15,721 cf Primary=0.84 cfs 605 cf Outflow=1.48 cfs 16,325 cf

**Pond P-4B: Isolator Row #4** Peak Elev=49.49' Storage=396 cf Inflow=2.30 cfs 7,535 cf
Outflow=2.30 cfs 7,161 cf

**Pond P-5A: UIC #5** Peak Elev=49.04' Storage=4,347 cf Inflow=4.20 cfs 15,095 cf
Discarded=0.63 cfs 15,107 cf Primary=0.00 cfs 0 cf Outflow=0.63 cfs 15,107 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.45' Storage=392 cf Inflow=1.71 cfs 6,303 cf
Outflow=1.71 cfs 5,930 cf

**Pond P-6A: UIC #6** Peak Elev=48.11' Storage=9,513 cf Inflow=8.92 cfs 29,678 cf
Discarded=1.21 cfs 29,386 cf Primary=0.46 cfs 273 cf Outflow=1.67 cfs 29,659 cf

**Pond P-6B: Isolator Row #6** Peak Elev=48.04' Storage=1,532 cf Inflow=5.14 cfs 17,082 cf
Outflow=5.11 cfs 15,649 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=12.38 cfs 38,240 cf
Primary=12.38 cfs 38,240 cf

**Link DP-2: Post Road** Inflow=0.84 cfs 2,798 cf
Primary=0.84 cfs 2,798 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 328,953 cf Average Runoff Depth = 7.05"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 1.72 cfs @ 12.09 hrs, Volume= 6,345 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 5.32 cfs @ 12.09 hrs, Volume= 17,484 cf, Depth= 6.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 51.50 cfs @ 12.09 hrs, Volume= 173,164 cf, Depth= 7.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 12.43 cfs @ 12.09 hrs, Volume= 40,174 cf, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.78 cfs @ 12.11 hrs, Volume= 3,001 cf, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 2,798 cf, Depth= 7.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 1.24 cfs @ 12.09 hrs, Volume= 4,582 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 2.16 cfs @ 12.09 hrs, Volume= 7,324 cf, Depth= 7.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 1.24 cfs @ 12.09 hrs, Volume= 4,582 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 6,221 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 2.49 cfs @ 12.09 hrs, Volume= 9,165 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 2.30 cfs @ 12.09 hrs, Volume= 7,535 cf, Depth= 6.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 2.49 cfs @ 12.09 hrs, Volume= 9,165 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 1.71 cfs @ 12.09 hrs, Volume= 6,303 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 3.81 cfs @ 12.09 hrs, Volume= 14,029 cf, Depth= 8.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 5.14 cfs @ 12.09 hrs, Volume= 17,082 cf, Depth= 7.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.70"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 6.93" for 100-Year event
Inflow = 7.03 cfs @ 12.09 hrs, Volume= 23,100 cf
Outflow = 1.32 cfs @ 12.54 hrs, Volume= 23,086 cf, Atten= 81%, Lag= 27.2 min
Discarded = 1.05 cfs @ 12.54 hrs, Volume= 22,939 cf
Primary = 0.27 cfs @ 12.54 hrs, Volume= 147 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.27' @ 12.54 hrs Surf.Area= 4,161 sf Storage= 7,225 cf

Plug-Flow detention time= 47.7 min calculated for 23,045 cf (100% of inflow)
Center-of-Mass det. time= 47.2 min ( 834.2 - 787.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=1.05 cfs @ 12.54 hrs HW=49.27' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.05 cfs)

**Primary OutFlow** Max=0.26 cfs @ 12.54 hrs HW=49.27' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.26 cfs @ 0.88 fps)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 6.77" for 100-Year event
Inflow = 5.32 cfs @ 12.09 hrs, Volume= 17,484 cf
Outflow = 5.31 cfs @ 12.09 hrs, Volume= 16,756 cf, Atten= 0%, Lag= 0.1 min
Primary = 5.31 cfs @ 12.09 hrs, Volume= 16,756 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.55' @ 12.09 hrs Surf.Area= 468 sf Storage= 778 cf

Plug-Flow detention time= 38.0 min calculated for 16,726 cf (96% of inflow)
Center-of-Mass det. time= 14.5 min ( 804.8 - 790.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=5.19 cfs @ 12.09 hrs HW=49.55' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 5.19 cfs @ 1.78 fps)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 7.25" for 100-Year event
Inflow = 51.50 cfs @ 12.09 hrs, Volume= 173,164 cf
Outflow = 17.56 cfs @ 12.37 hrs, Volume= 173,164 cf, Atten= 66%, Lag= 16.9 min
Discarded = 6.33 cfs @ 12.37 hrs, Volume= 138,948 cf
Primary = 11.23 cfs @ 12.37 hrs, Volume= 34,216 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 47.77' @ 12.37 hrs Surf.Area= 23,713 sf Storage= 44,690 cf

Plug-Flow detention time= 28.7 min calculated for 172,855 cf (100% of inflow)
Center-of-Mass det. time= 28.7 min ( 808.2 - 779.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=6.32 cfs @ 12.37 hrs HW=47.77' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 6.32 cfs)

**Primary OutFlow** Max=11.20 cfs @ 12.37 hrs HW=47.77' (Free Discharge)
└**4=Culvert** (Passes 11.20 cfs of 46.81 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 11.20 cfs @ 5.12 fps)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 6.28" for 100-Year event
Inflow = 12.43 cfs @ 12.09 hrs, Volume= 40,174 cf
Outflow = 1.25 cfs @ 12.92 hrs, Volume= 40,174 cf, Atten= 90%, Lag= 49.8 min
Discarded = 1.25 cfs @ 12.92 hrs, Volume= 40,174 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 48.20' @ 12.92 hrs Surf.Area= 6,538 sf Storage= 16,053 cf

Plug-Flow detention time= 118.6 min calculated for 40,174 cf (100% of inflow)
Center-of-Mass det. time= 118.6 min ( 918.3 - 799.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=1.25 cfs @ 12.92 hrs HW=48.20' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.25 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 7.51" for 100-Year event
Inflow = 3.40 cfs @ 12.09 hrs, Volume= 11,534 cf
Outflow = 0.55 cfs @ 12.57 hrs, Volume= 11,541 cf, Atten= 84%, Lag= 28.8 min
Discarded = 0.55 cfs @ 12.57 hrs, Volume= 11,541 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.72' @ 12.57 hrs Surf.Area= 2,352 sf Storage= 3,373 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 38.8 min ( 812.7 - 773.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.55 cfs @ 12.57 hrs HW=48.72' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.55 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 7.37" for 100-Year event
Inflow = 2.16 cfs @ 12.09 hrs, Volume= 7,324 cf
Outflow = 2.16 cfs @ 12.09 hrs, Volume= 6,951 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.16 cfs @ 12.09 hrs, Volume= 6,951 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.48' @ 12.09 hrs Surf.Area= 245 sf Storage= 395 cf

Plug-Flow detention time= 47.7 min calculated for 6,939 cf (95% of inflow)
Center-of-Mass det. time= 19.5 min ( 796.0 - 776.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=2.11 cfs @ 12.09 hrs HW=49.48' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.11 cfs @ 1.56 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf, 100.00% Impervious, Inflow Depth = 8.17" for 100-Year event
Inflow = 2.93 cfs @ 12.09 hrs, Volume= 10,430 cf
Outflow = 0.48 cfs @ 12.56 hrs, Volume= 10,428 cf, Atten= 84%, Lag= 28.4 min
Discarded = 0.48 cfs @ 12.56 hrs, Volume= 10,428 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.72' @ 12.56 hrs Surf.Area= 2,031 sf Storage= 2,902 cf

Plug-Flow detention time= 36.1 min calculated for 10,428 cf (100% of inflow)
Center-of-Mass det. time= 36.0 min ( 793.6 - 757.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.48 cfs @ 12.56 hrs HW=48.72' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.48 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 8.46" for 100-Year event
Inflow = 1.69 cfs @ 12.09 hrs, Volume= 6,221 cf
Outflow = 1.69 cfs @ 12.09 hrs, Volume= 5,848 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.69 cfs @ 12.09 hrs, Volume= 5,848 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.45' @ 12.09 hrs Surf.Area= 245 sf Storage= 392 cf

Plug-Flow detention time= 64.6 min calculated for 5,837 cf (94% of inflow)
Center-of-Mass det. time= 31.0 min ( 771.2 - 740.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.64 cfs @ 12.09 hrs HW=49.44' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.64 cfs @ 1.43 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 7.36" for 100-Year event
Inflow = 4.79 cfs @ 12.09 hrs, Volume= 16,326 cf
Outflow = 1.48 cfs @ 12.42 hrs, Volume= 16,325 cf, Atten= 69%, Lag= 19.6 min
Discarded = 0.64 cfs @ 12.42 hrs, Volume= 15,721 cf
Primary = 0.84 cfs @ 12.42 hrs, Volume= 605 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.36' @ 12.42 hrs Surf.Area= 2,674 sf Storage= 4,733 cf

Plug-Flow detention time= 47.0 min calculated for 16,325 cf (100% of inflow)
Center-of-Mass det. time= 46.9 min ( 817.3 - 770.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.64 cfs @ 12.42 hrs HW=49.35' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.64 cfs)

**Primary OutFlow** Max=0.79 cfs @ 12.42 hrs HW=49.35' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.79 cfs @ 1.29 fps)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 6.65" for 100-Year event
Inflow = 2.30 cfs @ 12.09 hrs, Volume= 7,535 cf
Outflow = 2.30 cfs @ 12.09 hrs, Volume= 7,161 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.30 cfs @ 12.09 hrs, Volume= 7,161 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.49' @ 12.09 hrs Surf.Area= 245 sf Storage= 396 cf

Plug-Flow detention time= 43.6 min calculated for 7,148 cf (95% of inflow)
Center-of-Mass det. time= 16.2 min ( 808.9 - 792.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=2.25 cfs @ 12.09 hrs HW=49.49' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.25 cfs @ 1.59 fps)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 8.26" for 100-Year event
Inflow = 4.20 cfs @ 12.09 hrs, Volume= 15,095 cf
Outflow = 0.63 cfs @ 12.58 hrs, Volume= 15,107 cf, Atten= 85%, Lag= 29.8 min
Discarded = 0.63 cfs @ 12.58 hrs, Volume= 15,107 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.04' @ 12.58 hrs Surf.Area= 2,681 sf Storage= 4,347 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 42.6 min ( 794.8 - 752.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.63 cfs @ 12.58 hrs HW=49.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.63 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 8.46" for 100-Year event
Inflow = 1.71 cfs @ 12.09 hrs, Volume= 6,303 cf
Outflow = 1.71 cfs @ 12.09 hrs, Volume= 5,930 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.71 cfs @ 12.09 hrs, Volume= 5,930 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.45' @ 12.09 hrs Surf.Area= 245 sf Storage= 392 cf

Plug-Flow detention time= 63.9 min calculated for 5,919 cf (94% of inflow)
Center-of-Mass det. time= 30.7 min ( 770.9 - 740.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.66 cfs @ 12.09 hrs HW=49.44' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.66 cfs @ 1.44 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 7.25" for 100-Year event
Inflow = 8.92 cfs @ 12.09 hrs, Volume= 29,678 cf
Outflow = 1.67 cfs @ 12.54 hrs, Volume= 29,659 cf, Atten= 81%, Lag= 27.1 min
Discarded = 1.21 cfs @ 12.54 hrs, Volume= 29,386 cf
Primary = 0.46 cfs @ 12.54 hrs, Volume= 273 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.11' @ 12.54 hrs Surf.Area= 5,074 sf Storage= 9,513 cf

Plug-Flow detention time= 54.7 min calculated for 29,659 cf (100% of inflow)
Center-of-Mass det. time= 54.2 min ( 831.9 - 777.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=1.21 cfs @ 12.54 hrs HW=48.11' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.21 cfs)

**Primary OutFlow** Max=0.44 cfs @ 12.54 hrs HW=48.11' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.44 cfs @ 1.06 fps)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 7.01" for 100-Year event
Inflow = 5.14 cfs @ 12.09 hrs, Volume= 17,082 cf
Outflow = 5.11 cfs @ 12.09 hrs, Volume= 15,649 cf, Atten= 1%, Lag= 0.2 min
Primary = 5.11 cfs @ 12.09 hrs, Volume= 15,649 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.04' @ 12.09 hrs Surf.Area= 913 sf Storage= 1,532 cf

Plug-Flow detention time= 68.3 min calculated for 15,621 cf (91% of inflow)
Center-of-Mass det. time= 26.3 min ( 811.3 - 785.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=5.00 cfs @ 12.09 hrs HW=48.04' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 5.00 cfs @ 1.76 fps)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.83" for 100-Year event
Inflow = 12.38 cfs @ 12.40 hrs, Volume= 38,240 cf
Primary = 12.38 cfs @ 12.40 hrs, Volume= 38,240 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

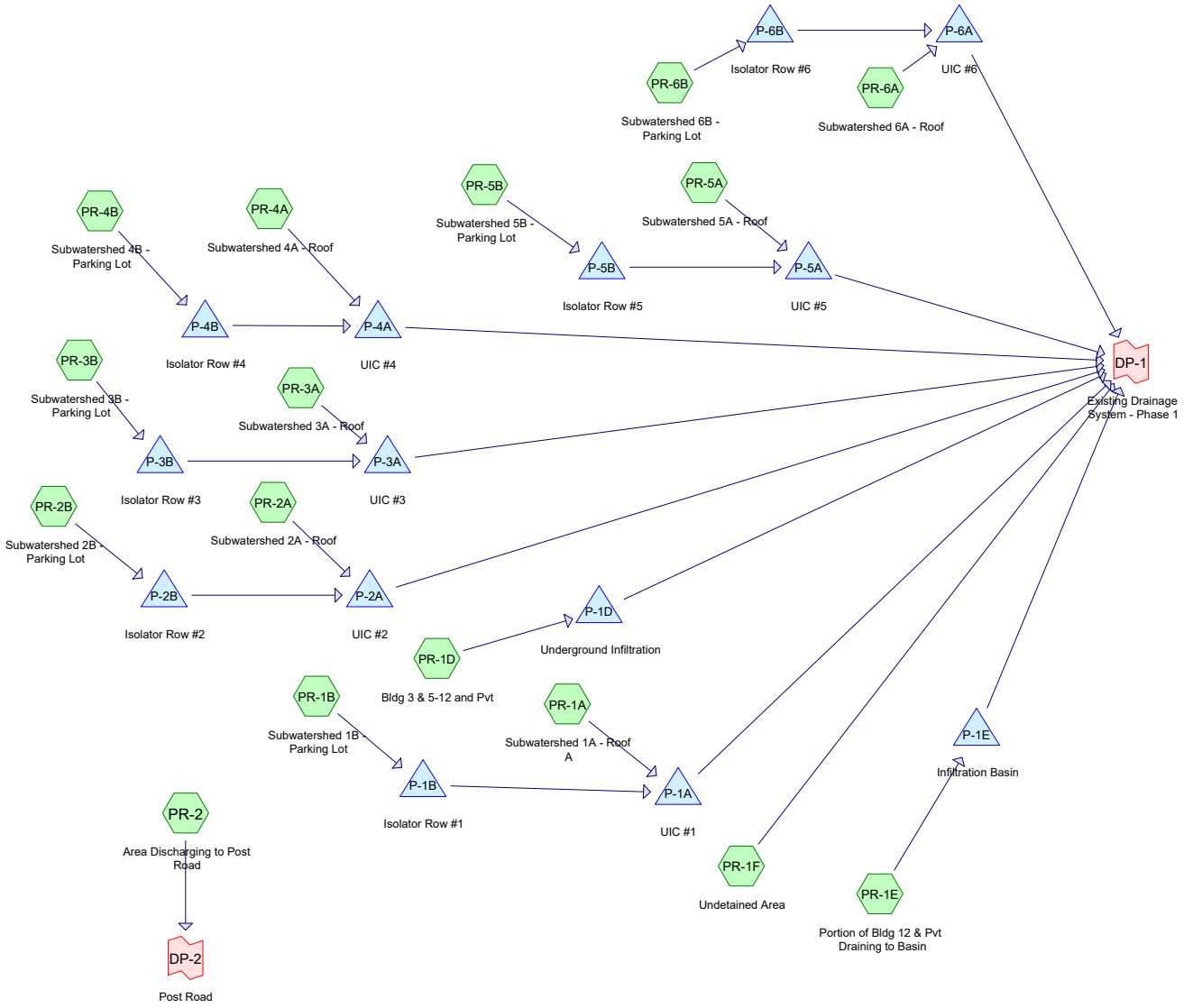
## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 7.01" for 100-Year event
Inflow = 0.84 cfs @ 12.09 hrs, Volume= 2,798 cf
Primary = 0.84 cfs @ 12.09 hrs, Volume= 2,798 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

# ATTACHMENT 3

## MODIFIED WATER QUALITY CALCULATIONS




Subcat Reach Pond Link

**Routing Diagram for 2826 Post Road Phase II Modifications - Proposed**

Prepared by {enter your company name here}, Printed 10/6/2022

## Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 16,907 | 68 | <50% Grass cover, Poor, HSG A (PR-1D, PR-1E) |
| 66,517 | 39 | >75% Grass cover, Good, HSG A (PR-1B, PR-1D, PR-1E, PR-1F, PR-2, PR-2B, PR-4B, PR-6B) |
| 536 | 61 | >75% Grass cover, Good, HSG B (PR-1D, PR-1F) |
| 1,253 | 80 | >75% Grass cover, Good, HSG D (PR-2) |
| 5,130 | 72 | Dirt roads, HSG A (PR-1D, PR-1E) |
| 85,172 | 98 | Paved parking and sidewalks, HSG A (PR-1B, PR-2B, PR-3B, PR-4B, PR-5B, PR-6B) |
| 144,295 | 98 | Paved parking, HSG A (PR-1D, PR-1E, PR-2) |
| 2,111 | 98 | Paved parking, HSG B (PR-1D) |
| 2,135 | 98 | Paved parking, HSG D (PR-2) |
| 202,787 | 98 | Roofs, HSG A (PR-1A, PR-1D, PR-1E, PR-2A, PR-3A, PR-4A, PR-5A, PR-6A) |
| 1,705 | 98 | Roofs, HSG B (PR-1D) |
| 12,907 | 36 | Woods, Fair, HSG A (PR-1E, PR-1F) |
| 3,966 | 60 | Woods, Fair, HSG B (PR-1F) |
| 3,402 | 30 | Woods, Good, HSG A (PR-1D, PR-1E) |
| 10,736 | 32 | Woods/grass comb., Good, HSG A (PR-1D, PR-1E) |
| **559,558** | **86** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 547,852 | HSG A | PR-1A, PR-1B, PR-1D, PR-1E, PR-1F, PR-2, PR-2A, PR-2B, PR-3A, PR-3B, PR-4A, PR-4B, PR-5A, PR-5B, PR-6A, PR-6B |
| 8,318 | HSG B | PR-1D, PR-1F |
| 0 | HSG C | |
| 3,388 | HSG D | PR-2 |
| 0 | Other | |
| **559,558** | | **TOTAL AREA** |

## Ground Covers (all nodes)

| HSG-A (sq-ft) | HSG-B (sq-ft) | HSG-C (sq-ft) | HSG-D (sq-ft) | Other (sq-ft) | Total (sq-ft) | Ground Cover |
|---|---|---|---|---|---|---|
| 16,907 | 0 | 0 | 0 | 0 | 16,907 | <50% Grass cover, Poor |
| 66,517 | 536 | 0 | 1,253 | 0 | 68,307 | >75% Grass cover, Good |
| 5,130 | 0 | 0 | 0 | 0 | 5,130 | Dirt roads |
| 144,295 | 2,111 | 0 | 2,135 | 0 | 148,541 | Paved parking |
| 85,172 | 0 | 0 | 0 | 0 | 85,172 | Paved parking and sidewalks |
| 202,787 | 1,705 | 0 | 0 | 0 | 204,492 | Roofs |
| 12,907 | 3,966 | 0 | 0 | 0 | 16,873 | Woods, Fair |
| 3,402 | 0 | 0 | 0 | 0 | 3,402 | Woods, Good |
| 10,736 | 0 | 0 | 0 | 0 | 10,736 | Woods/grass comb., Good |
| **547,852** | **8,318** | **0** | **3,388** | **0** | **559,558** | **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 | P-1D | 31.40 | 31.00 | 25.0 | 0.0160 | 0.012 | 24.0 | 0.0 | 0.0 |

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPR-1A: Subwatershed1A -** Runoff Area=9,000 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.22 cfs 739 cf

**SubcatchmentPR-1B: Subwatershed1B -** Runoff Area=30,994 sf 75.91% Impervious Runoff Depth=0.25"
Tc=6.0 min CN=84 Runoff=0.17 cfs 636 cf

**SubcatchmentPR-1D: Bldg 3 & 5-12 and** Runoff Area=286,475 sf 80.60% Impervious Runoff Depth=0.38"
Tc=6.0 min CN=88 Runoff=2.68 cfs 8,960 cf

**SubcatchmentPR-1E: Portion of Bldg 12 &** Runoff Area=76,715 sf 66.84% Impervious Runoff Depth=0.15"
Tc=6.0 min CN=80 Runoff=0.18 cfs 979 cf

**SubcatchmentPR-1F: Undetained Area** Runoff Area=20,166 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=42 Runoff=0.00 cfs 0 cf

**SubcatchmentPR-2: Area Discharging to** Runoff Area=4,789 sf 61.89% Impervious Runoff Depth=0.31"
Tc=6.0 min CN=86 Runoff=0.03 cfs 122 cf

**SubcatchmentPR-2A: Subwatershed2A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.16 cfs 534 cf

**SubcatchmentPR-2B: Subwatershed2B -** Runoff Area=11,917 sf 85.52% Impervious Runoff Depth=0.41"
Tc=6.0 min CN=89 Runoff=0.13 cfs 412 cf

**SubcatchmentPR-3A: Subwatershed3A -** Runoff Area=6,500 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.16 cfs 534 cf

**SubcatchmentPR-3B: Subwatershed3B -** Runoff Area=8,824 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.22 cfs 725 cf

**SubcatchmentPR-4A: Subwatershed4A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.32 cfs 1,068 cf

**SubcatchmentPR-4B: Subwatershed4B -** Runoff Area=13,602 sf 74.92% Impervious Runoff Depth=0.22"
Tc=6.0 min CN=83 Runoff=0.06 cfs 249 cf

**SubcatchmentPR-5A: Subwatershed5A -** Runoff Area=13,000 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.32 cfs 1,068 cf

**SubcatchmentPR-5B: Subwatershed5B -** Runoff Area=8,940 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.22 cfs 734 cf

**SubcatchmentPR-6A: Subwatershed6A -** Runoff Area=19,900 sf 100.00% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=98 Runoff=0.49 cfs 1,635 cf

**SubcatchmentPR-6B: Subwatershed6B -** Runoff Area=29,236 sf 80.37% Impervious Runoff Depth=0.31"
Tc=6.0 min CN=86 Runoff=0.21 cfs 744 cf

**Pond P-1A: UIC #1** Peak Elev=46.51' Storage=13 cf Inflow=0.22 cfs 739 cf
Discarded=0.21 cfs 739 cf Primary=0.00 cfs 0 cf Outflow=0.21 cfs 739 cf

**Pond P-1B: Isolator Row #1** Peak Elev=48.84' Storage=636 cf Inflow=0.17 cfs 636 cf
Outflow=0.00 cfs 0 cf

**Pond P-1D: Underground Infiltration** Peak Elev=44.74' Storage=301 cf Inflow=2.68 cfs 8,960 cf
Discarded=2.48 cfs 8,960 cf Primary=0.00 cfs 0 cf Outflow=2.48 cfs 8,960 cf

**Pond P-1E: Infiltration Basin** Peak Elev=45.01' Storage=33 cf Inflow=0.18 cfs 979 cf
Discarded=0.16 cfs 979 cf Primary=0.00 cfs 0 cf Outflow=0.16 cfs 979 cf

**Pond P-2A: UIC #2** Peak Elev=46.51' Storage=9 cf Inflow=0.16 cfs 571 cf
Discarded=0.15 cfs 571 cf Primary=0.00 cfs 0 cf Outflow=0.15 cfs 571 cf

**Pond P-2B: Isolator Row #2** Peak Elev=49.25' Storage=375 cf Inflow=0.13 cfs 412 cf
Outflow=0.00 cfs 37 cf

**Pond P-3A: UIC #3** Peak Elev=46.51' Storage=10 cf Inflow=0.18 cfs 880 cf
Discarded=0.16 cfs 880 cf Primary=0.00 cfs 0 cf Outflow=0.16 cfs 880 cf

**Pond P-3B: Isolator Row #3** Peak Elev=49.28' Storage=377 cf Inflow=0.22 cfs 725 cf
Outflow=0.11 cfs 346 cf

**Pond P-4A: UIC #4** Peak Elev=46.52' Storage=18 cf Inflow=0.32 cfs 1,068 cf
Discarded=0.31 cfs 1,068 cf Primary=0.00 cfs 0 cf Outflow=0.31 cfs 1,068 cf

**Pond P-4B: Isolator Row #4** Peak Elev=48.29' Storage=249 cf Inflow=0.06 cfs 249 cf
Outflow=0.00 cfs 0 cf

**Pond P-5A: UIC #5** Peak Elev=46.52' Storage=18 cf Inflow=0.32 cfs 1,420 cf
Discarded=0.31 cfs 1,420 cf Primary=0.00 cfs 0 cf Outflow=0.31 cfs 1,420 cf

**Pond P-5B: Isolator Row #5** Peak Elev=49.28' Storage=377 cf Inflow=0.22 cfs 734 cf
Outflow=0.12 cfs 352 cf

**Pond P-6A: UIC #6** Peak Elev=45.02' Storage=28 cf Inflow=0.49 cfs 1,635 cf
Discarded=0.47 cfs 1,635 cf Primary=0.00 cfs 0 cf Outflow=0.47 cfs 1,635 cf

**Pond P-6B: Isolator Row #6** Peak Elev=46.43' Storage=744 cf Inflow=0.21 cfs 744 cf
Outflow=0.00 cfs 0 cf

**Link DP-1: Existing Drainage System - Phase 1** Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

**Link DP-2: Post Road** Inflow=0.03 cfs 122 cf
Primary=0.03 cfs 122 cf

**Total Runoff Area = 559,558 sf Runoff Volume = 19,139 cf Average Runoff Depth = 0.41"**
**21.69% Pervious = 121,354 sf 78.31% Impervious = 438,205 sf**

## Summary for Subcatchment PR-1A: Subwatershed 1A - Roof A

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 739 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 9,000 | 98 | Roofs, HSG A |
| 9,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1B: Subwatershed 1B - Parking Lot

Runoff = 0.17 cfs @ 12.11 hrs, Volume= 636 cf, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,528 | 98 | Paved parking and sidewalks, HSG A |
| | 7,466 | 39 | >75% Grass cover, Good, HSG A |
| | 30,994 | 84 | Weighted Average |
| | 7,466 | 39 | 24.09% Pervious Area |
| | 23,528 | 98 | 75.91% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-1D: Bldg 3 & 5-12 and Pvt

Runoff = 2.68 cfs @ 12.10 hrs, Volume= 8,960 cf, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 8,805 | 32 | Woods/grass comb., Good, HSG A |
| 2,001 | 72 | Dirt roads, HSG A |
| 28,102 | 39 | >75% Grass cover, Good, HSG A |
| 113,211 | 98 | Roofs, HSG A |
| 113,868 | 98 | Paved parking, HSG A |
| 15,161 | 68 | <50% Grass cover, Poor, HSG A |
| 1,158 | 30 | Woods, Good, HSG A |
| 1,705 | 98 | Roofs, HSG B |
| 2,111 | 98 | Paved parking, HSG B |
| 353 | 61 | >75% Grass cover, Good, HSG B |
| 286,475 | 88 | Weighted Average |
| 55,580 | 47 | 19.40% Pervious Area |
| 230,895 | 98 | 80.60% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1E: Portion of Bldg 12 & Pvt Draining to Basin

Runoff = 0.18 cfs @ 12.14 hrs, Volume= 979 cf, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 14,109 | 39 | >75% Grass cover, Good, HSG A |
| 21,676 | 98 | Roofs, HSG A |
| 29,598 | 98 | Paved parking, HSG A |
| 3,129 | 72 | Dirt roads, HSG A |
| 1,746 | 68 | <50% Grass cover, Poor, HSG A |
| 2,283 | 36 | Woods, Fair, HSG A |
| 2,244 | 30 | Woods, Good, HSG A |
| 1,931 | 32 | Woods/grass comb., Good, HSG A |
| 76,715 | 80 | Weighted Average |
| 25,442 | 43 | 33.16% Pervious Area |
| 51,274 | 98 | 66.84% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-1F: Undetained Area

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 5,393 | 39 | >75% Grass cover, Good, HSG A |
| 10,624 | 36 | Woods, Fair, HSG A |
| 183 | 61 | >75% Grass cover, Good, HSG B |
| 3,966 | 60 | Woods, Fair, HSG B |
| 20,166 | 42 | Weighted Average |
| 20,166 | 42 | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2: Area Discharging to Post Road

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 122 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 829 | 98 | Paved parking, HSG A |
| 572 | 39 | >75% Grass cover, Good, HSG A |
| 2,135 | 98 | Paved parking, HSG D |
| 1,253 | 80 | >75% Grass cover, Good, HSG D |
| 4,789 | 86 | Weighted Average |
| 1,825 | 67 | 38.11% Pervious Area |
| 2,964 | 98 | 61.89% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PR-2A: Subwatershed 2A - Roof

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 534 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-2B: Subwatershed 2B - Parking Lot

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 412 cf, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 1,726 | 39 | >75% Grass cover, Good, HSG A |
| | 11,917 | 89 | Weighted Average |
| | 1,726 | 39 | 14.48% Pervious Area |
| | 10,191 | 98 | 85.52% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3A: Subwatershed 3A - Roof

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 534 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 6,500 | 98 | Roofs, HSG A |
| 6,500 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-3B: Subwatershed 3B - Parking Lot

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 725 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,824 | 98 | Paved parking and sidewalks, HSG A |
| | 8,824 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4A: Subwatershed 4A - Roof

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 1,068 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-4B: Subwatershed 4B - Parking Lot

Runoff = 0.06 cfs @ 12.11 hrs, Volume= 249 cf, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,191 | 98 | Paved parking and sidewalks, HSG A |
| | 3,411 | 39 | >75% Grass cover, Good, HSG A |
| | 13,602 | 83 | Weighted Average |
| | 3,411 | 39 | 25.08% Pervious Area |
| | 10,191 | 98 | 74.92% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5A: Subwatershed 5A - Roof

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 1,068 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 13,000 | 98 | Roofs, HSG A |
| 13,000 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-5B: Subwatershed 5B - Parking Lot

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 734 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 8,940 | 98 | Paved parking and sidewalks, HSG A |
| | 8,940 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6A: Subwatershed 6A - Roof

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 1,635 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| Area (sf) | CN | Description |
|---|---|---|
| 19,900 | 98 | Roofs, HSG A |
| 19,900 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Subcatchment PR-6B: Subwatershed 6B - Parking Lot

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 744 cf, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 23,498 | 98 | Paved parking and sidewalks, HSG A |
| | 5,738 | 39 | >75% Grass cover, Good, HSG A |
| | 29,236 | 86 | Weighted Average |
| | 5,738 | 39 | 19.63% Pervious Area |
| | 23,498 | 98 | 80.37% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, SEG A** |

## Summary for Pond P-1A: UIC #1

Inflow Area = 39,994 sf, 81.33% Impervious, Inflow Depth = 0.22" for WQV event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 739 cf
Outflow = 0.21 cfs @ 12.10 hrs, Volume= 739 cf, Atten= 3%, Lag= 0.9 min
Discarded = 0.21 cfs @ 12.10 hrs, Volume= 739 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.51' @ 12.10 hrs Surf.Area= 4,161 sf Storage= 13 cf

Plug-Flow detention time= 1.0 min calculated for 739 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 783.0 - 782.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 3,108 cf | **20.50'W x 202.98'L x 3.50'H Field A**<br>14,564 cf Overall - 5,145 cf Embedded = 9,418 cf x 33.0% Voids |
| #2A | 47.00' | 5,145 cf | **ADS_StormTech SC-740 +Cap** x 112 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>112 Chambers in 4 Rows |
| | | 8,253 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.81 cfs @ 12.10 hrs HW=46.51' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.81 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1B: Isolator Row #1

Inflow Area = 30,994 sf, 75.91% Impervious, Inflow Depth = 0.25" for WQV event
Inflow = 0.17 cfs @ 12.11 hrs, Volume= 636 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.84' @ 24.40 hrs Surf.Area= 468 sf Storage= 636 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 388 cf | **6.25'W x 74.82'L x 3.50'H Field A**<br>1,637 cf Overall - 459 cf Embedded = 1,177 cf x 33.0% Voids |
| #2A | 47.00' | 459 cf | **ADS_StormTech SC-740 +Cap** x 10 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 848 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1D: Underground Infiltration

Inflow Area = 286,475 sf, 80.60% Impervious, Inflow Depth = 0.38" for WQV event
Inflow = 2.68 cfs @ 12.10 hrs, Volume= 8,960 cf
Outflow = 2.48 cfs @ 12.14 hrs, Volume= 8,960 cf, Atten= 7%, Lag= 2.1 min
Discarded = 2.48 cfs @ 12.14 hrs, Volume= 8,960 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 44.74' @ 12.14 hrs Surf.Area= 23,713 sf Storage= 301 cf

Plug-Flow detention time= 2.0 min calculated for 8,944 cf (100% of inflow)
Center-of-Mass det. time= 2.0 min ( 866.3 - 864.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 44.70' | 18,217 cf | **15.75'W x 1,505.60'L x 3.50'H Crushed Stone**<br>82,996 cf Overall - 27,794 cf Embedded = 55,202 cf x 33.0% Voids |
| #2 | 45.20' | 1,103 cf | **P-1D-A** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #3 | 45.20' | 1,929 cf | **P-1D-B** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #4 | 45.20' | 1,240 cf | **P-1D-C** x 27 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>27 Chambers in 3 Rows |
| #5 | 45.20' | 965 cf | **P-1D-D** x 21 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>21 Chambers in 3 Rows |
| #6 | 45.20' | 1,654 cf | **P-1D-E** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #7 | 45.20' | 1,654 cf | **P-1D-F** x 36 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>36 Chambers in 3 Rows |
| #8 | 45.20' | 1,103 cf | **P-1D-G** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #9 | 45.20' | 1,286 cf | **P-1D-H** x 28 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>28 Chambers in 2 Rows |
| #10 | 45.20' | 184 cf | **P-1D-H** x 4 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #11 | 45.20' | 413 cf | **P-1D-H** x 9 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| #12 | 45.20' | 2,067 cf | **P-1D-I** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #13 | 45.20' | 1,929 cf | **P-1D-J** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #14 | 45.20' | 2,067 cf | **P-1D-K** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |

| | | | |
|---|---|---|---|
| | | | 45 Chambers in 3 Rows |
| #15 | 45.20' | 1,929 cf | **P-1D-L** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #16 | 45.20' | 2,067 cf | **P-1D-M** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #17 | 45.20' | 1,929 cf | **P-1D-N** x 42 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>42 Chambers in 3 Rows |
| #18 | 45.20' | 2,067 cf | **P-1D-O** x 45 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>45 Chambers in 3 Rows |
| #19 | 45.20' | 1,103 cf | **P-1D-P** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #20 | 45.20' | 1,103 cf | **P-1D-Q** x 24 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>24 Chambers in 3 Rows |
| #21 | 46.25' | 134 cf | **18.0" Round Pipe CB5-DMH1**-Impervious<br>L= 76.0' S= 0.0031 '/' |
| #22 | 45.70' | 205 cf | **18.0" Round Pipe CB5-CB6**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #23 | 46.10' | 93 cf | **12.0" Round Pipe CB6-CB7**-Impervious<br>L= 118.0' S= 0.0033 '/' |
| #24 | 46.50' | 101 cf | **12.0" Round Pipe CB33-CB40**-Impervious<br>L= 128.0' S= 0.0098 '/' |
| #25 | 46.10' | 83 cf | **12.0" Round Pipe CB8-CB9**-Impervious<br>L= 106.0' S= 0.0036 '/' |
| #26 | 45.70' | 187 cf | **18.0" Round Pipe CB9-CB10**-Impervious<br>L= 106.0' S= 0.0027 '/' |
| #27 | 46.20' | 91 cf | **12.0" Round Pipe CB10-CB11**-Impervious<br>L= 116.0' S= 0.0025 '/' |
| #28 | 45.30' | 540 cf | **24.0" Round 24" Header Pipe**-Impervious<br>L= 172.0' |
| #29 | 45.30' | 855 cf | **4.00'D x 4.00'H CBs** x 17 -Impervious |
| #30 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-6**-Impervious |
| #31 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-7**-Impervious |
| #32 | 47.80' | 50 cf | **4.00'D x 4.00'H CB-40**-Impervious |
| #33 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-8**-Impervious |
| #34 | 46.00' | 50 cf | **4.00'D x 4.00'H CB-9**-Impervious |
| #35 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-11**-Impervious |
| #36 | 46.50' | 50 cf | **4.00'D x 4.00'H CB-33**-Impervious |
| | | 48,651 cf | Total Available Storage |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 44.70' | **8.270 in/hr Exfiltration over Wetted area** Phase-In= 0.01' |
| #2 | Device 4 | 45.70' | **15.0" W x 21.0" H Vert. Orifice/Grate** C= 0.600 |
| #3 | Device 4 | 48.10' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |
| #4 | Primary | 31.40' | **24.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0160 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf |

**Discarded OutFlow** Max=4.56 cfs @ 12.14 hrs HW=44.74' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 4.56 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=44.70' (Free Discharge)
└**4=Culvert** (Passes 0.00 cfs of 41.88 cfs potential flow)
  ├**2=Orifice/Grate** ( Controls 0.00 cfs)
  └**3=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-1E: Infiltration Basin

Inflow Area = 76,715 sf, 66.84% Impervious, Inflow Depth = 0.15" for WQV event
Inflow = 0.18 cfs @ 12.14 hrs, Volume= 979 cf
Outflow = 0.16 cfs @ 12.22 hrs, Volume= 979 cf, Atten= 11%, Lag= 4.7 min
Discarded = 0.16 cfs @ 12.22 hrs, Volume= 979 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 45.01' @ 12.22 hrs Surf.Area= 3,605 sf Storage= 33 cf

Plug-Flow detention time= 3.5 min calculated for 977 cf (100% of inflow)
Center-of-Mass det. time= 3.5 min ( 923.8 - 920.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 45.00' | 21,635 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.00 | 3,597 | 0 | 0 |
| 46.00 | 4,453 | 4,025 | 4,025 |
| 47.00 | 5,366 | 4,910 | 8,935 |
| 48.00 | 6,336 | 5,851 | 14,786 |
| 49.00 | 7,362 | 6,849 | 21,635 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01' |
| #2 | Primary | 48.20' | **35.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74 |

**Discarded OutFlow** Max=0.62 cfs @ 12.22 hrs HW=45.01' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.62 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2A: UIC #2

Inflow Area = 18,417 sf, 90.63% Impervious, Inflow Depth = 0.37" for WQV event
Inflow = 0.16 cfs @ 12.09 hrs, Volume= 571 cf
Outflow = 0.15 cfs @ 12.10 hrs, Volume= 571 cf, Atten= 3%, Lag= 0.9 min
Discarded = 0.15 cfs @ 12.10 hrs, Volume= 571 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.51' @ 12.10 hrs Surf.Area= 2,352 sf Storage= 9 cf

Plug-Flow detention time= 1.0 min calculated for 570 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 817.5 - 816.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,762 cf | **34.75'W x 67.70'L x 3.50'H Field A**<br>8,234 cf Overall - 2,894 cf Embedded = 5,339 cf x 33.0% Voids |
| #2A | 47.00' | 2,894 cf | **ADS_StormTech SC-740 +Cap** x 63 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>63 Chambers in 7 Rows |
| | | 4,656 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.46 cfs @ 12.10 hrs HW=46.51' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.46 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-2B: Isolator Row #2

Inflow Area = 11,917 sf, 85.52% Impervious, Inflow Depth = 0.41" for WQV event
Inflow = 0.13 cfs @ 12.10 hrs, Volume= 412 cf
Outflow = 0.00 cfs @ 19.90 hrs, Volume= 37 cf, Atten= 98%, Lag= 468.0 min
Primary = 0.00 cfs @ 19.90 hrs, Volume= 37 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 49.25' @ 19.90 hrs Surf.Area= 245 sf Storage= 375 cf

Plug-Flow detention time= 606.8 min calculated for 37 cf (9% of inflow)
Center-of-Mass det. time= 450.9 min ( 1,309.0 - 858.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 19.90 hrs HW=49.25' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.11 fps)

## Summary for Pond P-3A: UIC #3

Inflow Area = 15,324 sf,100.00% Impervious, Inflow Depth = 0.69" for WQV event
Inflow = 0.18 cfs @ 12.27 hrs, Volume= 880 cf
Outflow = 0.16 cfs @ 12.29 hrs, Volume= 880 cf, Atten= 11%, Lag= 1.7 min
Discarded = 0.16 cfs @ 12.29 hrs, Volume= 880 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.51' @ 12.29 hrs Surf.Area= 2,031 sf Storage= 10 cf

Plug-Flow detention time= 1.0 min calculated for 878 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 831.6 - 830.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,527 cf | **30.00'W x 67.70'L x 3.50'H Field A**<br>7,108 cf Overall - 2,481 cf Embedded = 4,627 cf x 33.0% Voids |
| #2A | 47.00' | 2,481 cf | **ADS_StormTech SC-740 +Cap** x 54 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>54 Chambers in 6 Rows |
| | | 4,008 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.40 cfs @ 12.29 hrs HW=46.51' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.40 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-3B: Isolator Row #3

Inflow Area = 8,824 sf,100.00% Impervious, Inflow Depth = 0.99" for WQV event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 725 cf
Outflow = 0.11 cfs @ 12.27 hrs, Volume= 346 cf, Atten= 49%, Lag= 11.0 min
Primary = 0.11 cfs @ 12.27 hrs, Volume= 346 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.28' @ 12.25 hrs Surf.Area= 245 sf Storage= 377 cf

Plug-Flow detention time= 240.3 min calculated for 345 cf (48% of inflow)
Center-of-Mass det. time= 123.5 min ( 905.5 - 782.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.08 cfs @ 12.27 hrs HW=49.28' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.53 fps)

## Summary for Pond P-4A: UIC #4

Inflow Area = 26,602 sf, 87.18% Impervious, Inflow Depth = 0.48" for WQV event
Inflow = 0.32 cfs @ 12.09 hrs, Volume= 1,068 cf
Outflow = 0.31 cfs @ 12.10 hrs, Volume= 1,068 cf, Atten= 3%, Lag= 0.9 min
Discarded = 0.31 cfs @ 12.10 hrs, Volume= 1,068 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.52' @ 12.10 hrs Surf.Area= 2,674 sf Storage= 18 cf

Plug-Flow detention time= 1.0 min calculated for 1,068 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 783.0 - 782.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 1,997 cf | **39.50'W x 67.70'L x 3.50'H Field A**<br>9,359 cf Overall - 3,308 cf Embedded = 6,051 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 8 Rows |
| | | 5,305 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.52 cfs @ 12.10 hrs HW=46.52' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.52 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-4B: Isolator Row #4

Inflow Area = 13,602 sf, 74.92% Impervious, Inflow Depth = 0.22" for WQV event
Inflow = 0.06 cfs @ 12.11 hrs, Volume= 249 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 48.29' @ 24.40 hrs Surf.Area= 245 sf Storage= 249 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5A: UIC #5

Inflow Area = 21,940 sf,100.00% Impervious, Inflow Depth = 0.78" for WQV event
Inflow = 0.32 cfs @ 12.09 hrs, Volume= 1,420 cf
Outflow = 0.31 cfs @ 12.10 hrs, Volume= 1,420 cf, Atten= 3%, Lag= 0.9 min
Discarded = 0.31 cfs @ 12.10 hrs, Volume= 1,420 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.52' @ 12.10 hrs Surf.Area= 2,681 sf Storage= 18 cf

Plug-Flow detention time= 1.1 min calculated for 1,420 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 813.5 - 812.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 2,004 cf | **44.25'W x 60.58'L x 3.50'H Field A**<br>9,382 cf Overall - 3,308 cf Embedded = 6,074 cf x 33.0% Voids |
| #2A | 47.00' | 3,308 cf | **ADS_StormTech SC-740 +Cap** x 72 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>72 Chambers in 9 Rows |
| | | 5,312 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 46.50' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 49.20' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.52 cfs @ 12.10 hrs HW=46.52' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.52 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=46.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-5B: Isolator Row #5

Inflow Area = 8,940 sf,100.00% Impervious, Inflow Depth = 0.99" for WQV event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 734 cf
Outflow = 0.12 cfs @ 12.27 hrs, Volume= 352 cf, Atten= 47%, Lag= 10.8 min
Primary = 0.12 cfs @ 12.27 hrs, Volume= 352 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 49.28' @ 12.25 hrs Surf.Area= 245 sf Storage= 377 cf

Plug-Flow detention time= 239.6 min calculated for 351 cf (48% of inflow)
Center-of-Mass det. time= 123.0 min ( 905.0 - 782.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 46.50' | 207 cf | **6.25'W x 39.22'L x 3.50'H Field A**<br>858 cf Overall - 230 cf Embedded = 628 cf x 33.0% Voids |
| #2A | 47.00' | 230 cf | **ADS_StormTech SC-740 +Cap** x 5 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 437 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 49.25' | **6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.09 cfs @ 12.27 hrs HW=49.28' (Free Discharge)
**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.54 fps)

## Summary for Pond P-6A: UIC #6

Inflow Area = 49,136 sf, 88.32% Impervious, Inflow Depth = 0.40" for WQV event
Inflow = 0.49 cfs @ 12.09 hrs, Volume= 1,635 cf
Outflow = 0.47 cfs @ 12.10 hrs, Volume= 1,635 cf, Atten= 3%, Lag= 0.9 min
Discarded = 0.47 cfs @ 12.10 hrs, Volume= 1,635 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 45.02' @ 12.10 hrs Surf.Area= 5,074 sf Storage= 28 cf

Plug-Flow detention time= 1.0 min calculated for 1,632 cf (100% of inflow)
Center-of-Mass det. time= 1.0 min ( 783.0 - 782.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 3,738 cf | **34.75'W x 146.02'L x 3.50'H Field A**<br>17,759 cf Overall - 6,432 cf Embedded = 11,328 cf x 33.0% Voids |
| #2A | 45.50' | 6,432 cf | **ADS_StormTech SC-740 +Cap** x 140 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>140 Chambers in 7 Rows |
| | | 10,170 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 45.00' | **8.410 in/hr Exfiltration over Wetted area** |
| #2 | Primary | 48.00' | **4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Discarded OutFlow** Max=0.99 cfs @ 12.10 hrs HW=45.02' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
**2=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond P-6B: Isolator Row #6

Inflow Area = 29,236 sf, 80.37% Impervious, Inflow Depth = 0.31" for WQV event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 744 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 46.43' @ 24.40 hrs Surf.Area= 913 sf Storage= 744 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1A | 45.00' | 751 cf | **6.25'W x 146.02'L x 3.50'H Field A**<br>3,194 cf Overall - 919 cf Embedded = 2,275 cf x 33.0% Voids |
| #2A | 45.50' | 919 cf | **ADS_StormTech SC-740 +Cap** x 20 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap |
| | | 1,670 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 47.75' | **5.0' long Sharp-Crested Rectangular Weir X 2.00**<br>2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Link DP-1: Existing Drainage System - Phase 1

Inflow Area = 554,769 sf, 78.45% Impervious, Inflow Depth = 0.00" for WQV event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

## Summary for Link DP-2: Post Road

Inflow Area = 4,789 sf, 61.89% Impervious, Inflow Depth = 0.31" for WQV event
Inflow = 0.03 cfs @ 12.10 hrs, Volume= 122 cf
Primary = 0.03 cfs @ 12.10 hrs, Volume= 122 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs