# Town of Poughkeepsie
## Planning Department

*1 Overocker Road*
*Poughkeepsie, NY 12603*

*845-485-3657 Phone*

**February 11, 2026**
**Eric Hollman, Planner**

**A.3. VASSAR COLLEGE – PRENTISS FIELDS**
**SEQRA Review and Site Plan Review** for a proposal to improve existing athletic fields northwest of Hooker Avenue and Brewers Lane including replacement of one existing grass field with a newly designed turf field and updating an existing grass practice field, expanding the existing parking lot, and installation of amenities such as fencing, a storage shed, a scoreboard, site lighting, and bleachers with a press box. Institutional (IN) Zoning District; ± 57 acres; 334 Hooker Avenue; Grid # 6161-04-740465; Unlisted Action; *Vassar College c/o Maryann Pilon (Applicant and Owner).*

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The Planning Board's 1/15/26 declaration of lead agency intent for an Unlisted action was circulated and no objection was received. The applicant submitted revised plans and responses to comments seeking conditional approval. A public hearing was duly noticed. A draft SEQR determination and approval resolution are provided for the Board's consideration, below.

The applicant also requested Planning Board authorization to conduct tree felling after a conditional site plan approval and before a signed site plan, and in advance of the March 31 seasonal prohibition to protect endangered bat species. Site Plan Procedures §210-151(H) states, in part: *The site owner or applicant shall not commence any site preparation, including but not limited to tree removal, removal of soil, grading, stockpiling of soil or other construction material, until the final site plan has been endorsed by the Planning Board Chairman.*

The applicant's request letter was submitted with a Tree Felling Plan for limited areas of tree removal proposed by the plan. It proposes felling 9 trees for the western practice field expansion and 41 trees for the parking lot expansion, leaving the stumps in place. A resolution to conditionally approve authorization of a partial waiver is provided for the Board's consideration, below.

**SEQRA and Site Plan Review**

1. **The Planning Board should discuss** the applicant's previous meeting discussion and current responses to comments regarding event size, hours, traffic and parking, noise including audio, and lighting. They generally indicate that existing events at the sports complex will continue with greater use of the proposed improved fields; and that new lighting levels will be distributed as shown and buffered for adjacent residential properties by existing and proposed trees. The Board should determine if any additional information is required and if any incremental effects may rise to the level of significance.
2. Response to prior comment #4 is noted, updated: Applicant is to correct and show consistent locations and directions for proposed speakers on Site Plan SP-1, Landscape Plan LL-1 and Athletic Field Plan AF-3.
3. Response to prior comment #5 is noted, updated: Applicant is to identify the type and height of the western "existing fence to remain" on Site Plan Sheet SP-1, indicated by applicant responses to be chain link, 8-ft high.
4. Response to prior comment #8 is noted, updated per applicant response: For all locations identified as "Future Impervious Surface" on Athletic Field Layout Sheet AF-3, add the text, "(Not Proposed)". For "Install electric conduit for future EVCS" on Site Plan Sheet SP-1, add the text, ", subject to separate site plan application for EVCS installation".
5. Stadium light locations are to be shown on Site Plan SP-1 and Lighting Plan LP-1.

6. Applicant is to address Site Plan Information checklist and other information details as follows:
   a. Response to prior comment #11c is incomplete: Please add sequential sheet numbers to the Drawing List on Cover Sheet CV-1, corresponding to those on the plan set sheets (1-28 of 28).
   b. Correct seasonal tree clearing note on Demo Plan DM-1, to permit tree clearing only between Oct 15 (not Oct 1) and Mar 31.
   c. Show limits of disturbance on all plan views.

**Recommendations**
Staff recommend that the Planning Board discuss the application and take the following actions:

**A.** Open the public hearing, as follows:
**"I move that the Planning Board open the public hearing."**

**B.** Close the public hearing, as follows:
**"I move that the Planning Board close the public hearing.**

**C.** Adopt a SEQRA Negative Declaration, as follows:
**"I move that the Planning Board determine that the Vassar College – Prentiss Fields project will not have a significant adverse impact on the environment, and that no environmental impact statement will be required for the reasons set forth in the SEQRA Negative Declaration for an Unlisted Action dated February 19, 2026."**

**D.** Consider granting conditional site plan approval for the application, as follows:
**"I move that the Planning Board grant conditional site plan approval for the Vassar College – Prentiss Fields project, subject to the following:"**
Respond to comments of all reviewing departments and agencies, said responses to be reviewed by the Planning Department as to adequacy and completeness, including, but not limited to, the following:

1. Town Planning Department comments dated February 11, 2026.
2. Town Engineering Department comments dated February __, 2026.
3. Town Water Department comments dated February 9, 2026.
4. Town Building Department review of plans for signature.
5. Arlington Fire District review of plans for signature.
6. Comments of the Planning Board meeting.

**E. Planning Board is to conduct or waive architectural review approval for the proposed 900 SF storage building (Sheet 24, AF-D-4) and/or the proposed bleachers (Sheet 23, AF-D-3).**

**F.** Consider a resolution to permit tree felling activity prior to the Chair's signature of the Site Plan, as follows *(Only if the Planning Board has granted conditional site plan approval)*:

**"I move that the Planning Board authorize a partial waiver of §210-151(H) to permit site clearing activity limited to tree felling only, prior to Chair signature of an approved Site Plan and consistent with approved bat mitigation, expressly subject to the following:"**

1. Tree felling activity may occur on or prior to March 31, 2026, and thereafter is prohibited from April 1 through October 14, unless performed in accordance with NYSDEC and USF&W guidance.
2. Prior to signature of the approved Site Plan by the Planning Board Chair, site clearing activity is restricted to tree felling only; such activity shall not include relocation or removal of trees or brush, the use of heavy equipment, or any ground disturbance.
3. If the owner/applicant obtains Town acceptance of the final SWPPP, and submits evidence of coverage under the NYSDEC SPDES General Permit for Construction Activity, then tree felling activity including relocation or removal of trees or brush, and/or the use of heavy equipment, and/or ground disturbance, may be permitted at the written discretion of the Town Engineer.

4. Such tree felling activity shall be restricted to the area of disturbance and other conditions shown upon Tree Felling Plan TF-1, prepared by LRC Engineering and Surveying, dated 1/26/26, subject to subsequent revision and acceptance by the Town Engineering and Planning Departments. No tree felling activity shall occur until after Town acceptance of the tree-felling plan.
5. Prior to the commencement of any tree felling activity, a site restoration agreement shall be executed subject to Town Board and legal approval, and a financial guarantee filed for such restoration in an amount to be approved by the Town Engineer and the Director of Municipal Development.

# Town of Poughkeepsie
## Planning Department

*1 Overocker Road*
*Poughkeepsie, NY 12603*
*845-485-3657 Phone*

**TOWN DEPARTMENT, CONSULTANT AND FIRE DISTRICT COMMENTS**

**Project Name: VASSAR COLLEGE – PRENTISS FIELDS**
**Parcel ID #(s): 6161-04-740465-0000**
**For Planning Board Meeting on: February 19, 2026**

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Town Departments, Consultants, and the appropriate Fire District have reviewed materials submitted by the applicant for this Planning Board Meeting and have the following comments:

Review For Meeting - Water Department
02/09/2026
Tom Colgan

Any expansion of the existing irrigation system must be connected downstream from the existing backflow preventer.

Review For Meeting - Building
02/09/2026
Bruce Flower

No comment

Review For Meeting - Zoning
02/05/2026
Kristina Granieri

No comment.

Review For Meeting - Engineering
02/11/2026
Andrew Learn

General:
1. Responses to prior comment No. 1 are noted. The project will disturb more than 1 acre of land which will trigger the requirement for coverage under the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity and preparation of a Stormwater Pollution Prevention Plan. The applicant has prepared a SWPPP, comments are provided below.
a. The existing stormwater access easement agreement must be provided for review and updated as necessary to give the Town the authority but not obligation to access the site for maintenance of any stormwater facilities. Please coordinate with the Town's Planning Board Attorney.
b. Please include the appropriate protections/restrictions for the Indiana Bat within the SWPPP.

Stormwater:
2. Responses to prior comment No. 11 are noted. The following comments apply to the Demolition Plan, DM-1:
a. Comment remains. Please include coverage under the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity as a requirement prior to any tree clearing or soil disturbing activities within the Demolition Notes.
b. Response to prior comment No 14 is noted. Please provide a gate in the wooden guardrail for maintenance access to the infiltration basin.
3. There is a minor discrepancy between pre and post drainage areas of 0.232 ac. Please explain.
4. HydroCAD node IB-1's inflow area does not match the table on page 8 of the SWPPP document. Please revise.
5. Table on page 8 of the SWPPP document impervious cover does not match the amount listed in the HydroCAD node IB-1. Please revise accordingly.
6. Based on the infiltration rate of 67.1 in/hr, 100% of the WQv needs to be pretreated. In the SWPPP, pretreatment is stated to be achieved with deep sumps. Please provide alternative measures to provide the require pretreatment volume .
7. Please show the locations of deep tests and infiltration tests on drainage area maps and site plans for further review.
8. Based on the data provided for the infiltration testing, a more conservative infiltration rate should be considered as the tested rates are unstable and fluctuate greatly between runs.
9. Infiltration basin detail on sheet DN-3 has a call out for an overflow weir. No overflow weir detail is found and no callout is on the plans for an overflow weir. Please revise.
10. Post Drainage Areas 4 and 8 appear to have new impervious surfaces within the bounds, yet these areas are not being directed to the infiltration basin for treatment. Please explain and revise accordingly.

Tree Felling:
11. Please clarify the method proposed for tree felling. The use of mechanized logging equipment operation causing soil disturbance will trigger the requirement for coverage under the Construction General Permit (mentioned above). The plan seems to identify skidding of trees to a central chipping location.
a. Permit coverage requirements to be identified on TF-1, as necessary.
12. Demolition Notes 15 to 21 on TF-1 appear to reflect building demolition, please review and revise as necessary to describe the proposed work.
13. Please coordinate inspection of the tree felling activities with our office.
14. A restoration bond has been prepared by our office and provided to the Town Planning Department.

VASSAR COLLEGE - PRENTIS FIELD

TREE REMOVAL RESTORATION
SURETY ESTIMATE
TOWN OF POUGHKEEPSIE
CPL # R25.17334.13
**January 26, 2026**

| ITEM | RESTORATION QUANTITY | UNIT | UNIT PRICE | VALUE | COMPLETED QUANTITY | COST TO COMPLETE |
|---|---|---|---|---|---|---|
| Tree and log removal | 0.6 | Acre | $16,000.00 | $9,985 | 0.0 | $9,985 |
| 3" Caliper Deciduous Trees (15/Acre) | 9 | Acre | $500.00 | $4,680 | 0 | $4,680 |
| Rake Topsoil-Seed-Mulch | 665 | S.Y. | $7.00 | $4,652 | 0 | $4,652 |
| Erosion Controls | 0.6 | Acre | $3,200.00 | $1,997 | 0.0 | $1,997 |
| TOTAL CONST. COST | | | | $21,300 | | $21,300 |
| CONTINGENCY | 20% | | | $4,260 | | $4,260 |
| BOND, INSPECTION, CONSTRUCTION ADMIN, LEGAL COSTS | 15% | | | $3,195 | | $3,195 |
| SURETY AMOUNT | | | ORIGINAL | $24,495 | REDUCED | $24,495 |

January 26, 2026

Chairman Whitehead
Honorable Members of the Town of Poughkeepsie Planning Board
Town of Poughkeepsie
One Overocker Road
Poughkeepsie, NY 12603

**RE: Vassar College – Prentiss Fields**

Dear Chairman Whitehead and Members of the Board:

Please accept this letter and accompanying revised copies of plans sheets and documents as our resubmission for the above referenced project. We respectfully request that the Board grant a Negative Declaration and Conditional Approval to enable the applicant to complete necessary tree cutting prior to the March 31 deadline, ideally during the College's Spring Break (March 7–March 22), when students are not present on campus.

Below, please find our responses to comments received from our previous submission to the Town of Poughkeepsie on December 19, 2025:

**Please find below our summary of responses to the Comments received from Town of Poughkeepsie Planning Department in an email dated January 15, 2026:**

**Site Plan Review**

1. Planning Board should discuss proposed "turf" field and any additional information required for review.

   ***LRC Response: Comment noted.***

2. Planning Board should discuss adequacy of the landscaped buffer for adjoining residential properties to the west as proposed for incremental reduction by the field relocations closer to the property line, from 35' to 24.5' at the southwest field corner and about 78' to 55' at the northwest field corner. Planning Board has discretion over the relevant §210-38(F)(1) design guideline as modified by §210-152(A)(2).

***LRC Response: This was discussed at the 1/15/26 Planning Board meeting in which the board was satisfied with the landscape buffer as proposed.***

3. Applicant is to quantify and address the change in regular and maximum size of events and special events, inclusive of total participants at one time, earliest and latest hours, traffic and parking, bus parking, noise including audio, lighting, etc.

***Vassar Response: Regular and maximum size of events and special events, inclusive of total participants at one time: The size of practices will not change from current use. [Since this field will now host games, those events will include participating teams as well as spectators. Over the past three years, our average attendance for a single home contest varies from 100 to 175 spectators for the teams who will use this field for contests. Our single game high over the past three years was an estimated 417 attendees for the men's soccer Liberty League championship in 2024.]***

***As previously indicated, it should be noted that the varsity games that will take place on this field are currently already taking place on other fields at the Prentiss Athletic Complex - we are simply shifting some of the contests from our existing turf and Gordon field to this new turf.***

- ***Earliest and latest hours: This will change from 7 am to sunset to 7 am to 10:00 pm.***
- ***Traffic and parking: We do not anticipate increases in traffic and/or parking. This project proposes the addition of a number of new parking spots to better support existing needs.***
- ***Bus parking: We do not anticipate increases in the overall amount of bus parking as a result of this project and will continue to utilize the existing lot at the Prentiss Athletic Complex to address this need.***
- ***Noise including audio: Teams currently utilize portable speakers at practice on occasion and we do not anticipate a change in that activity. We will be adding a sound system for use during games/contests and will direct the speakers toward the spectator area rather than across the field toward neighbors. Audio during home contests typically involves pre, post, and in-game music and announcements. This will increase the noise level at this field during home contests.***
- ***Lighting: We are adding lights to this field. Based on information from our lighting vendor, the lights are designed to keep lighting on the field itself and will not impact neighboring homes, sidewalks or roadways.***

4. Applicant is to show on the plans the locations and direction of speakers/audio and address their purpose/characteristics.

***Clark Response: Speaker output direction, aim, and absorption is key to keeping the signal within the bleacher area, the speaker locations and output direction have been added to AF-3. The PA system and speakers will be limited to game announcements for spectators. Decibels for the speaker output are around 95bd at the speaker and 80-85db (peak) at the spectator ear.***

5. Applicant is to address ball protection for adjacent residential lots in the vicinity of decreased distance to field to property line from 35 feet to 24.5 feet.

   ***Clark Response: The decreased distance of the field to the property line from 35 feet to 24.5 feet will not require additional ball netting for the following reasons:***
   - ***The existing 8-foot-high chain link fence and vegetation will remain in place at this location.***
   - ***The 24.5 feet distance has an additional 10 feet of safety buffer to the limits of play for the athletic field.***
   - ***The existing soccer field use will not change, and soccer only needs ball netting behind the goal area to contain erroneous goal attempts.***

6. Applicant is to quantify the change in parking for the lot expansion (it appears to be from 48 to 119 spaces) beneath the Zoning Summary Table.

   ***LRC Response: The quantities of existing parking & proposed new parking stalls have been added beneath the zoning table, sheet SP-1.***

7. Applicant is to address if the proposed 20x45' storage building 10' high will be used for anything other than storage, and to determine if the Planning Board intends to conduct or waive architectural review.

   ***Clark Response: The proposed storage building is for storage use only.***

8. Applicant is to clarify all plan features indicated as "Future" to be included in the application (e.g., "Impervious Surface" on Sheet AF-3, "Future EVCS" on SP-1): Show proposed conditions both for site plan completion and for the "future" condition (by separate inset or detail if needed): and latest date (phase?) for future implementation; or that it will be subject to a future application.

   ***Clark Response: The future impervious surface shown on AF-3 is included for stormwater calculations only. The site plan completion for the 2026 construction will be lawn surface that blends to existing grades. The grades for a future hardscape have been added to the plans. Any future development of this area will be subject to a future application.***

9. Applicant is to address landscaping/screening as follows:

   a. Address gaps in the residential western buffer line with additional screening tree plantings.

      ***LRC Response: This was discussed at the 1/15/26 Planning Board meeting in which the board was satisfied with the landscape buffer proposed. However, some additional evergreen tree (Cedar) trees have been added to the plan to supplement the buffer further.***

   b. On the Landscaping Plan, show the locations of stadium lighting and audio speakers.

      ***LRC Response: The landscape plan has been updated for the field lighting and speaker locations as requested.***

c. On the Landscaping Plan, update the schedule to include all plant types proposed on the graphic plan.

***LRC Response: The planting schedule on the landscape plan has been updated accordingly.***

d. Provide a tree protection detail (to the dripline), referenced by Sheet EC-1 call-out to DN-4 but not found.

***LRC Response: Proposed OSF DN-1/7 (Orange Safety Fencing) is to be utilized for tree protection that has been extended to the drip edge of the existing tree. DN-1/4 detail denotes a concrete washout area detail.***

10. Applicant is to correct or clarify the Refuse Vehicle Movement plan on Sheet DN-4, which erroneously utilizes the interior of the refuse enclosure for the turning movement.

***LRC Response: The forward-facing movement into the refuse enclosure has been corrected. An additional reverse movement in & out of the enclosure has been provided.***

11. Applicant is to address Site Plan Information checklist and other information details as follows:

a. Please show all abutting owners on a sheet, by name, parcel address and parcel number.

***LRC Response: An abutters' list has been provided to the overall site plan, sheet OP-1.***

b. Please identify the municipal boundary to the west and south on plan views as appropriate (*e.g.,* Sheet OP-1 Zoning Map).

***LRC Response: The municipality boundary that adjoins the City of Poughkeepsie, has been added to overall site plan, sheet OP-1.***

c. Please add sequential sheet numbers to the Drawing List and on each corresponding sheet title block (presently 27 sheets in the plan set).

***LRC Response: The drawing set has been numbered sequentially.***

d. Please clarify trash enclosure detail DN-1/14 to specify the gate screening material and appearance.

***LRC Response: The proposed gate refuse material identified as a non-combustible painted galvanized steel an shown on detail sheet DN-1.***

e. On Sheet SP-1 Site Plan General Notes, #16 indicating refuse storage in a building near a loading area is inconsistent with the proposed refuse enclosure in expanded parking.

***LRC Response: The erroneous notation #16 has been removed.***

f. On Sheet SP-1 Site Plan General Notes, #17 reference to College and Town Highway specifications appears erroneous.

***LRC Response: The erroneous notation #17 has been removed as Town highway work is not applicable.***

12. Applicant is to correct or clarify the FEAF as follows:

    a. Item B: Identify Town Board approval for acceptance of legal agreements/easement (*i.e.,* stormwater); identify NYS DEC approval for the required Stormwater General Permit.

       ***LRC Response: The fEAF has been revised to include the Town Board and NYSDEC.***

    b. Item E.2.(o) regarding threatened and endangered species is incomplete.

       ***LRC Response: The fEAF section E.2.(o) has been completed.***

    c. Obtain comment from NYS OPRHP (SHPO) on the application and 2025 Cultural Resource study submitted, sufficient to support a SEQRA Determination.

       ***LRC Response: A letter of No Impact from OPRHP SHPO is included in Appendix H of the fEAF.***

    d. Other adjustments as required by revisions in response to reviewer comments.

       ***LRC Response: Comment noted.***

**Please find below our summary of responses to the Comments received from the Town Departments, Consultant, and Fire District.**

Review For Meeting – Engineering
0106/2026
Andrew Learn

**General:**

1. The project will disturb more than 1 acre of land which will trigger the requirement for coverage under the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity and preparation of a Stormwater Pollution Prevention Plan. The applicant has prepared a preliminary Engineering Report, comments are provided below:

    a. The existing stormwater access easement agreement must be provided for review and updated as necessary to give the Town the authority but not obligation to access the site for maintenance of any stormwater facilities. Please coordinate with the Town's Planning Board Attorney.

       ***LRC Response: Comment noted.***

    b. The FEAF indicates the presence of the Indiana Bat. Please include the appropriate protections/restrictions for the Indiana Bat on the drawing DM-1 and within the SWPPP.

       ***LRC Response: A note has been added to DM-1.***

c. Please contact NYS OPRHP for review of the proposed project and provide their determination when available. Please include within the SWPPP.

***LRC Response: A submission has been made and a response has been received for no impact. The letter is included within the SWPPP.***

d. Please contact our office to coordinate witnessing of any soil testing for stormwater design.

***LRC Response: Soil testing had been conducted earlier in the year. The results are provided within the SWPPP.***

e. Please identify any existing stormwater management practices in the area and confirm they will continue to function as designed.

***LRC Response: The existing stormwater management practice located south of the proposed fields will function as designed. The stormwater management practice that is located north of the proposed parking lot will also function as designed.***

2. Please clarify if restrooms or drinking fountains will be constructed to serve the new fields.

***LRC Response: The new fields will utilize the restrooms and drinking fountains located at the JL Weinberg Sports Pavillion.***

**Site Plan:**

3. Location of any speakers for the press box should be identified for review of potential noise impacts to the adjacent residential neighborhood. If possible, amplified noise should be directed to the east as opposed to west towards the neighbors.

***Clark Response: Speaker output direction, aim, and absorption is key to keeping the signal within the bleacher area, the speaker locations and output direction have been added to AF-3. The PA system and speakers will be limited to game announcements for spectators. Decibels for the speaker output are around 95bd at the speaker and 80-85db (peak) at the spectator ear.***

4. Please identify the existing transformer along Brewers Lane where the proposed electrical connection is shown.

***LRC Response: The existing transformer on Brewers Lane has been labeled on the site plan.***

5. The sidewalk connecting the parking lot and the existing sidewalk along Brewers Lane to the northeast is shown as 5’ in width but labeled as 6’ wide, please review and revise as necessary.

***LRC Response: The sidewalk label has been corrected to a 5’ width.***

6. A crosswalk should be provided near the Y intersection of Brewers Lane connecting the existing and proposed sidewalk ramps.

***LRC Response: There is an existing crosswalk at the Y intersection of Brewers Lane, but the paint will be re-striped as part of this project.***

7. Identify all pedestrian and vehicular access gates for the field. Notably at the pedestrian sidewalk connections shown.

   ***LRC Response: All vehicle and pedestrian access gate locations have been labeled on site plan.***

8. Identify snow storage areas for parking lot.

   ***LRC Response: Proposed snow storage areas have been added and labeled on the site plan.***

9. It appears that a "Site Lighting Calculation" table is missing from drawing LP-1, please provide a summary table showing compliance with IES Standards for the parking lot and sidewalks.

   ***LRC Response: The site lighting calculation box is now shown on LP-1.***

**Grading:**

10. Provide spot elevations for the sidewalk connections to Brewers Lane on the east side of the field.

    ***Clark Response: Spot elevations are shown on sheet AF-4 labeled "Athletic Field Grading and Drainage".***

**Stormwater:**

11. The following comments apply to the Demolition Plan, DM-1:
    a. Please include coverage under NYS DEC SPDES General Permit for Stormwater Discharge from Construction Activity as a requirement prior to any tree clearing or soil disturbing activities within the Demolition Notes.

       ***LRC Response: Tree clearing restriction notations for Indiana bats species is noted on the demolition plan, DM-1.***

    b. Erosion and Sediment controls should be identified on the demolition plan.

       ***LRC Response: As it relates to demolition activities, some pertinent erosion control measures are identified on the demolition plan.***

    c. Identify the overall limits of disturbance in acres.

       ***LRC Response: The limit of work line (LOW) is shown on the demolition plan. Its acreage is 7.38 acres.***

12. The overall limit of disturbance is identified at 7.38 acres. A phasing plan must be prepared indicating how both demolition and construction activities will occur.
    a. The plan must include a written sequence of construction.

       ***LRC Response: A project phasing plan PH-1 has need included that describes the work in each individual phase for both demolition and construction.***

b. Individual phases should remain under 5 acres at any given time with stabilization occurring prior to the next phase starting.

***LRC Response: No phase as described in the phasing plan exceeds more than five (5) acres of disturbance and has stabilization notations provided.***

13. The following comments apply to the Erosion & Sediment Control Plan:
    a. Provide locations for contractor staging area(s) and material storage area (relating to the turf field construction).

    ***LRC Response: A contractor staging area has been provided on sheet EC-1.***

    b. Clarify if all access will be through the proposed construction entrance. Orange construction fencing or similar should be provided along the eastern limits of work to prevent unapproved site access. Provide additional construction entrances as necessary.

    ***LRC Response: Orange safety fencing has been added along the boundary on both the eastern and western sides. An additional anti tracking was added on the southern portion for additional construction access.***

    c. Orange construction fencing or similar should be provided along the northwest portion of the limits of work to prevent unnecessary tree clearing or soil disturbance.

    ***LRC Response: Orange safety fencing has been added along the project boundary as indicated on the plans.***

    d. Provide inlet protection for the existing catch basins near Brewers Lane on the northeast side of the proposed parking lot.

    ***LRC Response: Inlet protection has been added for the existing basin.***

    e. Provide inlet protection for the existing catch basin and manhole (if open inlet) along the southern side of the turf field.

    ***LRC Response: Inlet protection has been added for the existing basin.***

    f. Please revise ESC Note 5 to indicate authorization from the Town of Poughkeepsie as the MS4 Operator.

    ***LRC Response: Notation #5 has been revised accordingly.***

14. A post and rail fence or similar should be provided around the proposed infiltration basin.

***LRC Response: A wooden guardrail and corresponding detail has been provided around the stormwater practice.***

15. Please clarify why CB#1 is shown connecting to existing drainage infrastructure that is routed to the east as opposed to the newly proposed infiltration basin.

    ***LRC Response: CB#1 is depicted as connecting to the existing drainage structure, as tying into the proposed system would result in the stormwater management practice being situated at an elevation that would not allow for adequate separation distances. Prior to development, the existing impervious area drained to this catch basin; following development, a reduced impervious area will be directed to the same catch basin.***

16. Clarify the intention of the "future impervious surface" shown along the east side of the turf field on drawings AF-3.
    a. It is unclear what grading may be required for construction and what the finished grades for the surface will be. Please provide additional detail with proposed contours and spot elevations.
    ***Clark Response: The future impervious surface shown on AF-3 is included for stormwater calculations only. The site plan completion for the 2026 construction will be lawn surface that blends to existing grades. The grades for a future hardscape have been added to the plans.***

    b. There is an existing stormwater catch basin at the southeast corner of the field that may be impacted by construction and changes to drainage patterns. Please review and revise as necessary.

    ***Clark Response: The existing stormwater catch basin at the southeast corner of the field will not be impacted by the site plan completion as shown or by the future impervious area. Changes to the drainage patterns have been reflected in the SWPPP.***

    c. Please note that the stormwater model should include this area as impervious surface even if it is not being constructed at this time.

    ***LRC Response: The stormwater model does include the area labeled as "future impervious."***

17. Drawing AF-4 indicates a 12" diameter HDPE discharge for the underdrains to "outlet to bioretention" while the remainder of the drawings indicate this feature as an "infiltration basin". Please review and revise as necessary.

    ***Clark Response: The labeling on AF-4 has been corrected to reflect the feature as an infiltration basin.***

Review For Meeting – Fire District -AFD
01/06/2026
Chris Mills

No comments.

Review For Meeting – Building
01/06/2026
Bruce Flower

No comments.

Review For Meeting – Zoning
12/31/2025
Kristina Granieri

Design standards 210-38(F) Design standards for the institutional district are at the discretion of the planning board.

No further comments.

***LRC Response: Comment noted.***

Review For Meeting – Water Department
12/29/2025
Tom Golgan

No water conflicts.

Review For Meeting – Sewer Department
12/23/2025
Jim Bynon

No comments.

**Please find below our summary of responses to the Comments received from Eric Hollman, Planner, Town of Poughkeepsie Planning Dept. in an email dated January 16, 2026:**

1. Clark's plans on lighting and details should clarify that info for "Musco Lighting" is only for the stadium lights if that is what is intended? It is unclear if some of the Clark info includes or excludes new parking lot and/or Brewer's Lane proposed lighting: Clark's footcandle plots include the parking area and portions of Brewer's Lane and beyond. The labels and appearance of pole and fixture details do not clearly distinguish them as field or street lights.

***Clark Response: The MUSCO notations in the drawings refers to the LED sports lighting provided by the MUSCO Sports Lighting company. The MUSCO lighting system for this project is comprised of two lighting features, the sports lighting and additional security lighting on the bleachers for spectator foot traffic after an athletic event. The MUSCO lighting systems will be on for athletic events and remain on for a maximum of one hour after the event is concluded.***

2. Clark's AF-D-7 does not indicate the pole height (discussed last night as 90' high); and detail 4 for a light pole contains a fixture detail, the pole detail appears to be omitted.

   ***Clark Response: A note has been added to 1/AF-D-7 to indicate a pole height and detail 4 has been relabeled.***

3. The multiple AF-D sheets of details should have unique titles to distinguish them instead of all "Athletic Field Details", e.g. turf drainage detail, field design details, bleachers, storage building, light levels, directional lighting, lighting details…

   ***Clark Response: The AF-D sheets have bene revised as requested.***

4. Clark's AF-6 overall photometrics for the fields project and surrounding area out to 0.0 FC:
   a. Which category(ies) of fixtures are represented by the footcandle distribution shown—stadium lights only, or also new parking lighting, or also Brewer's Lane/south parking lighting? AF-6 shows the locations of the four stadium pole lights and new parking lot pole lights, but not Brewer's Lane lights.

      ***Clark Response: AF - 6 overall photometrics out to 0.0 FC has been revised to include both the MUSCO lighting fixtures and the Cree lighting fixtures. The MUSCO lighting will be on for athletic events and remain on for a maximum of one hour after the event is concluded. The Cree lighting fixtures will be utilized year round.***

   b. AF-6 footcandle levels for the new parking lot, bleachers and Brewers Lane are substantially different (more) than shown on the civil Lighting Plan LP-1; and also substantially different than the FC levels shown on the Musco Lighting Bleacher & Parking Lot Illumination detail 4/AF-D-5.

      ***Clark Response: The AF - 6 footcandle levels show the cumulative lighting levels form both the MUSCO lighting and the Cree lighting. The illumination detail shown on 4/AD-D5 shows only MUSCO security lighting on the bleachers. These added security lights are provided so spectators can safely leave the facility after a sporting event is concluded. The stadium lighting and security lighting provided by MUSCO will remain on for a maximum of one hour after the event is concluded. The remaining lighting shown on LP-1 will be utilized year-round.***

c. For the Musco Lighting Bleacher & Parking Lot Illumination detail 4/AF-D-5, the "Equipment List for the Areas Shown" indicates 3 of the stadium lights, and not the four proposed and used for the other Field illumination details on that sheet.

- ***Clark Response: The 4/AF-D-5 MUSCO Lighting Bleacher Illumination summary and equipment list are limited to the security lighting used on two of the four stadium light poles. The illumination summary shows the lighting levels in these areas with the stadium lights off and ignoring any additional lighting. These security lights are provided so spectators can safely leave the facility after a sporting event is concluded and will remain on for a maximum of one hour. Additional notes have been added to the illumination summary pages for clarity.***
-

5. For lighting on the civil plans:
   a. On LP-1, the footcandle levels for the new parking lot, bleachers and Brewers Lane are substantially different (less) than shown on the Clark plans.

      ***LRC Response: The LP-1 sheet shows lighting levels during conditions when the field lighting is not active (off-season for example) but when the parking lot may still be in use.***

   b. Are existing light poles and/or fixtures along Brewers Lane, respectively, to be retained or removed (Demo Plan)? The civil Lighting Plan LP-1 proposes new poles and fixtures along Brewers Lane. Are the streetlight and parking photometrics cumulative or new only?

      ***LRC Response: Existing light pole fixtures along Brewers Lane (including the circle and the parking area southeast are being maintained as is, but have been modeled to show the full effect of lighting adjacent to the game field.***

   c. The photometrics for the proposed EX-1 and EX-2 street lights are incomplete, they are cut off in the direction away from the fields.

      ***LRC Response: Note that "EX" fixtures modeled on the LP-1 sheet are <u>existing</u>, not proposed. The extent of photometry has been expanded but shows only those fixtures adjacent to Brewers Lane and is not intended to show light levels well east of the road where existing conditions remain. The plan does account for showing the full extent of lighting produced by <u>new</u> fixtures in the parking lot to 0.0 footcandles and beyond.***

   d. Labeling of light types on the graphic plan is illegible or omitted for some of the fixtures (too small or overprinted).

      ***LRC Response: Labels have been enhanced for clarity and additionally the height of light fixtures from grade to the fixture lenes is shown for each fixture.***

e. The numbers of fixtures by type in the Schedule appear to be inconsistent with those on the graphic plan. Also, type PT-1 listed in Schedule and specs detail was not found on the graphic plan, is it proposed?

***LRC Response: This fixture is located at the southwest corner of the new parking lot and the enhanced labeling should make this more readily apparent.***

6. Please note that U.S. FWS recommends use of their online Official Species List, rather than the Resource Report that was submitted.

***LRC Response: An official species list is included in Appendix D of the fEAF.***

**Please find below our summary of responses to the Comments received from Town of Poughkeepsie Planning Department in an email dated January 16, 2026:**

1. Comments of the Planning Board meeting, including but not limited to the following:
   a. The Board requested data on decibel levels from the sound system.

***Clark Response: The PA system decibels for the speaker output are around 95bd at the speaker and 80-85db (peak) at the spectator ear.***

   b. The Board asked about the change in bleacher capacity and event attendance.

***Vassar Response: The proposed project will not increase event attendance. At present, Vassar's bleachers for the current grass game field and current astroturf field hold up to 215 people each, but many students and spectators often choose to sit on the grass hill or stand around the fields. With the new bleacher system, attendance numbers would remain unchanged; however, instead of sitting or standing on the grass, attendees would make use of the bleachers.***

   c. The Board asked if and where irrigation would be provided.

***Clark Response: Both the existing fields +/- 153,000 sf are irrigated. The existing irrigation laterals located at the proposed synthetic turf field will be removed. The existing irrigation laterals at the natural grass field will be field verified and irrigation zones supplemented as necessary to ensure a uniform playing surface. The irrigated surface of the natural grass field will be approximately 95,550 sf, resulting in a reduction of 57,450 sf of existing irrigation use.***

   d. The Board asked about the height of stadium pole lighting and off-site visibility of them.

***Clark Response: The stadium pole lighting is achieved by using 90ft high light poles.***

We appreciate your efforts to review our revised plans and look forward to satisfying any outstanding concerns as soon as possible. Thank you for your time and effort.

Sincerely,

**Loureiro NY, P.C.**

By: _____
Kenneth Casamento, CPESC

## Instructions for Completing Part 1

**Part 1 is to be completed by the applicant or project sponsor.** Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

**A. Project and Applicant/Sponsor Information.**

| | | |
|---|---|---|
| Name of Action or Project:<br>Vassar College Prentiss Fields | | |
| Project Location (describe, and attach a general location map):<br>334 Hooker Avenue, Poughkeepsie, NY12603, Tax ID: 134689-6161-04-740465-0000 | | |
| Brief Description of Proposed Action (include purpose or need):<br>Vassar College seeks to improve their existing athletic fields with the replacement of one existing grass field with a newly designed athletic turf field along with updating the existing grass practice field and expansion of the existing parking lot to meet the needs of the college. The proposed action will also include athletic field amenities such as fencing, a storage shed for athletic and maintenance equipment, a score board, site lighting, and bleachers with a press box. | | |
| Name of Applicant/Sponsor:<br>Vassar College c/o Maryann Pilon | Telephone: 845-437-7179<br>E-Mail: [redacted] | |
| Address: 124 Raymond Avenue | | |
| City/PO: Poughkeepsie | State: NY | Zip Code: 12604 |
| Project Contact (if not same as sponsor; give name and title/role):<br>Land Resource Consultants Engineering & Surveying, LLC c/o Kenneth Casamento | Telephone: 845-243-2880<br>E-Mail: [redacted] | |
| Address:<br>85 Civic Center Plaza, Ste. 204 | | |
| City/PO:<br>Poughkeepsie | State:<br>NY | Zip Code:<br>12601 |
| Property Owner (if not same as sponsor): | Telephone:<br>E-Mail: | |
| Address: | | |
| City/PO: | State: | Zip Code: |

**B. Government Approvals**

**B. Government Approvals, Funding, or Sponsorship.** ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

| Government Entity | If Yes: Identify Agency and Approval(s) Required | Application Date (Actual or projected) |
|---|---|---|
| a. City Council, Town Board, or Village Board of Trustees ☐Yes ☑No | T/Poughkeepsie Town Board - legal agreements | TBD |
| b. City, Town or Village Planning Board or Commission ☑Yes ☐No | T/Poughkeepsie PB - Site Plan Approval | December 2025 |
| c. City, Town or Village Zoning Board of Appeals ☑Yes ☐No | T/Poughkeepsie ZBA | January 2026 |
| d. Other local agencies ☑Yes ☐No | | |
| e. County agencies ☑Yes ☐No | DC Planning - 239M | December 2025 |
| f. Regional agencies ☐Yes ☑No | | |
| g. State agencies ☑Yes ☐No | OPRHP SHPO<br>NYSDEC - SPDES | December 2025<br>TBD |
| h. Federal agencies ☐Yes ☑No | | |

i. Coastal Resources.

*i.* Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

*ii.* Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

*iii.* Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

**C. Planning and Zoning**

**C.1. Planning and zoning actions.**

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

**C.2. Adopted land use plans.**

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Hudson River Valley National Heritage Area

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

**C.3. Zoning**

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
IN - Institutional

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
*i.* What is the proposed new zoning for the site? _____

**C.4. Existing community services.**

a. In what school district is the project site located? Arlington Central School District

b. What police or other public protection forces serve the project site?
Town of Poughkeepsie and DC Sheriff's Office

c. Which fire protection and emergency medical services serve the project site?
Arlington Fire Department

d. What parks serve the project site?

**D. Project Details**

**D.1. Proposed and Potential Development**

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Institutional - Athletic fields

b. a. Total acrea_e of the site of the _ro_osed action? 57.00 acres * See Part F
b. Total acreage to be physically disturbed? 7.38 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 106.8 acres

c. Is the proposed action an expansion of an existing project or use? *See Part F ☑ Yes ☐ No
*i.* If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
*i.* Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
*ii.* Is a cluster/conservation layout proposed? ☐ Yes ☐ No
*iii.* Number of lots proposed? _____
*iv.* Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
*i.* If No, anticipated period of construction: 12 months
*ii.* If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

| | One Family | Two Family | Three Family | Multiple Family (four or more) |
|---|---|---|---|---|
| Initial Phase | _____ | _____ | _____ | _____ |
| At completion of all phases | _____ | _____ | _____ | _____ |

g. Does the proposed action include new non-residential construction (including expansions)? *See Part F ☑ Yes ☐ No

If Yes,

*i.* Total number of structures _____

*ii.* Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

*iii.* Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

*i.* Purpose of the impoundment: _____

*ii.* If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

*iii.* If other than water, identify the type of impounded/contained liquids and their source.

_____

*iv.* Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

*v.* Dimensions of the proposed dam or impounding structure: _____ height; _____ length

*vi.* Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

**D.2. Project Operations**

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

*i* .What is the purpose of the excavation or dredging? _____

*ii.* How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

*iii.* Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

*v.* What is the total area to be dredged or excavated? _____acres

*vi.* What is the maximum area to be worked at any one time? _____ acres

*vii.* What would be the maximum depth of excavation or dredging? _____ feet

*viii.* Will the excavation require blasting? ☐ Yes ☐ No

*ix.* Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

*i.* Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

*ii.* Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

*iii.* Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

*iv.* Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

*v.* Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

*i.* Total anticipated water usage/demand per day: _____ gallons/day

*ii.* Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

*iii.* Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

*iv.* Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

*v.* If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

*vi.* If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

*i.* Total anticipated liquid waste generation per day: _____ gallons/day

*ii.* Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

*iii.* Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

*iv.* Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

*v.* If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

*vi.* Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

*i.* How much impervious surface will the _ro_ect create in relation to total size of project parcel?

_____ Square feet or 1.14 acres (impervious surface)

_____ Square feet or 57 acres (parcel size)

*ii.* Describe types of new point sources. New catch basin and under drain from fields

*iii.* Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Proposed on site surface water treatment pond

- If to surface waters, identify receiving water bodies or wetlands: None. Infiltration in proposed pond
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

*iv.* Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

*i.* Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Construction equipment during construction period

*ii.* Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Construction equipment during construction period

*iii.* Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

N/A

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

*i.* Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

*ii.* In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide ($CO_2$)
- _____Tons/year (short tons) of Nitrous Oxide ($N_2O$)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride ($SF_6$)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐ Yes ☑ No

If Yes:

*i.* Estimate methane generation in tons/year (metric): _____

*ii.* Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐ Yes ☑ No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐ Yes ☑ No

If Yes:

*i.* When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐ Weekend ☐ Randomly between hours of _____ to _____.

*ii.* For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

*iii.* Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

*iv.* Does the proposed action include any shared use parking? ☐ Yes ☐ No

*v.* If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

*vi.* Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐ Yes ☐ No

*vii* Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐ Yes ☐ No

*viii.* Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐ Yes ☐ No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐ Yes ☐ No

If Yes:

*i.* Estimate annual electricity demand during operation of the proposed action: _____

*ii.* Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

*iii.* Will the proposed action require a new, or an upgrade, to an existing substation? ☐ Yes ☐ No

l. Hours of operation. Answer all items which apply.

*i.* During Construction:

- Monday - Friday: 7:00AM - 8:00PM
- Saturday: 10:00AM - 6:00PM
- Sunday: Not Permitted
- Holidays: Not Permitted

*ii.* During Operations:

- Monday - Friday: 7:00AM - 10:00PM
- Saturday: 7:00AM - 10:00PM
- Sunday: 7:00AM - 10:00PM
- Holidays: N/A

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? *See Part F ☑ Yes ☐ No

If yes:

*i.* Provide details including sources, time of day and duration:

Noise will exceed ambient noise levels during the construction period only and only during hours permitted under Town code

*ii.* Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

*i.* Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Proposed athletic field lighting approximately 90' in height at each corner of the proposed turf field.

*ii.* Will proposed action remove existing natural barriers that could act as a light barrier or screen? *See Part F ☑ Yes ☐ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

*i.* Product(s) to be stored _____

*ii.* Volume(s) _____ per unit time _____ (e.g., month, year)

*iii.* Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

*i.* Describe proposed treatment(s):

*ii.* Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

*i.* Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

*ii.* Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

*iii.* Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

*i.* Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

*ii.* Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

*iii.* If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

*i.* Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

*ii.* Generally describe processes or activities involving hazardous wastes or constituents: _____

*iii.* Specify amount to be handled or generated _____ tons/month

*iv.* Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

*v.* Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

## E. Site and Setting of Proposed Action

### E.1. Land uses on and surrounding the project site

a. Existing land uses.

*i.* Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): College/Institution

*ii.* If mix of uses, generally describe:

b. Land uses and covertypes on the project site. *Based off project area

| Land use or Covertype | Current Acreage | Acreage After Project Completion | Change (Acres +/-) |
|---|---|---|---|
| • Roads, buildings, and other paved or impervious surfaces *See Part F | 0.64 | 1.14 | +0.5 |
| • Forested | 0.29 | 0 | -0.29 |
| • Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural) | 0 | 0 | 0 |
| • Agricultural (includes active orchards, field, greenhouse etc.) | 0 | 0 | 0 |
| • Surface water features (lakes, ponds, streams, rivers, etc.) | 0 | 0 | 0 |
| • Wetlands (freshwater or tidal) | 0 | 0 | 0 |
| • Non-vegetated (bare rock, earth or fill) | 0 | 0 | 0 |
| • Other Describe: grass | 6.38 | 6.24 | -0.14 |

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

*i.* If Yes: explain: _____

d. Are there an_ facilities servin_ children the elderl_ _ eo_ le with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

*i.* Identify Facilities:

Poughkeepsie Community Seventh Seventh-day Adventist School

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

*i.* Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

*ii.* Dam's existing hazard classification: _____

*iii.* Provide date and summarize results of last inspection:

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

*i.* Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

*ii.* Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

*iii.* Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

*i.* Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

*i.* Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

*ii.* If site has been subject of RCRA corrective activities, describe control measures: _____

*iii.* Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☐ No

If yes, provide DEC ID number(s): _____

*iv.* If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

*v.* Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

**E.2. Natural Resources On or Near Project Site**

a. What is the average depth to bedrock on the project site? > 5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

| | |
|---|---|
| Fr - Fredon silt loam | 65 % |
| HeA - Haven loam | 29 % |
| NwB - Nassau-Cardigan | 4.1 % |

d. What is the average depth to the water table on the project site? Average: >6 feet

e. Drainage status of project site soils:
☑ Well Drained: 90 % of site
☐ Moderately Well Drained: _____ % of site
☑ Poorly Drained 10 % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____ % of site
☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

*i.* Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

*ii.* Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

*iii.* Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

*iv.* For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 862-387 Classification C
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters Approximate Size _____
- Wetland No. (if regulated by DEC) _____

*v.* Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

*i.* Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Squirrel / Chipmunk, Deer
Racoon, Birds
Rabbit

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
*i.* Describe the habitat/community (composition, function, and basis for designation): _____
*ii.* Source(s) of description or evaluation: _____
*iii.* Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No
*See Part F
If Yes:
*i.* Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No
If Yes:
*i.* Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

**E.3. Designated Public Resources On or Near Project Site**

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
*i.* If Yes: acreage(s) on project site? _____
*ii.* Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
*i.* Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
*ii.* Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
*i.* CEA name: _____
*ii.* Basis for designation: _____
*iii.* Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

*i.* Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

*ii.* Name: See Part F

*iii.* Brief description of attributes on which listing is based:

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? *See Part F ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

*i.* Describe possible resource(s):

*ii.* Basis for identification:

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

*i.* Identify resource:

*ii.* Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.):

*iii.* Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

*i.* Identify the name of the river and its designation:

*ii.* Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

**F. Additional Information**

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

**G. Verification**

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Kenneth Casamento Date 01/26/2026

Signature Kenneth Casamento Title As Agent for Applicant

PRINT FORM

Vassar College Prentiss Fields – Part F

**D.1.b. a. Total acreage of the site of the proposed action.**

The total acreage of the proposed action is approximately 57 acres; however, the project area is approximately 7.38 acres.

**D.1.c. Is the proposed action and expansion of an existing project or use?**

Yes, the proposed athletic fields are an expansion of an existing use on the institutional property. Prentiss athletic fields are existing grass fields.

**D.1.g. Does the proposed action include new non-residential construction (including expansions)?**

Yes, the proposed action is an expansion of an existing use and includes the construction of a new turf field in addition to the grass practice field directly adjacent. The proposed action includes athletic field features such as netting, fencing, storage, bleachers with a press box and sound system and additional parking.

**D.2.m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both?**

The proposed action will exceed ambient noise level during construction and operation, however, the proposed use of athletic fields is an existing use on the property and will be a continuation of the existing noise level.

**D.2.n.ii Will the proposed action remove existing natural barriers that could act as a light barrier or screen?**

The proposed action does involve some tree removal within the project area that acts as a natural barrier, however, the proposed landscaping will re-establish this screening.

**E.1.b. Land uses on and surrounding the project site: Roads, buildings, and other paved or impervious surfaces.**

The new artificial turf field, which is considered impervious area for stormwater requirements, is an additional 2.31 acres of impervious surface. The turf field is not included in the land use impervious surface noted within the EAF.

**E.2.H.i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)?**

The northern portion of the property of the proposed action contains wetlands, however, the proposed project area is over 100 ft from the wetlands, therefore the wetlands will not be adversely impacted.

**E.2.j. Is the project site in the 100-year Floodplain?**

A portion of the project parcel is located within the 100-year Floodplain, however, the project area is not within the 100-year Floodplain. See FEMA Map in Appendix G.

**E.2.o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species**

The EAF mapper indicates Indiana Bat. In addition to Indiana Bat (endangered) the official species list from USFWS includes Northern Long Eared Bat (endangered), Tri-colored Bat (proposed endangered) and Monarch butterfly (proposed threatened). No threatened, endangered or proposed endangered is anticipated to be adversely impacted by this project.

**E.3.e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?**

Eligible property: single family residence, Eligible property: Vassar College: Williams House I, Eligible property: Vassar College: Williams House II, Eligible property: Vassar College: Williams House III, Eligible property: Faculty Housing1.

**E.3.f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archeological sites on the NY State Historic Preservation Office (SHPO) archeological site inventory?**

A Phase 1a was performed on site, report included in Appendix F, which concludes that due to previous ground disturbance it is unlikely the project area will contain intact archeological deposits and no further archeological investigation is recommended. A letter of No Impact from OPRHP is included in Appendix H.

# APPENDIX A

**Parcel Number**
134689-6161-04-740465-0000

**Parcel Location**
334 Hooker Ave

**Municipality**
Poughkeepsie

**Owner Name**
Vassar College *(Primary)*

**Primary Owner Mailing Address**
124 Raymond Ave
Poughkeepsie, NY 12604




## Parcel Details

| | | | |
|---|---|---|---|
| **Lot Size (acres):** | 57 Ac | **Split Town:** | - |
| **Filed Map:** | - | **Agri. District:** | None |
| **File Lot #:** | - | **School District:** | (134601) Arlington CSD |
| **Land Use Class:** | (613) College/univ | | |

## Assessment Information (Current)

| Land: | Total: | County Taxable: | Town Taxable: | School Taxable: | Village Taxable: |
|---|---|---|---|---|---|
| $1,211,500 | $18,138,500 | $0 | $0 | $0 | $0 |

| Tax Code: | Roll Section: | Uniform %: | Full Market Value: |
|---|---|---|---|
| N (Non-Homestead) | 8 (Wholly Exempt) | 89 | $20,380,300 |

| Tentative Roll: | Final Roll: | Valuation Date: |
|---|---|---|
| 5/1/2025 | 7/1/2025 | 7/1/2024 |

## Last Sale / Transfer

| Sale Price: | Sale Date: | Deed Book: | Deed Page: | Sale Condition: | No. Parcels: |
|---|---|---|---|---|---|
| - | - | 1237 | 0074 | - | - |

## Site Information

**Site 1**

| Water Supply: | Sewer Type: | Desirability: | Zoning Code: * | Used As: |
|---|---|---|---|---|
| (3) Comm/public | (3) Comm/public | (2) Fair | IN | (A04) Twnhouse apt |

## Commercial / Industrial / Utility Building Information

**Site 1, Section 1, No. 1**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 2002 | 1 | 7,287 | (0451) Club/rec ctr load sup | |

| Air Cond. %: | Sprinkler %: | Alarm %: | No. Elevators: | Basement SF: |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |

| Number Identical: | Condition Code: | Constr. Qual: |
|---|---|---|

| | | |
|---|---|---|
| 1 | 3 | (3) Above Average |

**Site 1, Section 1, No. 2**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 1910 | 2 | 4,992 | (0110) 2 sty apt load sup | |
| **Air Cond. %:** | **Sprinkler %:** | **Alarm %:** | **No. Elevators:** | **Basement SF:** |
| 0 | 100 | 0 | 0 | 2,496 |
| **Number Identical:** | **Condition Code:** | **Constr. Qual:** | | |
| 1 | 3 | (3) Above Average | | |

**Site 1, Section 1, No. 3**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 1971 | 2 | 5,280 | (0110) 2 sty apt load sup | |
| **Air Cond. %:** | **Sprinkler %:** | **Alarm %:** | **No. Elevators:** | **Basement SF:** |
| 0 | 100 | 0 | 0 | 0 |
| **Number Identical:** | **Condition Code:** | **Constr. Qual:** | | |
| 10 | 3 | (2) Average | | |

**Site 1, Section 1, No. 4**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 2008 | 2 | 6,384 | (0110) 2 sty apt load sup | |
| **Air Cond. %:** | **Sprinkler %:** | **Alarm %:** | **No. Elevators:** | **Basement SF:** |
| 0 | 100 | 0 | 0 | 0 |
| **Number Identical:** | **Condition Code:** | **Constr. Qual:** | | |
| 2 | 3 | (2) Average + | | |

**Site 1, Section 1, No. 5**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 2008 | 2 | 3,669 | (0110) 2 sty apt load sup | |
| **Air Cond. %:** | **Sprinkler %:** | **Alarm %:** | **No. Elevators:** | **Basement SF:** |
| 0 | 100 | 0 | 0 | 0 |
| **Number Identical:** | **Condition Code:** | **Constr. Qual:** | | |
| 1 | 3 | (2) Average + | | |

**Site 1, Section 1, No. 6**

| Year Built: | No. Stories: | Gross Floor Area: | Boeck Model: | |
|---|---|---|---|---|
| 2007 | 1 | 1,500 | (0855) Utility bldg load sup | |
| **Air Cond. %:** | **Sprinkler %:** | **Alarm %:** | **No. Elevators:** | **Basement SF:** |
| 0 | 0 | 0 | 0 | 0 |
| **Number Identical:** | **Condition Code:** | **Constr. Qual:** | | |
| 1 | 3 | (2) Average | | |

## Commercial Rental Information

**Site 1, Use 1**

| Used As: | Unit Code: | Total Rent Area: | Total Units: |
|---|---|---|---|
| (Z30) College/univ | - | 7,287 | 0 |

| Area 1 Bed. Apts.: | Area 2 Bed. Apts.: | Area 3 Bed. Apts.: | No. 1 Bed. Apts: | No. 2 Bed. Apts: | No. 3 Bed. Apts: |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 |

**Site 1, Use 2**

| Used As: | | | Unit Code: | Total Rent Area: | Total Units: |
|---|---|---|---|---|---|
| (A02) Convrted apt | | | 02 | 4,992 | 6 |
| **Area 1 Bed. Apts.:** | **Area 2 Bed. Apts.:** | **Area 3 Bed. Apts.:** | **No. 1 Bed. Apts:** | **No. 2 Bed. Apts:** | **No. 3 Bed. Apts:** |
| 0 | 0 | 0 | 0 | 0 | 0 |

**Site 1, Use 3**

| Used As: | | | Unit Code: | Total Rent Area: | Total Units: |
|---|---|---|---|---|---|
| (B06) Room/dorm | | | 03 | 69,237 | 150 |
| **Area 1 Bed. Apts.:** | **Area 2 Bed. Apts.:** | **Area 3 Bed. Apts.:** | **No. 1 Bed. Apts:** | **No. 2 Bed. Apts:** | **No. 3 Bed. Apts:** |
| 0 | 0 | 0 | 0 | 0 | 0 |

**Site 1, Use 4**

| Used As: | | | Unit Code: | Total Rent Area: | Total Units: |
|---|---|---|---|---|---|
| (F05) Row storage | | | - | 1,500 | 0 |
| **Area 1 Bed. Apts.:** | **Area 2 Bed. Apts.:** | **Area 3 Bed. Apts.:** | **No. 1 Bed. Apts:** | **No. 2 Bed. Apts:** | **No. 3 Bed. Apts:** |
| 0 | 0 | 0 | 0 | 0 | 0 |

**Site 1, Use 5**

| Used As: | | | Unit Code: | Total Rent Area: | Total Units: |
|---|---|---|---|---|---|
| (Z26) Athletic fld | | | - | 0 | 0 |
| **Area 1 Bed. Apts.:** | **Area 2 Bed. Apts.:** | **Area 3 Bed. Apts.:** | **No. 1 Bed. Apts:** | **No. 2 Bed. Apts:** | **No. 3 Bed. Apts:** |
| 0 | 0 | 0 | 0 | 0 | 0 |

## Improvements

**Site 1, Improvement 1**

| Structure Code: | Dim. 1: | Dim. 2: | Quantity: |
|---|---|---|---|
| (LP4) Pavng-asphlt | 60,000 | 2 | 1 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 1971 | (3) Normal | C | 0 |

**Site 1, Improvement 2**

| Structure Code: | Dim. 1: | Dim. 2: | Quantity: |
|---|---|---|---|
| (FC1) Shed-machine | 0 | 0 | 0 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 2009 | (3) Normal | C | 80 |

**Site 1, Improvement 3**

| Structure Code: | Dim. 1: | Dim. 2: | Quantity: |
|---|---|---|---|
| (FC1) Shed-machine | 0 | 0 | 0 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 2009 | (3) Normal | C | 216 |

**Site 1, Improvement 4**

| Structure Code: | Dim. 1: | Dim. 2: | Quantity: |
|---|---|---|---|

| | | | |
|---|---|---|---|
| (FC1) Shed-machine | 0 | 0 | 0 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 2009 | (3) Normal | C | 336 |

**Site 1, Improvement 5**

| **Structure Code:** | **Dim. 1:** | **Dim. 2:** | **Quantity:** |
|---|---|---|---|
| (GN2) Generator, Com | 0 | 0 | 1 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 2013 | (3) Normal | C | 8,000 |

**Site 1, Improvement 6**

| **Structure Code:** | **Dim. 1:** | **Dim. 2:** | **Quantity:** |
|---|---|---|---|
| (FC1) Shed-machine | 0 | 0 | 0 |
| **Year Built:** | **Condition:** | **Grade:** | **Sq. Ft.:** |
| 2019 | (3) Normal | C | 448 |

## Special District Information

**Special District: 999Y2**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Townwide Drain Imp | 85000 | $0 |

**Special District: ARSW2**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Arlington Swr Ar II | 51000 | $0 |

**Special District: 999Y1**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Arlington Sewer | 51000 | $0 |

**Special District: GL000**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Pok Lib District | 0 | $0 |

**Special District: TW0K3**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Town Wide Wat Imp | 146300 | $0 |

**Special District: AS0F4**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Arlington Sewer Cap | 466300 | $0 |

**Special District: AF024**

| **Special District Name:** | **Primary Units:** | **Ad Valorem Value:** |
|---|---|---|
| Arlington Fire | 0 | $0 |

## Exemption Information

**Exemption: 25120**

| Exemption Name: | Amount: |
| --- | --- |
| NONPRO EDU | $18,138,500 |

ABSOLUTELY NO ACCURACY OR COMPLETENESS GUARANTEE IS IMPLIED OR INTENDED. ALL INFORMATION ON THIS MAP IS SUBJECT TO CHANGE BASED ON A COMPLETE TITLE SEARCH OR FIELD SURVEY.

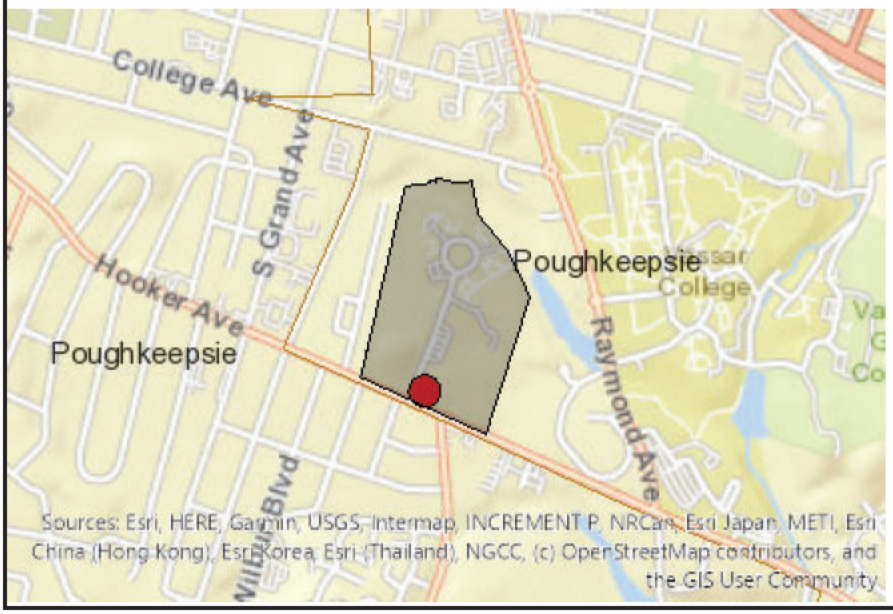
***Please see the Dutchess County Zoning Map for the most up-to-date zoning information.**

This report was produced using ParcelAccess on 11/21/2025. Developed and maintained by OCIS - Dutchess County, NY.

# APPENDIX B

# EAF Mapper Summary Report

Friday, November 21, 2025 2:52 PM




**Disclaimer:** The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources to confirm data provided by the Mapper or to obtain data not provided by the Mapper.




| | |
|---|---|
| B.i.i [Coastal or Waterfront Area] | No |
| B.i.ii [Local Waterfront Revitalization Area] | Yes |
| C.2.b. [Special Planning District] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h [DEC Spills or Remediation Site - Potential Contamination History] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Listed] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.iii [Within 2,000' of DEC Remediation Site] | No |
| E.2.g [Unique Geologic Features] | No |
| E.2.h.i [Surface Water Features] | Yes - Digital mapping information on local, New York State, and federal wetlands and waterbodies is known to be incomplete. Refer to the EAF Workbook. |
| E.2.h.ii [Surface Water Features] | Yes - Digital mapping information on local, New York State, and federal wetlands and waterbodies is known to be incomplete. Refer to the EAF Workbook. |
| E.2.h.iii [Surface Water Features] | Yes - Digital mapping information on local, New York State, and federal wetlands and waterbodies is known to be incomplete. Refer to the EAF Workbook. |
| E.2.h.iv [Surface Water Features - Stream Name] | 862-387 |
| E.2.h.iv [Surface Water Features - Stream Classification] | C |
| E.2.h.iv [Surface Water Features - Wetlands Name] | Federal Waters |
| E.2.h.v [Impaired Water Bodies] | No |

| | |
|---|---|
| E.2.i. [Floodway] | No |
| E.2.j. [100 Year Floodplain] | Yes |
| E.2.k. [500 Year Floodplain] | No |
| E.2.l. [Aquifers] | Yes |
| E.2.l. [Aquifer Names] | Principal Aquifer |
| E.2.n. [Natural Communities] | No |
| E.2.o. [Endangered or Threatened Species] | Yes |
| E.2.o. [Endangered or Threatened Species - Name] | Indiana Bat |
| E.2.p. [Rare Plants or Animals] | No |
| E.3.a. [Agricultural District] | No |
| E.3.c. [National Natural Landmark] | No |
| E.3.d [Critical Environmental Area] | No |
| E.3.e. [National or State Register of Historic Places or State Eligible Sites] | Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook. |
| E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name] | Eligible property:single family residence, Eligible property:Vassar College: Williams House I, Eligible property:Vassar College: Williams House II, Eligible property:Vassar College: Williams House III, Eligible property:Faculty Housing 1 |
| E.3.f. [Archeological Sites] | No |
| E.3.i. [Designated River Corridor] | No |

# APPENDIX C

# Environmental Resource Mapper




November 25, 2025

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Vantor, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

# APPENDIX D

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 01/21/2026 15:13:02 UTC
Project Code: 2026-0038502
Project Name: Vassar College Prentiss Fields

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New York Ecological Services Field Office**
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

# PROJECT SUMMARY

Project Code: 2026-0038502
Project Name: Vassar College Prentiss Fields
Project Type: Recreation - New Construction
Project Description: Vassar College seeks to improve their existing athletic fields with the replacement of one existing grass field with a newly designed athletic turf field along with updating the existing grass practice field and expansion of the existing parking lot to meet the needs of the college. The proposed action will also include athletic field amenities such as fencing, a storage shed for athletic and maintenance equipment, a score board, site lighting, and bleachers with a press box.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.68660415,-73.90415498084465,14z




Counties: Dutchess County, New York

# ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## MAMMALS

| NAME | STATUS |
|---|---|
| Indiana Bat *Myotis sodalis*<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/5949 | Endangered |
| Northern Long-eared Bat *Myotis septentrionalis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9045 | Endangered |
| Tricolored Bat *Perimyotis subflavus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10515 | Proposed Endangered |

## INSECTS

| NAME | STATUS |
|---|---|
| Monarch Butterfly *Danaus plexippus*<br>There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/9743 | Proposed Threatened |

# CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

# IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Aime Patane
Address: 85 Civic Center Plaza, Suite 204
City: Poughkeepsie
State: NY
Zip: 12601
Email apatane@lrcconsult.com
Phone: 8452432880

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 01/21/2026 15:01:03 UTC
Project code: 2026-0038502
Project Name: Vassar College Prentiss Fields

Federal Nexus: no
Federal Action Agency (if applicable):

**Subject:** Technical assistance for 'Vassar College Prentiss Fields'

Dear Aime Patane:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on January 21, 2026, for 'Vassar College Prentiss Fields' (here forward, Project). This project has been assigned Project Code 2026-0038502 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not bbe complete.**

**Ensuring Accurate Determinations When Using IPaC**

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid. Note that conservation measures for northern long-eared bat and tricolored bat may differ. If both bat species are present in the action area and the key suggests more conservative measures for one of the species for your project, the Project may need to apply the most conservative measures in order to avoid adverse effects. If unsure which conservation measures should be applied, please contact the appropriate Ecological Services Field Office***

**Determination for the Northern Long-Eared Bat and Tricolored Bat**

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the following effect determination(s):

| Species | Listing Status | Determination |
|---|---|---|
| Northern Long-eared Bat (*Myotis septentrionalis*) | Endangered | NLAA |
| Tricolored Bat (*Perimyotis subflavus*) | Proposed Endangered | NLAA |

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

**Other Species and Critical Habitat that May be Present in the Action Area**

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

**Next Steps**

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the

Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the New York Ecological Services Field Office and reference Project Code 2026-0038502 associated with this Project.

**Action Description**
You provided to IPaC the following name and description for the subject Action.

**1. Name**

Vassar College Prentiss Fields

**2. Description**

The following description was provided for the project 'Vassar College Prentiss Fields':

> Vassar College seeks to improve their existing athletic fields with the replacement of one existing grass field with a newly designed athletic turf field along with updating the existing grass practice field and expansion of the existing parking lot to meet the needs of the college. The proposed action will also include athletic field amenities such as fencing, a storage shed for athletic and maintenance equipment, a score board, site lighting, and bleachers with a press box.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.68660415,-73.90415498084465,14z



# DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for a least one species covered by this determination key.

## QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   **Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   *No*

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   **Automatically answered**
   *No*

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   **Automatically answered**
   *No*

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   *No*

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   **Note for projects in Pennsylvania**: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer 'yes' to this question.

   *No*

6. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

   **Automatically answered**
   *No*

7. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

   *No*

8. Will the action cause effects to a bridge?

   **Note:** Covered bridges should be considered as bridges in this question.

   *No*

9. Will the action result in effects to a culvert or tunnel at any time of year?

   *No*

10. Are trees present within 1000 feet of the action area?

    **Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *Yes*

11. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    *No*

12. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    *No*

13. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    *No*

14. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    *No*

15. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    *No*

16. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    **Note:** For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    *No*

17. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    *No*

18. Will the proposed action involve blasting or drilling?

    *No*

19. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

    *No*

20. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

    *No*

21. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *No*

22. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *Yes*

23. Will the action cause an increase in the extent of suitable forested habitat exposed to artificial lighting?

    *No*

24. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    *Yes*

25. Is the project related to the production of coal, including projects that support the mining of coal, as well as the production and/or distribution of energy produced from coal?

    *No*

26. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

    *No*

27. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    **Note:** A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

    *No*

28. Does the project intersect with the 0- 9.9% forest density category?

    **Automatically answered**
    *No*

29. Does the project intersect with the 10.0- 19.9% forest density category map?

    **Automatically answered**
    *Yes*

30. Does the project intersect with the 20.0- 29.9% forest density category map?

    **Automatically answered**
    *No*

31. Does the project intersect with the 30.0- 100% forest density category map?

    **Automatically answered**
    *No*

32. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 5 acres in total extent?

    *No*

33. Will the proposed action result in the use of prescribed fire?

    **Note:** If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

    *No*

34. Does the action area intersect the northern long-eared bat species list area?

    **Automatically answered**
    *Yes*

35. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known NLEB hibernacula or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    **Automatically answered**
    *No*

36. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    **Automatically answered**
    *No*

37. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.Have you contacted the appropriate agency to determine if your action is within 150 feet of any documented northern long-eared bat roosts?

    Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat roosts is available here. Location information for northern long-eared bat roosts is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

    **Automatically answered**
    *No*

38. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    If unsure, answer "Yes."

    **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *Yes*

39. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    *No*

40. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

    **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *Yes*

41. Will any tree cutting/trimming or other knocking or bringing down of trees occur during the **Summer Occupancy season** for northern long-eared bats in the action area? **Note:** Bat activity periods for your state can be found in Appendix 2 of the Service's Northern long-eared Bat and Tricolored Bat Voluntary Environmental Review Process for Development Projects.

    *No*

42. Does the action area intersect the tricolored bat species list area?

    **Automatically answered**
    *Yes*

43. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    **Automatically answered**
    *No*

44. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    **Automatically answered**
    *No*

45. Has a presence/probable absence bat survey targeting the tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    *No*

46. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?
    (If unsure, answer ""Yes."")

    **Note:** If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (Tillandsia usneoides), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    *Yes*

47. Do any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pine trees)?

    **Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    *Yes*

48. Will any tree cutting/trimming or other knocking or bringing down of trees be conducted during the Pup Season for tricolored bat? **Note:** Bat activity periods for your state can be found in Appendix 2 of the Service's Northern Long-eared Bat and Tricolored Bat Voluntary Environmental Review Process for Developmental Projects.

    *No*

49. Do you have any documents that you want to include with this submission?

    *Yes*

    ***SUBMITTED DOCUMENTS***

    - *3-DM22292801-DM-1.pdf https://ipac.ecosphere.fws.gov/project/L7HAPKWVY5EPPBBG3RUVNOOWT4/projectDocuments/175571271*
    - *5-SP22292801-SP-1.pdf https://ipac.ecosphere.fws.gov/project/L7HAPKWVY5EPPBBG3RUVNOOWT4/projectDocuments/175571272*
    - *4-OP22292801-OP-1.pdf https://ipac.ecosphere.fws.gov/project/L7HAPKWVY5EPPBBG3RUVNOOWT4/projectDocuments/175571273*
    - *9-LL22292801-LL-1.pdf https://ipac.ecosphere.fws.gov/project/L7HAPKWVY5EPPBBG3RUVNOOWT4/projectDocuments/175571275*

# PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

# IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Aime Patane
Address: 85 Civic Center Plaza, Suite 204
City: Poughkeepsie
State: NY
Zip: 12601
Email apatane@lrcconsult.com
Phone: 8452432880

# APPENDIX E




Map Scale: 1:1,870 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| Fr | Fredon silt loam | 6.0 | 65.1% |
| HeA | Haven loam, nearly level | 2.7 | 29.0% |
| KuA | Knickerbocker-Urban land complex, nearly level | 0.2 | 1.9% |
| NwB | Nassau-Cardigan complex, undulating, very rocky | 0.4 | 4.1% |
| **Totals for Area of Interest** | | **9.3** | **100.0%** |

# Dutchess County, New York

## Fr—Fredon silt loam

### Map Unit Setting

*National map unit symbol:* 9rfz
*Elevation:* 250 to 1,200 feet
*Mean annual precipitation:* 41 to 47 inches
*Mean annual air temperature:* 45 to 50 degrees F
*Frost-free period:* 115 to 195 days
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Fredon and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Fredon

#### Setting

*Landform:* Depressions
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Concave
*Across-slope shape:* Concave
*Parent material:* Loamy over sandy and gravelly glaciofluvial deposits

#### Typical profile

*H1 - 0 to 9 inches:* silt loam
*H2 - 9 to 31 inches:* very fine sandy loam
*H3 - 31 to 70 inches:* stratified very gravelly sand to loamy fine sand

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* About 6 to 18 inches
*Frequency of flooding:* Rare
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 15 percent
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* B/D

*Ecological site:* F144AY029NY - Semi-Rich Wet Outwash
*Hydric soil rating:* No

**Minor Components**

**Fredon, poorly drained**
*Percent of map unit:* 5 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

**Unnamed soils, glacial outwash**
*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Halsey**
*Percent of map unit:* 5 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

# Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

# Dutchess County, New York

## HeA—Haven loam, nearly level

### Map Unit Setting

*National map unit symbol:* 9rg9
*Elevation:* 80 to 410 feet
*Mean annual precipitation:* 41 to 47 inches
*Mean annual air temperature:* 45 to 50 degrees F
*Frost-free period:* 115 to 195 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Haven and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Haven

#### Setting

*Landform:* Outwash plains
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

#### Typical profile

*H1 - 0 to 12 inches:* loam
*H2 - 12 to 23 inches:* gravelly loam
*H3 - 23 to 72 inches:* stratified very gravelly sand

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 4.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 1
*Hydrologic Soil Group:* B
*Ecological site:* F144AY023CT - Well Drained Outwash
*Hydric soil rating:* No

**Minor Components**

**Knickerbocker**
*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Hoosic**
*Percent of map unit:* 5 percent
*Hydric soil rating:* No

**Fredon**
*Percent of map unit:* 4 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

**Halsey**
*Percent of map unit:* 1 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

# Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

# Dutchess County, New York

## KuA—Knickerbocker-Urban land complex, nearly level

### Map Unit Setting

*National map unit symbol:* 9rh4
*Elevation:* 100 to 800 feet
*Mean annual precipitation:* 41 to 47 inches
*Mean annual air temperature:* 45 to 50 degrees F
*Frost-free period:* 115 to 195 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Knickerbocker and similar soils:* 40 percent
*Urban land:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Knickerbocker

#### Setting

*Landform:* Deltas, terraces
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Sandy glaciofluvial deposits or deltaic deposits

#### Typical profile

*H1 - 0 to 10 inches:* fine sandy loam
*H2 - 10 to 19 inches:* sandy loam
*H3 - 19 to 30 inches:* loamy sand
*H4 - 30 to 72 inches:* loamy sand

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2s
*Hydrologic Soil Group:* A
*Ecological site:* F144AY022MA - Dry Outwash
*Hydric soil rating:* No

### Description of Urban Land

#### Typical profile

*H1 - 0 to 6 inches:* variable

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8s
*Hydric soil rating:* Unranked

### Minor Components

#### Udorthents

*Percent of map unit:* 10 percent
*Hydric soil rating:* No

#### Hoosic

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

#### Haven

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

#### Fredon

*Percent of map unit:* 4 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

#### Halsey

*Percent of map unit:* 1 percent
*Landform:* Depressions
*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

# Dutchess County, New York

## NwB—Nassau-Cardigan complex, undulating, very rocky

### Map Unit Setting

*National map unit symbol:* 9rhc
*Elevation:* 0 to 1,800 feet
*Mean annual precipitation:* 41 to 47 inches
*Mean annual air temperature:* 45 to 50 degrees F
*Frost-free period:* 115 to 195 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Nassau and similar soils:* 45 percent
*Cardigan and similar soils:* 35 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Nassau

#### Setting

*Landform:* Benches, ridges, till plains
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Crest
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Channery loamy till derived mainly from local slate or shale

#### Typical profile

*H1 - 0 to 5 inches:* channery silt loam
*H2 - 5 to 16 inches:* very channery silt loam
*H3 - 16 to 20 inches:* unweathered bedrock

#### Properties and qualities

*Slope:* 1 to 6 percent
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock
*Drainage class:* Somewhat excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very low (about 1.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6s
*Hydrologic Soil Group:* D
*Ecological site:* F144AY033MA - Shallow Dry Till Uplands
*Hydric soil rating:* No

## Description of Cardigan

### Setting

*Landform:* Hills, ridges
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Crest
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Loamy till or colluvium derived from phyllite, slate, shale, and schist

### Typical profile

*H1 - 0 to 8 inches:* channery silt loam
*H2 - 8 to 20 inches:* channery loam
*H3 - 20 to 30 inches:* channery silt loam
*H4 - 30 to 34 inches:* unweathered bedrock

### Properties and qualities

*Slope:* 1 to 6 percent
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 4.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6s
*Hydrologic Soil Group:* C
*Ecological site:* F144AY034CT - Well Drained Till Uplands
*Hydric soil rating:* No

## Minor Components

### Dutchess

*Percent of map unit:* 10 percent
*Hydric soil rating:* No

### Rock outcrop

*Percent of map unit:* 5 percent
*Hydric soil rating:* Unranked

### Massena

*Percent of map unit:* 4 percent
*Hydric soil rating:* No

### Sun

*Percent of map unit:* 1 percent
*Landform:* Depressions

*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

# APPENDIX F

# Phase 1A Literature Search and Sensitivity Assessment & Archaeological Monitoring

Vassar College

Brewers Lane

Poughkeepsie, Dutchess County, New York

Prepared for:

Vassar College

124 Raymond Avenue,

Poughkeepsie, New York 12604

H·C·S

PO Box 124, Lagrangeville, NY 12540

November 2025

# Management Summary

OPRHP Project Review Number (if available):

Involved State and Federal Agencies:

Phase of Survey: **Phase 1A Literature Search & Sensitivity Assessment & Archaeological Monitoring**

Location Information

Location: **18 Brewers Lane**

Minor Civil Division: **Town of Poughkeepsie**

County: **Dutchess County**

USGS Quadrangle: **2023 Poughkeepsie**, **NY Quadrangle**

Survey Area (English & Metric)

Length: **615'** / **187.5 m**

Width: **530'** / **161.5 m**

Depth (when appropriate):

Number of Acres (Project Parcel): **± 6.57 acres** (**± 2.66 h**)

Archaeological Survey Overview

Number & Interval of Shovel Tests: **N/A**

Number & Size of Units: N/A

Results of Archaeological Survey

Number & name of precontact sites identified: **0**

Number & name of historic sites identified: **0**

Number & name of sites recommended for Phase II/Avoidance: **0**

Report Author (s): **Fiona Shackleton and Beth Selig**, **MA**, **RPA**

HCS Project Number: **25–10–889**

Date of Report: **November 20**, **2025**

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Photo 18: Existing utilities are located along the northern boundary of the existing parking lot. View to the east..... **A**:**9**

# I. Phase 1A Literature Search and Sensitivity Assessment

## A. Vassar Sports Field Project Description

In October of 2025, Hudson Cultural Services (HCS) was retained by Vassar College to complete a Phase 1A Literature Search and Sensitivity Assessment and Archaeological Monitoring for the proposed Vassar Sports Field Project (hereafter "the Project") located on the west side of Brewers Lane in the Town of Poughkeepsie, Dutchess County, New York.

The purpose of the Phase 1 Cultural Resources Survey is to determine whether previously identified cultural resources (historic and archeological sites) are located within the boundaries of the proposed project, and to evaluate the potential for previously unidentified cultural resources to be located within the boundaries of the Area of Potential Effect (APE). The Office of Parks Recreation and Historic Preservation (OPRHP) identifies the APE as all areas where ground disturbing activities will take place. All work was completed in accordance with the *Standards for Cultural Resource Investigations and the Curation of Archeological Collections* published by the New York Archeological Council (NYAC) in 1994 and recommended for use by OPRHP. The report has been prepared according to *New York State OPRHP's Phase 1 Archaeological Report Format Requirements*, established in 2005.

The background research as well as the cultural and environmental overviews were completed by Beth Selig, MA, RPA, President and Principal Investigator with HCS, and Fiona Shackleton. The GIS based imagery was completed by Matt Chmura. A Project site visit was conducted by Beth Selig, MA, RPA on November 4, 2025, to observe and photograph existing conditions within the Project and identify areas of prior disturbance. The information gathered during the walkover reconnaissance is included in the relevant sections of this report.

The proposed Vassar Sports Field Project (hereafter "the Project") consists of the renovation of the current grass athletic fields located along the western side of Brewers Lane in Poughkeepsie, Dutchess County, New York. The proposed Project includes the removal of the existing chain link fence, the expansion of parking areas, and the reorientation of the game fields. A new chain link fence will be installed around the proposed practice and playing fields. A press box with bleachers will be installed opposite the Weinberg Pavillion and east of the Proposed Playing Field. The parking area to the north of the athletic fields will be expanded, offering a total of 112 parking spaces to accommodate players and visitors.

The Project APE consists of ± 6.57 acres (± 2.66 h) within the Prentiss Sports Complex of Vassar College. The Project APE is composed of an artificial landscape that has been elevated and leveled to create grass sports fields and a paved parking area. Buried utility corridors for drainage, irrigation, and electricity are located throughout the Project APE.

The existing sports field was constructed in 1997. The construction at that time included grading and leveling the fields, installing under drains and irrigations lines as well as fences and light poles.

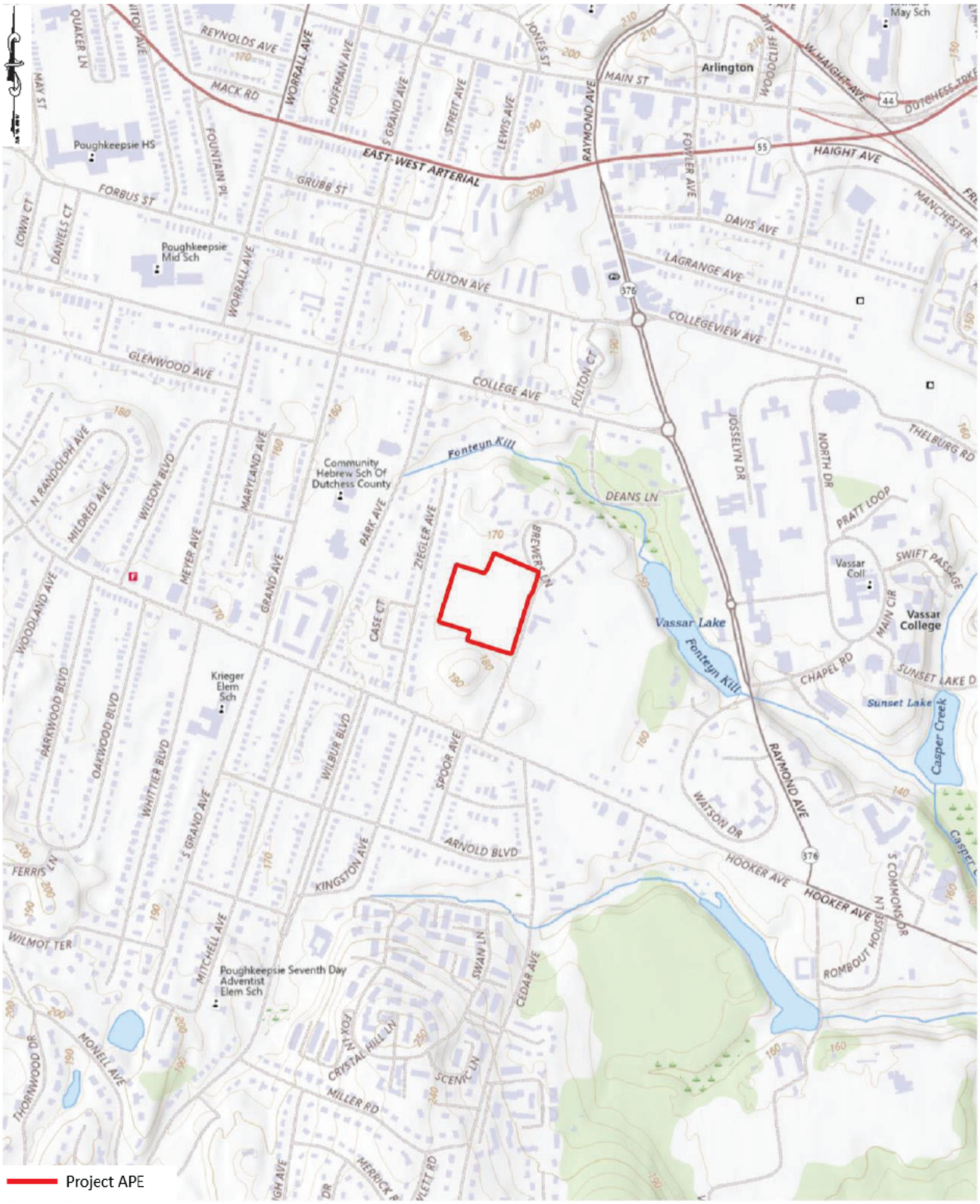


Figure 1: 2023 USGS Topographical Map. Poughkeepsie, NY Quadrangle. 7.5 Minute Series. (Source: USGS.gov.) Scale: 1"=1000'.




Figure 2: 2023 Aerial Image showing the Project APE. (Source: Google Earth Pro.) Scale: 1"= 150'.

## B. Environmental Conditions

The landscape within the Project is primarily mown athletic fields surrounded by parking areas, existing buildings, and roadways. Elevations within the Project APE are generally level averaging 170' (51.82 m) Above Mean Sea Level (AMSL).

### Ecology

The Project APE lies within the Eastern Broadleaf Forest. This mountainous region is in the transition zone between the boreal spruce-fir forest to the north and the deciduous forest to the south. Growth form and species are very similar to those found to the north, but red spruce tends to replace white spruce (Bailey 1995).

### Geology

The Project APE is within the Hudson-Mohawk Lowlands Physiographic Province. This physiographic province embraces the Hudson, Wallkill, and Mohawk River Valleys and extends from the Lake George/Lake Champlain area in the north to the vicinity of Harriman, Ulster County in the south. Its outer boundaries are the Helderberg Plateau and Catskill Mountains on the west and the Taconic Mountains on the east. Between these mountain ranges are several distinctive terrains which give the Hudson Valley much diversity (NYS DOT 2013).

The Hudson Mohawk Lowlands are underlain by bedrock of Ordovician origin (Bryce et al 2010). The bedrock formations in the area of Hoosick are primarily of greywacke and shale, but Normanskill shales, mudstone, and sandstone belonging to the Loraine, Trenton, and Black River Groups are also present. There are small areas, mostly in the southern portion of the province, which are underlain by Normanskill formations that have over thrust these younger shale beds.

### Drainage

Drainage on the property is into the existing storm drains. Further to the east are Vassar Lake and Sunset Lake. The Project APE is located 1.82 miles (2.93 km) to the east of the Hudson River.

### Soils

Soil surveys provide a general characterization of the types and depths of soils that are found in an area. The characteristics of the soils within the Project have an important impact on the potential for the presence of cultural material since the types of soils present affect the ability of an area to support human populations. The Soil Survey's mapped boundaries are considered approximate, as they generally correspond poorly to the actual boundaries of landforms and soil types within an area. The Natural Resources Conservation Service indicates that the soils within the Project are composed primarily of well drained loam and somewhat poorly drained silt loam. The soil description is located below in Table 1.




Figure 3: Aerial Image showing soil units within the Project APE. (Source: Natural Resources Conservation Service.) Scale: 1"= 150'.

**Table 1**: Soil Unit Descriptions (Natural Resources Conservation Service)

| Map Unit Symbol | Map Unit Name | Soil Horizons & Texture | Slope | Drainage | Landform |
|---|---|---|---|---|---|
| Fr | Fredon silt loam | H1 – 0 to 9 inches: silt loam<br>H2 – 9 to 31 inches: very fine sandy loam<br>H3 – 31 to 70 inches: stratified very gravelly sand to loamy fine sand | 0 to 3% | Somewhat poorly drained | Depressions |
| HeA | Haven loam, nearly level | H1 – 0 to 12 inches: loam<br>H2 – 12 to 23 inches: gravelly loam<br>H3 – 23 to 72 inches: stratified very gravelly sand | 0 to 3% | Well drained | Outwash plains |
| NwB | Nassau–Cardigan complex, undulating, very rocky | H1 – 0 to 5 inches: channery silt loam<br>H2 – 5 to 16 inches: very channery silt loam<br>H3 – 16 to 20 inches: unweathered bedrock | 1 to 6% | Somewhat excessively drained | Benches, ridges, till plains |
| | | H1 – 0 to 8 inches: channery silt loam<br>H2 – 8 to 20 inches: channery loam<br>H3 – 20 to 30 inches: channery silt loam<br>H4 – 30 to 34 inches: unweathered bedrock | | Well drained | Hills, ridges |

## C. Recorded Archaeological Sites and Surveys

On November 3, 2025, HCS reviewed the combined site files of the New York State OPRHP and the New York State Museum (NYSM) for information regarding previously recorded archeological sites within one mile (1.6 km) of the Project. HCS also consulted regional Native American sources (e.g. Beauchamp 1900; Parker 1920; Ritchie 1980; Ritchie and Funk 1973) for descriptions of regional archeological sites.

### Previously Recorded Archaeological Sites

A singular archaeological site has been previously identified within a one-mile (1.6 km) radius of the Project. The site, the Low Burial Plot ( USN 02714.000656), consists of a historic burial ground belonging to the Low Family. The property was purchased in 1777 by Aaron Low, a local innkeeper and newspaper editor, from Dr. John Chamberlain. Aaron Low was later buried in this plot upon his death in 1807. Presently the plot contains six grave markers, however eight were identified in 1912. The Low Burial Plot is located within the Vassar Golf Course and well outside the boundaries of the Project APE.

### Previously Completed Archaeological Surveys

As part of the research for this project, surveys completed for projects in the general area were consulted. One archaeological survey has been completed within a one-mile radius of the Project APE. This survey was completed for the construction of the Science Building for Vassar College but did not identify any archaeological sites (Lindner 2012).

## D. National Register Eligible/Listed Sites

A review of the site files was completed to identify National Register Properties within a half-mile radius of the Project that have been listed on the National Register of Historic Places or identified as National Register Eligible. Four (4) National Register Listed properties and two (2) eligible properties are located within a half mile of the Project. The individually listed properties include: the Freer House (90NR00399), the Poughkeepsie Friends Meeting House (90NR00569), Main Building, Vassar College (90NR00320), and the Vassar College Observatory (92NR00304). The eligible properties include The Arlington Poughkeepsie (USN 02740.000875) and Temple Beth-El (USN 02740.001028). The Project APE is located within the boundaries of the National Register Eligible Vassar College Historic District (USN 02714.000578).

## E. Indigenous Context

The Lower Hudson River Valley has a long history of human occupation, where the river served as an important route connecting the region's occupants to other regions of the American Northeast. The lands along the banks of the Hudson River, from the southern end of Lake Champlain to the outlet of the Hudson River, and from the Schoharie Valley east to south-central Vermont are the traditional homelands of the Mohicans, or the Muhheconneok, "The People of the Waters that Are Never Still" (Stockbridge-Munsee Band of Mohican Indians, n.d. and Lavin 2011). The Lower Hudson Valley was also inhabited by the Munsee, one of the three subtribes of the Lenni-Lenape (Delaware) people. The Munsee, or "people of the stone country", consisted of smaller community groups such as the Minisink, Wappinger, Esopus, Hackensack, Raritan, and Neversink (Kraft 1996 and Ruttenber and Clark 1881). The area that is now Dutchess County was historically inhabited by the Wappinger, meaning "easterner," whose territory ranged as far north as Roeliff Jansen Kill in Columbia County and south to the mouth of the Hudson River (Swanton 1952).

The earliest occupants of New York State are associated with the Paleoindian Period (c. 12,000-8,000 BP). These early inhabitants were highly mobile hunter-gatherers widely dispersed across a tundra-like landscape, residing in temporary camps on elevated terraces near the shores of proglacial lakes and major waterways (Lothrop et al. 2017). Subsistence was likely broad-based and likely included hunting of caribou herds. Sites of this period are most easily recognized by their fluted Clovis points and related stone tool kits. In the Lower Hudson Valley several Paleoindian camps have been identified in the upland regions a short distance from the Wallkill River. Several other well-documented Paleoindian sites have been identified in southeastern New York, such as Twin Fields and Dutchess Quarry (Lothrop and Bradley 2012).

Increasing evidence of human occupation during the Archaic Period (9000-3000 BP) parallels climatic warming and the gradual retreat of the Laurentide Ice Sheet. Archaic populations were still bands of mobile hunter-gatherers who left behind a minimal footprint (Ritchie and Funk 1973). Population numbers during the Early and Middle Archaic Periods (8,000-6,000 BP) were low, and sites dating to these periods are rare, more commonly associated with stable southern environments in New Jersey and coastal New York (Ritchie and Funk 1973: 337). However, some sites have been identified in the Central and Lower Hudson Valley, such as Mohonk Rockshelter (Eisenberg 1991), Grouse Bluff (Lindner 1992), and the Sylvan Lake and North Bowdoin Rockshelters in Dutchess County (Funk 1966; Kinsey 1972). Charred botanicals and zooarchaeological remains from such sites indicate that Early and Middle Archaic inhabitants utilized a wide variety of resources, including acorns, berries, white-tailed deer, and turkey, as well as aquatic resources (Ritchie and Funk 1973).

By the Late Archaic Period (6,000-3,000 BP), environmental conditions had stabilized to that of modern climates (Sirkin 1977), and indigenous populations had developed territorial seasonal settlement patterns, aggregating in camps (~100 individuals) in uplands adjacent to rich aquatic resources during the summer months and dispersing to small, backcountry, ephemeral rock shelters in the winter (Pagoulatos 2003). The lithic tools kits were comprised of small-stemmed projectile points, including recognizable Narrow-Stemmed Point and Laurentian Traditions (Funk and Wellman 1984; Ritchie and Funk 1973:38), chipped stone tools (e.g. utilized flakes, scrapers, and drills), and a marked increase in ground stone tools (e.g. celts, mortars and pestles), indicative of increased food processing.

The Late Archaic trends of increasing resource exploitation, sedentary lifeways, and increasing population numbers intensified during the Woodland Period (2,700 BP-Contact). As human occupations became increasingly sedentary, people modified their lithic tool kits to accommodate shifts in subsistence patterns and began developing new methods and styles of pottery production (Snow 1980). The Early Woodland Period (2,700 -2,000 BP), in particular, saw marked elaboration of existing mortuary practices through the introduction of copper metal ornaments (Ritchie 1994: 179), as well as significant subsistence shifts through intensified cultivation of native wild plants like chenopodium (goosefoot) (Ritchie and Funk 1973).

By the Middle Woodland (2,000 – 1,000 BP), the early inhabitants of New York State had developed a rich material culture, possible maize cultivation (Hart et al. 2003; Hart 2008), long-distance trade networks, complex burial patterns, and frequent use of cord-marked ceramics (Ritchie 1968, Ritchie and Funk 1973). The growing reliance on maize, bean, and squash agriculture during the Late Woodland Period (1,000 BP-400 BP) accelerated population growth and facilitated shifts in social structure (Hart and Reith 2002). Uninhibited by seasonal relocation, villages were able to grow larger and be occupied over longer periods of time. Settlement patterns shifted to accommodate developing agricultural hamlets, exhibiting a high degree of sociocultural and economic heterogeneity (Reith 2002; Peterson et al. 2002). By the Late Woodland Period, distinct archaeological patterns associated with early cultural groups had developed. Compared to the large permanent and semi-permanent fortified villages associated with Haudenosaunee settlement patterns,

Algonquian settlement patterns were "mobile, fluid, and variable" (Chilton 1996:75). Mid-sized longhouses and small, circular wik-wam houses were typically located on floodplains and hilltops overlooking rivers.

The Contact Period (1500-1650 AD) identifies the start of settler colonialism, in which the European settlers arrived in New York State and began extracting resources and interacting with indigenous communities. This period is predominantly informed by European documented history and the presence (or absence) of European material culture within the archaeological record. Early contact with Europeans occurred in the 1590s as Dutch and French trappers traveled up and down the Mahicannituck. At the time of European Contact, the Hudson Valley lay within the Mohican-Munsee territory. These Algonquian-speaking people were sedentary, living in small permanent villages and growing crops such as maize and squash. The region remained relatively uncolonized until the seventeenth century, when Dutch explorers returned to the Hudson River Valley in 1609. By 1614, Dutch settlers had established the Hudson River Valley's first European settlement at Fort Nassau, located at the confluence of the Mohawk and Hudson Rivers (Ritchie and Funk 1973). European settlements brought about considerable change for indigenous communities. The economic imperative of the fur trade and the demand for European goods affected indigenous subsistence, as well as the social, technological, and political structure of their communities. Economic competition over furs, and changing alliances between Dutch, French, English powers, sparked increasing conflict amongst indigenous groups (Hunter 1978), ultimately pitting the powerful Haudenosaunee nations against Algonquian-speaking peoples in the so-called Beaver Wars. Continued interaction with Europeans further decimated local populations through smallpox, diphtheria, and scarlet fever epidemics (Stockbridge Munsee Band of Mohican Indians, n.d.).

Though the territorial extent of the Muhheconneok traditionally included all the land east of the Hudson River, stretching as far north as Lake George and Lake Champlain, persistent conflict with the powerful Mohawk Nation pushed Mohican communities across the present-day New York-Massachusetts state border to resettle in Stockbridge, Massachusetts. By this time, the dwindling Munsee tribes, their population ravaged by war and disease and their land stolen through questionable "sales" to European settlers, joined their Algonquian relatives in Stockbridge, Massachusetts. During the Revolutionary War, the Stockbridge Munsee Community supported the American efforts to overthrow British colonial rule. Their only reward, however, was to have more of their land stolen by debt, mortgage, and other fraudulent means. Aware of plans for their removal from Stockbridge, MA, the Stockbridge Munsee Community relocated to New Stockbridge, NY, near Oneida Lake in the mid-1780s onto land gifted to them by the Oneida, who had fought alongside the Mohicans and Munsee during the Revolutionary War.

By the early nineteenth century, however, there was growing pressure to remove all Indigenous peoples from within the boundaries of New York State. Under the direction of President Andrew Jackson, the Indian Removal Act of 1832 was enacted forcing Indian Nations from their ancestral homelands to lands west of the Mississippi. A treaty between New York State and the Menominee and Ho-Chunk (Winnebago) in Wisconsin was negotiated in 1822, and the Stockbridge Mohicans were forcibly relocated. Initially, the Stockbridge Mohicans settled on the Fox River. Once the economic importance of the river was noted, however, they were resettled on the eastern shores of Lake Winnebago and established Stockbridge, WI in 1834 (Lavin 2011). Three years later a number of Moravian Munsee from Canada joined the Mohicans at Stockbridge, and the community became known as the "Stockbridge-Munsee" (Davids 2001). The current reservation of the Stockbridge-Munsee community in Shawano County was obtained in 1856 through a treaty with the Menominee.

By the mid-nineteenth century almost every Indigenous Nation in the United States had been assigned to reservations. The 1887 General Allotment Act apportioned reservation land to individuals, who were then

subject to taxation. Due to economic pressures and poverty, the land was sold to individuals outside the Indigenous Communities. Over time this resulted in an even greater loss of land held by the Indigenous Communities, in New York State and on reservations throughout the country. By the 1920's the present-day Stockbridge Munsee Community was virtually landless, continuing in poverty, living on their formerly owned land as squatters or tenants (Stockbridge-Munsee Community 2023).

In 1934, Congress passed the Indian Reorganization Act (IRA) which allowed Indigenous Communities to get federal funding to reorganize their governments and retrieve some of the lands which they had lost. By the 1940s the community now known as the "Stockbridge-Munsee Band of Mohican Indians" began building a new community on 15,000 acres in Bartelme, Wisconsin. Today's descendants of the Stockbridge Munsee Community have continually pushed for Federal recognition of Indigenous territorial and governmental rights, and in 2010, won a major settlement in New York State the unconstitutional seizure of the New Stockbridge territory. Many descendants of the Stockbridge-Munsee still reside on the Stockbridge-Munsee Community reservation in Shawano County, Wisconsin, although enrolled members live in other parts of Wisconsin, the United States and the world (Stockbridge-Munsee Community 2023).

## F. Historic Context

Dutchess County, one of New York's original counties, was created in 1683, and at that time included all of Putnam County and part of Columbia County (Cronon 1983). The county was divided into thirteen patents, with the Rombout Patent being one of the earliest. Dutch settlement on the patents began in the late 1600s, with English Quakers from Rhode Island and Long Island moving into the eastern part of the county in the 1740s (Cronon 1983) The Rombout Patent, consisting of about 85,000 acres, and encompassing the present towns (townships) of Poughkeepsie, LaGrange, Wappingers, Fishkill, East Fishkill, and Beacon, was bought in 1683 by three New York businessmen.

Part of the current Town of Poughkeepsie was previously included in Beekman's Patent, which was granted to Henry Beekman in 1703. Henry Beekman died in 1737, and his estate was divided between his two daughters, Cornelia Beekman Livingston, and Catherine Beekman Pawling (MacCracken 1956). As part of the distribution of Beekman's estate, a survey was completed that showed the allocation of lands within Beekman's Patent, to Beekman's heirs. It was not until the period from 1740 to 1750 that the patent was further subdivided, and land was sold in 200 to 300 acre lots. For the remaining portion of the eighteenth century and into the early portion of the nineteenth century the land within the former Beekman Patent remained sparsely settled and undeveloped. In 1746 there were 8,000 recorded individuals residing in Dutchess County. By 1756 the population had grown to 14,148; however, the majority of the new residents were living close to the Hudson River.

Poughkeepsie became the center for committee meetings during the Revolutionary War. Committees strategized and planned the defense of the Hudson River, as well as commissioning furnishings and provisions for the army. The American Navy built several frigates here, and portions of the "great chain" were forged at the Fall Kill/Poughkeepsie Iron Works. While still only a village, Poughkeepsie received considerable attention during the Revolutionary War and subsequently became a rendezvous and place of residence for many famous men, such as Cadwallader Colden, Gilbert Livingston and James Kent (Platt 1905).

Poughkeepsie was officially chartered as a Village in 1799. The village trustees immediately began public works projects that included the digging of new wells and the construction of a village courthouse and a fire engine house. This courthouse was later destroyed by fire. The Vassar Brewery served as the county jail for a time when the current courthouse was being constructed. The courthouse that stands today was built in 1902

(Hasbrouck 1909). In the year 1815, Poughkeepsie was a growing village, and during the mid-nineteenth century the village experienced rapid development culminating in a real estate boom that led to the village laying out planned streets and lots. In 1841, Poughkeepsie had seventy-nine streets and one thousand and fifty-five dwelling houses. Scores of citizens were engaged in mercantile businesses. The telegraph came to Poughkeepsie in 1846 (Platt 1905).

As a travel corridor for millennia, and the dominant geophysical feature near Poughkeepsie, the Hudson River became a vital resource in the growth of the city. Capitalizing on the growing river traffic, the steamboat reached the highest point of its commercial usefulness during the early nineteenth century, becoming a major contributor to the City's growth. In 1827 the Poughkeepsie Steamboat Company was founded by James Tallmadge. The steamboat was the main source of river transport from New York City to Albany until the Hudson River Railroad running from New York City to Poughkeepsie was built. Heavy rock obstructions to the north were a source of significant construction delay, and the first train did not pass through the Poughkeepsie Station until December of 1850 (Platt 1905, Hasbrouck 1909). In 1849, the Hudson River railroad opened, transporting passengers from New York to Peekskill. The 32 miles of track connecting Peekskill to Poughkeepsie was opened on December 31, 1849. The cost of building the railroad from New York City to Albany was nine million dollars (277 billion dollars in the current day).

The New York and Massachusetts Railroad built a rail line running east-west connecting the City of Poughkeepsie to Stissing, New York and from there east to Hartford, Connecticut. The rail line opened in 1871 and in 1881 the cantilever train bridge over the Hudson River opened, connecting this rail line to the West Shore Rail line. The construction of the railroad through Poughkeepsie brought about the demise of the cargo shipping industry that once served the town. Passenger boats replaced the shipping barges at the Poughkeepsie boat landings.

The City of Poughkeepsie was incorporated in 1854 and experienced a decline in the years following the 1857 financial panic and the Civil War. The most important local enterprise of the period succeeding the Civil War was the Poughkeepsie Bridge. Construction took place from 1873 through 1888 when the first train crossed over the bridge from Poughkeepsie to Highland.

The Fall Kill was, for many years, an important factor in the industrial development of Poughkeepsie. The first large mill pond was located above Smith Street and was known as the Red Mill Pond. In later years it was known as the Winnikee Pond. The first dam was constructed in this location as early as 1730, by Frans LeRoy. It was later owned by Benjamin Crannell in 1770. There was a small mill pond above the falls near the mouth of the creek, but the first large storage reservoir was built in this location in 1803. This mill pond was later known as Pelton's Pond (Hasbrouck 1909).

### Brief History of Vassar College

The Vassar Family first immigrated to the United States from northern France to England and then on to New York, arriving in 1796. They established a farm in the Poughkeepsie area overlooking the Hudson River. James Vassar made the transition from farming to running family businesses in the early 1800s, founding a brickyard on their property and soon thereafter starting a brewery operation along the Hudson River. He and his wife had eight children including Sophia, Maria, Jemima, Kezia, John Guy, Matthew, Charles, and James. The elder sons, John Guy and Matthew, grew up in the family businesses (Haight 1916 and Vassar College Digital Library, n.d.).

Matthew was born in England in 1792 and came to America with his parents at the age of four. By 1810 Matthew became the business manager of the family brewery. After the death of his brother John Guy during

the fire that destroyed the brewery in 1811, Matthew established his own small batch brewery and saloon the next year in the City of Poughkeepsie. In 1814 M. Vassar & Company was founded and by 1832 expanded to a new building along the Hudson River. In the 1850s he left for a tour of Europe to visit family. While in England, he went to Guy's Hospital, founded by his relative, Sir Thomas Guy. This renowned and innovative institution was the initial inspiration for Vassar's hospital (Vassar Hospital). Matthew Vassar returned to New York with the vision to construct an innovative hospital, but his close friend and educator, Milo P. Jewett, and his niece Lydia Booth convinced him to establish an all-women's college. Setting aside his vision for a hospital, he endowed Vassar College (Haight 1916).

Vassar College was officially founded in 1861 by Matthew Vassar, who donated his Mill Cove Estate to the Female College and began construction with $400,000.00. In the mid-nineteenth century the Mill Cove estate featured a mill, springs and water sources, as well as barns and a farmhouse. Present day Raymond Avenue follows the original roadway through the estate (Linder 2012). Open farmlands were located to the south of the farmhouse and Vassar Lake is in the present-day location of Vassar Farm. Matthew Vassar owned additional property in the City of Poughkeepsie, securing his wealth through his brewery operation located along the Hudson River.

Soon after the College began operations it developed a reputation for intellectual rigor with women being offered courses in art history, geology, physical education, mathematics, music and chemistry. Vassar retained the leading scholars in these fields to provide instruction, which brought about the "seminar method" of teaching which utilized original source material (vassar.edu).

Vassar College was the first college in the northeastern United States to include a museum and teaching collection amongst its facilities. The college's art gallery predates the Metropolitan Museum of Art and other reputable art institutions within the region. The College maintains its broad and rich curriculum, with classes ranging from Latin to cognitive science and biochemistry. In 1969, Vassar College opened its doors to men, becoming the first women's college in the county to become coeducational.

The Vassar Campus comprises over 1,000 acres (400 h) and more than 100 buildings, including two National Historic Landmarks and an additional National Historic Place. A designated arboretum, the campus features more than 200 species of trees, a native plant preserve, and the 415-acre Vassar Ecological Preserve (vassar.edu).

The Vassar College Campus is considered eligible for listing on the National Register of Historic Places. Currently two structures within the main campus, the Main Building and the Vassar College Observatory have been individually listed on the National Register. The Rombout house, also listed on the National Register is located on Vassar Farm. Based on a review completed in April of 2019 by the Office of Parks Recreation and Historic Preservation the Vassar College Campus, as well as the 1930s Vassar Golf Course, and the Vassar Farm and Ecological Preserve (415 acres) are considered eligible in regard to the history of women's higher education. With very few intrusive or non-contributing buildings, the campus retains the integrity as a cohesive campus and is therefore also considered eligible for its architectural design (Bagrow 2019).

The current sports fields which comprise the Project APE were installed in 1996. These two full-sized grass fields, known as the Betty Richey Field, were the primary game fields for Vassar College prior to the construction of the Prentiss Complex in 2008. Betty Richey Field is currently utilized as the primary practice facility for the men's soccer and lacrosse teams as well as hosts intramural sporting events, rugby tournaments, and local soccer camps (Vassar College Athletics 2025).

## Cartographic Research

HCS consulted historical documents and maps available at the Library of Congress, David Rumsey Cartography Associates and the New York Public Library. HCS examined historical maps of Dutchess County to identify possible structures, previous road alignments and other landscape features or alterations that could affect the likelihood that archeological and/or historic resources could be located within the Project. These maps have been georeferenced with the boundaries of the Project superimposed. Nineteenth century maps frequently lack the accuracy of location and scale present in modern surveys. As a result of this common level of inaccuracy on the historic maps, the location of the Project is drafted relative to the roads, structures, and other features as they are drawn, and should be regarded as approximate. The historic maps included in this report depict the sequence of road construction and settlement/development in the vicinity of the Project APE.




Figure 4: 1851 J.C. Sidney. *Map of Orange County, New York: from actual surveys.* (Source: Library of Congress). Scale 1" = 1000'.

The earliest map that includes the Project APE is the 1851 Sidney *Map of Dutchess County.* This map shows the Project APE northwest of the junction of present-day Hooker and Cedar Avenues. No structures are located within the Project boundaries; however, several structures are located within the vicinity of the Project. The residences of C. Dubois, W. Barnes, and Mrs. A Vanderburgh are located along Hooker Avenue to the south and southwest of the APE. A grist mill owned by C. Morgan and the residence of T.L. Davies are located to the east and northeast of the Project along Raymond Avenue.




Figure 5: 1858 Chas. Bachman. *Map of Dutchess County, New York: from actual surveys.* (Source: Library of Congress). Scale: 1" =1000'.

The next map that shows the Project APE is the 1858 *Map of Dutchess County* published by Charles Bachman. This map indicates that additional development has occurred, particularly to the north of the Project APE along present-day East-West Arterial. Along Hooker Avenue the previously indicated structures remain, along with five newly constructed structures owned by E. Young, M. Frost, Underhill, J.&A. Vanderburgh, and E. Phillips. The former C. Morgan property is now occupied by M. Vassar. Additionally, to the northwest of the junction of Hooker and Raymond Avenues, the residence of O. Holmes has been constructed. No structures are located within the Project boundaries.

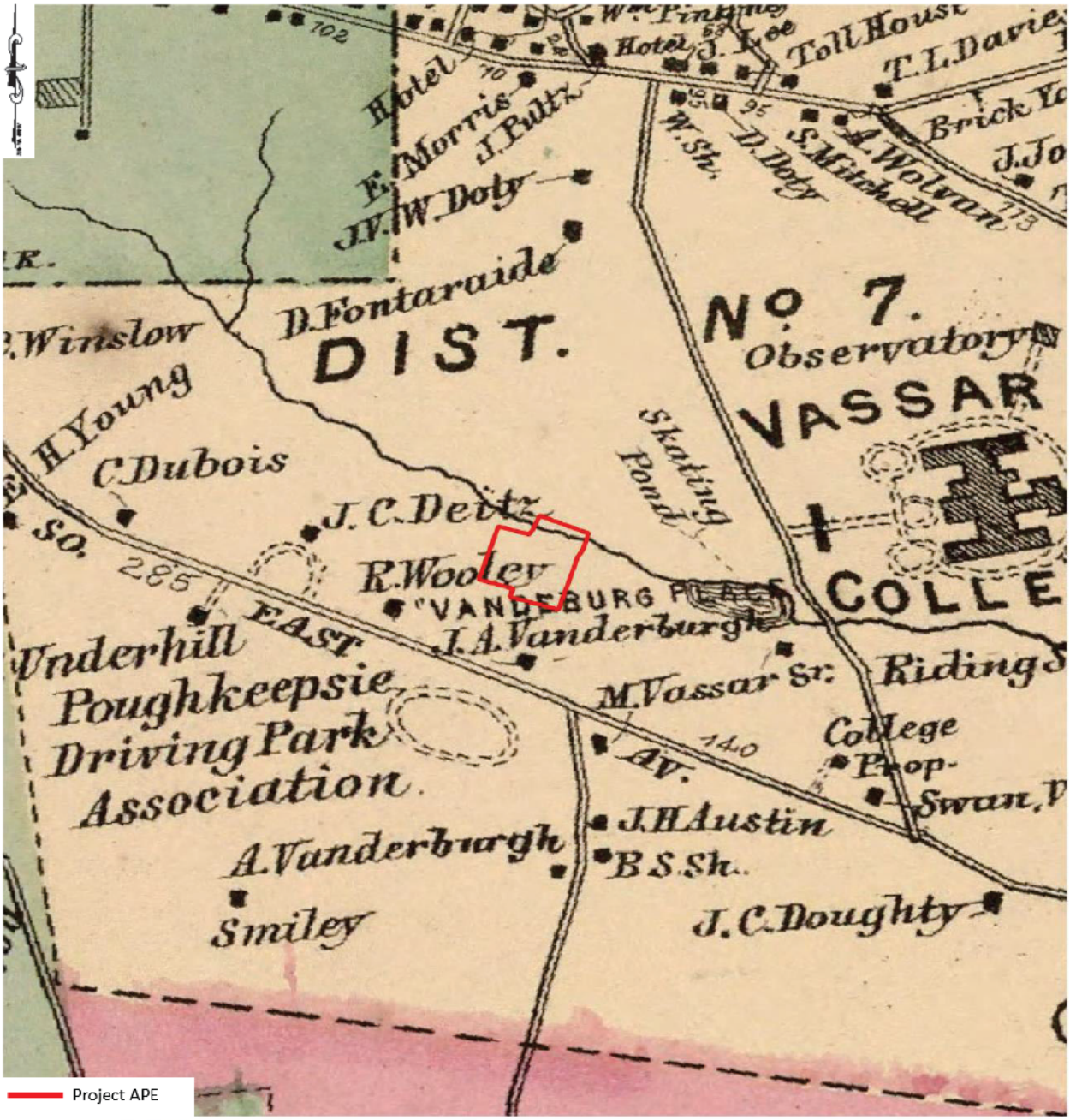


Figure 6: 1867 Frederick W. Beers. *Atlas of New York and Vicinity: from actual surveys.* (Source: David Rumsey Map Collection) Scale: 1"=1000'.

The 1867 *Atlas of New York and Vicinity: from actual surveys* by Frederick W. Beers shows extensive development within the vicinity of the Project APE. Among the major developments are the construction of Vassar College along the eastern side of Raymond Avenue and the installation of a driving track owned by the Poughkeepsie Driving Park Association to the south of the Project APE. A stream flows through the northeastern portion of the Project to the "Skating Pond" located east of the Project.

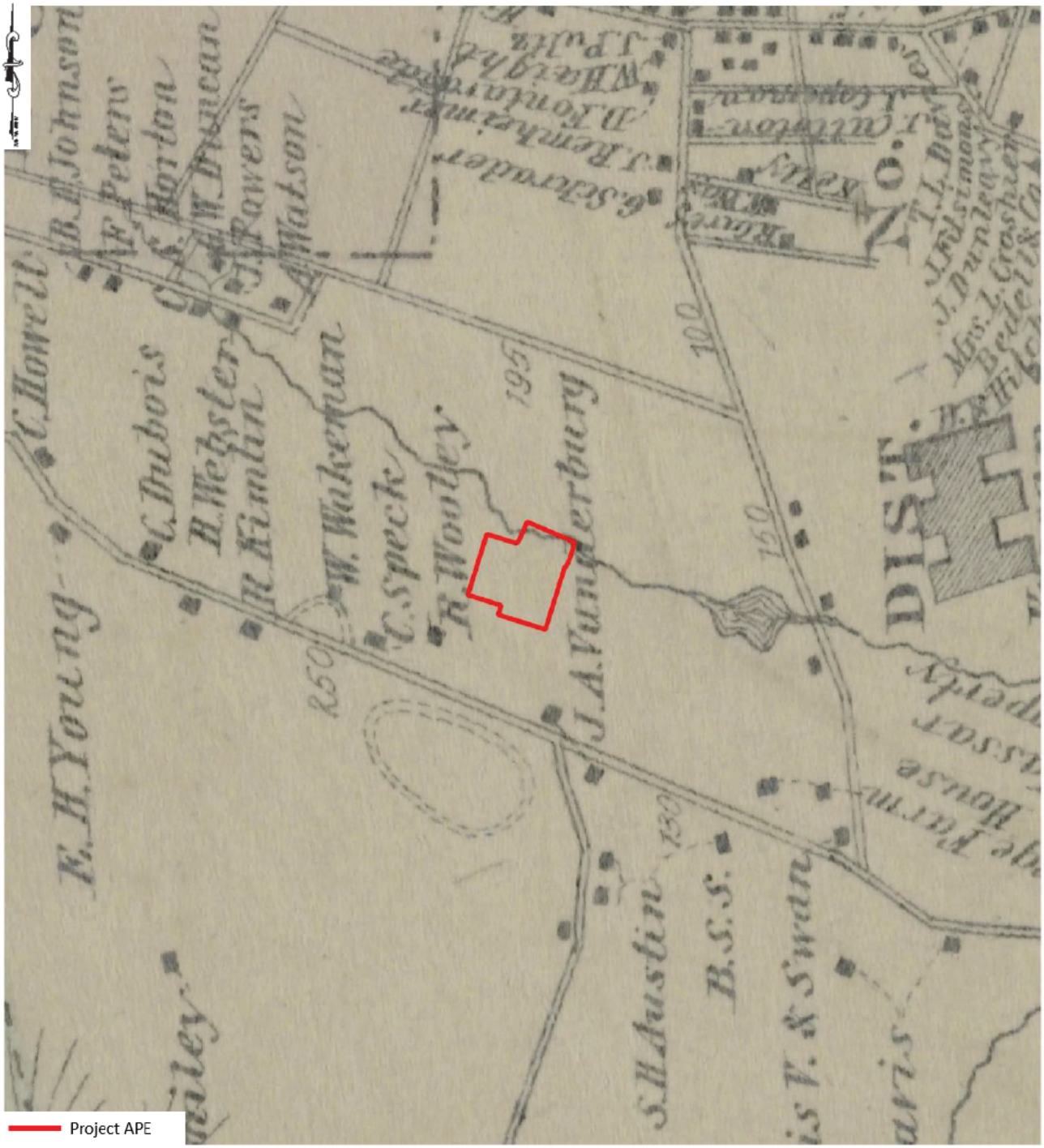


Figure 7: 1876 O.W. Gray & Son and F.A. Davis. *New Illustrated Atlas of Dutchess County, New York.* (Source: NYPL Digital Collections). Scale: 1"= 1000'.

The 1876 *New Illustrated Atlas of Dutchess County, New York* shows that extensive residential development and the construction of additional roadways have occurred north and northwest of Vassar College. Present-day College Avenue has been installed north of the Project APE. The stream is still shows as crossing the northeastern portion of the Project APE and the driving track is still visible to the south. No structures have been constructed within the boundaries of the Project.




Figure 8: 1891 F.W. Beers. *Atlas of the Hudson River Valley from New York to Troy.* (Source: NYPL Digital Collections). Scale: 1"= 1000'.

The 1891 F.W. Beers *Atlas of the Hudson River Valley* indicates that additional road construction and residential development have occurred within the immediate vicinity of the Project APE. Park Avenue and Grand Avenue have been installed to the west of the Project APE. The stream is no longer indicated as crossing the Project APE. The track to the south of the Project is now indicated as the Hudson River Driving Park. Eight residences are located within close proximity to the Project APE including the properties of J.A. Vanderburgh, F. Howell, C. Speck, and W. Creighton along Hooker Avenue to the south, C. Schrader along Park Avenue to the west, and J. Cole, C. Norris, and W. Dean along College Avenue to the north.

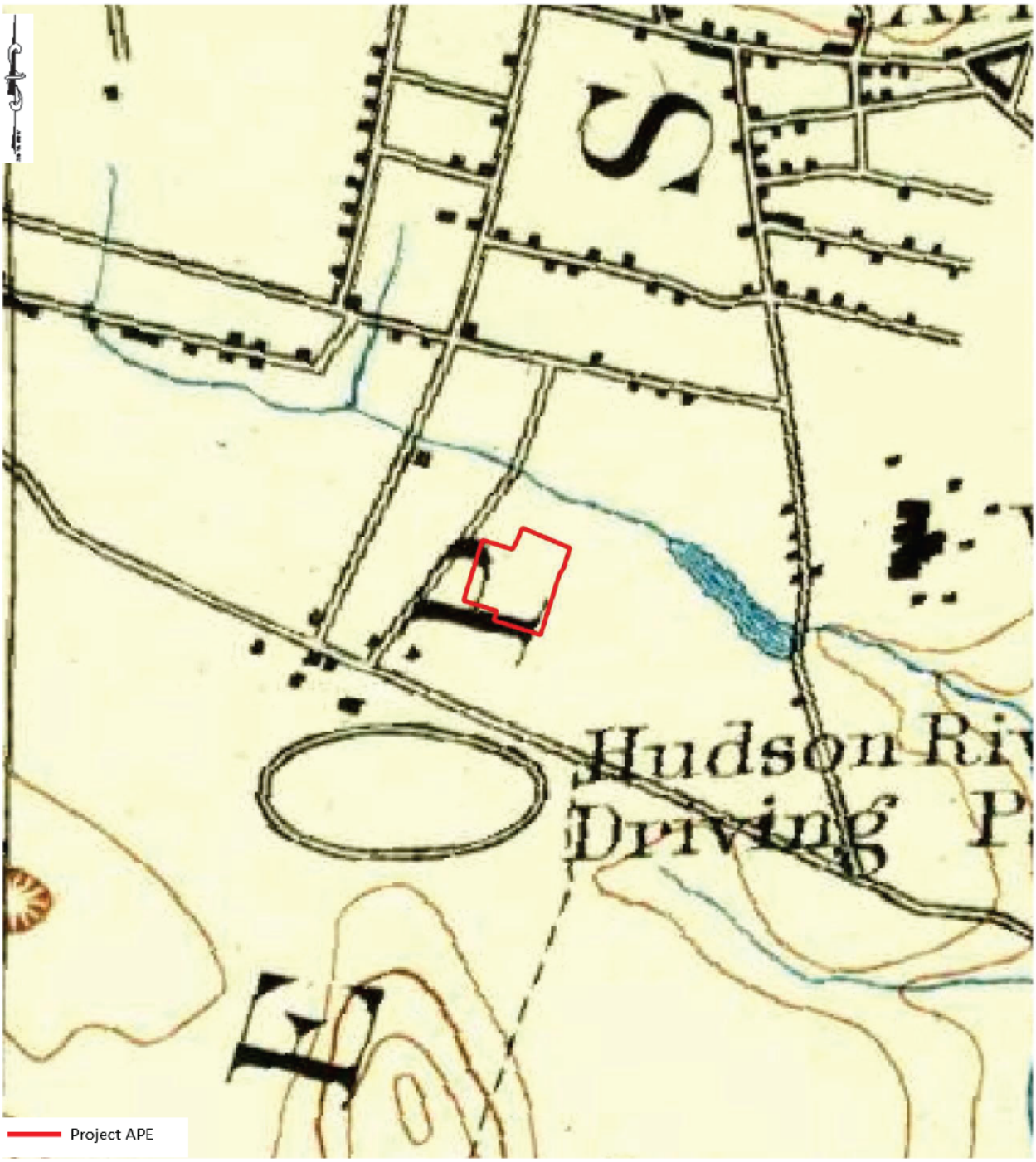


Figure 9: 1893 USGS Topographical Map. Poughkeepsie, New York Quadrangle. 15 Minute Series. (Source: usgs.gov). Scale: 1"=1000'.

The 1893 Topographical Map shows the Project APE north of the Hudson River Driving Park and east of Park Avenue. Vassar Lake is indicated to the east. Of the previously indicated structures south of the APE along Hooker Avenue only the C. Creighton property is depicted. The former C. Schrader property along Park Avenue is no longer indicated. No structures appear within the boundaries of the Project APE.




Figure 10: 1943/1946 USGS Topographical Map. Poughkeepsie, New York Quadrangle. 7.5 Minute Series. (Source: usgs.gov). Scale: 1"=1000'.

The 1943/1946 Topographical Map shows the Project APE west of Vassar Lake and northeast of the junction of Hooker and Park Avenues. Since the nineteenth century topographical map was published extensive residential development has occurred around the Project APE. Multiple residences have been constructed along Park Avenue west of the Project. To the south of the Project APE, a multitude of roads and residences have been installed in the area formerly occupied by the Hudson Valley Driving Park. No structures have been constructed within the boundaries of the Project.

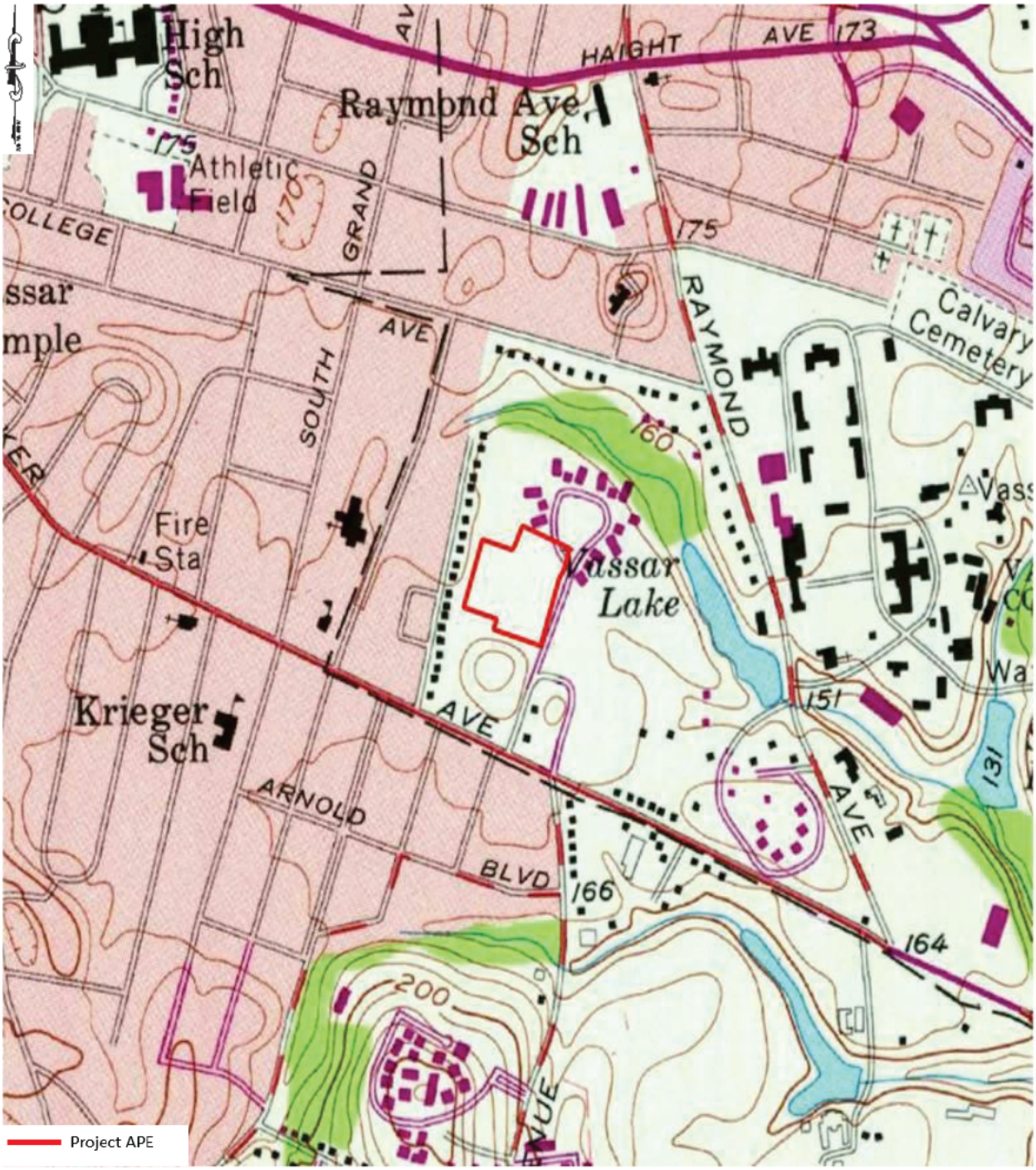


Figure 11: 1957/1982 USGS Topographical Map. Poughkeepsie, New York Quadrangle. 7.5 Minute Series. (Source: usgs.gov). Scale: 1"=1000'.

The 1957 Topographic Map edited in 1982 (purple) shows the Project APE north of Hooker Avenue. A residential street has been installed between Park Avenue and the western boundary of the Project APE. Two structures have been constructed to the southeast of the Project APE on the north side of Hooker Avenue. By 1982 the Brewers Lane cul-de-sac has been constructed, establishing the eastern boundary of the Project.

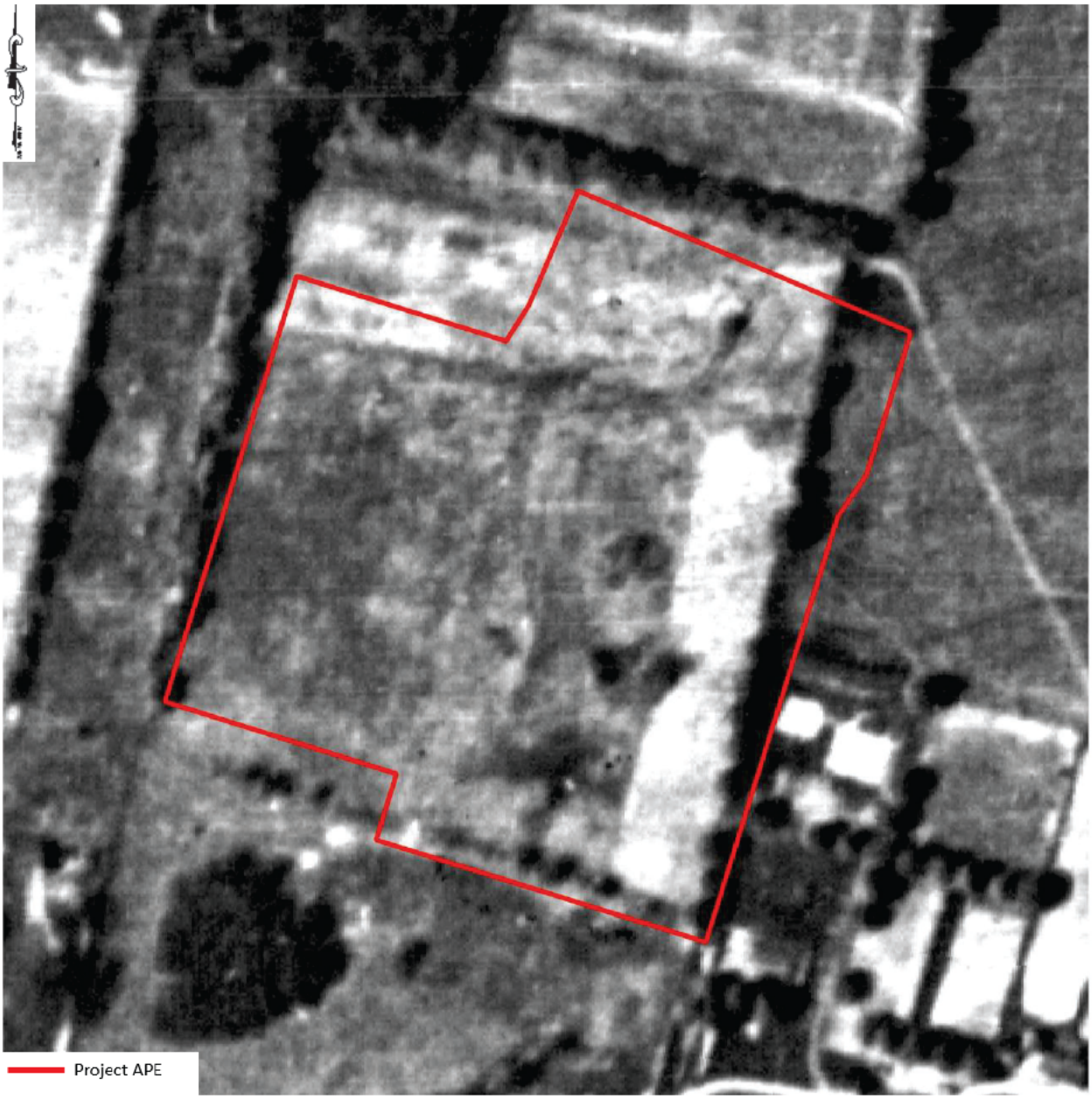


Figure 12: 1936 Aerial image showing the Project Parcel. (Source: NYS GIS Clearinghouse). Scale: 1" = 150'.

The 1936 aerial image shows that the Project APE is composed of a designed landscape. The Project APE contains a cleared field lined with trees. Several structures and/or sporting fields border the Project APE to the southeast.




Figure 13: 1995 Aerial image showing the Project Parcel. (Source: earthexplorer.usgs.gov). Scale: 1"=150'.

The 1995 aerial image shows that Project APE is primarily composed of an overgrown, wooded landscape. A parking area is located in the northeast corner of the Project APE. Residential structures along present-day Ziegler Avenue borders the western Project boundary.

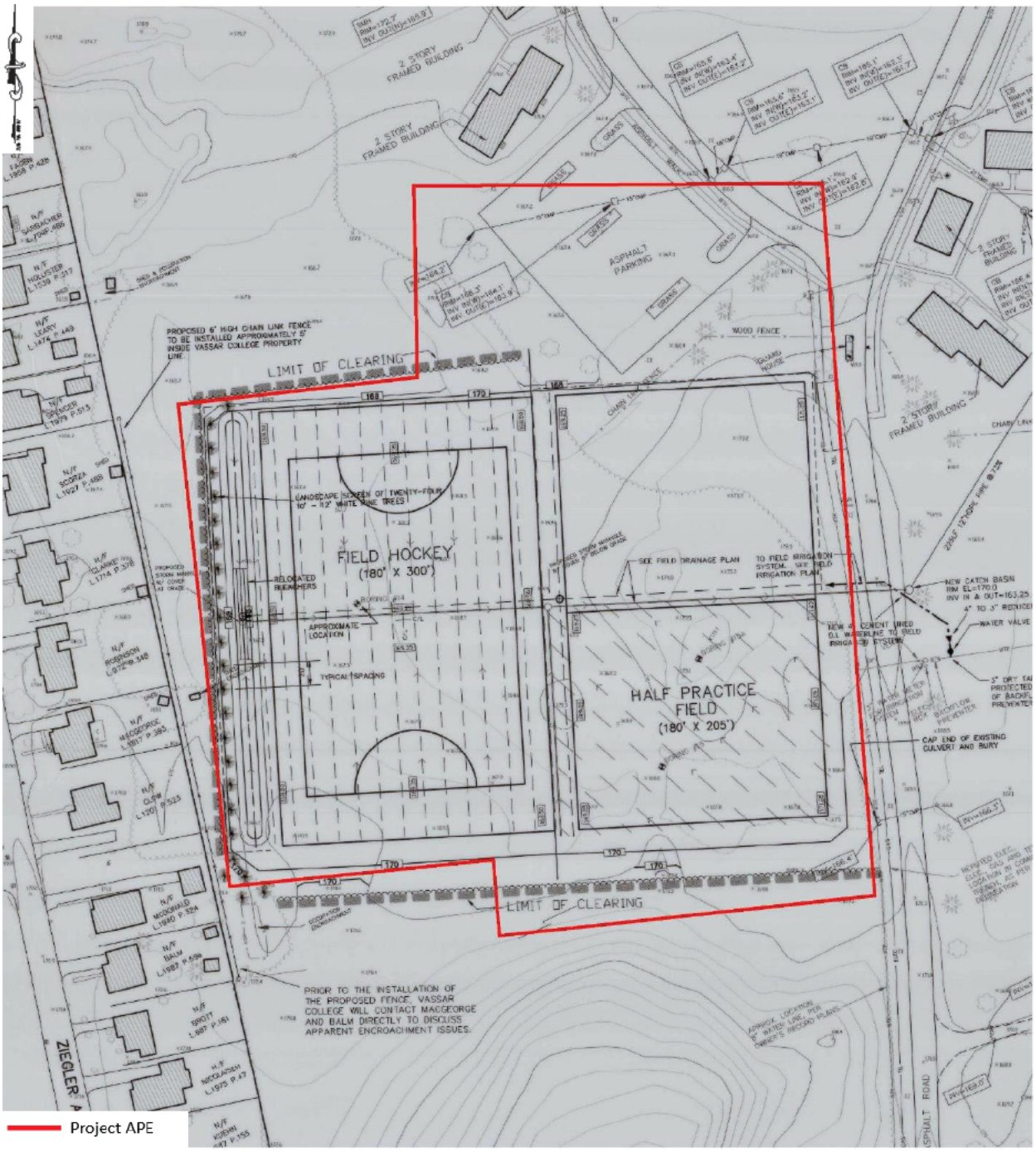


Figure 14: 1997 Existing Conditions map with Site Plan. (Source: Clark Companies) Scale: 1"=130'.

The 1997 Existing conditions map indicates that the ground surface of the location of the sports field included a small knoll (location of practice field), with the slope descending from 175' to 170' at the northern edge of the field area and 167' at the western edge. The field was graded, and the underdrains and irrigations lines shown on the plans were installed to create the current sports fields.




Figure 15: 2000 Aerial image showing the Project Parcel. (Source: gis.dutchessny.gov). Scale: 1"=150'.

The 2000 aerial image shows that Betty Richey Field has been constructed. The location of the subsurface drains is visible in the shadows created at the surface. An area of disturbance is visible on the northern side of the field, where a stormwater management area exists.

## G. Assessment of Potential Cultural Resources

An assessment of whether significant cultural resources are likely to be present within the Project APE must consider what is known of the history of the area, including the likely locations of archaeological sites and proximity to known sites. In addition, to the history of the immediate area, details pertaining to whether any historic structures or features are known to exist within the Project boundaries, must be considered. Disturbance to the landscape and the soils on the property are also considered in this assessment.

### Precontact Period Sensitivity

Precontact period archaeological sensitivity of an area is based primarily on proximity to previously documented Precontact archeological sites, known Precontact period resources, and physiographic characteristics, such as topography and proximity to freshwater. The level terrain that exists within the Project APE and the Project's location adjacent to Vassar Lake as well as its proximity to Casper Creek and the Hudson River makes this landscape moderately sensitive for precontact cultural resources. However, the urban setting of the Project APE in addition to the soil disturbance that has taken place within the APE through the installation of various types of utilities and infrastructure has reduced the precontact sensitivity to low.

### Historic Sensitivity

Careful examination of the historic and topographical maps available indicates that the lands within the Project have been unoccupied until the twentieth century. The land within the Project APE was eventually utilized for recreational and athletic purposes by Vassar College. No buildings have been located within the Project APE; however subsurface infrastructure is present in the APE. The installation of the athletic fields and adjacent parking areas indicate a high level of disturbance throughout the Project APE, reducing historic sensitivity to low.

## H. Summary and Recommendations

The environmental conditions present within the Project suggest that the Project APE is minimally sensitive for precontact period and historic period cultural resources. Due to the high level of disturbance caused by the installation of the athletic fields with buried utilities and drainage systems, it is unlikely that the Project APE will contain intact archaeological deposits. It is therefore the recommendation of HCS that no further archaeological reconnaissance is necessary for the Proposed Vassar Sports Field Project.

# II. Archaeological Monitoring

## I. Archaeological Monitoring Results

At the request of Vassar College, HCS monitored the completion of auger borings that were being completed within the sports field as part of a Geotechnical Survey. As part of this survey, test wells were being installed to measure the infiltrations of the existing soils, as part of the background for the installation of the Proposed turf fields. The infiltration wells were installed using a hollow stem auger drilling method. These well locations were excavated into the water table or to the top of bedrock, whichever was encountered first. During drilling, split spoon soil samples were collected at four-foot intervals and inspected in the field by the on-site hydrogeologist and HCS archaeologist.

The wells, consisting of 4" diameter PVC pipe, were installed in the auger holes. The auger holes were then backfilled with the well in place. Seven test (SB) wells were completed around the perimeter of the existing sports field, where the turf field is proposed.

On November 13 and 14, HCS monitored the soils pulled from the spilt spoon samples for the seven test well locations. The soils generally consisted of a top layer, varying between 0-12" (0-30 cm) which consisted of a silty loam. This topsoil layer was followed by a variety of sand, silty sand, sand and gravel layers. This silty sand layer was underlain by a variety of stratigraphy, based on the location of the test. In the northern portion of the APE, Tests numbers (SB) 2, 3, and 4, encountered shallow rock layers below the sandy fill layers. In the southern portion of the field the balance of tests contained deeper soil profiles consisting of deep layers of silt and sand, mixed with shale. The locations of the Tests are marked as Infiltrations Tests (SB) on Figure 16.

Mabel Gutliph, of Clark Companies, the company that designed the existing field. stated that during construction the top soil, or organic layer was stripped off and leveled. This is evident with the change in the topography from 1997 (Figure 13) and the present day (Appendix A: Figure 17). In 1997, the topography ranged from 167' (50.9 m) to 175' (53.35 m) across the boundaries of the current Project APE. Currently, the elevation is fairly consistent at 167' (50.9 m)-168' (51.21 m). Evidence of the grading was identified in Test (SB) 3, where the soil sample indicated a buried topsoil layer.

## J. Conclusions

The seven test wells were monitored, and confirmed that the soils within the Project APE have been profoundly disturbed. No undisturbed, potentially cultural resource bearing stratigraphy was identified in the test wells.

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# Appendix A: Photographs

1. View to the northeast along the eastern boundary of the sports field.



2. Drainage lines are located along the eastern boundary of the sports field. View to the north.



3. Additional drainage lines are located within the center of the Project APE, between the two existing sports field. View to the north east.



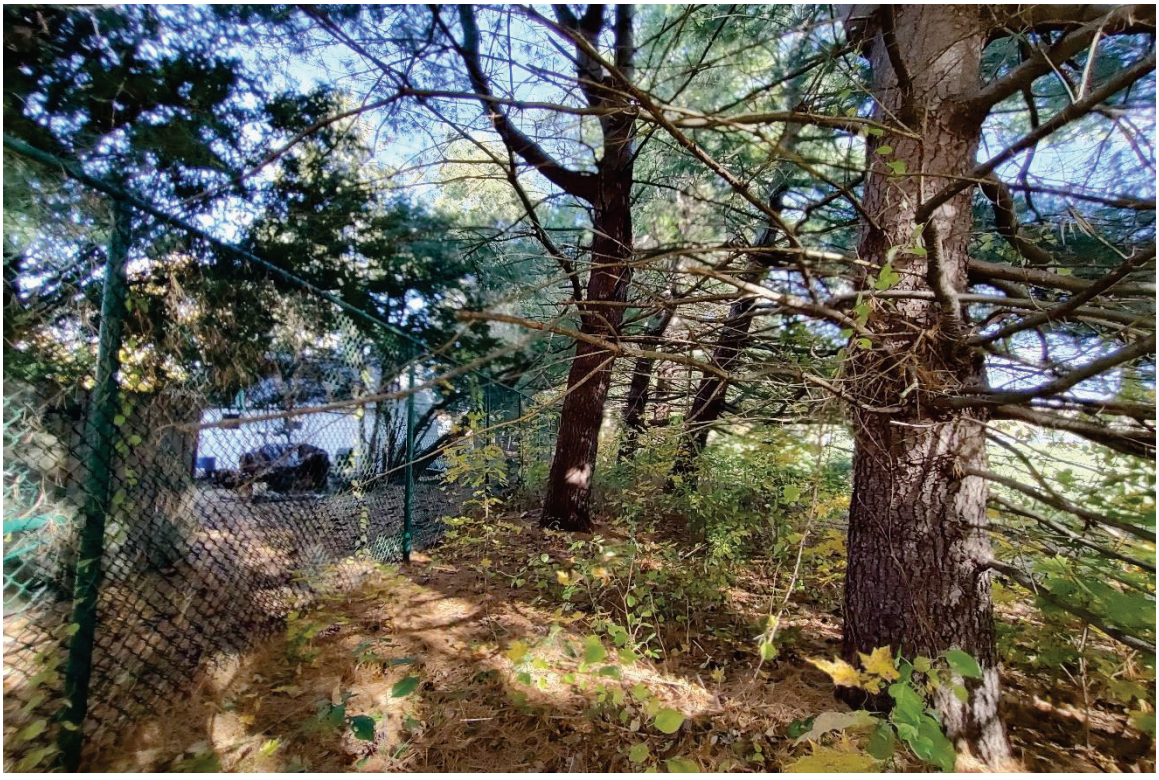
4. The space between the two fields consists of a corridor of electrical, drainage and irrigation lines. View to the southwest.



5. The sports field is elevated above the surrounding landscape. View to the west.



6. Mature evergreen trees are located along the western boundary of the soccer fields. View to the north.



7. View to the south of the northeastern corner of the existing soccer field.



8. A wooded areas is located north of the sports fields, in the location of the propose parking lot expansion. View to the north.



9. The wooded area features storm drains and has been previously disturbed. View to the west.



10. View to the west along the northern side of the sports field.



11. View to the northwest along the western edge of the existing parking lot.



12. View to the east along the northern boundary of the sports field.



13. A drainage culvert and swale are located on the southern side of the sports field.



14. View to the east from the western boundary of the sports field.



15. Utility lines fed the lights and score board at the southern extent of the field. View to the southeast.



16. View to the south from the northern extent of the sports field. Subsurface utilities are located in the swale.



17. Buried utilities are located along the Brewers Lane. View to the north.



18. Existing utilities are located along the northern boundary of the existing parking lot. View to the east.



19. View to the east toward the location of Test (SB) #1.



20. View to the northeast toward the location of Test (SB) #3.



21. View to the southeast toward the location of Test (SB) #7.



22. View of the split spoon sample from SB #1.



23. View of the split spoon sample from Test (SB) # 5.



24. View of the split spoon sample from Test (SB) # 7.



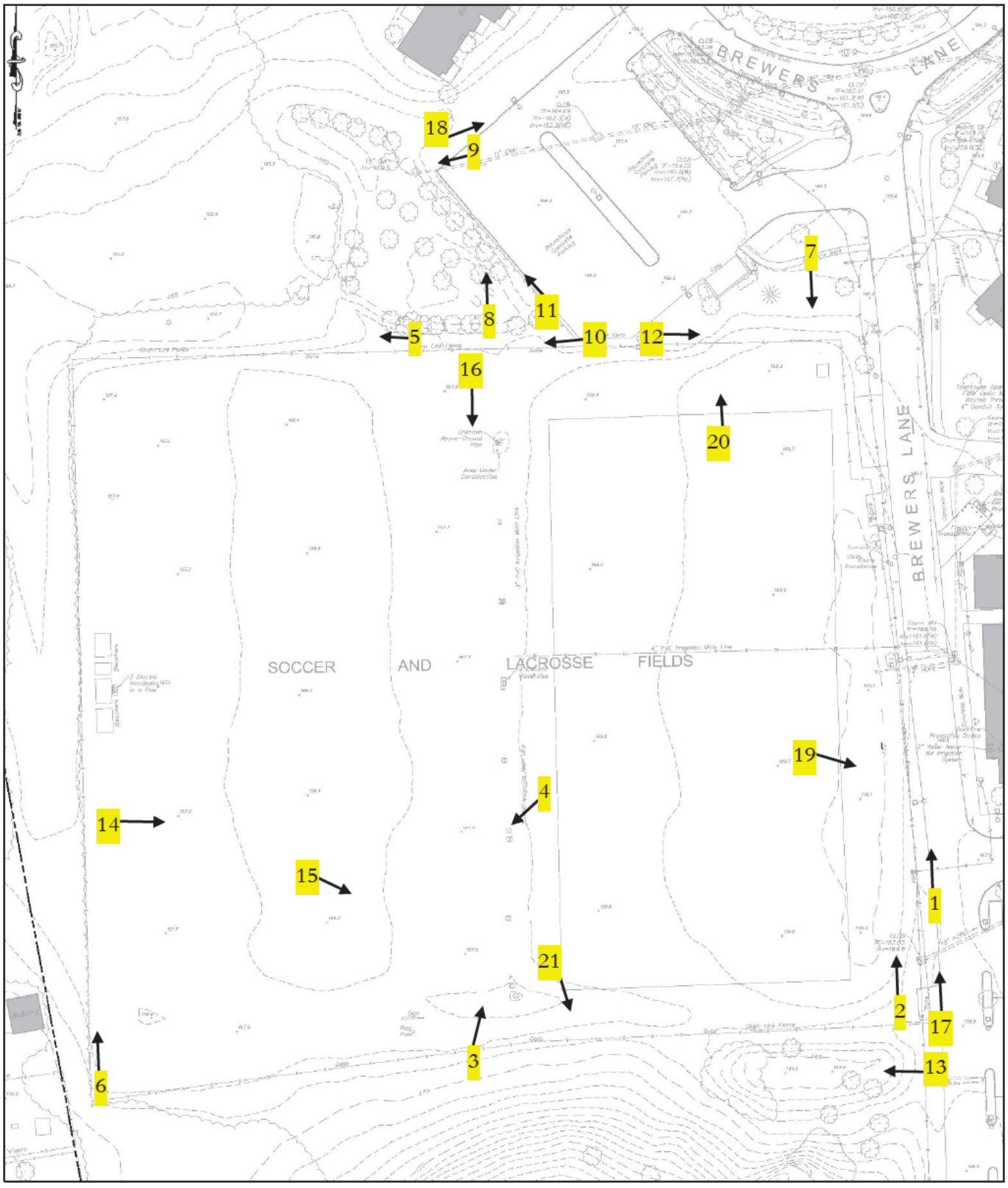


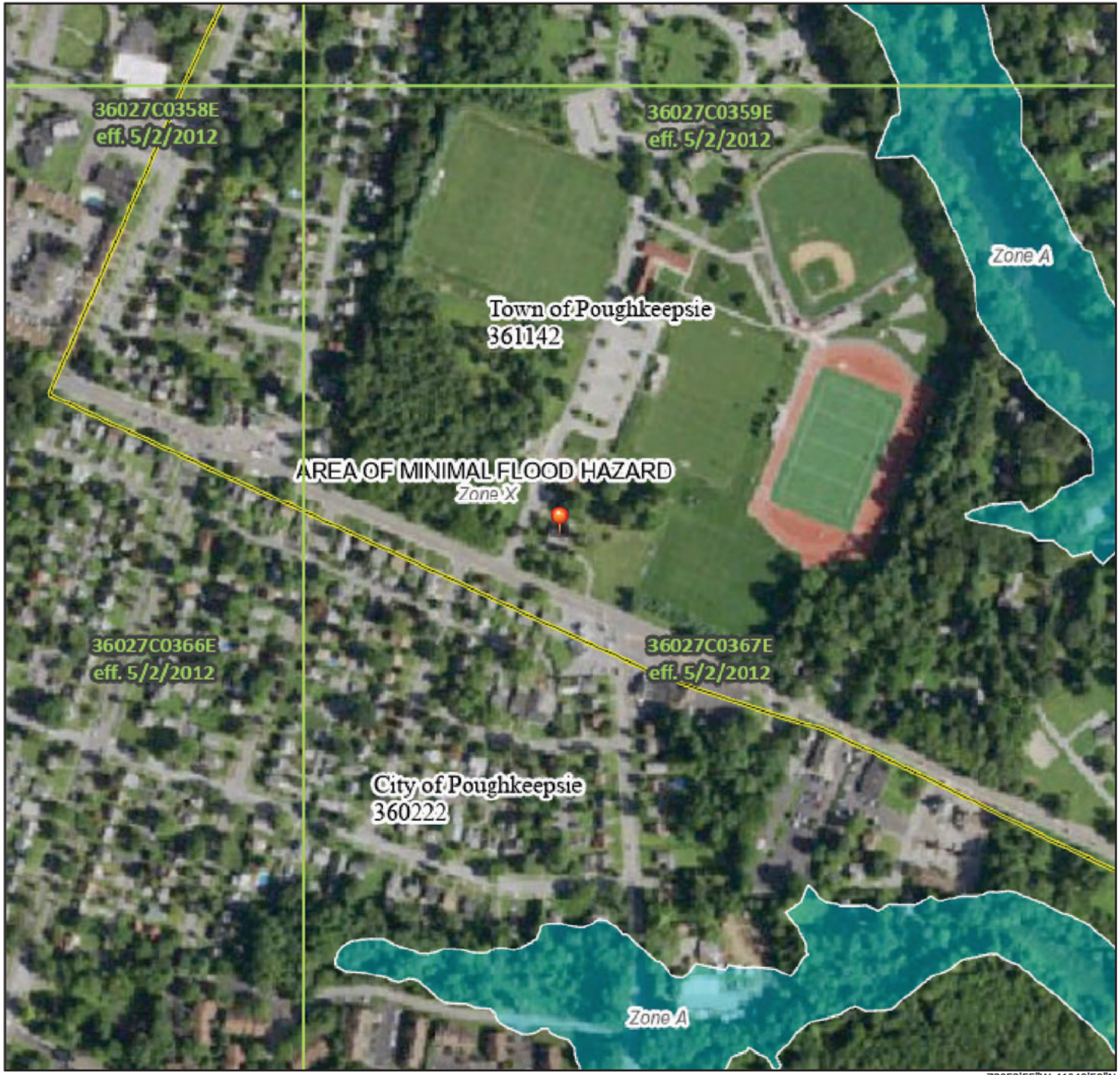

Figure 16: Current Existing Conditions Plan with Photograph Views. (Source: Vassar College). Scale: 1"=150'.

# APPENDIX G

# National Flood Hazard Layer FIRMette

FEMA

73°54'33"W 41°41'17"N




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

1:6,000

73°53'55"W 41°40'50"N

*Basemap Imagery Source: USGS National Map 2023*

## Legend

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

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

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

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

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

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/18/2025 at 1:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

# APPENDIX H

New York State
Parks, Recreation and
Historic Preservation

**KATHY HOCHUL**
Governor

**KATHY MOSER**
Acting Commissioner

January 13, 2026

Aime Patane
Land Resource Consultants Engineering & Surveying, LLC
85 Civic Center Plaza, Suite 204
Poughkeepsie, NY 12603

Re: DEC
Vassar College-Prentiss Fields
Brewers Lane, Town of Poughkeepsie, Dutchess County, NY
25PR11205

Dear Aime Patane:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

The above-noted project is located within the State and National Register Eligible Vassar College Building District (USN 02714.000578). OPRHP has reviewed the Phase IA Literature Search and Sensitivity Assessment & Archaeological Monitoring report prepared for this project by Hudson Cultural Services (HCS) (November 2025; 25SR00603). No archaeological sites were identified during this investigation; therefore, no further archaeological investigations are warranted. Based on our review, it is the opinion of the OPRHP that the proposed project will have no adverse impacts on properties, including archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

If you have any questions, I can be reached at Josalyn.Ferguson@parks.ny.gov.

Sincerely,

Josalyn Ferguson, Ph.D.
Scientist – Archaeology

*via email only*

c.c. Beth Selig, HCS

January 29, 2026

Chairman Whitehead
Honorable Members of the Town of Poughkeepsie Planning Board
Town of Poughkeepsie
One Overocker Road
Poughkeepsie, NY 12603

**RE: Vassar College – Prentiss Fields**

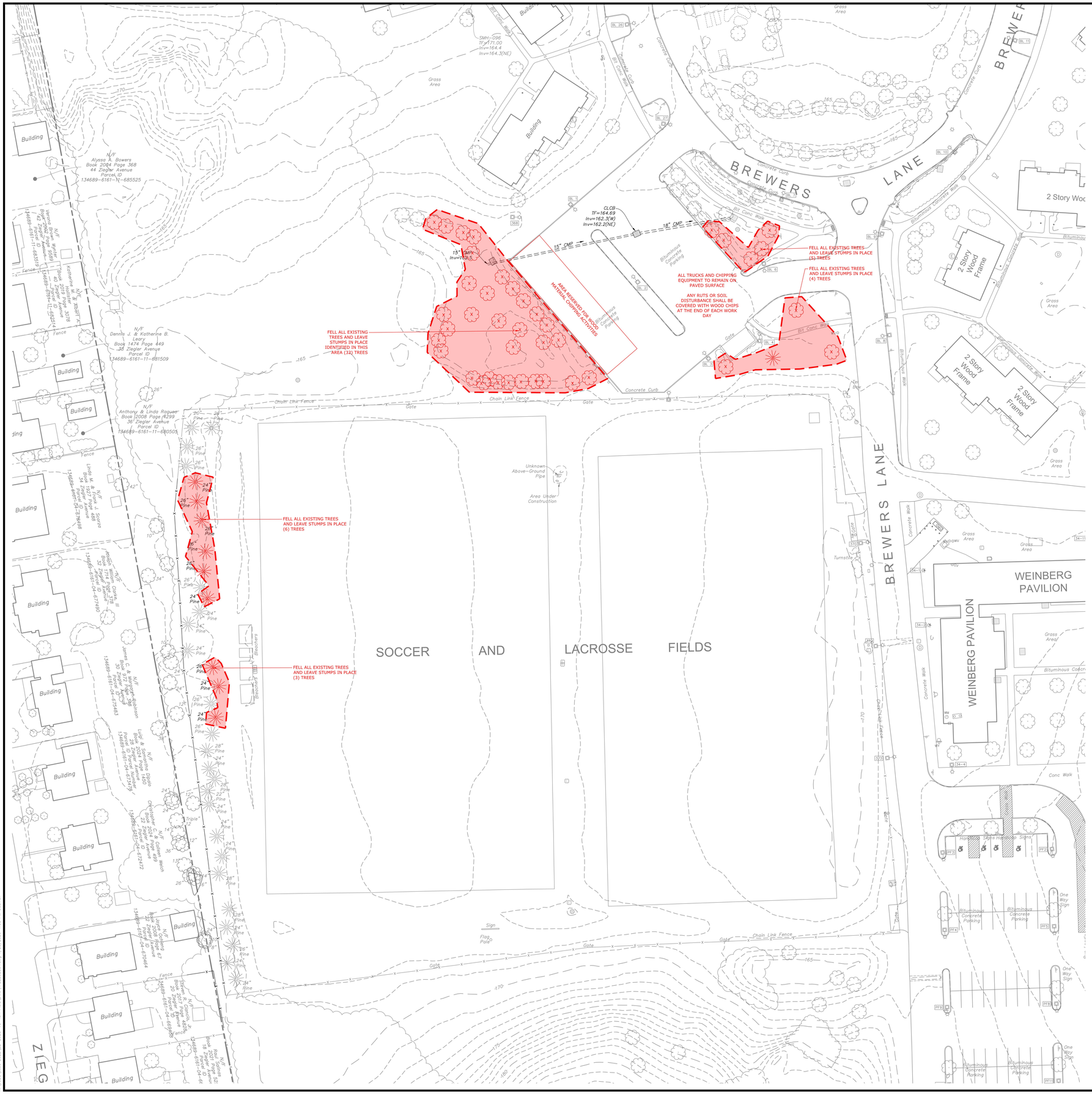
Dear Chairman Whitehead and Members of the Board,

Please accept this letter, along with the associated Tree Felling Plan, as our formal request to conduct tree felling for the above-referenced project prior to the Chairman's signature on the conditionally approved site plan. The tree felling will be restricted to the felling of the trees only on the tree removal plan (attached). We respectfully request that the Board authorize the applicant to complete the necessary tree cutting in advance of the March 31 Indiana bat restriction deadline, during the College's Spring Break (March 7–March 22), when students are not present on campus.

We appreciate the Board's continued review of the revised plans and look forward to addressing any remaining comments or concerns in a timely manner. Thank you for your time and consideration.

Sincerely,
**Loureiro NY, P.C**

By: _____
Kenneth Casamento, CPESC




## DEMOLITION NOTES:

1. CONTRACTOR SHALL NOTIFY "Dig NY" AT 1-800-962-7962 AT LEAST TWO FULL WORKING DAYS PRIOR TO COMMENCEMENT OF ANY WORK IN ACCORDANCE WITH UFPO CODE RULE 53, 16 NYCRR PART 753.
2. PRIOR TO DEMOLISHING ANY BUILDINGS/STRUCTURES, THE CONTRACTOR SHALL PERFORM A PRE-DEMOLITION SURVEY IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS BY THE AUTHORITY HAVING JURISDICTION.
3. CONFORM TO APPLICABLE CODE FOR DEMOLITION OF STRUCTURES, SAFETY OF ADJACENT STRUCTURES, DUST CONTROL, RUNOFF CONTROL, AND HAULING, DISPOSAL AND STORAGE OF DEBRIS.
4. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
5. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OPERATING FACILITIES, EXCEPT WHEN AUTHORIZED, IN WRITING, BY OWNER AND AUTHORITIES HAVING JURISDICTION.
6. WHEN DISTURBED, EXISTING FACILITIES SHALL BE REPAIRED OR REPLACED IN KIND AND IN ACCORDANCE WITH THE REQUIREMENTS OR THE DIRECTION OF THE AUTHORITY HAVING JURISDICTION. ASSOCIATED COSTS SHALL BE BORNE BY THE CONTRACTOR.
7. NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE, OR DISRUPTION. COORDINATE WITH OWNER.
8. PREVENT MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES. PROVIDE BRACING AND SHORING.
9. LOCATE AND IDENTIFY ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREA. DISCONNECT AND SEAL OR CAP OFF UTILITY SERVICES THAT WILL BE AFFECTED BY THIS PROJECT. NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.
10. DEMOLISH AND REMOVE COMPONENTS IN AN ORDERLY AND CAREFUL MANNER.
11. PROTECT EXISTING FEATURES THAT ARE NOT TO BE DEMOLISHED.
12. CONDUCT OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSES.
13. MAINTAIN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS, OR SIDEWALKS WITHOUT PERMITS.
14. CEASE OPERATIONS IMMEDIATELY IF ADJACENT STRUCTURES APPEAR TO BE IN DANGER. NOTIFY AUTHORITY HAVING JURISDICTION.
15. ROUGH GRADE AND COMPACT AREAS AFFECTED BY DEMOLITION TO MAINTAIN SITE GRADES AND CONTOURS.
16. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH SELECTIVE DEMOLITION OPERATIONS.
17. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
18. USE WATER, MIST, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS. DO NOT USE WATER WHEN IT MAY DAMAGE EXISTING CONSTRUCTION, SUCH AS ICE, FLOODING, AND POLLUTION.
19. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
20. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITIONS.
21. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. ALL DEBRIS RESULTING FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT A FACILITY APPROVED TO RECEIVE THE DEBRIS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. DO NOT BURN DEMOLISHED MATERIALS ON-SITE.
22. NO ONSITE BLASTING IS PROPOSED FOR THE PROJECT.
23. ANY TREES IDENTIFIED ON THE EC-1 PLAN FOR PROTECTION SHOULD HAVE ORANGE SAFETY FENCING ADDED TO TREE DRIPEDGE.

## LEGEND

- EXISTING TREE
- EXISTING TREE TO BE REMOVED


Vassar College
124 Raymond Avenue
Poughkeepsie, NY
12604

LRC Engineering & Surveying (A Loureiro Company)
- Civil Engineering
- Land Surveying
- Landscape Architecture
- Land Planning
- Laser Scanning & Bim
- Subsurface Utility Engineering

**Land Resource Consultants Engineering & Surveying, LLC**
**Loureiro NY, P.C.**
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
(845) 243-2880
160 West Street, Suite E
Cromwell, CT 06416
(860) 635-2877
www.lrcconsult.com

STATE OF NEW YORK — ROBERT E. MORRISON — 074102 — LICENSED PROFESSIONAL ENGINEER

CLARK COMPANIES
308 PEARSALL LANE, PHONE: (607)746-2727
P.O. BOX 427, DELHI, N.Y. 13753 FAX:(607)746-3107
CAPELLA ENGINEERING, LLC
P.O. BOX 414
DELHI, N.Y. 13753-1222


| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | TF22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

# TREE FELLING PLAN

Drawing No.
TF-1

X:\JOBS\Jobs 2022\22-2928-VC-Turf Field\DWG\TF22292801.dwg 1/28/2026 4:38 PM Sconza

# STORMWATER POLLUTION PREVENTION PLAN

Prepared for

## VASSAR COLLEGE TURF FIELD

Located at

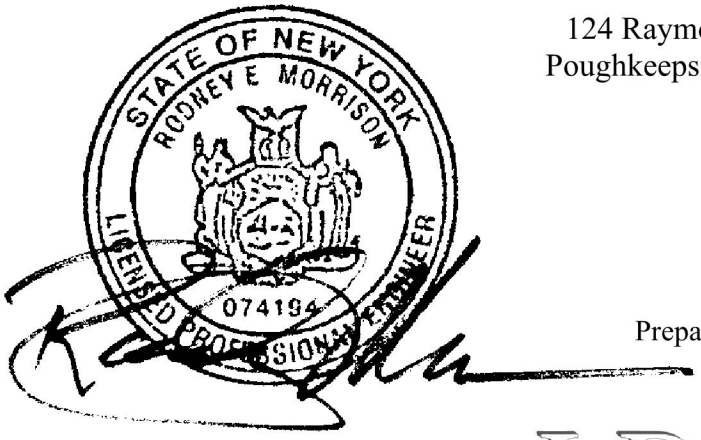
**334 Hooker Avenue**
**Town of Poughkeepsie, Dutchess County, NY**
**Tax ID #: 134689-6161-04-740465**

Submitted: January 26, 2026

Prepared for

**Vassar College**

124 Raymond Avenue
Poughkeepsie, NY 12604

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**Civil Engineering ♦ Land Surveying ♦ Landscape Architecture ♦ Land Planning ♦ Laser Scanning & BIM ♦ Subsurface Utility Engineering**

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# 1.0 INTRODUCTION

This Water Quality and Quantity Plan and Stormwater Pollution Prevention Plan (SWPPP) have been prepared pursuant to the Environmental Protection Agencies' (EPA) and the New York State Department of Environmental Conservations (NYSDEC) Phase II Storm Water Regulations. All parties, as defined below, are responsible for executing the SWPPP and for complying with the requirements set forth in the EPA's National Pollution Discharge Elimination System (NPDES) General Permit, the NYSDEC's State Pollution Discharge Elimination System (SPDES) General Permit GP-0-25-001, and any local governing agencies having jurisdiction with regard to erosion and sediment control.

The purpose of the SWPPP, described herein, is to provide for the proper control and treatment of water quality and quantity impacts due to the proposed project. These controls and treatments will be achieved through the use of appropriate features such as conveyance piping and an infiltration basin. The goal is to manage the post-development storm water discharge to match or improve on the pre-development conditions, provide necessary water quality treatment and quality control for the new development and prevent discharge of pollutants into receiving waters, in keeping with the afore-noted regulations and best management practices as described within the New York State Erosion and Sediment Control Manual and the New York State Stormwater Design Manual.

This SWPPP outlines methods that Owner/Developers and Contractors can use to adjust construction practices in a way that will retain surface water quality and prevent sediment laden runoff from entering rivers, streams, estuaries, wetlands and other sensitive environments. This SWPPP describes methods for permanent stormwater management features in the design and runoff management during the construction phase.

## 1.1 Responsibilities of the Participants

It is the responsibility of the Owner/Developer, General Contractor and subcontractors to comply with the measures set forth in this SWPPP and implement pollutant control measures which retain surface water quality and prevent sediment laden runoff from entering rivers, streams, estuaries, wetlands and other sensitive environments. The following outlines the responsibilities of all participants.

***Owner/Developer's Qualified Representative***

1. Prepare this Water Quality and Water Quantity Report and SWPPP using good Engineering practices, best management practices and in compliance with NYSDEC Phase II Storm Water Regulations. The Owner/Developer, General Contractor and all Subcontractors involved in earth disturbance during construction must certify this Plan by signing the certifying statement contained in **Appendix B**.
2. Prepare the Electronic Notice of Intent (eNOI) for the Owner/Developer for submission to the NYSDEC prior to commencement of construction.
3. The SWPPP that has been prepared for the job site shall include certification forms and a completed and signed eNOI.
4. Provide copies of the SWPPP and the "Letter of Authorization" (LOA) to the local government agencies having jurisdiction or regulatory control over the project within 5 business days of receiving.

5. Review the site prior to the beginning of construction and certify in an inspection report that the appropriate pre-construction erosion and sediment control measures outlined herein, and that are required by the NYSDEC SPDES General Permit, have been installed and will operate as designed.
6. Conduct on-site inspections every 7 days for general compliance with the SWPPP and the NYSDEC SPDES General Permit. Inspection reports will be provided to the Owner/Developer within 24 hours of the field inspection. Any problem areas or areas in need of additional stabilization shall be made clear to the Owner/Developer. The Owner/Developer and the authorized person who is responsible for the overall operation of the site, such as a project manager or site superintendent, must certify these reports by signing the certifying statements contained at the end of the reports and must be maintained in the on-site logbook as described below.
7. Review onsite Contractors SWPPP records to ensure compliance and update them as required or necessary.
8. Update the SWPPP each time there is a significant modification to the design or construction which may have a significant effect on the potential for discharge of pollutants into receiving waters.
9. When construction is complete, provide the Owner/Developer with certification that an inspection has been completed verifying that the site has undergone final stabilization.
10. When the site has undergone final stabilization, prepare the Electronic Notice of Termination (eNOT) for the Owner/Developer for submission to the NYSDEC.

***Owner/Developer/Operator/Permittee***

The following is a summary of the Owner/Developer's responsibilities:

1. Certify the SWPPP by signing the Owner/Operator's Certification statement contained in **Appendix B** of this report. The eNOI should be submitted online on the NYSDEC Portal with a sign Owner/Operator Certification which is included within **Appendix B**.
2. When the Owner/Developer receives a letter of "Letter of Authorization" from the NYSDEC, post a copy of this letter at the site for public viewing on a kiosk, in a construction field trailer, in model home, etc. A copy should also be forwarded to the local government agencies and the Owner/Developer's Qualified Representative for the project file.
3. Post at the site with the "Letter of Authorization" a SWPPP inspection activity log for public viewing on a monthly basis.
4. Ensure that a logbook containing all the required documentation is kept on site and made available for inspection upon request. The book should contain an extra copy of the "Letter of Authorization," a copy of this Water Quality and Water Quantity and SWPPP report, weekly SWPPP inspection reports, SWPPP inspection quarterly reports and a copy of the SPDES General Permit.
5. Ensure the SWPPP report, inspection reports and inspection quarterly summaries are certified by an authorized person who has responsibility for the overall operation of the site such as a project manager or site superintendent. Certification of these documents is

executed by signing the certifying statements contained in **Appendix A and B** and at the end of the inspection reports.

6. Require the General Contractor and all Subcontractors involved with construction activity that disturbs site soils, to fully implement the SWPPP and the requirements set forth in the SPDES General Permit. The SWPPP should be certified by the General Contractor and all Subcontractors involved with earth disturbance during construction by signing the certifying statement in **Appendix B**.
7. Upon project completion and when the site has reached final stabilization, the Owner/Developer should sign the Electronic Notice of Termination (eNOT) prepared by the Owner/Developer's Qualified Representative and submit online on the NYSDEC Portal.
8. Retain all site records and documentation including Engineering reports, SWPPP reports, SWPPP inspection reports and all records of data used to complete the eNOI for a minimum of 3 years from the date the site reached final stabilization.
9. Provide an Operation & Maintenance (O&M) manual to the new Owner/Developer who is expected to conduct the necessary O&M over the life of the structures as described in Section 10.0 of this report.

***Contractors and Sub-Contractors***

The following is a summary of the Contractor's responsibilities:

1. Implement fully the SWPPP while following the Phasing Plan and the requirements set forth in the SPDES General Permit. Certify the SWPPP by signing the Contractor's Certification statement contained in **Appendix B** of this report.
2. Provide the names and addresses of all subcontractors involved in construction activities that disturb site soils for inclusion in the SWPPP.
3. Ensure all Subcontractors involved in construction activities that disturb site soils implement fully the SWPPP, and the requirements set forth in the SPDES General Permit. All Subcontractors must certify the SWPPP by signing the Contractor's Certification statement contained in **Appendix B** of this report.
4. Conduct inspections on a regular basis of the erosion and sedimentation controls installed at the site. Maintain and repair as necessary all erosion and sedimentation controls.

## 1.2 Participant Contact Information

| Owner/Developer/Operator | Owner/Developer's Qualified Representative | Contractors & Subcontractors |
|---|---|---|
| **Vassar College**<br>124 Raymond Avenue<br>Poughkeepsie, NY, 12604 | **Land Resource Consultant Engineering & Surveying, LLC d.b.a. Loureiro NY, P.C.**<br>85 Civic Center Plaza, Suite 204<br>Poughkeepsie, NY 12601<br>(845) 243-2880 | **TBD** |

## 2.0 SITE DESCRIPTION

This section briefly describes existing and proposed hydrologic and hydraulic conditions at and around the project site as they relate to Surface Water Management planning considerations. Subsequent sections contain a description of the manner in which site runoff will be managed to minimize effects on areas adjacent to the site.

### 2.1 Location

The subject property consists of one existing parcel with a total of 57 acres. The parcel is identified as Tax Parcel # 134689-6161-04-740465 according to the Dutchess County Parcel Access. The project is located at 334 Hooker Avenue in the Town of Poughkeepsie, NY. The project is located on the western side of Brewers Lane and the northern side of Hooker Avenue. The project has UTM coordinates of 591240 Northing and 4615569 Easting. Below in ***Figure 1*** is a vicinity map showing the outer limits of the proposed project.



***Figure 1: Vicinity Map***

### 2.2 Topography

Elevations within the project area are relatively flat, as the existing topography primarily consists of athletic fields. To the south of the proposed project site, the terrain rises sharply, with an elevation change of nearly 30 feet. The area designated for the proposed work is located where previous development has already taken place.

## 2.3 Land Cover and Site Development

The site currently consists of an athletic field with associated parking and wooded area surrounding the field to the west and the south. The existing watershed consists of 1.27 acres of impervious area. The proposed development will consist of 4.17 acres of impervious area, but this includes the turf field as impervious. Without including the turf field as impervious, the proposed development will consist of 1.85 acres of impervious area which would only add 0.58 acres of impervious area.

## 2.4 Soils

Soils mantling the site have been classified by the United States Department of Agriculture (USDA) Soil Survey of Dutchess County, New York. The following soils groups are present, based on the afore-noted mapping:

1. NwB: Nassau-Cardigan Complex (Undulating, Very Rocky)
2. Fr: Fredon Silt Loam
3. HeA: Haven Loam (Nearly Level)
4. KuA: Knickerbocker-Urban Land Complex (Nearly Level)

According to NRCS soil hydraulic classifications KuA as a "Class A" soil while HeA as a "Class B" and Fr and NwB as a "Class C." A map of the soils can be found in **Appendix K.** On-site deep testing and infiltration testing around the site stormwater improvements revealed, primarily, a consistent well-draining "Class A" soil type. The results of the onsite soil tests can be found in **Appendix M**.

## 2.5 Rainfall Data

Rainfall data utilized in the modeling and the analysis was obtained from NRCS & NRCC Extreme Precipitation in New York and New England, an interactive web tool for extreme precipitation analysis. The data used is specific to Poughkeepsie NY and various 24-hour storm events are presented below. A record of the extreme precipitation data is included in **Appendix K**.

| 24-Hour Storm Event | 24-hour rainfall |
|---|---|
| 1 year | 2.61 |
| 2 years | 3.16 |
| 10 years | 4.67 |
| 25 years | 5.84 |
| 100 years | 8.21 |

## 2.6 Streams and Water Bodies

There are no streams or water bodies located in the vicinity of the proposed project, but there is the existing Vassar Lake located to the north of the project. According to NYSDEC Environmental Resource Mapper and USFWS Wetland Mapper there are no ACOE or NYS DEC wetlands located in the vicinity of the project. According to FEMA mapping there are no floodplains located in the vicinity of the project.

## 2.7 Wetlands and Floodplains

There are no floodplains or wetlands located in the vicinity of the project.

### 2.8 Historical and Cultural Resources

The project area has been reviewed in accordance with Section 106 of the National Historic Preservation Act of 1966. The project will have no effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places. A letter from the New York State Office of Parks, Recreations and Historic Preservation is included in **Appendix N**.

## 3.0 PROJECT DESCRIPTION

Vassar College plans to enhance its current athletic facilities by replacing an existing grass field with a newly designed synthetic turf field. The project will also involve updates to the existing grass practice field and an expansion of the parking lot to better accommodate the college's requirements. Additional improvements include the installation of field amenities such as fencing, a storage shed for athletic and maintenance equipment, a scoreboard, site lighting, and bleachers equipped with a press box. Landscaping and stormwater management practices will be included as well.

## 4.0 METHODOLOGY

The stormwater design approach for this project will accommodate all NYS DEC requirements and will ensure that water quality and water quantity volumes are managed accordingly. Although the proposed project consists of redeveloping a portion of the existing site the project has been designed to meet the entire WQv and RRv volumes. The methodology for designing stormwater management, as well as, the erosion and sediment control structures for this project are as follows:

1. Evaluate the hydrologic condition of the tributary area using the USDA-SCS Technical Release No. 20 (June 1986) Methods.
2. Determine peak flows from each watershed, for various storm events, using the Hydro CAD computer program.
3. Determine the water quality volume, runoff reduction volume, channel protection volume, overbank flood protection volume and extreme storm flood protection volume for each drainage area that requires mitigation. Design the mitigation program to the DEC water quality and quantity methodology for each affected area.
4. Perform hydrologic routings for the selected stormwater systems using the Hydro CAD computer program. Examine and compare the output for the DEC design criteria, and also for peak elevations and peak outflows for both pre and post-development conditions as may be prescribed by the local authority.
5. Design the erosion and sedimentation control structures and prepare engineering calculations for the design of channels and conveyance piping in accordance with the "New York Standards and Specifications for Erosion and Sediment Control", July 2016, New York State Department of Environmental Conservation".

### 4.1 Green Infrastructure Planning Guidelines

The proposed project has been designed to implement as many green infrastructure planning guidelines as possible. All of the guidelines are not always applicable or cannot be achieved. The planning methods are discussed below.

***Preservation of Undisturbed Areas***

The proposed project is located in a portion of the site that has been disturbed in the past.

***Preservation of Buffers***

There are no existing stream, river, or wetland vegetated buffers on the project site.

***Reduction of Clearing and Grading***

The proposed project is located in a previously disturbed area which has already been cleared in the past. This reduces the need for further clearing and grading on the property.

***Locating Development in Less Sensitive Areas***

As described above, the project is located in an area of the site that has been previously disturbed.

***Open Space Design***

There are no buildings proposed.

***Soil Restoration***

There will be no pavement reduction or building removal with this project. Any soil disturbed during the course of construction will be restored in accordance with the NYSDEC Stormwater Design Manual, Section 5.1.6.

***Roadway Reduction***

There are no proposed roads in this project.

***Sidewalk Reduction***

The sidewalk are proposed to be the minimum width allowable in the town.

***Driveway Reduction***

The drive aisles are 26 foot wide which is the minimum width required by the town.

***Cul-de-sac Reduction***

There are no proposed cul-de-sacs or dead ends. The layout has a continuous drive aisle to achieve sufficient vehicle access while eliminating the need for large unnecessary dead ends.

***Building Footprint Reduction***

No buildings will be reduced or removed as part of this project.

***Parking Reduction***

The parking proposed is the amount required to serve Vassar College's needs as well as the minimum amount to reduce any additional clearing.

## 5.0 HYDROLOGIC AND HYDRAULIC ANALYSIS

Stormwater Management Design has the purpose of improving the quality of surface water runoff from all impervious areas and providing retention for increased runoff quantities that may occur. For the proposed project, the appropriate methodology to manage stormwater is to capture and treat runoff for quality and quantity control for the site.

The hydrologic analysis was performed using the Hydro CAD stormwater modeling software, and all data regarding areas has been calculated in AutoCAD. Soils information has been obtained through mapping per the NRCS Dutchess County Soils Survey, onsite deep tests and infiltration tests. The results of the Hydraulic Analysis can be found in **Appendix M**.

## 5.1 Proposed Runoff Treatment – Water Quality

The project has been designed to take advantage of the good soils in the vicinity of the proposed development. By allowing stormwater runoff to infiltrate back into the ground we are able to minimize the impacts on the surrounding surface waters and treat the runoff through exfiltration into the sub surface soils. The evaluation of the site to determine the water quality volumetric requirements follow strictly the procedures presented in chapters 4 & 5 of the New York State Stormwater Design Manual, and is provided in full in **Appendix L**.

The table below summarizes the volumes required and provided for runoff reduction and water quality; The proposed redevelopment is primarily contained within drainage areas DA 2, 3, and 5-11 as shown on the pre and post drainage area maps in **Appendix O**.

| **Water Quality Volume Calculations** | | | STANDARD |
|---|---|---|---|
| Trib Area | 11.27 | ac | |
| Imperv Cover: | 3.56 | ac | |
| Imperv. % | 31.59 | | |
| **Stormwater Management Practice Selection:** | | | |
| Infiltration Basin | | | |
| **Uniform Sizing Criteria:** | | | |
| Water Quality (WQv) | P= | 1.40 | |
| | *I=* | *31.6* | |
| | Rv= | 0.3343 | |
| | A= | 11.27 | |
| | WQv= | 0.44 | AC-FT |
| | | 19,143.2 | CF |

| **Minimum Runoff Reduction Requirements** | | | |
|---|---|---|---|
| RRV = 90% rain (P) x Rv* x S x total impervious area (AI from #2) / 12 | | | |
| with S = .55 (A soils); .40 (B soils); .30 (C soils); .20(D soils) OR weighted HSG average in DA | | | |
| Weighted HSG= | 0.3405 | | |
| | **Min RRV** = | 0.134 | ac-ft |
| | **Min RRV** = | 5,851.4 | cu ft |

The total impervious surface created and or modified by the proposed project is 2.9 acres. The impervious surface treated by the proposed Infiltration Basin totals 3.56 acres as shown in the calculations above. This exceeds the impervious area affected by the project. By treating a greater area of impervious surface than required, the overall water quality treatment provided prior to the discharge location exceeds the requirements of the NYSDEC Design Manual.

Water quality requirements for the proposed project will be achieved via a runoff reduction practice. Runoff reduction practices will satisfy the minimum required runoff reduction volume (RRv) by use of direct infiltration via infiltration basin. For this design, the entire WQv is provided in a runoff reduction practice so 100% of the RRv will be achieved.

***Pretreatment***

Pretreatment is provided in deep sumps in all of the catch basins prior to entering into the proposed infiltration basin.

## 5.2 Proposed Stormwater Management – Water Quality

The design observation points have been modeled in Hydro CAD and represent the total flow leaving the project drainage areas. Three different drainage points have been evaluated based on the proposed site development. The drainage analysis points are shown on the pre and post drainage area maps in **Appendix O.** The table below displays the peak discharge rates for the design points and demonstrates that discharge rates for post construction are less than or equal to what is currently produced at the design points meeting the requirements of Overbank Flood Protection and Extreme Flood Protection.

Channel Protection Volume is not required if the Runoff Reduction volume is reduced onsite through runoff reduction techniques or infiltration practices.

| Peak Flow Discharge Rate DP-1 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 3.7 | 1.3 | **-2.3** |
| 2 | 5.7 | 1.8 | **-3.8** |
| 10 | 11.8 | 3.2 | **-8.6** |
| 100 | 27.7 | 6.4 | **-21.4** |

| Peak Flow Discharge Rate DP-2 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 1.3 | 1.4 | **0.0** |
| 2 | 1.9 | 2.0 | **0.0** |
| 10 | 3.7 | 3.7 | **0.0** |
| 100 | 8.1 | 8.0 | **-0.1** |

| Peak Flow Discharge Rate DP-3 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 1.0 | 0.0 | **-1.0** |
| 2 | 1.7 | 0.0 | **-1.7** |
| 10 | 4.0 | 0.0 | **-4.0** |
| 100 | 10.2 | 0.0 | **-10.2** |

| Peak Flow Discharge Rate OVERALL | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 6.0 | 2.7 | **-3.3** |
| 2 | 9.3 | 3.8 | **-5.5** |
| 10 | 19.5 | 6.9 | **-12.6** |
| 100 | 46.0 | 14.3 | **-31.7** |

### 5.3 Hydraulic Grade Evaluation

The stormwater model has been developed to show the proposed storm system has the capacity to adequately convey stormwater runoff during large storm events. The hydraulic analysis for the 25 year storm event can be found in **Appendix P**. The model shows the peak water elevation does not exceed the elevations available in the storm system.

## 6.0 PERMANENT STORMWATER MANAGEMENT FEATURES

### 6.1 Conveyance Piping

Storm runoff from developed areas will be conveyed to and through the stormwater system by a series of underground piping and surface flows. Due to relatively small watershed areas associated with each catch basin, the SCS Unit Hydrograph TR-55/TR-20 Method and inlet capacities for circular pipes were used for pipe sizing. In general, piping is designed such that:

- All proposed piping is sized to accommodate the peak flow from the 25-year 24-hour storm, as prescribed by the local authority.
- Flow capacity is sufficient to convey runoff to the receiving discharge points.
- Strength is sufficient to withstand the soil cover and vehicle loads.
- In some instances, the existing site drainage system is not capable of conveying all of the runoff contributing to the drainage structure. The model shows that the basins fill and sheet flow overland to the next available drainage structure in large storm events. In no cases does the "surcharging" exceed 6 inches. In these locations the post condition has been improved to convey the flow or reduce the "surcharging."

### 6.2 Infiltration Basin

Infiltration Basins are proposed to collect and treat runoff. Infiltration Basin areas are shallow stormwater basins designed to storm and infiltrate stormwater runoff into the native soils. In general, the basins have been designed so that:

- Flow capacity is sufficient to infiltrate into existing soils.
- Storage and exfiltration rates are sufficient to accommodate water quality volumes.
- Outlet and flow capacity is sufficient to bypass flows from larger storms.

## 7.0 STORMWATER EROSION AND SEDIMENT CONTROLS

Several types of permanent and temporary storm water pollutant controls are required to be installed and implemented for pre-construction, during construction and post-construction as shown on the

Construction Plans and per the NYSDEC SPDES General Permit. Guidelines and recommendations can be found in the "New York State Standards and Specifications for Erosion and Sediment Control."

The permanent storm water management system has been designed to accommodate peak storm flows utilizing catch basins, piping and grass swales.

Selection of temporary storm water controls will be on an "as needed basis" and will depend on the specific conditions of the site. Since site characteristics can change significantly during construction, it is important to monitor the site regularly to ensure the proper selection and implementation of the necessary controls. These controls include, but are not limited to, silt fence, drainage swales, check dams, hay bales, stone construction entrances, sediment traps and seeding and mulching.

## 7.1 Erosion and Sediment Controls

### ***Temporary Stabilization***

Silt fences, drainage swales, stabilized stone construction entrances, erosion control blankets, seeding and mulching, as well as other controls will be utilized as temporary surface water management features. See the Erosion and Sediment Control Plan(s) and details sheets for the location, size, quantity and details of the temporary stormwater management features as described below.

### ***Silt Fence***

Silt fence will be used as necessary to reduce the sediment load in the receiving drainage ditches and as a perimeter sediment control device. In addition, silt fencing will be placed on the downslope sides of all disturbed areas 5 ft. from the toe of the slope until more permanent drainage and erosion control structures are established. In cases with environmentally sensitive areas adjacent to the downslope sides of disturbed areas, silt fencing should be placed at the toe of the slope outside the sensitive area. All silt fence are to be 36" minimum length with built in woven wire mesh (min. 6X6 14 ½ gauge) unless otherwise specified on the construction details.

### ***Inlet Protection***

Storm drain inlet protection measures prevent soil, sediment, and debris from entering storm basins. In unpaved areas inlet protection shall consist of a row of silt fence completely encircling the drain inlet. In paved areas inlet protection can consist of stone and block, silt sox, or hanging filter traps as specified on the plans.

### ***Stabilized Stone Construction Entrance***

A construction entrance is used at all entrances and exists to construction activities. The stone construction entrance is stabilized to reduce tracking of mud and dirt onto surrounding roads and surfaces.

### ***Erosion Control Blanket***

Erosion control blankets are used on steep slopes to provide adequate protection after the slopes have been graded and prior to the establishment of proper vegetation. Blankets are made from many forms of materials and products. Refer to the site specific details for the erosion control blankets to be used for this job. Erosion control mats are required on all slopes which exceed 1V:2H.

***Seeding and Mulching***

Seeding and mulching is one of the most important and underutilized erosion control practices. Exposed earths pose the greatest risks for erosion and sediment. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. Temporarily Ceased means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

***Soil Stockpile***

A soil stockpile is formed with soil excavated to provide proper building elevations. Stockpiled soil is later used to contour the surface to the desired grades, removed from the site, or the material is used for reclamation/restoration of the region following the removal of roads and facilities. All soils piled onsite must be completely enclosed by silt fence around the toe of the slope. The site fence should be installed a minimum of 2 feet from the toe of the slope. The soil pile should have a maximum side slope of 1V:2H. All soil piles must be stabilized with seed and mulch or covered with a plastic tarp if the soil will not be used within fourteen (14) days from the date the current soil pile was created.

***Permanent Stabilization***

Permanent stormwater stabilization measures include catch basins, piping and other stormwater structures as described in sections 5 and 6. In all instances, the structures associated with the stormwater management system have been sized to accommodate peak flows from the appropriate storm events as required by the governing municipality. All lawns, basins and swales will be permanently seeded and mulched and maintained as necessary to prevent overgrowth.

***Concrete Washout Areas***

Concrete washouts are used to contain concrete and liquids when the chutes of concrete mixers and hoppers are cleaned after a delivery. The washout facility consolidates the liquids and allows them to harden for easy disposal. This prevents contaminated liquids from flowing offsite or leaching into the groundwater aquifer.

## 7.2 Other Pollutant Controls

***Paints and Solvents***

During construction temporary structures such as construction trailers may be moved on site to store items such as paints, solvents and gasoline pertinent to the continuation of construction activities. The intention of these structures is to shelter potential contaminants from stormwater and reduce the potential of toxic chemicals from entering the stormwater runoff due to construction activities.

Solvents and detergents that will be used for regular cleaning and maintenance of construction vehicles or temporary structures may be stored on-site. Solvents shall be used in cleaning machinery pursuant to 6 NYCRR Part 750. After use, solvents shall be disposed of in approved containers and removed from site at scheduled intervals.

***Fuels***

Fuel for construction equipment shall either be obtained from a licensed distributor of petroleum products or from an approved above ground storage tank on site. A distributor may be contracted to arrive on site periodically and fill all equipment as necessary. All distributors of petroleum products must have adequate liability insurance to mitigate and clean up any spills that occur on site as well as obtain appropriate permits and licenses from the NYSDEC. All above ground storage tanks with a combined capacity of 1,100 gallons shall be registered with the NYSDEC pursuant to 6 NYCRR Part 614 Standards for New and Substantially Modified Petroleum Storage Facilities.

Fuel from construction vehicles may come into contact with stormwater when vehicles are stored outside. Good housekeeping and preventative maintenance procedures shall be implemented to ensure fuel spills and leaks are minimized during refueling and storage. Any small-scale fuel or oil spills must be remedied immediately and contaminated soils shall be disposed of appropriately. A licensed spill prevention and response team shall handle large-scale gasoline spills.

Oil and other petroleum products may be stored on site, in limited quantities, to ensure the continued operation of construction equipment in the event a scheduled delivery is unavailable. Items shall be stored in their original containers within temporary structures and shall not be exposed to stormwater. Used oil and petroleum products shall be stored in approved containers until recycled or disposed of at an approved disposal facility.

***Temporary Facilities***

Temporary sanitary facilities may be located on site for construction workers. This facility shall be located in an accessible and visible location. Such a facility shall be leak and tip proof. A waste management company may be contracted to arrive on site and provide the routine pumping and sanitization of the facility. Such a company shall have adequate liability insurance to mitigate and clean up any spills that occur on site as well as appropriate permits and licenses from NYSDEC.

***Dust Control***

Construction vehicles shall enter and exit the site at the stabilized construction entrance. The construction entrance will trap dust and mud that would otherwise be carried off-site by construction traffic. Water trucks will be used as needed during construction to reduce dust generated on the site. The general contractor will provide dust control in compliance with applicable local and state dust control regulations. The construction entrances will be maintained during the life of the construction and repaired, and/or cleaned, periodically to ensure proper function.

***Dewatering***

If dewatering is required the water must be free of silt and sediment prior to discharge offsite or to any existing water bodies. If sediment is present, methods of sediment removal may include, but are not limited to; silt bags, temporary sediment traps, temporary sediment basins, or sheet flow across stabilized vegetated surfaces. As the quantity and quality of water cannot accurately be determined prior to excavation dewatering practices must be determined during construction and should be approved by the site engineer prior to commencing any dewatering activities.

***Solid Waste***

No solid materials are allowed to be discharged from the site with stormwater. All solid waste shall be collected and placed in containers. The containers will be emptied periodically by a contract trash disposal service and hauled away from the site.

***Thermal Pollution***

Stormwater that comes in contact with roadways, driveways, parking lots or other impermeable surfaces may increase in temperature during warm weather. If stormwater is discharged into surface water bodies, the temperature of the water body may also increase, potentially threatening plant and animal species sensitive to temperature changes as well as providing an environment that may cause nuisance species to flourish.

After development is complete, impervious areas shall be graded to channel water to catch basins and culverts, which in turn convey stormwater to the stormwater management basin. All stormwater shall be stored and treated within the basins and shall be released over a 24 hour period, which shall minimize the potential for raising the temperature of any downstream water bodies.

## 7.3 Best Management Practices

Throughout construction, care shall be taken to ensure sediment does not enter surface water bodies and chemicals do not enter stormwater, potentially contaminating surface and groundwater supplies. The following Best Management Practices (BMP) shall be observed to maintain responsible environmental practices on the construction site.

***Good Housekeeping***

Good housekeeping is essential to reducing the risk of contaminating runoff waters during every stage of construction. The General Contractor shall ensure supervisors train each employee in good housekeeping practices as they pertain to the implementation of this SWPPP.

Immediately following mobilization, the General Contractor shall take an inventory of all equipment and containers containing hazardous or toxic materials and submit this inventory to the Owner/Developer to keep on-site with this Stormwater Pollution Prevention Plan. This inventory shall be updated regularly to reflect changes in the quantity or type of hazardous and toxic materials stored on site. In the event of a spill, the Spill Response Team can refer to the inventory if the contents of the spill are unknown.

All equipment shall be operational while it is stored on site. Inspections shall be conducted regularly to ensure all equipment is free of leaks and that oil and grease are not in contact with soils or stormwater. Portable equipment such as chain saws, drills, as well as hand tools, must be placed within a trailer or under cover at the end of each workday.

A storage area shall be designated on-site where all hazardous or toxic materials are stored. Each employee shall return the materials to the designated storage area following use. Chemicals including oil, grease, solvents and detergents shall be stored on-site in approved containers only. Used chemicals shall be disposed of in refuse containers and removed periodically. Containers shall be regularly inspected to ensure the integrity of the container and sealed to prevent leaks.

A scheduled clean-up shall occur at the end of each workweek. During this clean up, empty containers of solvents, oils, grease, paints and detergents shall be disposed of, containers of gasoline shall be placed in trailers where they are not in contact with stormwater and the inventory shall be updated. Empty containers shall not be permitted on the ground.

***Preventative Maintenance***

All on-site vehicles must be inspected regularly for oil and grease leaks. All leaks shall be repaired immediately upon obtaining the appropriate equipment. If the leak cannot be fixed immediately, it shall be temporarily mitigated to prevent the flow of contaminants onto the soil and potentially into the stormwater. If necessary, the reservoir will be drained to stop the flow of contaminants or the vehicle will be moved under cover. Drip pans shall be used when performing any maintenance or cleaning on construction vehicles.

***Spill Prevention and Response***

The safety of employees and neighbors shall be of utmost concern when hazardous or toxic chemicals are stored or utilized on-site. Safety Data Sheets (SDS) shall be obtained for all toxic or hazardous substances that are stored on-site to provide employees with a valuable database in assessing risk in the event of a spill.

Any above ground storage tanks on site shall be installed pursuant to 6 NYCRR Part 614. According to the New York State "Minimum Standards for New and Substantially Modified Above Ground Storage Facilities", all tanks installed must meet or exceed the design criteria in one or more of the following design or manufacturing standards: UL No. 142, UL No. 58, API Standard No. 650, API Standard No. 620, CAN4-S601-M84 or CAN4-S630-M84. Tanks constructed of wood, concrete, aluminum, fiberglass reinforced plastic as well as riveted or bolted steel tanks are not permitted. All tanks must have installed leak detection systems, secondary containment, corrosion protection, and undergo periodic monitoring pursuant to all Part 614 requirements.

Should a spill occur, a licensed spill contractor will be contacted to mitigate the potential negative effects of a spill. Additionally, the NYSDEC must be notified of a release of petroleum products. The General Contractor shall have trained employees knowledgeable in the location of sorbent, brooms, rags and mops in the event of a small-scale spill. An inventory of equipment and its location shall be posted in a visible location as well as kept in proximity to this Pollution Prevention Plan. If the General Contractor does not have Hazardous Materials trained employees on site, a firm that specializes in handling spills, soil and water contamination shall be called.

After a spill occurs, all personnel not trained in hazardous materials spill response shall be asked to evacuate the immediate area. The NYSDEC Spill Response Team shall be called to investigate the spill and determine if additional actions should be taken to ensure the safety of personnel and nearby residents. Should any employee have a suspected injury, a local emergency squad must be contacted immediately.

## 8.0 CONSTRUCTION SEQUENCE SCHEDULING

The scale of site construction does not necessitate that this project be a phased construction project; However, the construction will be sequenced to limit the exposed soils to reduce the amount of sediments in runoff water and ultimately preserve the quality of surface waters. The construction method selected

is designed to combine development with responsible land management as well as protection of sensitive environments both within the proposed development and the surrounding area.

Temporary and permanent stabilization methods will be implemented before construction begins and will be continuously modified throughout the project to provide the best methods for stormwater management and pollution prevention. For more details pertaining to construction sequence, please refer to the "NYSDEC Instruction Manual for Stormwater Construction Permit" pages 23-26. A typical and sample ordering of site construction activities is as follows:

Pre-Construction Activities

- Identify all natural resources and mark and protect them as necessary i.e., trees, vegetation, limits of disturbance.
- Identify on-site and downstream surface water bodies and install controls to protect them from sedimentation.
- Establish temporary stone construction entrance pads to capture mud and debris from the tires of construction vehicles.
- Install perimeter sediment controls such as silt fences, as shown on the project plans.
- Install temporary construction fencing as shown on the project plans or as directed by the site engineer.
- All earth disturbances during this phase should be limited to work necessary to install erosion and sedimentation controls.

During Construction Activities

- Complete building demolition in accordance with notes and procedures identified on the demolition plan.
- As site grading is completed install runoff and drainage controls as shown on the project plans and as necessary. These controls should reduce run-off flow rates and velocities, as well as divert off site and clean run-off.
- Stabilize the conveyance system, i.e., ditches, swales, berms etc. by seeding, mulching and installing rock check dams.
- Utilize practices to infiltrate stormwater runoff as much as possible when applicable.
- Stabilize all stormwater runoff outlets as shown on the project plans and as necessary.
- Limit soil disturbance to small areas and preserve as much of the existing vegetation as practical.
- Complete all underground utility improvements prior to installation of hard surface improvements.
- All topsoil stockpiles should be staged in an area away from surface waters and storm drains and should be protected and stabilized.
- Earth disturbance is not allowed in established buffers, within any regulated distance from wetlands, or within the high water line of a body of water affected by tidal action or other such protected zones.
- At any location where surface run-off from disturbed or graded areas may flow off-site, sedimentation control measures must be installed to prevent sedimentation from being transported.
- Regular inspections and maintenance should be performed as described in the following section.

Post-Construction Activities

- Identify the permanent structural or non-structural practices that will remain on the site.
- Provide an Operation & Maintenance (O&M) manual to the new Owner/Developer who is expected to conduct the necessary O&M over the life of the structures as described in Section 10.0 of this report.

## 9.0 IMPLEMENTING THE SWPPP

### 9.1 Employee Training

All employees involved in site-development activities shall be aware of the stipulations outlined in this SWPPP as it pertains to their everyday activities. All such employees must be able to recognize potential problems and have the ability to provide either temporary or permanent stabilization measures, as appropriate, to mitigate stormwater runoff before problems occur. The NYSDEC periodically holds workshops on erosion and sediment control. It is recommended that the affected and responsible on-site personnel attend these workshops to ensure training is current and up to date. Contact the NYSDEC for more information.

### 9.2 Site Inspections

The Owner/Developer must have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in this SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction. A qualified professional is defined as a Professional Engineer or Landscape Architect licensed to practice in New York State or is a Certified Professional in Erosion and Sediment Control (CPESC). Once construction begins regular inspection of construction activities by the qualified professional are required at least once every 7 days to ensure deficiencies regarding erosion and sedimentation are reported and corrected. It is the responsibility of the Contractor to continuously monitor construction activities to ensure the measures outlined in this report are being implemented.

Areas which have not been fully stabilized, areas used for materials storage and all structural control measures must be inspected once every 7 calendar days to monitor erosion and assess the risk of sedimentation. For sites where soil disturbance activities are on-going and the owner operator has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the qualified inspector shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. For areas construction sites where soil disturbance activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the qualified inspector shall conduct a site inspection at least once every (30) calendar days.

A thorough site evaluation shall be performed to determine the continued applicability of the permit and assess the need to make any changes that have not already been reflected in this SWPPP. The SWPPP shall be reviewed to evaluate its overall effectiveness in preventing sediment laden stormwater runoff. Temporary and permanent stabilization methods shall be assessed and new methods shall be established, should any method be determined to be inadequate.

A copy of the SWPPP must be maintained on site at all times in the field logbook. The Owner/Developer must maintain a record of all inspection reports with the onsite SWPPP. The SWPPP and inspection reports must be maintained on site and be made available to the permitting authority upon request.

## 9.3 Maintenance

It shall be necessary to maintain all temporary controls installed as well as vegetative measures across the site. Maintenance shall also be necessary to ensure the permanent structural features, such as underground chambers, catch basins and conveyance piping remain optimally functional and continue to reduce the risk of sediment loading of surface water bodies. All controls shall be repaired or replaced as necessary and as noted on the inspection reports as prepared by the Owner/Developer's Qualified Representative.

During construction, maintenance of these stabilization measures shall be the responsibility of the General Contractor or appropriate Subcontractors. Vegetative plantings must not be allowed to become overgrown. Vegetation shall be removed should it be ineffective and be replaced with a variety of grasses, trees and shrubs more suitable for preventing stormwater runoff. Silt fences must be inspected regularly to ensure that they are still effective and their capability to reduce stormwater runoff has not been reduced due to prolonged sun exposure.

Piping and catch basin sumps shall be cleaned out periodically to prevent the collection of sediment that will reduce the maximum flow. Sediment must be removed from sediment basins, infiltration basins or traps whenever their capacity has been reduced by 50 percent of their design capacity.

Guidelines and recommendations for installation and maintenance practices can be found in the "New York State Standards and Specifications for Erosion and Sediment Control."

## 9.4 Progress Reports and Summaries

Progress reports shall be completed by the General Contractor and all Subcontractors weekly to document any conditions, which may affect adherence to the construction schedule and may ultimately result in changes to the stormwater pollution prevention plan.

Each progress report must contain the project, date, weather conditions and a brief description of progress made throughout the week, including the use of temporary and permanent stabilization measures on all exposed soils. The progress reports shall be filed with this SWPPP in the on-site logbook.

Additionally, as described in Section 1.1 of this report, the Owner/Developer's Qualified Representative will prepare weekly inspection reports and quarterly summaries. These reports should be maintained in the onsite logbook as well.

## 9.5 Certification

Prior to starting construction, the Owner/Developer must certify that to the best of their knowledge this SWPPP was prepared in accordance with the requirements in the NYSDEC SPDES General Permit and that it meets all federal, state and local erosion and sediment control requirements. The certifying statement is presented in **Appendix B** of this report.

The General Contractor and all appropriate Subcontractors are responsible for reading and understanding the SWPPP and are also required to certify the SWPPP by signing the certifying statement presented in **Appendix B** of this report.

All inspection reports and inspection quarterly summaries are to be certified by an authorized person who has responsibility for the overall operation of the site such as a project manager or site superintendent. Certification of these documents is executed by signing the certifying statements presented at the end of the inspection reports.

## 10.0 POST CONSTRUCTION INSPECTION & MAINTENANCE

Post-construction, regularly scheduled inspections and maintenance will be necessary to ensure the permanent structural features such as the stormwater management basins and the conveyance system components remain optimally functional and continue to reduce the risk of sediment loading of surface water bodies. Follow manufactures guidelines and the detailed construction installation and maintenance guidelines included in **Appendix C and D** for all stormwater management practices.

When construction is complete, the Contractor will remain responsible for the site until the entire site has reached final stabilization. The site is considered stabilized when all soil disturbing activities have been completed and a uniform, perennial vegetative cover, with a density of 80%, has been established or equivalent stabilization measures, such as the use of mulches or geotextiles, have been employed on all unpaved areas and areas not covered by permanent structures. Weekly inspections should continue until the site has reached this point.

At the time of final stabilization, the Owner/Developer's Qualified Representative shall perform a final inspection of the site and certify that the site has successfully undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls such as silt fence, not needed for long term use, have been removed. All storm water practices must be clean and free of sediment and or debris or must be cleaned by the contractor prior to turning the maintenance responsibilities over to the Owner/Developer. At this point, the Owner/Developer is responsible for the following:

1. Submit to the NYSDEC a NOT prepared by the Owner/Developer's Qualified Representative as described in Section 1.1 of this report.
2. Identify all the permanent stormwater management structures that have been constructed and provide the New Owner/Developer with an Operations and Maintenance (O&M) manual that will be necessary in order for the structures to function properly after the site has been stabilized. Section 10.0 of this report satisfies the O&M requirements.
3. Transfer the Water Quality and Quantity Report and SWPPP to the New Owner/Developer.
4. Certify that the permanent structures have been constructed as described by this plan and the drawings.

The new Owner/Developer shall overtake responsibility of inspecting and maintaining drainage and erosion control features over the lifetime of the structures. Maintenance personnel, employed by the New Owner/Developer, must be aware of the SWPPP and should be trained to recognize signs that stabilization measures may not be performing optimally or are failing. The inspection of on-site stabilization measures

will become part of routine preventative maintenance practiced by the New Owner/Developer and his employees.

10.1 Inspection

***Overall Site Inspection***

The overall site, embankments, vegetation and stormwater conveyance system components including catch basins, culverts, swales and outlets should be inspected regularly. The inspections should include but are not limited to:

1. Density and condition of vegetation and ground cover.
2. Erosion, differential settlement or cracking of embankment.
3. Bulging or sliding of toe of embankments.
4. Sedimentation of on-site or downstream water bodies.
5. Sedimentation of culverts or swales.
6. Sedimentation of lawn areas, paved areas, within the sand filter units or catch basin sumps.
7. Accumulation of pollutants, including oils or grease in catch basin sumps.
8. Damage or fatigue of storm sewer structures or associated components.

***Water Quality Practice Inspection (if applicable)***

All water quality practices and all associated features should be inspected regularly. The inspections should include but are not limited to:

1. Density and condition of vegetation and ground cover.
2. All features of the practice should be clear of brush and tree growth.
3. Erosion, differential settlement or cracking of basin embankments.
4. Bulging or sliding of toe of embankments.
5. Presence of animal burrows.
6. Evidence of clogging or sedimentation at inlets or outlets.
7. Erosion of the flow path through the detention basin.
8. Spillways should be inspected for structural integrity.
9. Spillways should be clear of obstructions.
10. Inlet/outlet riprap should be inspected for scour and dislodged stones and obstructions should be removed.
11. Accumulation of sediments at inlets, outlets and silt traps.

Detailed inspection checklists for each of the Stormwater Management Practices can be found in **Appendix C and D**.

10.2 Maintenance

***Overall Site Maintenance***

Maintaining vegetative and structural measures for soil protection is necessary to keep the storm water system functioning properly. Maintenance should occur on a regular basis and should include but is not limited to:

*Seasonal Maintenance*

1. Vegetated areas should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year but may require more frequent mowing's depending on the growth rate.
2. Trees and unwanted vegetation should be removed from inlet structures, outlet structures, banks, and berms to prevent clogging or weakening of the berms and structures.
3. Paved areas should be swept at least twice a year and in the early spring for removal of deicing materials.
4. Accumulation of litter and debris should be removed during each mowing or sweep operation.
5. Structural components of the storm sewer system such as culverts and catch basins which require repair or replacement should be addressed immediately following identification.
6. Cleanout of catch basin sumps should occur when accumulation of sediments and debris are within six inches of the catch basin outlet pipe.
7. Swale and drainage way maintenance will include periodic mowing, occasional spot reseeding and weed control. Weeds and woody plants should be eradicated or cut back since they reduce the efficiency of the drainage way.
8. Rip rap lined inlet and outlets that show signs of scour should be repaired. Weed and brush growth at the inlets and outlets should be controlled as needed.

*Winter Maintenance*

1. Remove snow and ice from inlet structures, basin inlet and outlet structures and away from culvert end sections.
2. Snow removed from paved areas should not be piled at inlets/outlets of the stormwater management basin.
3. Use of deicing materials should be limited to sand and environmentally friendly chemical products. Use of salt mixtures should be kept to a minimum.
4. Sand used for deicing should be clean, course material free of fines, silt, and clay.
5. Materials used for de-icing should be removed during the early spring by sweeping and/or vacuuming.

*Underground Practices Maintenance*

1. A consistent schedule of inspection shall be observed for all system components to insure continued effective operation.
2. Areas surrounding the surface access points shall be kept clear of overgrowth.
3. All inspections shall be logged. A specific schedule, on a quarterly basis, shall be maintained by the system owner/operator and a periodic replacement of the water quality practice media shall be schedule for minimally every two years.
4. Accumulation of litter and debris should be removed during each mowing or sweep operation.
5. Structural components of the system which require repair or replacement should be addressed immediately following identification.
6. Spillways should be cleared of obstructions.
7. Inlet/outlet riprap damage due to scouring should be repaired.

For any proprietary practices refer to manufacturer specifications for additional maintenance requirements. Detailed maintenance checklists for each of the Stormwater Management Practices can be found in **Appendix C and D**.

## 11.0 CONCLUSION

**The Engineer has designed a NYSDEC-compliant Stormwater Management Plan for the Vassar College Turf Field Project. Overall, the proposed stormwater management system reduces and/or eliminates the impacts of the proposed re-development by controlling and treating stormwater through the use of catch basins, storm-sewer piping, and infiltration basin. Offsite storm discharges and velocities for the proposed project are less than what currently exists. The stormwater management system will function adequately and will not adversely affect adjacent or downstream properties provided it is constructed and maintained as outlined in this plan and as shown on the site plans.**

# APPENDIX A

Construction Site Log Book

**STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM**
**FOR CONSTRUCTION ACTIVITIES**

# CONSTRUCTION SITE LOG BOOK

## Table of Contents


I. Pre-Construction Meeting Documents.

a. Preamble to Site Assessment and Inspections

b. Operator's Certification

c. Qualified Professional's Credentials & Certification

d. Pre-Construction Site Assessment Checklist

a.

II. Construction Duration Inspections

a. Directions

b. Modification to the SWPPP

III. Monthly Summary Reports

IV. Monitoring, Reporting, and Three-Month Status Reports

a. Operator's Compliance Response Form

a


Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

## I. PRE-CONSTRUCTION MEETING DOCUMENTS

**Project Name** _____

**Permit No.** _____ **Date of Authorization** _____

**Name of Operator** _____

**Prime Contractor** _____

**a. Preamble to Site Assessment and Inspections** -The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

**b. Operators Certification**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

**Name (please print):**_____

**Title** _____**Date:**_____

**Address:** _____

**Phone:** _____ **Email:**_____

**Signature:**_____

**c. Qualified Professional's Credentials & Certification**

" I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

**Name (please print):**_____

**Title** _____**Date:**_____

**Address:** _____

**Phone:** _____ **Email:**_____

**Signature:**_____

**d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)**

1. Notice of Intent, SWPPP, and Contractors Certification:

**Yes No NA**

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

**Pre-construction Site Assessment Checklist (continued)**

2. Resource Protection

**Yes No NA**

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?

[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.

[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

**Yes No NA**

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.

[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.

[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.

[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

**Yes No NA**

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.

[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.

[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

**Yes No NA**

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.

[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals

[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.

[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

**Yes No NA**

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.

[ ] [ ] [ ] The plan is contained in the SWPPP on page _____

[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

## II. CONSTRUCTION DURATION INSPECTIONS

**a. Directions:**
**Inspection Forms will be filled out during the entire construction phase of the project.**
Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

**SITE PLAN/SKETCH**

| | |
|---|---|
| **Inspector (print name)** | **Date of Inspection** |
| **Qualified Professional (print name)** | **Qualified Professional Signature** |

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

**Maintaining Water Quality**

**Yes No NA**

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

**Housekeeping**

1. General Site Conditions

**Yes No NA**

[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

**Yes No NA**

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

**Runoff Control Practices**

1. Excavation Dewatering

**Yes No NA**

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

**Yes No NA**

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

**Yes No NA**

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

**Runoff Control Practices (continued)**

4. Stone Check Dam

**Yes No NA**

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

**Yes No NA**

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

**Soil Stabilization**

1. Topsoil and Spoil Stockpiles

**Yes No NA**

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

**Yes No NA**

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

**Sediment Control**

1. Stabilized Construction Entrance

**Yes No NA**

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

**Yes No NA**

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.

**Sediment Control (continued)**

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

**Yes No NA**

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

**Yes No NA**

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

**Yes No NA**

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

**CONSTRUCTION DURATION INSPECTIONS**
**b. Modifications to the SWPPP (To be completed as described below)**

The Operator shall amend the SWPPP whenever:
1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

**Modification & Reason:**

## III. Monthly Summary of Site Inspection Activities

| Name of Permitted Facility: | Today's Date: | Reporting Month: |
|---|---|---|
| Location: | Permit Identification #: | |
| Name and Telephone Number of Site Inspector: | | |

| Date of Inspection | Regular / Rainfall based Inspection | Name of Inspector | Items of Concern |
|---|---|---|---|
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***Owner/Operator Certification:***

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

_____ _____

Signature of Permittee or Duly Authorized Representative  Name of Permittee or Duly Authorized Representative  date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

# APPENDIX B

Owner/Developer and Contactor Certification Forms

## CONTRACTOR CERTIFICATION

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York state Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards.* Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."

| | | |
|---|---|---|
| Contractor Signature | Title | Date |
| Contractor Signature | Title | Date |
| Contractor Signature | Title | Date |
| Contractor Signature | Title | Date |

NEW YORK STATE | Department of Environmental Conservation

# Owner/Operator Certification Form

***SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)***

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.

**Project/Site Name:** Vassar College Turf Field

**eNOI Submission ID:** HQJ-SRQZ-KTR39

**eNOI Submitted by:** ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

## Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

MARYANN — Owner/Operator First Name

R — MI

PILON /ON BEHALF OF VASSAR COLLEGE — Owner/Operator Last Name

Maryann R. Pilon ON BEHALF OF VASSAR COLLEGE

Signature

1/22/26

Date

Revised: January 2025

# SWPPP Preparer Certification Form

**SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)**

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

| | |
|---|---|
| **Project/Site Name:** | Vassar College Turf Field |
| **eNOI Submission ID:** | HQJ-SRQZ-KTR39 |
| **Owner/Operator Name:** | Vassar College |

## Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

| Rodney | E | Morrison |
|---|---|---|
| SWPPP Preparer First Name | MI | SWPPP Preparer Last Name |



Signature

01/22/2026

Date

# APPENDIX C

Pre/Duration Construction Maintenance Inspection Checklist (NYSDEC Sample)

# INFILTRATION BASIN CONSTRUCTION INSPECTION CHECKLIST

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

| CONSTRUCTION SEQUENCE | SATISFACTORY /UNSATISFACTORY | COMMENTS |
|---|---|---|
| **1. Pre Construction** | | |
| Runoff | | |
| Soil Permeability Tested | | |
| Groundwater / Bedrock Depth | | |
| 2. **Excavation** | | |
| Size and Location | | |
| Side Slopes stable | | |
| Excavation does not compact subsoils | | |
| 3. **Embankment** | | |
| Barrel | | |
| Anti-seep collar or Filter diaphragm | | |
| Fill Material | | |
| 4. **Final Excavation** | | |
| Drainage area stabilization | | |
| Sediment removed from facility | | |
| Basin floor tilled | | |
| Facility stabilized | | |

# INFILTRATION BASIN CONSTRUCTION INSPECTION CHECKLIST

| CONSTRUCTION SEQUENCE | SATISFACTORY /UNSATISFACTORY | COMMENTS |
|---|---|---|
| **5. Final Inspection** | | |
| Pretreatment facility in place | | |
| Inlets / outlets | | |
| Contributing watershed stabilized before flow is routed to the facility | | |

**Comments:**

**Actions to be Taken:**

# APPENDIX D

Post Construction Operation and Maintenance

# Infiltration Trench Operation, Maintenance, and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

| MAINTENANCE ITEM | SATISFACTORY / UNSATISFACTORY | COMMENTS |
|---|---|---|
| **1. Debris Cleanout (Monthly)** | | |
| Trench surface clear of debris | | |
| Inflow pipes clear of debris | | |
| Overflow spillway clear of debris | | |
| Inlet area clear of debris | | |
| **2. Sediment Traps or Forebays (Annual)** | | |
| Obviously trapping sediment | | |
| Greater than 50% of storage volume remaining | | |
| **3. Dewatering (Monthly)** | | |
| Trench dewaters between storms | | |
| **4. Sediment Cleanout of Trench (Annual)** | | |
| No evidence of sedimentation in trench | | |
| Sediment accumulation doesn't yet require cleanout | | |
| **5. Inlets (Annual)** | | |

| MAINTENANCE ITEM | SATISFACTORY / UNSATISFACTORY | COMMENTS |
|---|---|---|
| Good condition | | |
| No evidence of erosion | | |
| **6. Outlet/Overflow Spillway (Annual)** | | |
| Good condition, no need for repair | | |
| No evidence of erosion | | |
| **7. Aggregate Repairs (Annual)** | | |
| Surface of aggregate clean | | |
| Top layer of stone does not need replacement | | |
| Trench does not need rehabilitation | | |

## Comments:

_____

_____

_____

_____

_____

_____

## Actions to be Taken:

_____

_____

_____

_____

_____

_____

# APPENDIX E

Notice of Intent (NOI)

# Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.14

**(Submission #: HQJ-SRQZ-KTR39, version 1)**

## Details

| | |
|---|---|
| **Originally Started By** | Rodney Morrison |
| **Alternate Identifier** | Vassar College Turf Field—Region 3 |
| **Submission ID** | HQJ-SRQZ-KTR39 |
| **Status** | Draft |

## Form Input

### Eligibility

**Disturbance Threshold**

**1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?**
Yes

**1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?**
No

**1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?**
No

**1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?**
No

**Other SPDES Permits**

**2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?**
Yes

**Threatened and Endangered Species**

**3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?**
No

**State Historic Preservation Act (SHPA)**

**4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?**
No

---

4.a. Will the construction activity:

a) occur within an archeologically sensitive area indicated on the sensitivity map, or

b) have the potential to affect a property that is listed or determined to be eligible for listing on the National or State Registers of Historic Places, or

c) include a new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined is a historically/archeological significant building, structure, or object:

- 1-5 acres of disturbance—20 feet
- 5-20 acres of disturbance—50 feet
- 20+ acres of disturbance—100 feet?

No

---

4.b. Is there documentation at the construction site demonstrating:

a) that the construction activity is not within an archeologically sensitive area indicated on the sensitivity map, and that the construction activity is not immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and

b) that there is no new permanent building to be built on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeological significant:

- 1-5 acres of disturbance – 20 feet
- 5-20 acres of disturbance – 50 feet
- 20+ acres of disturbance – 100 feet?

Yes

**State Environmental Quality Review (SEQR)**

**5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?**
Yes

**5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?**
Yes

**Uniform Procedures Act (UPA) Permits**

**6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001? Select "Yes" if no UPA permits, or the equivalent, are required for this construction activity.**
Yes

**Steep Slope**

**7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?**
No

## Owner/Operator Information

**8. Owner/Operator Name**
Vassar College

**9. Owner/Operator Contact Person Information**

| First and Last Name | Phone | E-mail |
|---|---|---|
| Maryann Pilon | (845) 437-7179 | mpilon@vassar.edu |

**10. Owner/Operator Mailing Address**
Vassar College
124 Raymond Avenue
Poughkeepsie, NY 12604
USA

**11. Is the billing contact different from the Owner/Operator Contact?**
No

**12. What type of organization is the owner/operator?**
Other: College

## Site Information

**13. Project/Site Name**
Vassar College Turf Field

**14. Site Address**
334 Hooker Avenue
Poughkeepsie, NY 12604
Dutchess

**DEC Region**
3

**15. Site Latitude & Longitude**
41.68644489493513,-73.90435077514647

## Project Details

**16. This eNOI submission is for:**
A construction activity not part of a common plan of development or sale in accordance with Part I.D.1.a.

**17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".**
Table 2

**18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.**
Vassar College plans to enhance its current athletic facilities by replacing an existing grass field with a newly designed synthetic turf field. The project will also involve updates to the existing grass practice field and an expansion of the parking lot to better accommodate the college's requirements. Additional improvements include the installation of field amenities such as fencing, a storage shed for athletic and maintenance equipment, a scoreboard, site lighting, and bleachers equipped with a press box. Landscaping and stormwater management practices will be included as well.

---

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

**19. Total Site Area (acres)**
57.0

**20. Total Area to be Disturbed (acres)**
7.4

**21. Existing Impervious Area to be Disturbed (acres)**
1.2

**22. Future Impervious Area Within Disturbed Area (acres)**
1.8

**Nature of the project:**
Redevelopment with increase in impervious area

**23. Do you plan to disturb more than 5 acres of soil at any one time?**
No

---

24. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

**A (%)**
4

**B (%)**
51

**C (%)**
45

**D (%)**
0

**25. Enter the planned start and end dates of the disturbance activities.**

**Start Date**
03/20/2026

**End Date**
03/01/2027

**26. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.**
Vassar Lake

**27. Type of waterbody identified in question 26?**
Stream/Creek On Site

**28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?**
No

**29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?**
No

**30. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?**
No

**31. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?**
Yes

**31.a. What is the name of the municipality/entity that owns the separate storm sewer system? If the separate sewer system is owned by an MS4 Operator, enter the MS4 Operator name.**
Vassar College

**32. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?**
No

**33. Is this property owned by a state authority, state agency, federal government or local government?**
No

## Required SWPPP Components

**General SWPPP Requirements**

---

**34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?**
Yes

**35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?**
Yes

**36. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?**
Yes

**37. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the NYS Stormwater Management Design Manual?**
Yes

**37.a. Which version of the NYS Stormwater Management Design Manual was used to develop the SWPPP?**
2024

**SWPPP Preparer**

**39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:**
Professional Engineer (P.E.)

**40. Name of the person who prepared the SWPPP**
Rodney Morrison

**41. SWPPP Preparer Organization Name**
Land Resource Consultants Engineering & Surveying, LLC d.b.a Loureiro NY, P.C.

**42. SWPPP Preparer Contact Information**

| First and Last Name | Phone | E-mail |
|---|---|---|
| Rodney Morrison | 845-243-2880 | rmorrison@lrcconsult.com |

**43. SWPPP Preparer Address**
85 Civic Center Plaza, Suite 204
Poughkeepsie, NY 12601

**Download SWPPP Preparer Certification Form**

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Upload the completed form
Download SWPPP Preparer Certification Form

**44. Please upload the SWPPP Preparer Certification**
SWPPP Preparer Certification-SIGNED.pdf - 01/22/2026 11:48 AM
**Comment**
*NONE PROVIDED*

**44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?**
Yes

## Erosion & Sediment Control Criteria

**45. Has a construction sequence schedule for the planned management practices been prepared?**
Yes

## Post-Construction Criteria

**Site Planning and Soil Restoration**

**46. Identify all site planning practices that were used to prepare the final site plan/layout for the project.**
Preservation of Undisturbed Area
Preservation of Buffers
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas
Roadway Reduction
Sidewalk Reduction
Driveway Reduction
Cul-de-sac Reduction
Building Footprint Reduction
Parking Reduction

**47. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6 ("Soil Restoration") of the Design Manual.**
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

**Water Quality Criteria**

**49. Water Quality Sizing Criteria**

| Total WQv required (acre-feet) | Total RRv provided (acre-feet) | Minimum RRv (acre-feet) | Total WQv provided (acre-feet) | Sum of RRv and WQv provided |
|---|---|---|---|---|
| 0.44 | 0.44 | | | NaN |

**Water Quantity Criteria**

**50. Per Section 9.2.1.C.VI and VII of the 2024 Design Manual, is there 0% change to hydrology that increases the discharge rate and volume from the project site?**
Yes

**Operation and Maintenance**

**53. Has a long-term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?**
Yes

**53.a. Identify the entity responsible for the long-term Operation and Maintenance.**
Vassar College

## Post-Construction SMP Identification

**54. Post-Construction RR Techniques and Standard SMPs**

| RR Techniques and SMPs | Contributing Impervious Area (acres) | Total Contributing Area (acres) |
|---|---|---|
| Infiltration Basin (I-2) | 3.560 | |

**55. Alternative SMPs**

| Type of Alternative SMP | Manufacturer of the Alternative SMP | Name of the Alternative SMP | Contributing Impervious Area (acres) |
|---|---|---|---|
| *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* |

## Other Permits

**56. Identify other permits, existing and new, that are required for this project/facility.**
None

**57. Is this NOI for a change in owner/operator per Part I.G.?**
No

## MS4 SWPPP Acceptance

**59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?**
Yes

**59.a. Which form is required per Part I.D.2.b.ii.?**
MS4 SWPPP Acceptance Form

**MS4 SWPPP Acceptance Form Download**

Download the MS4 SWPPP Acceptance Form from the link below.
MS4 SWPPP Acceptance Form

**60. MS4 Acceptance or No Jurisdiction Form Upload**
*NONE PROVIDED*
**Comment**
*NONE PROVIDED*

**60.a. Has the form been signed by the principal executive officer or ranking elected official—or duly authorized representative of that person—in accordance with Part VII.J. and submitted along with this NOI?**
Yes

## Owner/Operator Certification

**Owner/Operator Certification Form Download**

Download the Owner/Operator Certification Form by clicking the link below.
Owner/Operator Certification Form

**61. Upload Owner/Operator Certification Form**
Owner Operator Certification Form-SIGNED.pdf - 01/22/2026 12:19 PM
**Comment**
*NONE PROVIDED*

**61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?**
Yes

## Additional Project Information

**62. Enter any additional pertinent project information in the text box below.**
*NONE PROVIDED*

# Attachments

| Date | Attachment Name | Context | User |
|---|---|---|---|
| 1/22/2026 12:19 PM | Owner Operator Certification Form-SIGNED.pdf | Attachment | Rodney Morrison |
| 1/22/2026 11:48 AM | SWPPP Preparer Certification-SIGNED.pdf | Attachment | Rodney Morrison |

# APPENDIX F

Notice of Termination (NOT)

# APPENDIX G

NYSDEC SPDES General Permit GP-0-25-001

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP-0-25-001

Construction General Permit (CGP)

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2025 Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator

Scott E. Sheeley JAN. 29, 2025

Authorized Signature Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

## PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *stormwater discharges* from certain *construction activities* are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York State administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

C*onstruction activities* constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**SPDES CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001**
**FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES**

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## Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

### A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:

    a. one or more acres; or

    b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or

    c. less than one acre where NYSDEC has determined that a SPDES permit is required for *stormwater discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of pollutants to *surface waters of the State*.

        i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or

        ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or

        iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or

        iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges* from the *owner's or operator's construction activities* are/were not:

    a. already covered by a different SPDES permit; or

    b. covered under a different SPDES permit that was denied, terminated, or revoked; or

    c. identified in an expired individual SPDES permit that was not renewed; or

    d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.

3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:

    a. permit issued pursuant to 6 NYCRR Part 182 for the project; or

    b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.

4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:

    a. documentation that the *construction activity* is not within an archeological buffer area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant:

        i. 1-5 acres of disturbance - 20 feet; or

        ii. 5-20 acres of disturbance - 50 feet; or

iii. 20+ acres of disturbance - 100 feet.

b. NYSDEC consultation form sent to OPRHP,[1] and copied to NYSDEC's Agency Historic Preservation Officer (APO), and

i. the State Environmental Quality Review Act (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or

ii. documentation from OPRHP that the *construction activity* will result in No Impact; or

iii. documentation from OPRHP providing a determination of No Adverse Impact; or

iv. a Letter of Resolution signed by the *owner or operator*, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA).

c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

i. No Affect; or

ii. No Adverse Affect; or

iii. Executed Memorandum of Agreement.

d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.

5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.

6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

[1] The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

*owner or operator* must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:

    a. obtain all such necessary permits; or

    b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.

8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:

    a. For linear transportation and linear utility project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb two or more acres of *steep slope*.

    b. For all other project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb one or more acres of *steep slope*.

## B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:

   a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part II. and Part III.

   b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:

      i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and

      ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and

      iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and

      iv. *Stormwater* controls are implemented in accordance with Part II. and Part III. for *discharges* from the support activity areas.

2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:

   a. Non-*stormwater discharges* listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "*Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; and

   b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and

   c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges* of *stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

## C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:

    a. Wastewater from washout of concrete; and

    b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and

    c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and

    d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

    e. Toxic or hazardous substances from a spill or other release.

## D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part I.D. The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part II. have been met; demonstrate consideration of the future risks due to climate change in accordance with Part III.A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part III. have been met.

1. An eNOI may be submitted for:

    a. *construction activities* that are not part of a *common plan of development or sale*; or

b. an entire *common plan of development or sale*; or

c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:

    i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and

    ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and

    iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or

d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:

    i. meets all other eligibility requirements of Part I.A.; and

    ii. will occur in NYSDEC's Regions 3-9; and

    iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and

    iv. will occur between November 1st and March 31st.

2. As prerequisites for submitting an eNOI, the *owner or operator* must:

    a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and

    b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:

        i. for all eNOIs:

            1. the SWPPP Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and

ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:

1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:

a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or

b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or

c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 “Governmental Immunity from Zoning and Other Legislation”; and

2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:

a. if outside the municipal boundaries of NYC: the MS4 SWPPP Acceptance Form, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and

3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.

3. Submitting an eNOI:

a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.[2]

b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.

i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

[2] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

## E. General Requirements for *Owners or Operators* with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.

2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:

   a. all areas of disturbance have achieved *final stabilization;* and

   b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.

3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:

   a. all documentation necessary to demonstrate eligibility with this permit; and

   b. this permit; and

   c. the *SWPPP*; and

   d. the signed SWPPP Preparer Certification Form; and

   e. the signed MS4 SWPPP Acceptance Form or signed NYCDEP SWPPP Acceptance/Approval Form or signed MS4 No Jurisdiction Form (when applicable); and

   f. the signed Owner/Operator Certification Form; and

g. the eNOI; and

h. the LOA; and

i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).

4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:

   a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and

   b. inspection reports in accordance with Part IV.C.4. and 6.; and

   c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and

   d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and

   e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).

5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.

6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:

   a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or

ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or

iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.

b. The written Request to Disturb Greater Than Five Acres must include:

i. The SPDES permit identification number (Permit ID); and

ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and

iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and

iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and

v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and

vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."

c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or

ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.

7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

8. If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE).[3] *Construction activity* shall not resume until written permission to do so has been received from the RWE.

9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:

   a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and

   b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and

   c. receive an updated LOA.

10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

[3] The Regional Water Manager where a DEC Region does not have a RWE.

## F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of *a construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.

2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,[4] which contains the information identified in Part I.F.3. below, if:

   a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and

   b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.

3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.

4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.

5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

[4] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

## G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:

    a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and

    b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and

    c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and

    d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and

    e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or

    f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:

        i. the revised area of disturbance and/or *impervious area(s)*; and

        ii. the revised SMP information, if applicable; and

        iii. a narrative description of what has changed; and

        iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

    *Owners or operators* must follow Part I.E.9. to modify the eNOI.

## Part II. Water Quality-Based Effluent Limitations

### A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any *discharge* to either cause or contribute to a violation of the following *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York:

1. There must be no increase in turbidity that will cause a substantial visible contrast to natural conditions; and

2. There must be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There must be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the *stormwater discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standard,* the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this permit and document in accordance with Part IV.C.4. of this permit. To address the *water quality standard* violation the *owner or operator* must include and implement appropriate controls in the *SWPPP* to correct the problem or obtain an individual SPDES permit.

If, despite compliance with the requirements of this permit, it is demonstrated that the *stormwater discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

### B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. These limitations represent the

degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement, and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

    a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:

        i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s; and

        ii. Control *stormwater discharge*s, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and

        iii. *Minimize* the amount of soil exposed during *construction activity*; and

        iv. *Minimize* the disturbance of *steep slope*; and

        v. *Minimize* sediment *discharge*s from the site; and

        vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharge*s, unless *infeasible*; and

        vii. *Minimize* soil compaction. *Minimizing* soil compaction is not required

where the intended function of a specific area of the site dictates that it be compacted; and

viii. Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

ix. *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of *pollutants* that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar days from the date the current soil disturbance activity ceased. For *construction sites* that *directly discharge* to one of the 303(d) segments listed in Appendix D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity ceased.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Select, design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be selected, designed, installed, implemented, and maintained to:

i. *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and

ii. *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation

and to *stormwater*. *Minimization* of exposure is not required in cases where the exposure to precipitation and to *stormwater* will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of *stormwater* contamination (such as final products and materials intended for outdoor use); and

iii. Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must be designed, constructed, and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

## C. Post-Construction Stormwater Management Practice (SMP) Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, the *owner or operator* must include in the *SWPPP* the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity*, that requires SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

### a. Sizing Criteria for *New Development*

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

   **In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.4 of the DM.** The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

   1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

   2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or

   3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

**b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watersheds**

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24-hour design storm over the post-developed watershed and must be calculated in accordance with the criteria in Section 4.3 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include

documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.5 of the DM.** The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or

3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

**c. *Sizing Criteria* for *Redevelopment Activity***

i. Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.

1. Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the DM must be applied to all newly created pervious areas; or

2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or

3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or

4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or

6. If there is an existing SMP located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 through 5 above.

ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.

iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

**d. *Sizing Criteria* for Combination of *Redevelopment Activity* and *New Development***

Construction projects, that include both *new development* and *redevelopment activity*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

## Part III. Stormwater Pollution Prevention Plan (SWPPP)

### A. General *SWPPP* Requirements

1. A *SWPPP* must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the *SWPPP*. The *SWPPP* must document the selection, design, installation, implementation and maintenance of the control measures and

practices that will be used to meet the effluent limitations in Part II.B. and, where applicable, the SMP requirements in Part II.C.

2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.

    a. The owner or operator must consider:

        i. the following physical risks due to climate change:

            (i) increasing temperature; and

            (ii) increasing precipitation; and

            (iii) increasing variability in precipitation, including chance of drought; and

            (iv) increasing frequency and severity of flooding; and

            (v) rising sea level; and

            (vi) increasing storm surge; and

            (vii) shifting ecology.

        ii. for each of the following:

            (i) overall site planning; and

            (ii) location, elevation, and sizing of:

                a. control measures and practices; and

                b. conveyance system(s); and

                c. detention system(s).

3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.

5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:

   a. whenever the current provisions prove to be ineffective in *minimizing pollutants* in *stormwater discharges* from the site; and

   b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* NYSDEC, or other regulatory authority; and

   d. to document the final construction conditions in an as-built drawing.

6. NYSDEC may notify the *owner or operator* at any time that the *SWPPP* does not meet one or more of the minimum requirements of this permit. The notification must be in writing and identify the provisions of the *SWPPP* that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4.

7. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in the *SWPPP* and the

contractor(s) and subcontractor(s) that will be responsible for constructing the SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

> "I hereby certify under penalty of law that I understand and agree to comply with the requirements of the *SWPPP* and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the *SWPPP* that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for *SWPPP* implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* must attach the certification statement(s) to the copy of the *SWPPP* that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the *SWPPP* after the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

## B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.

    a. Erosion and sediment control practices must be designed:

        i. in conformance with the BB; or

        ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.

    b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.

    c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:

        i. Background information about the scope of the project, including the location, type and size of project; and

        ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the *stormwater discharge*(s) and receiving surface water(s); and

        iii. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG); and

        iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:

    a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and

    b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and

2. A sequencing plan for a specific *phase* must include:

    a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and

    b. all permanent and *temporary stabilization* measures; and

v. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented; and

vi. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice; and

vii. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any

temporary sediment basins and structural practices that will be used to divert flows from exposed soils; and

viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and

ix. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the *stormwater discharges*; and

x. A description and location of any *stormwater discharges* associated with industrial activity other than construction at the site, including, but not limited to, *stormwater discharges* from asphalt plants and concrete plants located on the *construction site*; and

xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. SMP component – The *owner or operator* of *construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.

   a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and

   b. SMPs must be designed in conformance with the *performance criteria*:

      i. in the DM; or

      ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or

      iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:

    a. subject to governmental review and approval:

        i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and

        ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or

    b. not subject to governmental review and approval:

        i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and

        ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and

c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and

d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and

e. The SMP component of the *SWPPP* must include the following:

    i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and

    ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

iii. A Stormwater Modeling and Analysis Report that includes:

(i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points; and

(ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and SMPs; and

(iii) Results of *stormwater* modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre- and post-development runoff rates and volumes for the different storm events; and

(iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part II.C.; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the DM.

iv. Soil testing results and locations (test pits, borings); and

v. Infiltration test results, when required in accordance with Part III.B.2.a.; and

vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

### C. Required *SWPPP* Components by Project Type

*Owners or operators* of *construction activities*, identified in Table 1 of Appendix B, are required to prepare a *SWPPP* that only includes erosion and sediment control practices designed in accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

## Part IV. Inspection and Maintenance Requirements

### A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures), and all SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

### B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being

implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor must:

a. if the corrective action does not require engineering design:

    i. begin implementing corrective actions within one business day; and

    ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

    i. begin the engineering design process within five business days; and

    ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

2. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.

3. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

**C. *Qualified Inspector* Inspection Requirements**

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:

    a. the construction of a single-family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than or equal to five (5) acres and is

not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to five (5) acres and is not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

c. construction on *agricultural property* that involves soil disturbances of one (1) or more acres but less than five (5) acres; and

d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.

2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:

a. For *construction sites* where soil disturbance activities are on-going, the *qualified inspector* must conduct a site inspection at least once every seven (7) calendar days; or

b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or

c. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator,* the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or

e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* must inspect:

   a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and

   b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and

   c. all areas of disturbance that have not achieved *final stabilization*; and

   d. all points of *discharge* to *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and

   e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:

   a. Permit identification number; and

   b. Date and time of inspection; and

   c. Name and title of person(s) performing inspection; and

   d. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and

   e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow; and

   f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and

   g. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and

   h. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced; and

   i. Description and sketch (map) of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection; and

   j. Estimates, in square feet or acres, of the following areas:

i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and

ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and

iii. Total area that has achieved *temporary stabilization*; and

iv. Total area that has achieved *final stabilization*; and

k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and

l. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the SMP(s); and

m. Identification and status of all corrective actions that were required by previous inspection; and

n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* must also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* must attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:

a. if the corrective action does not require engineering design:

i. begin implementing corrective actions within one business day; and

ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

i. begin the engineering design process within five business days; and

ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

6. All inspection reports must be signed by the *qualified inspector.* In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

## Part V. How to Terminate CGP Coverage

### A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:

a. Total project completion:

i. all *construction activity* identified in the *SWPPP* has been completed; and

ii. all areas of disturbance have achieved *final stabilization*; and

iii. all temporary, structural erosion and sediment control measures have been removed; and

iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and

v. an as-built drawing has been prepared; or

b. Planned shutdown with partial project completion:

   i. all soil disturbance activities have ceased; and

   ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and

   iii. all temporary, structural erosion and sediment control measures have been removed; and

   iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and

   v. an as-built drawing has been prepared; or

c. In accordance with Part I.G. Change of Owner or Operator; or

d. The *owner or operator* has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.

2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice(s)” certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.

3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the “MS4 Acceptance” statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*’s final site inspection certification(s) when required in Part V.A.2.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:

    a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or

    b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or

    c. for SMP(s) that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record; or

    d. for SMP(s) that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility, the *owner or operator* has policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.

5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.[5]

    a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

[5] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

## Part VI. Record Retention and Reporting

### A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

### B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

## Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

### A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

### B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

### C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to $37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

**D. False Statements**

Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

**E. Re-Opener Clause**

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

**F. Duty to Mitigate**

The *owner or operator*, and its contractors and subcontractors, must take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**G. Requiring Another General Permit or Individual SPDES Permit**

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and

b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and

c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and

d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and

e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and

f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and

g. the *discharge* is in violation of section 17-0501 of the ECL; and

h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:

   i. the location of the *discharge(s)* with respect to *surface waters of the State*; and

   ii. the size of the *discharge(s)*; and

   iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and

   iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.

2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,[6] that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

## H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

## I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

[6] The Regional Water Manager where a DEC Region does not have a RWE.

## J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

    a. For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or

        (ii) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

        Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

    b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

    1. the chief executive officer of the agency; or

    2. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Part VII.J.1. or using the Duly Authorized Form, found on the DEC website; and

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

    c. The written authorization is submitted to NYSDEC.

3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

    *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who*

*manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

**K. Inspection and Entry**

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the *discharge*, upon the presentation of credentials and other documents as may be required by law, to:

1. enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the requirements of this permit; and

2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and

3. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and

5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

## L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

## M. Other Permits May Be Required

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

## N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

## O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

## P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

## Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

## R. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, must not be affected thereby.

## S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

## APPENDIX A – Abbreviations and Definitions

### Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
CPv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law
EPA – U.S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

**Definitions**

All definitions in this section are solely for the purposes of this permit. If a word is not italicized in the permit, use its common definition.

**Agricultural Building** – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

**Agricultural Property** – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023).

**Alter Hydrology from Pre- to Post-Development Conditions** – the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer System** – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

**Commence (Commencement of) Construction Activities** – the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the *SWPPP*. See definition for "*Construction Activity(ies)*" also.

**Common Plan of Development or Sale** – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

*Common plan of development or sale* does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

**Construction Activity(ies)** – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal.

*Construction activity* does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

**Construction Site** – the land area where *construction activity(ies)* will occur. See also the definitions for "*Commence (Commencement of) Construction Activities"* and "*Common Plan of Development or Sale."*

**Dewatering** – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

**Directly Discharge(s)(ing) (to a specific surface waterbody)** – runoff flows from a *construction site* by overland flow and the first point of *discharge* is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system and the first point of *discharge* from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)(d)** – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

**Embankment** – an earthen or rock slope that supports a road/highway.

**Equivalent (Equivalence)** – the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization** – all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other *equivalent* stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**Historic Property** – any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

**Impervious Area (Cover)** – all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and compacted gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – not technologically possible, or not economically practicable and achievable considering best industry practices.

**Minimize(ing)(ation)** – reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer System (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. owned or operated by a State, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, *stormwater*, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA, that *discharges* to *surface waters of the State*; and

2. designed or used for collecting or conveying *stormwater*; and

3. which is not a *combined sewer system*; and

4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**Natural Buffer(s)** – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

**New Development** – any land disturbance that does not meet the definition of *Redevelopment Activity* included in this appendix.

**New York State Erosion and Sediment Control Certificate Program** – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

**Nonpoint Source(s)** – any source of water pollution or *pollutants* which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

**Overbank** – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

**Owner or Operator** – the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit requirements.

**Performance Criteria** – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRv, CPv, Qp and Qf) in Part I.C.2. of the permit.

**Phase** – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

**Point Source** – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharged*.

**Pollutant(s)** – dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast *discharged* into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq.

**Qualified Inspector** – a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder or other NYSDEC endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** – a person that is knowledgeable in the principles and practices of *stormwater* management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the *SWPPP* that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

**Redevelopment Activity(ies)** – the disturbance and reconstruction of existing *impervious area*, including *impervious areas* that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Renewable Energy** – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

**Site Limitations** – site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical *site limitations* include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of *site limitations* shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

**Steep Slope** – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description is inclusive of slopes greater than 25%), or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

**Stormwater** – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

**Streambank** – the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

**Stormwater Pollution Prevention Plan (SWPPP)** – a project specific report, including construction drawings, that among other things: describes the *construction activity(ies)*, identifies the potential sources of pollution at the *construction site*; describes and shows the *stormwater c*ontrols that will be used to control the *pollutants* (i.e. erosion and sediment controls; for many projects, includes SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements of the permit. See Part III of the permit for a complete description of the information that must be included in the *SWPPP*.

**Surface Waters of the State** – shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** – exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Load** (TMDL) – the sum of the allowable loads of a single *pollutant* from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint source*s, and a margin of safety (MOS).

**Traditional Land Use Control MS4 Operator** – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

**Trained Contractor** – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.7., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

The *trained contractor* is responsible for the day-to-day implementation of the *SWPPP*.

**Tree Clearing** – *construction activities* limited to felling and removal of trees.

*Tree clearing* does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

**Water Quality Standard** – such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

## APPENDIX B – Required SWPPP Components by Project Type

### Table 1
### *CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

**The following *construction activities* that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:**

- Single-family home not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions with 25% or less *impervious cover* at total site build-out and not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.

**The following *construction activities* that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:**

- All construction activities located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

**Within the municipal boundaries of NYC:**

- Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.

**The following *construction activities*:**

- Installation of underground linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover*
- Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot
- Dam rehabilitation (the structure of the dam itself)
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development;
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path, or walking path.

## Table 1 (Continued)
## *CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

**The following *construction activities*:**

- Slope stabilization
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *alter hydrology from pre- to post-development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions
- Demolition where vegetation will be established, and no *redevelopment activity* is planned[1]
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, "temporary" means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

## Table 2
## *CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

**The following *construction activities*:**

- Single-family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family home that disturbs five (5) or more acres of land
- Single-family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single-family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

## Table 2 (Continued)

### *CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

**The following *construction activities*:**

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- Athletic fields (natural grass) that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations, and well drilling pads, surfaced with *impervious cover,* and constructed as part of an overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- All other *construction activities* that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre- to post-development* conditions, and are not listed in Table 1

## APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

**Watersheds where *owners or operators* of *construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.**

- Entire New York City Watershed located east of the Hudson River – Figure 1
- Onondaga Lake Watershed – Figure 2
- Greenwood Lake Watershed – Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

**Figure 1 - New York City Watershed East of the Hudson**

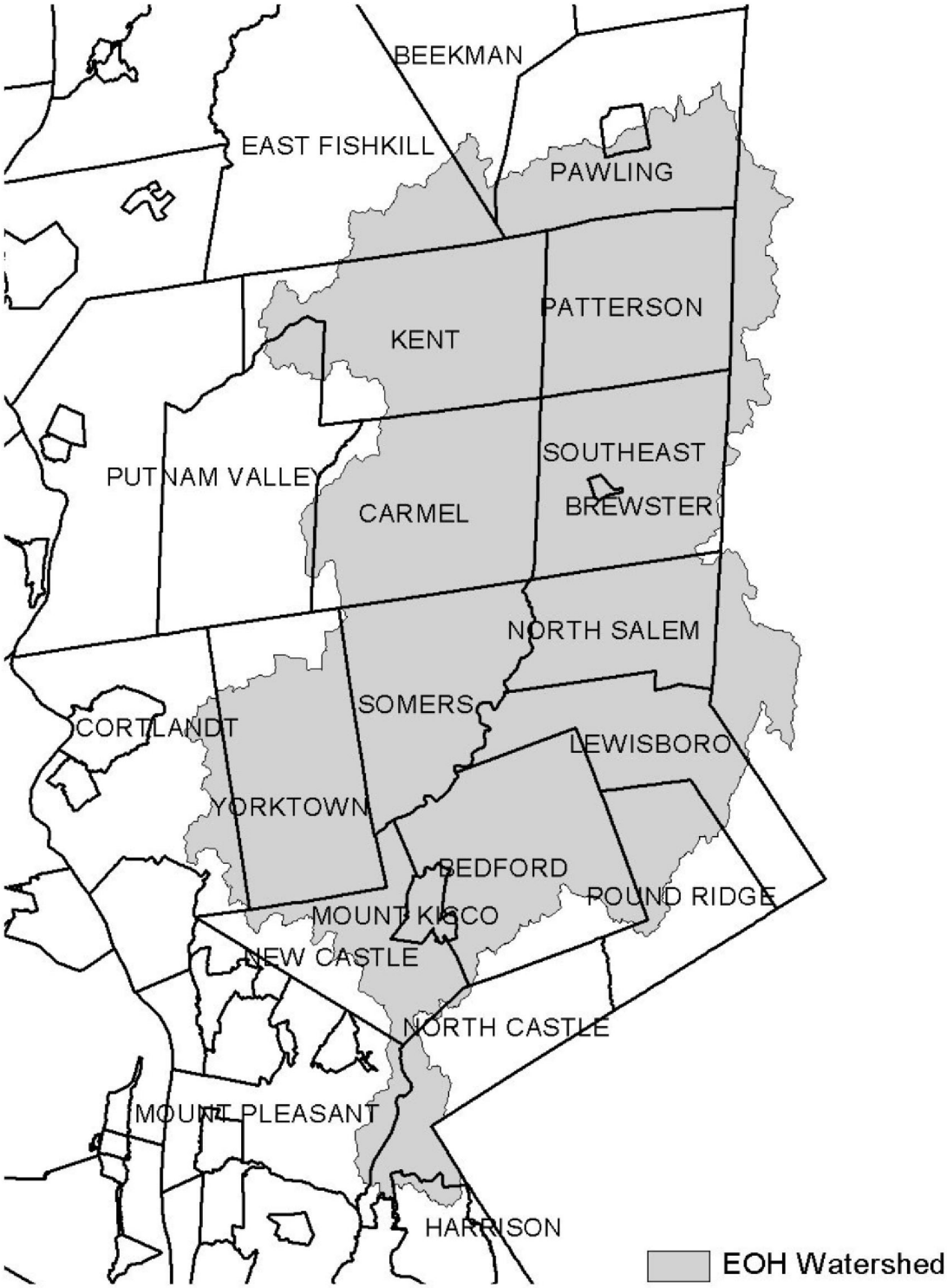


**Figure 2 - Onondaga Lake Watershed**



**Figure 3 - Greenwood Lake Watershed**

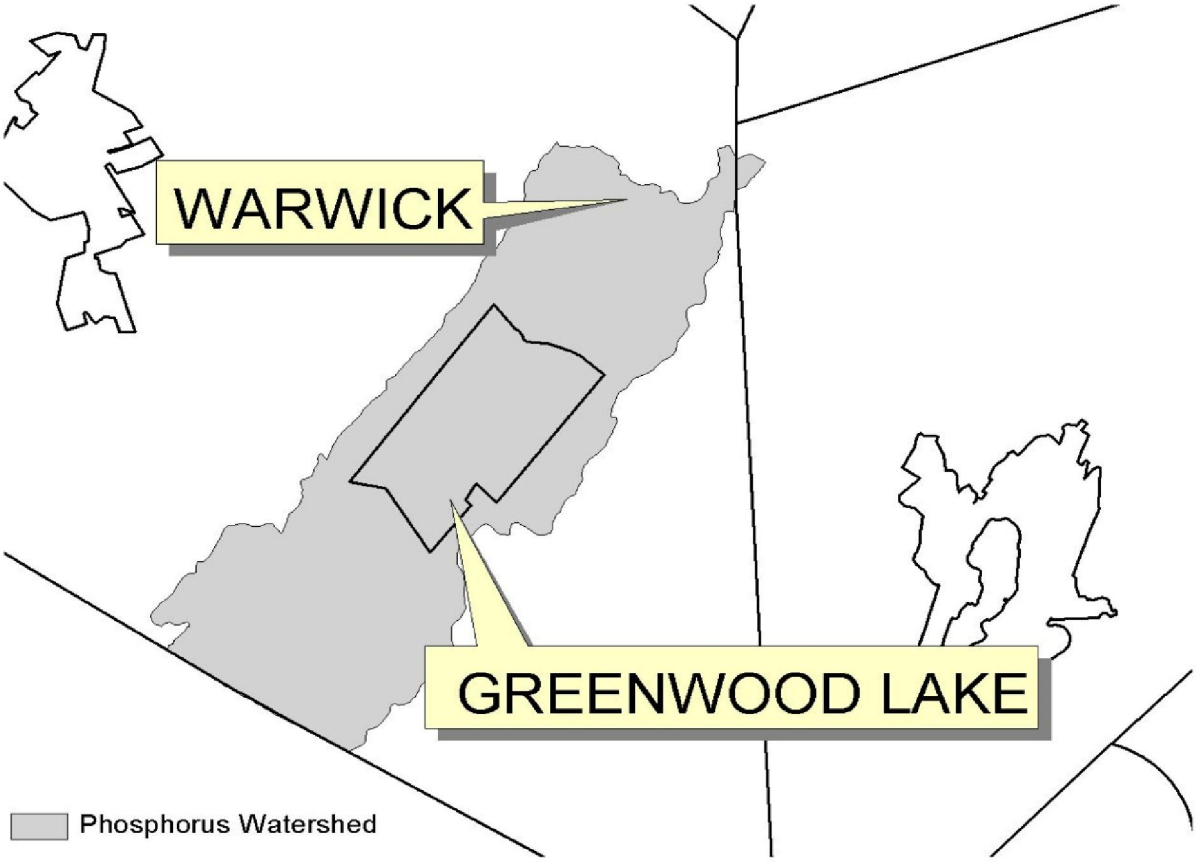


**Figure 4 - Oscawana Lake Watershed**

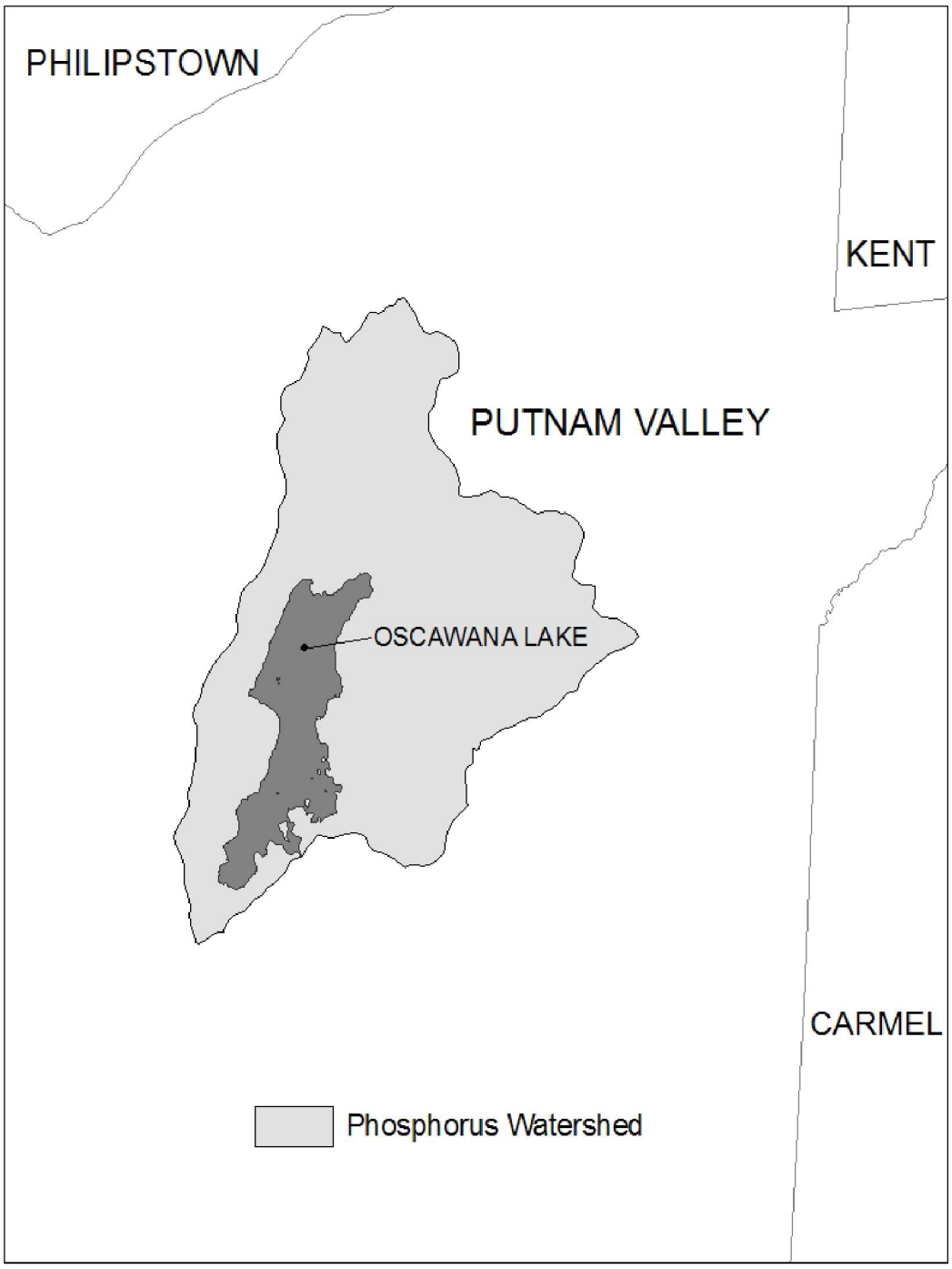
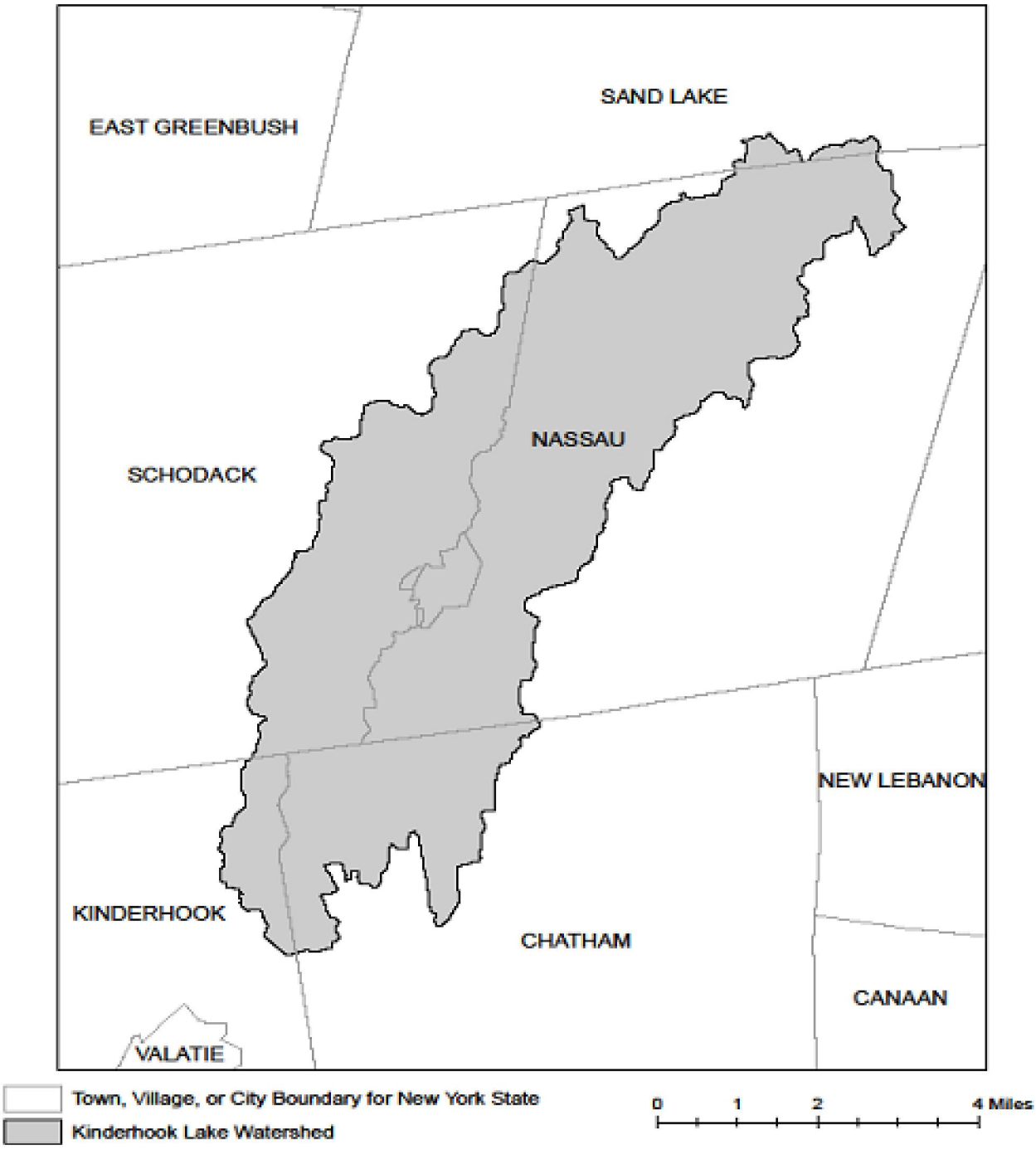


**Figure 5 - Kinderhook Lake Watershed**



## APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of "The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL" dated June 2020.

| County | Waterbody | Pollutant |
|---|---|---|
| Albany | Ann Lee (Shakers) Pond, Stump Pond (1201-0096) | Phosphorus |
| Albany | Lawsons Lake (1301-0235) | Phosphorus |
| Allegany | Amity Lake, Saunders Pond (0403-0054) | Phosphorus |
| Allegany | Andover Pond (0403-0056) | Phosphorus |
| Bronx | Reservoir No.1/Lake Isle (1702-0075) | Phosphorus |
| Bronx | Van Cortlandt Lake (1702-0008) | Phosphorus |
| Broome | Blueberry, Laurel Lakes (1404-0033) | Phosphorus |
| Broome | Fly Pond, Deer Lake (1404-0038) | Phosphorus |
| Broome | Minor Tribs to Lower Susquehanna (0603-0044) | Phosphorus |
| Broome | Whitney Point Lake/Reservoir (0602-0004) | Phosphorus |
| Cattaraugus | Allegheny River/Reservoir (0201-0023) | Phosphorus |
| Cattaraugus | Beaver Lake/Alma Pond (0201-0073) | Phosphorus |
| Cattaraugus | Case Lake (0201-0020) | Phosphorus |
| Cattaraugus | Linlyco/Club Pond (0201-0035) | Phosphorus |
| Cayuga | Duck Lake (0704-0025) | Phosphorus |
| Cayuga | Owasco Inlet, Upper, and tribs (0706-0014) | Nutrients |
| Chautauqua | Chadakoin River and tribs (0202-0018) | Phosphorus |
| Chautauqua | Hulburt/Clymer Pond (0202-0079) | Phosphorus |
| Chautauqua | Middle Cassadaga Lake (0202-0002) | Phosphorus |
| Clinton | Great Chazy River, Lower, Main Stem (1002-0001) | Silt/Sediment |
| Columbia | Robinson Pond (1308-0003) | Phosphorus |
| Cortland | Dean Pond (0602-0077) | Phosphorus |
| Dutchess | Fallkill Creek (1301-0087) | Phosphorus |
| Dutchess | Hillside Lake (1304-0001) | Phosphorus |
| Dutchess | Wappingers Lake (1305-0001) | Phosphorus |
| Dutchess | Wappingers Lake (1305-0001) | Silt/Sediment |
| Erie | Beeman Creek and tribs (0102-0030) | Phosphorus |
| Erie | Delaware Park Pond (0101-0026) | Phosphorus |
| Erie | Ellicott Creek, Lower, and tribs (0102-0018) | Phosphorus |
| Erie | Ellicott Creek, Lower, and tribs (0102-0018) | Silt/Sediment |
| Erie | Green Lake (0101-0038) | Phosphorus |
| Erie | Little Sister Creek, Lower, and tribs (0104-0045) | Phosphorus |
| Erie | Murder Creek, Lower, and tribs (0102-0031) | Phosphorus |

| | | |
|---|---|---|
| Erie | Rush Creek and tribs (0104-0018) | Phosphorus |
| Erie | Scajaquada Creek, Lower, and tribs (0101-0023) | Phosphorus |
| Erie | Scajaquada Creek, Middle, and tribs (0101-0033) | Phosphorus |
| Erie | Scajaquada Creek, Upper, and tribs (0101-0034) | Phosphorus |
| Erie | South Branch Smoke Cr, Lower, and tribs (0101-0036) | Phosphorus |
| Erie | South Branch Smoke Cr, Lower, and tribs (0101-0036) | Silt/Sediment |
| Genesee | Bigelow Creek and tribs (0402-0016) | Phosphorus |
| Genesee | Black Creek, Middle, and minor tribs (0402 0028) | Phosphorus |
| Genesee | Black Creek, Upper, and minor tribs (0402-0048) | Phosphorus |
| Genesee | Bowen Brook and tribs (0102-0036) | Phosphorus |
| Genesee | LeRoy Reservoir (0402-0003) | Phosphorus |
| Genesee | Mill Pond (0402-0050) | Phosphorus |
| Genesee | Oak Orchard Cr, Upper, and tribs (0301-0014) | Phosphorus |
| Genesee | Oatka Creek, Middle, and minor tribs (0402-0031) | Phosphorus |
| Genessee | Tonawanda Cr, Middle, Main Stem (0102-0002) | Phosphorus |
| Greene | Schoharie Reservoir (1202-0012) | Silt/Sediment |
| Greene | Sleepy Hollow Lake (1301-0059) | Silt/Sediment |
| Herkimer | Steele Creek tribs (1201-0197) | Phosphorus |
| Herkimer | Steele Creek tribs (1201-0197) | Silt/Sediment |
| Kings | Hendrix Creek (1701-0006) 18 | Nitrogen |
| Kings | Prospect Park Lake (1701-0196) | Phosphorus |
| Lewis | Mill Creek/South Branch, and tribs (0801-0200) | Nutrients |
| Livingston | Christie Creek and tribs (0402-0060) | Phosphorus |
| Livingston | Conesus Lake (0402-0004) | Phosphorus |
| Livingston | Mill Creek and minor tribs (0404-0011) | Silt/Sediment |
| Monroe | Black Creek, Lower, and minor tribs (0402-0033) | Phosphorus |
| Monroe | Buck Pond (0301-0017) | Phosphorus |
| Monroe | Cranberry Pond (0301-0016) | Phosphorus |
| Monroe | Durand, Eastman Lakes (0302-0037) | Phosphorus |
| Monroe | Lake Ontario Shoreline, Western (0301-0069) 9 | Phosphorus |
| Monroe | Long Pond (0301-0015) | Phosphorus |
| Monroe | Mill Creek and tribs (0302-0025) | Phosphorus 2 |
| Monroe | Mill Creek/Blue Pond Outlet and tribs (0402-0049) | Phosphorus |
| Monroe | Minor Tribs to Irondequoit Bay (0302-0038) | Phosphorus |
| Monroe | Rochester Embayment - East (0302-0002) [9] | Phosphorus |
| Monroe | Rochester Embayment - West (0301-0068) 9 | Phosphorus |
| Monroe | Shipbuilders Creek and tribs (0302-0026) | Phosphorus 2 |
| Monroe | Thomas Creek/White Brook and tribs (0302-0023) | Phosphorus |

| | | |
|---|---|---|
| Nassau | Bannister Creek/Bay (1701-0380) | Nitrogen |
| Nassau | Beaver Lake (1702-0152) | Phosphorus |
| Nassau | Browswere Bay (1701-0383) | Nitrogen |
| Nassau | Camaans Pond (1701-0052) | Phosphorus |
| Nassau | East Meadow Brook, Upper, and tribs (1701-0211) | Silt/Sediment |
| Nassau | East Rockaway Channel (1701-0381) | Nitrogen |
| Nassau | Glen Cove Creek, Lower, and tribs (1702-0146) | Silt/Sediment |
| Nassau | Grant Park Pond (1701-0054) | Phosphorus |
| Nassau | Hempstead Bay, Broad Channel (1701-0032) | Nitrogen |
| Nassau | Hempstead Lake (1701-0015) | Phosphorus |
| Nassau | Hewlett Bay (1701-0382) | Nitrogen |
| Nassau | Hog Island Channel (1701-0220) | Nitrogen |
| Nassau | Massapequa Creek, Upper, and tribs (1701-0174) | Phosphorus |
| Nassau | Milburn/Parsonage Creeks, Upp, and tribs (1701-0212) | Phosphorus |
| Nassau | Reynolds Channel, East (1701-0215) [12] | Nitrogen |
| Nassau | Reynolds Channel, West (1701-0216) 12 | Nitrogen |
| Nassau | Tidal Tribs to Hempstead Bay (1701-0218) | Nitrogen |
| Nassau | Tribs (fresh) to East Bay (1701-0204) | Silt/Sediment |
| Nassau | Tribs (fresh) to East Bay (1701-0204) | Phosphorus |
| Nassau | Tribs to Smith Pond/Halls Pond (1701-0221) | Phosphorus |
| Nassau | Woodmere Channel (1701-0219) | Nitrogen |
| New York | Harlem Meer (1702-0103) | Phosphorus |
| New York | The Lake in Central Park (1702-0105) | Phosphorus |
| Niagara | Bergholtz Creek and tribs (0101-0004) | Phosphorus |
| Niagara | Hyde Park Lake (0101-0030) | Phosphorus |
| Niagara | Lake Ontario Shoreline, Western (0301-0053) 9 | Phosphorus |
| Niagara | Lake Ontario Shoreline, Western (0301-0072) 9 | Phosphorus |
| Oneida | Ballou, Nail Creeks (1201-0203) | Phosphorus |
| Onondaga | Ley Creek and tribs (0702-0001) 10 | Nutrients (phosphorus) |
| Onondaga | Minor Tribs to Onondaga Lake (0702-0022) 10 | Nutrients (phosphorus) |
| Onondaga | Minor Tribs to Onondaga Lake (0702-0022) 10 | Nitrogen (NH3, NO2) |
| Onondaga | Onondaga Creek, Lower (0702-0023) 10 | Nutrients (phosphorus) |
| Onondaga | Onondaga Creek, Lower, and tribs (0702-0023) | Turbidity |
| Onondaga | Onondaga Creek, Middle, and tribs (0702-0004) | Turbidity |
| Onondaga | Onondaga Creek, Upper, and tribs (0702-0024) | Turbidity |
| Ontario | Great Brook and minor tribs (0704-0034) | Phosphorus 2 |
| Ontario | Great Brook and minor tribs (0704-0034) | Silt/Sediment |

| | | |
|---|---|---|
| Ontario | Hemlock Lake Outlet and minor tribs (0402-0013) | Phosphorus |
| Ontario | Honeoye Lake (0402-0032) | Phosphorus |
| Orange | Brown Pond Reservoir (1303-0013) | Phosphorus |
| Orange | Lake Washington (1303-0012) | Phosphorus |
| Orange | Minor Tribs to Middle Wallkill (1306-0061) | Phosphorus |
| Orange | Monhagen Brook and tribs (1306-0074) | Phosphorus |
| Orange | Orange Lake (1301-0008) [16] | Phosphorus |
| Orange | Quaker Creek and tribs (1306-0025) | Phosphorus |
| Orange | Wallkill River, Middle, Main Stem (1306-0038) | Phosphorus |
| Orange | Wallkill River, Upper, and Minor tribs (1306-0017) | Phosphorus |
| Orleans | Glenvwood Lake (0301-0041) | Phosphorus |
| Orleans | Lake Ontario Shoreline, Western (0301-0070) 9 | Phosphorus |
| Orleans | Lake Ontario Shoreline, Western (0301-0071) 9 | Phosphorus |
| Oswego | Lake Neatahwanta (0701-0018) | Nutrients (phosphorus) |
| Oswego | Pleasant Lake (0703-0047) | Phosphorus |
| Putnam | Lost Lake, Putnam Lake (1302-0053) | Phosphorus |
| Putnam | Minor Tribs to Croton Falls Reservoir (1302-0001) | Phosphorus |
| Queens | Bergen Basin (1701-0009) 18 | Nitrogen |
| Queens | Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18 | Nitrogen |
| Queens | Kissena Lake (1702-0258) | Phosphorus |
| Queens | Meadow Lake (1702-0030) | Phosphorus |
| Queens | Shellbank Basin (1701-0001) 18 | Nitrogen |
| Queens | Willow Lake (1702-0031) | Phosphorus |
| Rensselaer | Nassau Lake (1310-0001) | Phosphorus |
| Rensselaer | Snyders Lake (1301-0043) | Phosphorus |
| Richmond | Grassmere Lake/Bradys Pond (1701-0357) | Phosphorus |
| Rockland | Congers Lake, Swartout Lake (1501-0019) | Phosphorus |
| Rockland | Rockland Lake (1501-0021) | Phosphorus |
| Saratoga | Ballston Lake (1101-0036) | Phosphorus |
| Saratoga | Dwaas Kill and tribs (1101-0007) | Phosphorus |
| Saratoga | Dwaas Kill and tribs (1101-0007) | Silt/Sediment |
| Saratoga | Lake Lonely (1101-0034) | Phosphorus |
| Saratoga | Round Lake (1101-0060) | Phosphorus |
| Saratoga | Tribs to Lake Lonely (1101-0001) | Phosphorus |
| Schenectady | Collins Lake (1201-0077) | Phosphorus |
| Schenectady | Duane Lake (1311-0006) | Phosphorus |
| Schenectady Lake | Mariaville Lake (1201-0113) | Phosphorus |
| Schuyler | Cayuta Lake (0603-0005) | Phosphorus |

| | | |
|---|---|---|
| Seneca | Reeder Creek and tribs (0705-0074) | Phosphorus |
| St.Lawrence | Black Lake Outlet, Black Lake (0906-0001) | Phosphorus |
| St.Lawrence | Fish Creek and minor tribs (0906-0026) | Phosphorus |
| Steuben | Smith Pond (0502-0012) | Phosphorus |
| Suffolk | Agawam Lake (1701-0117) | Phosphorus |
| Suffolk | Big/Little Fresh Ponds (1701-0125) | Phosphorus |
| Suffolk | Canaan Lake (1701-0018) | Phosphorus |
| Suffolk | Canaan Lake (1701-0018) | Silt/Sediment |
| Suffolk | Fresh Pond (1701-0241) | Phosphorus |
| Suffolk | Great South Bay, East (1701-0039) | Nitrogen |
| Suffolk | Great South Bay, Middle (1701-0040) | Nitrogen |
| Suffolk | Great South Bay, West (1701-0173) | Nitrogen |
| Suffolk | Lake Ronkonkoma (1701-0020) | Phosphorus |
| Suffolk | Mattituck/Marratooka Pond (1701-0129) | Phosphorus |
| Suffolk | Mill and Seven Ponds (1701-0113) | Phosphorus |
| Suffolk | Millers Pond (1702-0013) | Phosphorus |
| Suffolk | Moriches Bay, East (1701-0305) | Nitrogen |
| Suffolk | Moriches Bay, West (1701-0038) | Nitrogen |
| Suffolk | Quantuck Bay (1701-0042) | Nitrogen |
| Suffolk | Shinnecock Bay and Inlet (1701-0033) | Nitrogen |
| Suffolk | Tidal Tribs to West Moriches Bay (1701-0312) | Nitrogen |
| Sullivan | Bodine, Mongomery Lakes (1401-0091) | Phosphorus |
| Sullivan | Davies Lake (1402-0047) | Phosphorus |
| Sullivan | Evens Lake (1402-0004) | Phosphorus |
| Sullivan | Pleasure Lake (1402-0055) | Phosphorus |
| Sullivan | Swan Lake (1401-0063) | Phosphorus |
| Tompkins | Cayuga Lake, Southern End (0705-0040) | Phosphorus |
| Tompkins | Cayuga Lake, Southern End (0705-0040) | Silt/Sediment |
| Ulster | Ashokan Reservoir (1307-0004) | Silt/Sediment |
| Ulster | Esopus Creek, Lower, Main Stem (1307-0010) [17] | Turbidity |
| Ulster | Esopus Creek, Middle, Main Stem (1307-0003) 17 | Turbidity |
| Ulster | Esopus Creek, Upper, and minor tribs (1307-0007)[3] | Silt/Sediment |
| Ulster | Wallkill River, Lower, Main Stem (1306-0027) | Phosphorus |
| Warren | Hague Brook and tribs (1006-0006) | Silt/Sediment |
| Warren | Huddle/Finkle Brooks and tribs (1006-0003) | Silt/Sediment |
| Warren | Indian Brook and tribs (1006-0002) | Silt/Sediment |
| Warren | Lake George (1006-0016) and tribs | Silt/Sediment |
| Warren | Tribs to Lake George, East Shore (1006-0020) | Silt/Sediment |
| Warren | Tribs to Lake George, Lk.George Village (1006-0008) | Silt/Sediment |

| | | |
|---|---|---|
| Washington | Wood Cr/Champlain Canal and tribs (1005-0036) | Phosphorus |
| Westchester | Lake Katonah (1302-0136) | Phosphorus |
| Westchester | Lake Lincolndale (1302-0089) | Phosphorus |
| Westchester | Lake Meahagh (1301-0053) | Phosphorus |
| Westchester | Lake Mohegan (1301-0149) | Phosphorus |
| Westchester | Lake Shenorock (1302-0083) | Phosphorus |
| Westchester | Mamaroneck River, Lower (1702-0071) | Silt/Sediment |
| Westchester | Mamaroneck River, Upp, & minor tribs (1702-0123) | Silt/Sediment |
| Westchester | Saw Mill River (1301-0007) | Phosphorus |
| Westchester | Saw Mill River, Middle, and tribs (1301-0100) | Phosphorus |
| Westchester | Sheldrake River (1702-0069) | Phosphorus |
| Westchester | Sheldrake River (1702-0069) | Silt/Sedimnt |
| Westchester | Silver Lake (1702-0040) | Phosphorus |
| Westchester | Teatown Lake (1302-0150) | Phosphorus |
| Westchester | Truesdale Lake (1302-0054) | Phosphorus |
| Westchester | Wallace Pond (1301-0140) | Phosphorus |

## APPENDIX E – List of NYSDEC Regional Offices

| Region | Covering the following counties: | DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators | DIVISION OF WATER (DOW) Water (SPDES) Program |
|---|---|---|---|
| 1 | Nassau and Suffolk | 50 Circle Road<br>Stony Brook, NY 11790<br>Tel. (631) 444-0365 | 50 Circle Road<br>Stony Brook, NY 11790-3409<br>Tel. (631) 444-0405 |
| 2 | Bronx, Kings, New York, Queens and Richmond | 1 Hunters Point Plaza,<br>47-40 21st St.<br>Long Island City, NY 11101-5407<br>Tel. (718) 482-4997 | 1 Hunters Point Plaza,<br>47-40 21st St.<br>Long Island City, NY 11101-5407<br>Tel. (718) 482-4933 |
| 3 | Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester | 21 South Putt Corners Road<br>New Paltz, NY 12561-1696<br>Tel. (845) 256-3059 | 220 White Plains Road, Suite 110<br>Tel. (914) 428 - 2505 |
| 4 | Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie | 1130 North Westcott Road<br>Schenectady, NY 12306-2014<br>Tel. (518) 357-2069 | 1130 North Westcott Road<br>Schenectady, NY 12306-2014<br>Tel. (518) 357-2045 |
| 5 | Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington | 1115 State Route 86, Po Box 296<br>Ray Brook, NY 12977-0296<br>Tel. (518) 897-1234 | 232 Golf Course Road<br>Warrensburg, NY 12885-1172<br>Tel. (518) 623-1200 |
| 6 | HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE | STATE OFFICE BUILDING<br>317 WASHINGTON STREET<br>WATERTOWN, NY 13601-3787<br>TEL. (315) 785-2245 | STATE OFFICE BUILDING<br>207 GENESEE STREET<br>UTICA, NY 13501-2885<br>TEL. (315) 793-2554 |
| 7 | BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS | 5786 WIDEWATERS PARKWAY<br>SYRACUSE, NY 13214-1867<br>TEL. (315) 426-7438 | 5786 WIDEWATERS PARKWAY<br>SYRACUSE, NY 13214-1867<br>TEL. (315) 426-7500 |
| 8 | CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES | 6274 EAST AVON-LIMA<br>ROADAVON, NY 14414-9519<br>TEL. (585) 226-2466 | 6274 EAST AVON-LIMA RD.<br>AVON, NY 14414-9519<br>TEL. (585) 226-2466 |
| 9 | ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING | 700 DELAWARE AVENUE<br>BUFFALO, NY 14209-2999<br>TEL. (716) 851-7165 | 700 DELAWARE AVENUE<br>BUFFALO, NY 14209-2999<br>TEL. (716) 851-7070 |

# APPENDIX H

MS4 Acceptance Form

NEW YORK STATE | Department of Environmental Conservation

# MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

## SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

| |
|---|
| **I. Project Owner/Operator Information** |
| 1. Owner/Operator Name: |
| 2. Contact Person: |
| 3. Street Address: |
| 4. City/State/Zip: |
| **II. Project Site Information** |
| 5. Project/Site Name: |
| 6. Street Address: |
| 7. City/State/Zip: |
| **III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information** |
| 8. SWPPP Reviewed by: |
| 9. Title/Position: |
| 10. Date Final SWPPP Reviewed and Accepted: |
| **IV. Regulated MS4 Information** |
| 11. Name of MS4 Operator: |
| 12. MS4 SPDES Permit Identification Number: NYR20A |
| 13. Street Address: |
| 14. City/State/Zip: |
| 15. Telephone Number: |
| |

## MS4 SWPPP Acceptance Form - continued

**V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative**

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name[1]:

Title/Position:

Signature:

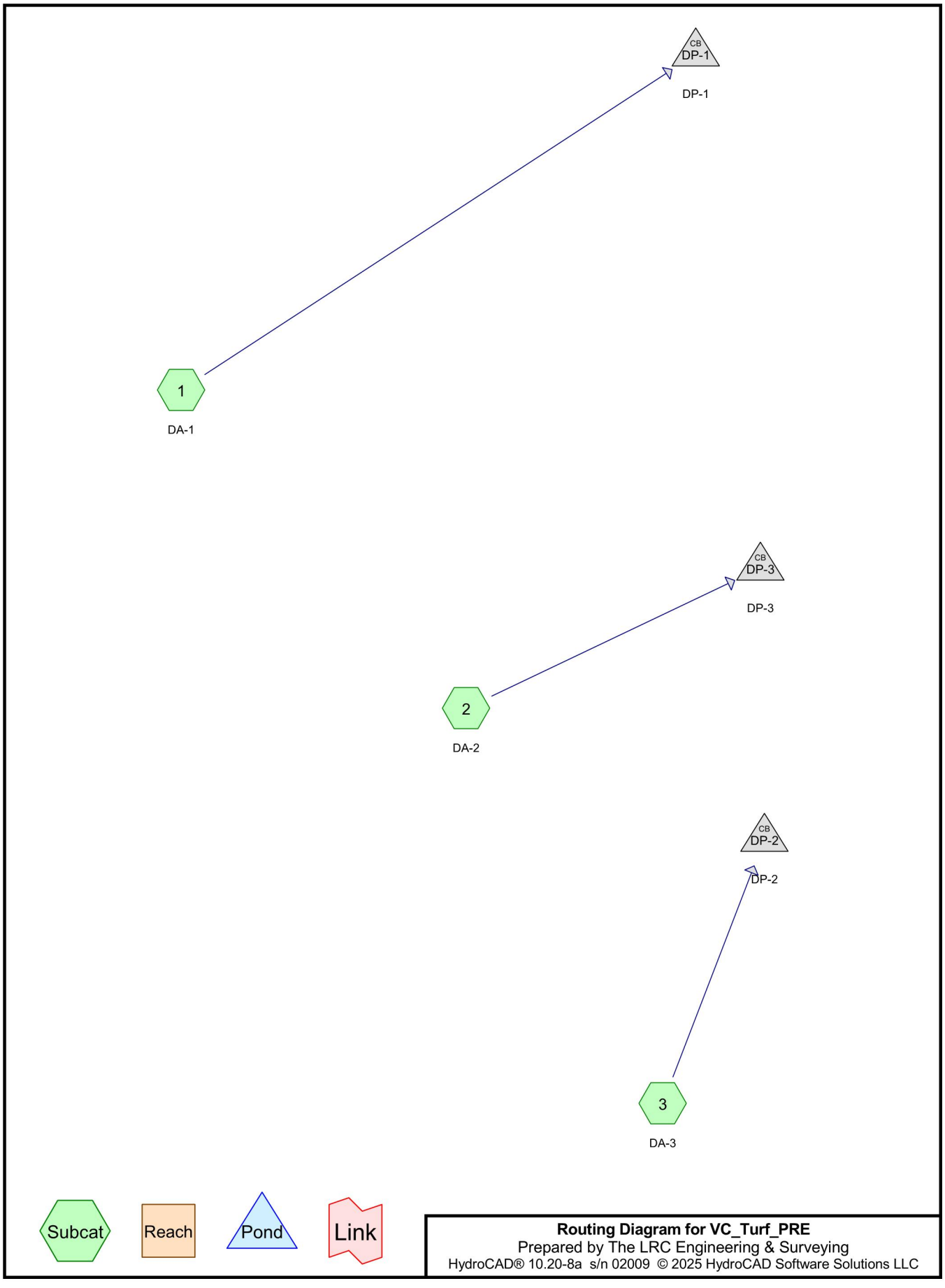
Date:

**VI. Additional Information**

[1] Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

# APPENDIX I

Pre-Development Run-off Calculations




**Routing Diagram for VC_Turf_PRE**
Prepared by The LRC Engineering & Surveying
HydroCAD® 10.20-8a s/n 02009 © 2025 HydroCAD Software Solutions LLC

## Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 1-yr | NY-Poughkeepsie 24-hr S1 | 1-yr | Default | 24.00 | 1 | 2.61 | 2 |
| 2 | 2-yr | NY-Poughkeepsie 24-hr S1 | 2-yr | Default | 24.00 | 1 | 3.16 | 2 |
| 3 | 10-yr | NY-Poughkeepsie 24-hr S1 | 10-yr | Default | 24.00 | 1 | 4.67 | 2 |
| 4 | 100-yr | NY-Poughkeepsie 24-hr S1 | 100-yr | Default | 24.00 | 1 | 8.21 | 2 |

## Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 18,637 | 49 | 50-75% Grass cover, Fair, HSG A (1) |
| 198,485 | 69 | 50-75% Grass cover, Fair, HSG B (1, 2, 3) |
| 215,436 | 79 | 50-75% Grass cover, Fair, HSG C (1, 2, 3) |
| 55,513 | 98 | Paved parking, HSG C (1, 2, 3) |
| 4,362 | 60 | Woods, Fair, HSG B (1) |
| 126,925 | 73 | Woods, Fair, HSG C (1, 2, 3) |
| **619,358** | **75** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 18,637 | HSG A | 1 |
| 202,847 | HSG B | 1, 2, 3 |
| 397,874 | HSG C | 1, 2, 3 |
| 0 | HSG D | |
| 0 | Other | |
| **619,358** | | **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 | Su Nu |
|---|---|---|---|---|---|---|---|
| 18,637 | 198,485 | 215,436 | 0 | 0 | 432,558 | 50-75% Grass cover, Fair | |
| 0 | 0 | 55,513 | 0 | 0 | 55,513 | Paved parking | |
| 0 | 4,362 | 126,925 | 0 | 0 | 131,287 | Woods, Fair | |
| **18,637** | **202,847** | **397,874** | **0** | **0** | **619,358** | **TOTAL AREA** | |

## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 0.00 | 149.0 | 0.0050 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 2 | 1 | 0.00 | 0.00 | 117.0 | 0.0020 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 3 | 1 | 0.00 | 0.00 | 80.0 | 0.0050 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 4 | 1 | 0.00 | 0.00 | 20.0 | 0.0050 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 5 | 1 | 0.00 | 0.00 | 77.0 | 0.0030 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 6 | 3 | 0.00 | 0.00 | 62.0 | 0.0100 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 7 | DP-1 | 161.30 | 160.60 | 72.0 | 0.0097 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 8 | DP-2 | 164.80 | 160.00 | 181.0 | 0.0265 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 9 | DP-3 | 161.60 | 160.70 | 117.0 | 0.0077 | 0.011 | 0.0 | 12.0 | 0.0 | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=423,083 sf 10.76% Impervious Runoff Depth=0.76"
Flow Length=1,395' Tc=40.2 min CN=76 Runoff=3.68 cfs 26,868 cf

**Subcatchment 2: DA-2** Runoff Area=117,204 sf 0.98% Impervious Runoff Depth=0.55"
Flow Length=298' Tc=17.2 min CN=71 Runoff=0.99 cfs 5,343 cf

**Subcatchment 3: DA-3** Runoff Area=79,071 sf 11.17% Impervious Runoff Depth=0.91"
Flow Length=397' Tc=17.6 min CN=79 Runoff=1.33 cfs 6,009 cf

**Pond DP-1: DP-1** Peak Elev=162.36' Inflow=3.68 cfs 26,868 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=3.68 cfs 26,868 cf

**Pond DP-2: DP-2** Peak Elev=165.39' Inflow=1.33 cfs 6,009 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=1.33 cfs 6,009 cf

**Pond DP-3: DP-3** Peak Elev=162.19' Inflow=0.99 cfs 5,343 cf
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Outflow=0.99 cfs 5,343 cf

**Total Runoff Area = 619,358 sf Runoff Volume = 38,220 cf Average Runoff Depth = 0.74"**
**91.04% Pervious = 563,845 sf 8.96% Impervious = 55,513 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 123% of capacity of segment #5
[47] Hint: Peak is 108% of capacity of segment #6

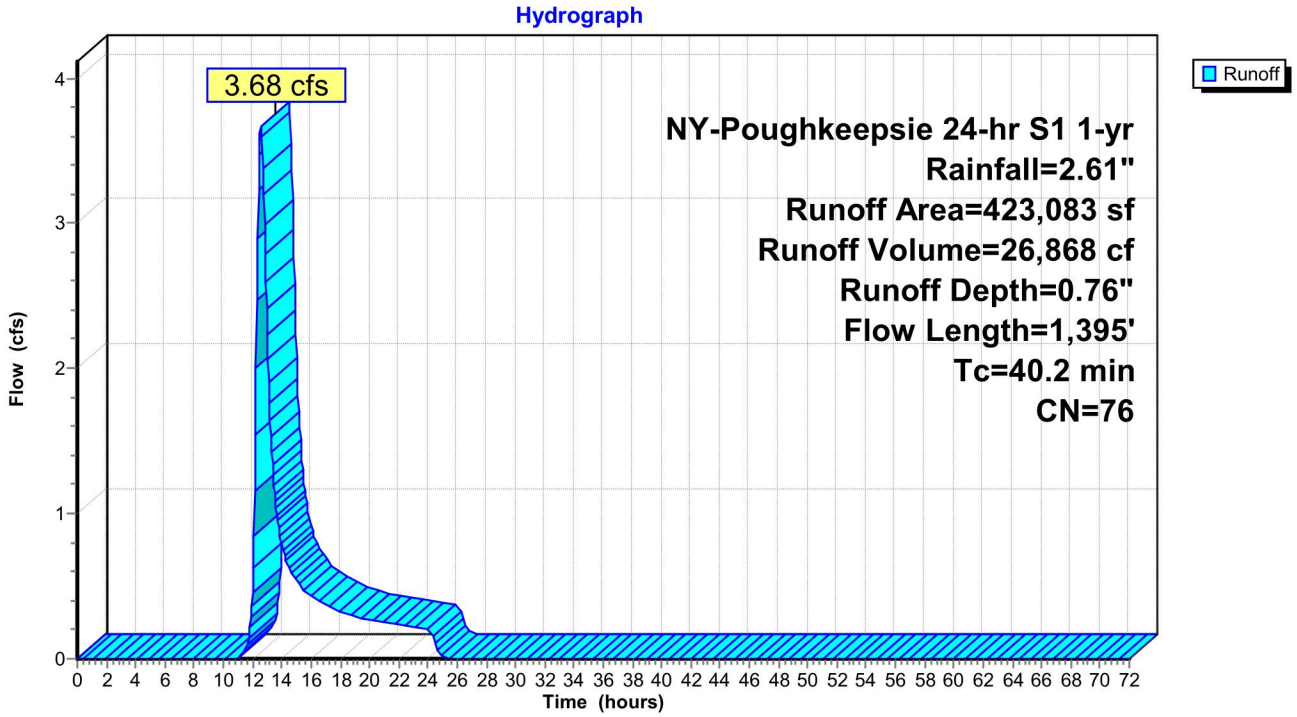
Runoff = 3.68 cfs @ 12.56 hrs, Volume= 26,868 cf, Depth= 0.76"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 18,637 | 49 | 50-75% Grass cover, Fair, HSG A |
| 93,418 | 69 | 50-75% Grass cover, Fair, HSG B |
| 149,601 | 79 | 50-75% Grass cover, Fair, HSG C |
| 4,362 | 60 | Woods, Fair, HSG B |
| 111,533 | 73 | Woods, Fair, HSG C |
| 45,532 | 98 | Paved parking, HSG C |
| 423,083 | 76 | Weighted Average |
| 377,551 | | 89.24% Pervious Area |
| 45,532 | | 10.76% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 4.6 | 303 | 0.0250 | 1.11 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 16.7 | 419 | 0.0070 | 0.42 | | **Shallow Concentrated Flow, D-E**<br>Woodland Kv= 5.0 fps |
| 0.7 | 149 | 0.0050 | 3.79 | 2.98 | **Pipe Channel, E-F**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.7 | 117 | 0.0020 | 2.78 | 3.41 | **Pipe Channel, F-G**<br>15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.3 | 80 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, G-H**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.1 | 20 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, H-I**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 0.3 | 77 | 0.0030 | 3.85 | 6.80 | **Pipe Channel, I-J**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 40.2 | 1,395 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

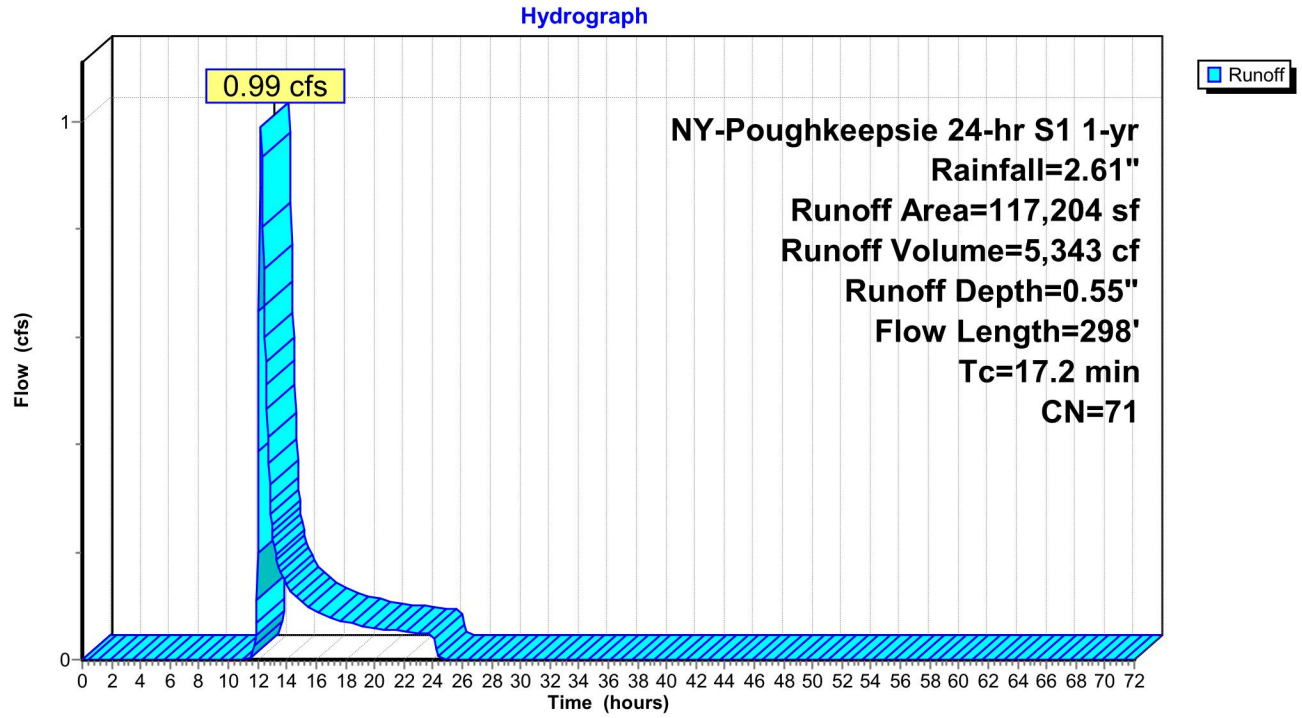
Runoff = 0.99 cfs @ 12.22 hrs, Volume= 5,343 cf, Depth= 0.55"
Routed to Pond DP-3 : DP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 97,495 | 69 | 50-75% Grass cover, Fair, HSG B |
| 17,753 | 79 | 50-75% Grass cover, Fair, HSG C |
| 805 | 73 | Woods, Fair, HSG C |
| 1,151 | 98 | Paved parking, HSG C |
| 117,204 | 71 | Weighted Average |
| 116,053 | | 99.02% Pervious Area |
| 1,151 | | 0.98% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 8.8 | 58 | 0.0640 | 0.11 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 7.5 | 92 | 0.0870 | 0.21 | | **Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.16" |
| 0.9 | 148 | 0.1390 | 2.61 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 17.2 | 298 | Total | | | |

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

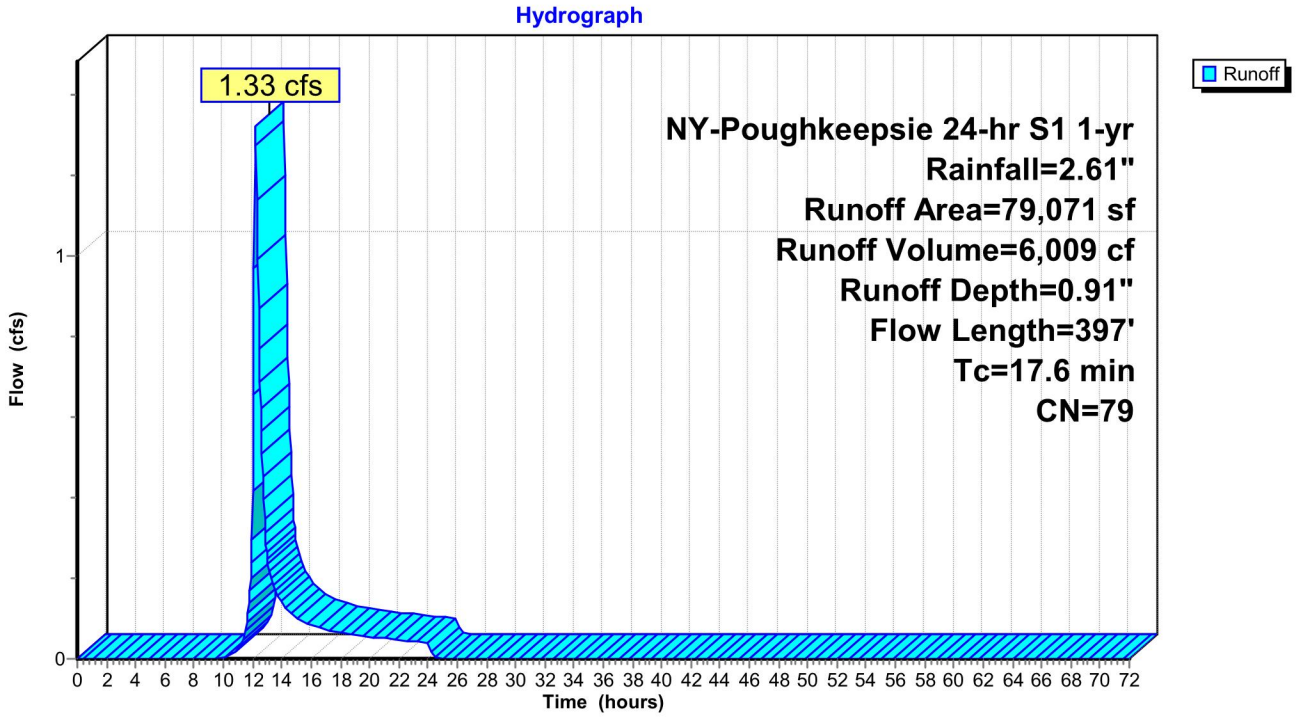
Runoff = 1.33 cfs @ 12.21 hrs, Volume= 6,009 cf, Depth= 0.91"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 7,572 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,082 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 8,830 | 98 | Paved parking, HSG C |
| 79,071 | 79 | Weighted Average |
| 70,241 | | 88.83% Pervious Area |
| 8,830 | | 11.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Pond DP-1: DP-1

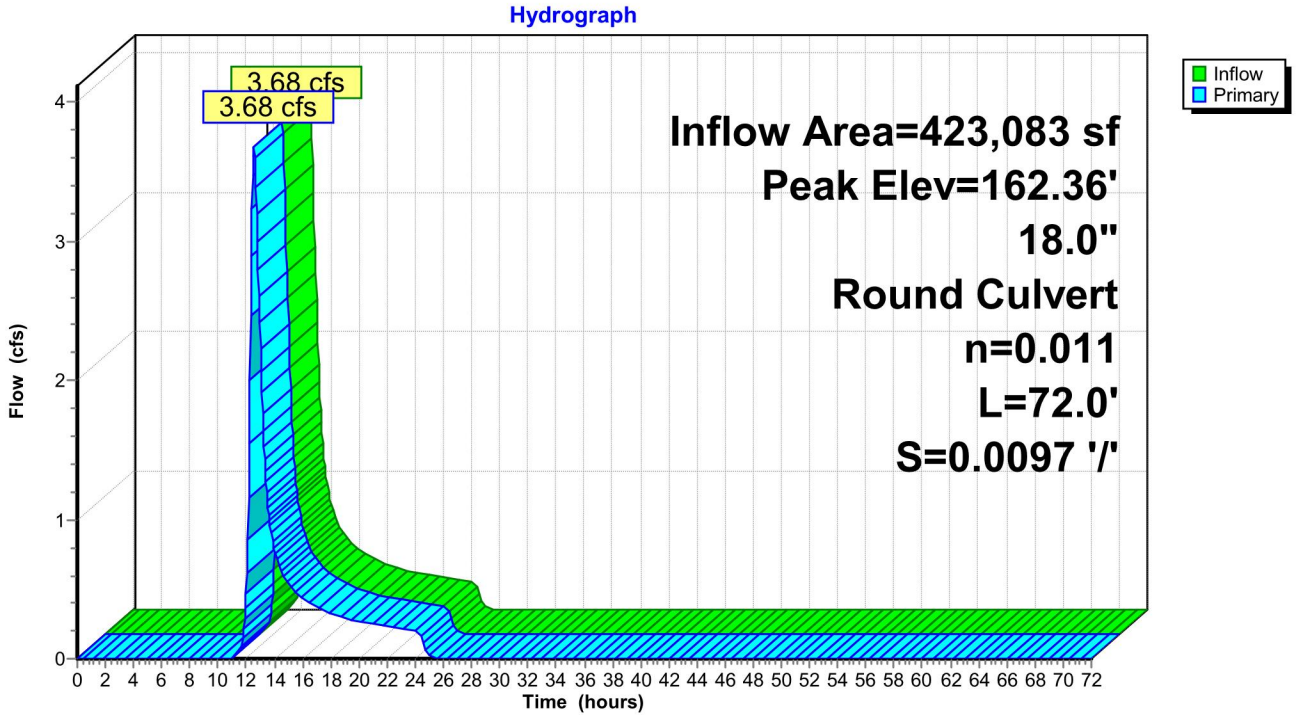
Inflow Area = 423,083 sf, 10.76% Impervious, Inflow Depth = 0.76" for 1-yr event
Inflow = 3.68 cfs @ 12.56 hrs, Volume= 26,868 cf
Outflow = 3.68 cfs @ 12.56 hrs, Volume= 26,868 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 12.56 hrs, Volume= 26,868 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.36' @ 12.56 hrs
Flood Elev= 163.41'

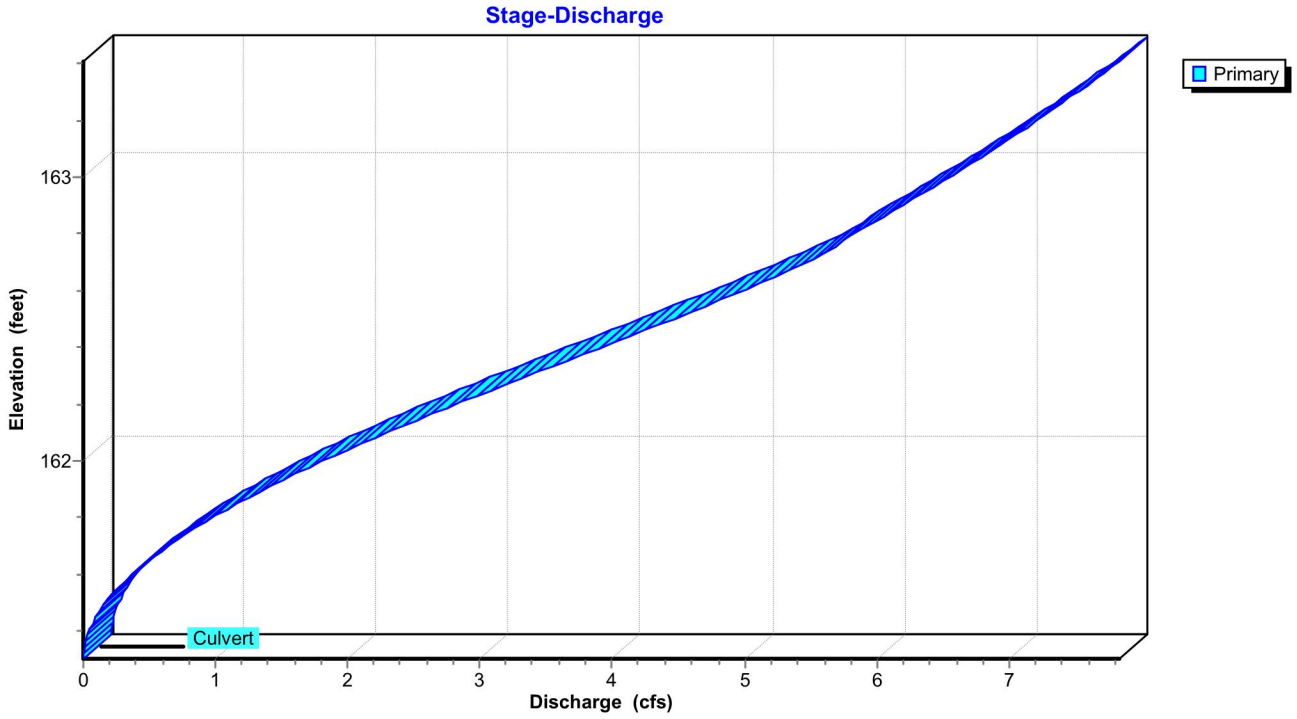
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.67 cfs @ 12.56 hrs HW=162.36' (Free Discharge)
**1=Culvert** (Inlet Controls 3.67 cfs @ 2.76 fps)

## Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

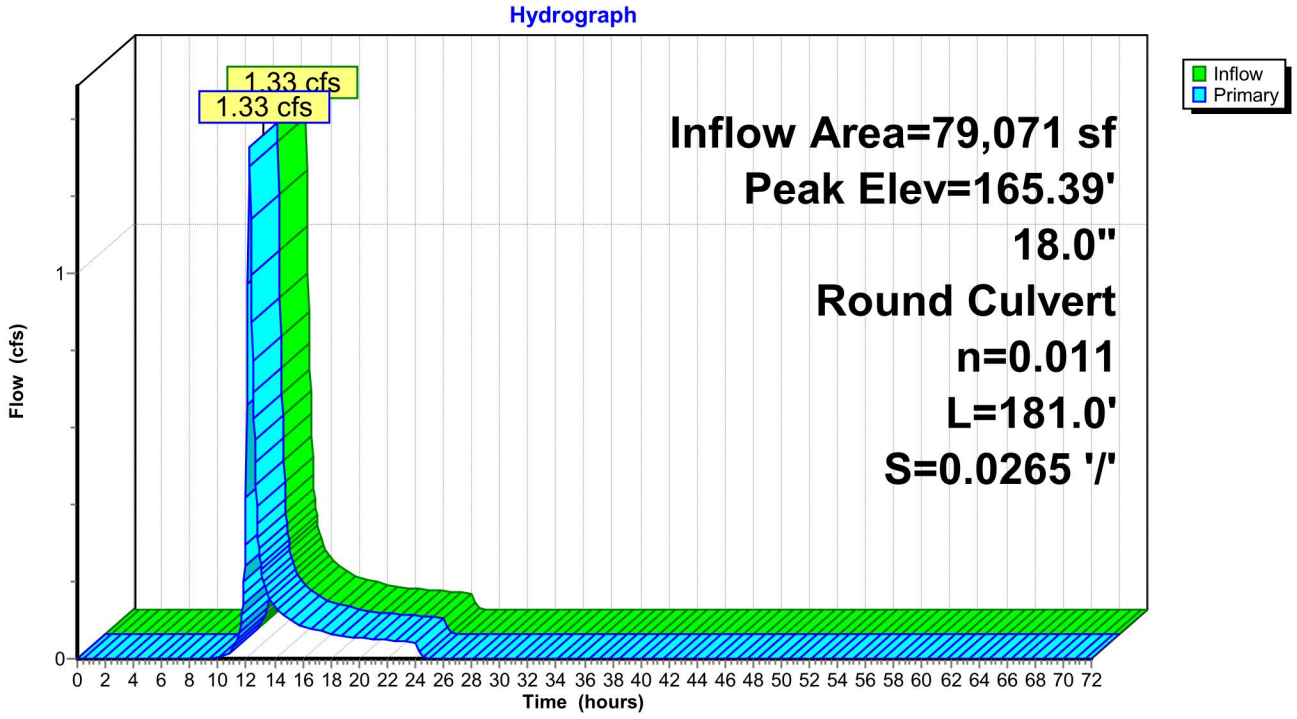
Inflow Area = 79,071 sf, 11.17% Impervious, Inflow Depth = 0.91" for 1-yr event
Inflow = 1.33 cfs @ 12.21 hrs, Volume= 6,009 cf
Outflow = 1.33 cfs @ 12.21 hrs, Volume= 6,009 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.21 hrs, Volume= 6,009 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.39' @ 12.21 hrs
Flood Elev= 167.03'

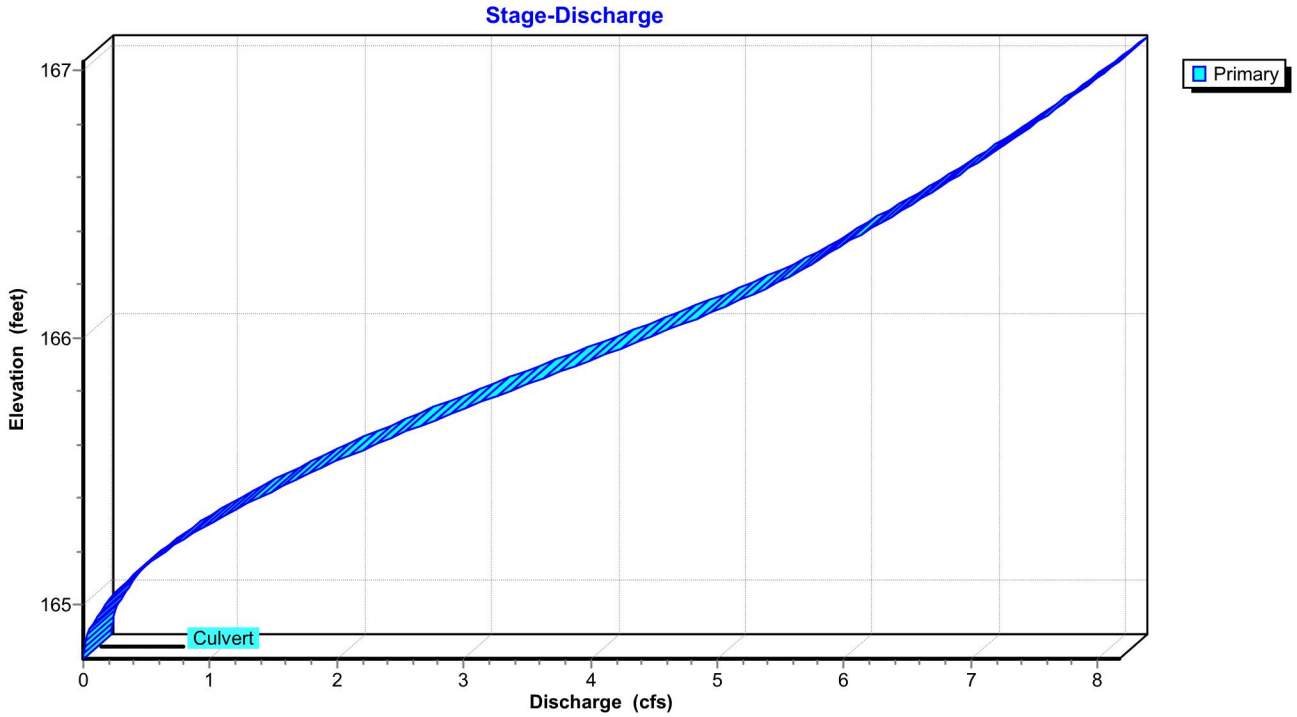
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.32 cfs @ 12.21 hrs HW=165.39' (Free Discharge)
**1=Culvert** (Inlet Controls 1.32 cfs @ 2.06 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Culvert
Elevation (feet)
167
166
165
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

## Summary for Pond DP-3: DP-3

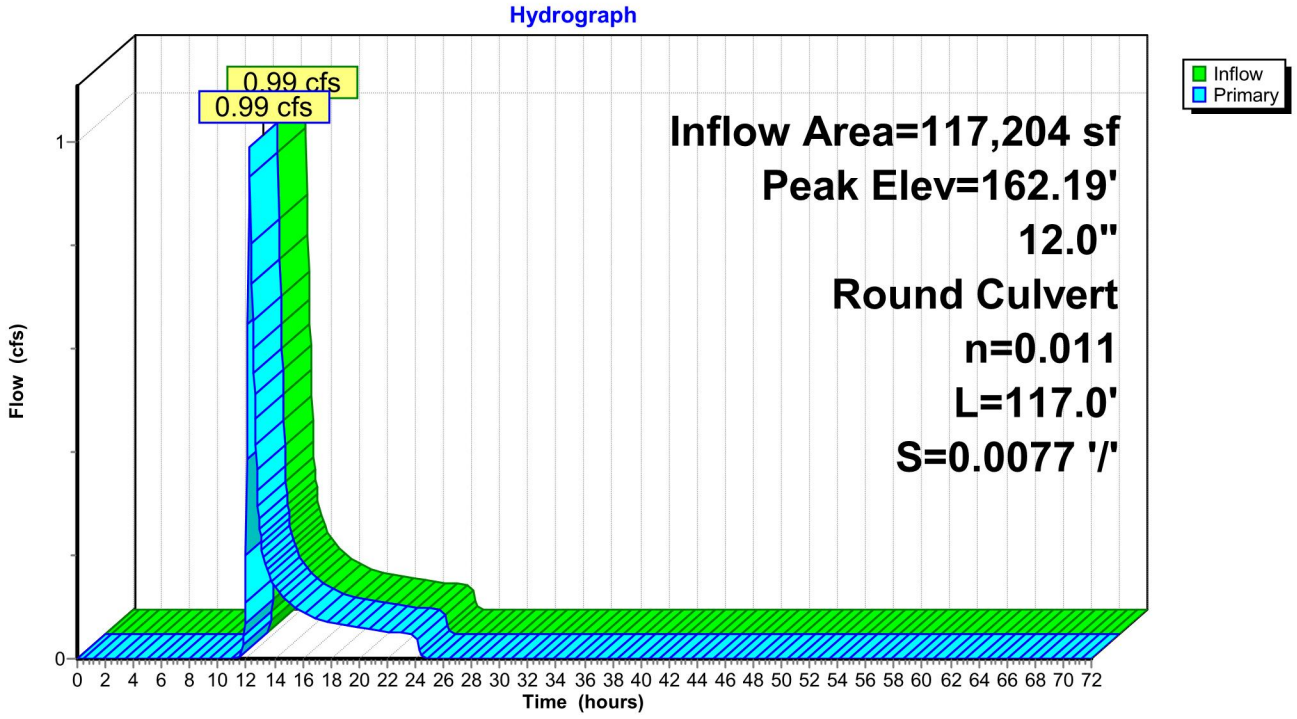
Inflow Area = 117,204 sf, 0.98% Impervious, Inflow Depth = 0.55" for 1-yr event
Inflow = 0.99 cfs @ 12.22 hrs, Volume= 5,343 cf
Outflow = 0.99 cfs @ 12.22 hrs, Volume= 5,343 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.22 hrs, Volume= 5,343 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.19' @ 12.22 hrs
Flood Elev= 168.45'

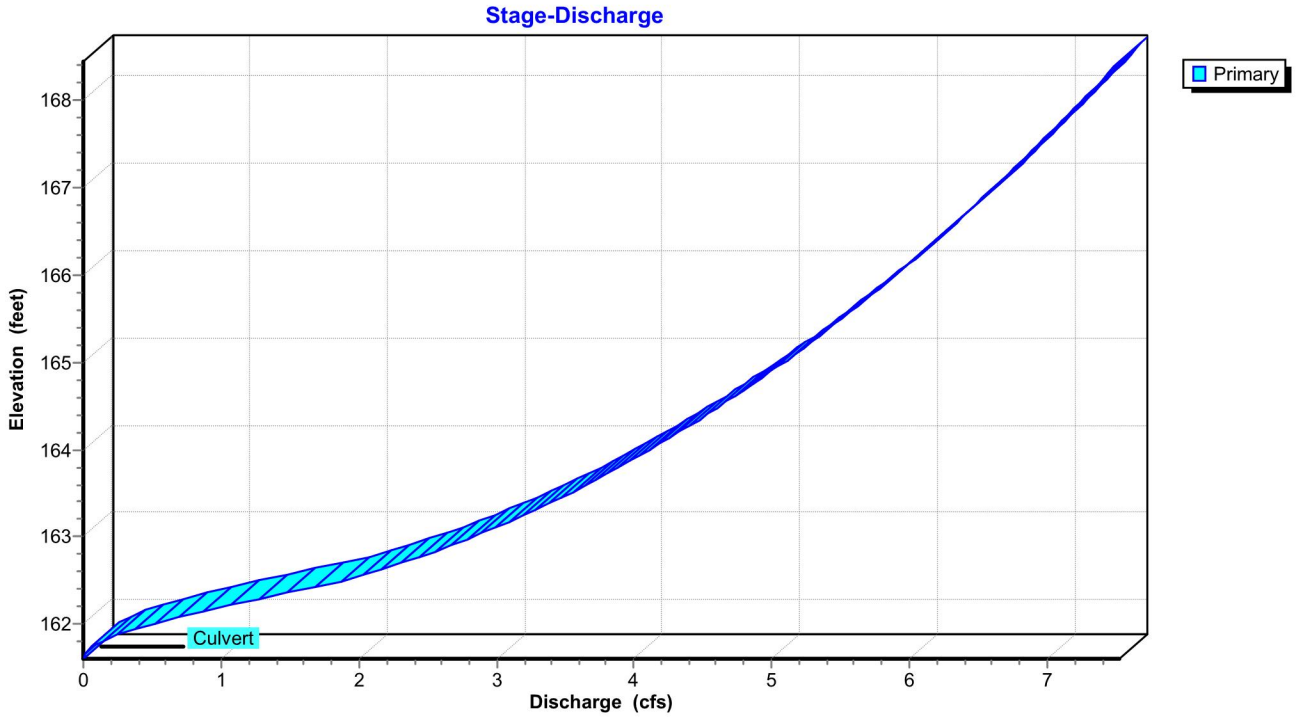
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.98 cfs @ 12.22 hrs HW=162.18' (Free Discharge)
**1=Culvert** (Inlet Controls 0.98 cfs @ 2.05 fps)

## Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=423,083 sf 10.76% Impervious Runoff Depth=1.12"
Flow Length=1,395' Tc=40.2 min CN=76 Runoff=5.66 cfs 39,638 cf

**Subcatchment 2: DA-2** Runoff Area=117,204 sf 0.98% Impervious Runoff Depth=0.85"
Flow Length=298' Tc=17.2 min CN=71 Runoff=1.71 cfs 8,342 cf

**Subcatchment 3: DA-3** Runoff Area=79,071 sf 11.17% Impervious Runoff Depth=1.31"
Flow Length=397' Tc=17.6 min CN=79 Runoff=1.94 cfs 8,611 cf

**Pond DP-1: DP-1** Peak Elev=162.75' Inflow=5.66 cfs 39,638 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=5.66 cfs 39,638 cf

**Pond DP-2: DP-2** Peak Elev=165.53' Inflow=1.94 cfs 8,611 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=1.94 cfs 8,611 cf

**Pond DP-3: DP-3** Peak Elev=162.43' Inflow=1.71 cfs 8,342 cf
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Outflow=1.71 cfs 8,342 cf

**Total Runoff Area = 619,358 sf Runoff Volume = 56,591 cf Average Runoff Depth = 1.10"**
**91.04% Pervious = 563,845 sf 8.96% Impervious = 55,513 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 190% of capacity of segment #5
[47] Hint: Peak is 166% of capacity of segment #6

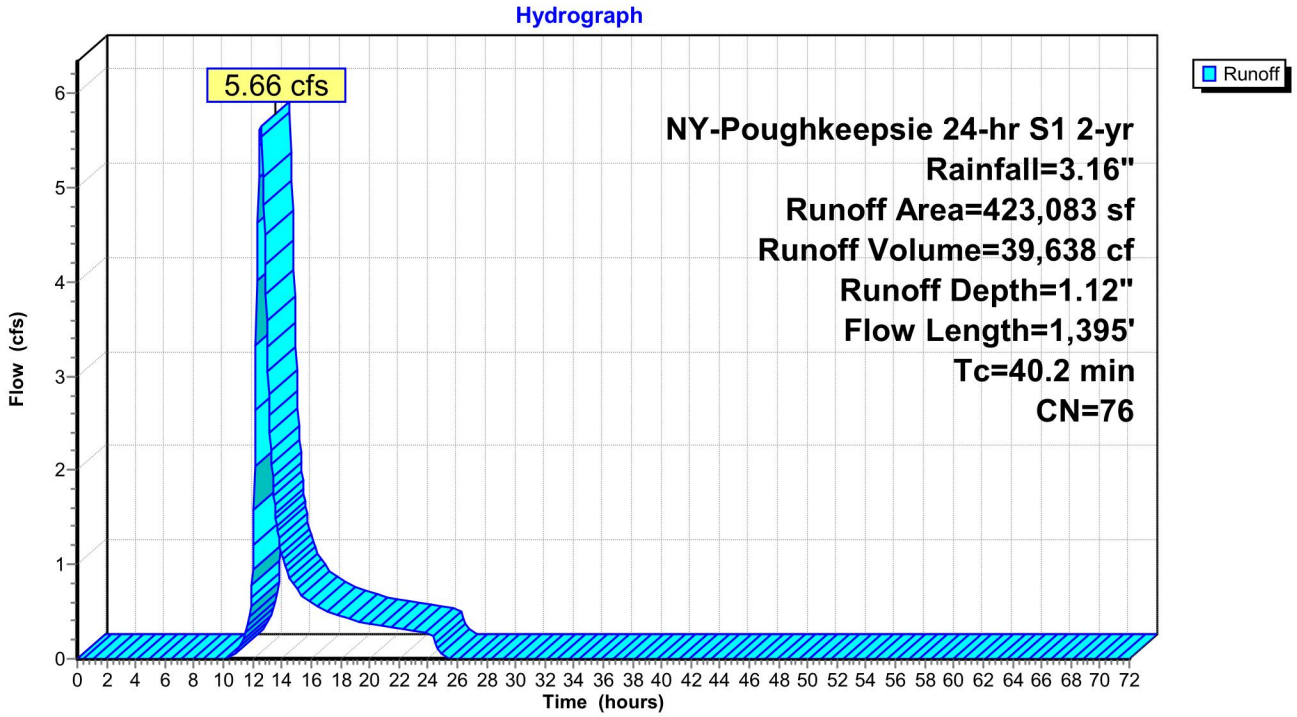
Runoff = 5.66 cfs @ 12.54 hrs, Volume= 39,638 cf, Depth= 1.12"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 18,637 | 49 | 50-75% Grass cover, Fair, HSG A |
| 93,418 | 69 | 50-75% Grass cover, Fair, HSG B |
| 149,601 | 79 | 50-75% Grass cover, Fair, HSG C |
| 4,362 | 60 | Woods, Fair, HSG B |
| 111,533 | 73 | Woods, Fair, HSG C |
| 45,532 | 98 | Paved parking, HSG C |
| 423,083 | 76 | Weighted Average |
| 377,551 | | 89.24% Pervious Area |
| 45,532 | | 10.76% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 4.6 | 303 | 0.0250 | 1.11 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 16.7 | 419 | 0.0070 | 0.42 | | **Shallow Concentrated Flow, D-E**<br>Woodland Kv= 5.0 fps |
| 0.7 | 149 | 0.0050 | 3.79 | 2.98 | **Pipe Channel, E-F**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.7 | 117 | 0.0020 | 2.78 | 3.41 | **Pipe Channel, F-G**<br>15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.3 | 80 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, G-H**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.1 | 20 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, H-I**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 0.3 | 77 | 0.0030 | 3.85 | 6.80 | **Pipe Channel, I-J**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 40.2 | 1,395 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

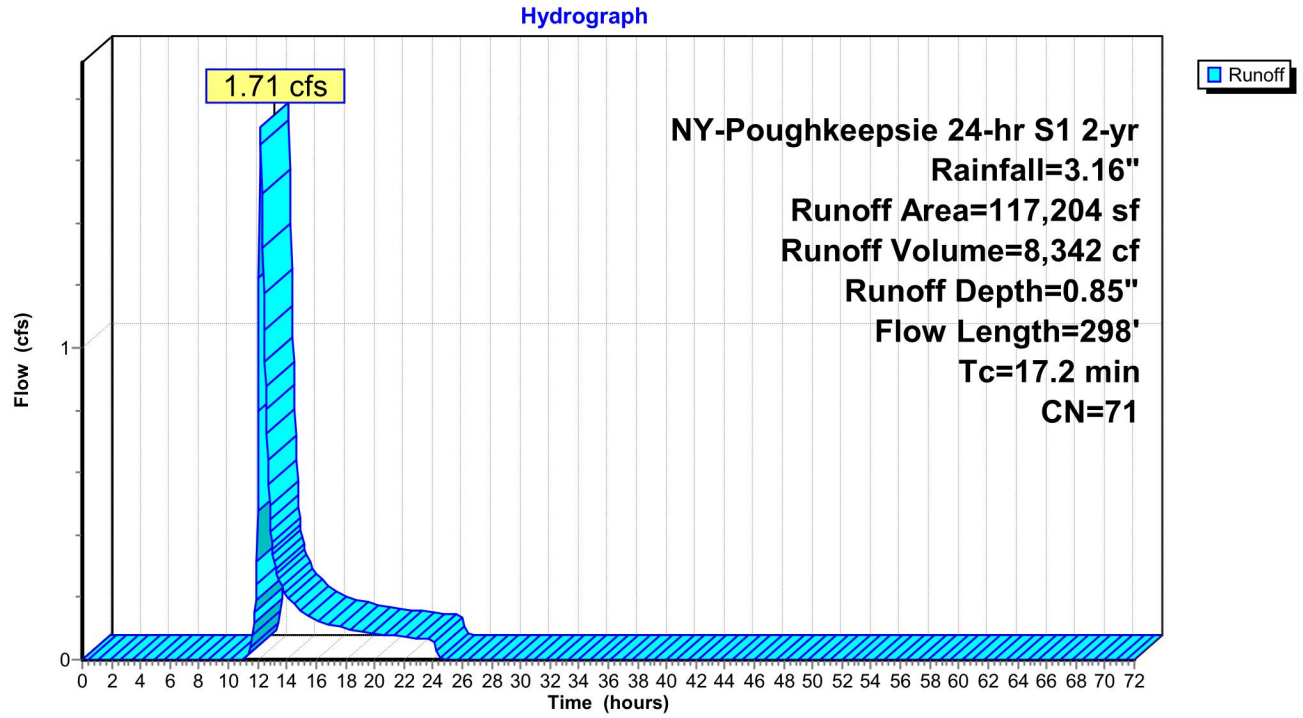
Runoff = 1.71 cfs @ 12.21 hrs, Volume= 8,342 cf, Depth= 0.85"
Routed to Pond DP-3 : DP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 97,495 | 69 | 50-75% Grass cover, Fair, HSG B |
| 17,753 | 79 | 50-75% Grass cover, Fair, HSG C |
| 805 | 73 | Woods, Fair, HSG C |
| 1,151 | 98 | Paved parking, HSG C |
| 117,204 | 71 | Weighted Average |
| 116,053 | | 99.02% Pervious Area |
| 1,151 | | 0.98% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 8.8 | 58 | 0.0640 | 0.11 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 7.5 | 92 | 0.0870 | 0.21 | | **Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.16" |
| 0.9 | 148 | 0.1390 | 2.61 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 17.2 | 298 | Total | | | |

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

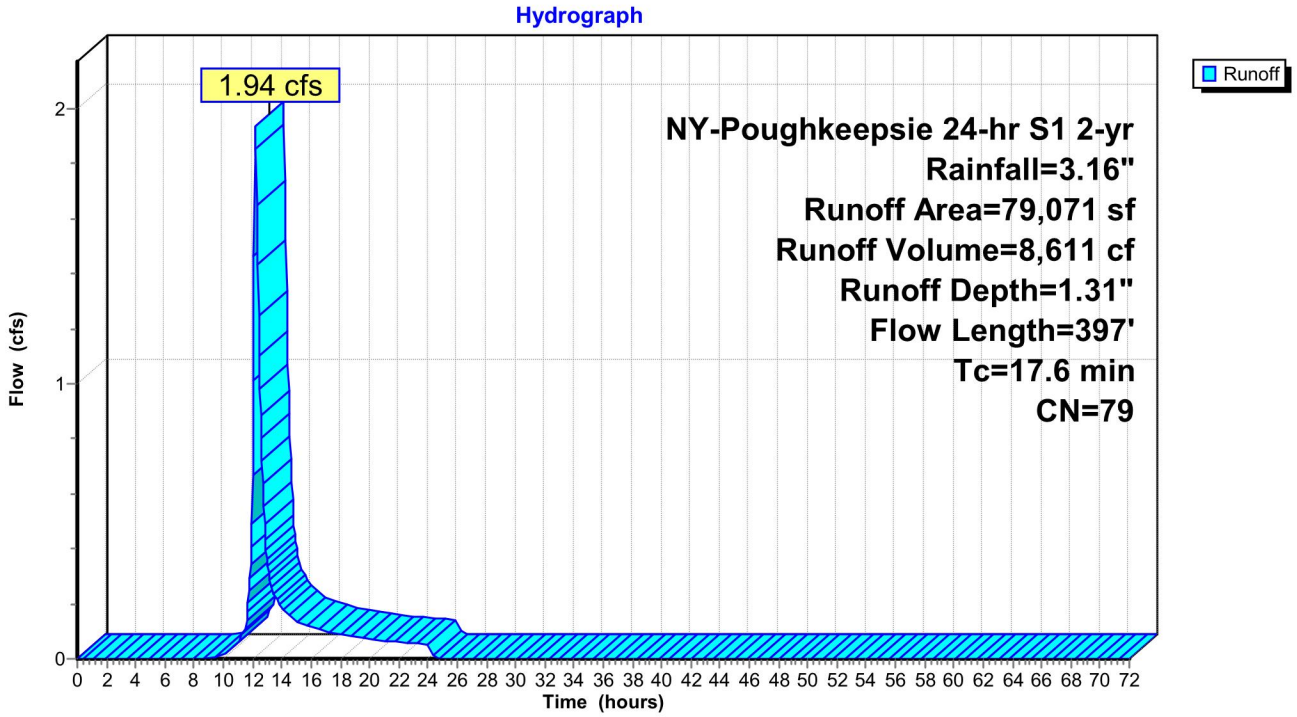
Runoff = 1.94 cfs @ 12.20 hrs, Volume= 8,611 cf, Depth= 1.31"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 7,572 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,082 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 8,830 | 98 | Paved parking, HSG C |
| 79,071 | 79 | Weighted Average |
| 70,241 | | 88.83% Pervious Area |
| 8,830 | | 11.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Pond DP-1: DP-1

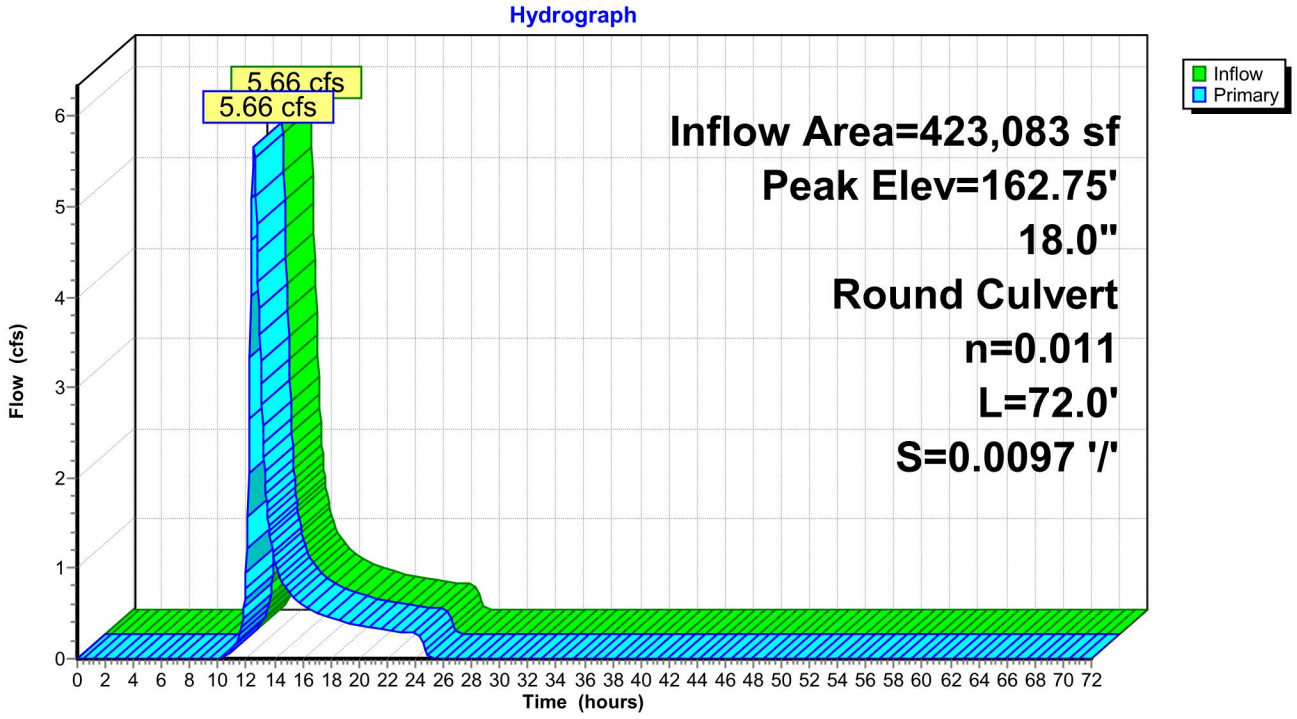
Inflow Area = 423,083 sf, 10.76% Impervious, Inflow Depth = 1.12" for 2-yr event
Inflow = 5.66 cfs @ 12.54 hrs, Volume= 39,638 cf
Outflow = 5.66 cfs @ 12.54 hrs, Volume= 39,638 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.54 hrs, Volume= 39,638 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.75' @ 12.54 hrs
Flood Elev= 163.41'

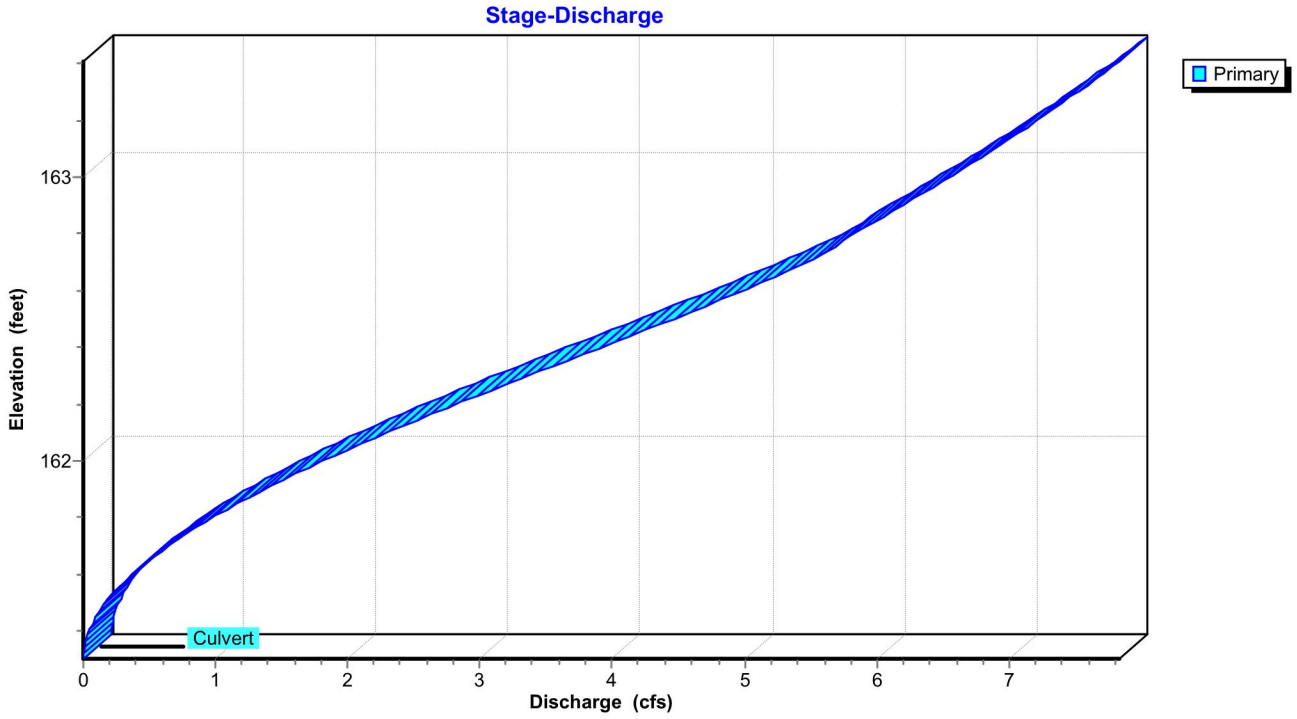
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=5.65 cfs @ 12.54 hrs HW=162.75' (Free Discharge)
**1=Culvert** (Inlet Controls 5.65 cfs @ 3.23 fps)

## Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

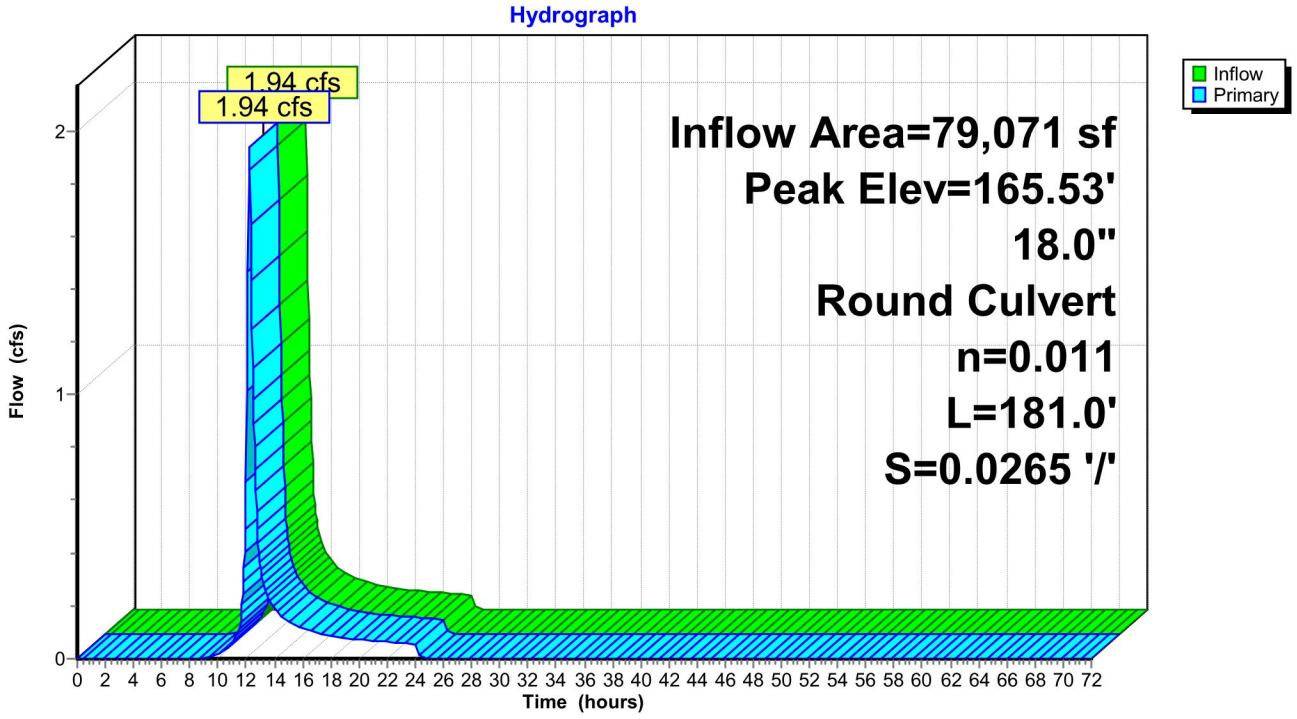
Inflow Area = 79,071 sf, 11.17% Impervious, Inflow Depth = 1.31" for 2-yr event
Inflow = 1.94 cfs @ 12.20 hrs, Volume= 8,611 cf
Outflow = 1.94 cfs @ 12.20 hrs, Volume= 8,611 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.94 cfs @ 12.20 hrs, Volume= 8,611 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.53' @ 12.20 hrs
Flood Elev= 167.03'

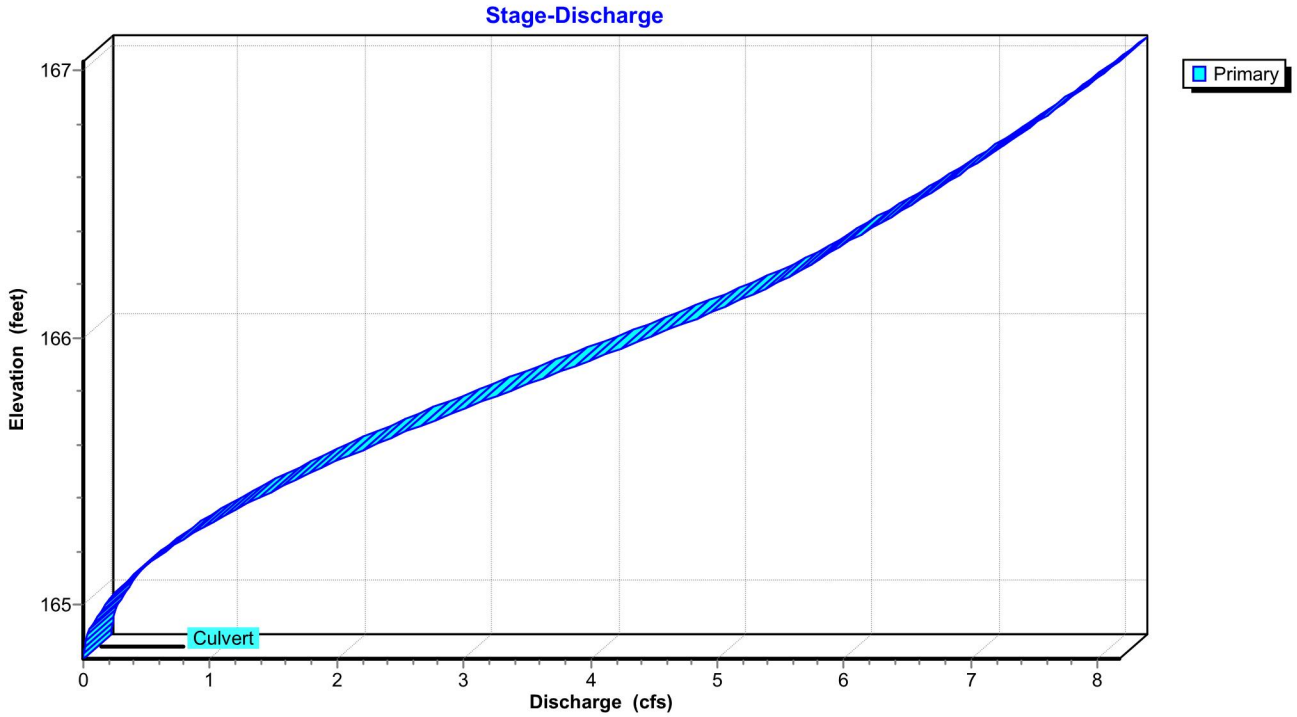
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.93 cfs @ 12.20 hrs HW=165.52' (Free Discharge)
**1=Culvert** (Inlet Controls 1.93 cfs @ 2.29 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Culvert
Elevation (feet)
167
166
165
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

## Summary for Pond DP-3: DP-3

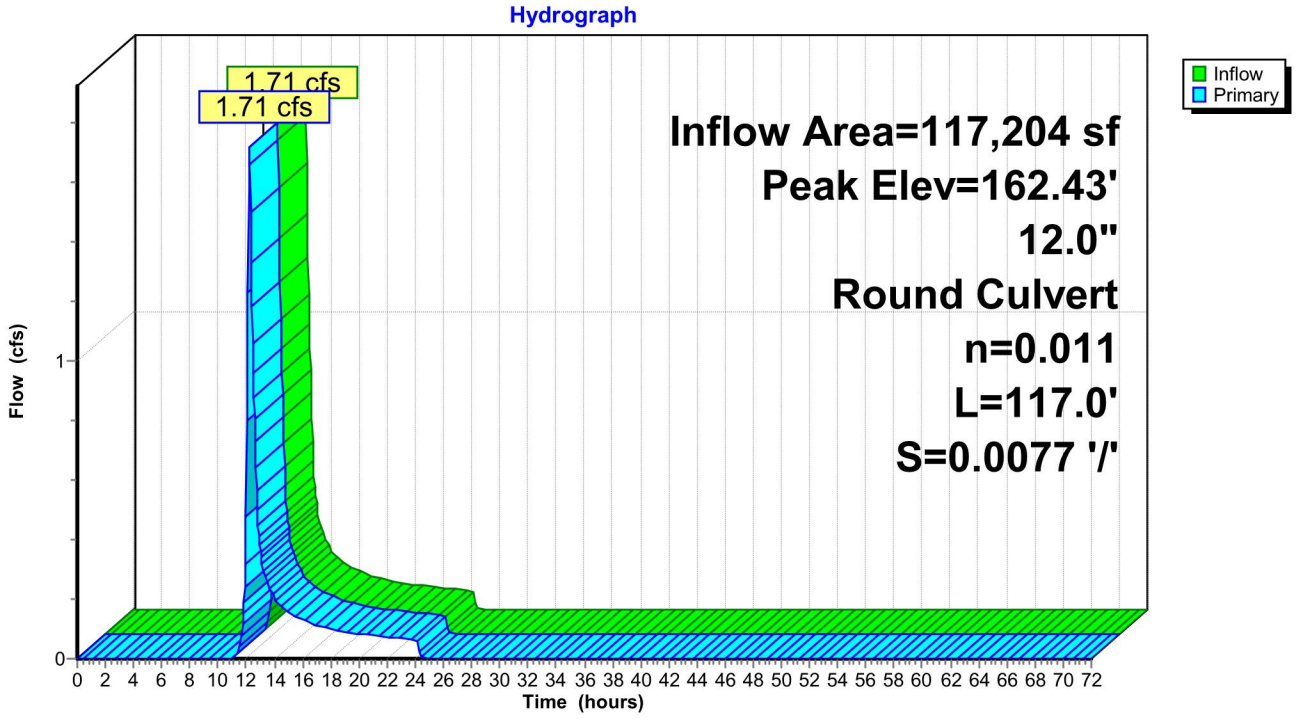
Inflow Area = 117,204 sf, 0.98% Impervious, Inflow Depth = 0.85" for 2-yr event
Inflow = 1.71 cfs @ 12.21 hrs, Volume= 8,342 cf
Outflow = 1.71 cfs @ 12.21 hrs, Volume= 8,342 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.71 cfs @ 12.21 hrs, Volume= 8,342 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.43' @ 12.21 hrs
Flood Elev= 168.45'

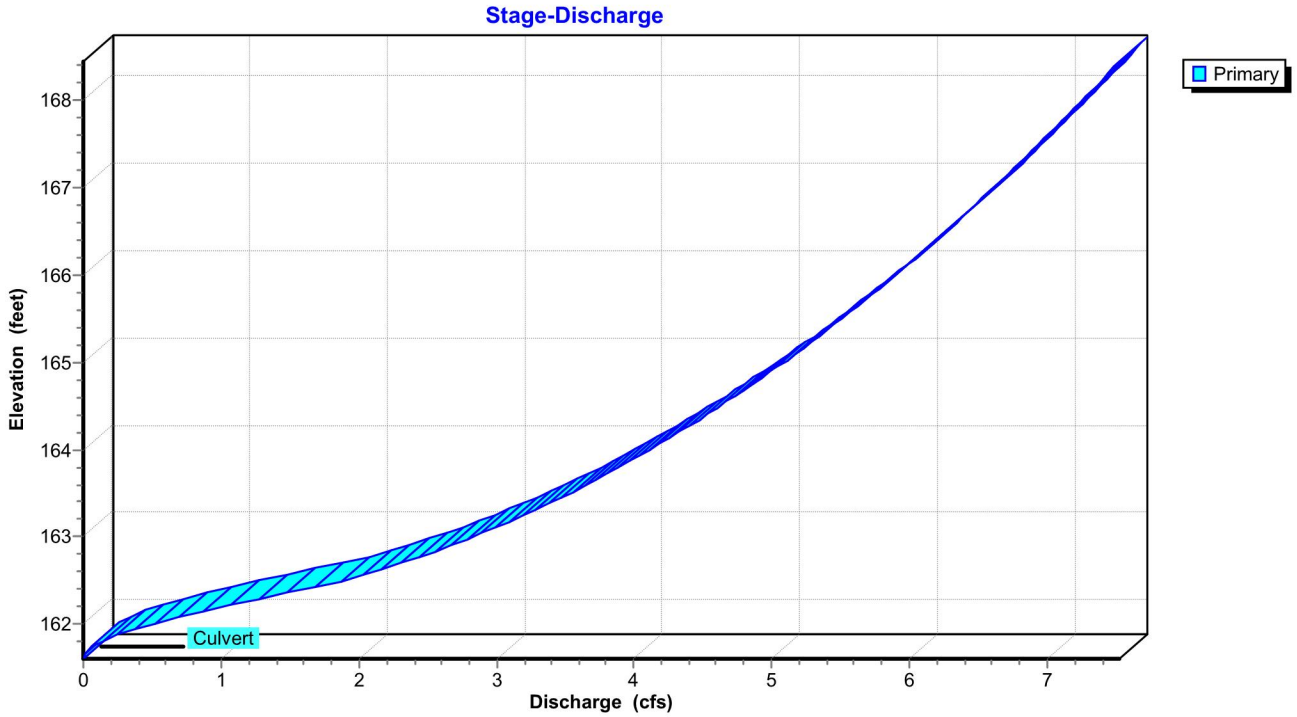
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=1.70 cfs @ 12.21 hrs HW=162.43' (Free Discharge)
**1=Culvert** (Inlet Controls 1.70 cfs @ 2.44 fps)

## Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=423,083 sf 10.76% Impervious Runoff Depth=2.27"
Flow Length=1,395' Tc=40.2 min CN=76 Runoff=11.77 cfs 79,902 cf

**Subcatchment 2: DA-2** Runoff Area=117,204 sf 0.98% Impervious Runoff Depth=1.87"
Flow Length=298' Tc=17.2 min CN=71 Runoff=3.99 cfs 18,268 cf

**Subcatchment 3: DA-3** Runoff Area=79,071 sf 11.17% Impervious Runoff Depth=2.52"
Flow Length=397' Tc=17.6 min CN=79 Runoff=3.70 cfs 16,604 cf

**Pond DP-1: DP-1** Peak Elev=165.12' Inflow=11.77 cfs 79,902 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=11.77 cfs 79,902 cf

**Pond DP-2: DP-2** Peak Elev=165.86' Inflow=3.70 cfs 16,604 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=3.70 cfs 16,604 cf

**Pond DP-3: DP-3** Peak Elev=163.88' Inflow=3.99 cfs 18,268 cf
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Outflow=3.99 cfs 18,268 cf

**Total Runoff Area = 619,358 sf Runoff Volume = 114,774 cf Average Runoff Depth = 2.22"**
**91.04% Pervious = 563,845 sf 8.96% Impervious = 55,513 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 395% of capacity of segment #5
[47] Hint: Peak is 345% of capacity of segment #6
[47] Hint: Peak is 134% of capacity of segment #7
[47] Hint: Peak is 134% of capacity of segment #8
[47] Hint: Peak is 173% of capacity of segment #9

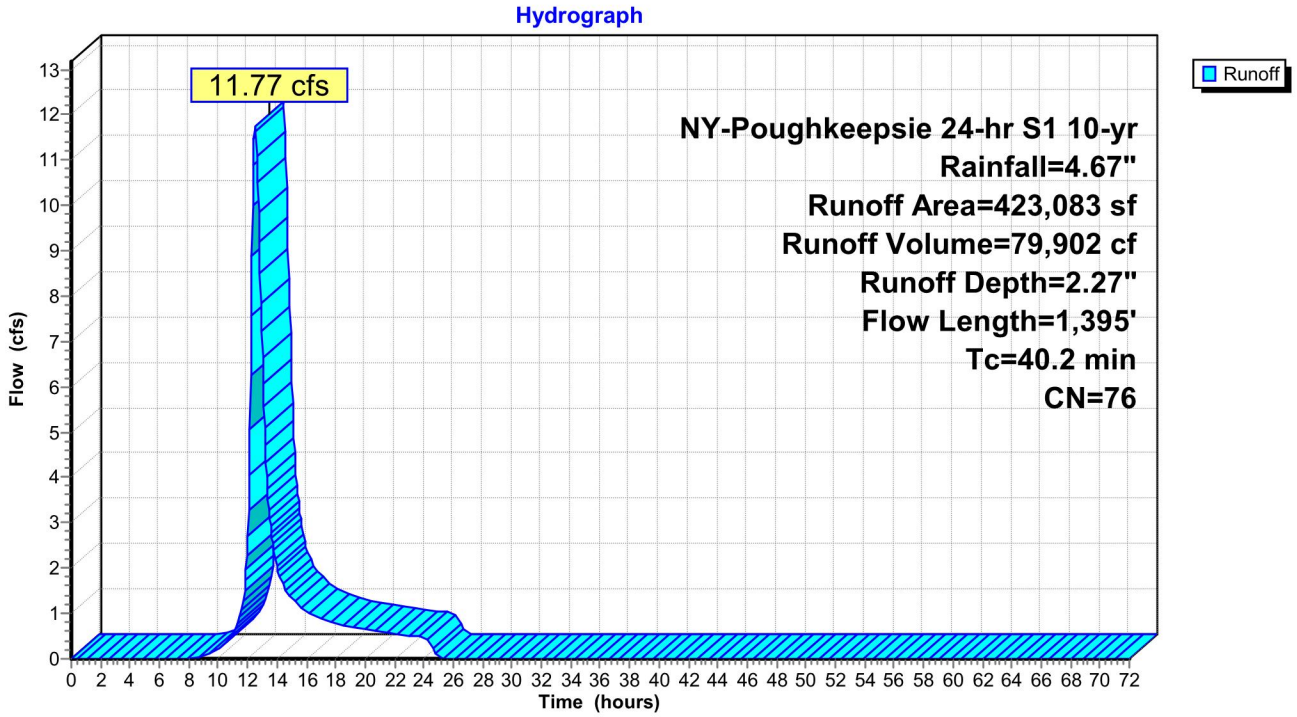
Runoff = 11.77 cfs @ 12.53 hrs, Volume= 79,902 cf, Depth= 2.27"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 18,637 | 49 | 50-75% Grass cover, Fair, HSG A |
| 93,418 | 69 | 50-75% Grass cover, Fair, HSG B |
| 149,601 | 79 | 50-75% Grass cover, Fair, HSG C |
| 4,362 | 60 | Woods, Fair, HSG B |
| 111,533 | 73 | Woods, Fair, HSG C |
| 45,532 | 98 | Paved parking, HSG C |
| 423,083 | 76 | Weighted Average |
| 377,551 | | 89.24% Pervious Area |
| 45,532 | | 10.76% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 4.6 | 303 | 0.0250 | 1.11 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 16.7 | 419 | 0.0070 | 0.42 | | **Shallow Concentrated Flow, D-E**<br>Woodland Kv= 5.0 fps |
| 0.7 | 149 | 0.0050 | 3.79 | 2.98 | **Pipe Channel, E-F**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.7 | 117 | 0.0020 | 2.78 | 3.41 | **Pipe Channel, F-G**<br>15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.3 | 80 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, G-H**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.1 | 20 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, H-I**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 0.3 | 77 | 0.0030 | 3.85 | 6.80 | **Pipe Channel, I-J**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 40.2 | 1,395 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

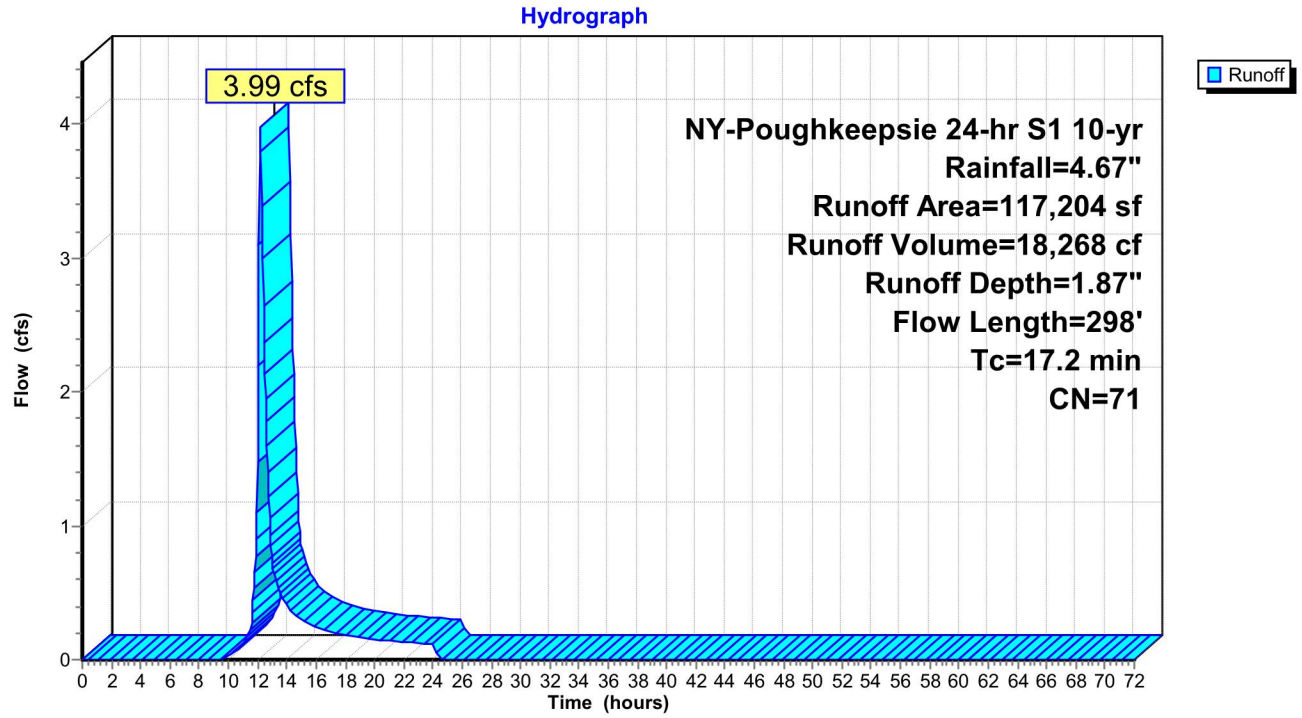
Runoff = 3.99 cfs @ 12.20 hrs, Volume= 18,268 cf, Depth= 1.87"
Routed to Pond DP-3 : DP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 97,495 | 69 | 50-75% Grass cover, Fair, HSG B |
| 17,753 | 79 | 50-75% Grass cover, Fair, HSG C |
| 805 | 73 | Woods, Fair, HSG C |
| 1,151 | 98 | Paved parking, HSG C |
| 117,204 | 71 | Weighted Average |
| 116,053 | | 99.02% Pervious Area |
| 1,151 | | 0.98% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 8.8 | 58 | 0.0640 | 0.11 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 7.5 | 92 | 0.0870 | 0.21 | | **Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.16" |
| 0.9 | 148 | 0.1390 | 2.61 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 17.2 | 298 | Total | | | |

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

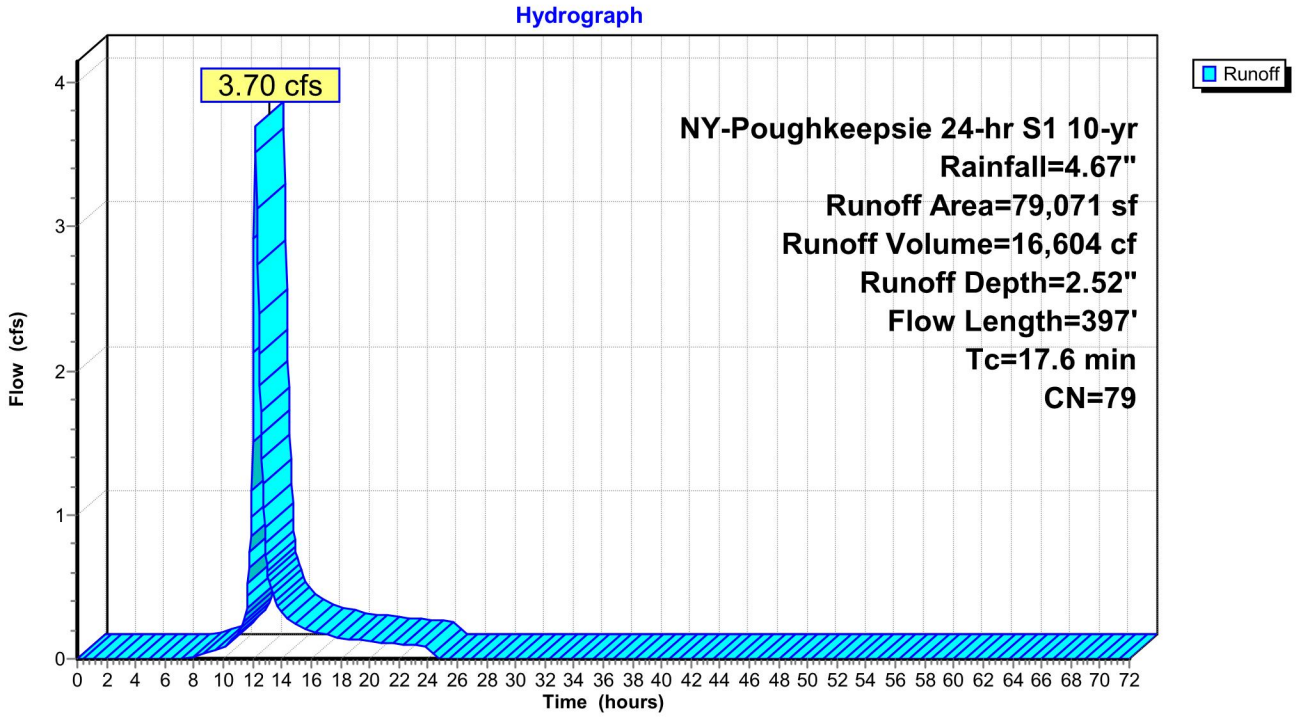
Runoff = 3.70 cfs @ 12.20 hrs, Volume= 16,604 cf, Depth= 2.52"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 7,572 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,082 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 8,830 | 98 | Paved parking, HSG C |
| 79,071 | 79 | Weighted Average |
| 70,241 | | 88.83% Pervious Area |
| 8,830 | | 11.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Pond DP-1: DP-1

[58] Hint: Peaked 1.71' above defined flood level

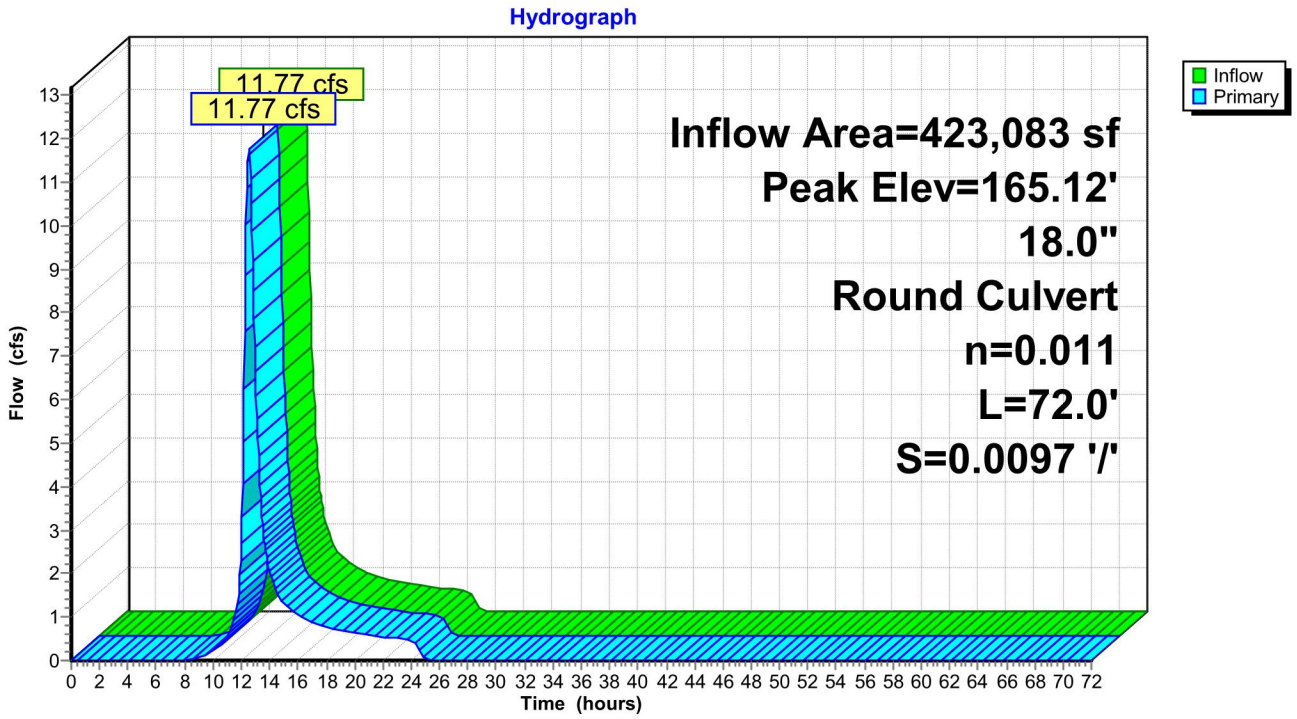
Inflow Area = 423,083 sf, 10.76% Impervious, Inflow Depth = 2.27" for 10-yr event
Inflow = 11.77 cfs @ 12.53 hrs, Volume= 79,902 cf
Outflow = 11.77 cfs @ 12.53 hrs, Volume= 79,902 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.77 cfs @ 12.53 hrs, Volume= 79,902 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.12' @ 12.53 hrs
Flood Elev= 163.41'

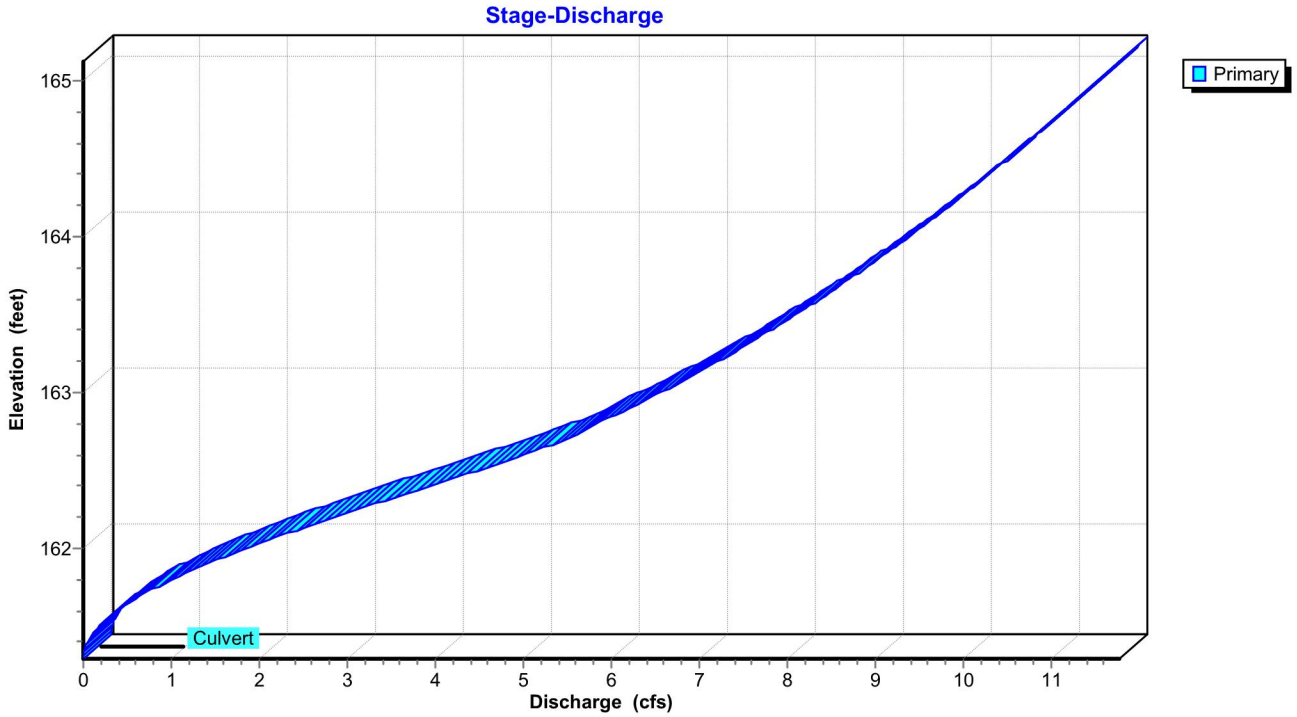
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=11.74 cfs @ 12.53 hrs HW=165.10' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 11.74 cfs @ 6.64 fps)

## Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
8
9
10
11
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 161.30 | **0** | 163.90 | 0 |
| 161.35 | 0 | 163.95 | 0 |
| 161.40 | 0 | 164.00 | 0 |
| 161.45 | 0 | 164.05 | 0 |
| 161.50 | 0 | 164.10 | 0 |
| 161.55 | 0 | 164.15 | 0 |
| 161.60 | 0 | 164.20 | 0 |
| 161.65 | 0 | 164.25 | 0 |
| 161.70 | 0 | 164.30 | 0 |
| 161.75 | 0 | 164.35 | 0 |
| 161.80 | 0 | 164.40 | 0 |
| 161.85 | 0 | 164.45 | 0 |
| 161.90 | 0 | 164.50 | 0 |
| 161.95 | 0 | 164.55 | 0 |
| 162.00 | 0 | 164.60 | 0 |
| 162.05 | 0 | 164.65 | 0 |
| 162.10 | 0 | 164.70 | 0 |
| 162.15 | 0 | 164.75 | 0 |
| 162.20 | 0 | 164.80 | 0 |
| 162.25 | 0 | 164.85 | 0 |
| 162.30 | 0 | 164.90 | 0 |
| 162.35 | 0 | 164.95 | 0 |
| 162.40 | 0 | 165.00 | 0 |
| 162.45 | 0 | 165.05 | 0 |
| 162.50 | 0 | 165.10 | 0 |
| 162.55 | 0 | | |
| 162.60 | 0 | | |
| 162.65 | 0 | | |
| 162.70 | 0 | | |
| 162.75 | 0 | | |
| 162.80 | 0 | | |
| 162.85 | 0 | | |
| 162.90 | 0 | | |
| 162.95 | 0 | | |
| 163.00 | 0 | | |
| 163.05 | 0 | | |
| 163.10 | 0 | | |
| 163.15 | 0 | | |
| 163.20 | 0 | | |
| 163.25 | 0 | | |
| 163.30 | 0 | | |
| 163.35 | 0 | | |
| 163.40 | 0 | | |
| 163.45 | 0 | | |
| 163.50 | 0 | | |
| 163.55 | 0 | | |
| 163.60 | 0 | | |
| 163.65 | 0 | | |
| 163.70 | 0 | | |
| 163.75 | 0 | | |
| 163.80 | 0 | | |
| 163.85 | 0 | | |

## Summary for Pond DP-2: DP-2

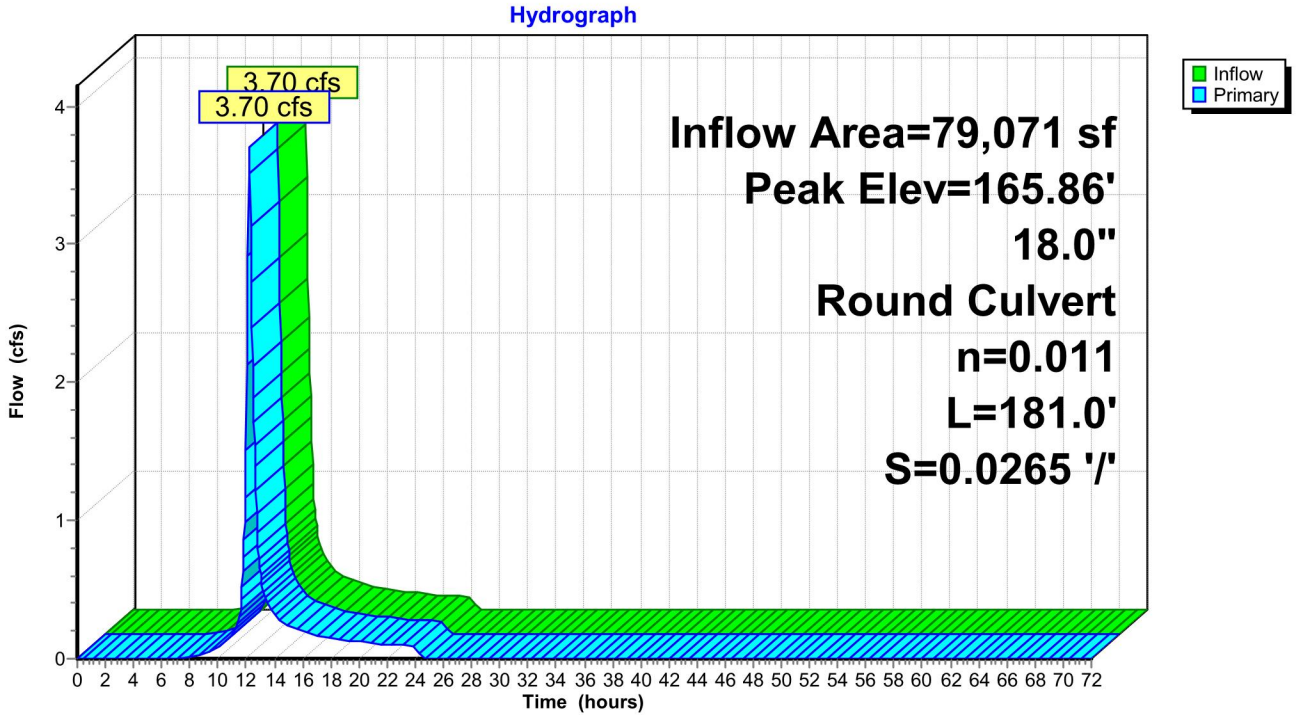
Inflow Area = 79,071 sf, 11.17% Impervious, Inflow Depth = 2.52" for 10-yr event
Inflow = 3.70 cfs @ 12.20 hrs, Volume= 16,604 cf
Outflow = 3.70 cfs @ 12.20 hrs, Volume= 16,604 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.70 cfs @ 12.20 hrs, Volume= 16,604 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.86' @ 12.20 hrs
Flood Elev= 167.03'

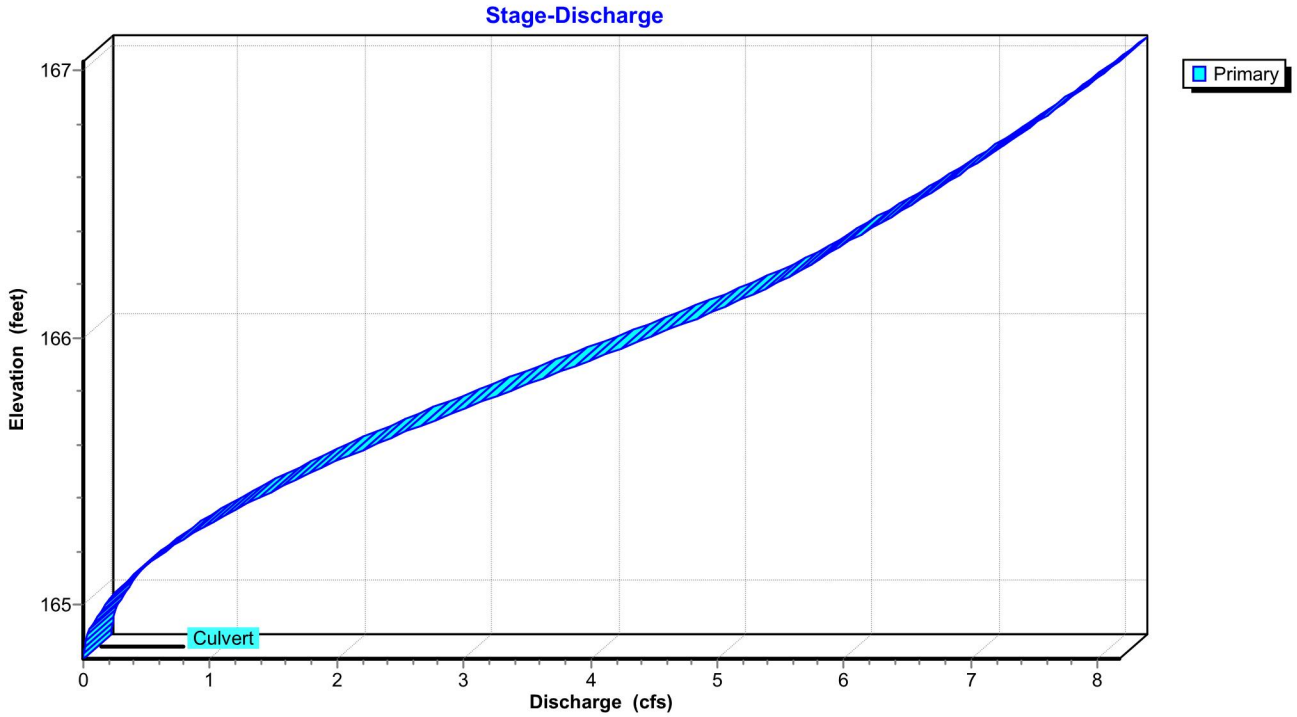
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.70 cfs @ 12.20 hrs HW=165.86' (Free Discharge)
**1=Culvert** (Inlet Controls 3.70 cfs @ 2.77 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

## Summary for Pond DP-3: DP-3

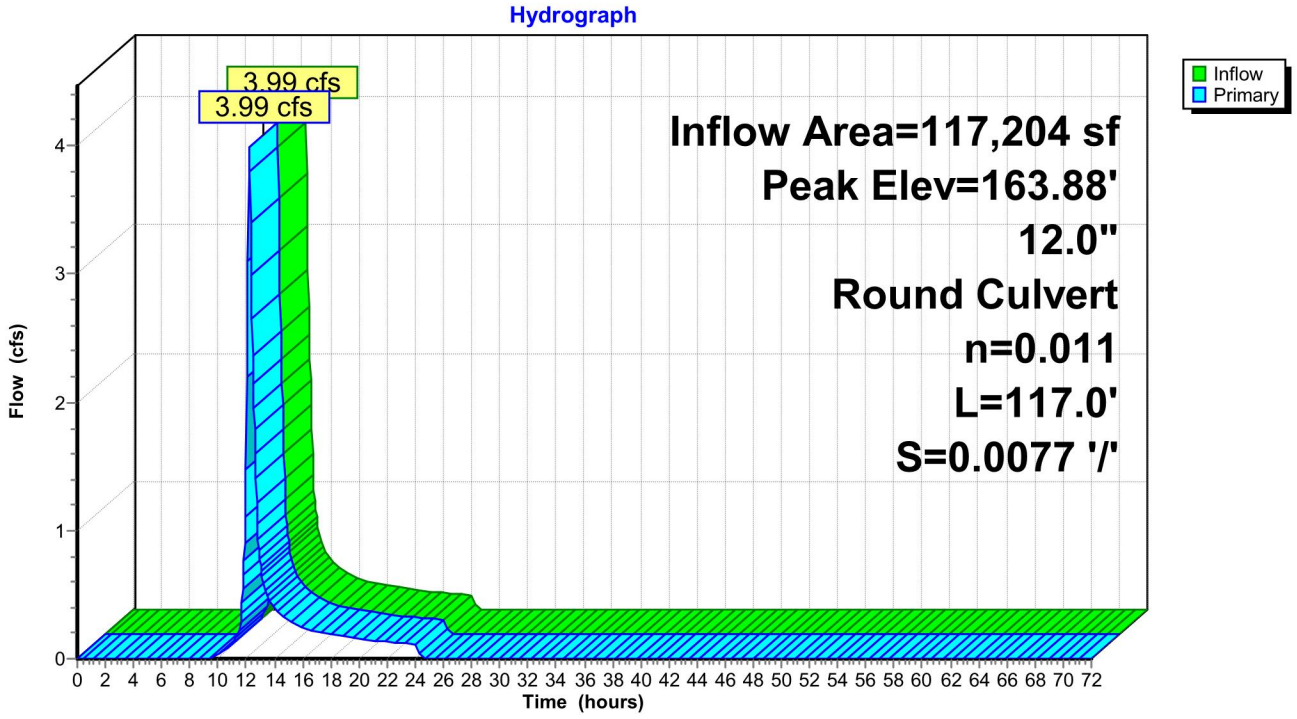
Inflow Area = 117,204 sf, 0.98% Impervious, Inflow Depth = 1.87" for 10-yr event
Inflow = 3.99 cfs @ 12.20 hrs, Volume= 18,268 cf
Outflow = 3.99 cfs @ 12.20 hrs, Volume= 18,268 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.99 cfs @ 12.20 hrs, Volume= 18,268 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.88' @ 12.20 hrs
Flood Elev= 168.45'

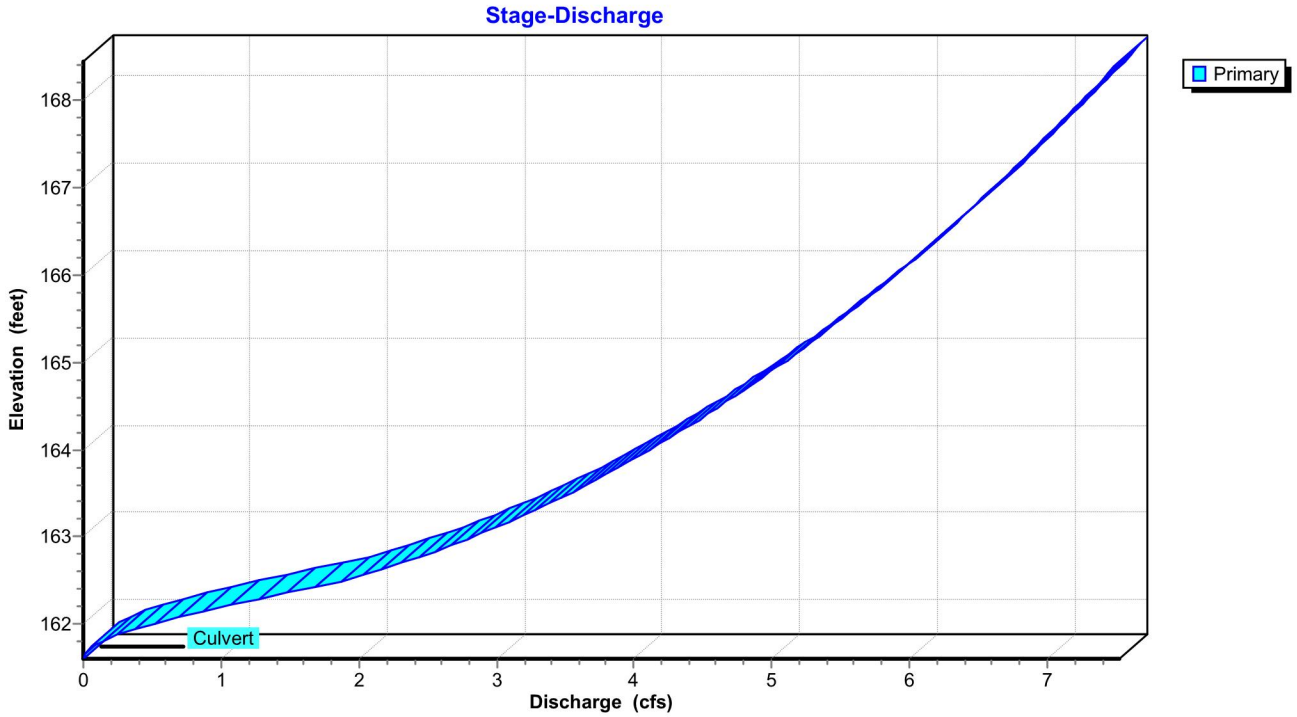
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=3.98 cfs @ 12.20 hrs HW=163.88' (Free Discharge)
**1=Culvert** (Inlet Controls 3.98 cfs @ 5.07 fps)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=423,083 sf 10.76% Impervious Runoff Depth=5.35"
Flow Length=1,395' Tc=40.2 min CN=76 Runoff=27.73 cfs 188,602 cf

**Subcatchment 2: DA-2** Runoff Area=117,204 sf 0.98% Impervious Runoff Depth=4.76"
Flow Length=298' Tc=17.2 min CN=71 Runoff=10.17 cfs 46,512 cf

**Subcatchment 3: DA-3** Runoff Area=79,071 sf 11.17% Impervious Runoff Depth=5.70"
Flow Length=397' Tc=17.6 min CN=79 Runoff=8.08 cfs 37,583 cf

**Pond DP-1: DP-1** Peak Elev=179.10' Inflow=27.73 cfs 188,602 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=27.73 cfs 188,602 cf

**Pond DP-2: DP-2** Peak Elev=167.00' Inflow=8.08 cfs 37,583 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=8.08 cfs 37,583 cf

**Pond DP-3: DP-3** Peak Elev=173.69' Inflow=10.17 cfs 46,512 cf
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Outflow=10.17 cfs 46,512 cf

**Total Runoff Area = 619,358 sf Runoff Volume = 272,697 cf Average Runoff Depth = 5.28"**
**91.04% Pervious = 563,845 sf 8.96% Impervious = 55,513 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 932% of capacity of segment #5
[47] Hint: Peak is 812% of capacity of segment #6
[47] Hint: Peak is 316% of capacity of segment #7
[47] Hint: Peak is 316% of capacity of segment #8
[47] Hint: Peak is 408% of capacity of segment #9

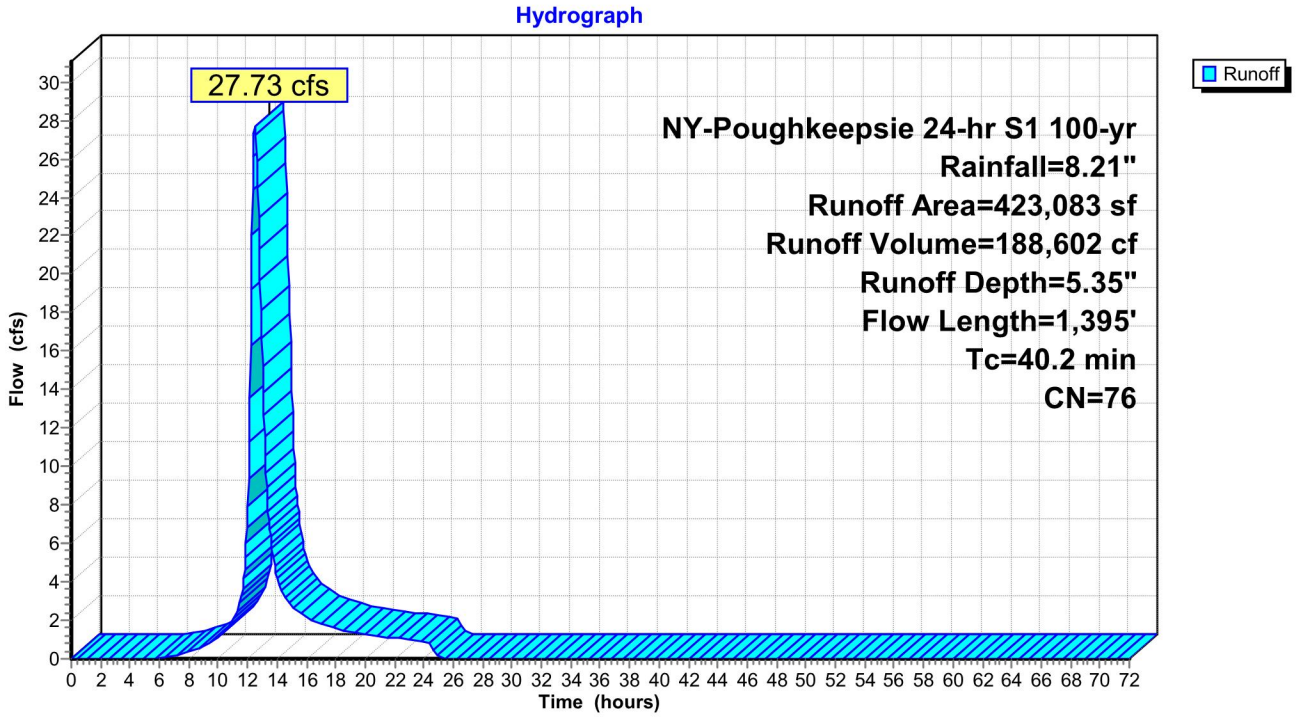
Runoff = 27.73 cfs @ 12.51 hrs, Volume= 188,602 cf, Depth= 5.35"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 18,637 | 49 | 50-75% Grass cover, Fair, HSG A |
| 93,418 | 69 | 50-75% Grass cover, Fair, HSG B |
| 149,601 | 79 | 50-75% Grass cover, Fair, HSG C |
| 4,362 | 60 | Woods, Fair, HSG B |
| 111,533 | 73 | Woods, Fair, HSG C |
| 45,532 | 98 | Paved parking, HSG C |
| 423,083 | 76 | Weighted Average |
| 377,551 | | 89.24% Pervious Area |
| 45,532 | | 10.76% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 4.6 | 303 | 0.0250 | 1.11 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 16.7 | 419 | 0.0070 | 0.42 | | **Shallow Concentrated Flow, D-E**<br>Woodland Kv= 5.0 fps |
| 0.7 | 149 | 0.0050 | 3.79 | 2.98 | **Pipe Channel, E-F**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.7 | 117 | 0.0020 | 2.78 | 3.41 | **Pipe Channel, F-G**<br>15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.3 | 80 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, G-H**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 Concrete pipe, straight & clean |
| 0.1 | 20 | 0.0050 | 4.97 | 8.78 | **Pipe Channel, H-I**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 0.3 | 77 | 0.0030 | 3.85 | 6.80 | **Pipe Channel, I-J**<br>18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'<br>n= 0.011 |
| 40.2 | 1,395 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

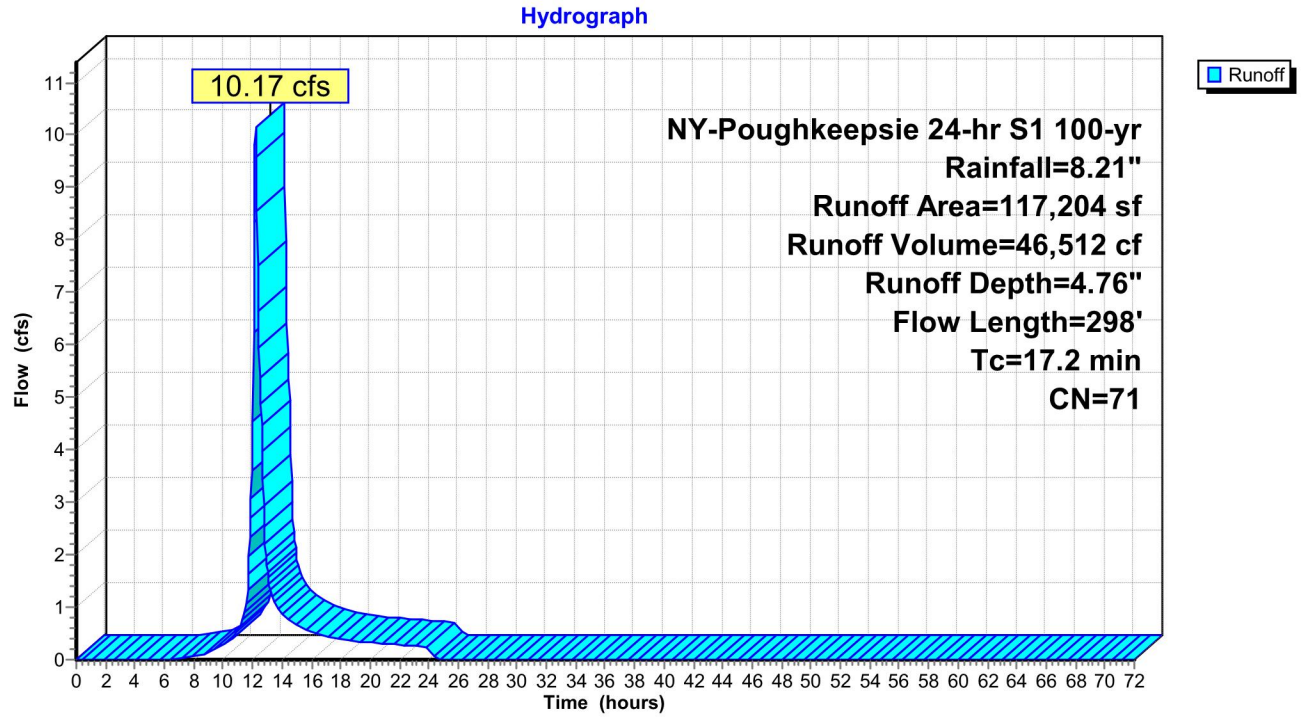
Runoff = 10.17 cfs @ 12.19 hrs, Volume= 46,512 cf, Depth= 4.76"
Routed to Pond DP-3 : DP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 97,495 | 69 | 50-75% Grass cover, Fair, HSG B |
| 17,753 | 79 | 50-75% Grass cover, Fair, HSG C |
| 805 | 73 | Woods, Fair, HSG C |
| 1,151 | 98 | Paved parking, HSG C |
| 117,204 | 71 | Weighted Average |
| 116,053 | | 99.02% Pervious Area |
| 1,151 | | 0.98% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 8.8 | 58 | 0.0640 | 0.11 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 7.5 | 92 | 0.0870 | 0.21 | | **Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.16" |
| 0.9 | 148 | 0.1390 | 2.61 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 17.2 | 298 | Total | | | |

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

[47] Hint: Peak is 192% of capacity of segment #4

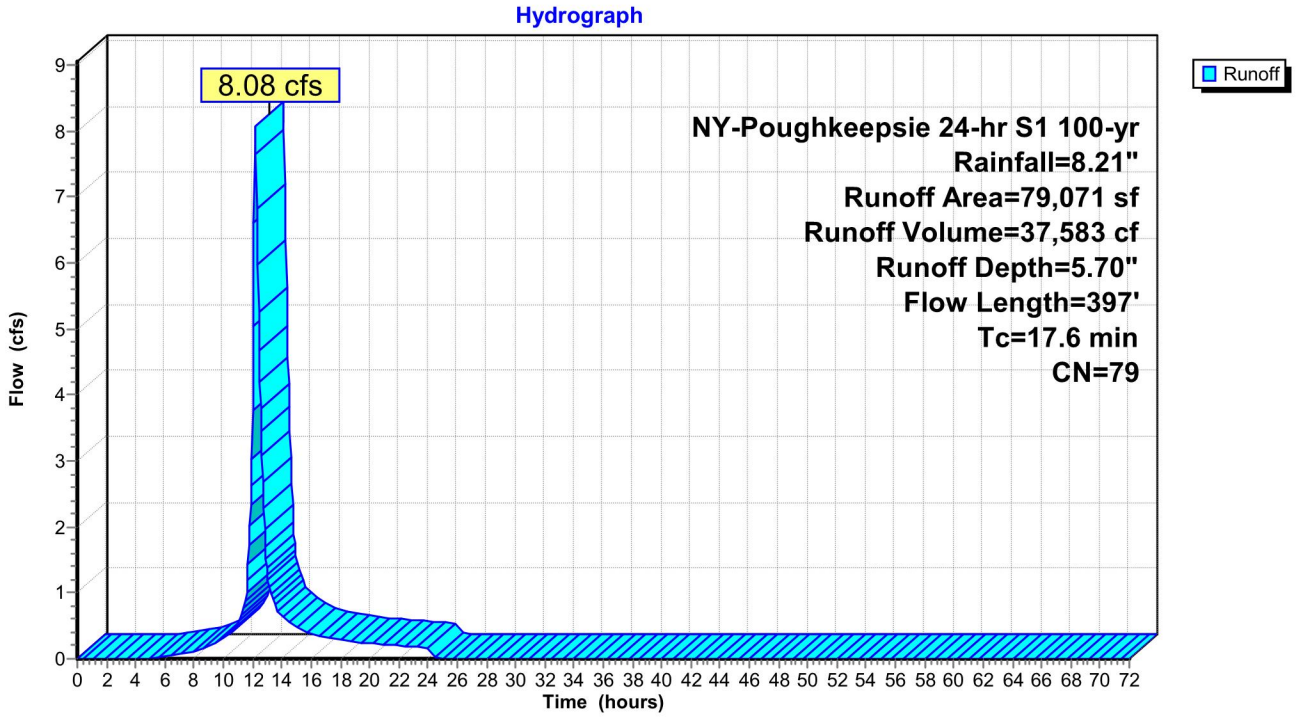
Runoff = 8.08 cfs @ 12.20 hrs, Volume= 37,583 cf, Depth= 5.70"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 7,572 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,082 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 8,830 | 98 | Paved parking, HSG C |
| 79,071 | 79 | Weighted Average |
| 70,241 | | 88.83% Pervious Area |
| 8,830 | | 11.17% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Pond DP-1: DP-1

[58] Hint: Peaked 15.69' above defined flood level

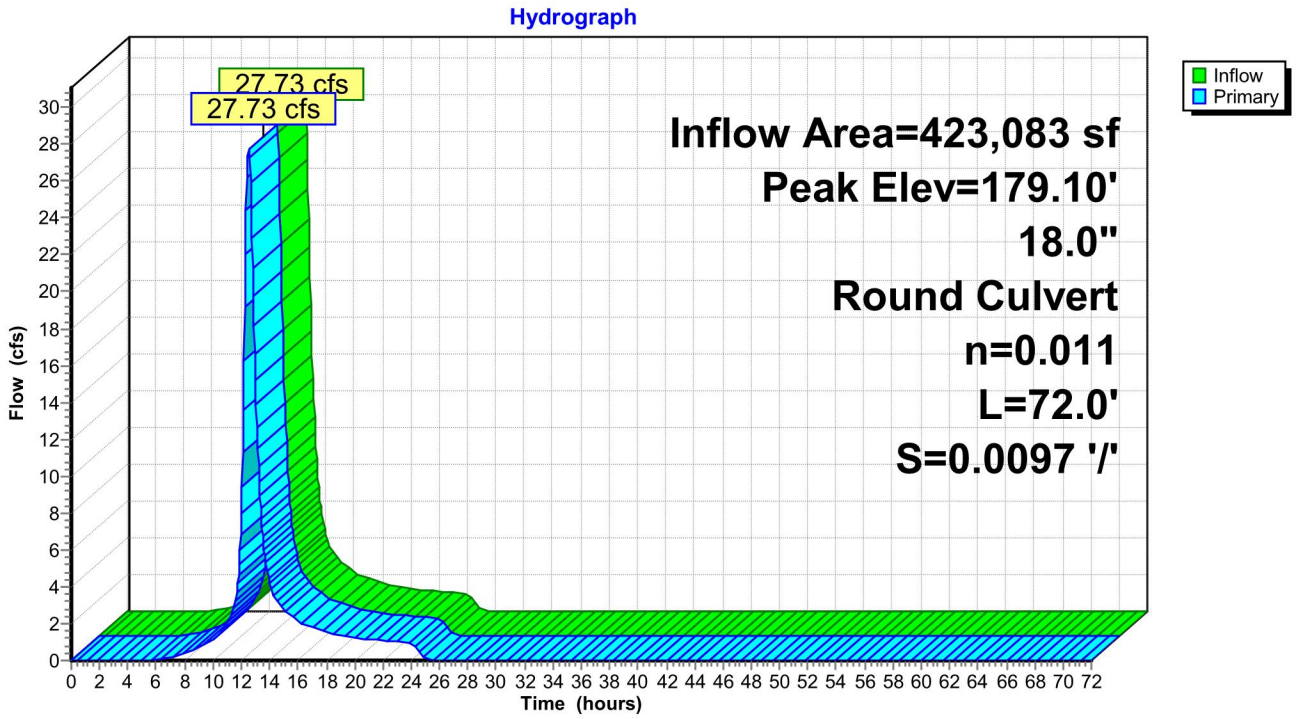
Inflow Area = 423,083 sf, 10.76% Impervious, Inflow Depth = 5.35" for 100-yr event
Inflow = 27.73 cfs @ 12.51 hrs, Volume= 188,602 cf
Outflow = 27.73 cfs @ 12.51 hrs, Volume= 188,602 cf, Atten= 0%, Lag= 0.0 min
Primary = 27.73 cfs @ 12.51 hrs, Volume= 188,602 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 179.10' @ 12.51 hrs
Flood Elev= 163.41'

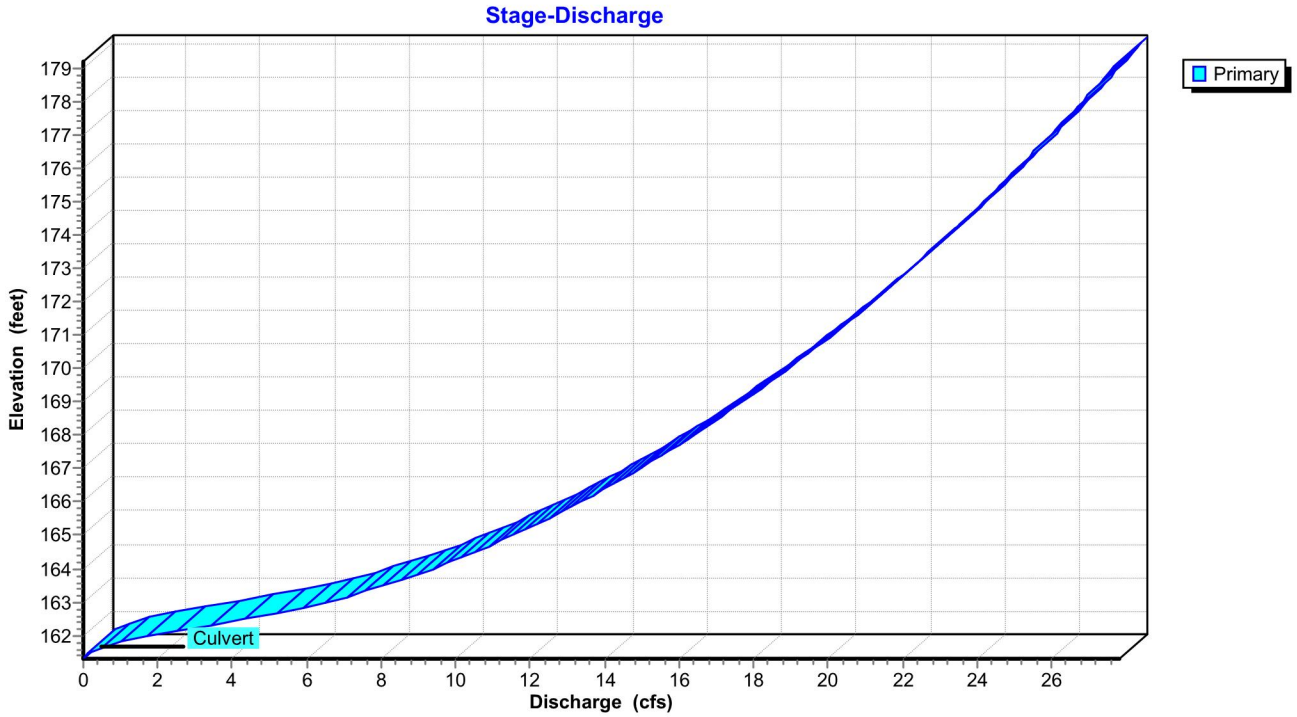
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=27.68 cfs @ 12.51 hrs HW=179.03' (Free Discharge)
**1=Culvert** (Inlet Controls 27.68 cfs @ 15.67 fps)

## Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
179
178
177
176
175
174
173
172
171
170
169
168
167
166
165
164
163
162
Culvert
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 161.30 | **0** | 171.70 | 0 |
| 161.50 | 0 | 171.90 | 0 |
| 161.70 | 0 | 172.10 | 0 |
| 161.90 | 0 | 172.30 | 0 |
| 162.10 | 0 | 172.50 | 0 |
| 162.30 | 0 | 172.70 | 0 |
| 162.50 | 0 | 172.90 | 0 |
| 162.70 | 0 | 173.10 | 0 |
| 162.90 | 0 | 173.30 | 0 |
| 163.10 | 0 | 173.50 | 0 |
| 163.30 | 0 | 173.70 | 0 |
| 163.50 | 0 | 173.90 | 0 |
| 163.70 | 0 | 174.10 | 0 |
| 163.90 | 0 | 174.30 | 0 |
| 164.10 | 0 | 174.50 | 0 |
| 164.30 | 0 | 174.70 | 0 |
| 164.50 | 0 | 174.90 | 0 |
| 164.70 | 0 | 175.10 | 0 |
| 164.90 | 0 | 175.30 | 0 |
| 165.10 | 0 | 175.50 | 0 |
| 165.30 | 0 | 175.70 | 0 |
| 165.50 | 0 | 175.90 | 0 |
| 165.70 | 0 | 176.10 | 0 |
| 165.90 | 0 | 176.30 | 0 |
| 166.10 | 0 | 176.50 | 0 |
| 166.30 | 0 | 176.70 | 0 |
| 166.50 | 0 | 176.90 | 0 |
| 166.70 | 0 | 177.10 | 0 |
| 166.90 | 0 | 177.30 | 0 |
| 167.10 | 0 | 177.50 | 0 |
| 167.30 | 0 | 177.70 | 0 |
| 167.50 | 0 | 177.90 | 0 |
| 167.70 | 0 | 178.10 | 0 |
| 167.90 | 0 | 178.30 | 0 |
| 168.10 | 0 | 178.50 | 0 |
| 168.30 | 0 | 178.70 | 0 |
| 168.50 | 0 | 178.90 | 0 |
| 168.70 | 0 | 179.10 | 0 |
| 168.90 | 0 | | |
| 169.10 | 0 | | |
| 169.30 | 0 | | |
| 169.50 | 0 | | |
| 169.70 | 0 | | |
| 169.90 | 0 | | |
| 170.10 | 0 | | |
| 170.30 | 0 | | |
| 170.50 | 0 | | |
| 170.70 | 0 | | |
| 170.90 | 0 | | |
| 171.10 | 0 | | |
| 171.30 | 0 | | |
| 171.50 | 0 | | |

## Summary for Pond DP-2: DP-2

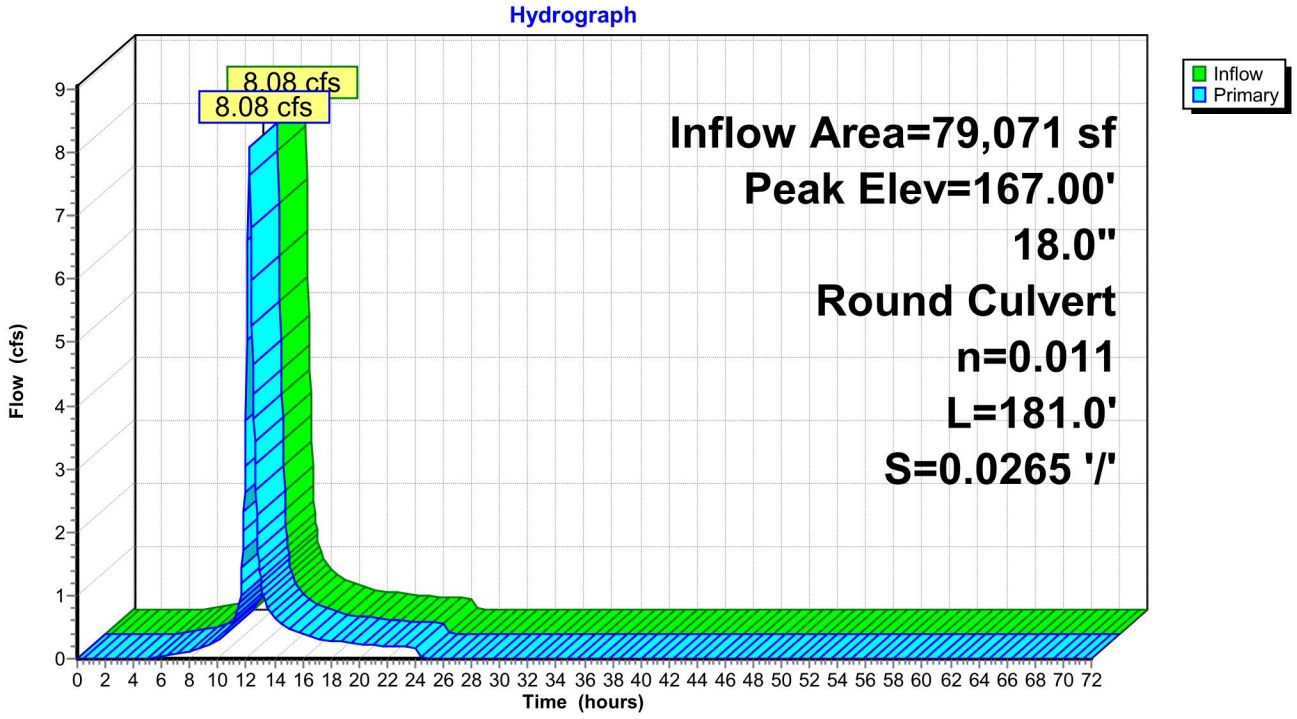
Inflow Area = 79,071 sf, 11.17% Impervious, Inflow Depth = 5.70" for 100-yr event
Inflow = 8.08 cfs @ 12.20 hrs, Volume= 37,583 cf
Outflow = 8.08 cfs @ 12.20 hrs, Volume= 37,583 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.08 cfs @ 12.20 hrs, Volume= 37,583 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 167.00' @ 12.20 hrs
Flood Elev= 167.03'

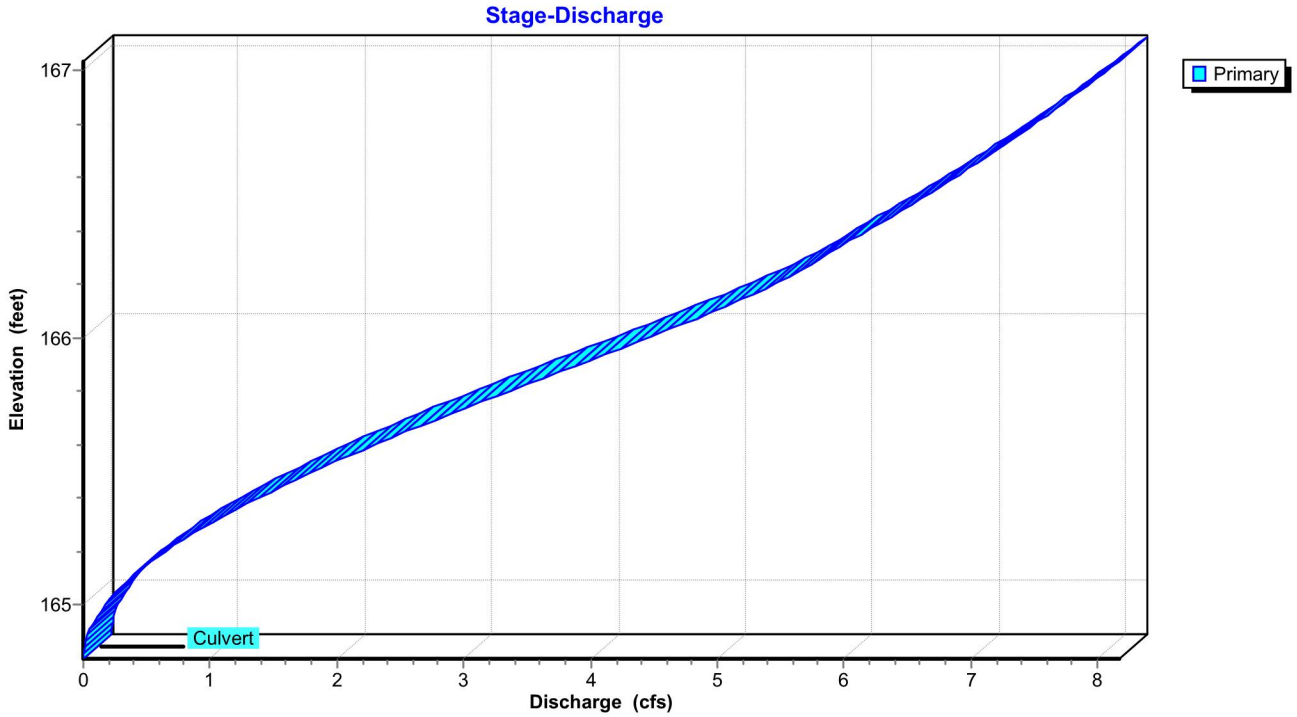
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=8.05 cfs @ 12.20 hrs HW=166.99' (Free Discharge)
**1=Culvert** (Inlet Controls 8.05 cfs @ 4.56 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

## Summary for Pond DP-3: DP-3

[58] Hint: Peaked 5.24' above defined flood level

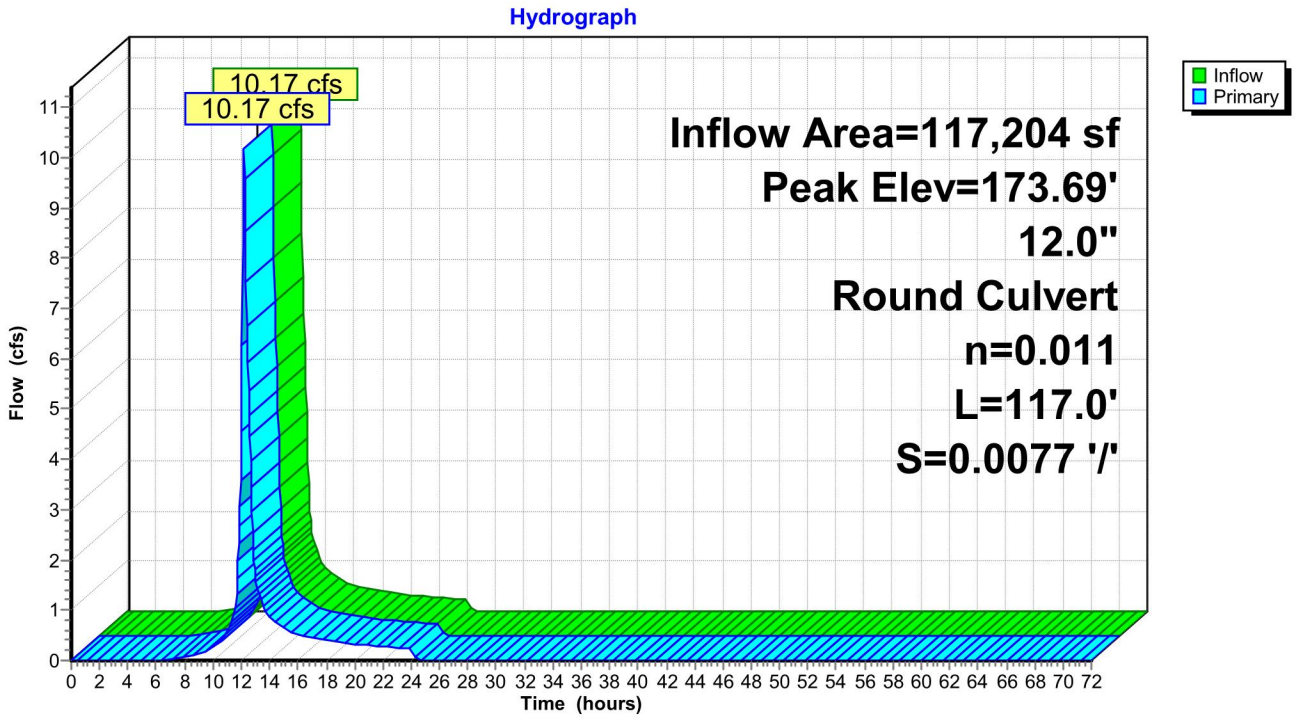
Inflow Area = 117,204 sf, 0.98% Impervious, Inflow Depth = 4.76" for 100-yr event
Inflow = 10.17 cfs @ 12.19 hrs, Volume= 46,512 cf
Outflow = 10.17 cfs @ 12.19 hrs, Volume= 46,512 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.17 cfs @ 12.19 hrs, Volume= 46,512 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 173.69' @ 12.19 hrs
Flood Elev= 168.45'

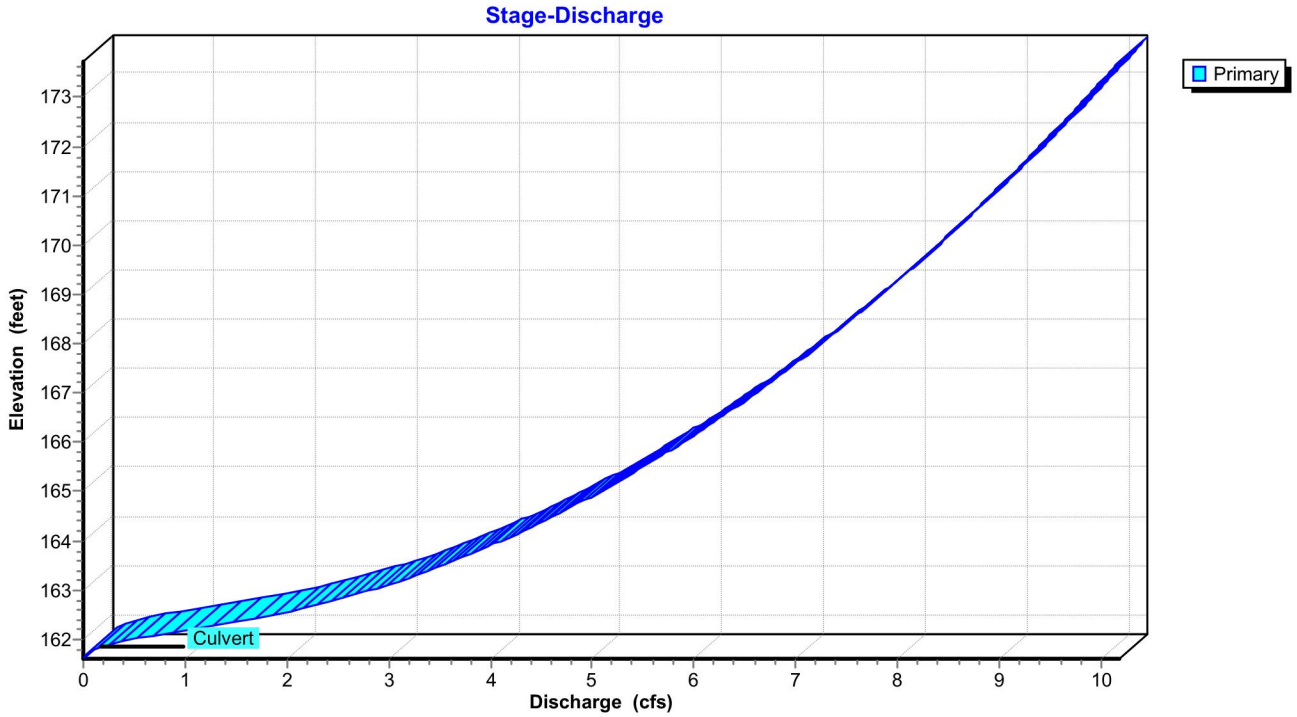
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=10.12 cfs @ 12.19 hrs HW=173.58' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 10.12 cfs @ 12.88 fps)

### Pond DP-3: DP-3



## Pond DP-3: DP-3

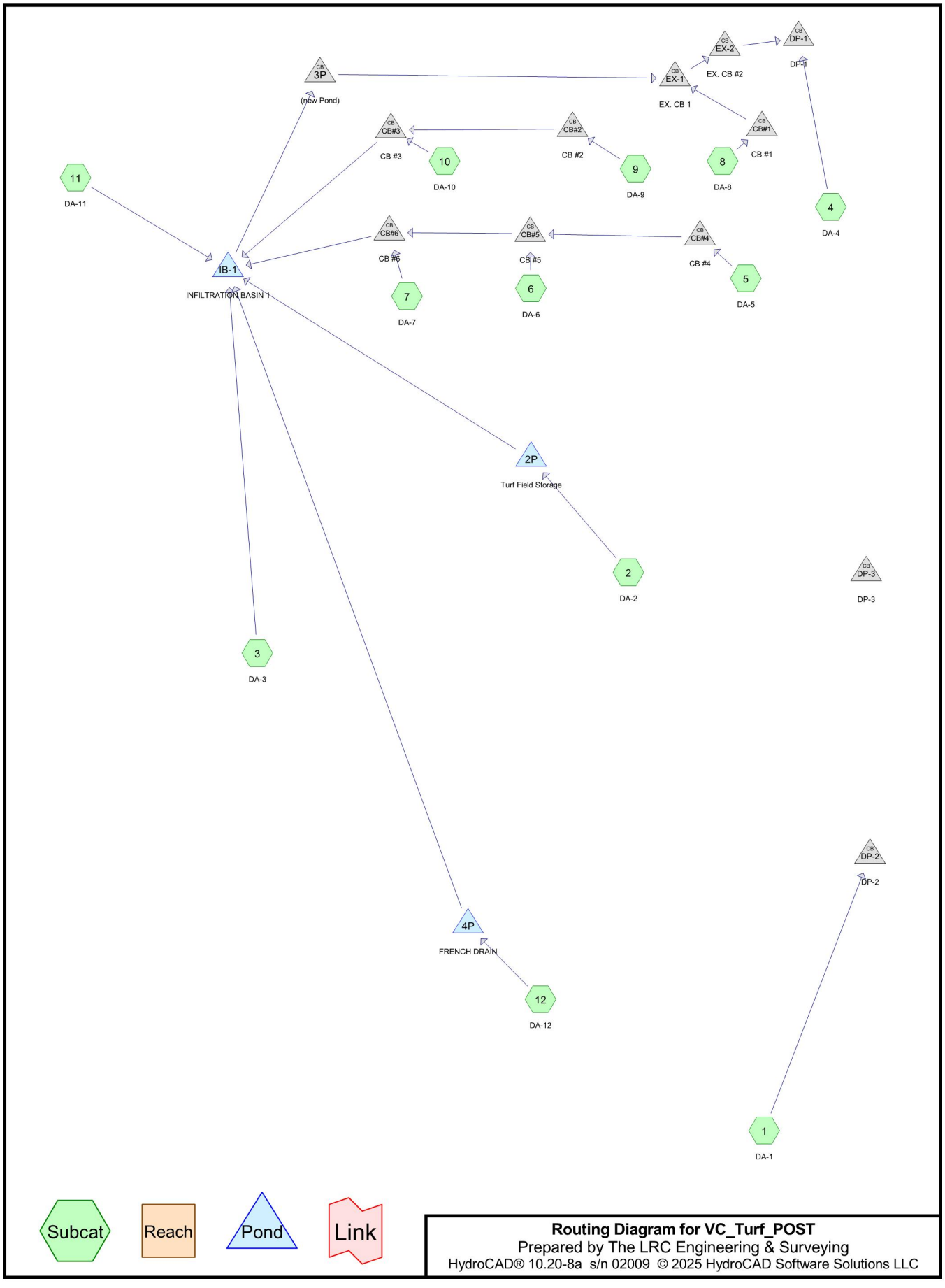

Stage-Discharge
Primary
Elevation (feet)
173
172
171
170
169
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
8
9
10
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 166.80 | 0 | 172.00 | 0 |
| 161.70 | 0 | 166.90 | 0 | 172.10 | 0 |
| 161.80 | 0 | 167.00 | 0 | 172.20 | 0 |
| 161.90 | 0 | 167.10 | 0 | 172.30 | 0 |
| 162.00 | 0 | 167.20 | 0 | 172.40 | 0 |
| 162.10 | 0 | 167.30 | 0 | 172.50 | 0 |
| 162.20 | 0 | 167.40 | 0 | 172.60 | 0 |
| 162.30 | 0 | 167.50 | 0 | 172.70 | 0 |
| 162.40 | 0 | 167.60 | 0 | 172.80 | 0 |
| 162.50 | 0 | 167.70 | 0 | 172.90 | 0 |
| 162.60 | 0 | 167.80 | 0 | 173.00 | 0 |
| 162.70 | 0 | 167.90 | 0 | 173.10 | 0 |
| 162.80 | 0 | 168.00 | 0 | 173.20 | 0 |
| 162.90 | 0 | 168.10 | 0 | 173.30 | 0 |
| 163.00 | 0 | 168.20 | 0 | 173.40 | 0 |
| 163.10 | 0 | 168.30 | 0 | 173.50 | 0 |
| 163.20 | 0 | 168.40 | 0 | 173.60 | 0 |
| 163.30 | 0 | 168.50 | 0 | 173.70 | 0 |
| 163.40 | 0 | 168.60 | 0 | | |
| 163.50 | 0 | 168.70 | 0 | | |
| 163.60 | 0 | 168.80 | 0 | | |
| 163.70 | 0 | 168.90 | 0 | | |
| 163.80 | 0 | 169.00 | 0 | | |
| 163.90 | 0 | 169.10 | 0 | | |
| 164.00 | 0 | 169.20 | 0 | | |
| 164.10 | 0 | 169.30 | 0 | | |
| 164.20 | 0 | 169.40 | 0 | | |
| 164.30 | 0 | 169.50 | 0 | | |
| 164.40 | 0 | 169.60 | 0 | | |
| 164.50 | 0 | 169.70 | 0 | | |
| 164.60 | 0 | 169.80 | 0 | | |
| 164.70 | 0 | 169.90 | 0 | | |
| 164.80 | 0 | 170.00 | 0 | | |
| 164.90 | 0 | 170.10 | 0 | | |
| 165.00 | 0 | 170.20 | 0 | | |
| 165.10 | 0 | 170.30 | 0 | | |
| 165.20 | 0 | 170.40 | 0 | | |
| 165.30 | 0 | 170.50 | 0 | | |
| 165.40 | 0 | 170.60 | 0 | | |
| 165.50 | 0 | 170.70 | 0 | | |
| 165.60 | 0 | 170.80 | 0 | | |
| 165.70 | 0 | 170.90 | 0 | | |
| 165.80 | 0 | 171.00 | 0 | | |
| 165.90 | 0 | 171.10 | 0 | | |
| 166.00 | 0 | 171.20 | 0 | | |
| 166.10 | 0 | 171.30 | 0 | | |
| 166.20 | 0 | 171.40 | 0 | | |
| 166.30 | 0 | 171.50 | 0 | | |
| 166.40 | 0 | 171.60 | 0 | | |
| 166.50 | 0 | 171.70 | 0 | | |
| 166.60 | 0 | 171.80 | 0 | | |
| 166.70 | 0 | 171.90 | 0 | | |

# APPENDIX J

Post-Development Run-off Calculations




**Routing Diagram for VC_Turf_POST**
Prepared by The LRC Engineering & Surveying
HydroCAD® 10.20-8a s/n 02009 © 2025 HydroCAD Software Solutions LLC

## Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 1-yr | NY-Poughkeepsie 24-hr S1 | 1-yr | Default | 24.00 | 1 | 2.61 | 2 |
| 2 | 2-yr | NY-Poughkeepsie 24-hr S1 | 2-yr | Default | 24.00 | 1 | 3.16 | 2 |
| 3 | 10-yr | NY-Poughkeepsie 24-hr S1 | 10-yr | Default | 24.00 | 1 | 4.67 | 2 |
| 4 | 100-yr | NY-Poughkeepsie 24-hr S1 | 100-yr | Default | 24.00 | 1 | 8.21 | 2 |

## Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 18,806 | 49 | 50-75% Grass cover, Fair, HSG A (3, 11) |
| 57,043 | 69 | 50-75% Grass cover, Fair, HSG B (1, 4, 5, 6, 7, 8, 9, 10, 11) |
| 134,377 | 79 | 50-75% Grass cover, Fair, HSG C (1, 3, 7, 10, 11, 12) |
| 96,152 | 74 | >75% Grass cover, Good, HSG C (3) |
| 37,561 | 98 | Paved parking, HSG B (4, 5, 6, 9) |
| 43,050 | 98 | Paved parking, HSG C (1, 2, 3, 7, 8, 10, 11) |
| 100,932 | 98 | Turf Field (2) |
| 4,362 | 60 | Woods, Fair, HSG B (11) |
| 116,980 | 73 | Woods, Fair, HSG C (1, 3, 11, 12) |
| **609,263** | **81** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 18,806 | HSG A | 3, 11 |
| 98,966 | HSG B | 1, 4, 5, 6, 7, 8, 9, 10, 11 |
| 390,559 | HSG C | 1, 2, 3, 7, 8, 10, 11, 12 |
| 0 | HSG D | |
| 100,932 | Other | 2 |
| **609,263** | | **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 | Su Nu |
|---|---|---|---|---|---|---|---|
| 18,806 | 57,043 | 134,377 | 0 | 0 | 210,226 | 50-75% Grass cover, Fair | |
| 0 | 0 | 96,152 | 0 | 0 | 96,152 | >75% Grass cover, Good | |
| 0 | 37,561 | 43,050 | 0 | 0 | 80,611 | Paved parking | |
| 0 | 0 | 0 | 0 | 100,932 | 100,932 | Turf Field | |
| 0 | 4,362 | 116,980 | 0 | 0 | 121,342 | Woods, Fair | |
| **18,806** | **98,966** | **390,559** | **0** | **100,932** | **609,263** | **TOTAL AREA** | |

## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 0.00 | 62.0 | 0.0100 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 2 | 2P | 162.16 | 161.63 | 107.0 | 0.0050 | 0.012 | 0.0 | 12.0 | 0.0 | |
| 3 | 3P | 162.80 | 161.70 | 221.0 | 0.0050 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 4 | CB#1 | 162.10 | 161.40 | 68.0 | 0.0103 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 5 | CB#2 | 162.83 | 162.20 | 122.0 | 0.0052 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 6 | CB#3 | 162.20 | 161.70 | 100.0 | 0.0050 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 7 | CB#4 | 164.50 | 163.90 | 118.0 | 0.0051 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 8 | CB#5 | 163.65 | 163.18 | 93.0 | 0.0051 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 9 | CB#6 | 163.18 | 162.75 | 85.0 | 0.0051 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 10 | DP-1 | 161.30 | 160.60 | 72.0 | 0.0097 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 11 | DP-2 | 164.80 | 160.00 | 181.0 | 0.0265 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 12 | DP-3 | 161.60 | 160.70 | 117.0 | 0.0077 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 13 | EX-1 | 161.70 | 161.60 | 14.0 | 0.0071 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 14 | EX-2 | 161.50 | 161.30 | 72.0 | 0.0028 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 15 | IB-1 | 163.15 | 162.80 | 70.0 | 0.0050 | 0.011 | 0.0 | 15.0 | 0.0 | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=76,401 sf 13.71% Impervious Runoff Depth=0.97"
Flow Length=397' Tc=17.6 min CN=80 Runoff=1.37 cfs 6,149 cf

**Subcatchment 2: DA-2** Runoff Area=108,319 sf 100.00% Impervious Runoff Depth=2.38"
Tc=6.0 min CN=98 Runoff=7.09 cfs 21,484 cf

**Subcatchment 3: DA-3** Runoff Area=193,351 sf 0.48% Impervious Runoff Depth=0.67"
Flow Length=336' Tc=18.1 min CN=74 Runoff=2.15 cfs 10,813 cf

**Subcatchment 4: DA-4** Runoff Area=36,951 sf 43.34% Impervious Runoff Depth=1.08"
Flow Length=178' Tc=8.8 min CN=82 Runoff=1.01 cfs 3,324 cf

**Subcatchment 5: DA-5** Runoff Area=7,317 sf 86.07% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=94 Runoff=0.43 cfs 1,204 cf

**Subcatchment 6: DA-6** Runoff Area=9,667 sf 76.56% Impervious Runoff Depth=1.71"
Tc=6.0 min CN=91 Runoff=0.50 cfs 1,378 cf

**Subcatchment 7: DA-7** Runoff Area=8,414 sf 88.44% Impervious Runoff Depth=2.17"
Tc=6.0 min CN=96 Runoff=0.52 cfs 1,521 cf

**Subcatchment 8: DA-8** Runoff Area=7,009 sf 71.29% Impervious Runoff Depth=1.63"
Tc=6.0 min CN=90 Runoff=0.34 cfs 952 cf

**Subcatchment 9: DA-9** Runoff Area=9,188 sf 85.40% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=94 Runoff=0.54 cfs 1,512 cf

**Subcatchment 10: DA-10** Runoff Area=7,734 sf 92.94% Impervious Runoff Depth=2.17"
Tc=6.0 min CN=96 Runoff=0.48 cfs 1,398 cf

**Subcatchment 11: DA-11** Runoff Area=129,794 sf 3.57% Impervious Runoff Depth=0.59"
Flow Length=253' Tc=17.0 min CN=72 Runoff=1.23 cfs 6,347 cf

**Subcatchment 12: DA-12** Runoff Area=15,118 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=288' Tc=18.9 min CN=79 Runoff=0.24 cfs 1,149 cf

**Pond 2P: Turf Field Storage** Peak Elev=164.14' Storage=2,455 cf Inflow=7.09 cfs 21,484 cf
12.0" Round Culvert n=0.012 L=107.0' S=0.0050 '/' Outflow=3.71 cfs 21,476 cf

**Pond 3P: (new Pond)** Peak Elev=162.80' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.011 L=221.0' S=0.0050 '/' Outflow=0.00 cfs 0 cf

**Pond 4P: FRENCH DRAIN** Inflow=0.24 cfs 1,149 cf
Primary=0.24 cfs 1,149 cf

**Pond CB#1: CB #1** Peak Elev=162.41' Inflow=0.34 cfs 952 cf
15.0" Round Culvert n=0.011 L=68.0' S=0.0103 '/' Outflow=0.34 cfs 952 cf

**Pond CB#2: CB #2** Peak Elev=163.22' Inflow=0.54 cfs 1,512 cf
15.0" Round Culvert n=0.011 L=122.0' S=0.0052 '/' Outflow=0.54 cfs 1,512 cf

**Pond CB#3: CB #3** Peak Elev=162.74' Inflow=1.02 cfs 2,910 cf
15.0" Round Culvert n=0.011 L=100.0' S=0.0050 '/' Outflow=1.02 cfs 2,910 cf

**Pond CB#4: CB #4** Peak Elev=164.84' Inflow=0.43 cfs 1,204 cf
15.0" Round Culvert n=0.011 L=118.0' S=0.0051 '/' Outflow=0.43 cfs 1,204 cf

**Pond CB#5: CB #5** Peak Elev=164.13' Inflow=0.92 cfs 2,582 cf
18.0" Round Culvert n=0.011 L=93.0' S=0.0051 '/' Outflow=0.92 cfs 2,582 cf

**Pond CB#6: CB #6** Peak Elev=163.80' Inflow=1.45 cfs 4,103 cf
18.0" Round Culvert n=0.011 L=85.0' S=0.0051 '/' Outflow=1.45 cfs 4,103 cf

**Pond DP-1: DP-1** Peak Elev=161.89' Inflow=1.34 cfs 4,276 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=1.34 cfs 4,276 cf

**Pond DP-2: DP-2** Peak Elev=165.40' Inflow=1.37 cfs 6,149 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=1.37 cfs 6,149 cf

**Pond DP-3: DP-3** Peak Elev=0.00'
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Primary=0.00 cfs 0 cf

**Pond EX-1: EX. CB 1** Peak Elev=162.00' Inflow=0.34 cfs 952 cf
18.0" Round Culvert n=0.011 L=14.0' S=0.0071 '/' Outflow=0.34 cfs 952 cf

**Pond EX-2: EX. CB #2** Peak Elev=161.82' Inflow=0.34 cfs 952 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0028 '/' Outflow=0.34 cfs 952 cf

**Pond IB-1: INFILTRATION BASIN 1** Peak Elev=160.54' Storage=285 cf Inflow=8.19 cfs 46,797 cf
Discarded=8.18 cfs 46,797 cf Primary=0.00 cfs 0 cf Outflow=8.18 cfs 46,797 cf

**Total Runoff Area = 609,263 sf Runoff Volume = 57,230 cf Average Runoff Depth = 1.13"**
**70.20% Pervious = 427,720 sf 29.80% Impervious = 181,543 sf**

## Summary for Subcatchment 1: DA-1

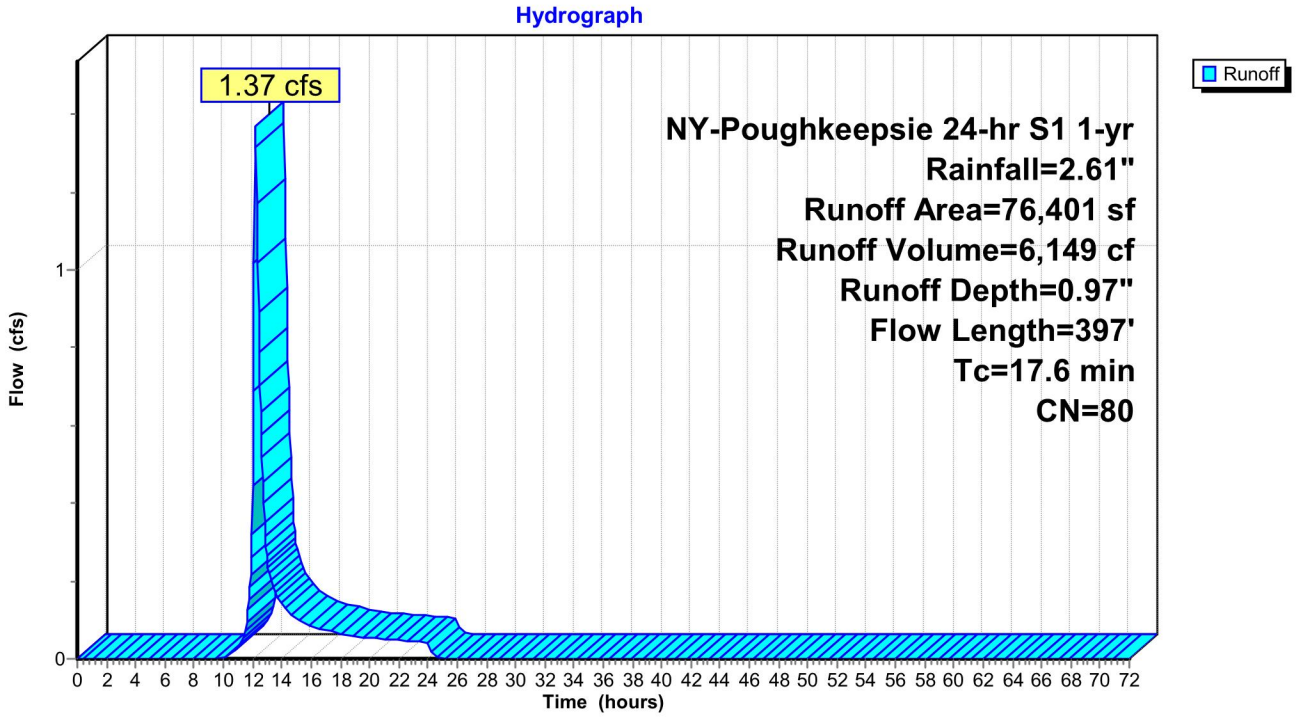
Runoff = 1.37 cfs @ 12.21 hrs, Volume= 6,149 cf, Depth= 0.97"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 3,133 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,203 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 10,478 | 98 | Paved parking, HSG C |
| 76,401 | 80 | Weighted Average |
| 65,923 | | 86.29% Pervious Area |
| 10,478 | | 13.71% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

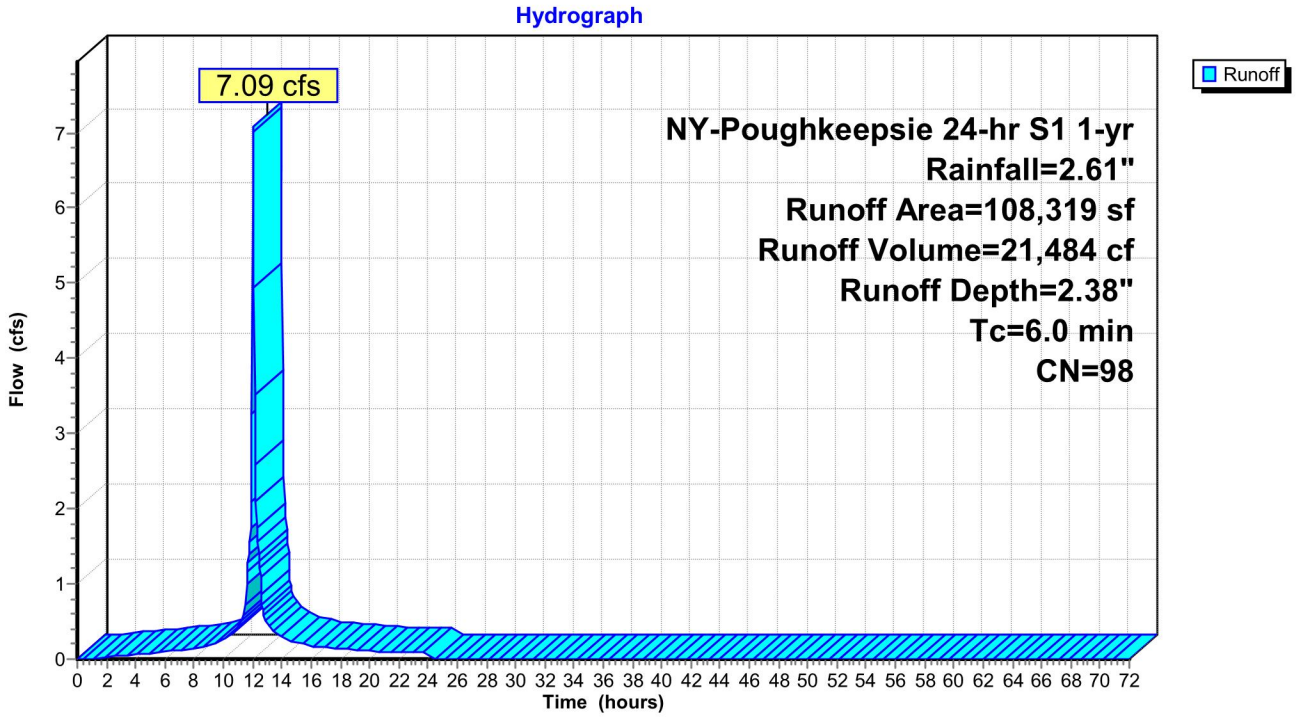
Runoff = 7.09 cfs @ 12.04 hrs, Volume= 21,484 cf, Depth= 2.38"
Routed to Pond 2P : Turf Field Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 100,932 | 98 | Turf Field |
| | 7,387 | 98 | Paved parking, HSG C |
| | 108,319 | 98 | Weighted Average |
| | 108,319 | | 100.00% Impervious Area |

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

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

Regraded Field with Underderain

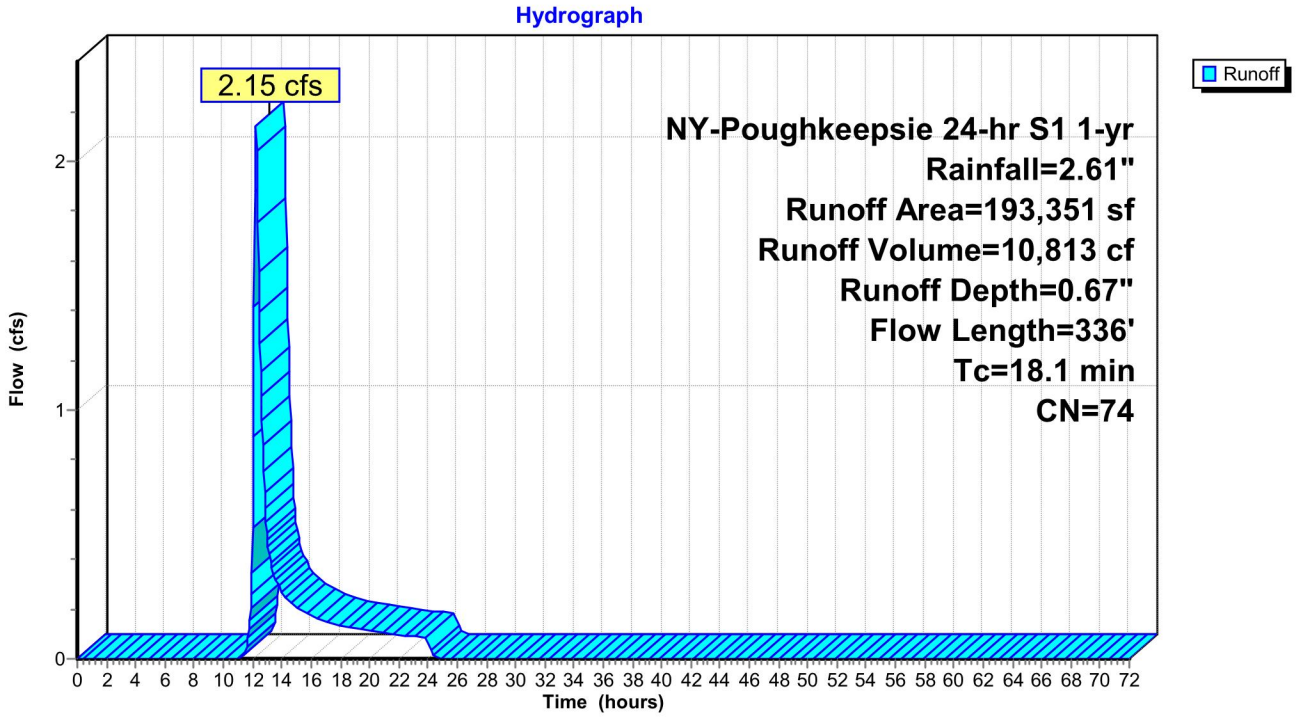
Runoff = 2.15 cfs @ 12.23 hrs, Volume= 10,813 cf, Depth= 0.67"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 96,152 | 74 | >75% Grass cover, Good, HSG C |
| 6,421 | 49 | 50-75% Grass cover, Fair, HSG A |
| 40,341 | 79 | 50-75% Grass cover, Fair, HSG C |
| 49,516 | 73 | Woods, Fair, HSG C |
| 921 | 98 | Paved parking, HSG C |
| 193,351 | 74 | Weighted Average |
| 192,430 | | 99.52% Pervious Area |
| 921 | | 0.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 1.3 | 106 | 0.0380 | 1.36 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 336 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Subcatchment 4: DA-4

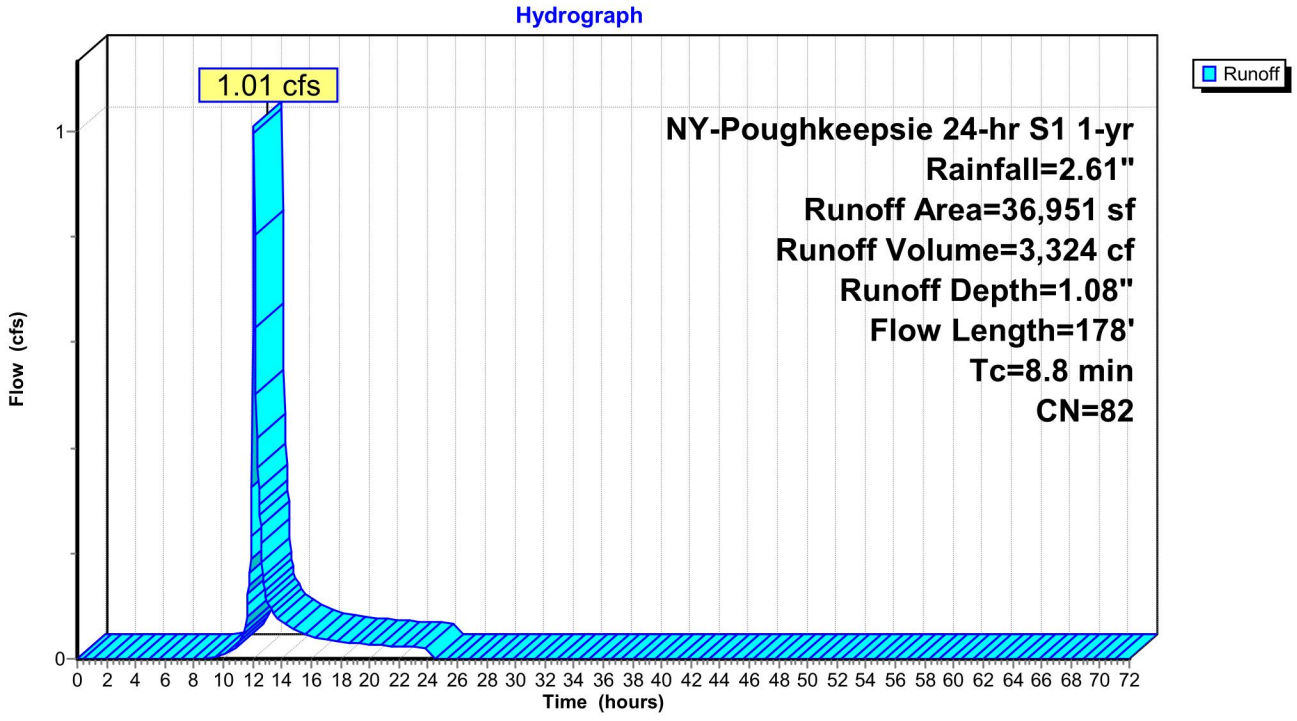
Runoff = 1.01 cfs @ 12.08 hrs, Volume= 3,324 cf, Depth= 1.08"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 20,936 | 69 | 50-75% Grass cover, Fair, HSG B |
| 16,015 | 98 | Paved parking, HSG B |
| 36,951 | 82 | Weighted Average |
| 20,936 | | 56.66% Pervious Area |
| 16,015 | | 43.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.5 | 100 | 0.0400 | 0.22 | | **Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.16" |
| 1.3 | 78 | 0.0190 | 0.96 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 8.8 | 178 | Total | | | |

## Subcatchment 4: DA-4



## Summary for Subcatchment 5: DA-5

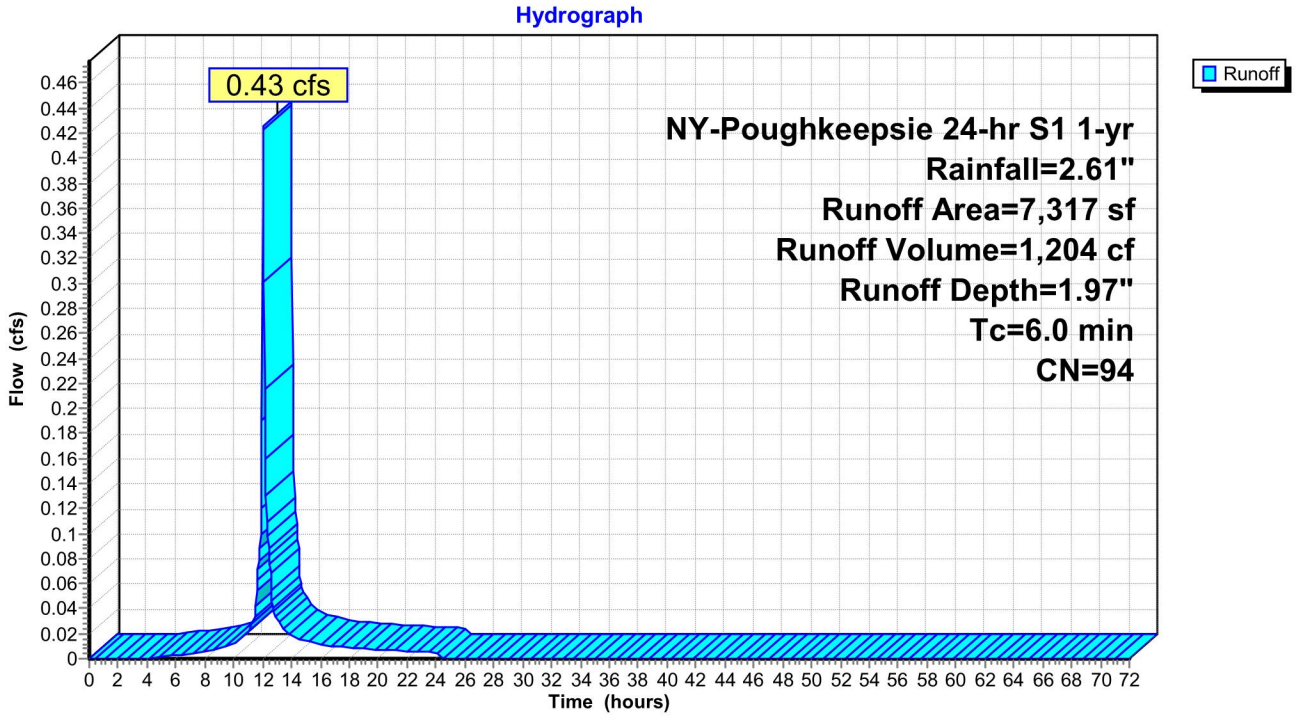
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,204 cf, Depth= 1.97"
Routed to Pond CB#4 : CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 1,019 | 69 | 50-75% Grass cover, Fair, HSG B |
| 6,298 | 98 | Paved parking, HSG B |
| 7,317 | 94 | Weighted Average |
| 1,019 | | 13.93% Pervious Area |
| 6,298 | | 86.07% Impervious Area |

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

## Subcatchment 5: DA-5



## Summary for Subcatchment 6: DA-6

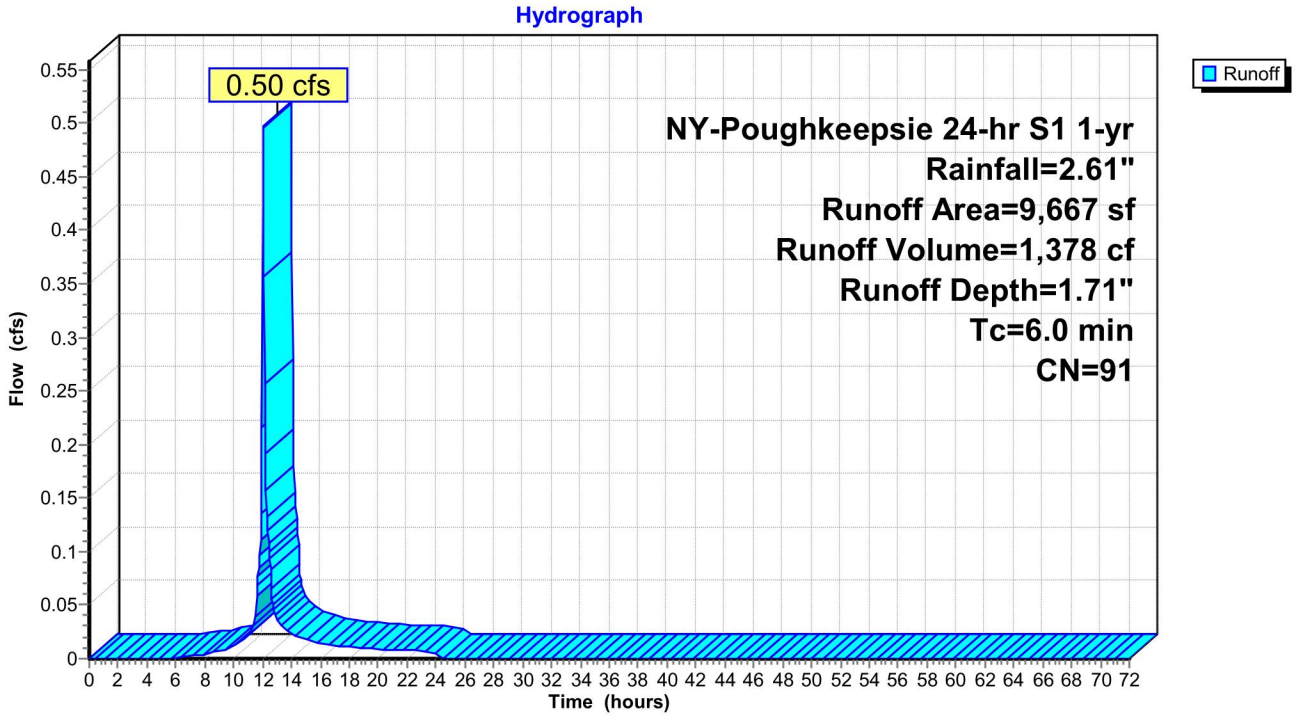
Runoff = 0.50 cfs @ 12.04 hrs, Volume= 1,378 cf, Depth= 1.71"
Routed to Pond CB#5 : CB #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 2,266 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,401 | 98 | Paved parking, HSG B |
| 9,667 | 91 | Weighted Average |
| 2,266 | | 23.44% Pervious Area |
| 7,401 | | 76.56% Impervious Area |

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

## Subcatchment 6: DA-6



## Summary for Subcatchment 7: DA-7

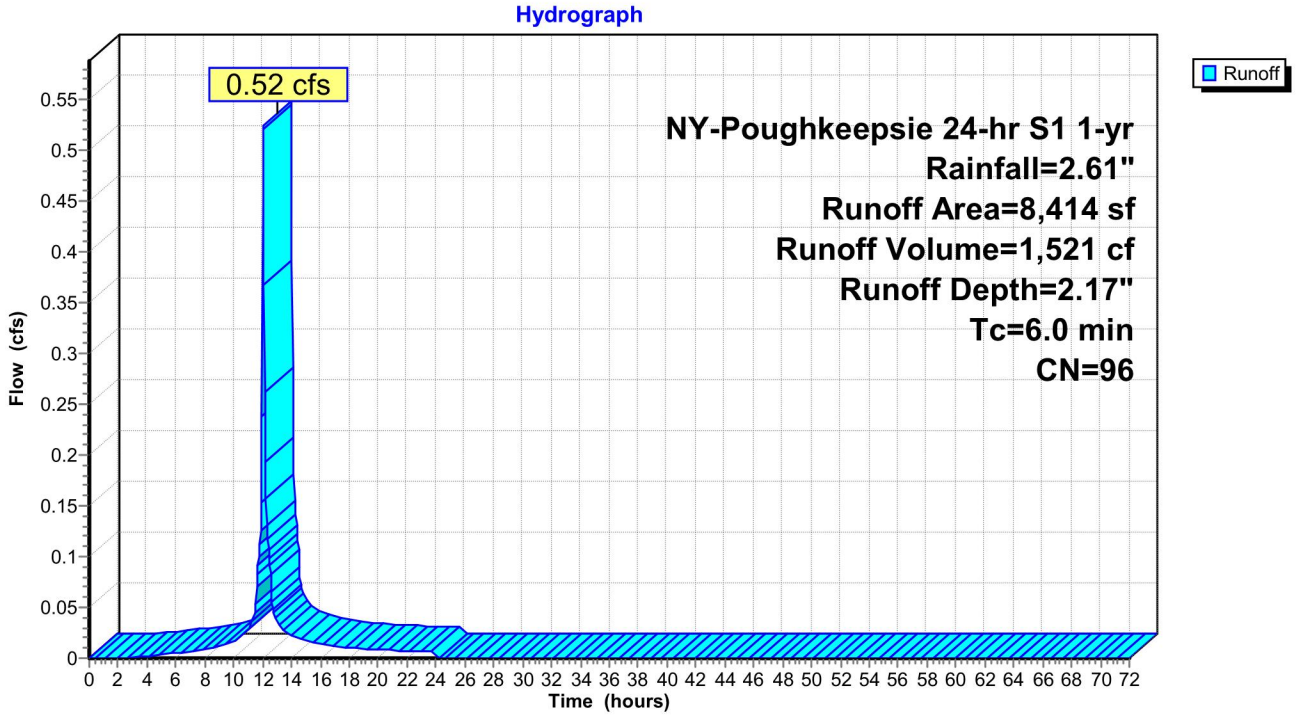
Runoff = 0.52 cfs @ 12.04 hrs, Volume= 1,521 cf, Depth= 2.17"
Routed to Pond CB#6 : CB #6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 46 | 69 | 50-75% Grass cover, Fair, HSG B |
| 927 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,441 | 98 | Paved parking, HSG C |
| 8,414 | 96 | Weighted Average |
| 973 | | 11.56% Pervious Area |
| 7,441 | | 88.44% Impervious Area |

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

### Subcatchment 7: DA-7



## Summary for Subcatchment 8: DA-8

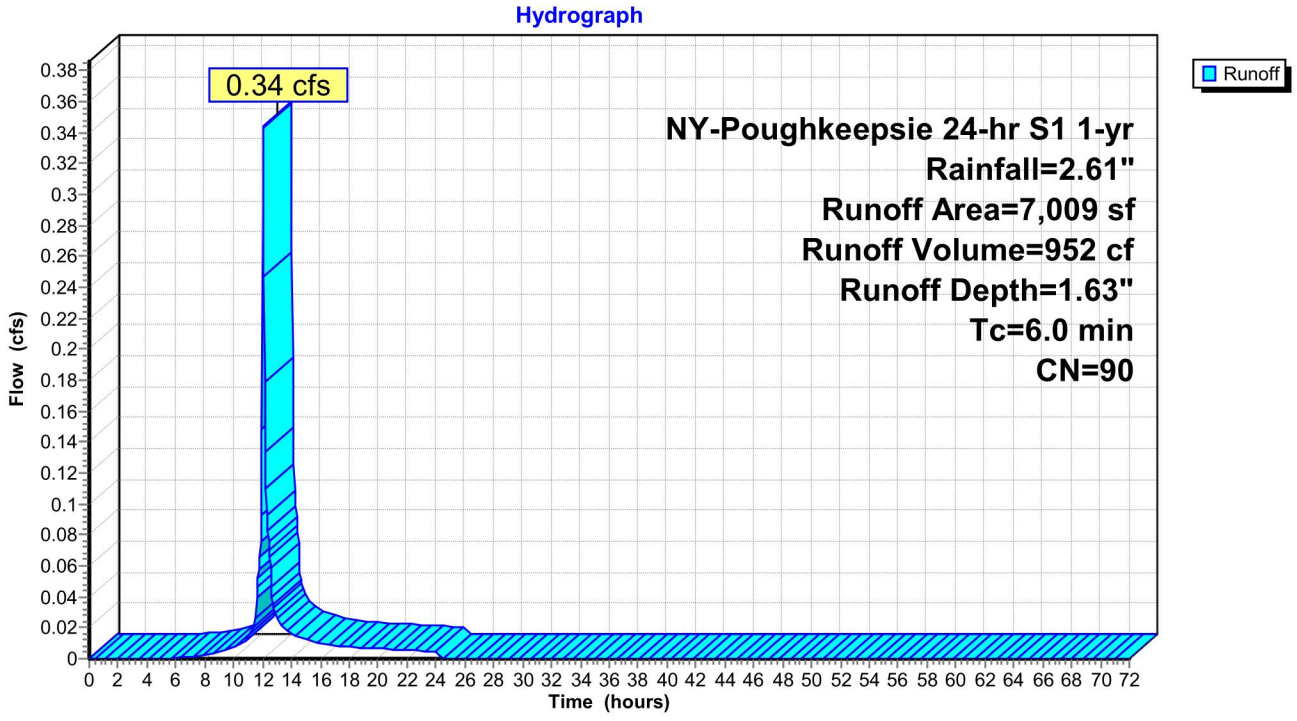
Runoff = 0.34 cfs @ 12.04 hrs, Volume= 952 cf, Depth= 1.63"
Routed to Pond CB#1 : CB #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 2,012 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,997 | 98 | Paved parking, HSG C |
| 7,009 | 90 | Weighted Average |
| 2,012 | | 28.71% Pervious Area |
| 4,997 | | 71.29% Impervious Area |

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

## Subcatchment 8: DA-8



## Summary for Subcatchment 9: DA-9

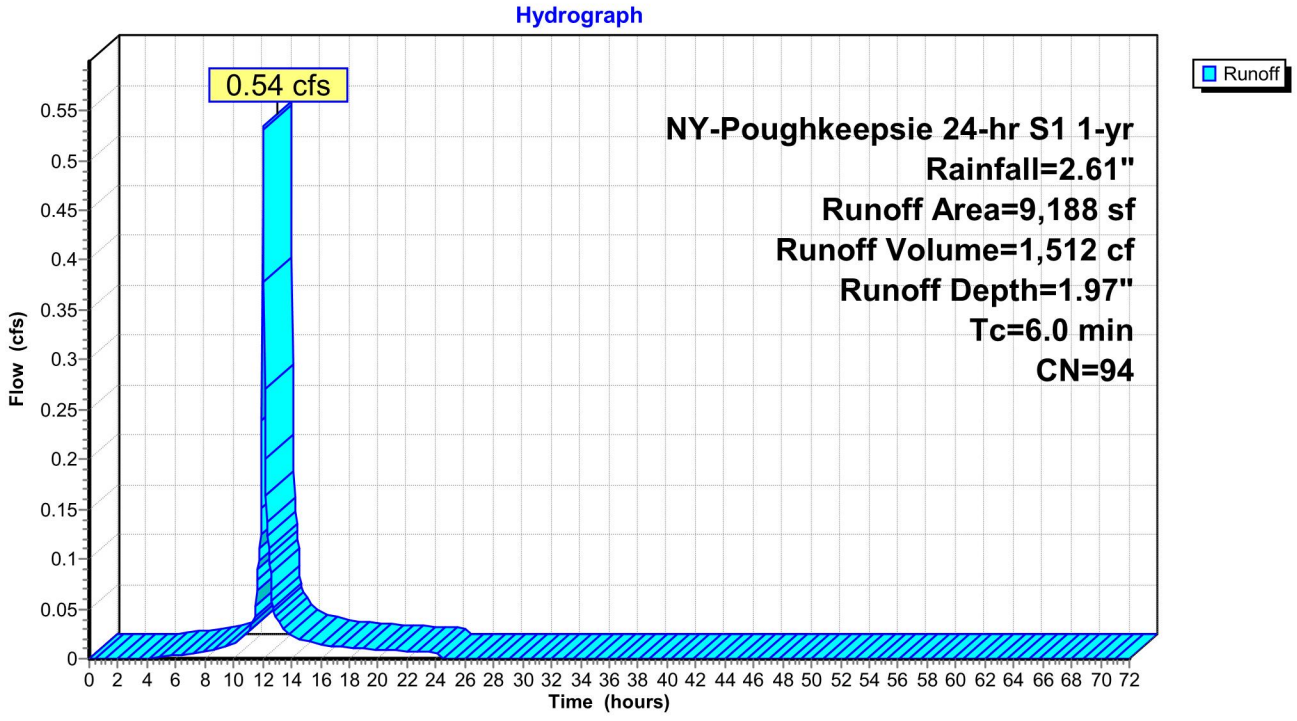
Runoff = 0.54 cfs @ 12.04 hrs, Volume= 1,512 cf, Depth= 1.97"
Routed to Pond CB#2 : CB #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 1,341 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,847 | 98 | Paved parking, HSG B |
| 9,188 | 94 | Weighted Average |
| 1,341 | | 14.60% Pervious Area |
| 7,847 | | 85.40% Impervious Area |

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

### Subcatchment 9: DA-9



## Summary for Subcatchment 10: DA-10

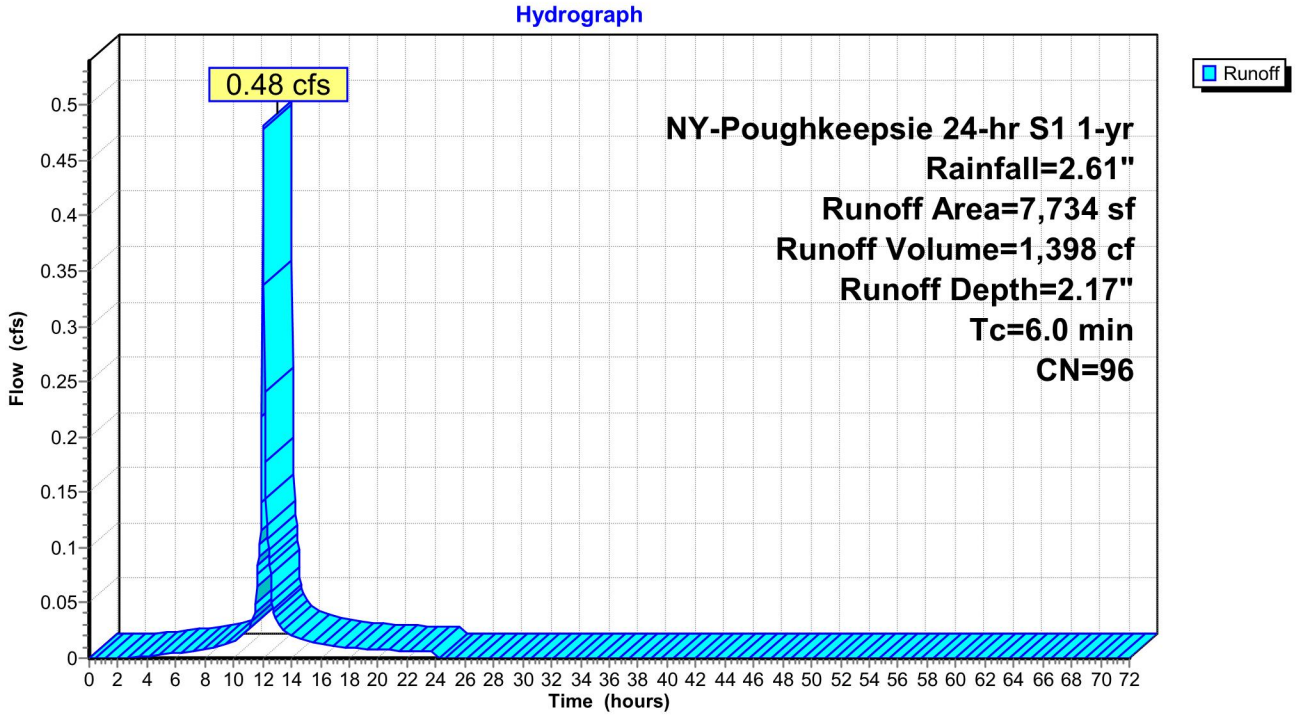
Runoff = 0.48 cfs @ 12.04 hrs, Volume= 1,398 cf, Depth= 2.17"
Routed to Pond CB#3 : CB #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 261 | 69 | 50-75% Grass cover, Fair, HSG B |
| 285 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,188 | 98 | Paved parking, HSG C |
| 7,734 | 96 | Weighted Average |
| 546 | | 7.06% Pervious Area |
| 7,188 | | 92.94% Impervious Area |

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

### Subcatchment 10: DA-10



## Summary for Subcatchment 11: DA-11

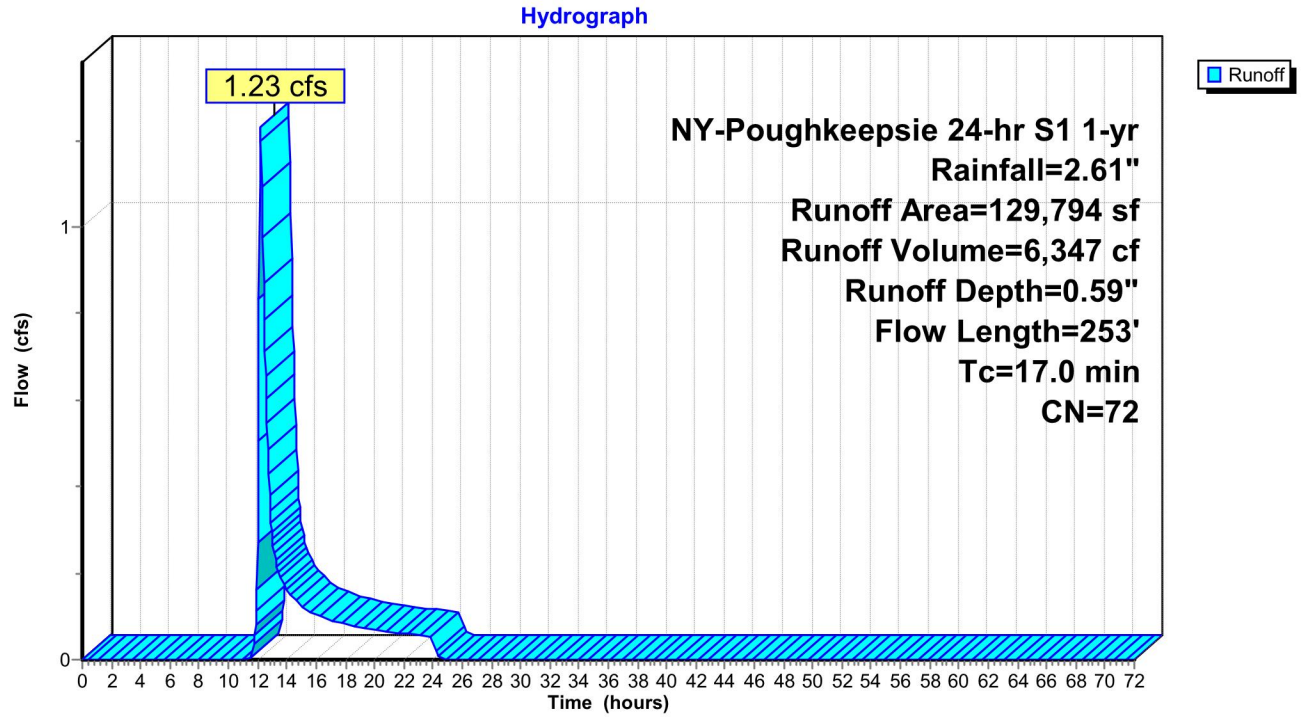
Runoff = 1.23 cfs @ 12.22 hrs, Volume= 6,347 cf, Depth= 0.59"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 12,385 | 49 | 50-75% Grass cover, Fair, HSG A |
| 26,029 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,362 | 60 | Woods, Fair, HSG B |
| 29,624 | 79 | 50-75% Grass cover, Fair, HSG C |
| 52,756 | 73 | Woods, Fair, HSG C |
| 4,638 | 98 | Paved parking, HSG C |
| 129,794 | 72 | Weighted Average |
| 125,156 | | 96.43% Pervious Area |
| 4,638 | | 3.57% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 14.2 | 100 | 0.0575 | 0.12 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 2.8 | 153 | 0.0340 | 0.92 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 17.0 | 253 | Total | | | |

## Subcatchment 11: DA-11



## Summary for Subcatchment 12: DA-12

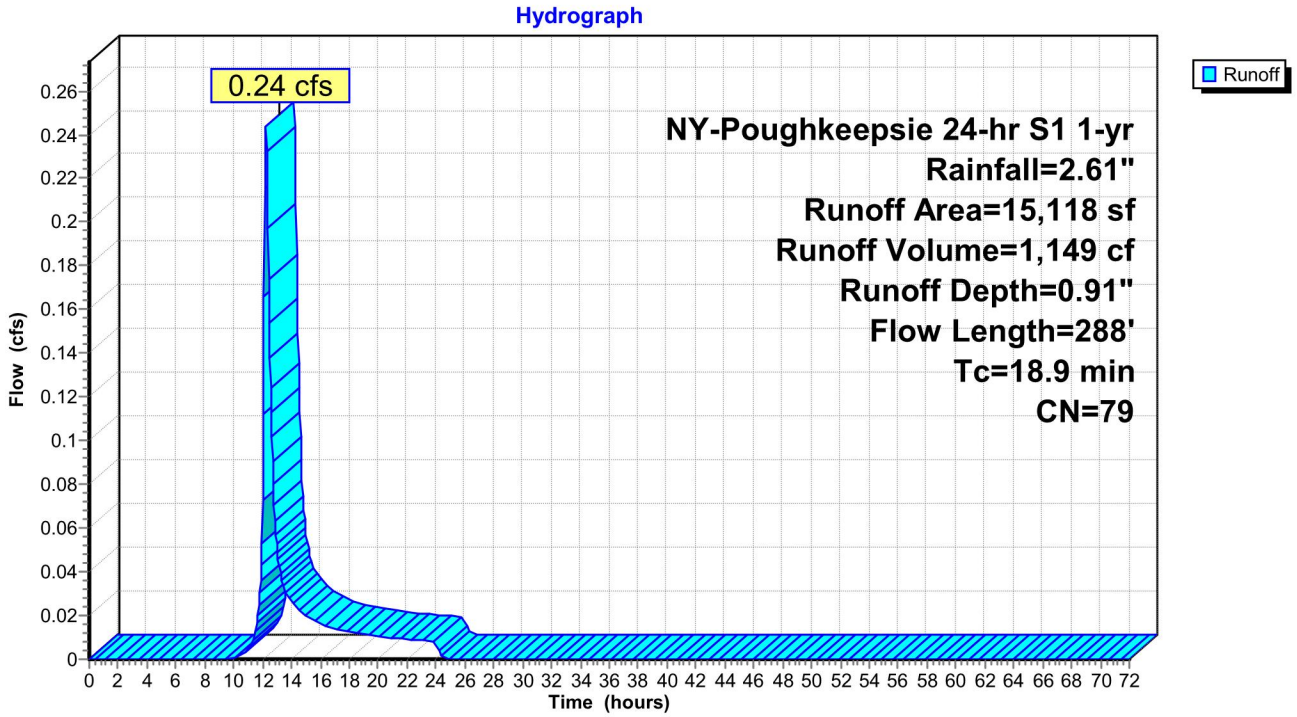
Runoff = 0.24 cfs @ 12.23 hrs, Volume= 1,149 cf, Depth= 0.91"
Routed to Pond 4P : FRENCH DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 1-yr Rainfall=2.61"

| Area (sf) | CN | Description |
|---|---|---|
| 14,997 | 79 | 50-75% Grass cover, Fair, HSG C |
| 121 | 73 | Woods, Fair, HSG C |
| 15,118 | 79 | Weighted Average |
| 15,118 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.0 | 150 | 0.0750 | 0.14 | | **Sheet Flow, A-B** Grass: Bermuda n= 0.410 P2= 3.16" |
| 0.9 | 138 | 0.1380 | 2.60 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 18.9 | 288 | Total | | | |

## Subcatchment 12: DA-12



## Summary for Pond 2P: Turf Field Storage

Inflow Area = 108,319 sf,100.00% Impervious, Inflow Depth = 2.38" for 1-yr event
Inflow = 7.09 cfs @ 12.04 hrs, Volume= 21,484 cf
Outflow = 3.71 cfs @ 12.15 hrs, Volume= 21,476 cf, Atten= 48%, Lag= 6.6 min
Primary = 3.71 cfs @ 12.15 hrs, Volume= 21,476 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.14' @ 12.15 hrs Surf.Area= 3,679 sf Storage= 2,455 cf

Plug-Flow detention time= 7.6 min calculated for 21,476 cf (100% of inflow)
Center-of-Mass det. time= 7.2 min ( 770.6 - 763.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.75' | 237 cf | **8" Pipe Trench (Irregular)** Listed below (Recalc)<br>684 cf Overall - 91 cf Embedded = 593 cf x 40.0% Voids |
| #2 | 163.00' | 69 cf | **8.0" Round 8" Collector** Inside #1<br>L= 197.0' S= 0.0050 '/'<br>91 cf Overall - 0.6" Wall Thickness = 69 cf |
| #3 | 161.93' | 6,068 cf | **12" Pipe Trench (Irregular)** Listed below (Recalc)<br>15,367 cf Overall - 197 cf Embedded = 15,170 cf x 40.0% Voids |
| #4 | 162.18' | 137 cf | **12.0" Round 12" Collector** Inside #3<br>L= 174.0' S= 0.0050 '/'<br>197 cf Overall - 1.2" Wall Thickness = 137 cf |
| #5 | 166.89' | 4,530 cf | **Field Stone (Irregular)** Listed below (Recalc)<br>11,326 cf Overall x 40.0% Voids |
| | | 11,041 cf | Total Available Storage |

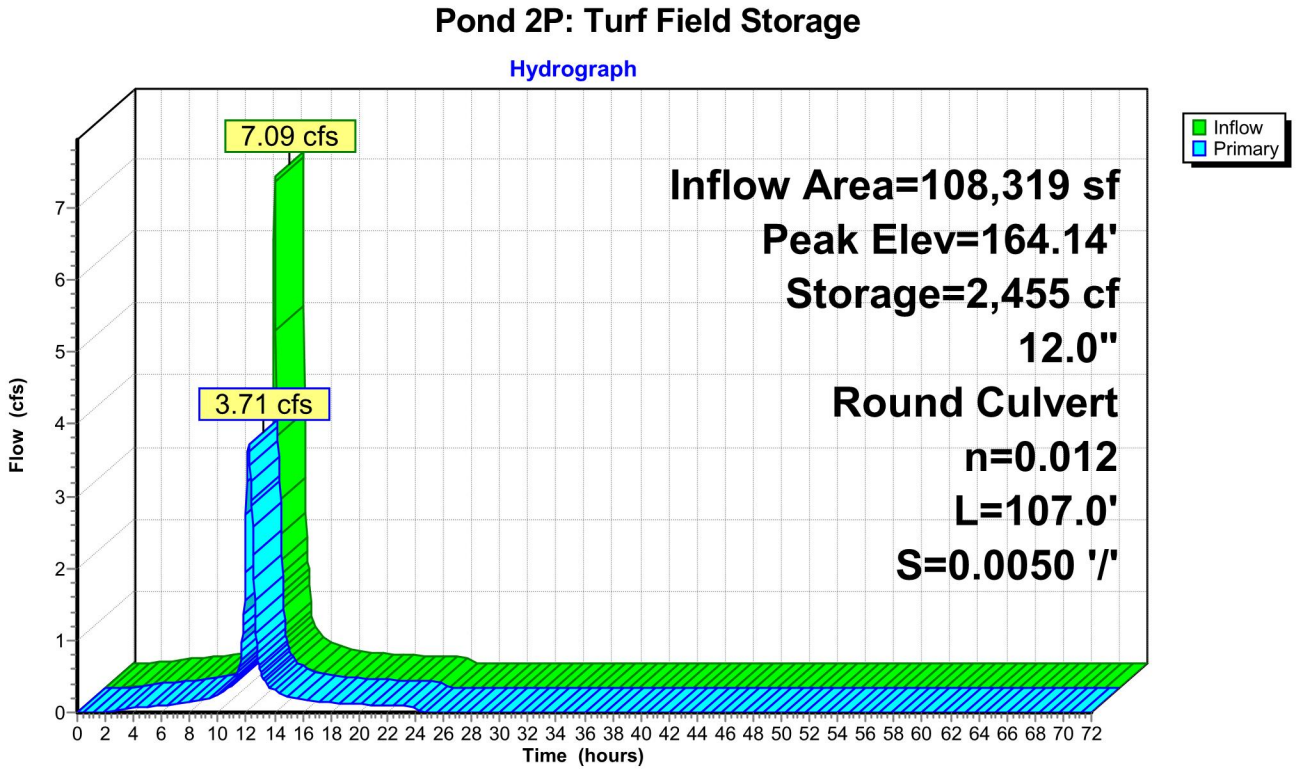
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 162.75 | 0 | 0.0 | 0 | 0 | 0 |
| 163.75 | 197 | 396.0 | 66 | 66 | 12,481 |
| 166.89 | 197 | 396.0 | 619 | 684 | 13,724 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 161.93 | 0 | 0.0 | 0 | 0 | 0 |
| 162.75 | 3,482 | 388.0 | 952 | 952 | 11,981 |
| 166.89 | 3,482 | 388.0 | 14,415 | 15,367 | 13,587 |

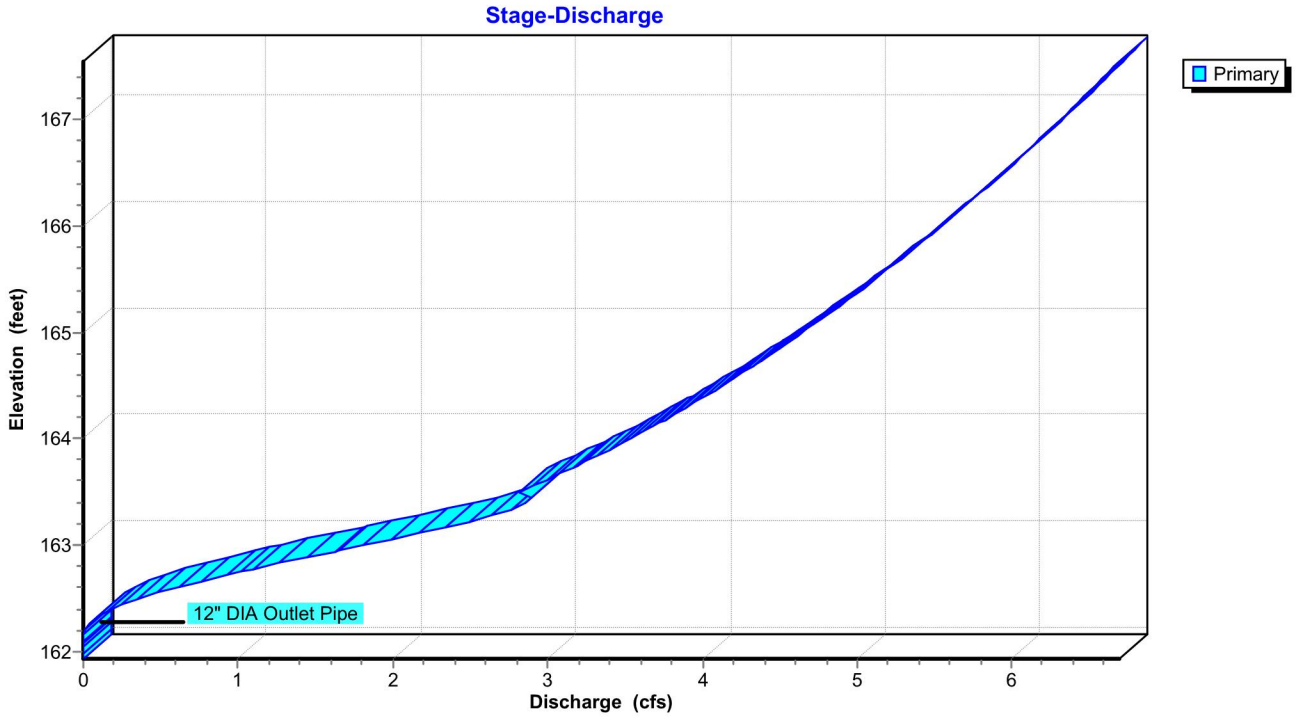
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 166.89 | 0 | 0.0 | 0 | 0 | 0 |
| 167.55 | 51,480 | 1,044.0 | 11,326 | 11,326 | 86,735 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.16' | **12.0" Round 12" DIA Outlet Pipe**<br>L= 107.0' CPP, square edge headwall, Ke= 0.500<br>Inlet / Outlet Invert= 162.16' / 161.63' S= 0.0050 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Primary OutFlow** Max=3.70 cfs @ 12.15 hrs HW=164.14' (Free Discharge)
└**1=12" DIA Outlet Pipe** (Barrel Controls 3.70 cfs @ 4.72 fps)



## Pond 2P: Turf Field Storage



## Stage-Area-Storage for Pond 2P: Turf Field Storage

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.93 | 0 | 164.53 | 3,038 | 167.13 | 6,729 |
| 161.98 | 0 | 164.58 | 3,112 | 167.18 | 6,895 |
| 162.03 | 1 | 164.63 | 3,185 | 167.23 | 7,130 |
| 162.08 | 2 | 164.68 | 3,259 | 167.28 | 7,446 |
| 162.13 | 5 | 164.73 | 3,332 | 167.33 | 7,853 |
| 162.18 | 11 | 164.78 | 3,406 | 167.38 | 8,365 |
| 162.23 | 18 | 164.83 | 3,479 | 167.43 | 8,992 |
| 162.28 | 29 | 164.88 | 3,553 | 167.48 | 9,747 |
| 162.33 | 44 | 164.93 | 3,627 | 167.53 | **10,642** |
| 162.38 | 63 | 164.98 | 3,700 | | |
| 162.43 | 86 | 165.03 | 3,774 | | |
| 162.48 | 115 | 165.08 | 3,847 | | |
| 162.53 | 150 | 165.13 | 3,921 | | |
| 162.58 | 192 | 165.18 | 3,994 | | |
| 162.63 | 240 | 165.23 | 4,068 | | |
| 162.68 | 296 | 165.28 | 4,142 | | |
| 162.73 | 360 | 165.33 | 4,215 | | |
| 162.78 | 431 | 165.38 | 4,289 | | |
| 162.83 | 503 | 165.43 | 4,362 | | |
| 162.88 | 576 | 165.48 | 4,436 | | |
| 162.93 | 648 | 165.53 | 4,510 | | |
| 162.98 | 721 | 165.58 | 4,583 | | |
| 163.03 | 794 | 165.63 | 4,657 | | |
| 163.08 | 868 | 165.68 | 4,730 | | |
| 163.13 | 941 | 165.73 | 4,804 | | |
| 163.18 | 1,016 | 165.78 | 4,877 | | |
| 163.23 | 1,090 | 165.83 | 4,951 | | |
| 163.28 | 1,164 | 165.88 | 5,025 | | |
| 163.33 | 1,239 | 165.93 | 5,098 | | |
| 163.38 | 1,313 | 165.98 | 5,172 | | |
| 163.43 | 1,388 | 166.03 | 5,245 | | |
| 163.48 | 1,463 | 166.08 | 5,319 | | |
| 163.53 | 1,538 | 166.13 | 5,393 | | |
| 163.58 | 1,614 | 166.18 | 5,466 | | |
| 163.63 | 1,689 | 166.23 | 5,540 | | |
| 163.68 | 1,765 | 166.28 | 5,613 | | |
| 163.73 | 1,841 | 166.33 | 5,687 | | |
| 163.78 | 1,916 | 166.38 | 5,760 | | |
| 163.83 | 1,992 | 166.43 | 5,834 | | |
| 163.88 | 2,067 | 166.48 | 5,908 | | |
| 163.93 | 2,143 | 166.53 | 5,981 | | |
| 163.98 | 2,218 | 166.58 | 6,055 | | |
| 164.03 | 2,293 | 166.63 | 6,128 | | |
| 164.08 | 2,368 | 166.68 | 6,202 | | |
| 164.13 | 2,443 | 166.73 | 6,275 | | |
| 164.18 | 2,518 | 166.78 | 6,349 | | |
| 164.23 | 2,593 | 166.83 | 6,423 | | |
| 164.28 | 2,667 | 166.88 | 6,496 | | |
| 164.33 | 2,742 | 166.93 | 6,512 | | |
| 164.38 | 2,816 | 166.98 | 6,522 | | |
| 164.43 | 2,890 | 167.03 | 6,554 | | |
| 164.48 | 2,964 | 167.08 | 6,619 | | |

## Summary for Pond 3P: (new Pond)

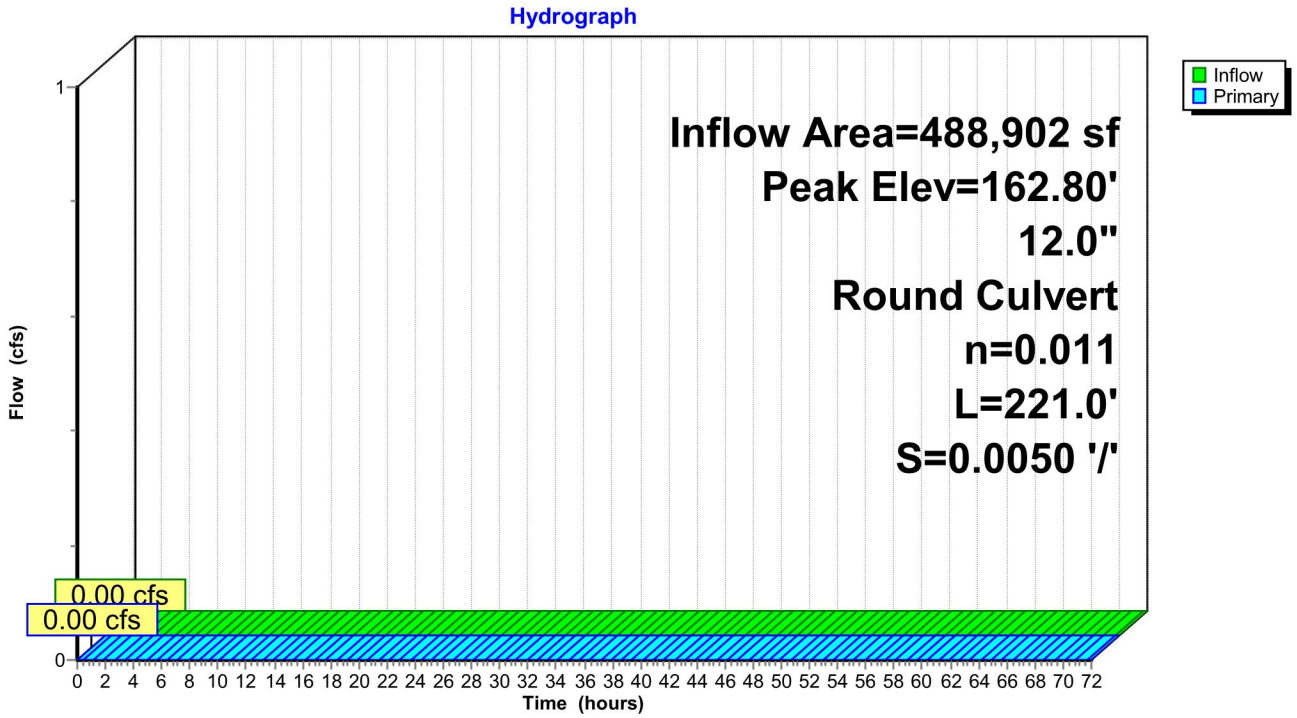
Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.80' @ 0.00 hrs
Flood Elev= 165.50'

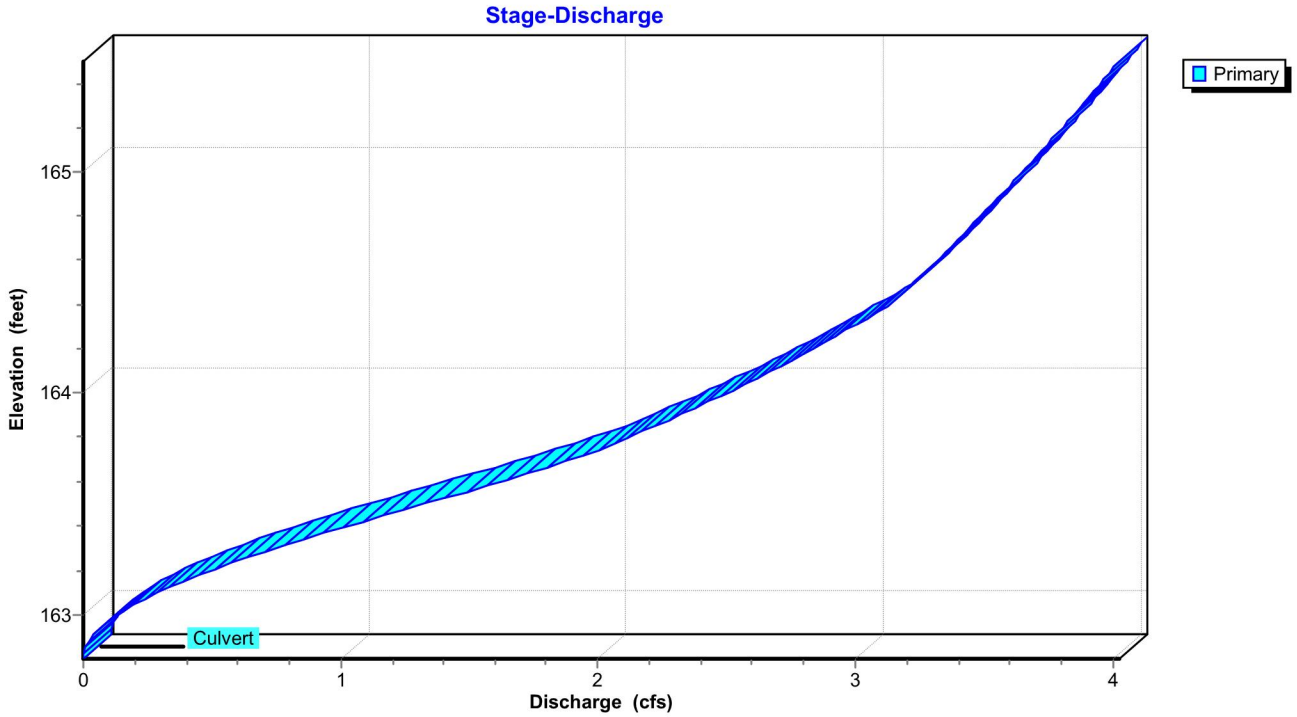
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.80' | **12.0" Round Culvert**<br>L= 221.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.80' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=162.80' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

## Pond 3P: (new Pond)



## Pond 3P: (new Pond)



## Stage-Area-Storage for Pond 3P: (new Pond)

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.80 | **0** | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | 164.98 | 0 |
| 162.92 | 0 | 163.96 | 0 | 165.00 | 0 |
| 162.94 | 0 | 163.98 | 0 | 165.02 | 0 |
| 162.96 | 0 | 164.00 | 0 | 165.04 | 0 |
| 162.98 | 0 | 164.02 | 0 | 165.06 | 0 |
| 163.00 | 0 | 164.04 | 0 | 165.08 | 0 |
| 163.02 | 0 | 164.06 | 0 | 165.10 | 0 |
| 163.04 | 0 | 164.08 | 0 | 165.12 | 0 |
| 163.06 | 0 | 164.10 | 0 | 165.14 | 0 |
| 163.08 | 0 | 164.12 | 0 | 165.16 | 0 |
| 163.10 | 0 | 164.14 | 0 | 165.18 | 0 |
| 163.12 | 0 | 164.16 | 0 | 165.20 | 0 |
| 163.14 | 0 | 164.18 | 0 | 165.22 | 0 |
| 163.16 | 0 | 164.20 | 0 | 165.24 | 0 |
| 163.18 | 0 | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | | |
| 163.46 | 0 | 164.50 | 0 | | |
| 163.48 | 0 | 164.52 | 0 | | |
| 163.50 | 0 | 164.54 | 0 | | |
| 163.52 | 0 | 164.56 | 0 | | |
| 163.54 | 0 | 164.58 | 0 | | |
| 163.56 | 0 | 164.60 | 0 | | |
| 163.58 | 0 | 164.62 | 0 | | |
| 163.60 | 0 | 164.64 | 0 | | |
| 163.62 | 0 | 164.66 | 0 | | |
| 163.64 | 0 | 164.68 | 0 | | |
| 163.66 | 0 | 164.70 | 0 | | |
| 163.68 | 0 | 164.72 | 0 | | |
| 163.70 | 0 | 164.74 | 0 | | |
| 163.72 | 0 | 164.76 | 0 | | |
| 163.74 | 0 | 164.78 | 0 | | |
| 163.76 | 0 | 164.80 | 0 | | |
| 163.78 | 0 | 164.82 | 0 | | |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |

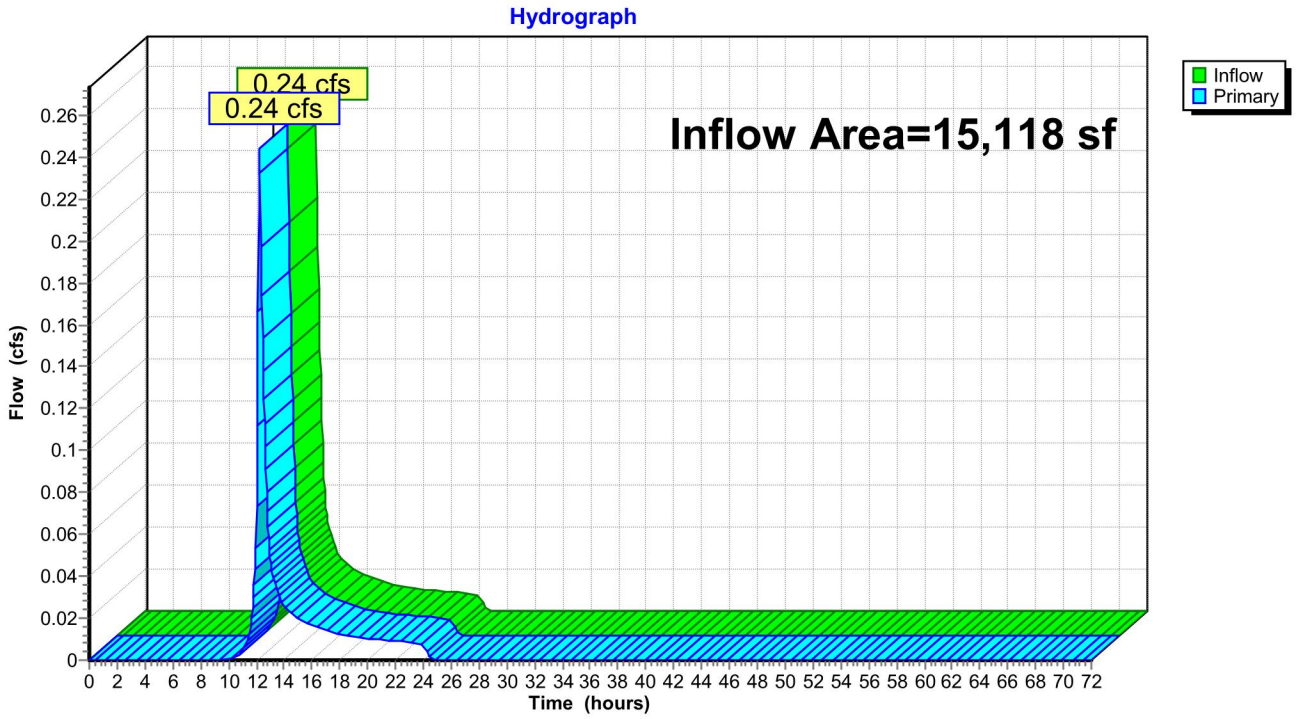
## Summary for Pond 4P: FRENCH DRAIN

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15,118 sf, 0.00% Impervious, Inflow Depth = 0.91" for 1-yr event
Inflow = 0.24 cfs @ 12.23 hrs, Volume= 1,149 cf
Primary = 0.24 cfs @ 12.23 hrs, Volume= 1,149 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Pond 4P: FRENCH DRAIN



## Summary for Pond CB#1: CB #1

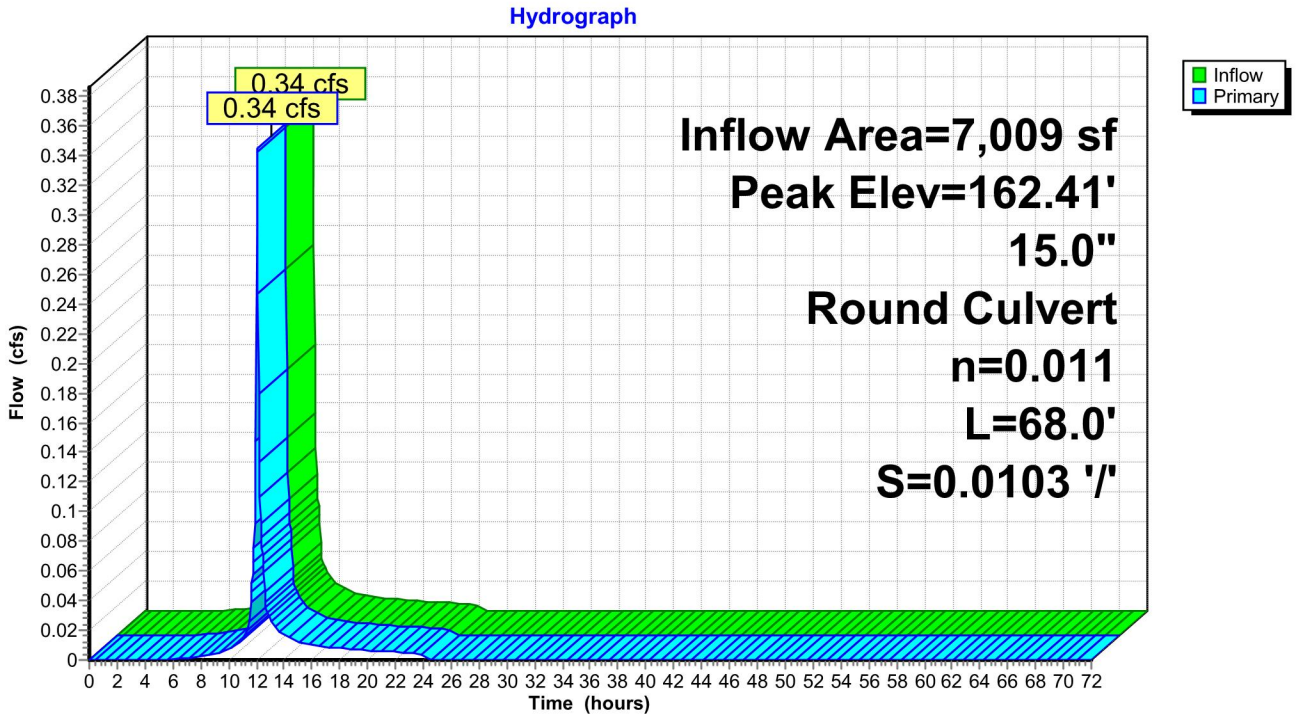
Inflow Area = 7,009 sf, 71.29% Impervious, Inflow Depth = 1.63" for 1-yr event
Inflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Outflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.41' @ 12.04 hrs
Flood Elev= 164.96'

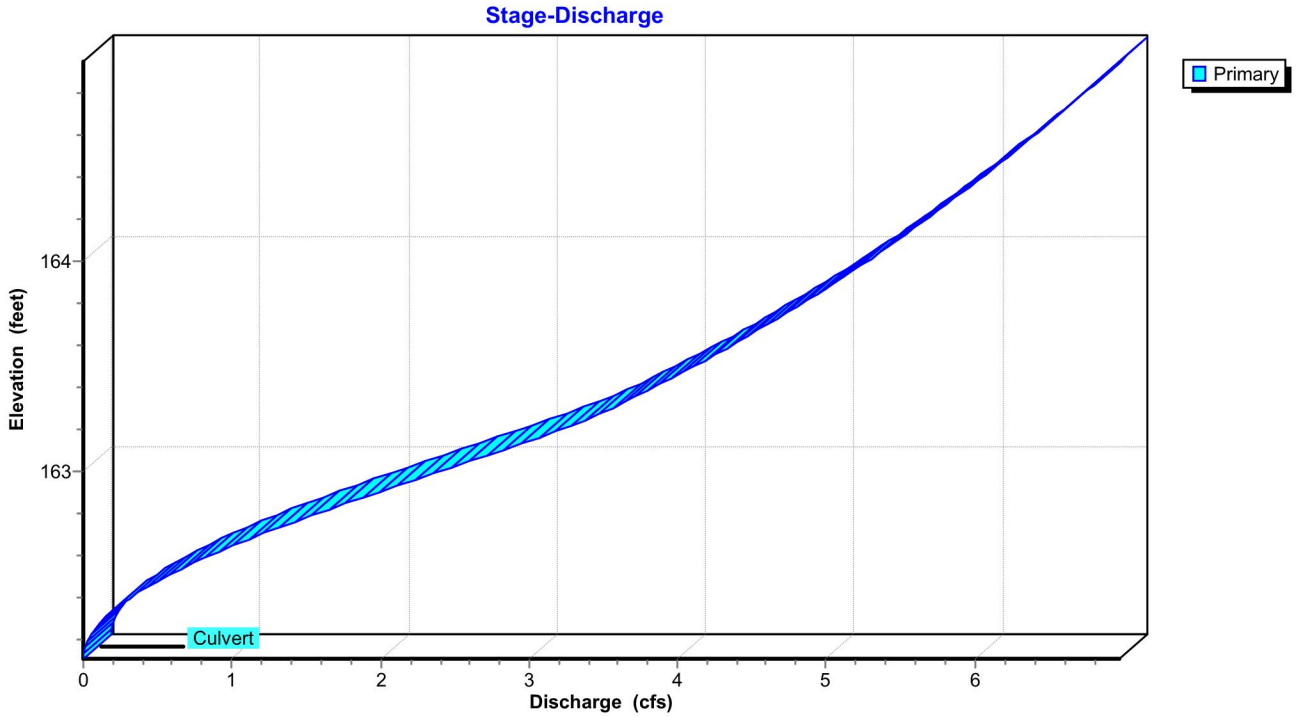
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.10' | **15.0" Round Culvert**<br>L= 68.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.10' / 161.40' S= 0.0103 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.33 cfs @ 12.04 hrs HW=162.40' (Free Discharge)
**1=Culvert** (Inlet Controls 0.33 cfs @ 1.47 fps)

## Pond CB#1: CB #1



## Pond CB#1: CB #1


Stage-Discharge
Primary
Elevation (feet)
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#1: CB #1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.10 | **0** | 163.14 | 0 | 164.18 | 0 |
| 162.12 | 0 | 163.16 | 0 | 164.20 | 0 |
| 162.14 | 0 | 163.18 | 0 | 164.22 | 0 |
| 162.16 | 0 | 163.20 | 0 | 164.24 | 0 |
| 162.18 | 0 | 163.22 | 0 | 164.26 | 0 |
| 162.20 | 0 | 163.24 | 0 | 164.28 | 0 |
| 162.22 | 0 | 163.26 | 0 | 164.30 | 0 |
| 162.24 | 0 | 163.28 | 0 | 164.32 | 0 |
| 162.26 | 0 | 163.30 | 0 | 164.34 | 0 |
| 162.28 | 0 | 163.32 | 0 | 164.36 | 0 |
| 162.30 | 0 | 163.34 | 0 | 164.38 | 0 |
| 162.32 | 0 | 163.36 | 0 | 164.40 | 0 |
| 162.34 | 0 | 163.38 | 0 | 164.42 | 0 |
| 162.36 | 0 | 163.40 | 0 | 164.44 | 0 |
| 162.38 | 0 | 163.42 | 0 | 164.46 | 0 |
| 162.40 | 0 | 163.44 | 0 | 164.48 | 0 |
| 162.42 | 0 | 163.46 | 0 | 164.50 | 0 |
| 162.44 | 0 | 163.48 | 0 | 164.52 | 0 |
| 162.46 | 0 | 163.50 | 0 | 164.54 | 0 |
| 162.48 | 0 | 163.52 | 0 | 164.56 | 0 |
| 162.50 | 0 | 163.54 | 0 | 164.58 | 0 |
| 162.52 | 0 | 163.56 | 0 | 164.60 | 0 |
| 162.54 | 0 | 163.58 | 0 | 164.62 | 0 |
| 162.56 | 0 | 163.60 | 0 | 164.64 | 0 |
| 162.58 | 0 | 163.62 | 0 | 164.66 | 0 |
| 162.60 | 0 | 163.64 | 0 | 164.68 | 0 |
| 162.62 | 0 | 163.66 | 0 | 164.70 | 0 |
| 162.64 | 0 | 163.68 | 0 | 164.72 | 0 |
| 162.66 | 0 | 163.70 | 0 | 164.74 | 0 |
| 162.68 | 0 | 163.72 | 0 | 164.76 | 0 |
| 162.70 | 0 | 163.74 | 0 | 164.78 | 0 |
| 162.72 | 0 | 163.76 | 0 | 164.80 | 0 |
| 162.74 | 0 | 163.78 | 0 | 164.82 | 0 |
| 162.76 | 0 | 163.80 | 0 | 164.84 | 0 |
| 162.78 | 0 | 163.82 | 0 | 164.86 | 0 |
| 162.80 | 0 | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | | |
| 162.92 | 0 | 163.96 | 0 | | |
| 162.94 | 0 | 163.98 | 0 | | |
| 162.96 | 0 | 164.00 | 0 | | |
| 162.98 | 0 | 164.02 | 0 | | |
| 163.00 | 0 | 164.04 | 0 | | |
| 163.02 | 0 | 164.06 | 0 | | |
| 163.04 | 0 | 164.08 | 0 | | |
| 163.06 | 0 | 164.10 | 0 | | |
| 163.08 | 0 | 164.12 | 0 | | |
| 163.10 | 0 | 164.14 | 0 | | |
| 163.12 | 0 | 164.16 | 0 | | |

## Summary for Pond CB#2: CB #2

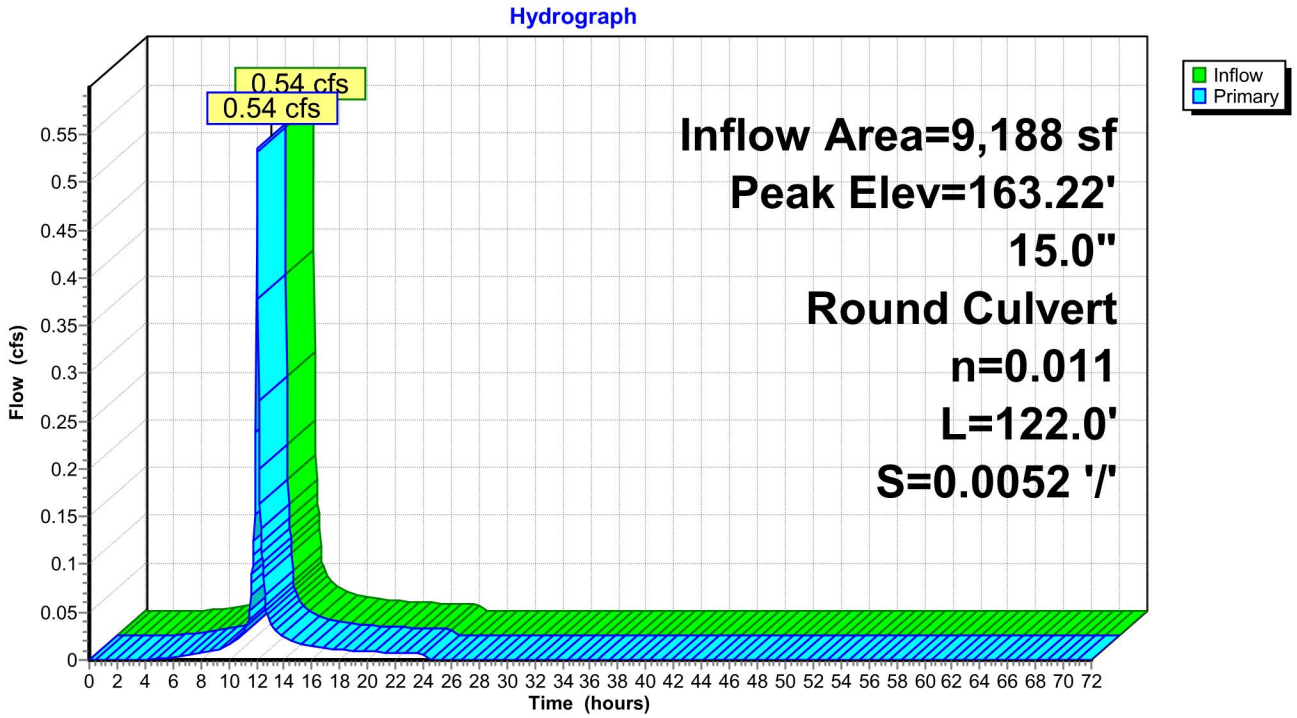
Inflow Area = 9,188 sf, 85.40% Impervious, Inflow Depth = 1.97" for 1-yr event
Inflow = 0.54 cfs @ 12.04 hrs, Volume= 1,512 cf
Outflow = 0.54 cfs @ 12.04 hrs, Volume= 1,512 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.04 hrs, Volume= 1,512 cf
Routed to Pond CB#3 : CB #3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.22' @ 12.04 hrs
Flood Elev= 165.58'

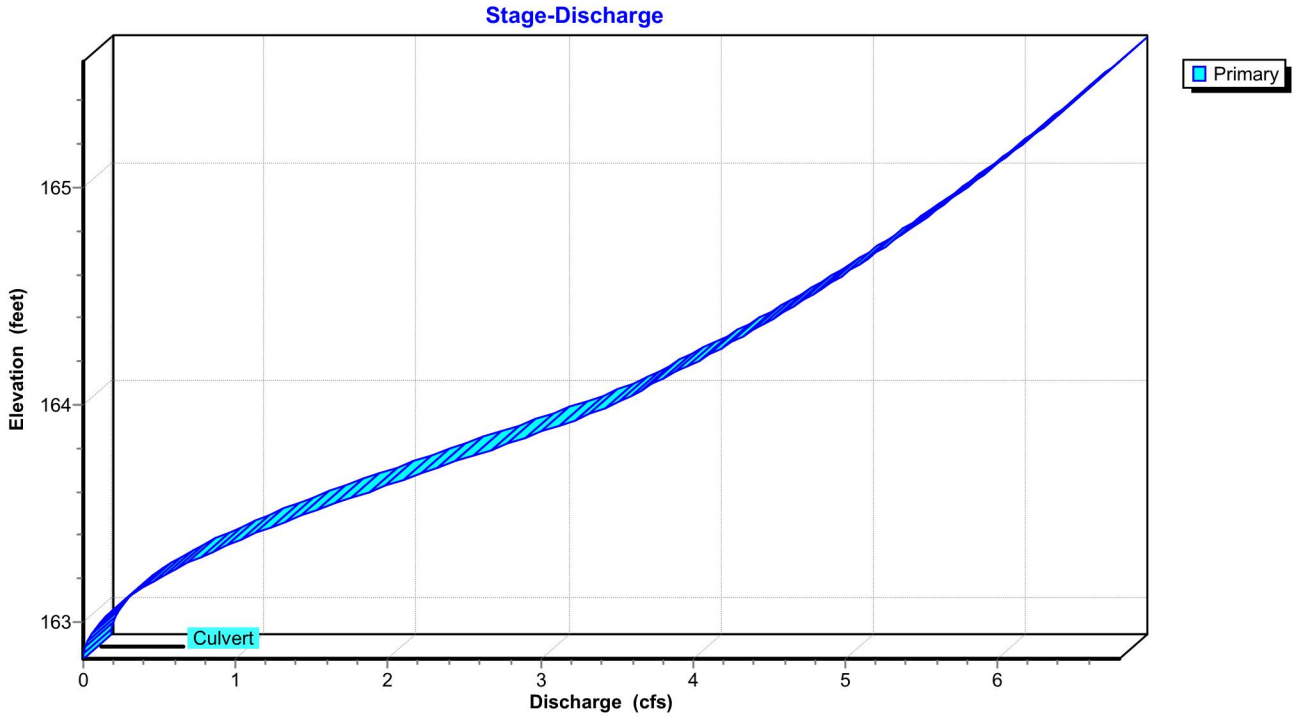
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.83' | **15.0" Round Culvert**<br>L= 122.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.83' / 162.20' S= 0.0052 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.52 cfs @ 12.04 hrs HW=163.21' (Free Discharge)
**1=Culvert** (Inlet Controls 0.52 cfs @ 1.65 fps)

## Pond CB#2: CB #2



## Pond CB#2: CB #2


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#2: CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.83 | **0** | 163.87 | 0 | 164.91 | 0 |
| 162.85 | 0 | 163.89 | 0 | 164.93 | 0 |
| 162.87 | 0 | 163.91 | 0 | 164.95 | 0 |
| 162.89 | 0 | 163.93 | 0 | 164.97 | 0 |
| 162.91 | 0 | 163.95 | 0 | 164.99 | 0 |
| 162.93 | 0 | 163.97 | 0 | 165.01 | 0 |
| 162.95 | 0 | 163.99 | 0 | 165.03 | 0 |
| 162.97 | 0 | 164.01 | 0 | 165.05 | 0 |
| 162.99 | 0 | 164.03 | 0 | 165.07 | 0 |
| 163.01 | 0 | 164.05 | 0 | 165.09 | 0 |
| 163.03 | 0 | 164.07 | 0 | 165.11 | 0 |
| 163.05 | 0 | 164.09 | 0 | 165.13 | 0 |
| 163.07 | 0 | 164.11 | 0 | 165.15 | 0 |
| 163.09 | 0 | 164.13 | 0 | 165.17 | 0 |
| 163.11 | 0 | 164.15 | 0 | 165.19 | 0 |
| 163.13 | 0 | 164.17 | 0 | 165.21 | 0 |
| 163.15 | 0 | 164.19 | 0 | 165.23 | 0 |
| 163.17 | 0 | 164.21 | 0 | 165.25 | 0 |
| 163.19 | 0 | 164.23 | 0 | 165.27 | 0 |
| 163.21 | 0 | 164.25 | 0 | 165.29 | 0 |
| 163.23 | 0 | 164.27 | 0 | 165.31 | 0 |
| 163.25 | 0 | 164.29 | 0 | 165.33 | 0 |
| 163.27 | 0 | 164.31 | 0 | 165.35 | 0 |
| 163.29 | 0 | 164.33 | 0 | 165.37 | 0 |
| 163.31 | 0 | 164.35 | 0 | 165.39 | 0 |
| 163.33 | 0 | 164.37 | 0 | 165.41 | 0 |
| 163.35 | 0 | 164.39 | 0 | 165.43 | 0 |
| 163.37 | 0 | 164.41 | 0 | 165.45 | 0 |
| 163.39 | 0 | 164.43 | 0 | 165.47 | 0 |
| 163.41 | 0 | 164.45 | 0 | 165.49 | 0 |
| 163.43 | 0 | 164.47 | 0 | 165.51 | 0 |
| 163.45 | 0 | 164.49 | 0 | 165.53 | 0 |
| 163.47 | 0 | 164.51 | 0 | 165.55 | 0 |
| 163.49 | 0 | 164.53 | 0 | 165.57 | 0 |
| 163.51 | 0 | 164.55 | 0 | | |
| 163.53 | 0 | 164.57 | 0 | | |
| 163.55 | 0 | 164.59 | 0 | | |
| 163.57 | 0 | 164.61 | 0 | | |
| 163.59 | 0 | 164.63 | 0 | | |
| 163.61 | 0 | 164.65 | 0 | | |
| 163.63 | 0 | 164.67 | 0 | | |
| 163.65 | 0 | 164.69 | 0 | | |
| 163.67 | 0 | 164.71 | 0 | | |
| 163.69 | 0 | 164.73 | 0 | | |
| 163.71 | 0 | 164.75 | 0 | | |
| 163.73 | 0 | 164.77 | 0 | | |
| 163.75 | 0 | 164.79 | 0 | | |
| 163.77 | 0 | 164.81 | 0 | | |
| 163.79 | 0 | 164.83 | 0 | | |
| 163.81 | 0 | 164.85 | 0 | | |
| 163.83 | 0 | 164.87 | 0 | | |
| 163.85 | 0 | 164.89 | 0 | | |

## Summary for Pond CB#3: CB #3

[79] Warning: Submerged Pond CB#2 Primary device # 1 OUTLET by 0.54'

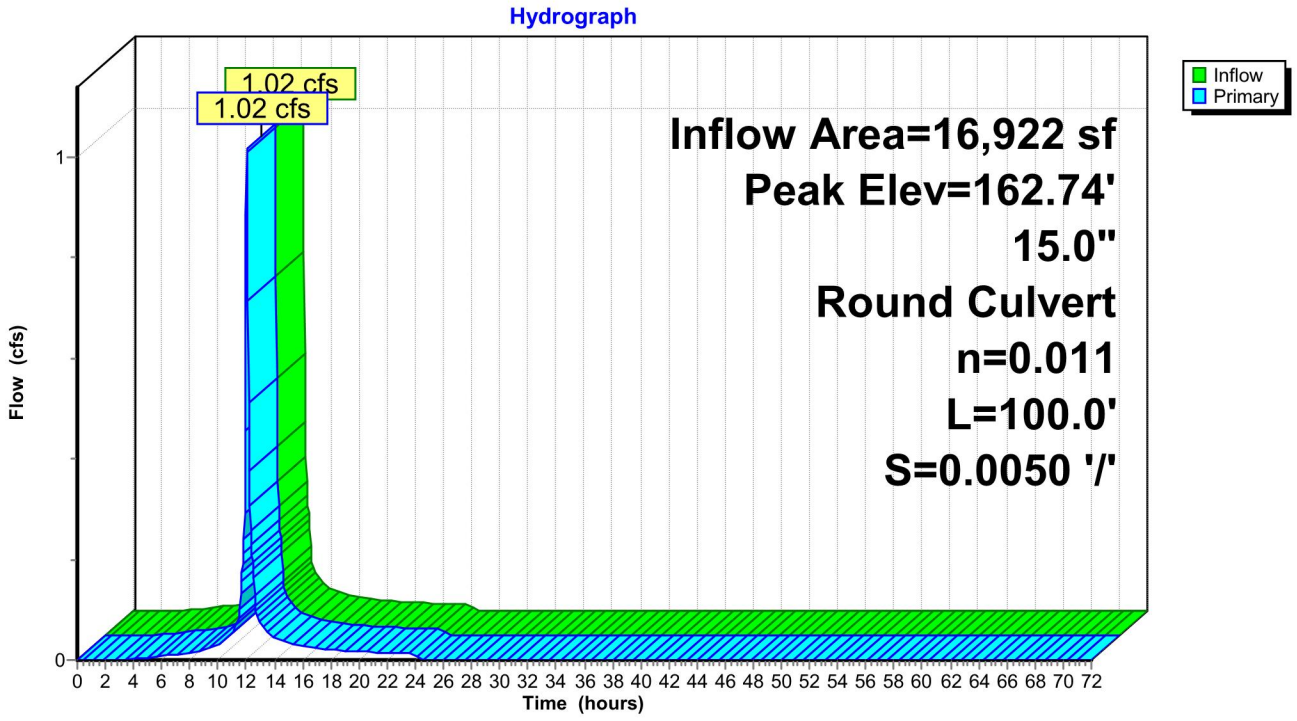
Inflow Area = 16,922 sf, 88.85% Impervious, Inflow Depth = 2.06" for 1-yr event
Inflow = 1.02 cfs @ 12.04 hrs, Volume= 2,910 cf
Outflow = 1.02 cfs @ 12.04 hrs, Volume= 2,910 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.04 hrs, Volume= 2,910 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.74' @ 12.04 hrs
Flood Elev= 165.70'

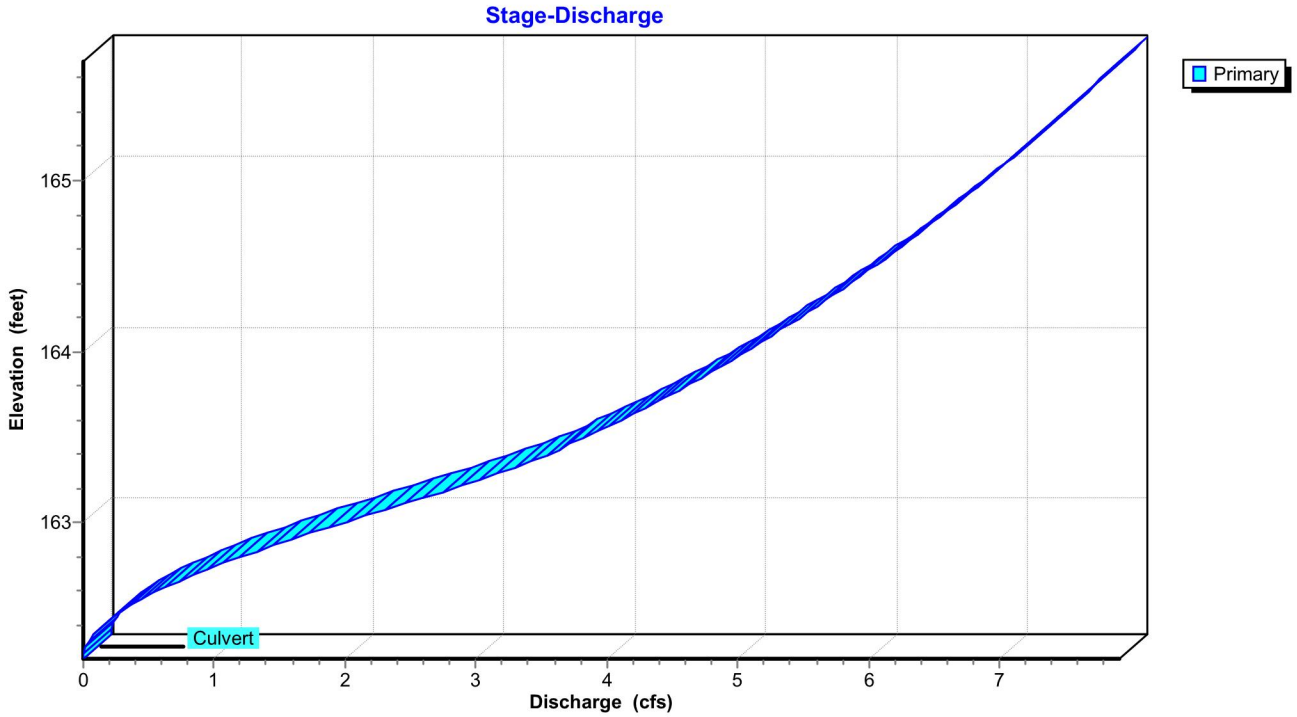
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.20' | **15.0" Round Culvert**<br>L= 100.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.20' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.98 cfs @ 12.04 hrs HW=162.73' (Free Discharge)
**1=Culvert** (Inlet Controls 0.98 cfs @ 1.96 fps)

### Pond CB#3: CB #3



## Pond CB#3: CB #3


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond CB#3: CB #3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 162.20 | **0** | 164.80 | 0 |
| 162.25 | 0 | 164.85 | 0 |
| 162.30 | 0 | 164.90 | 0 |
| 162.35 | 0 | 164.95 | 0 |
| 162.40 | 0 | 165.00 | 0 |
| 162.45 | 0 | 165.05 | 0 |
| 162.50 | 0 | 165.10 | 0 |
| 162.55 | 0 | 165.15 | 0 |
| 162.60 | 0 | 165.20 | 0 |
| 162.65 | 0 | 165.25 | 0 |
| 162.70 | 0 | 165.30 | 0 |
| 162.75 | 0 | 165.35 | 0 |
| 162.80 | 0 | 165.40 | 0 |
| 162.85 | 0 | 165.45 | 0 |
| 162.90 | 0 | 165.50 | 0 |
| 162.95 | 0 | 165.55 | 0 |
| 163.00 | 0 | 165.60 | 0 |
| 163.05 | 0 | 165.65 | 0 |
| 163.10 | 0 | 165.70 | 0 |
| 163.15 | 0 | | |
| 163.20 | 0 | | |
| 163.25 | 0 | | |
| 163.30 | 0 | | |
| 163.35 | 0 | | |
| 163.40 | 0 | | |
| 163.45 | 0 | | |
| 163.50 | 0 | | |
| 163.55 | 0 | | |
| 163.60 | 0 | | |
| 163.65 | 0 | | |
| 163.70 | 0 | | |
| 163.75 | 0 | | |
| 163.80 | 0 | | |
| 163.85 | 0 | | |
| 163.90 | 0 | | |
| 163.95 | 0 | | |
| 164.00 | 0 | | |
| 164.05 | 0 | | |
| 164.10 | 0 | | |
| 164.15 | 0 | | |
| 164.20 | 0 | | |
| 164.25 | 0 | | |
| 164.30 | 0 | | |
| 164.35 | 0 | | |
| 164.40 | 0 | | |
| 164.45 | 0 | | |
| 164.50 | 0 | | |
| 164.55 | 0 | | |
| 164.60 | 0 | | |
| 164.65 | 0 | | |
| 164.70 | 0 | | |
| 164.75 | 0 | | |

## Summary for Pond CB#4: CB #4

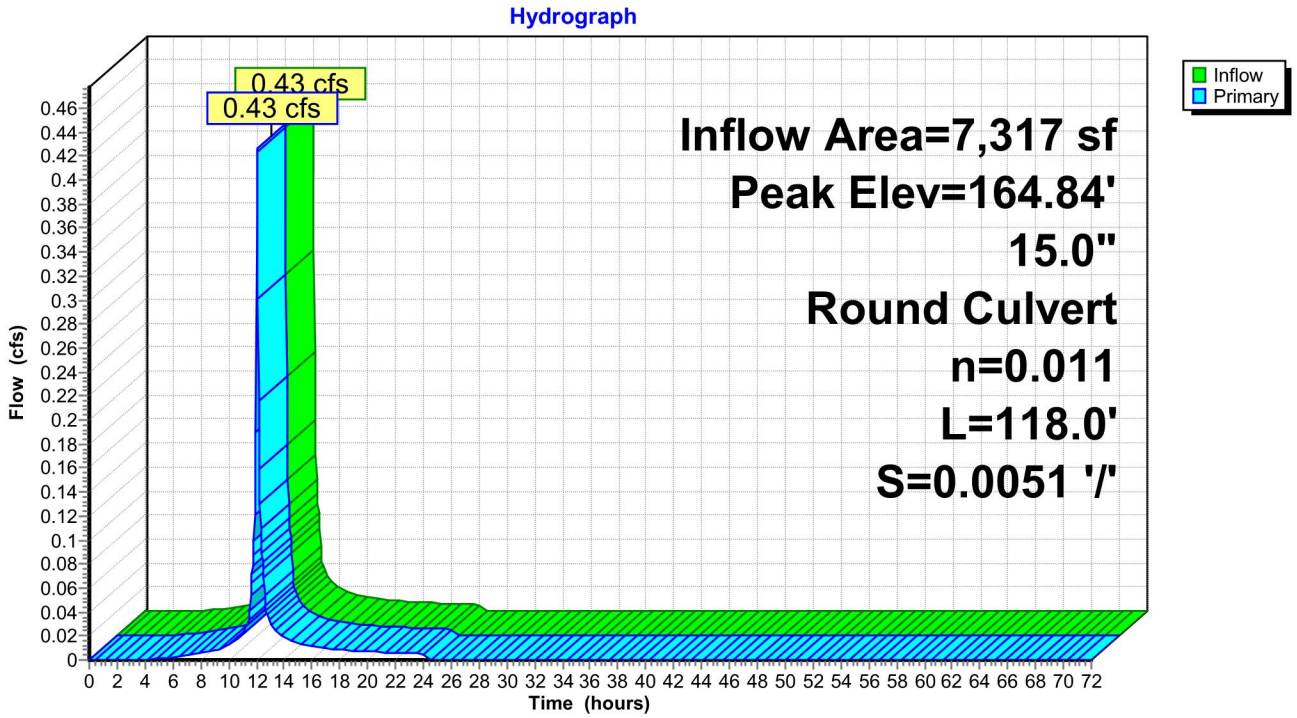
Inflow Area = 7,317 sf, 86.07% Impervious, Inflow Depth = 1.97" for 1-yr event
Inflow = 0.43 cfs @ 12.04 hrs, Volume= 1,204 cf
Outflow = 0.43 cfs @ 12.04 hrs, Volume= 1,204 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 12.04 hrs, Volume= 1,204 cf
Routed to Pond CB#5 : CB #5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.84' @ 12.04 hrs
Flood Elev= 167.26'

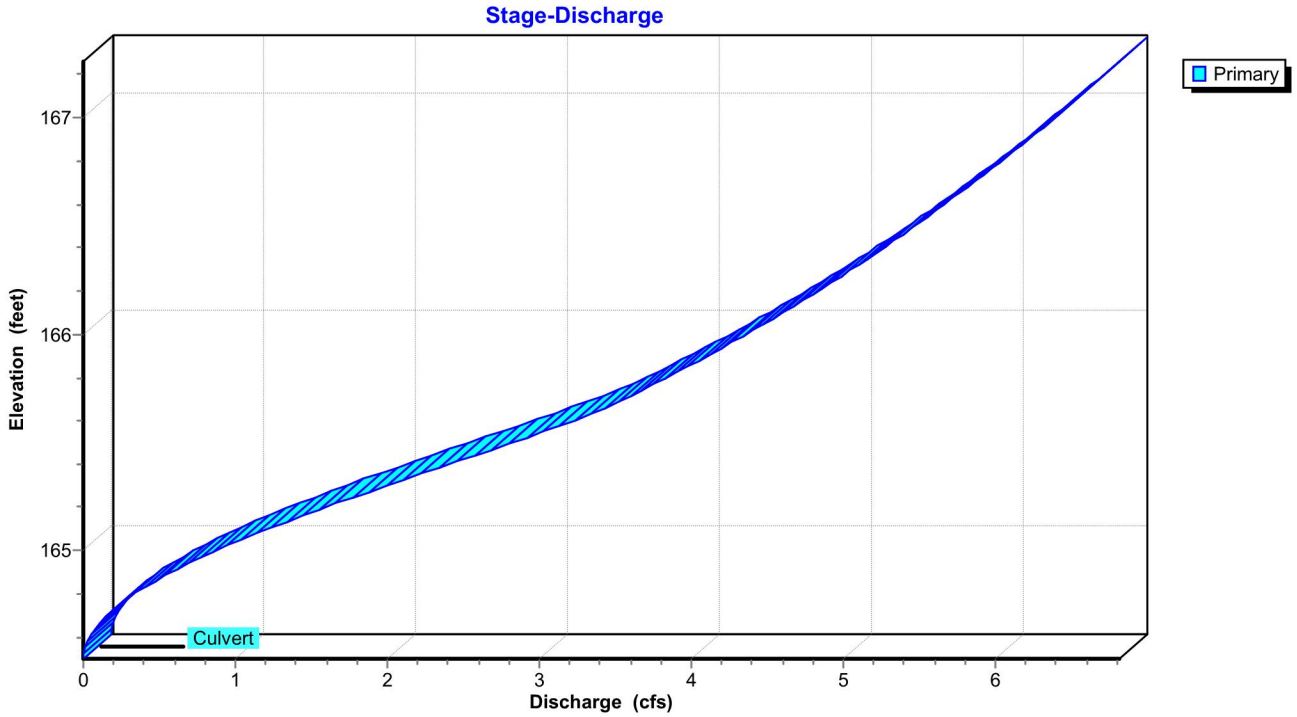
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.50' | **15.0" Round Culvert**<br>L= 118.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.50' / 163.90' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.41 cfs @ 12.04 hrs HW=164.84' (Free Discharge)
**1=Culvert** (Inlet Controls 0.41 cfs @ 1.56 fps)

## Pond CB#4: CB #4



## Pond CB#4: CB #4


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#4: CB #4

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.50 | **0** | 165.54 | 0 | 166.58 | 0 |
| 164.52 | 0 | 165.56 | 0 | 166.60 | 0 |
| 164.54 | 0 | 165.58 | 0 | 166.62 | 0 |
| 164.56 | 0 | 165.60 | 0 | 166.64 | 0 |
| 164.58 | 0 | 165.62 | 0 | 166.66 | 0 |
| 164.60 | 0 | 165.64 | 0 | 166.68 | 0 |
| 164.62 | 0 | 165.66 | 0 | 166.70 | 0 |
| 164.64 | 0 | 165.68 | 0 | 166.72 | 0 |
| 164.66 | 0 | 165.70 | 0 | 166.74 | 0 |
| 164.68 | 0 | 165.72 | 0 | 166.76 | 0 |
| 164.70 | 0 | 165.74 | 0 | 166.78 | 0 |
| 164.72 | 0 | 165.76 | 0 | 166.80 | 0 |
| 164.74 | 0 | 165.78 | 0 | 166.82 | 0 |
| 164.76 | 0 | 165.80 | 0 | 166.84 | 0 |
| 164.78 | 0 | 165.82 | 0 | 166.86 | 0 |
| 164.80 | 0 | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | 167.04 | 0 |
| 164.98 | 0 | 166.02 | 0 | 167.06 | 0 |
| 165.00 | 0 | 166.04 | 0 | 167.08 | 0 |
| 165.02 | 0 | 166.06 | 0 | 167.10 | 0 |
| 165.04 | 0 | 166.08 | 0 | 167.12 | 0 |
| 165.06 | 0 | 166.10 | 0 | 167.14 | 0 |
| 165.08 | 0 | 166.12 | 0 | 167.16 | 0 |
| 165.10 | 0 | 166.14 | 0 | 167.18 | 0 |
| 165.12 | 0 | 166.16 | 0 | 167.20 | 0 |
| 165.14 | 0 | 166.18 | 0 | 167.22 | 0 |
| 165.16 | 0 | 166.20 | 0 | 167.24 | 0 |
| 165.18 | 0 | 166.22 | 0 | 167.26 | 0 |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |

## Summary for Pond CB#5: CB #5

[79] Warning: Submerged Pond CB#4 Primary device # 1 OUTLET by 0.23'

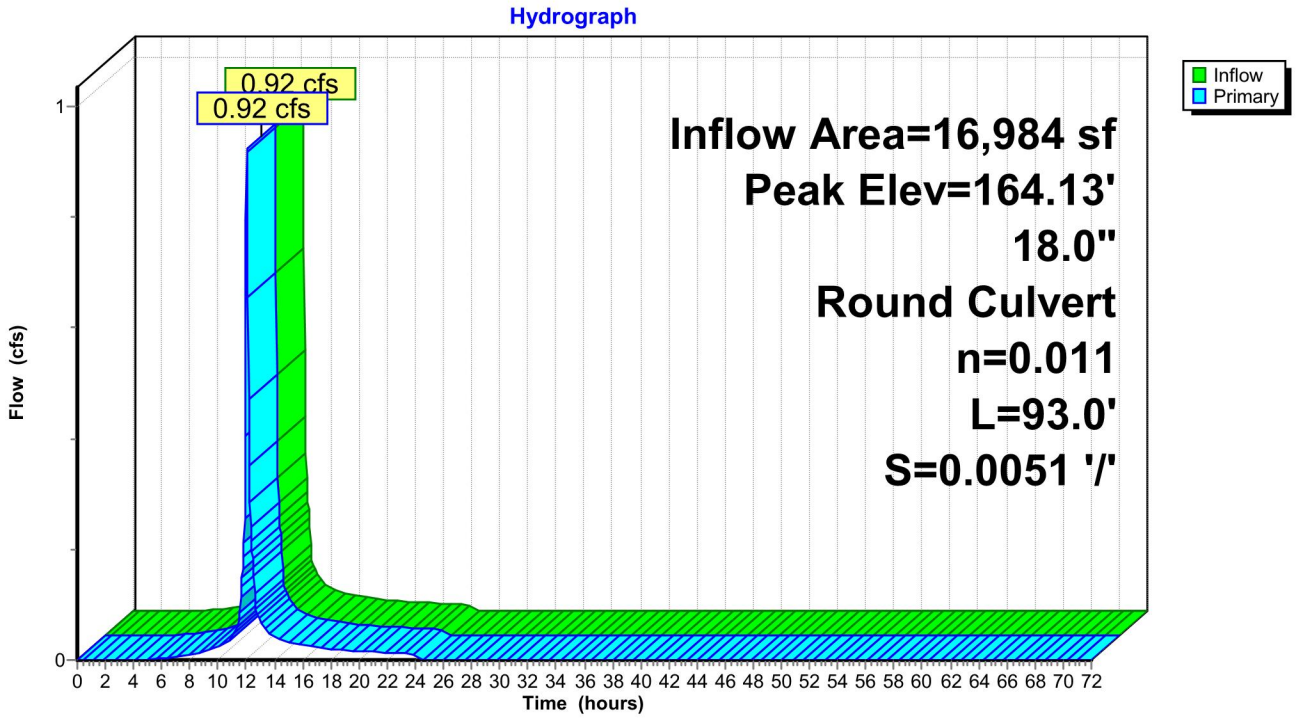
Inflow Area = 16,984 sf, 80.66% Impervious, Inflow Depth = 1.82" for 1-yr event
Inflow = 0.92 cfs @ 12.04 hrs, Volume= 2,582 cf
Outflow = 0.92 cfs @ 12.04 hrs, Volume= 2,582 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.92 cfs @ 12.04 hrs, Volume= 2,582 cf
Routed to Pond CB#6 : CB #6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.13' @ 12.04 hrs
Flood Elev= 166.36'

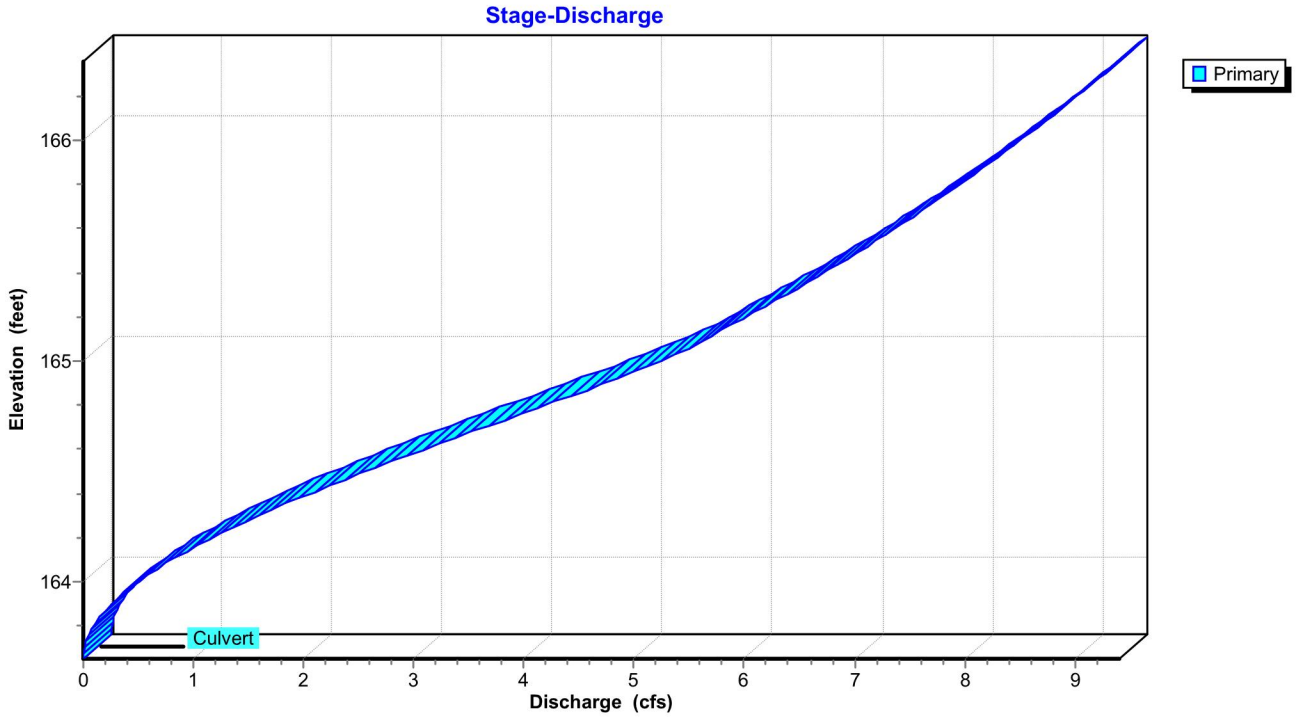
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.65' | **18.0" Round Culvert**<br>L= 93.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.65' / 163.18' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.89 cfs @ 12.04 hrs HW=164.13' (Free Discharge)
**1=Culvert** (Inlet Controls 0.89 cfs @ 1.86 fps)

### Pond CB#5: CB #5



## Pond CB#5: CB #5


Stage-Discharge
Primary
Elevation (feet)
166
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#5: CB #5

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.65 | **0** | 164.69 | 0 | 165.73 | 0 |
| 163.67 | 0 | 164.71 | 0 | 165.75 | 0 |
| 163.69 | 0 | 164.73 | 0 | 165.77 | 0 |
| 163.71 | 0 | 164.75 | 0 | 165.79 | 0 |
| 163.73 | 0 | 164.77 | 0 | 165.81 | 0 |
| 163.75 | 0 | 164.79 | 0 | 165.83 | 0 |
| 163.77 | 0 | 164.81 | 0 | 165.85 | 0 |
| 163.79 | 0 | 164.83 | 0 | 165.87 | 0 |
| 163.81 | 0 | 164.85 | 0 | 165.89 | 0 |
| 163.83 | 0 | 164.87 | 0 | 165.91 | 0 |
| 163.85 | 0 | 164.89 | 0 | 165.93 | 0 |
| 163.87 | 0 | 164.91 | 0 | 165.95 | 0 |
| 163.89 | 0 | 164.93 | 0 | 165.97 | 0 |
| 163.91 | 0 | 164.95 | 0 | 165.99 | 0 |
| 163.93 | 0 | 164.97 | 0 | 166.01 | 0 |
| 163.95 | 0 | 164.99 | 0 | 166.03 | 0 |
| 163.97 | 0 | 165.01 | 0 | 166.05 | 0 |
| 163.99 | 0 | 165.03 | 0 | 166.07 | 0 |
| 164.01 | 0 | 165.05 | 0 | 166.09 | 0 |
| 164.03 | 0 | 165.07 | 0 | 166.11 | 0 |
| 164.05 | 0 | 165.09 | 0 | 166.13 | 0 |
| 164.07 | 0 | 165.11 | 0 | 166.15 | 0 |
| 164.09 | 0 | 165.13 | 0 | 166.17 | 0 |
| 164.11 | 0 | 165.15 | 0 | 166.19 | 0 |
| 164.13 | 0 | 165.17 | 0 | 166.21 | 0 |
| 164.15 | 0 | 165.19 | 0 | 166.23 | 0 |
| 164.17 | 0 | 165.21 | 0 | 166.25 | 0 |
| 164.19 | 0 | 165.23 | 0 | 166.27 | 0 |
| 164.21 | 0 | 165.25 | 0 | 166.29 | 0 |
| 164.23 | 0 | 165.27 | 0 | 166.31 | 0 |
| 164.25 | 0 | 165.29 | 0 | 166.33 | 0 |
| 164.27 | 0 | 165.31 | 0 | 166.35 | 0 |
| 164.29 | 0 | 165.33 | 0 | | |
| 164.31 | 0 | 165.35 | 0 | | |
| 164.33 | 0 | 165.37 | 0 | | |
| 164.35 | 0 | 165.39 | 0 | | |
| 164.37 | 0 | 165.41 | 0 | | |
| 164.39 | 0 | 165.43 | 0 | | |
| 164.41 | 0 | 165.45 | 0 | | |
| 164.43 | 0 | 165.47 | 0 | | |
| 164.45 | 0 | 165.49 | 0 | | |
| 164.47 | 0 | 165.51 | 0 | | |
| 164.49 | 0 | 165.53 | 0 | | |
| 164.51 | 0 | 165.55 | 0 | | |
| 164.53 | 0 | 165.57 | 0 | | |
| 164.55 | 0 | 165.59 | 0 | | |
| 164.57 | 0 | 165.61 | 0 | | |
| 164.59 | 0 | 165.63 | 0 | | |
| 164.61 | 0 | 165.65 | 0 | | |
| 164.63 | 0 | 165.67 | 0 | | |
| 164.65 | 0 | 165.69 | 0 | | |
| 164.67 | 0 | 165.71 | 0 | | |

## Summary for Pond CB#6: CB #6

[79] Warning: Submerged Pond CB#5 Primary device # 1 INLET by 0.14'

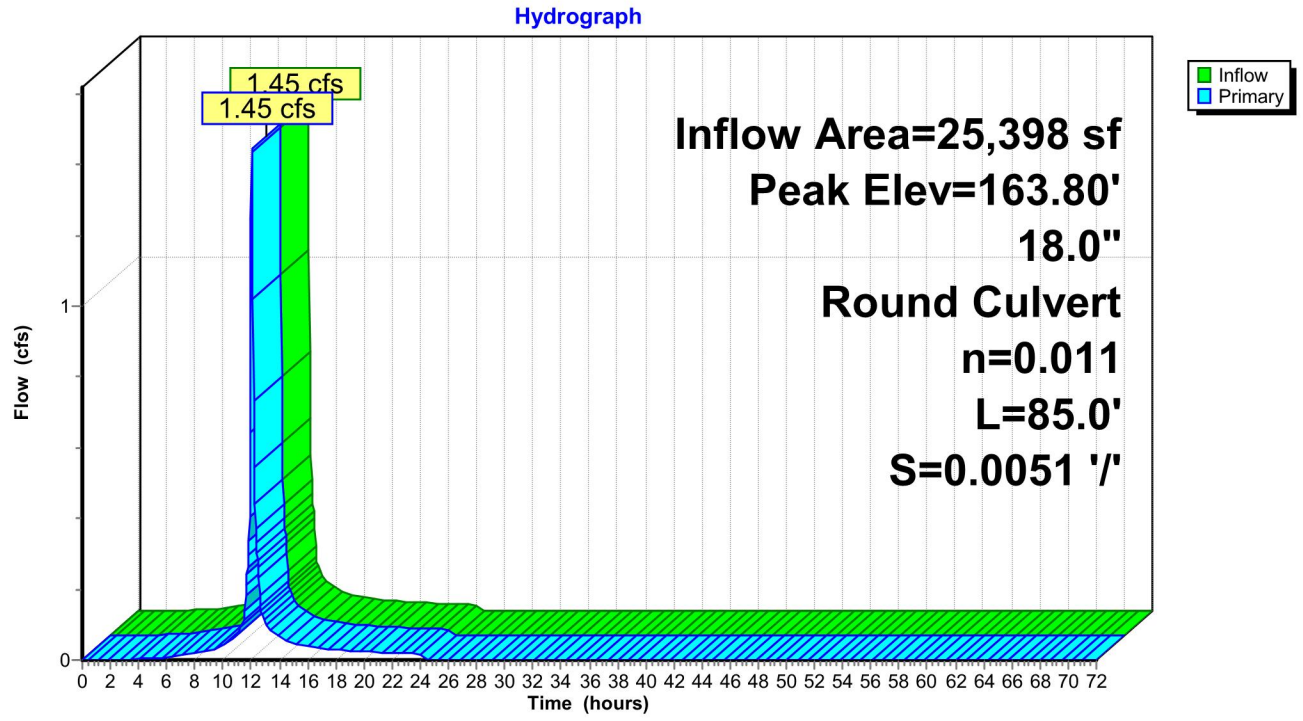
Inflow Area = 25,398 sf, 83.23% Impervious, Inflow Depth = 1.94" for 1-yr event
Inflow = 1.45 cfs @ 12.04 hrs, Volume= 4,103 cf
Outflow = 1.45 cfs @ 12.04 hrs, Volume= 4,103 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.45 cfs @ 12.04 hrs, Volume= 4,103 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.80' @ 12.04 hrs
Flood Elev= 165.87'

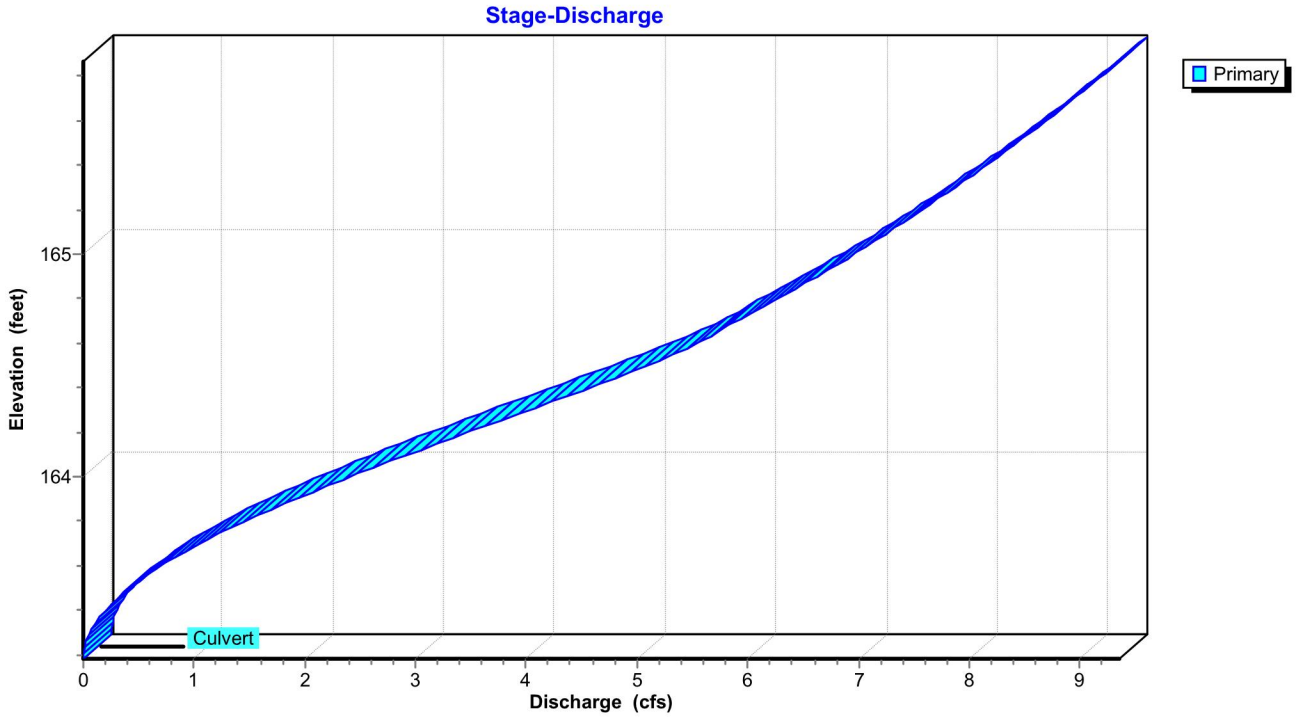
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.18' | **18.0" Round Culvert**<br>L= 85.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.18' / 162.75' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.40 cfs @ 12.04 hrs HW=163.79' (Free Discharge)
**1=Culvert** (Inlet Controls 1.40 cfs @ 2.09 fps)

### Pond CB#6: CB #6



## Pond CB#6: CB #6


Stage-Discharge
Primary
Elevation (feet)
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#6: CB #6

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.18 | **0** | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | 165.52 | 0 |
| 163.46 | 0 | 164.50 | 0 | 165.54 | 0 |
| 163.48 | 0 | 164.52 | 0 | 165.56 | 0 |
| 163.50 | 0 | 164.54 | 0 | 165.58 | 0 |
| 163.52 | 0 | 164.56 | 0 | 165.60 | 0 |
| 163.54 | 0 | 164.58 | 0 | 165.62 | 0 |
| 163.56 | 0 | 164.60 | 0 | 165.64 | 0 |
| 163.58 | 0 | 164.62 | 0 | 165.66 | 0 |
| 163.60 | 0 | 164.64 | 0 | 165.68 | 0 |
| 163.62 | 0 | 164.66 | 0 | 165.70 | 0 |
| 163.64 | 0 | 164.68 | 0 | 165.72 | 0 |
| 163.66 | 0 | 164.70 | 0 | 165.74 | 0 |
| 163.68 | 0 | 164.72 | 0 | 165.76 | 0 |
| 163.70 | 0 | 164.74 | 0 | 165.78 | 0 |
| 163.72 | 0 | 164.76 | 0 | 165.80 | 0 |
| 163.74 | 0 | 164.78 | 0 | 165.82 | 0 |
| 163.76 | 0 | 164.80 | 0 | 165.84 | 0 |
| 163.78 | 0 | 164.82 | 0 | 165.86 | 0 |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |
| 163.84 | 0 | 164.88 | 0 | | |
| 163.86 | 0 | 164.90 | 0 | | |
| 163.88 | 0 | 164.92 | 0 | | |
| 163.90 | 0 | 164.94 | 0 | | |
| 163.92 | 0 | 164.96 | 0 | | |
| 163.94 | 0 | 164.98 | 0 | | |
| 163.96 | 0 | 165.00 | 0 | | |
| 163.98 | 0 | 165.02 | 0 | | |
| 164.00 | 0 | 165.04 | 0 | | |
| 164.02 | 0 | 165.06 | 0 | | |
| 164.04 | 0 | 165.08 | 0 | | |
| 164.06 | 0 | 165.10 | 0 | | |
| 164.08 | 0 | 165.12 | 0 | | |
| 164.10 | 0 | 165.14 | 0 | | |
| 164.12 | 0 | 165.16 | 0 | | |
| 164.14 | 0 | 165.18 | 0 | | |
| 164.16 | 0 | 165.20 | 0 | | |
| 164.18 | 0 | 165.22 | 0 | | |
| 164.20 | 0 | 165.24 | 0 | | |

## Summary for Pond DP-1: DP-1

[81] Warning: Exceeded Pond EX-2 by 0.10' @ 12.10 hrs

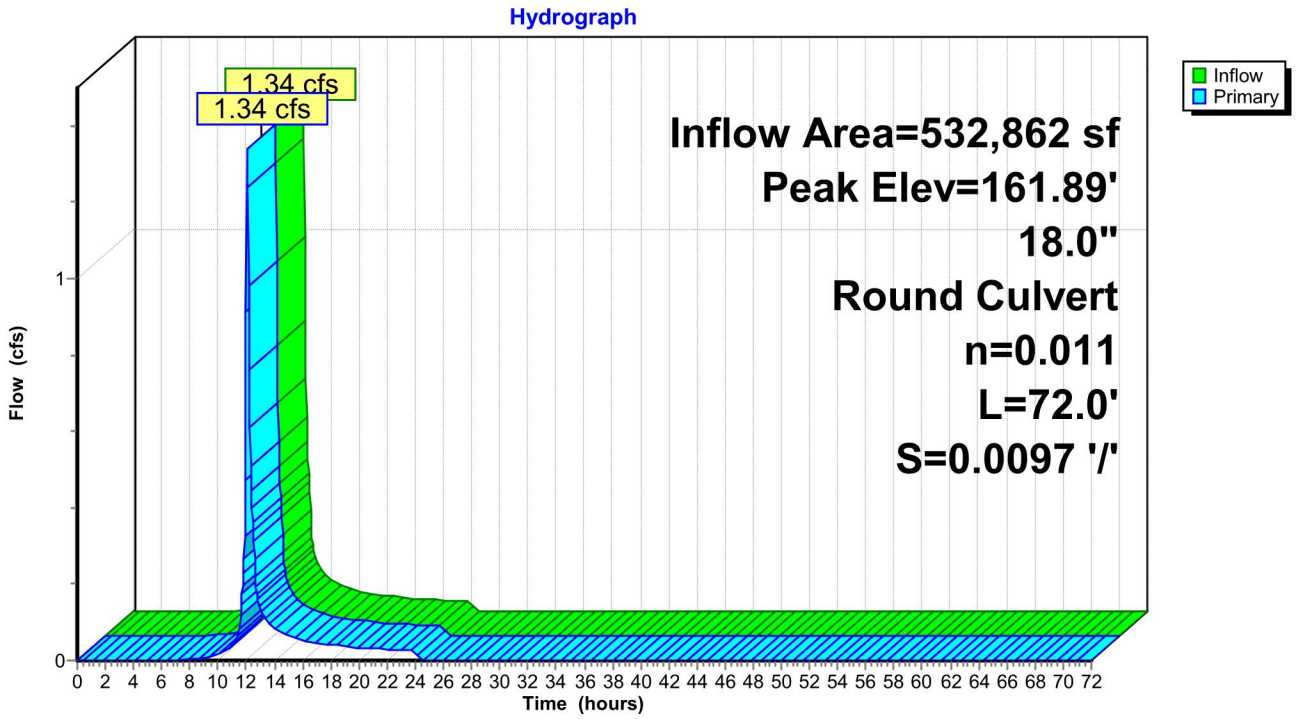
Inflow Area = 532,862 sf, 32.10% Impervious, Inflow Depth = 0.10" for 1-yr event
Inflow = 1.34 cfs @ 12.07 hrs, Volume= 4,276 cf
Outflow = 1.34 cfs @ 12.07 hrs, Volume= 4,276 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.07 hrs, Volume= 4,276 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 161.89' @ 12.07 hrs
Flood Elev= 163.41'

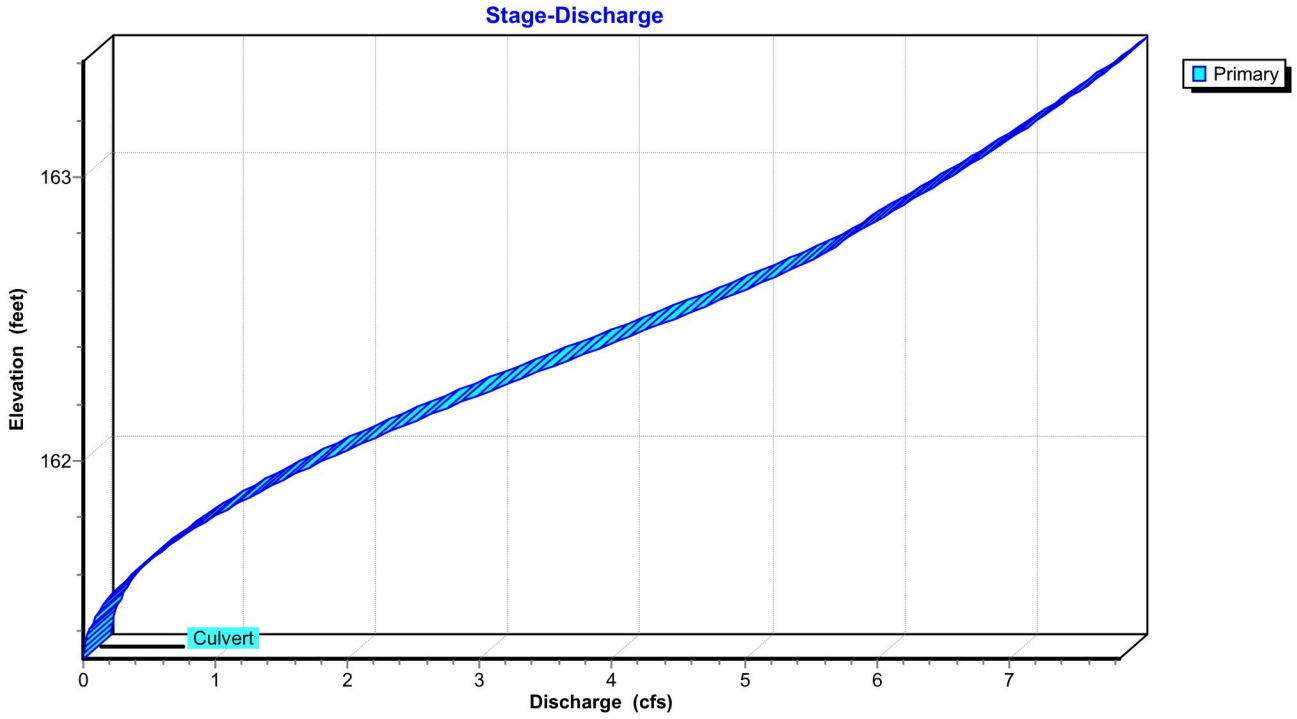
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.29 cfs @ 12.07 hrs HW=161.88' (Free Discharge)
↳**1=Culvert** (Inlet Controls 1.29 cfs @ 2.05 fps)

### Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

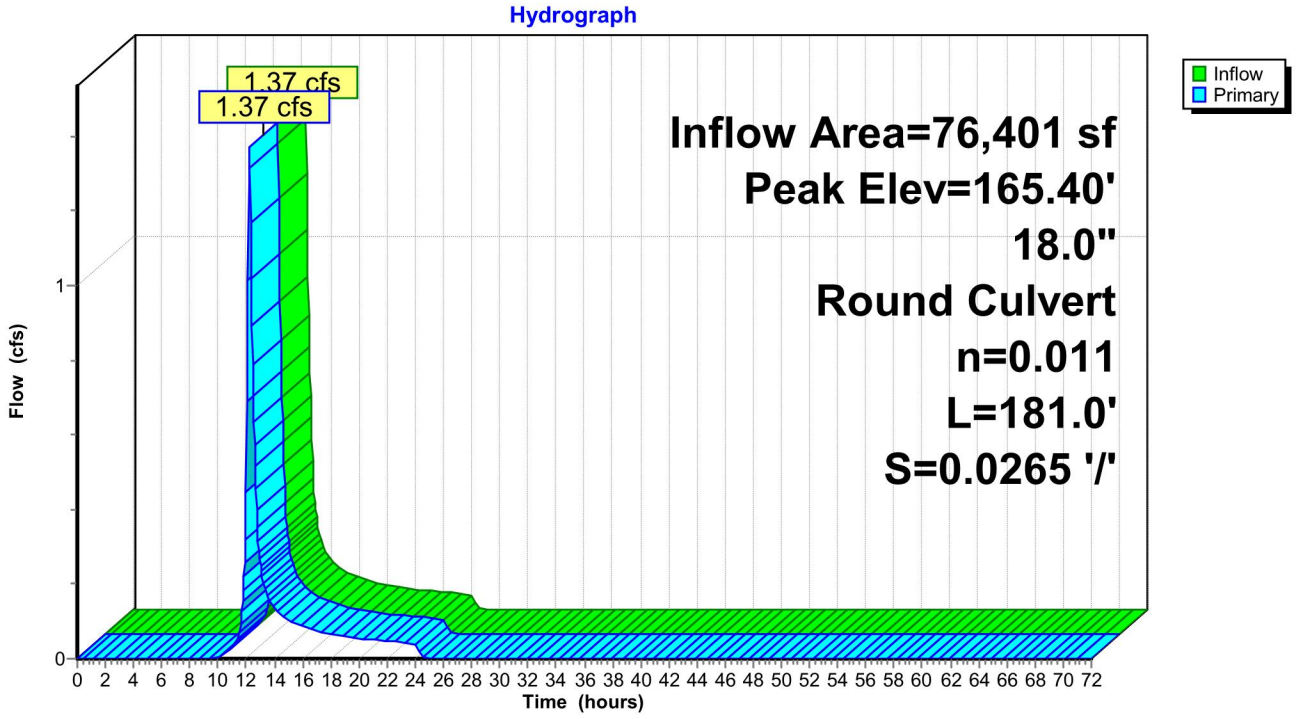
Inflow Area = 76,401 sf, 13.71% Impervious, Inflow Depth = 0.97" for 1-yr event
Inflow = 1.37 cfs @ 12.21 hrs, Volume= 6,149 cf
Outflow = 1.37 cfs @ 12.21 hrs, Volume= 6,149 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.37 cfs @ 12.21 hrs, Volume= 6,149 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.40' @ 12.21 hrs
Flood Elev= 167.03'

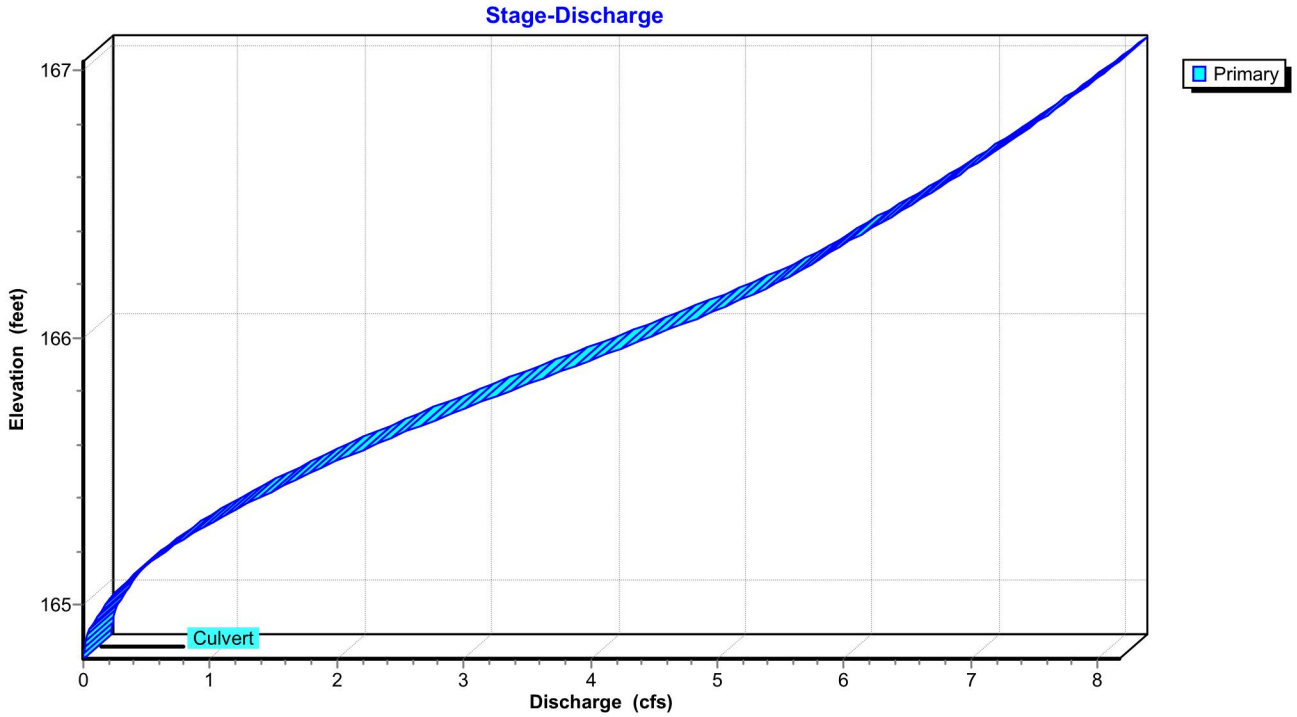
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.36 cfs @ 12.21 hrs HW=165.40' (Free Discharge)
**1=Culvert** (Inlet Controls 1.36 cfs @ 2.08 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Culvert
Elevation (feet)
167
166
165
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

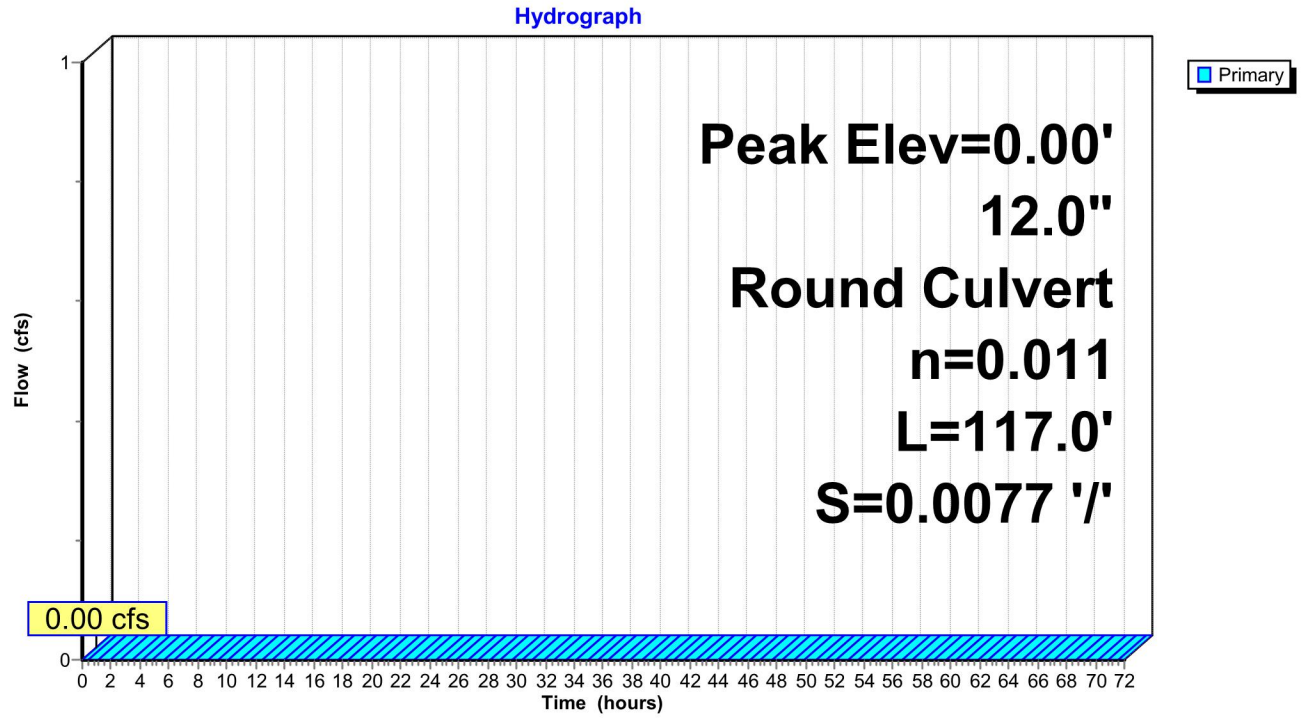
## Summary for Pond DP-3: DP-3

[43] Hint: Has no inflow (Outflow=Zero)

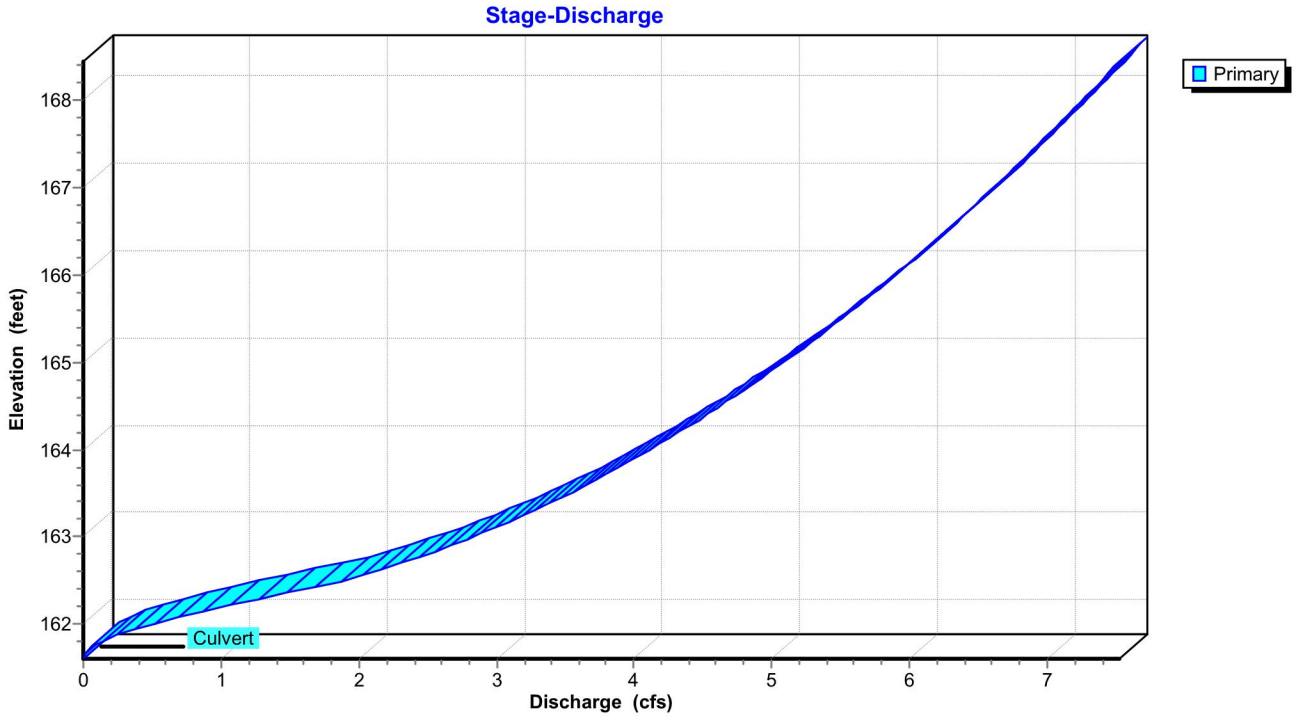
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

## Summary for Pond EX-1: EX. CB 1

[79] Warning: Submerged Pond 3P Primary device # 1 OUTLET by 0.30'
[79] Warning: Submerged Pond CB#1 Primary device # 1 OUTLET by 0.60'

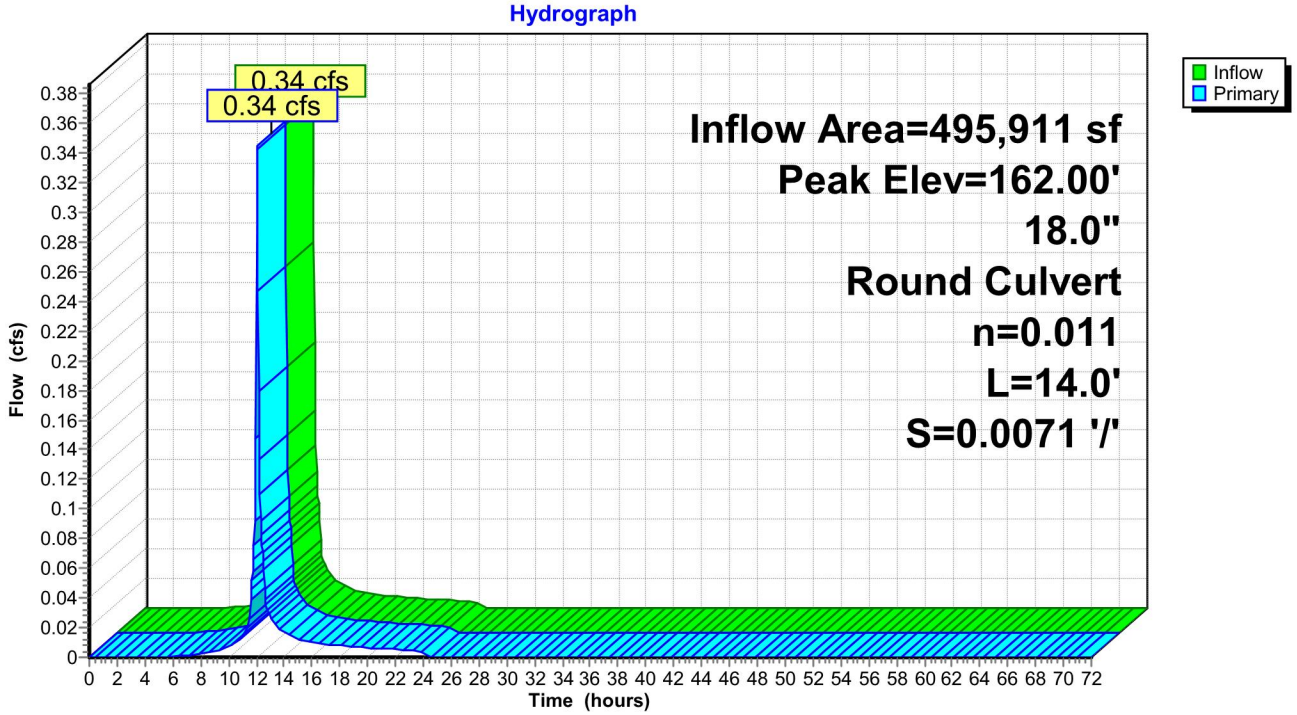
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.02" for 1-yr event
Inflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Outflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Routed to Pond EX-2 : EX. CB #2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.00' @ 12.04 hrs
Flood Elev= 164.02'

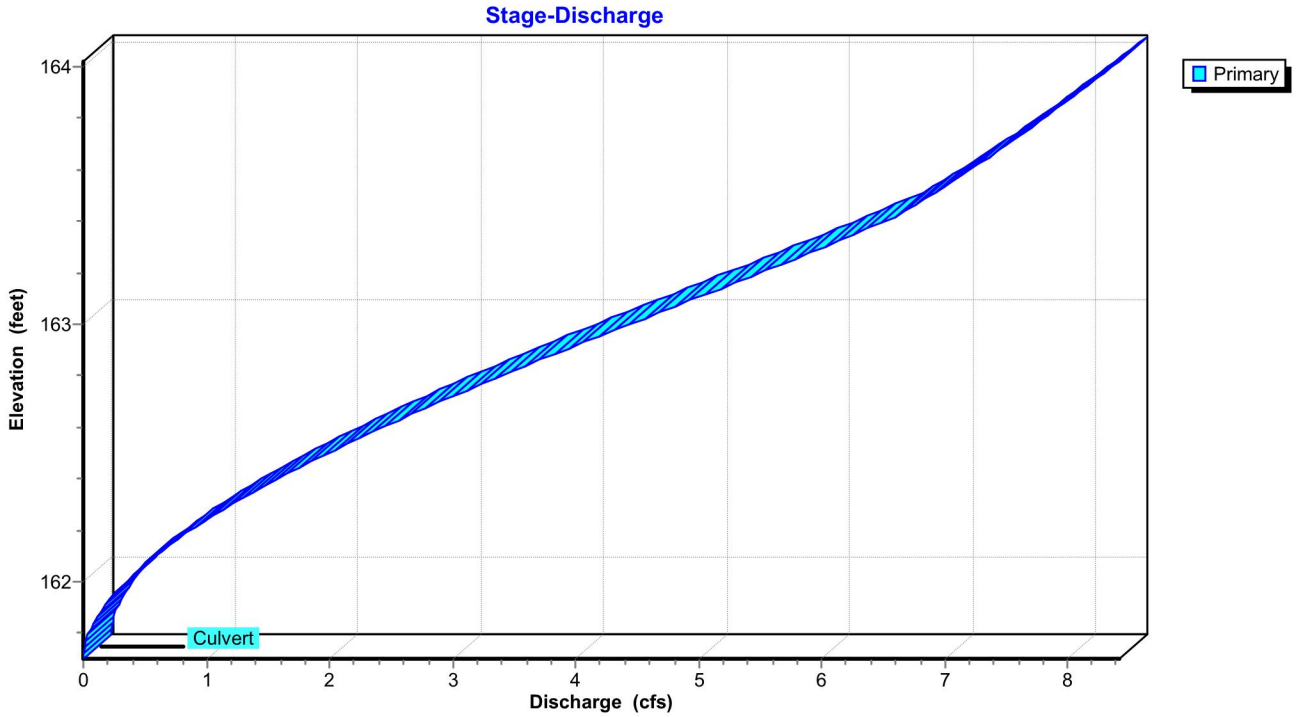
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.70' | **18.0" Round Culvert**<br>L= 14.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.70' / 161.60' S= 0.0071 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.33 cfs @ 12.04 hrs HW=161.99' (Free Discharge)
**1=Culvert** (Barrel Controls 0.33 cfs @ 2.07 fps)

## Pond EX-1: EX. CB 1



## Pond EX-1: EX. CB 1



## Stage-Area-Storage for Pond EX-1: EX. CB 1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.70 | **0** | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | 163.98 | 0 |
| 161.92 | 0 | 162.96 | 0 | 164.00 | 0 |
| 161.94 | 0 | 162.98 | 0 | 164.02 | 0 |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |
| 162.54 | 0 | 163.58 | 0 | | |
| 162.56 | 0 | 163.60 | 0 | | |
| 162.58 | 0 | 163.62 | 0 | | |
| 162.60 | 0 | 163.64 | 0 | | |
| 162.62 | 0 | 163.66 | 0 | | |
| 162.64 | 0 | 163.68 | 0 | | |
| 162.66 | 0 | 163.70 | 0 | | |
| 162.68 | 0 | 163.72 | 0 | | |
| 162.70 | 0 | 163.74 | 0 | | |
| 162.72 | 0 | 163.76 | 0 | | |

## Summary for Pond EX-2: EX. CB #2

[79] Warning: Submerged Pond EX-1 Primary device # 1 INLET by 0.12'

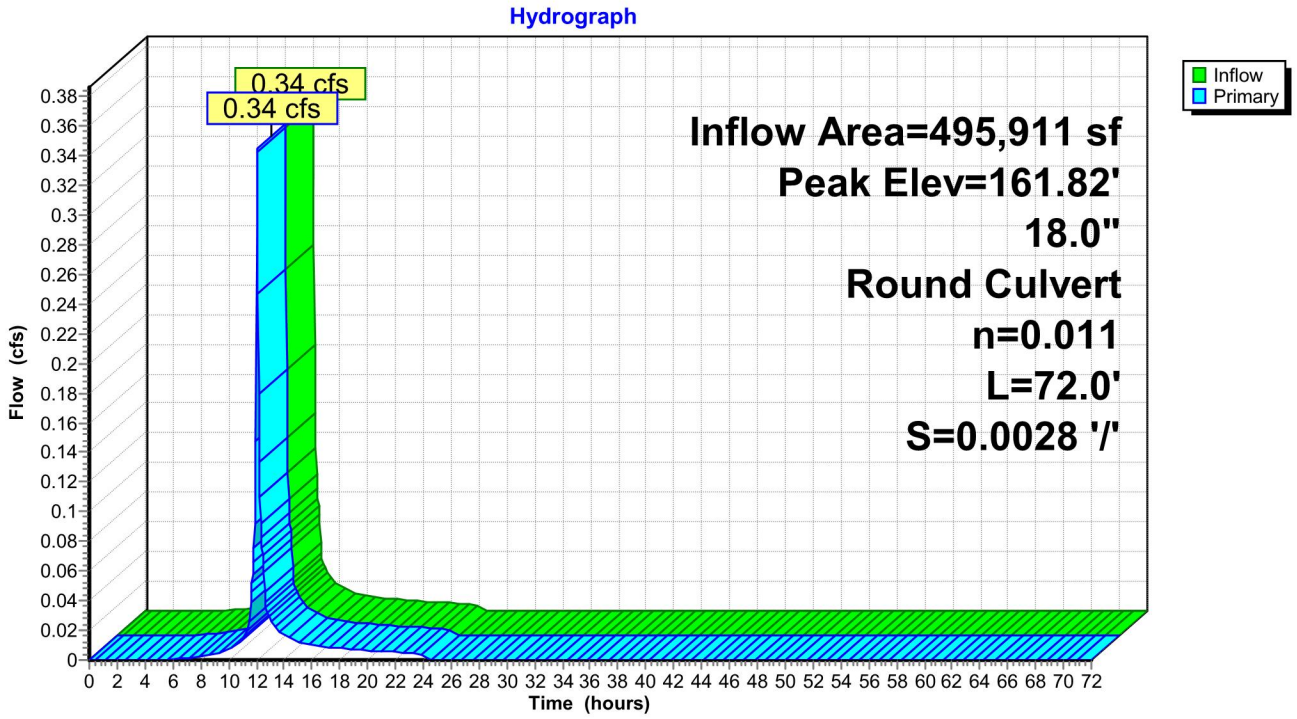
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.02" for 1-yr event
Inflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Outflow = 0.34 cfs @ 12.04 hrs, Volume= 952 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.04 hrs, Volume= 952 cf
Routed to Pond DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 161.82' @ 12.04 hrs
Flood Elev= 163.96'

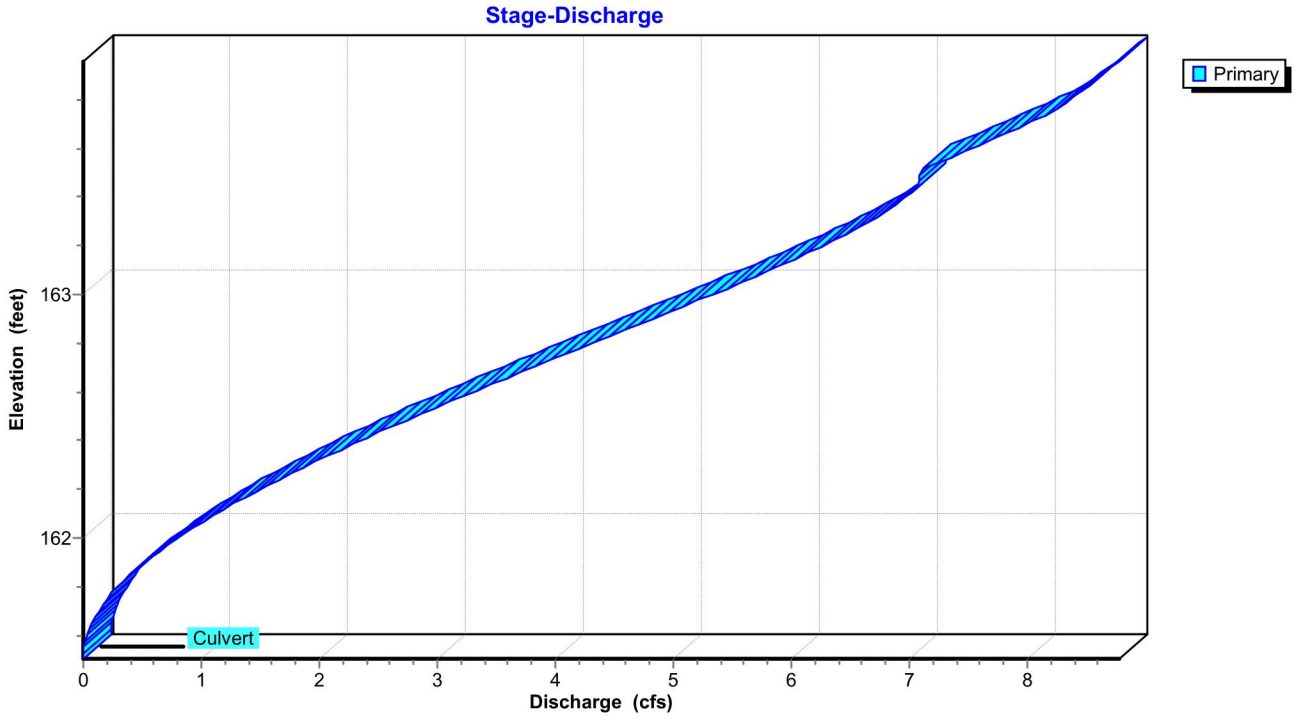
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.50' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.50' / 161.30' S= 0.0028 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.33 cfs @ 12.04 hrs HW=161.82' (Free Discharge)
**1=Culvert** (Barrel Controls 0.33 cfs @ 1.86 fps)

### Pond EX-2: EX. CB #2



## Pond EX-2: EX. CB #2



## Stage-Area-Storage for Pond EX-2: EX. CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.50 | **0** | 162.54 | 0 | 163.58 | 0 |
| 161.52 | 0 | 162.56 | 0 | 163.60 | 0 |
| 161.54 | 0 | 162.58 | 0 | 163.62 | 0 |
| 161.56 | 0 | 162.60 | 0 | 163.64 | 0 |
| 161.58 | 0 | 162.62 | 0 | 163.66 | 0 |
| 161.60 | 0 | 162.64 | 0 | 163.68 | 0 |
| 161.62 | 0 | 162.66 | 0 | 163.70 | 0 |
| 161.64 | 0 | 162.68 | 0 | 163.72 | 0 |
| 161.66 | 0 | 162.70 | 0 | 163.74 | 0 |
| 161.68 | 0 | 162.72 | 0 | 163.76 | 0 |
| 161.70 | 0 | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |

## Summary for Pond IB-1: INFILTRATION BASIN 1

Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 1.15" for 1-yr event
Inflow = 8.19 cfs @ 12.17 hrs, Volume= 46,797 cf
Outflow = 8.18 cfs @ 12.18 hrs, Volume= 46,797 cf, Atten= 0%, Lag= 0.8 min
Discarded = 8.18 cfs @ 12.18 hrs, Volume= 46,797 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 160.54' @ 12.18 hrs Surf.Area= 6,567 sf Storage= 285 cf

Plug-Flow detention time= 0.6 min calculated for 46,765 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min ( 831.1 - 830.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 160.50' | 50,670 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

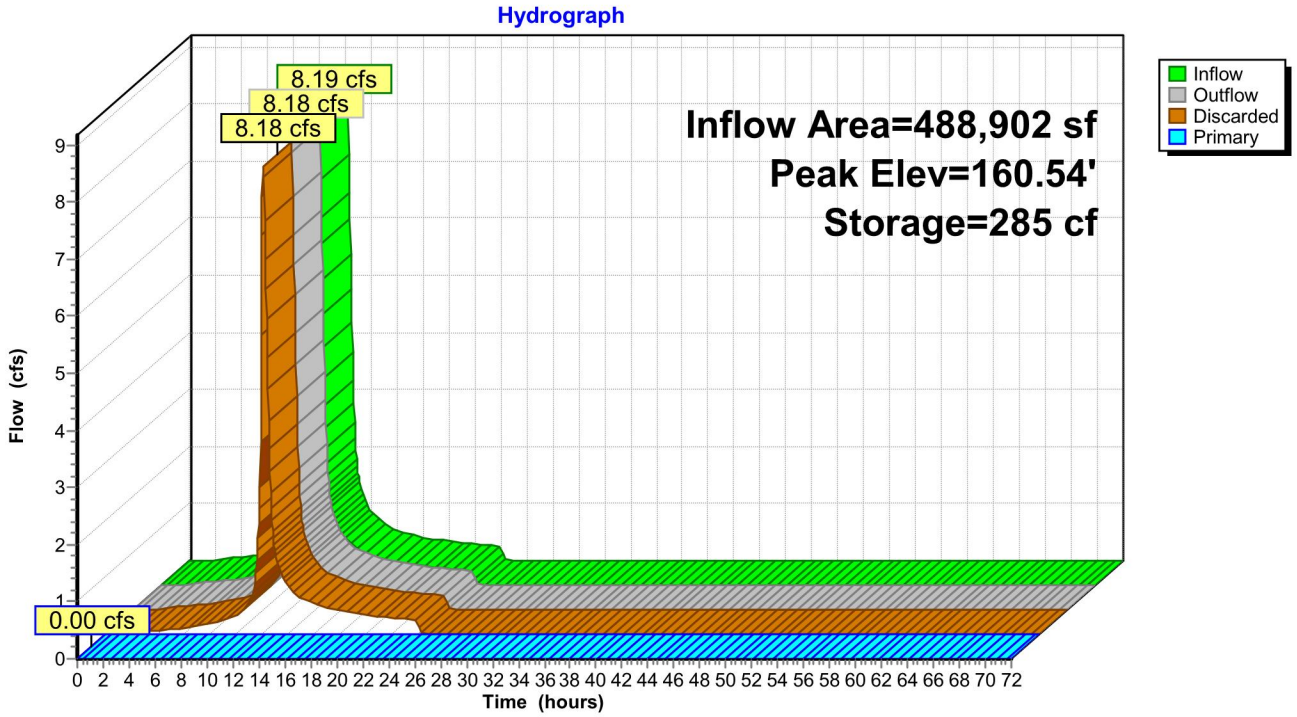
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 160.50 | 6,535 | 0 | 0 |
| 161.00 | 6,901 | 3,359 | 3,359 |
| 162.00 | 7,653 | 7,277 | 10,636 |
| 163.00 | 8,772 | 8,213 | 18,849 |
| 164.00 | 9,753 | 9,263 | 28,111 |
| 165.00 | 17,429 | 13,591 | 41,702 |
| 165.50 | 18,442 | 8,968 | 50,670 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 160.50' | **61.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 163.15' | **15.0" Round Culvert**<br>L= 70.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.15' / 162.80' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

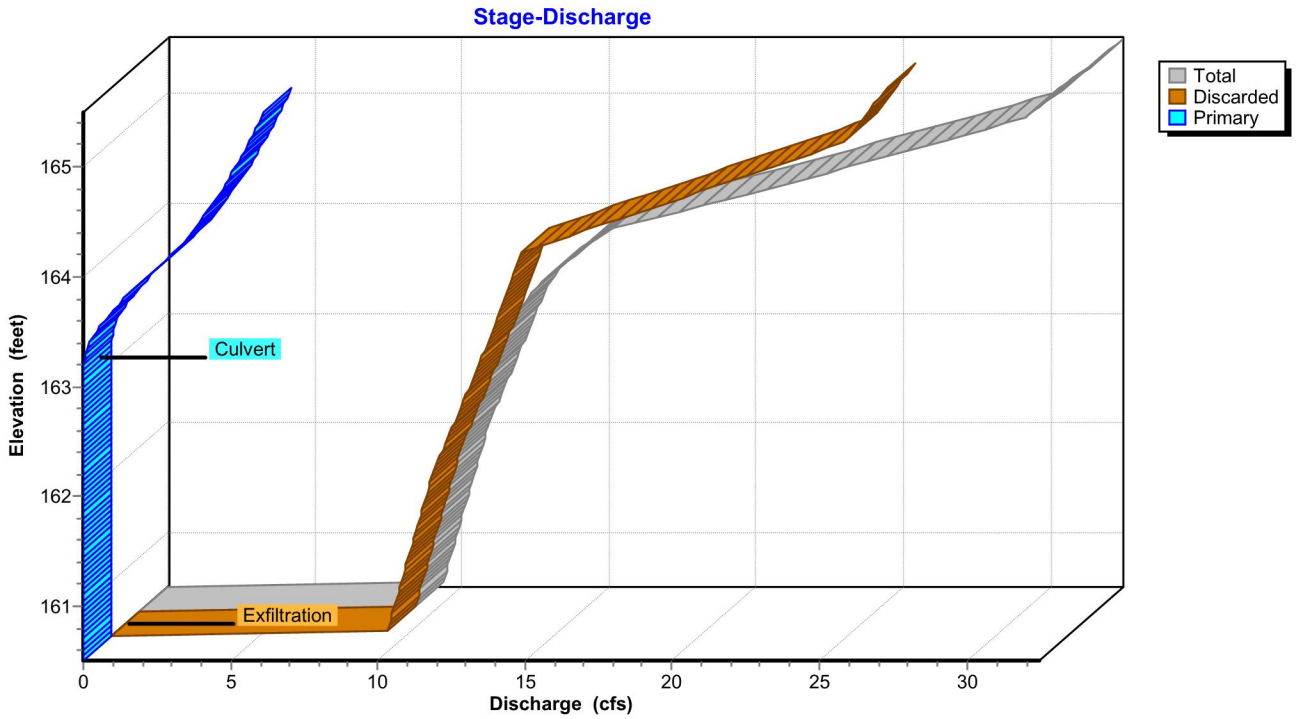
**Discarded OutFlow** Max=9.38 cfs @ 12.18 hrs HW=160.54' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 9.38 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=160.50' (Free Discharge)
↑—**2=Culvert** ( Controls 0.00 cfs)

## Pond IB-1: INFILTRATION BASIN 1




## Pond IB-1: INFILTRATION BASIN 1



## Stage-Area-Storage for Pond IB-1: INFILTRATION BASIN 1

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 160.50 | 6,535 | 0 |
| 160.55 | 6,572 | 328 |
| 160.60 | 6,608 | 657 |
| 160.65 | 6,645 | 988 |
| 160.70 | 6,681 | 1,322 |
| 160.75 | 6,718 | 1,657 |
| 160.80 | 6,755 | 1,993 |
| 160.85 | 6,791 | 2,332 |
| 160.90 | 6,828 | 2,673 |
| 160.95 | 6,864 | 3,015 |
| 161.00 | 6,901 | 3,359 |
| 161.05 | 6,939 | 3,705 |
| 161.10 | 6,976 | 4,053 |
| 161.15 | 7,014 | 4,403 |
| 161.20 | 7,051 | 4,754 |
| 161.25 | 7,089 | 5,108 |
| 161.30 | 7,127 | 5,463 |
| 161.35 | 7,164 | 5,820 |
| 161.40 | 7,202 | 6,180 |
| 161.45 | 7,239 | 6,541 |
| 161.50 | 7,277 | 6,904 |
| 161.55 | 7,315 | 7,268 |
| 161.60 | 7,352 | 7,635 |
| 161.65 | 7,390 | 8,004 |
| 161.70 | 7,427 | 8,374 |
| 161.75 | 7,465 | 8,746 |
| 161.80 | 7,503 | 9,120 |
| 161.85 | 7,540 | 9,497 |
| 161.90 | 7,578 | 9,874 |
| 161.95 | 7,615 | 10,254 |
| 162.00 | 7,653 | 10,636 |
| 162.05 | 7,709 | 11,020 |
| 162.10 | 7,765 | 11,407 |
| 162.15 | 7,821 | 11,797 |
| 162.20 | 7,877 | 12,189 |
| 162.25 | 7,933 | 12,584 |
| 162.30 | 7,989 | 12,982 |
| 162.35 | 8,045 | 13,383 |
| 162.40 | 8,101 | 13,787 |
| 162.45 | 8,157 | 14,193 |
| 162.50 | 8,213 | 14,602 |
| 162.55 | 8,268 | 15,014 |
| 162.60 | 8,324 | 15,429 |
| 162.65 | 8,380 | 15,847 |
| 162.70 | 8,436 | 16,267 |
| 162.75 | 8,492 | 16,690 |
| 162.80 | 8,548 | 17,116 |
| 162.85 | 8,604 | 17,545 |
| 162.90 | 8,660 | 17,977 |
| 162.95 | 8,716 | 18,411 |
| 163.00 | 8,772 | 18,849 |
| 163.05 | 8,821 | 19,288 |
| 163.10 | 8,870 | 19,731 |
| 163.15 | 8,919 | 20,175 |
| 163.20 | 8,968 | 20,623 |
| 163.25 | 9,017 | 21,072 |
| 163.30 | 9,066 | 21,524 |
| 163.35 | 9,115 | 21,979 |
| 163.40 | 9,164 | 22,436 |
| 163.45 | 9,213 | 22,895 |
| 163.50 | 9,263 | 23,357 |
| 163.55 | 9,312 | 23,821 |
| 163.60 | 9,361 | 24,288 |
| 163.65 | 9,410 | 24,758 |
| 163.70 | 9,459 | 25,229 |
| 163.75 | 9,508 | 25,703 |
| 163.80 | 9,557 | 26,180 |
| 163.85 | 9,606 | 26,659 |
| 163.90 | 9,655 | 27,141 |
| 163.95 | 9,704 | 27,625 |
| 164.00 | 9,753 | 28,111 |
| 164.05 | 10,137 | 28,608 |
| 164.10 | 10,521 | 29,125 |
| 164.15 | 10,904 | 29,660 |
| 164.20 | 11,288 | 30,215 |
| 164.25 | 11,672 | 30,789 |
| 164.30 | 12,056 | 31,382 |
| 164.35 | 12,440 | 31,995 |
| 164.40 | 12,823 | 32,626 |
| 164.45 | 13,207 | 33,277 |
| 164.50 | 13,591 | 33,947 |
| 164.55 | 13,975 | 34,636 |
| 164.60 | 14,359 | 35,344 |
| 164.65 | 14,742 | 36,072 |
| 164.70 | 15,126 | 36,819 |
| 164.75 | 15,510 | 37,585 |
| 164.80 | 15,894 | 38,370 |
| 164.85 | 16,278 | 39,174 |
| 164.90 | 16,661 | 39,997 |
| 164.95 | 17,045 | 40,840 |
| 165.00 | 17,429 | 41,702 |
| 165.05 | 17,530 | 42,576 |
| 165.10 | 17,632 | 43,455 |
| 165.15 | 17,733 | 44,339 |
| 165.20 | 17,834 | 45,228 |
| 165.25 | 17,936 | 46,123 |
| 165.30 | 18,037 | 47,022 |
| 165.35 | 18,138 | 47,926 |
| 165.40 | 18,239 | 48,836 |
| 165.45 | 18,341 | 49,750 |
| 165.50 | **18,442** | **50,670** |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=76,401 sf 13.71% Impervious Runoff Depth=1.37"
Flow Length=397' Tc=17.6 min CN=80 Runoff=1.98 cfs 8,730 cf

**Subcatchment 2: DA-2** Runoff Area=108,319 sf 100.00% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=98 Runoff=8.51 cfs 26,427 cf

**Subcatchment 3: DA-3** Runoff Area=193,351 sf 0.48% Impervious Runoff Depth=1.01"
Flow Length=336' Tc=18.1 min CN=74 Runoff=3.44 cfs 16,295 cf

**Subcatchment 4: DA-4** Runoff Area=36,951 sf 43.34% Impervious Runoff Depth=1.51"
Flow Length=178' Tc=8.8 min CN=82 Runoff=1.42 cfs 4,637 cf

**Subcatchment 5: DA-5** Runoff Area=7,317 sf 86.07% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.53 cfs 1,527 cf

**Subcatchment 6: DA-6** Runoff Area=9,667 sf 76.56% Impervious Runoff Depth=2.22"
Tc=6.0 min CN=91 Runoff=0.63 cfs 1,789 cf

**Subcatchment 7: DA-7** Runoff Area=8,414 sf 88.44% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=0.64 cfs 1,900 cf

**Subcatchment 8: DA-8** Runoff Area=7,009 sf 71.29% Impervious Runoff Depth=2.13"
Tc=6.0 min CN=90 Runoff=0.44 cfs 1,245 cf

**Subcatchment 9: DA-9** Runoff Area=9,188 sf 85.40% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.66 cfs 1,918 cf

**Subcatchment 10: DA-10** Runoff Area=7,734 sf 92.94% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=0.59 cfs 1,746 cf

**Subcatchment 11: DA-11** Runoff Area=129,794 sf 3.57% Impervious Runoff Depth=0.90"
Flow Length=253' Tc=17.0 min CN=72 Runoff=2.07 cfs 9,788 cf

**Subcatchment 12: DA-12** Runoff Area=15,118 sf 0.00% Impervious Runoff Depth=1.31"
Flow Length=288' Tc=18.9 min CN=79 Runoff=0.36 cfs 1,646 cf

**Pond 2P: Turf Field Storage** Peak Elev=164.62' Storage=3,167 cf Inflow=8.51 cfs 26,427 cf
12.0" Round Culvert n=0.012 L=107.0' S=0.0050 '/' Outflow=4.25 cfs 26,418 cf

**Pond 3P: (new Pond)** Peak Elev=162.80' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.011 L=221.0' S=0.0050 '/' Outflow=0.00 cfs 0 cf

**Pond 4P: FRENCH DRAIN** Inflow=0.36 cfs 1,646 cf
Primary=0.36 cfs 1,646 cf

**Pond CB#1: CB #1** Peak Elev=162.45' Inflow=0.44 cfs 1,245 cf
15.0" Round Culvert n=0.011 L=68.0' S=0.0103 '/' Outflow=0.44 cfs 1,245 cf

**Pond CB#2: CB #2** Peak Elev=163.26' Inflow=0.66 cfs 1,918 cf
15.0" Round Culvert n=0.011 L=122.0' S=0.0052 '/' Outflow=0.66 cfs 1,918 cf

**Pond CB#3: CB #3** Peak Elev=162.81' Inflow=1.25 cfs 3,664 cf
15.0" Round Culvert n=0.011 L=100.0' S=0.0050 '/' Outflow=1.25 cfs 3,664 cf

**Pond CB#4: CB #4** Peak Elev=164.88' Inflow=0.53 cfs 1,527 cf
15.0" Round Culvert n=0.011 L=118.0' S=0.0051 '/' Outflow=0.53 cfs 1,527 cf

**Pond CB#5: CB #5** Peak Elev=164.20' Inflow=1.16 cfs 3,316 cf
18.0" Round Culvert n=0.011 L=93.0' S=0.0051 '/' Outflow=1.16 cfs 3,316 cf

**Pond CB#6: CB #6** Peak Elev=163.88' Inflow=1.79 cfs 5,216 cf
18.0" Round Culvert n=0.011 L=85.0' S=0.0051 '/' Outflow=1.79 cfs 5,216 cf

**Pond DP-1: DP-1** Peak Elev=162.01' Inflow=1.84 cfs 5,882 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=1.84 cfs 5,882 cf

**Pond DP-2: DP-2** Peak Elev=165.53' Inflow=1.98 cfs 8,730 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=1.98 cfs 8,730 cf

**Pond DP-3: DP-3** Peak Elev=0.00'
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Primary=0.00 cfs 0 cf

**Pond EX-1: EX. CB 1** Peak Elev=162.04' Inflow=0.44 cfs 1,245 cf
18.0" Round Culvert n=0.011 L=14.0' S=0.0071 '/' Outflow=0.44 cfs 1,245 cf

**Pond EX-2: EX. CB #2** Peak Elev=161.87' Inflow=0.44 cfs 1,245 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0028 '/' Outflow=0.44 cfs 1,245 cf

**Pond IB-1: INFILTRATION BASIN 1** Peak Elev=160.71' Storage=1,371 cf Inflow=11.22 cfs 63,028 cf
Discarded=9.55 cfs 63,028 cf Primary=0.00 cfs 0 cf Outflow=9.55 cfs 63,028 cf

**Total Runoff Area = 609,263 sf Runoff Volume = 77,649 cf Average Runoff Depth = 1.53"**
**70.20% Pervious = 427,720 sf 29.80% Impervious = 181,543 sf**

## Summary for Subcatchment 1: DA-1

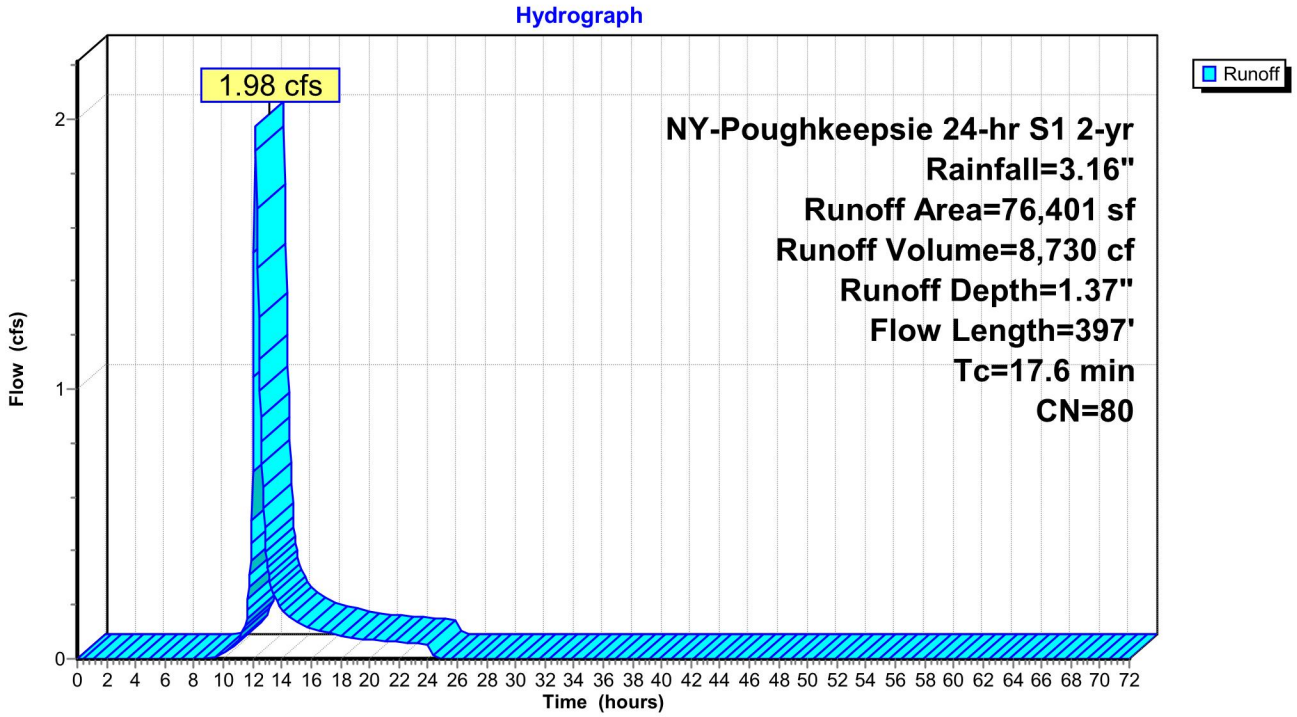
Runoff = 1.98 cfs @ 12.20 hrs, Volume= 8,730 cf, Depth= 1.37"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 3,133 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,203 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 10,478 | 98 | Paved parking, HSG C |
| 76,401 | 80 | Weighted Average |
| 65,923 | | 86.29% Pervious Area |
| 10,478 | | 13.71% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

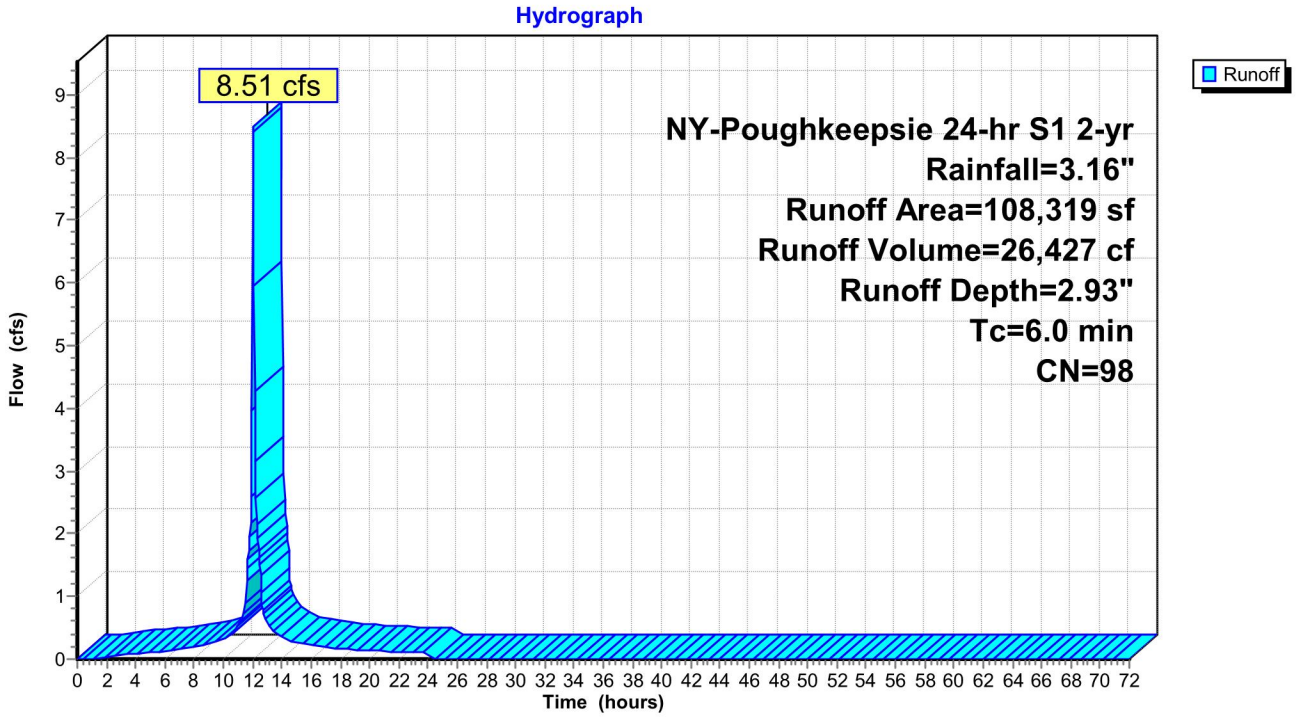
Runoff = 8.51 cfs @ 12.04 hrs, Volume= 26,427 cf, Depth= 2.93"
Routed to Pond 2P : Turf Field Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 100,932 | 98 | Turf Field |
| | 7,387 | 98 | Paved parking, HSG C |
| | 108,319 | 98 | Weighted Average |
| | 108,319 | | 100.00% Impervious Area |

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

### Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

Regraded Field with Underderain

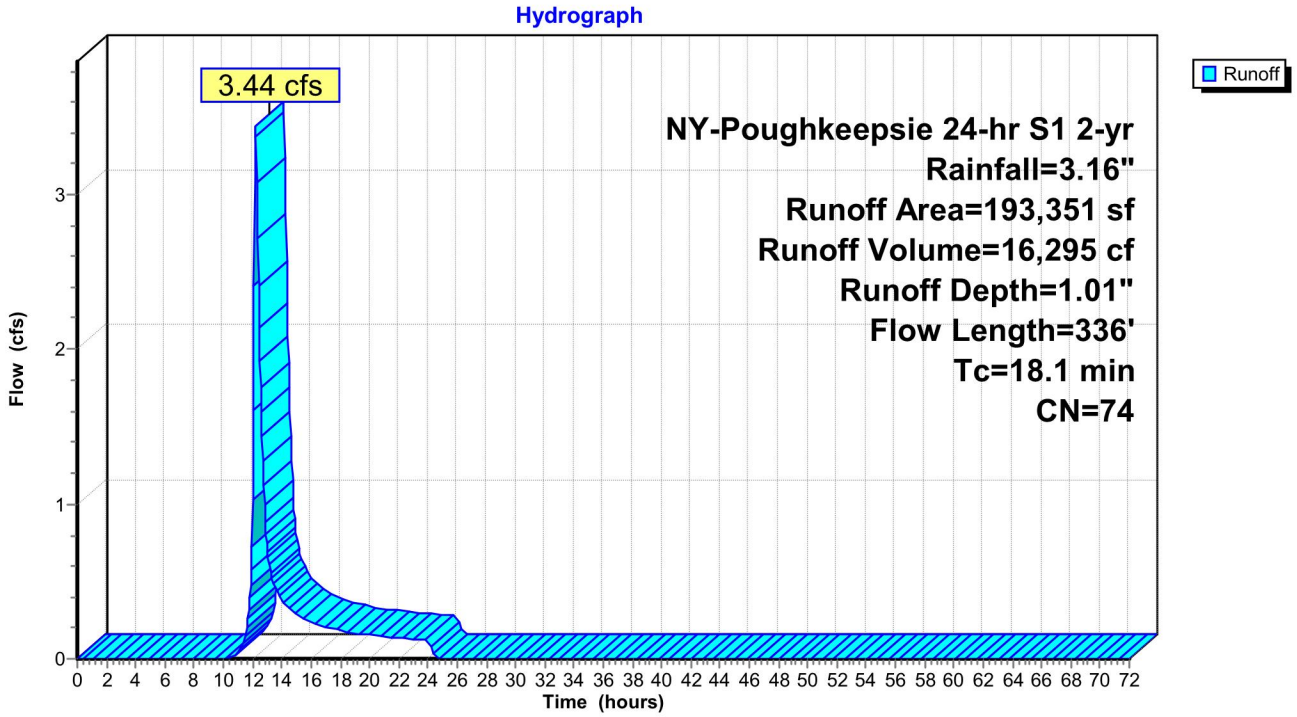
Runoff = 3.44 cfs @ 12.22 hrs, Volume= 16,295 cf, Depth= 1.01"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 96,152 | 74 | >75% Grass cover, Good, HSG C |
| 6,421 | 49 | 50-75% Grass cover, Fair, HSG A |
| 40,341 | 79 | 50-75% Grass cover, Fair, HSG C |
| 49,516 | 73 | Woods, Fair, HSG C |
| 921 | 98 | Paved parking, HSG C |
| 193,351 | 74 | Weighted Average |
| 192,430 | | 99.52% Pervious Area |
| 921 | | 0.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 1.3 | 106 | 0.0380 | 1.36 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 336 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Subcatchment 4: DA-4

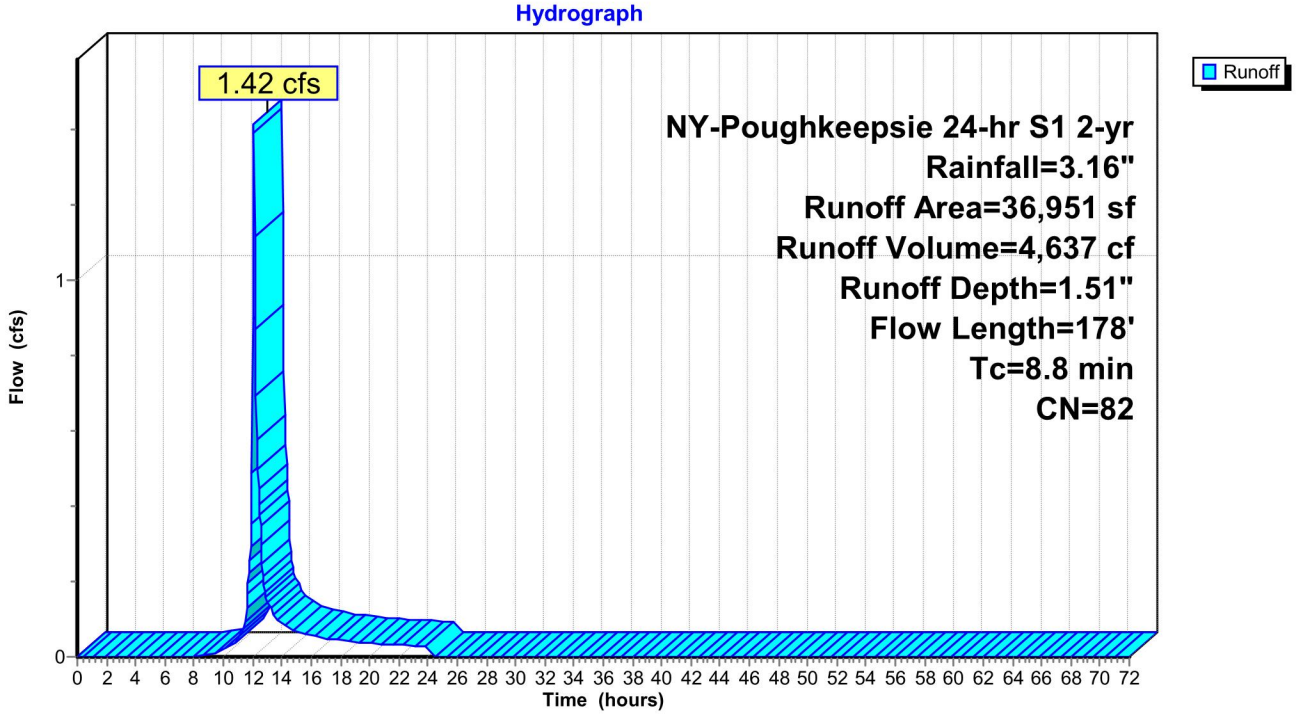
Runoff = 1.42 cfs @ 12.08 hrs, Volume= 4,637 cf, Depth= 1.51"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 20,936 | 69 | 50-75% Grass cover, Fair, HSG B |
| 16,015 | 98 | Paved parking, HSG B |
| 36,951 | 82 | Weighted Average |
| 20,936 | | 56.66% Pervious Area |
| 16,015 | | 43.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.5 | 100 | 0.0400 | 0.22 | | **Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.16" |
| 1.3 | 78 | 0.0190 | 0.96 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 8.8 | 178 | Total | | | |

## Subcatchment 4: DA-4



## Summary for Subcatchment 5: DA-5

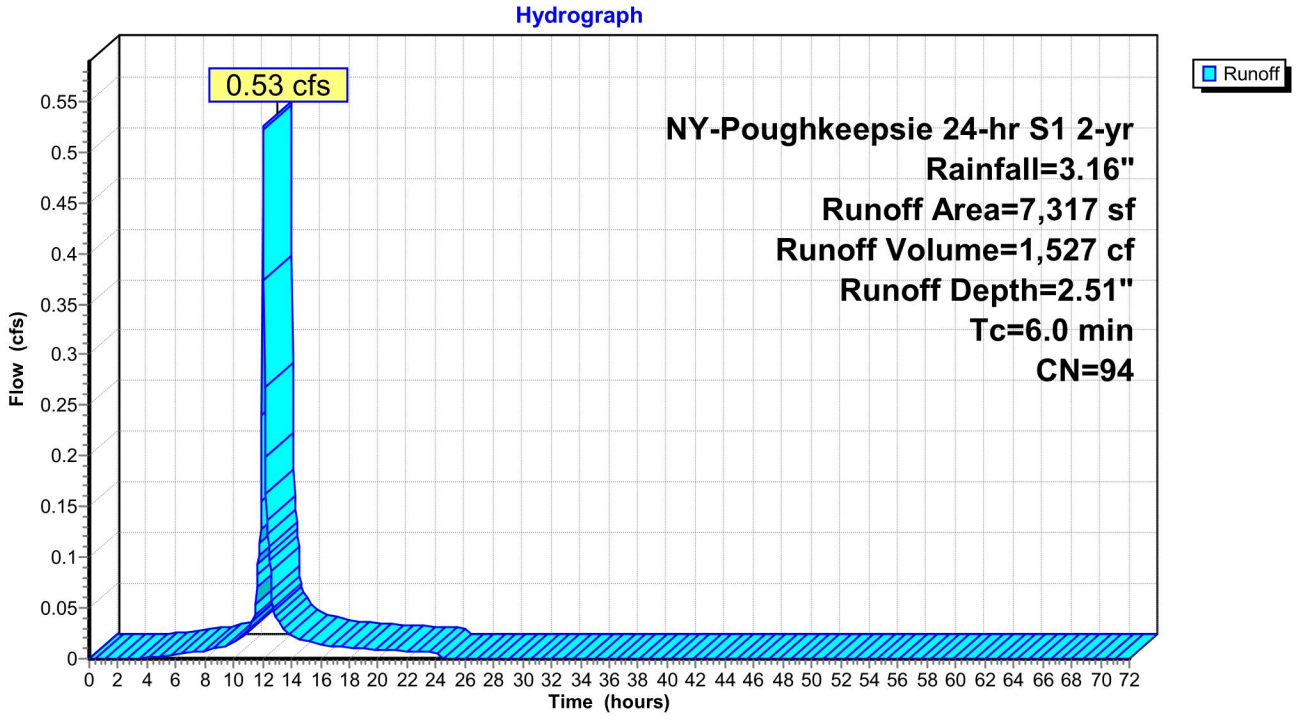
Runoff = 0.53 cfs @ 12.04 hrs, Volume= 1,527 cf, Depth= 2.51"
Routed to Pond CB#4 : CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 1,019 | 69 | 50-75% Grass cover, Fair, HSG B |
| 6,298 | 98 | Paved parking, HSG B |
| 7,317 | 94 | Weighted Average |
| 1,019 | | 13.93% Pervious Area |
| 6,298 | | 86.07% Impervious Area |

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

## Subcatchment 5: DA-5



## Summary for Subcatchment 6: DA-6

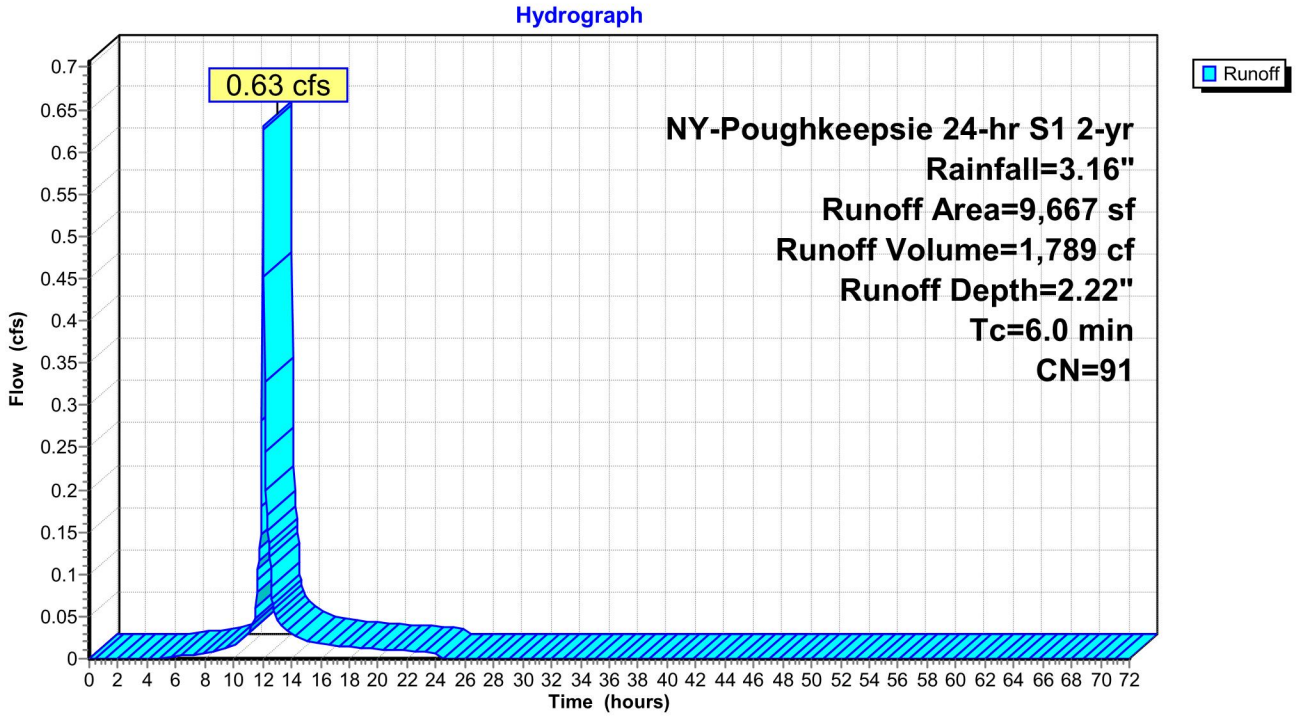
Runoff = 0.63 cfs @ 12.04 hrs, Volume= 1,789 cf, Depth= 2.22"
Routed to Pond CB#5 : CB #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 2,266 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,401 | 98 | Paved parking, HSG B |
| 9,667 | 91 | Weighted Average |
| 2,266 | | 23.44% Pervious Area |
| 7,401 | | 76.56% Impervious Area |

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

## Subcatchment 6: DA-6



## Summary for Subcatchment 7: DA-7

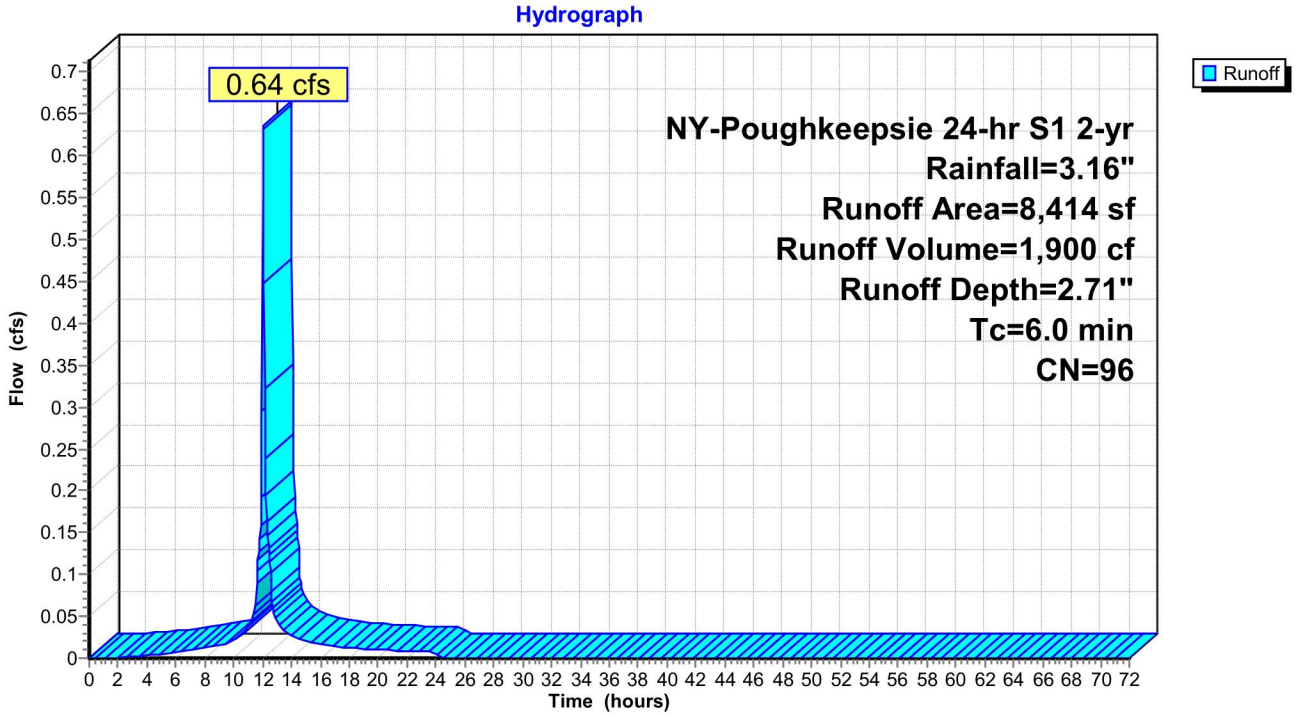
Runoff = 0.64 cfs @ 12.04 hrs, Volume= 1,900 cf, Depth= 2.71"
Routed to Pond CB#6 : CB #6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 46 | 69 | 50-75% Grass cover, Fair, HSG B |
| 927 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,441 | 98 | Paved parking, HSG C |
| 8,414 | 96 | Weighted Average |
| 973 | | 11.56% Pervious Area |
| 7,441 | | 88.44% Impervious Area |

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

### Subcatchment 7: DA-7



## Summary for Subcatchment 8: DA-8

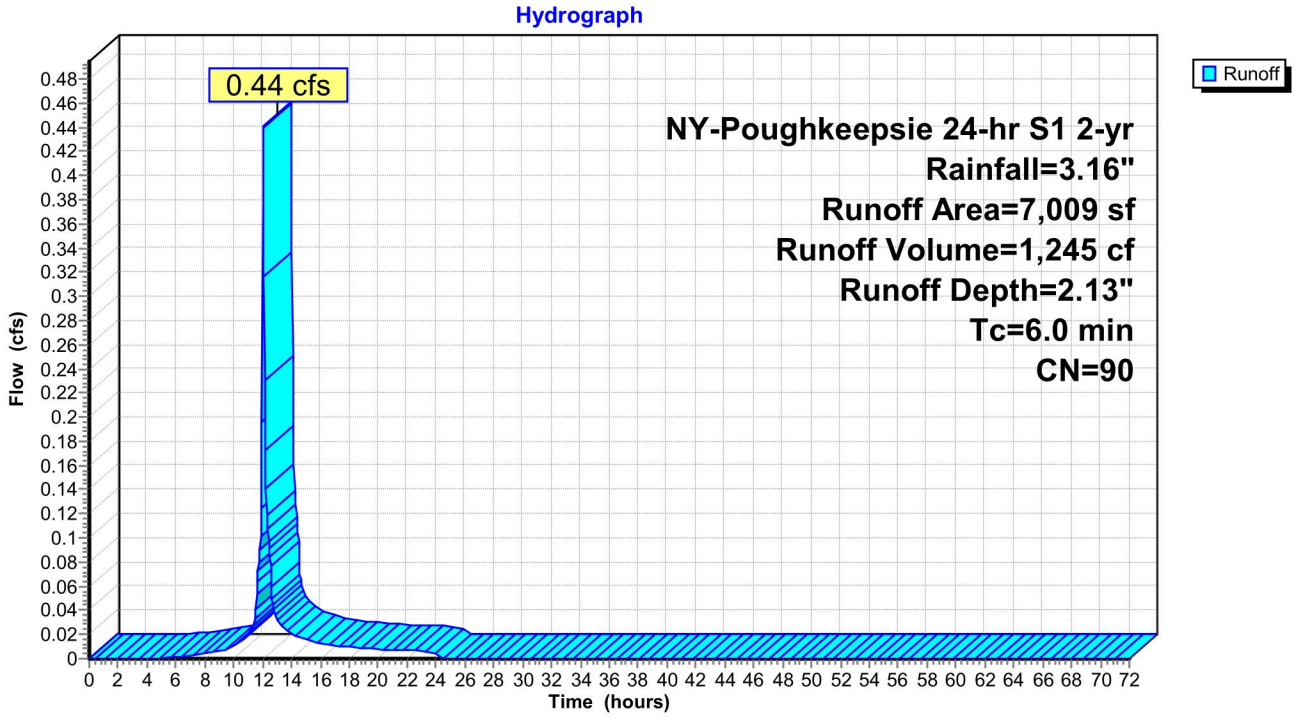
Runoff = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf, Depth= 2.13"
Routed to Pond CB#1 : CB #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 2,012 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,997 | 98 | Paved parking, HSG C |
| 7,009 | 90 | Weighted Average |
| 2,012 | | 28.71% Pervious Area |
| 4,997 | | 71.29% Impervious Area |

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

## Subcatchment 8: DA-8



## Summary for Subcatchment 9: DA-9

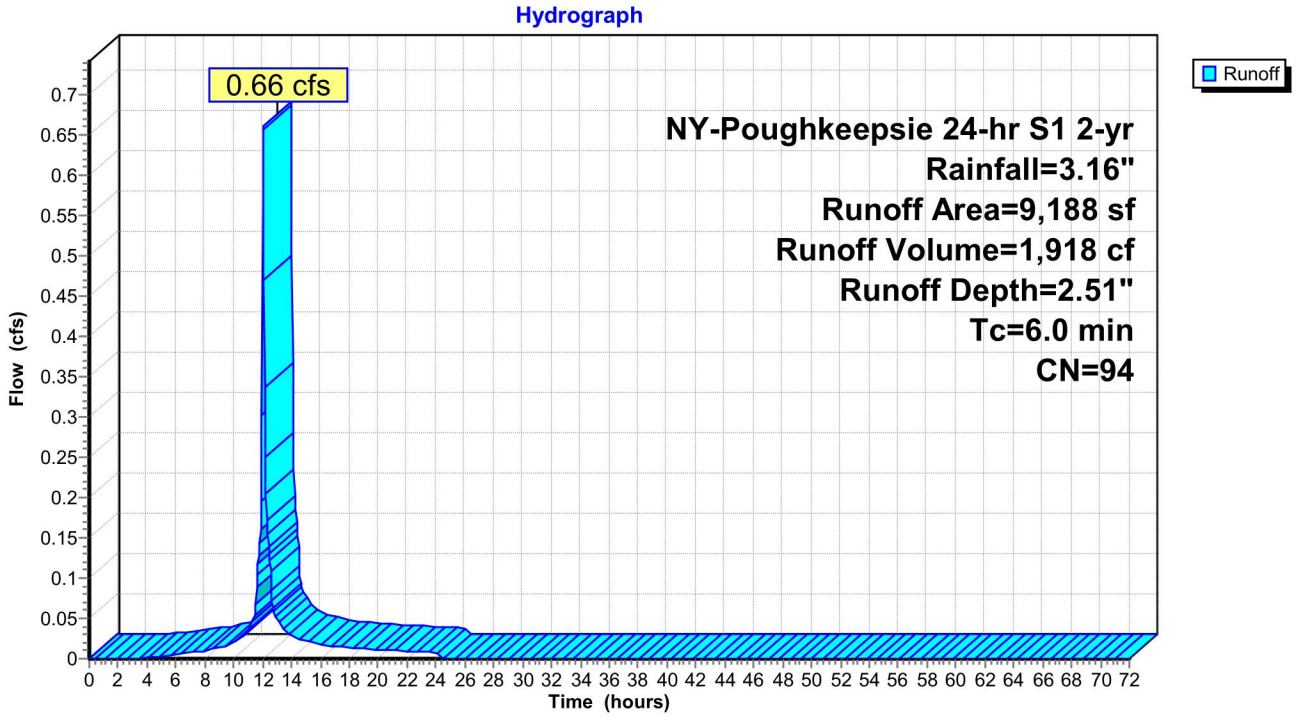
Runoff = 0.66 cfs @ 12.04 hrs, Volume= 1,918 cf, Depth= 2.51"
Routed to Pond CB#2 : CB #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 1,341 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,847 | 98 | Paved parking, HSG B |
| 9,188 | 94 | Weighted Average |
| 1,341 | | 14.60% Pervious Area |
| 7,847 | | 85.40% Impervious Area |

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

### Subcatchment 9: DA-9



## Summary for Subcatchment 10: DA-10

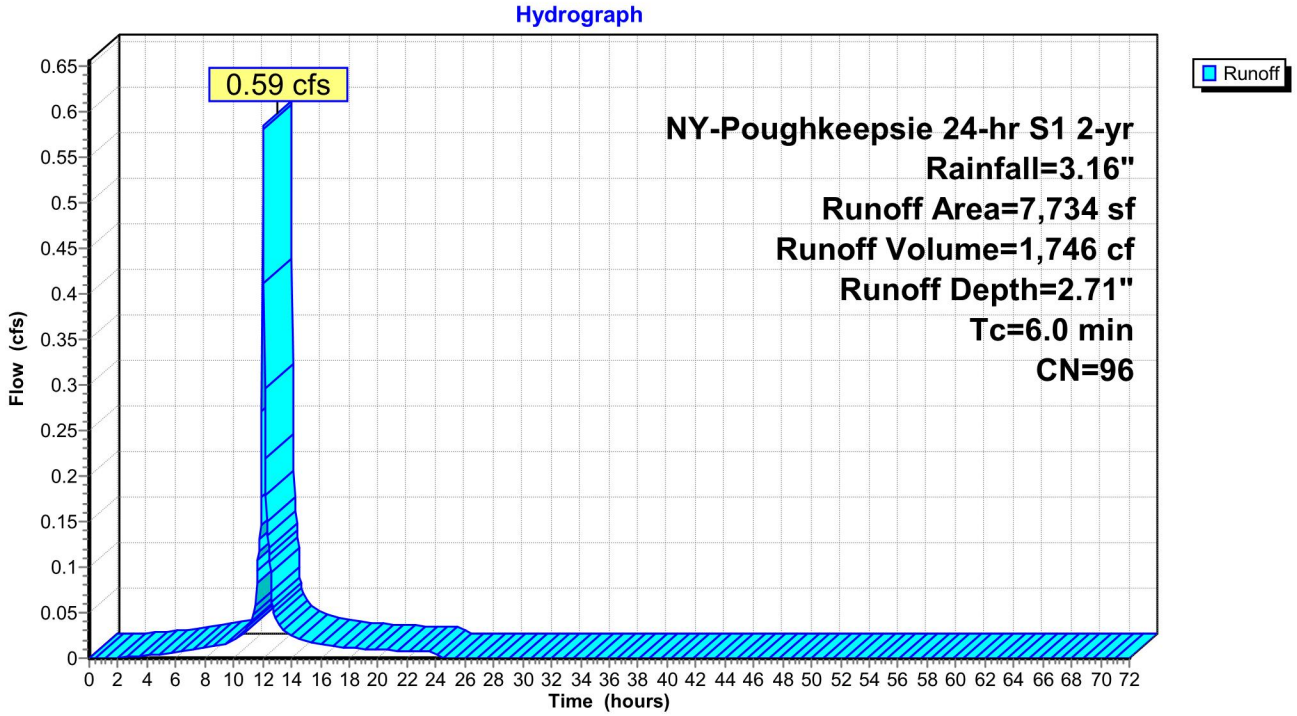
Runoff = 0.59 cfs @ 12.04 hrs, Volume= 1,746 cf, Depth= 2.71"
Routed to Pond CB#3 : CB #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 261 | 69 | 50-75% Grass cover, Fair, HSG B |
| 285 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,188 | 98 | Paved parking, HSG C |
| 7,734 | 96 | Weighted Average |
| 546 | | 7.06% Pervious Area |
| 7,188 | | 92.94% Impervious Area |

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

### Subcatchment 10: DA-10



## Summary for Subcatchment 11: DA-11

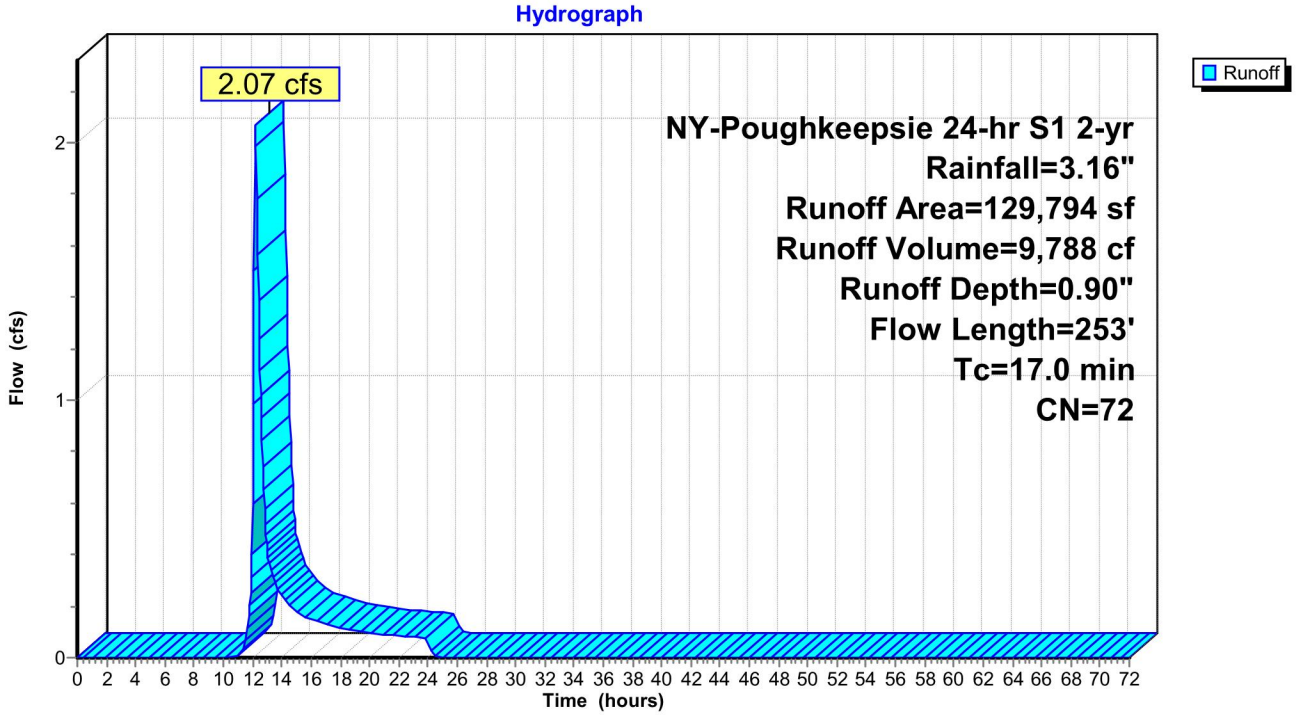
Runoff = 2.07 cfs @ 12.21 hrs, Volume= 9,788 cf, Depth= 0.90"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 12,385 | 49 | 50-75% Grass cover, Fair, HSG A |
| 26,029 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,362 | 60 | Woods, Fair, HSG B |
| 29,624 | 79 | 50-75% Grass cover, Fair, HSG C |
| 52,756 | 73 | Woods, Fair, HSG C |
| 4,638 | 98 | Paved parking, HSG C |
| 129,794 | 72 | Weighted Average |
| 125,156 | | 96.43% Pervious Area |
| 4,638 | | 3.57% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 14.2 | 100 | 0.0575 | 0.12 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 2.8 | 153 | 0.0340 | 0.92 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 17.0 | 253 | Total | | | |

## Subcatchment 11: DA-11



## Summary for Subcatchment 12: DA-12

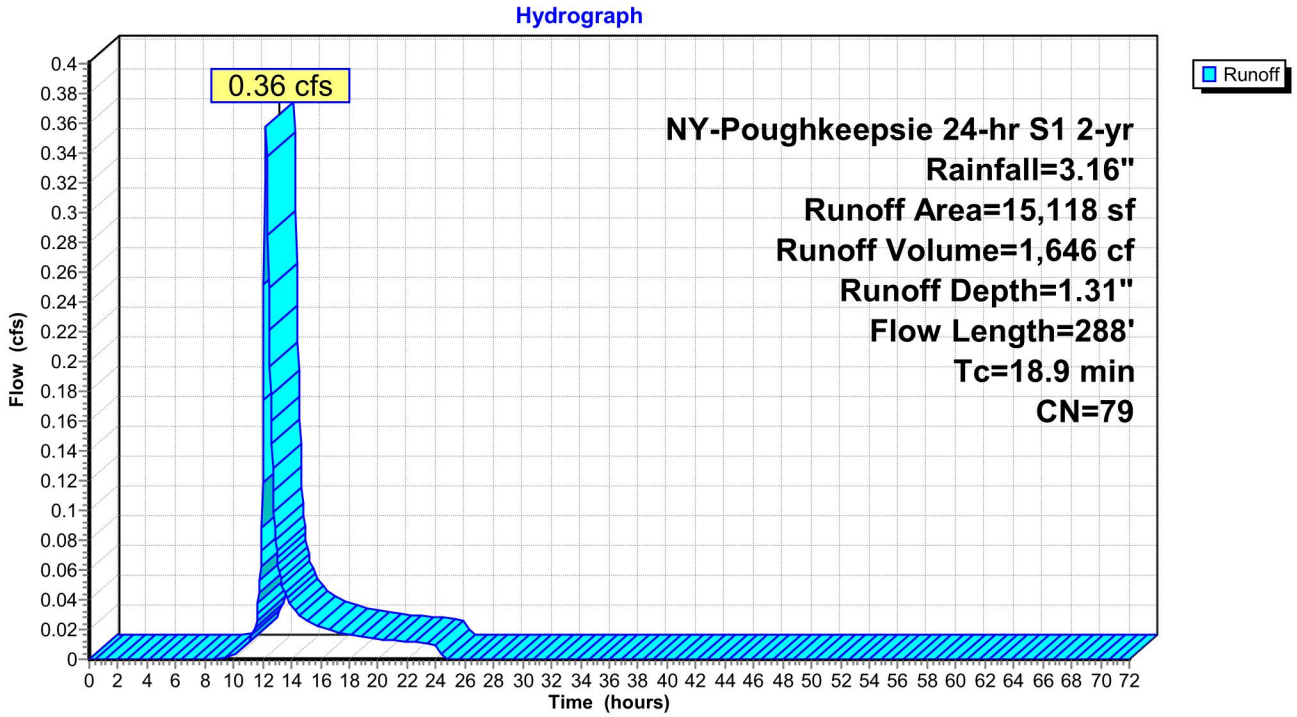
Runoff = 0.36 cfs @ 12.22 hrs, Volume= 1,646 cf, Depth= 1.31"
Routed to Pond 4P : FRENCH DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 2-yr Rainfall=3.16"

| Area (sf) | CN | Description |
|---|---|---|
| 14,997 | 79 | 50-75% Grass cover, Fair, HSG C |
| 121 | 73 | Woods, Fair, HSG C |
| 15,118 | 79 | Weighted Average |
| 15,118 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.0 | 150 | 0.0750 | 0.14 | | **Sheet Flow, A-B** Grass: Bermuda n= 0.410 P2= 3.16" |
| 0.9 | 138 | 0.1380 | 2.60 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 18.9 | 288 | Total | | | |

## Subcatchment 12: DA-12



## Summary for Pond 2P: Turf Field Storage

Inflow Area = 108,319 sf,100.00% Impervious, Inflow Depth = 2.93" for 2-yr event
Inflow = 8.51 cfs @ 12.04 hrs, Volume= 26,427 cf
Outflow = 4.25 cfs @ 12.16 hrs, Volume= 26,418 cf, Atten= 50%, Lag= 7.1 min
Primary = 4.25 cfs @ 12.16 hrs, Volume= 26,418 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.62' @ 12.16 hrs Surf.Area= 3,679 sf Storage= 3,167 cf

Plug-Flow detention time= 7.7 min calculated for 26,400 cf (100% of inflow)
Center-of-Mass det. time= 7.5 min ( 766.0 - 758.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.75' | 237 cf | **8" Pipe Trench (Irregular)** Listed below (Recalc)<br>684 cf Overall - 91 cf Embedded = 593 cf x 40.0% Voids |
| #2 | 163.00' | 69 cf | **8.0" Round 8" Collector** Inside #1<br>L= 197.0' S= 0.0050 '/'<br>91 cf Overall - 0.6" Wall Thickness = 69 cf |
| #3 | 161.93' | 6,068 cf | **12" Pipe Trench (Irregular)** Listed below (Recalc)<br>15,367 cf Overall - 197 cf Embedded = 15,170 cf x 40.0% Voids |
| #4 | 162.18' | 137 cf | **12.0" Round 12" Collector** Inside #3<br>L= 174.0' S= 0.0050 '/'<br>197 cf Overall - 1.2" Wall Thickness = 137 cf |
| #5 | 166.89' | 4,530 cf | **Field Stone (Irregular)** Listed below (Recalc)<br>11,326 cf Overall x 40.0% Voids |
| | | 11,041 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 162.75 | 0 | 0.0 | 0 | 0 | 0 |
| 163.75 | 197 | 396.0 | 66 | 66 | 12,481 |
| 166.89 | 197 | 396.0 | 619 | 684 | 13,724 |

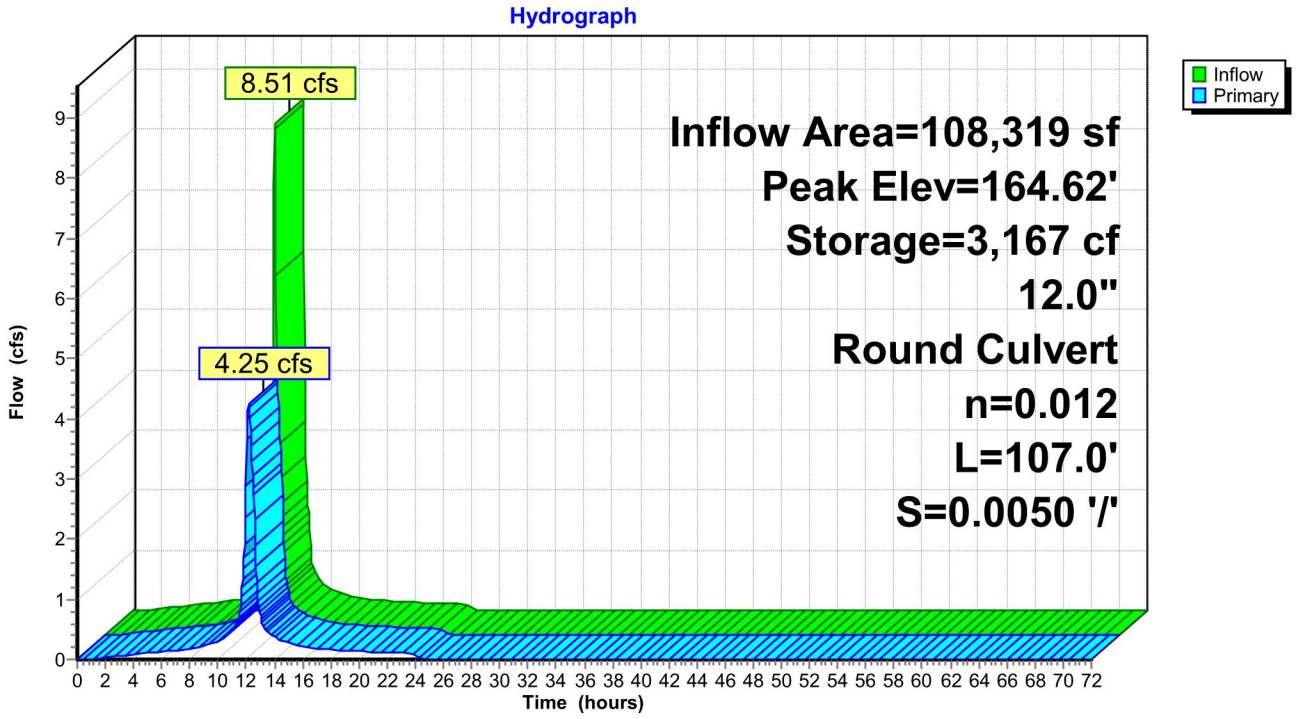
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 161.93 | 0 | 0.0 | 0 | 0 | 0 |
| 162.75 | 3,482 | 388.0 | 952 | 952 | 11,981 |
| 166.89 | 3,482 | 388.0 | 14,415 | 15,367 | 13,587 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 166.89 | 0 | 0.0 | 0 | 0 | 0 |
| 167.55 | 51,480 | 1,044.0 | 11,326 | 11,326 | 86,735 |

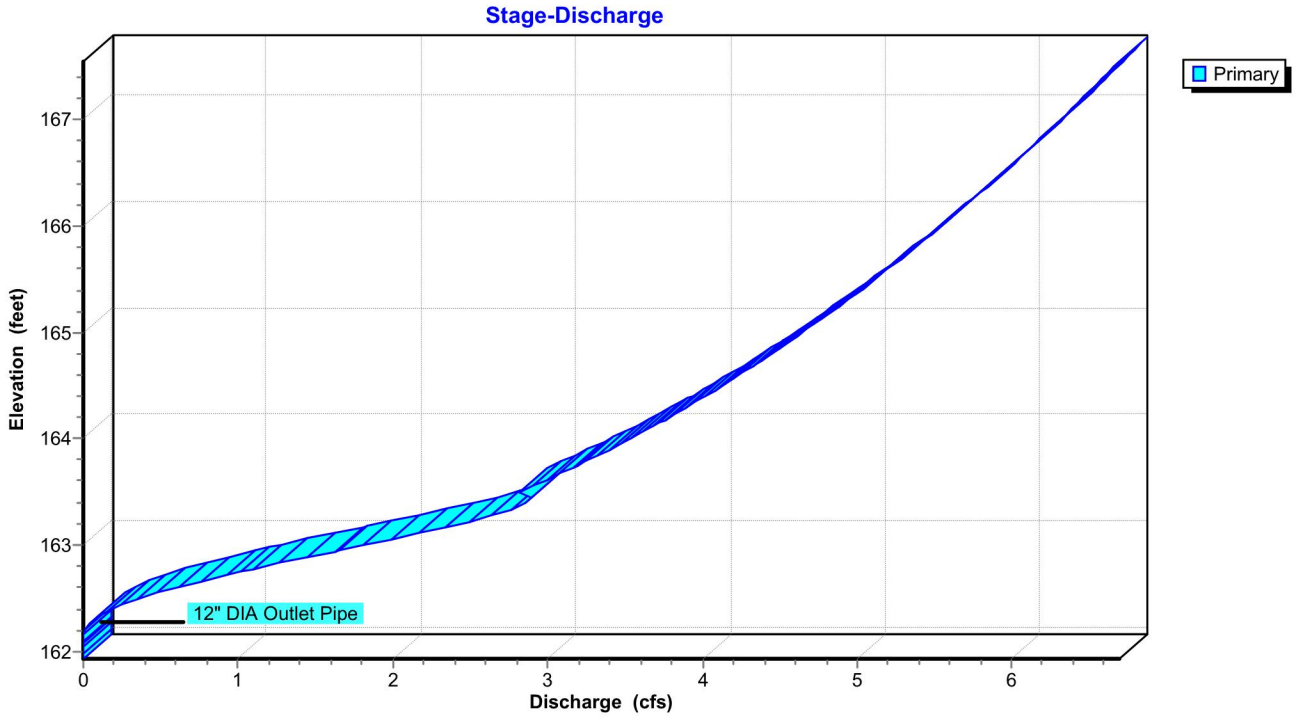
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.16' | **12.0" Round 12" DIA Outlet Pipe**<br>L= 107.0' CPP, square edge headwall, Ke= 0.500<br>Inlet / Outlet Invert= 162.16' / 161.63' S= 0.0050 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Primary OutFlow** Max=4.24 cfs @ 12.16 hrs HW=164.61' (Free Discharge)
└**1=12" DIA Outlet Pipe** (Barrel Controls 4.24 cfs @ 5.40 fps)

## Pond 2P: Turf Field Storage



## Pond 2P: Turf Field Storage



## Stage-Area-Storage for Pond 2P: Turf Field Storage

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.93 | 0 | 164.53 | 3,038 | 167.13 | 6,729 |
| 161.98 | 0 | 164.58 | 3,112 | 167.18 | 6,895 |
| 162.03 | 1 | 164.63 | 3,185 | 167.23 | 7,130 |
| 162.08 | 2 | 164.68 | 3,259 | 167.28 | 7,446 |
| 162.13 | 5 | 164.73 | 3,332 | 167.33 | 7,853 |
| 162.18 | 11 | 164.78 | 3,406 | 167.38 | 8,365 |
| 162.23 | 18 | 164.83 | 3,479 | 167.43 | 8,992 |
| 162.28 | 29 | 164.88 | 3,553 | 167.48 | 9,747 |
| 162.33 | 44 | 164.93 | 3,627 | 167.53 | **10,642** |
| 162.38 | 63 | 164.98 | 3,700 | | |
| 162.43 | 86 | 165.03 | 3,774 | | |
| 162.48 | 115 | 165.08 | 3,847 | | |
| 162.53 | 150 | 165.13 | 3,921 | | |
| 162.58 | 192 | 165.18 | 3,994 | | |
| 162.63 | 240 | 165.23 | 4,068 | | |
| 162.68 | 296 | 165.28 | 4,142 | | |
| 162.73 | 360 | 165.33 | 4,215 | | |
| 162.78 | 431 | 165.38 | 4,289 | | |
| 162.83 | 503 | 165.43 | 4,362 | | |
| 162.88 | 576 | 165.48 | 4,436 | | |
| 162.93 | 648 | 165.53 | 4,510 | | |
| 162.98 | 721 | 165.58 | 4,583 | | |
| 163.03 | 794 | 165.63 | 4,657 | | |
| 163.08 | 868 | 165.68 | 4,730 | | |
| 163.13 | 941 | 165.73 | 4,804 | | |
| 163.18 | 1,016 | 165.78 | 4,877 | | |
| 163.23 | 1,090 | 165.83 | 4,951 | | |
| 163.28 | 1,164 | 165.88 | 5,025 | | |
| 163.33 | 1,239 | 165.93 | 5,098 | | |
| 163.38 | 1,313 | 165.98 | 5,172 | | |
| 163.43 | 1,388 | 166.03 | 5,245 | | |
| 163.48 | 1,463 | 166.08 | 5,319 | | |
| 163.53 | 1,538 | 166.13 | 5,393 | | |
| 163.58 | 1,614 | 166.18 | 5,466 | | |
| 163.63 | 1,689 | 166.23 | 5,540 | | |
| 163.68 | 1,765 | 166.28 | 5,613 | | |
| 163.73 | 1,841 | 166.33 | 5,687 | | |
| 163.78 | 1,916 | 166.38 | 5,760 | | |
| 163.83 | 1,992 | 166.43 | 5,834 | | |
| 163.88 | 2,067 | 166.48 | 5,908 | | |
| 163.93 | 2,143 | 166.53 | 5,981 | | |
| 163.98 | 2,218 | 166.58 | 6,055 | | |
| 164.03 | 2,293 | 166.63 | 6,128 | | |
| 164.08 | 2,368 | 166.68 | 6,202 | | |
| 164.13 | 2,443 | 166.73 | 6,275 | | |
| 164.18 | 2,518 | 166.78 | 6,349 | | |
| 164.23 | 2,593 | 166.83 | 6,423 | | |
| 164.28 | 2,667 | 166.88 | 6,496 | | |
| 164.33 | 2,742 | 166.93 | 6,512 | | |
| 164.38 | 2,816 | 166.98 | 6,522 | | |
| 164.43 | 2,890 | 167.03 | 6,554 | | |
| 164.48 | 2,964 | 167.08 | 6,619 | | |

## Summary for Pond 3P: (new Pond)

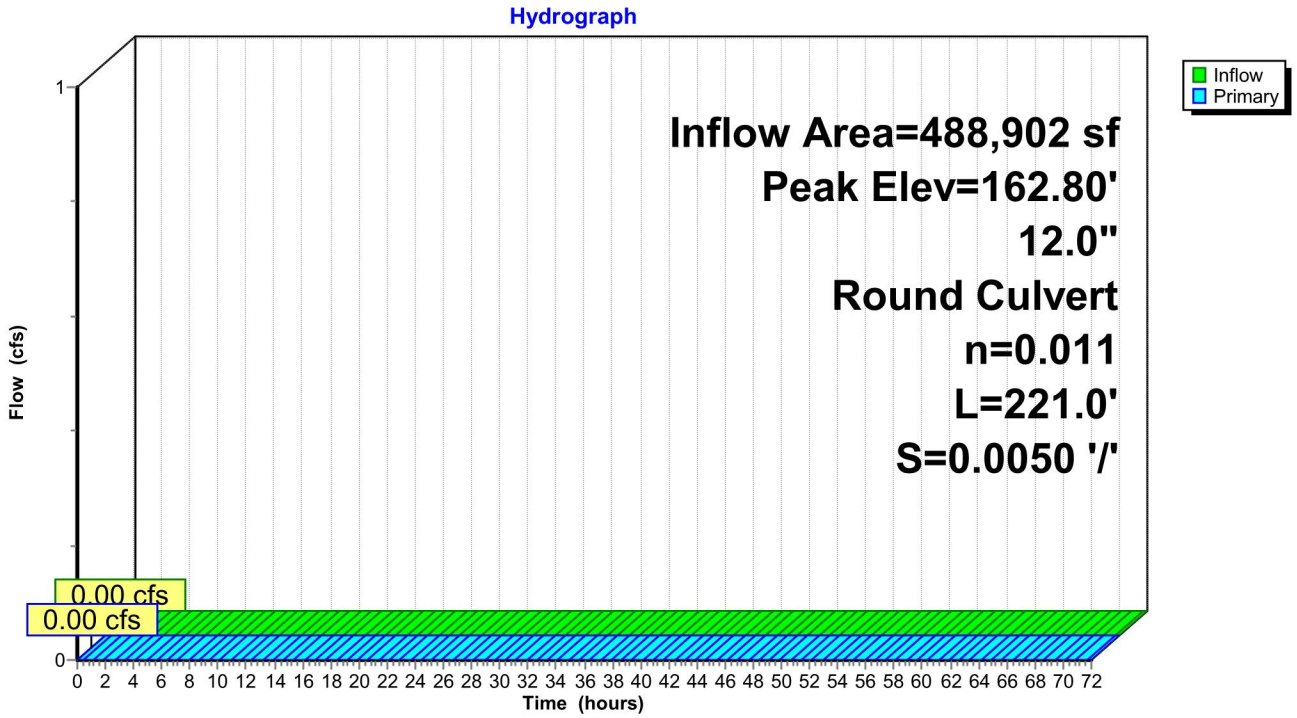
Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.80' @ 0.00 hrs
Flood Elev= 165.50'

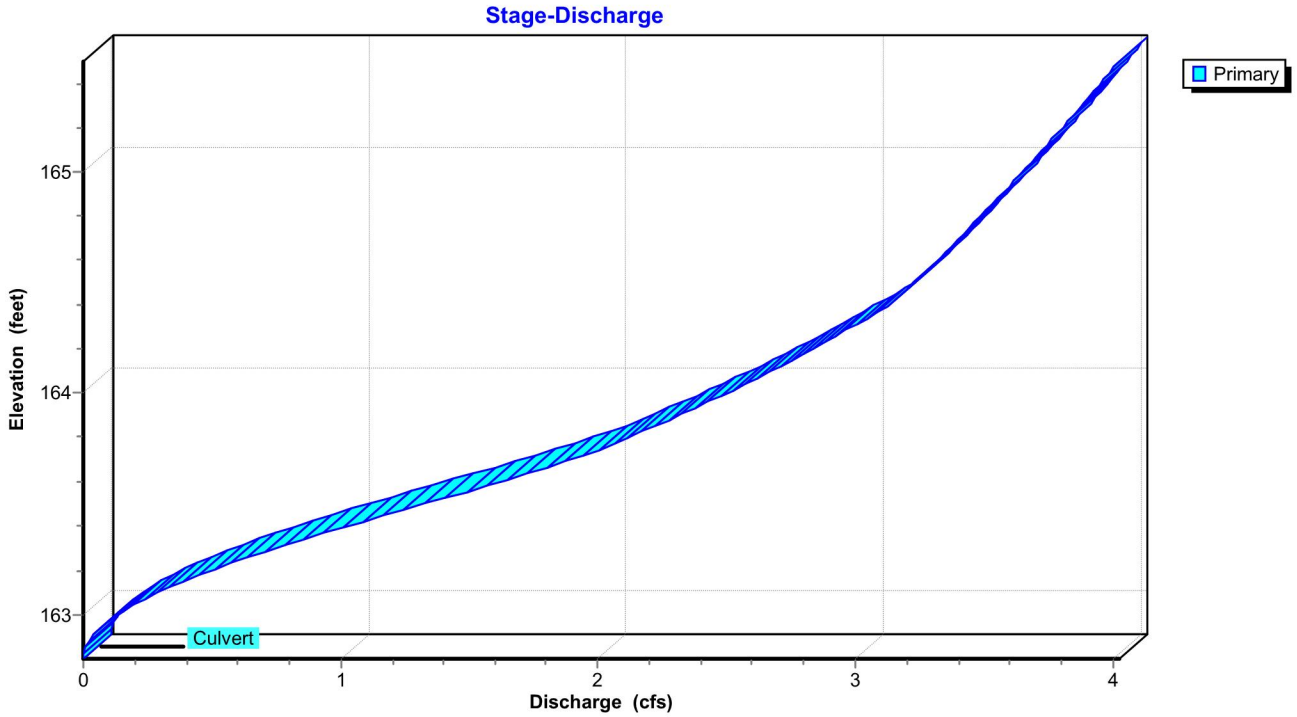
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.80' | **12.0" Round Culvert**<br>L= 221.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.80' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=162.80' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

## Pond 3P: (new Pond)



## Pond 3P: (new Pond)



## Stage-Area-Storage for Pond 3P: (new Pond)

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.80 | **0** | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | 164.98 | 0 |
| 162.92 | 0 | 163.96 | 0 | 165.00 | 0 |
| 162.94 | 0 | 163.98 | 0 | 165.02 | 0 |
| 162.96 | 0 | 164.00 | 0 | 165.04 | 0 |
| 162.98 | 0 | 164.02 | 0 | 165.06 | 0 |
| 163.00 | 0 | 164.04 | 0 | 165.08 | 0 |
| 163.02 | 0 | 164.06 | 0 | 165.10 | 0 |
| 163.04 | 0 | 164.08 | 0 | 165.12 | 0 |
| 163.06 | 0 | 164.10 | 0 | 165.14 | 0 |
| 163.08 | 0 | 164.12 | 0 | 165.16 | 0 |
| 163.10 | 0 | 164.14 | 0 | 165.18 | 0 |
| 163.12 | 0 | 164.16 | 0 | 165.20 | 0 |
| 163.14 | 0 | 164.18 | 0 | 165.22 | 0 |
| 163.16 | 0 | 164.20 | 0 | 165.24 | 0 |
| 163.18 | 0 | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | | |
| 163.46 | 0 | 164.50 | 0 | | |
| 163.48 | 0 | 164.52 | 0 | | |
| 163.50 | 0 | 164.54 | 0 | | |
| 163.52 | 0 | 164.56 | 0 | | |
| 163.54 | 0 | 164.58 | 0 | | |
| 163.56 | 0 | 164.60 | 0 | | |
| 163.58 | 0 | 164.62 | 0 | | |
| 163.60 | 0 | 164.64 | 0 | | |
| 163.62 | 0 | 164.66 | 0 | | |
| 163.64 | 0 | 164.68 | 0 | | |
| 163.66 | 0 | 164.70 | 0 | | |
| 163.68 | 0 | 164.72 | 0 | | |
| 163.70 | 0 | 164.74 | 0 | | |
| 163.72 | 0 | 164.76 | 0 | | |
| 163.74 | 0 | 164.78 | 0 | | |
| 163.76 | 0 | 164.80 | 0 | | |
| 163.78 | 0 | 164.82 | 0 | | |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |

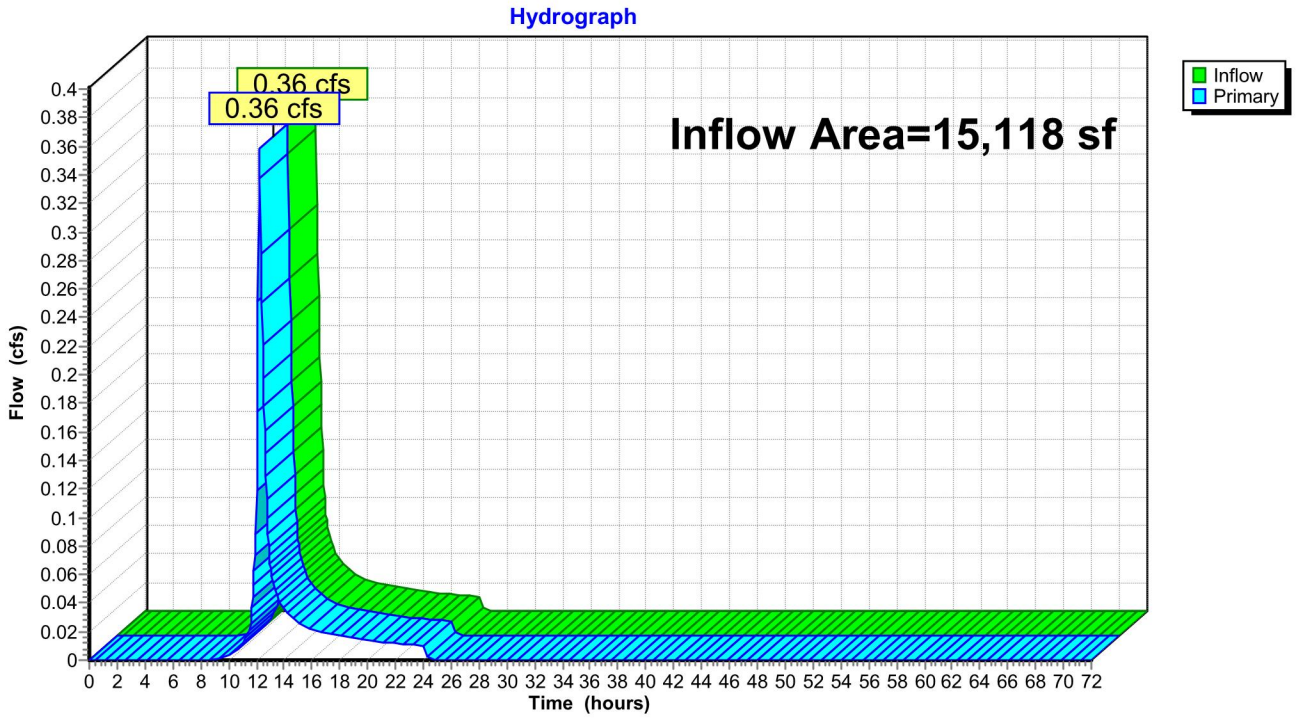
## Summary for Pond 4P: FRENCH DRAIN

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15,118 sf, 0.00% Impervious, Inflow Depth = 1.31" for 2-yr event
Inflow = 0.36 cfs @ 12.22 hrs, Volume= 1,646 cf
Primary = 0.36 cfs @ 12.22 hrs, Volume= 1,646 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Pond 4P: FRENCH DRAIN



## Summary for Pond CB#1: CB #1

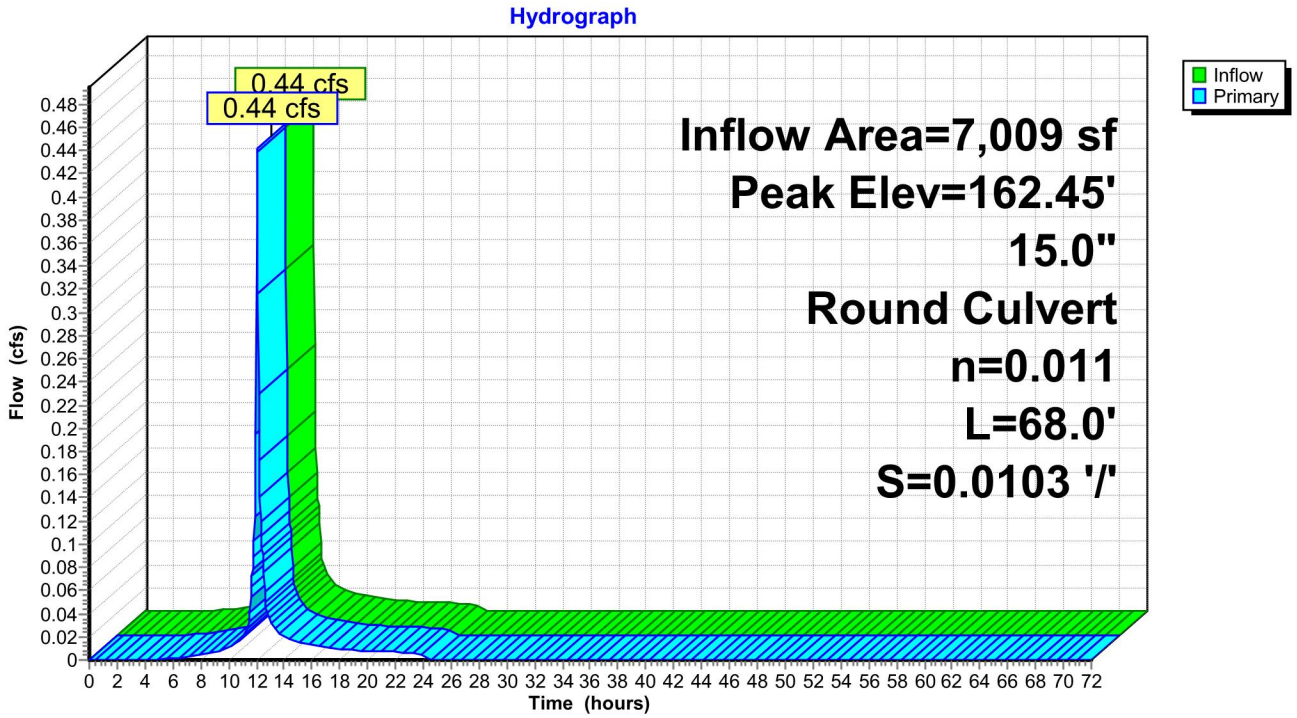
Inflow Area = 7,009 sf, 71.29% Impervious, Inflow Depth = 2.13" for 2-yr event
Inflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Outflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.45' @ 12.04 hrs
Flood Elev= 164.96'

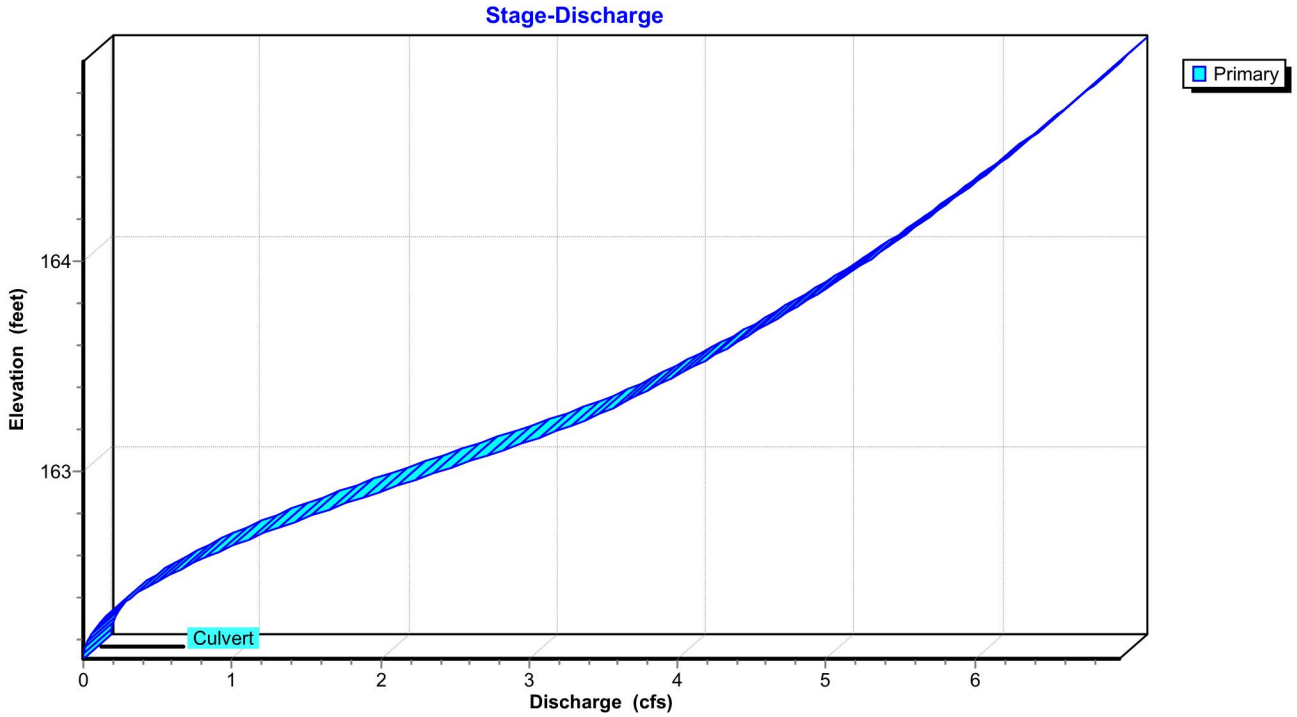
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.10' | **15.0" Round Culvert**<br>L= 68.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.10' / 161.40' S= 0.0103 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.43 cfs @ 12.04 hrs HW=162.44' (Free Discharge)
**1=Culvert** (Inlet Controls 0.43 cfs @ 1.57 fps)

## Pond CB#1: CB #1



## Pond CB#1: CB #1


Stage-Discharge
Primary
Elevation (feet)
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#1: CB #1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.10 | **0** | 163.14 | 0 | 164.18 | 0 |
| 162.12 | 0 | 163.16 | 0 | 164.20 | 0 |
| 162.14 | 0 | 163.18 | 0 | 164.22 | 0 |
| 162.16 | 0 | 163.20 | 0 | 164.24 | 0 |
| 162.18 | 0 | 163.22 | 0 | 164.26 | 0 |
| 162.20 | 0 | 163.24 | 0 | 164.28 | 0 |
| 162.22 | 0 | 163.26 | 0 | 164.30 | 0 |
| 162.24 | 0 | 163.28 | 0 | 164.32 | 0 |
| 162.26 | 0 | 163.30 | 0 | 164.34 | 0 |
| 162.28 | 0 | 163.32 | 0 | 164.36 | 0 |
| 162.30 | 0 | 163.34 | 0 | 164.38 | 0 |
| 162.32 | 0 | 163.36 | 0 | 164.40 | 0 |
| 162.34 | 0 | 163.38 | 0 | 164.42 | 0 |
| 162.36 | 0 | 163.40 | 0 | 164.44 | 0 |
| 162.38 | 0 | 163.42 | 0 | 164.46 | 0 |
| 162.40 | 0 | 163.44 | 0 | 164.48 | 0 |
| 162.42 | 0 | 163.46 | 0 | 164.50 | 0 |
| 162.44 | 0 | 163.48 | 0 | 164.52 | 0 |
| 162.46 | 0 | 163.50 | 0 | 164.54 | 0 |
| 162.48 | 0 | 163.52 | 0 | 164.56 | 0 |
| 162.50 | 0 | 163.54 | 0 | 164.58 | 0 |
| 162.52 | 0 | 163.56 | 0 | 164.60 | 0 |
| 162.54 | 0 | 163.58 | 0 | 164.62 | 0 |
| 162.56 | 0 | 163.60 | 0 | 164.64 | 0 |
| 162.58 | 0 | 163.62 | 0 | 164.66 | 0 |
| 162.60 | 0 | 163.64 | 0 | 164.68 | 0 |
| 162.62 | 0 | 163.66 | 0 | 164.70 | 0 |
| 162.64 | 0 | 163.68 | 0 | 164.72 | 0 |
| 162.66 | 0 | 163.70 | 0 | 164.74 | 0 |
| 162.68 | 0 | 163.72 | 0 | 164.76 | 0 |
| 162.70 | 0 | 163.74 | 0 | 164.78 | 0 |
| 162.72 | 0 | 163.76 | 0 | 164.80 | 0 |
| 162.74 | 0 | 163.78 | 0 | 164.82 | 0 |
| 162.76 | 0 | 163.80 | 0 | 164.84 | 0 |
| 162.78 | 0 | 163.82 | 0 | 164.86 | 0 |
| 162.80 | 0 | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | | |
| 162.92 | 0 | 163.96 | 0 | | |
| 162.94 | 0 | 163.98 | 0 | | |
| 162.96 | 0 | 164.00 | 0 | | |
| 162.98 | 0 | 164.02 | 0 | | |
| 163.00 | 0 | 164.04 | 0 | | |
| 163.02 | 0 | 164.06 | 0 | | |
| 163.04 | 0 | 164.08 | 0 | | |
| 163.06 | 0 | 164.10 | 0 | | |
| 163.08 | 0 | 164.12 | 0 | | |
| 163.10 | 0 | 164.14 | 0 | | |
| 163.12 | 0 | 164.16 | 0 | | |

## Summary for Pond CB#2: CB #2

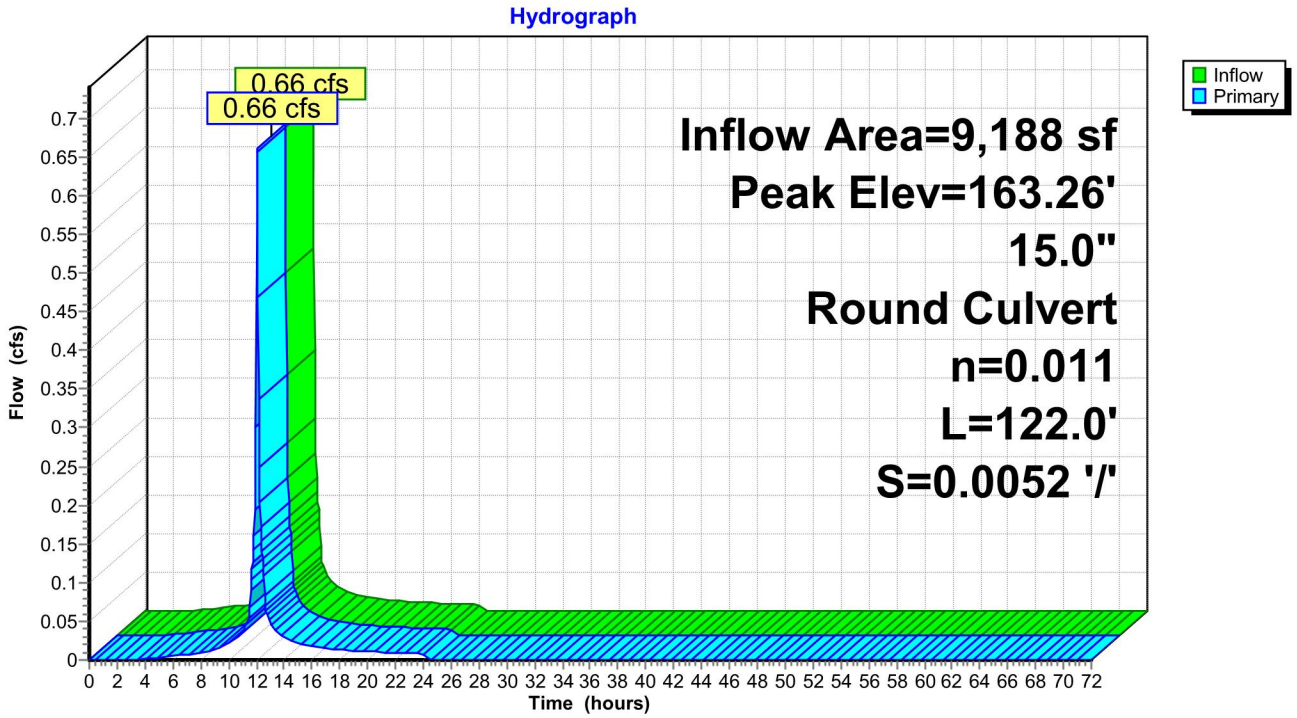
Inflow Area = 9,188 sf, 85.40% Impervious, Inflow Depth = 2.51" for 2-yr event
Inflow = 0.66 cfs @ 12.04 hrs, Volume= 1,918 cf
Outflow = 0.66 cfs @ 12.04 hrs, Volume= 1,918 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.66 cfs @ 12.04 hrs, Volume= 1,918 cf
Routed to Pond CB#3 : CB #3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.26' @ 12.04 hrs
Flood Elev= 165.58'

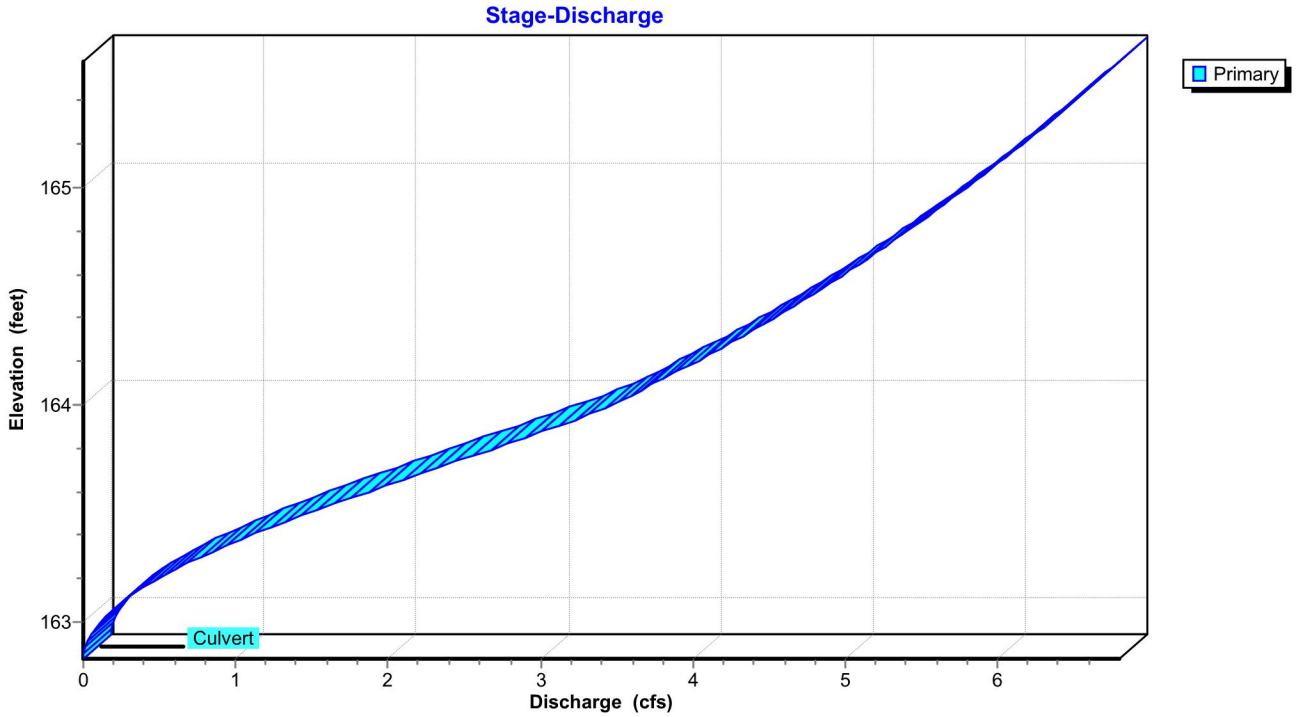
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.83' | **15.0" Round Culvert**<br>L= 122.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.83' / 162.20' S= 0.0052 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.64 cfs @ 12.04 hrs HW=163.25' (Free Discharge)
**1=Culvert** (Inlet Controls 0.64 cfs @ 1.75 fps)

## Pond CB#2: CB #2



## Pond CB#2: CB #2


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#2: CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.83 | **0** | 163.87 | 0 | 164.91 | 0 |
| 162.85 | 0 | 163.89 | 0 | 164.93 | 0 |
| 162.87 | 0 | 163.91 | 0 | 164.95 | 0 |
| 162.89 | 0 | 163.93 | 0 | 164.97 | 0 |
| 162.91 | 0 | 163.95 | 0 | 164.99 | 0 |
| 162.93 | 0 | 163.97 | 0 | 165.01 | 0 |
| 162.95 | 0 | 163.99 | 0 | 165.03 | 0 |
| 162.97 | 0 | 164.01 | 0 | 165.05 | 0 |
| 162.99 | 0 | 164.03 | 0 | 165.07 | 0 |
| 163.01 | 0 | 164.05 | 0 | 165.09 | 0 |
| 163.03 | 0 | 164.07 | 0 | 165.11 | 0 |
| 163.05 | 0 | 164.09 | 0 | 165.13 | 0 |
| 163.07 | 0 | 164.11 | 0 | 165.15 | 0 |
| 163.09 | 0 | 164.13 | 0 | 165.17 | 0 |
| 163.11 | 0 | 164.15 | 0 | 165.19 | 0 |
| 163.13 | 0 | 164.17 | 0 | 165.21 | 0 |
| 163.15 | 0 | 164.19 | 0 | 165.23 | 0 |
| 163.17 | 0 | 164.21 | 0 | 165.25 | 0 |
| 163.19 | 0 | 164.23 | 0 | 165.27 | 0 |
| 163.21 | 0 | 164.25 | 0 | 165.29 | 0 |
| 163.23 | 0 | 164.27 | 0 | 165.31 | 0 |
| 163.25 | 0 | 164.29 | 0 | 165.33 | 0 |
| 163.27 | 0 | 164.31 | 0 | 165.35 | 0 |
| 163.29 | 0 | 164.33 | 0 | 165.37 | 0 |
| 163.31 | 0 | 164.35 | 0 | 165.39 | 0 |
| 163.33 | 0 | 164.37 | 0 | 165.41 | 0 |
| 163.35 | 0 | 164.39 | 0 | 165.43 | 0 |
| 163.37 | 0 | 164.41 | 0 | 165.45 | 0 |
| 163.39 | 0 | 164.43 | 0 | 165.47 | 0 |
| 163.41 | 0 | 164.45 | 0 | 165.49 | 0 |
| 163.43 | 0 | 164.47 | 0 | 165.51 | 0 |
| 163.45 | 0 | 164.49 | 0 | 165.53 | 0 |
| 163.47 | 0 | 164.51 | 0 | 165.55 | 0 |
| 163.49 | 0 | 164.53 | 0 | 165.57 | 0 |
| 163.51 | 0 | 164.55 | 0 | | |
| 163.53 | 0 | 164.57 | 0 | | |
| 163.55 | 0 | 164.59 | 0 | | |
| 163.57 | 0 | 164.61 | 0 | | |
| 163.59 | 0 | 164.63 | 0 | | |
| 163.61 | 0 | 164.65 | 0 | | |
| 163.63 | 0 | 164.67 | 0 | | |
| 163.65 | 0 | 164.69 | 0 | | |
| 163.67 | 0 | 164.71 | 0 | | |
| 163.69 | 0 | 164.73 | 0 | | |
| 163.71 | 0 | 164.75 | 0 | | |
| 163.73 | 0 | 164.77 | 0 | | |
| 163.75 | 0 | 164.79 | 0 | | |
| 163.77 | 0 | 164.81 | 0 | | |
| 163.79 | 0 | 164.83 | 0 | | |
| 163.81 | 0 | 164.85 | 0 | | |
| 163.83 | 0 | 164.87 | 0 | | |
| 163.85 | 0 | 164.89 | 0 | | |

## Summary for Pond CB#3: CB #3

[79] Warning: Submerged Pond CB#2 Primary device # 1 OUTLET by 0.61'

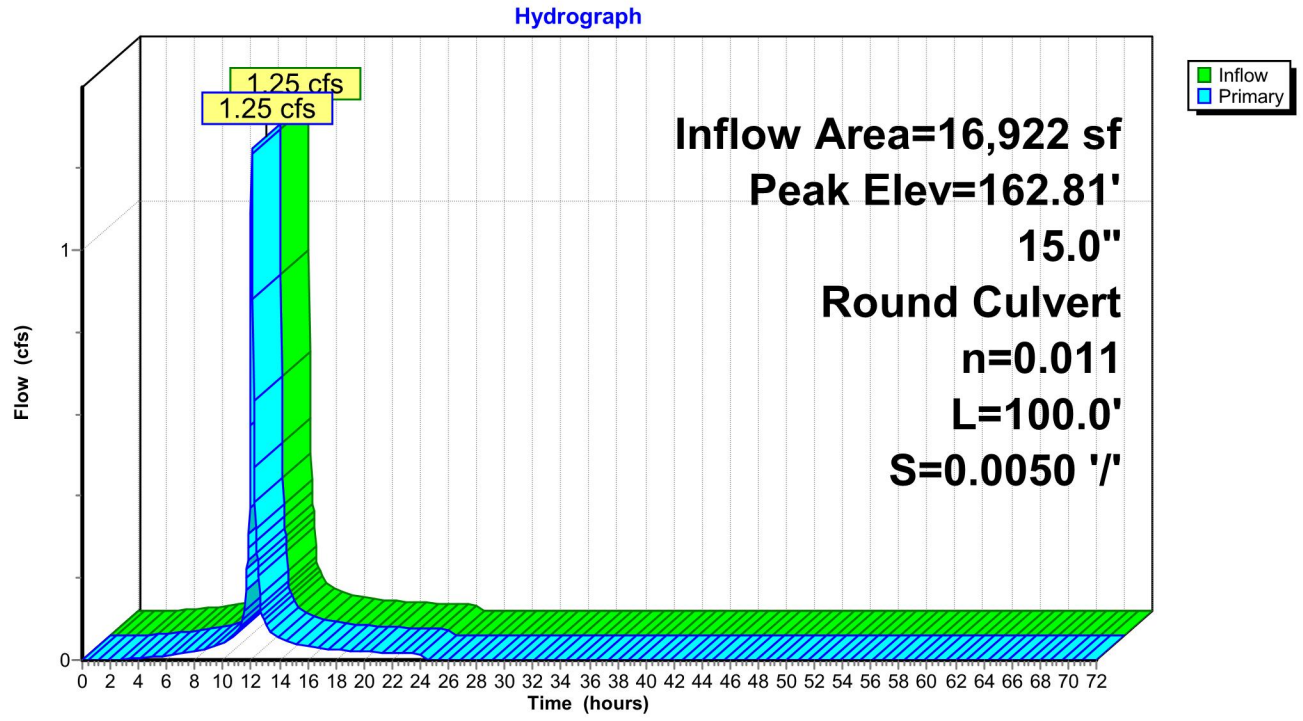
Inflow Area = 16,922 sf, 88.85% Impervious, Inflow Depth = 2.60" for 2-yr event
Inflow = 1.25 cfs @ 12.04 hrs, Volume= 3,664 cf
Outflow = 1.25 cfs @ 12.04 hrs, Volume= 3,664 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.04 hrs, Volume= 3,664 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.81' @ 12.04 hrs
Flood Elev= 165.70'

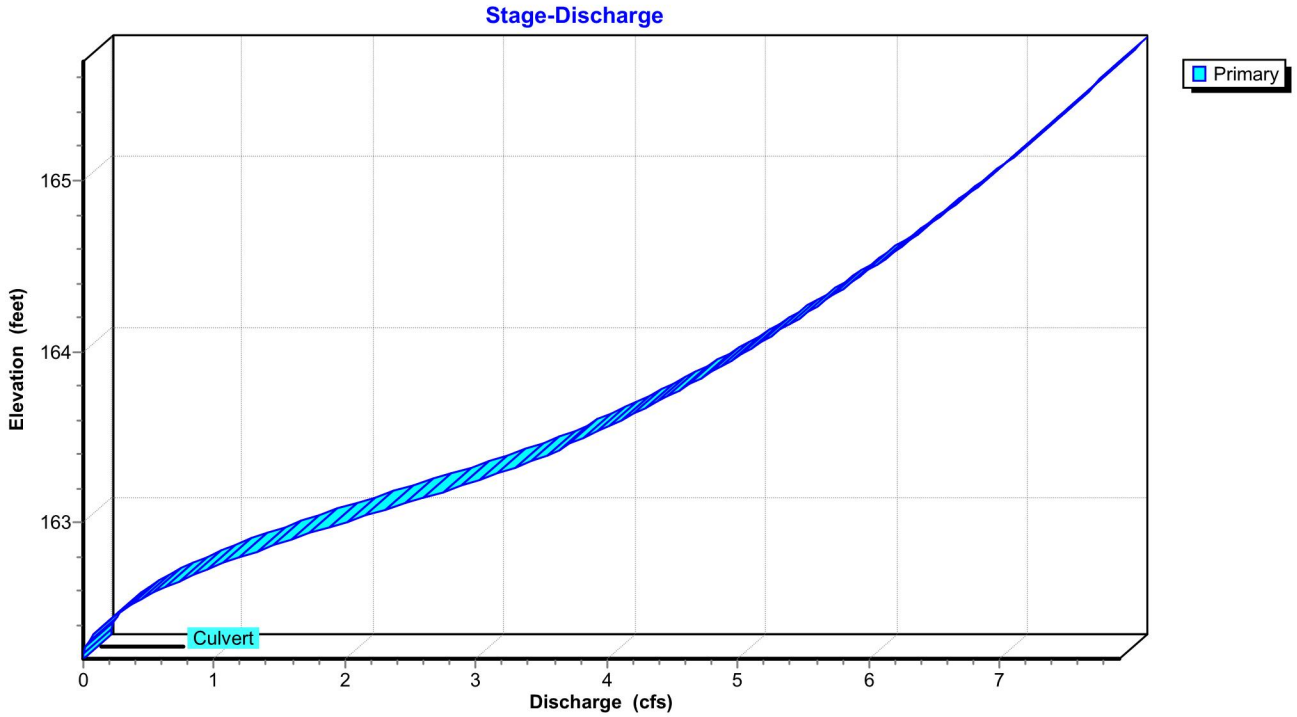
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.20' | **15.0" Round Culvert**<br>L= 100.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.20' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.20 cfs @ 12.04 hrs HW=162.80' (Free Discharge)
**1=Culvert** (Inlet Controls 1.20 cfs @ 2.08 fps)

### Pond CB#3: CB #3



## Pond CB#3: CB #3


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond CB#3: CB #3

| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 162.20 | **0** |
| 162.25 | 0 |
| 162.30 | 0 |
| 162.35 | 0 |
| 162.40 | 0 |
| 162.45 | 0 |
| 162.50 | 0 |
| 162.55 | 0 |
| 162.60 | 0 |
| 162.65 | 0 |
| 162.70 | 0 |
| 162.75 | 0 |
| 162.80 | 0 |
| 162.85 | 0 |
| 162.90 | 0 |
| 162.95 | 0 |
| 163.00 | 0 |
| 163.05 | 0 |
| 163.10 | 0 |
| 163.15 | 0 |
| 163.20 | 0 |
| 163.25 | 0 |
| 163.30 | 0 |
| 163.35 | 0 |
| 163.40 | 0 |
| 163.45 | 0 |
| 163.50 | 0 |
| 163.55 | 0 |
| 163.60 | 0 |
| 163.65 | 0 |
| 163.70 | 0 |
| 163.75 | 0 |
| 163.80 | 0 |
| 163.85 | 0 |
| 163.90 | 0 |
| 163.95 | 0 |
| 164.00 | 0 |
| 164.05 | 0 |
| 164.10 | 0 |
| 164.15 | 0 |
| 164.20 | 0 |
| 164.25 | 0 |
| 164.30 | 0 |
| 164.35 | 0 |
| 164.40 | 0 |
| 164.45 | 0 |
| 164.50 | 0 |
| 164.55 | 0 |
| 164.60 | 0 |
| 164.65 | 0 |
| 164.70 | 0 |
| 164.75 | 0 |
| 164.80 | 0 |
| 164.85 | 0 |
| 164.90 | 0 |
| 164.95 | 0 |
| 165.00 | 0 |
| 165.05 | 0 |
| 165.10 | 0 |
| 165.15 | 0 |
| 165.20 | 0 |
| 165.25 | 0 |
| 165.30 | 0 |
| 165.35 | 0 |
| 165.40 | 0 |
| 165.45 | 0 |
| 165.50 | 0 |
| 165.55 | 0 |
| 165.60 | 0 |
| 165.65 | 0 |
| 165.70 | 0 |

## Summary for Pond CB#4: CB #4

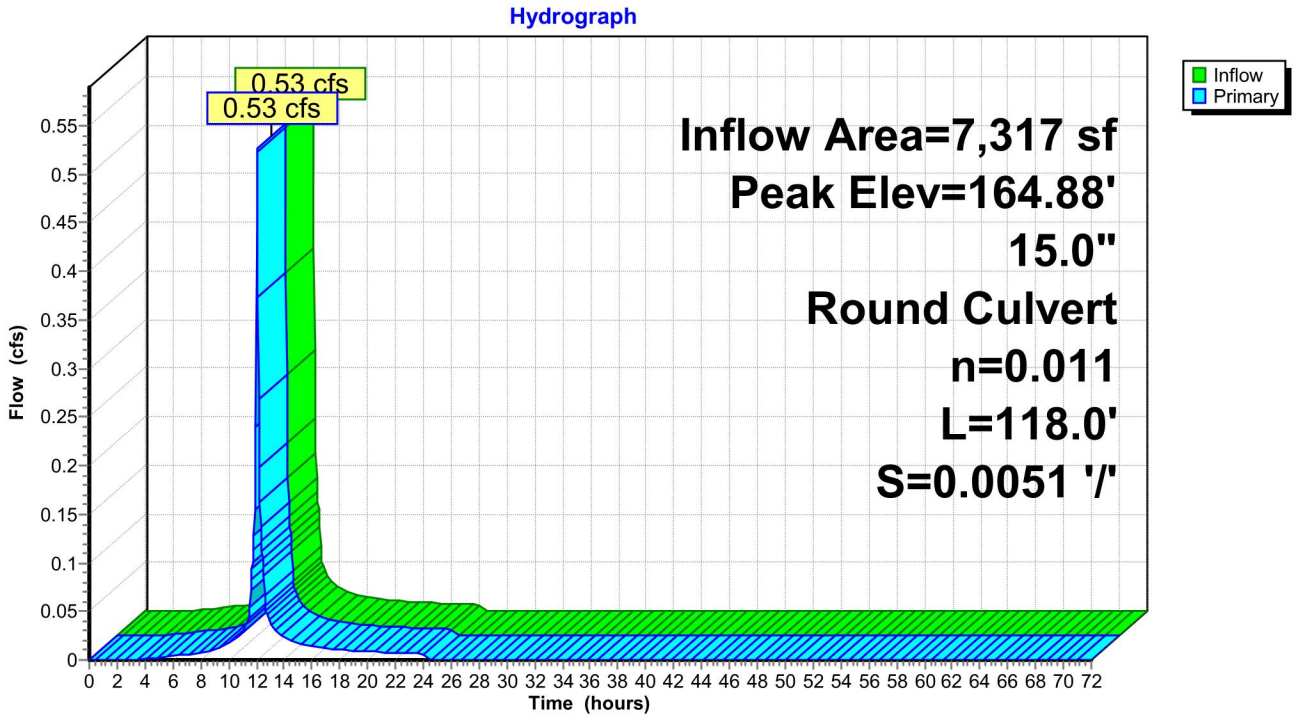
Inflow Area = 7,317 sf, 86.07% Impervious, Inflow Depth = 2.51" for 2-yr event
Inflow = 0.53 cfs @ 12.04 hrs, Volume= 1,527 cf
Outflow = 0.53 cfs @ 12.04 hrs, Volume= 1,527 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.04 hrs, Volume= 1,527 cf
Routed to Pond CB#5 : CB #5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.88' @ 12.04 hrs
Flood Elev= 167.26'

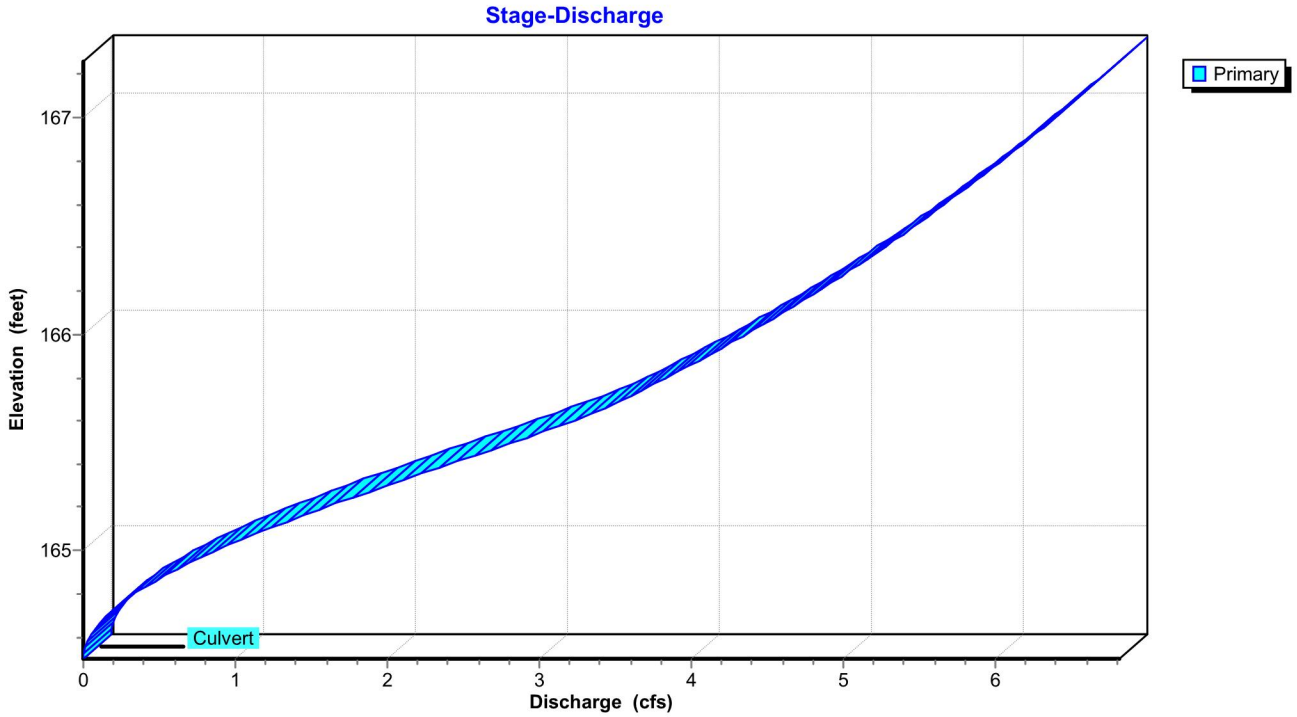
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.50' | **15.0" Round Culvert**<br>L= 118.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.50' / 163.90' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.51 cfs @ 12.04 hrs HW=164.87' (Free Discharge)
**1=Culvert** (Inlet Controls 0.51 cfs @ 1.65 fps)

## Pond CB#4: CB #4



## Pond CB#4: CB #4


Stage-Discharge
Primary
Culvert
Elevation (feet)
167
166
165
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#4: CB #4

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.50 | **0** | 165.54 | 0 | 166.58 | 0 |
| 164.52 | 0 | 165.56 | 0 | 166.60 | 0 |
| 164.54 | 0 | 165.58 | 0 | 166.62 | 0 |
| 164.56 | 0 | 165.60 | 0 | 166.64 | 0 |
| 164.58 | 0 | 165.62 | 0 | 166.66 | 0 |
| 164.60 | 0 | 165.64 | 0 | 166.68 | 0 |
| 164.62 | 0 | 165.66 | 0 | 166.70 | 0 |
| 164.64 | 0 | 165.68 | 0 | 166.72 | 0 |
| 164.66 | 0 | 165.70 | 0 | 166.74 | 0 |
| 164.68 | 0 | 165.72 | 0 | 166.76 | 0 |
| 164.70 | 0 | 165.74 | 0 | 166.78 | 0 |
| 164.72 | 0 | 165.76 | 0 | 166.80 | 0 |
| 164.74 | 0 | 165.78 | 0 | 166.82 | 0 |
| 164.76 | 0 | 165.80 | 0 | 166.84 | 0 |
| 164.78 | 0 | 165.82 | 0 | 166.86 | 0 |
| 164.80 | 0 | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | 167.04 | 0 |
| 164.98 | 0 | 166.02 | 0 | 167.06 | 0 |
| 165.00 | 0 | 166.04 | 0 | 167.08 | 0 |
| 165.02 | 0 | 166.06 | 0 | 167.10 | 0 |
| 165.04 | 0 | 166.08 | 0 | 167.12 | 0 |
| 165.06 | 0 | 166.10 | 0 | 167.14 | 0 |
| 165.08 | 0 | 166.12 | 0 | 167.16 | 0 |
| 165.10 | 0 | 166.14 | 0 | 167.18 | 0 |
| 165.12 | 0 | 166.16 | 0 | 167.20 | 0 |
| 165.14 | 0 | 166.18 | 0 | 167.22 | 0 |
| 165.16 | 0 | 166.20 | 0 | 167.24 | 0 |
| 165.18 | 0 | 166.22 | 0 | 167.26 | 0 |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |

## Summary for Pond CB#5: CB #5

[79] Warning: Submerged Pond CB#4 Primary device # 1 OUTLET by 0.29'

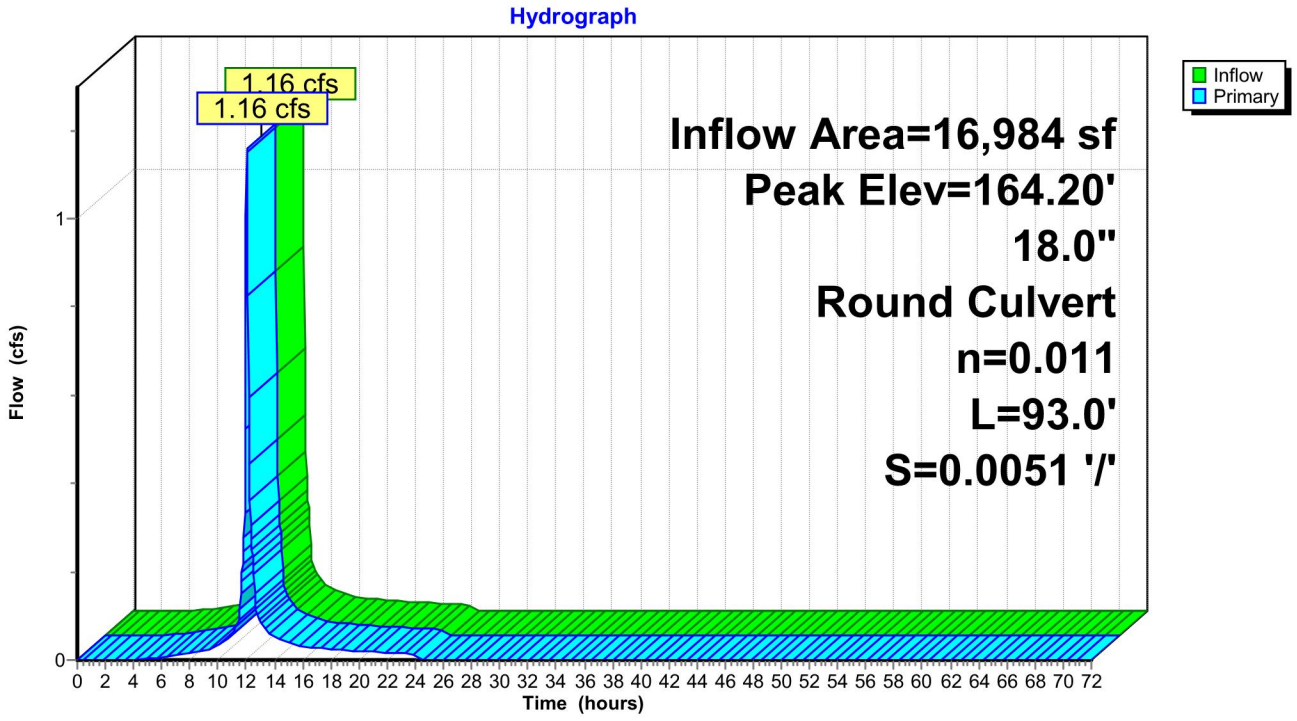
Inflow Area = 16,984 sf, 80.66% Impervious, Inflow Depth = 2.34" for 2-yr event
Inflow = 1.16 cfs @ 12.04 hrs, Volume= 3,316 cf
Outflow = 1.16 cfs @ 12.04 hrs, Volume= 3,316 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.16 cfs @ 12.04 hrs, Volume= 3,316 cf
Routed to Pond CB#6 : CB #6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.20' @ 12.04 hrs
Flood Elev= 166.36'

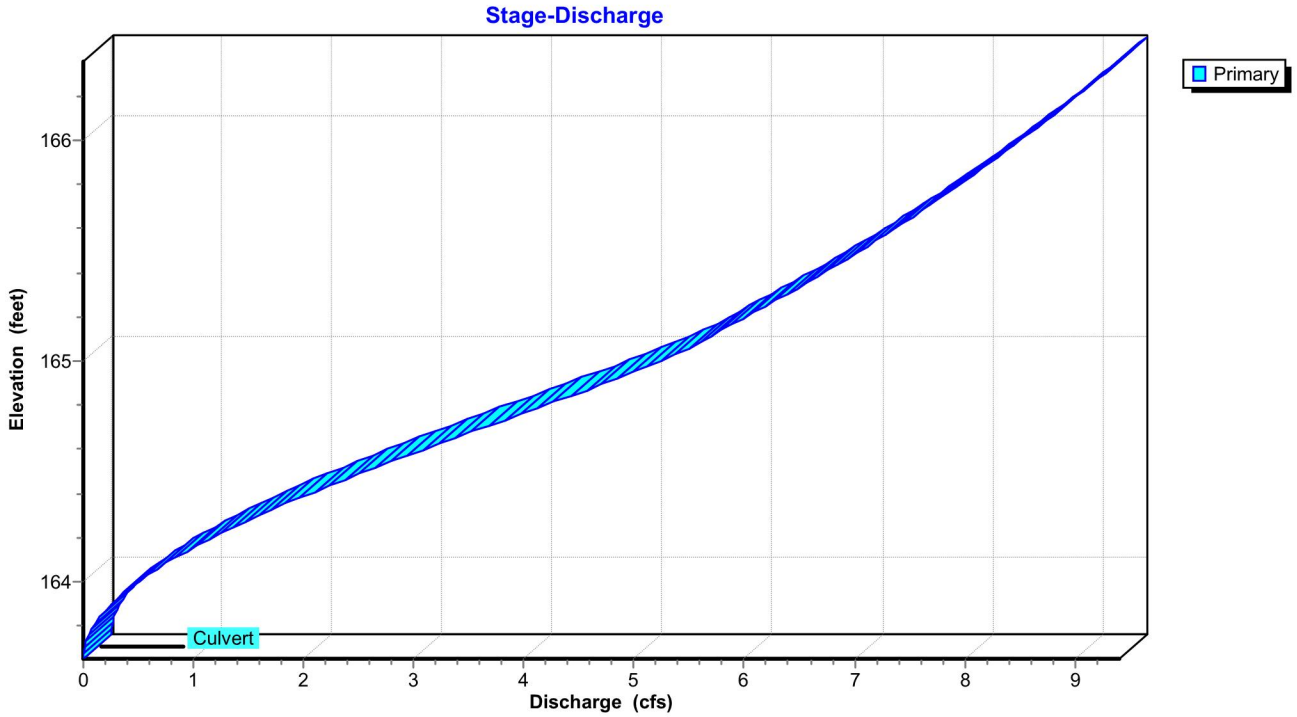
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.65' | **18.0" Round Culvert**<br>L= 93.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.65' / 163.18' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.12 cfs @ 12.04 hrs HW=164.19' (Free Discharge)
**1=Culvert** (Inlet Controls 1.12 cfs @ 1.97 fps)

### Pond CB#5: CB #5



## Pond CB#5: CB #5


Stage-Discharge
Primary
Elevation (feet)
166
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#5: CB #5

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.65 | **0** | 164.69 | 0 | 165.73 | 0 |
| 163.67 | 0 | 164.71 | 0 | 165.75 | 0 |
| 163.69 | 0 | 164.73 | 0 | 165.77 | 0 |
| 163.71 | 0 | 164.75 | 0 | 165.79 | 0 |
| 163.73 | 0 | 164.77 | 0 | 165.81 | 0 |
| 163.75 | 0 | 164.79 | 0 | 165.83 | 0 |
| 163.77 | 0 | 164.81 | 0 | 165.85 | 0 |
| 163.79 | 0 | 164.83 | 0 | 165.87 | 0 |
| 163.81 | 0 | 164.85 | 0 | 165.89 | 0 |
| 163.83 | 0 | 164.87 | 0 | 165.91 | 0 |
| 163.85 | 0 | 164.89 | 0 | 165.93 | 0 |
| 163.87 | 0 | 164.91 | 0 | 165.95 | 0 |
| 163.89 | 0 | 164.93 | 0 | 165.97 | 0 |
| 163.91 | 0 | 164.95 | 0 | 165.99 | 0 |
| 163.93 | 0 | 164.97 | 0 | 166.01 | 0 |
| 163.95 | 0 | 164.99 | 0 | 166.03 | 0 |
| 163.97 | 0 | 165.01 | 0 | 166.05 | 0 |
| 163.99 | 0 | 165.03 | 0 | 166.07 | 0 |
| 164.01 | 0 | 165.05 | 0 | 166.09 | 0 |
| 164.03 | 0 | 165.07 | 0 | 166.11 | 0 |
| 164.05 | 0 | 165.09 | 0 | 166.13 | 0 |
| 164.07 | 0 | 165.11 | 0 | 166.15 | 0 |
| 164.09 | 0 | 165.13 | 0 | 166.17 | 0 |
| 164.11 | 0 | 165.15 | 0 | 166.19 | 0 |
| 164.13 | 0 | 165.17 | 0 | 166.21 | 0 |
| 164.15 | 0 | 165.19 | 0 | 166.23 | 0 |
| 164.17 | 0 | 165.21 | 0 | 166.25 | 0 |
| 164.19 | 0 | 165.23 | 0 | 166.27 | 0 |
| 164.21 | 0 | 165.25 | 0 | 166.29 | 0 |
| 164.23 | 0 | 165.27 | 0 | 166.31 | 0 |
| 164.25 | 0 | 165.29 | 0 | 166.33 | 0 |
| 164.27 | 0 | 165.31 | 0 | 166.35 | 0 |
| 164.29 | 0 | 165.33 | 0 | | |
| 164.31 | 0 | 165.35 | 0 | | |
| 164.33 | 0 | 165.37 | 0 | | |
| 164.35 | 0 | 165.39 | 0 | | |
| 164.37 | 0 | 165.41 | 0 | | |
| 164.39 | 0 | 165.43 | 0 | | |
| 164.41 | 0 | 165.45 | 0 | | |
| 164.43 | 0 | 165.47 | 0 | | |
| 164.45 | 0 | 165.49 | 0 | | |
| 164.47 | 0 | 165.51 | 0 | | |
| 164.49 | 0 | 165.53 | 0 | | |
| 164.51 | 0 | 165.55 | 0 | | |
| 164.53 | 0 | 165.57 | 0 | | |
| 164.55 | 0 | 165.59 | 0 | | |
| 164.57 | 0 | 165.61 | 0 | | |
| 164.59 | 0 | 165.63 | 0 | | |
| 164.61 | 0 | 165.65 | 0 | | |
| 164.63 | 0 | 165.67 | 0 | | |
| 164.65 | 0 | 165.69 | 0 | | |
| 164.67 | 0 | 165.71 | 0 | | |

## Summary for Pond CB#6: CB #6

[79] Warning: Submerged Pond CB#5 Primary device # 1 INLET by 0.22'

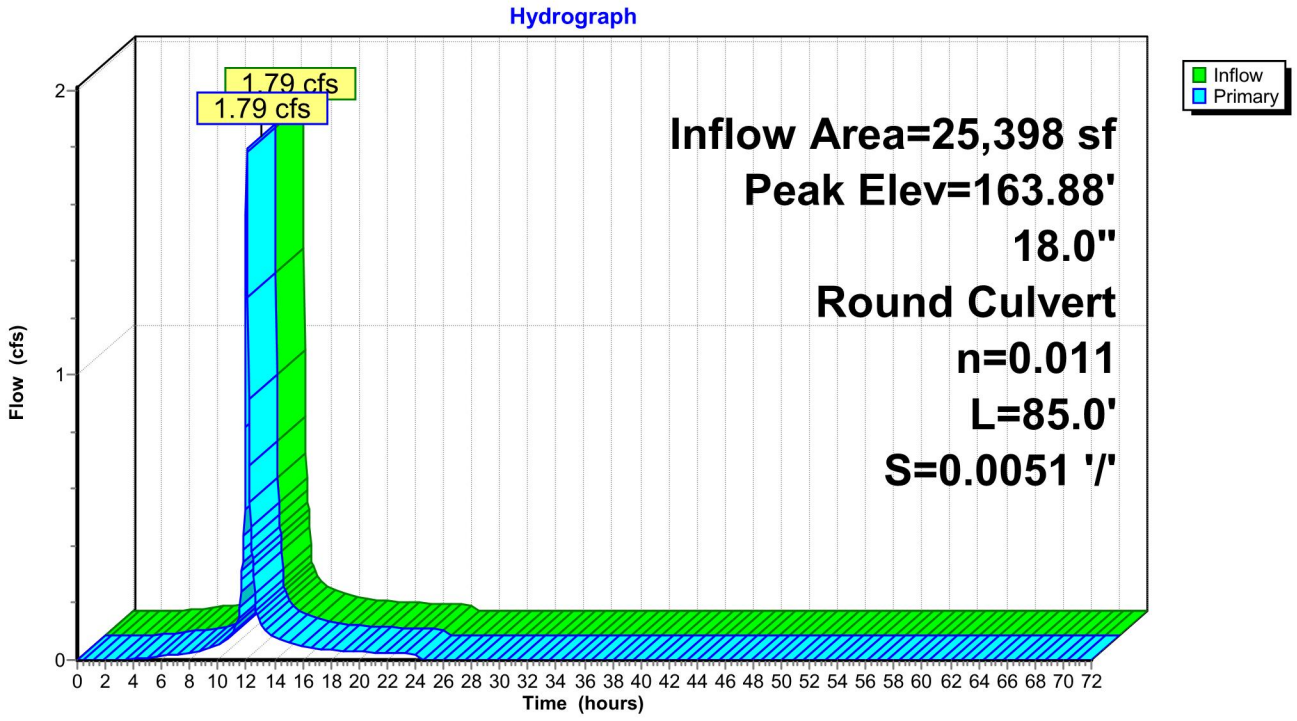
Inflow Area = 25,398 sf, 83.23% Impervious, Inflow Depth = 2.46" for 2-yr event
Inflow = 1.79 cfs @ 12.04 hrs, Volume= 5,216 cf
Outflow = 1.79 cfs @ 12.04 hrs, Volume= 5,216 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.04 hrs, Volume= 5,216 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.88' @ 12.04 hrs
Flood Elev= 165.87'

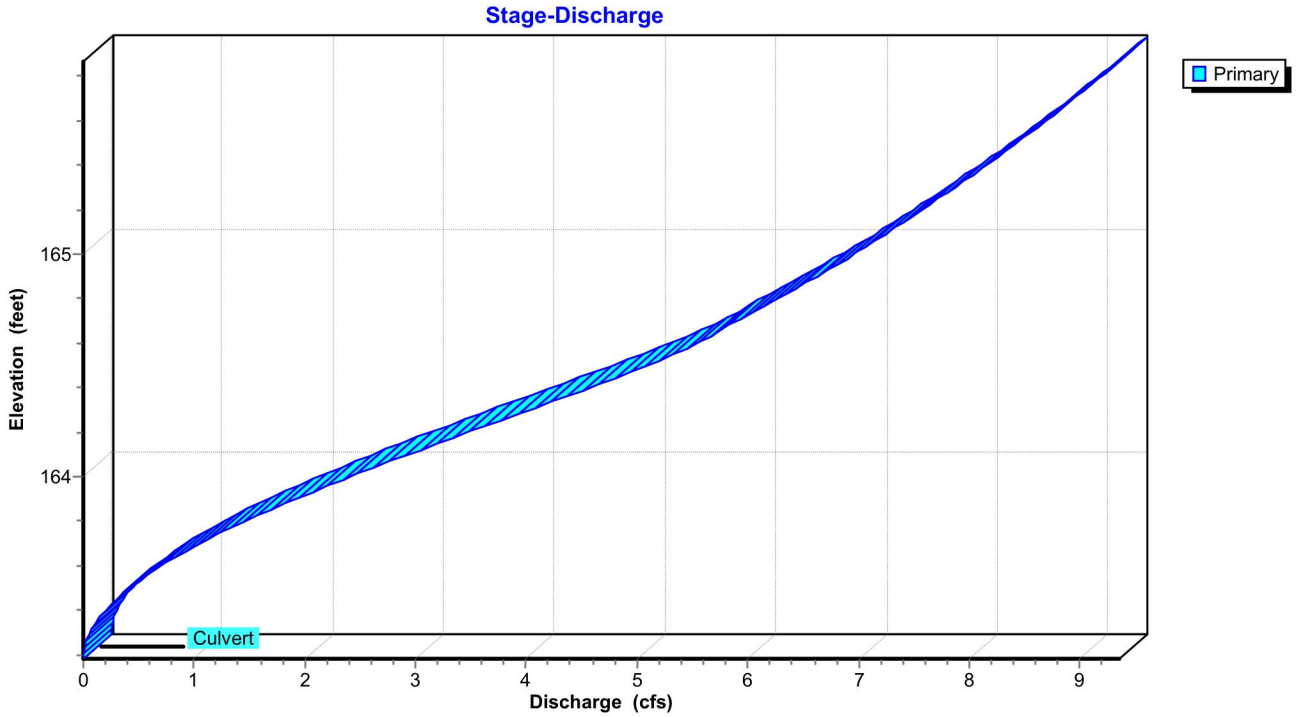
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.18' | **18.0" Round Culvert**<br>L= 85.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.18' / 162.75' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.74 cfs @ 12.04 hrs HW=163.86' (Free Discharge)
**1=Culvert** (Inlet Controls 1.74 cfs @ 2.22 fps)

### Pond CB#6: CB #6



## Pond CB#6: CB #6


Stage-Discharge
Primary
Elevation (feet)
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#6: CB #6

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.18 | **0** | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | 165.52 | 0 |
| 163.46 | 0 | 164.50 | 0 | 165.54 | 0 |
| 163.48 | 0 | 164.52 | 0 | 165.56 | 0 |
| 163.50 | 0 | 164.54 | 0 | 165.58 | 0 |
| 163.52 | 0 | 164.56 | 0 | 165.60 | 0 |
| 163.54 | 0 | 164.58 | 0 | 165.62 | 0 |
| 163.56 | 0 | 164.60 | 0 | 165.64 | 0 |
| 163.58 | 0 | 164.62 | 0 | 165.66 | 0 |
| 163.60 | 0 | 164.64 | 0 | 165.68 | 0 |
| 163.62 | 0 | 164.66 | 0 | 165.70 | 0 |
| 163.64 | 0 | 164.68 | 0 | 165.72 | 0 |
| 163.66 | 0 | 164.70 | 0 | 165.74 | 0 |
| 163.68 | 0 | 164.72 | 0 | 165.76 | 0 |
| 163.70 | 0 | 164.74 | 0 | 165.78 | 0 |
| 163.72 | 0 | 164.76 | 0 | 165.80 | 0 |
| 163.74 | 0 | 164.78 | 0 | 165.82 | 0 |
| 163.76 | 0 | 164.80 | 0 | 165.84 | 0 |
| 163.78 | 0 | 164.82 | 0 | 165.86 | 0 |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |
| 163.84 | 0 | 164.88 | 0 | | |
| 163.86 | 0 | 164.90 | 0 | | |
| 163.88 | 0 | 164.92 | 0 | | |
| 163.90 | 0 | 164.94 | 0 | | |
| 163.92 | 0 | 164.96 | 0 | | |
| 163.94 | 0 | 164.98 | 0 | | |
| 163.96 | 0 | 165.00 | 0 | | |
| 163.98 | 0 | 165.02 | 0 | | |
| 164.00 | 0 | 165.04 | 0 | | |
| 164.02 | 0 | 165.06 | 0 | | |
| 164.04 | 0 | 165.08 | 0 | | |
| 164.06 | 0 | 165.10 | 0 | | |
| 164.08 | 0 | 165.12 | 0 | | |
| 164.10 | 0 | 165.14 | 0 | | |
| 164.12 | 0 | 165.16 | 0 | | |
| 164.14 | 0 | 165.18 | 0 | | |
| 164.16 | 0 | 165.20 | 0 | | |
| 164.18 | 0 | 165.22 | 0 | | |
| 164.20 | 0 | 165.24 | 0 | | |

## Summary for Pond DP-1: DP-1

[81] Warning: Exceeded Pond EX-2 by 0.17' @ 12.10 hrs

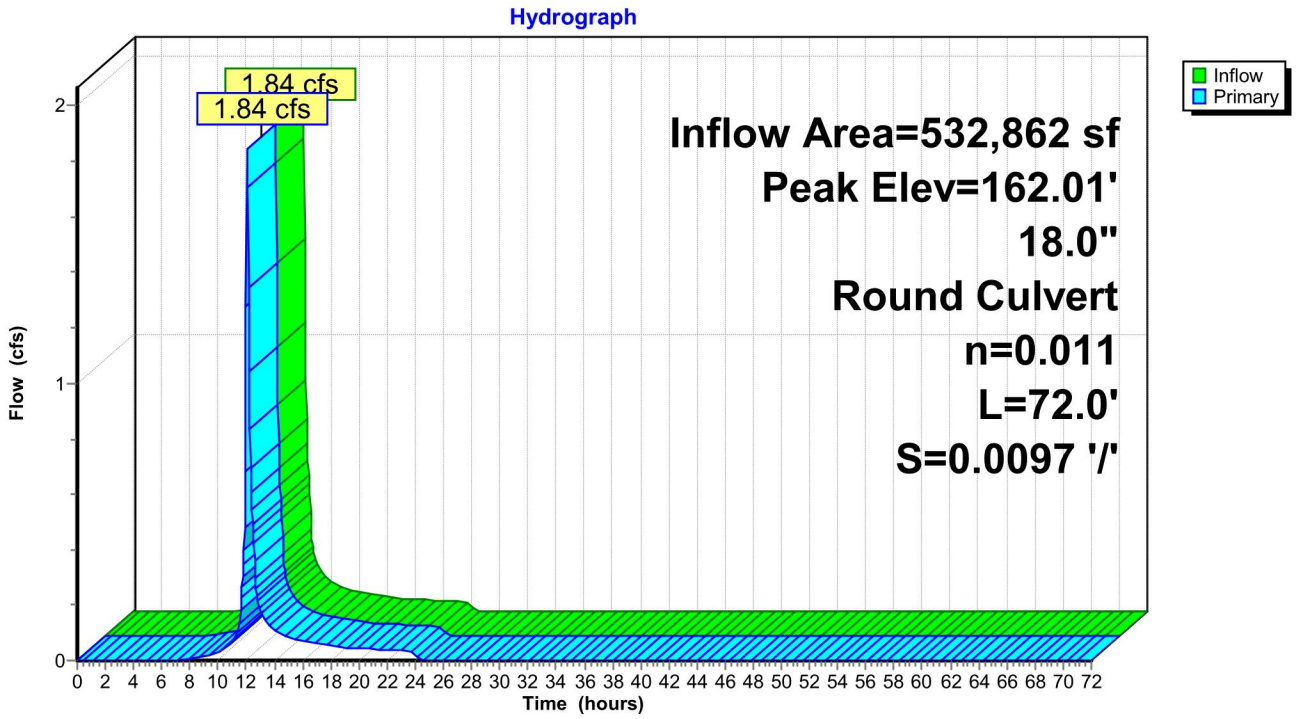
Inflow Area = 532,862 sf, 32.10% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 1.84 cfs @ 12.07 hrs, Volume= 5,882 cf
Outflow = 1.84 cfs @ 12.07 hrs, Volume= 5,882 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.84 cfs @ 12.07 hrs, Volume= 5,882 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.01' @ 12.07 hrs
Flood Elev= 163.41'

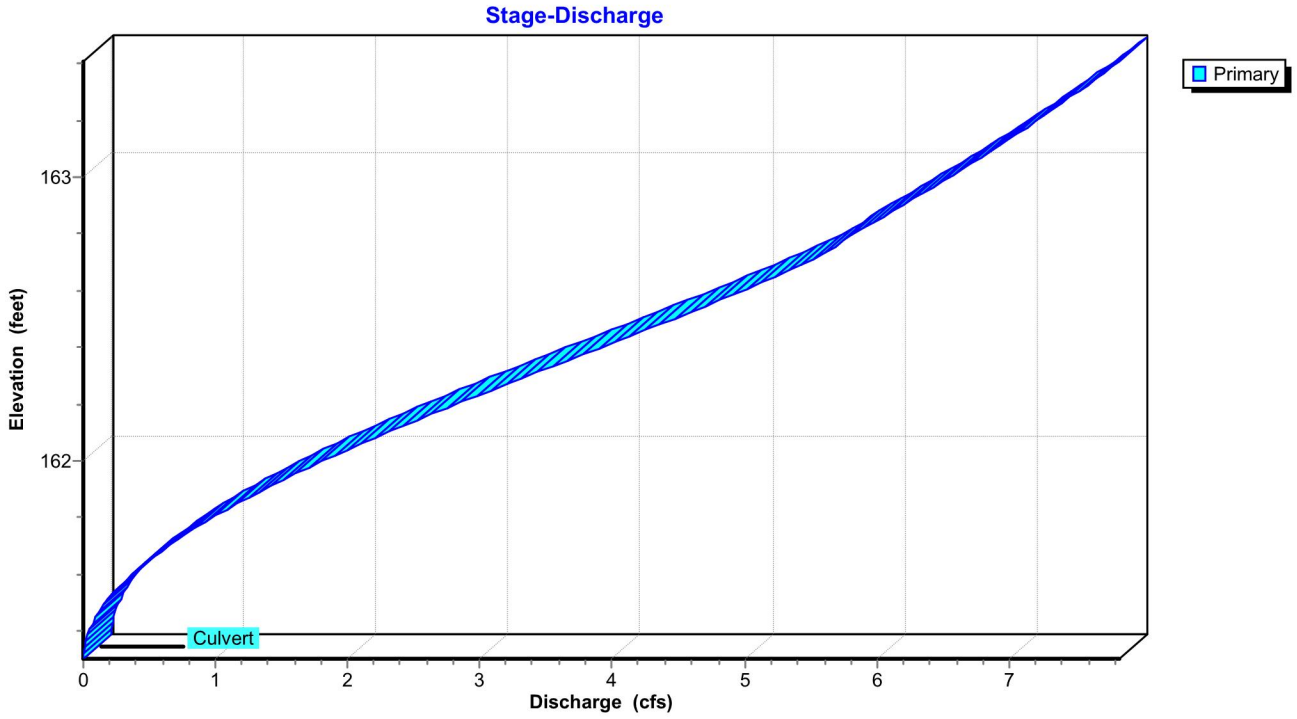
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.77 cfs @ 12.07 hrs HW=161.99' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.77 cfs @ 2.23 fps)

### Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

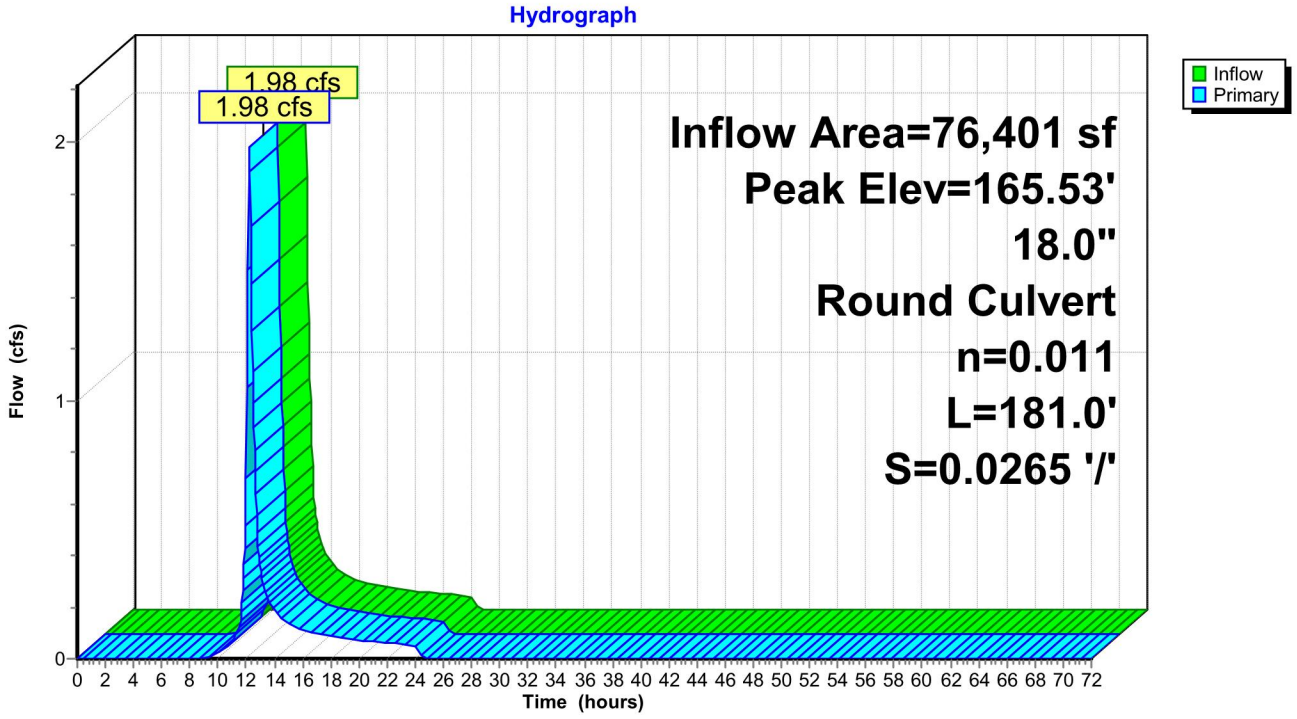
Inflow Area = 76,401 sf, 13.71% Impervious, Inflow Depth = 1.37" for 2-yr event
Inflow = 1.98 cfs @ 12.20 hrs, Volume= 8,730 cf
Outflow = 1.98 cfs @ 12.20 hrs, Volume= 8,730 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.98 cfs @ 12.20 hrs, Volume= 8,730 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.53' @ 12.20 hrs
Flood Elev= 167.03'

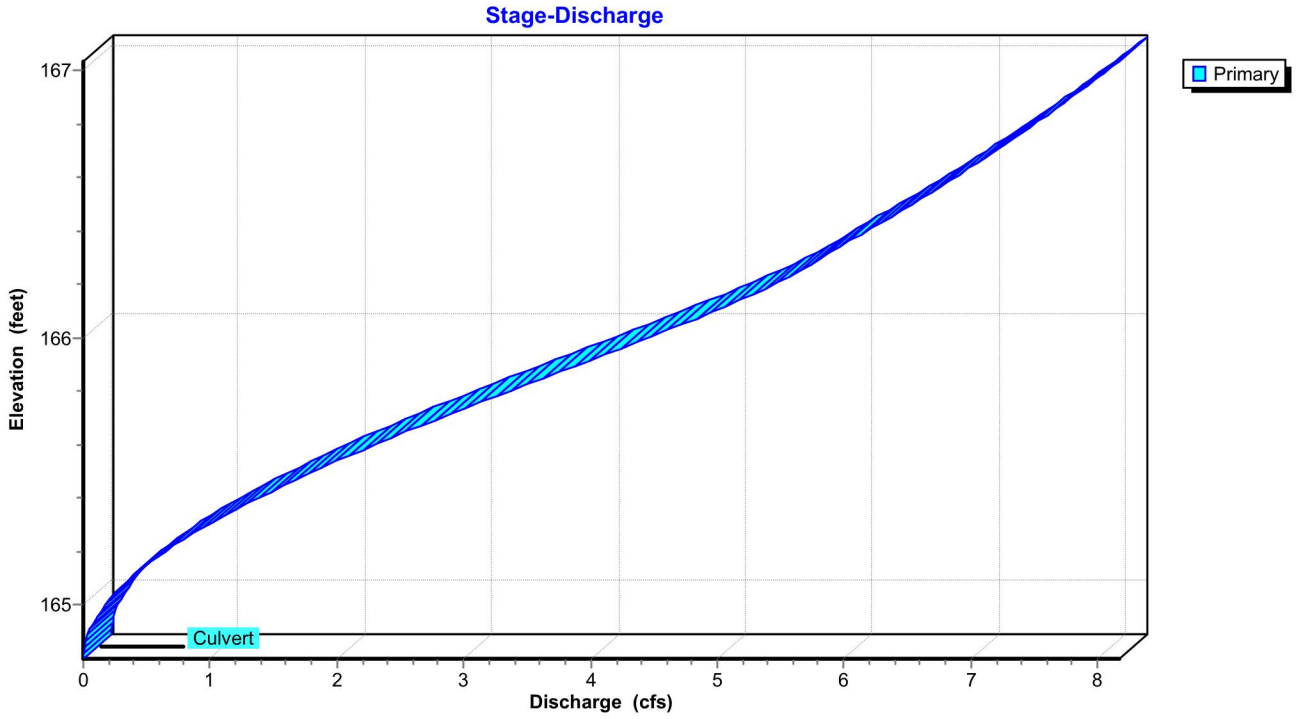
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.97 cfs @ 12.20 hrs HW=165.53' (Free Discharge)
**1=Culvert** (Inlet Controls 1.97 cfs @ 2.30 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

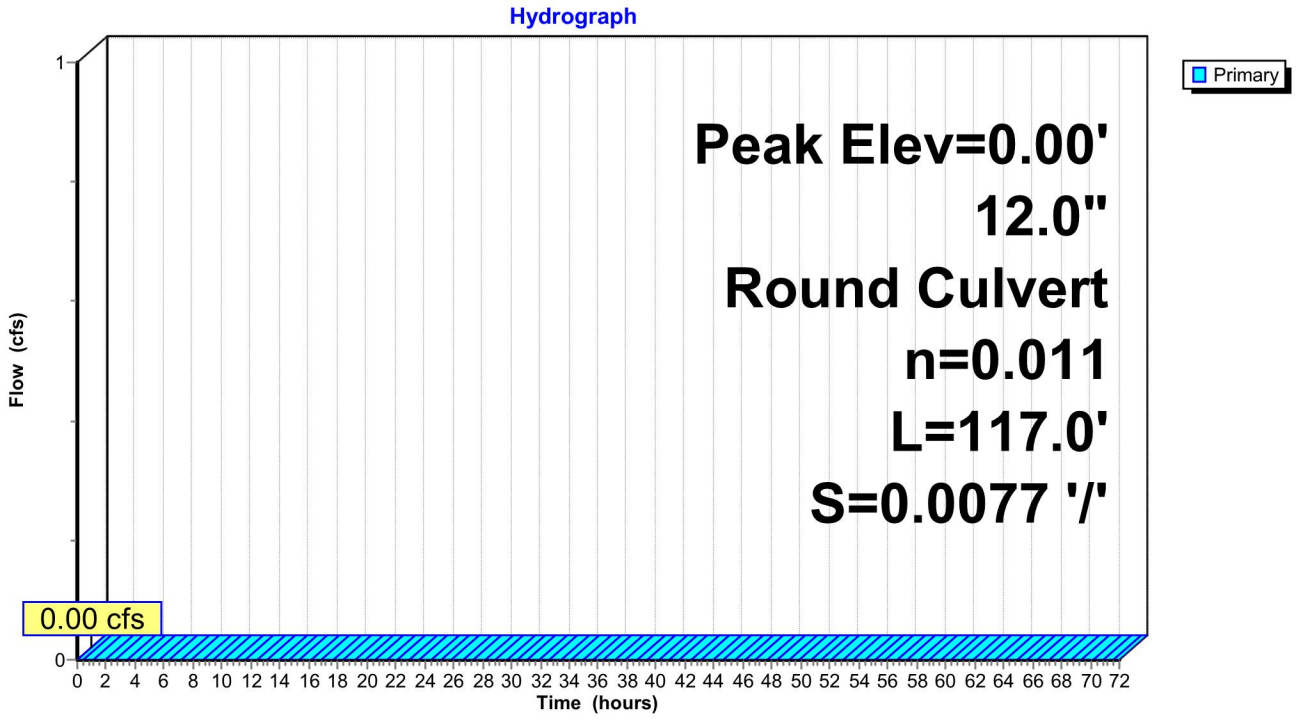
## Summary for Pond DP-3: DP-3

[43] Hint: Has no inflow (Outflow=Zero)

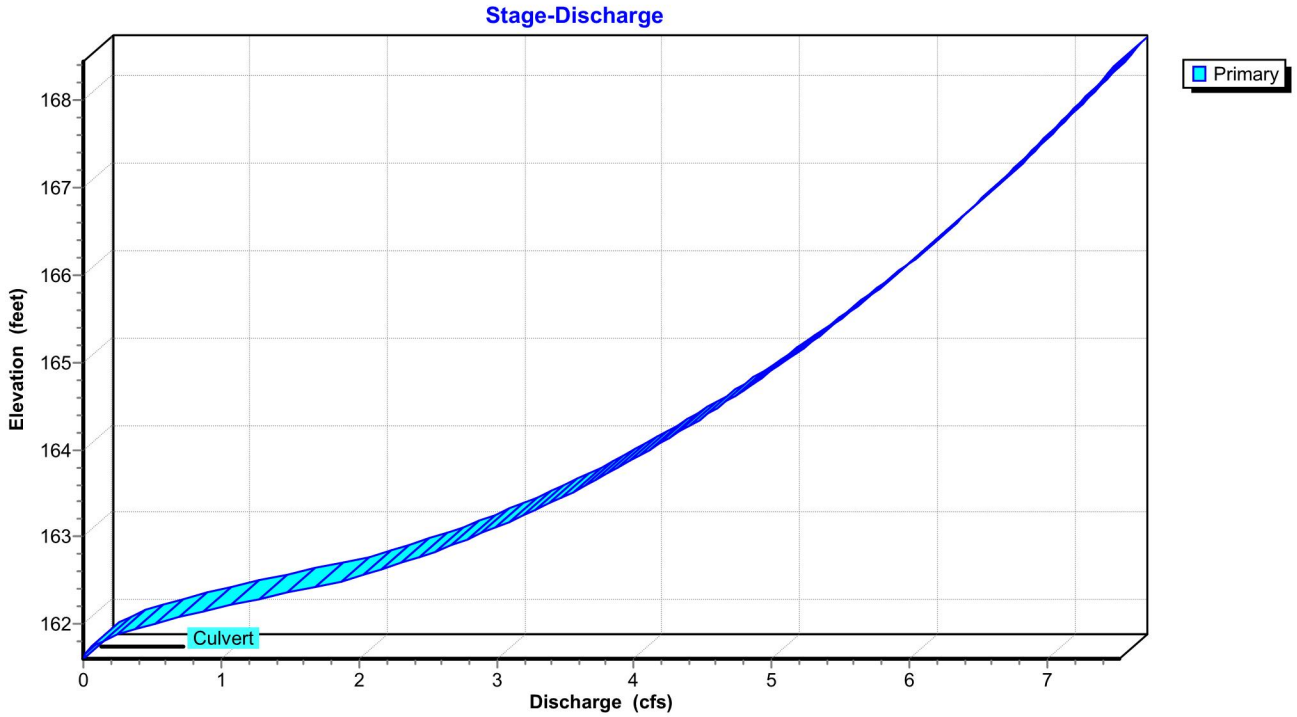
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

## Summary for Pond EX-1: EX. CB 1

[79] Warning: Submerged Pond 3P Primary device # 1 OUTLET by 0.34'
[79] Warning: Submerged Pond CB#1 Primary device # 1 OUTLET by 0.64'

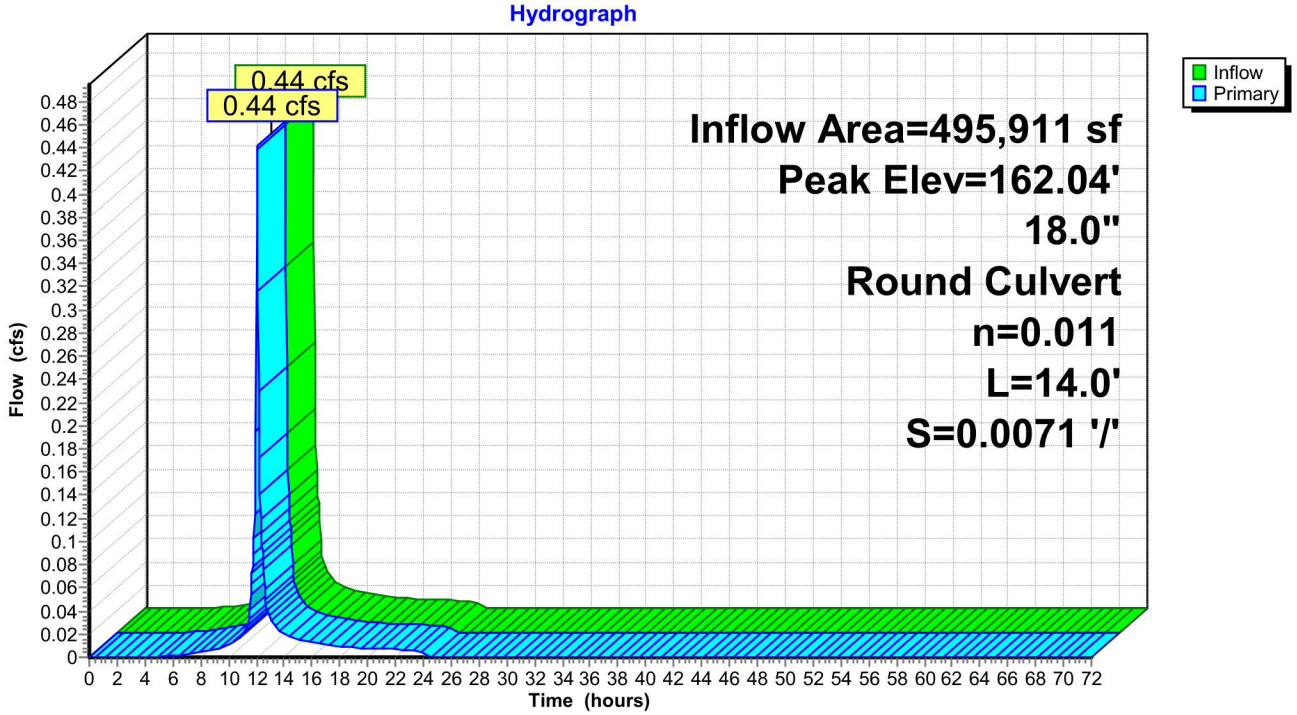
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Outflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Routed to Pond EX-2 : EX. CB #2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.04' @ 12.04 hrs
Flood Elev= 164.02'

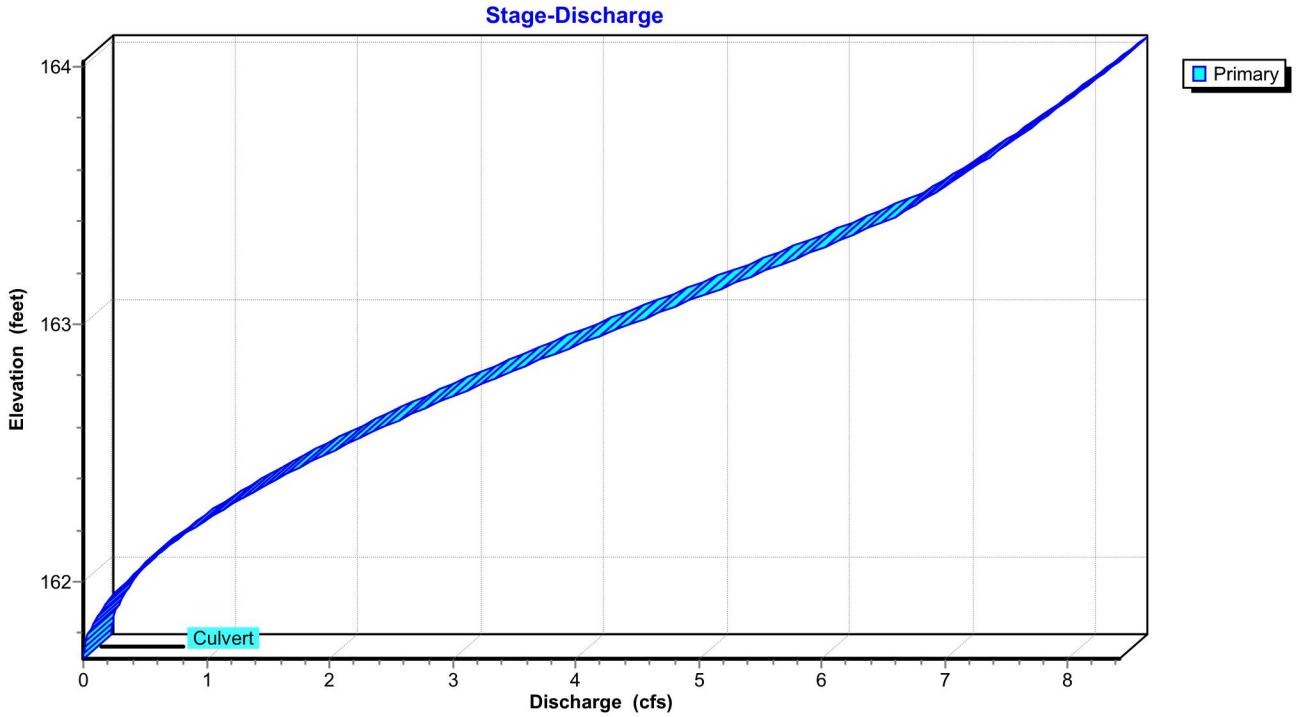
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.70' | **18.0" Round Culvert**<br>L= 14.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.70' / 161.60' S= 0.0071 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.43 cfs @ 12.04 hrs HW=162.04' (Free Discharge)
**1=Culvert** (Barrel Controls 0.43 cfs @ 2.18 fps)

### Pond EX-1: EX. CB 1



## Pond EX-1: EX. CB 1



## Stage-Area-Storage for Pond EX-1: EX. CB 1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.70 | **0** | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | 163.98 | 0 |
| 161.92 | 0 | 162.96 | 0 | 164.00 | 0 |
| 161.94 | 0 | 162.98 | 0 | 164.02 | 0 |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |
| 162.54 | 0 | 163.58 | 0 | | |
| 162.56 | 0 | 163.60 | 0 | | |
| 162.58 | 0 | 163.62 | 0 | | |
| 162.60 | 0 | 163.64 | 0 | | |
| 162.62 | 0 | 163.66 | 0 | | |
| 162.64 | 0 | 163.68 | 0 | | |
| 162.66 | 0 | 163.70 | 0 | | |
| 162.68 | 0 | 163.72 | 0 | | |
| 162.70 | 0 | 163.74 | 0 | | |
| 162.72 | 0 | 163.76 | 0 | | |

## Summary for Pond EX-2: EX. CB #2

[79] Warning: Submerged Pond EX-1 Primary device # 1 INLET by 0.16'

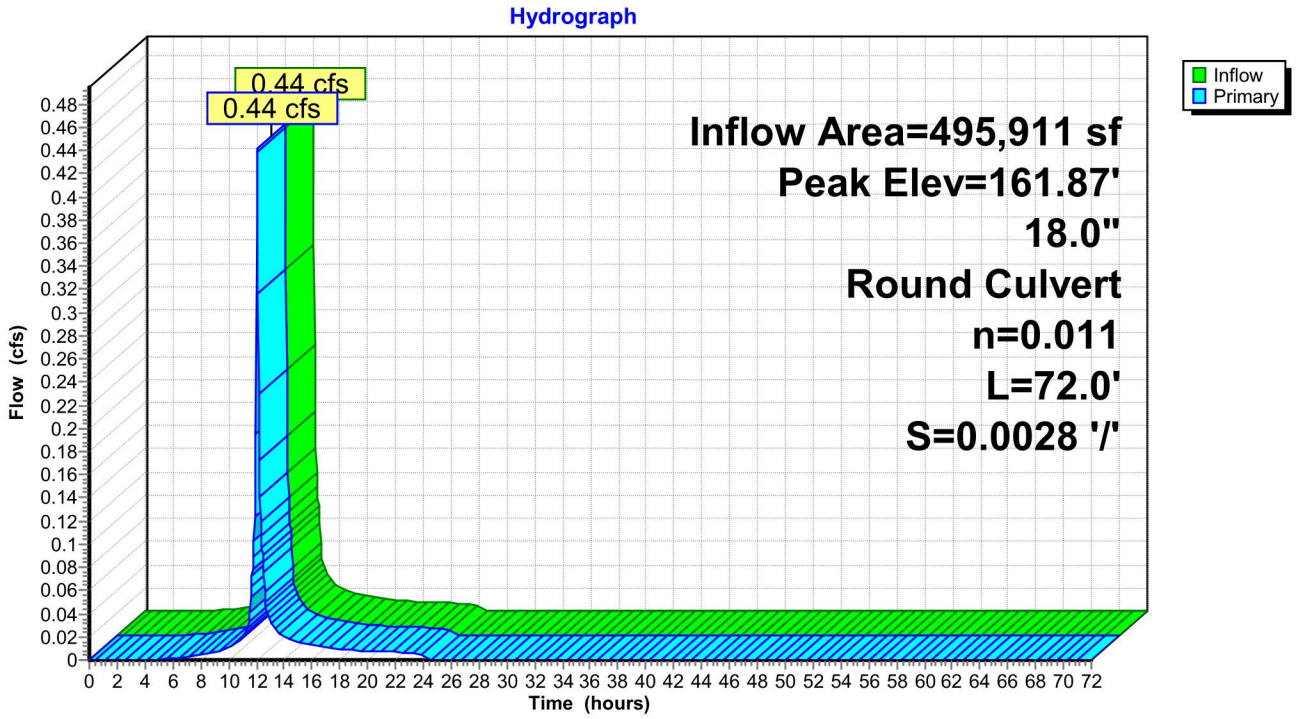
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Outflow = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.44 cfs @ 12.04 hrs, Volume= 1,245 cf
Routed to Pond DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 161.87' @ 12.04 hrs
Flood Elev= 163.96'

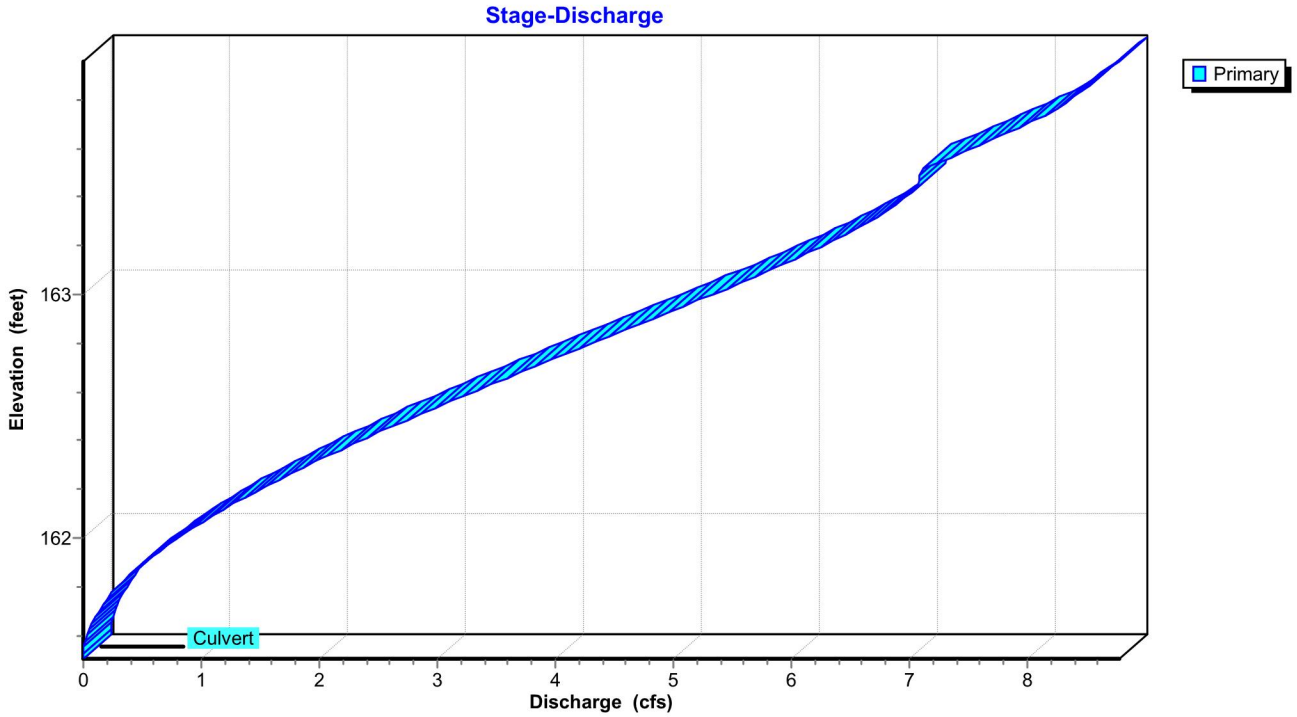
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.50' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.50' / 161.30' S= 0.0028 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.43 cfs @ 12.04 hrs HW=161.86' (Free Discharge)
**1=Culvert** (Barrel Controls 0.43 cfs @ 1.99 fps)

### Pond EX-2: EX. CB #2



## Pond EX-2: EX. CB #2



## Stage-Area-Storage for Pond EX-2: EX. CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.50 | **0** | 162.54 | 0 | 163.58 | 0 |
| 161.52 | 0 | 162.56 | 0 | 163.60 | 0 |
| 161.54 | 0 | 162.58 | 0 | 163.62 | 0 |
| 161.56 | 0 | 162.60 | 0 | 163.64 | 0 |
| 161.58 | 0 | 162.62 | 0 | 163.66 | 0 |
| 161.60 | 0 | 162.64 | 0 | 163.68 | 0 |
| 161.62 | 0 | 162.66 | 0 | 163.70 | 0 |
| 161.64 | 0 | 162.68 | 0 | 163.72 | 0 |
| 161.66 | 0 | 162.70 | 0 | 163.74 | 0 |
| 161.68 | 0 | 162.72 | 0 | 163.76 | 0 |
| 161.70 | 0 | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |

## Summary for Pond IB-1: INFILTRATION BASIN 1

Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 1.55" for 2-yr event
Inflow = 11.22 cfs @ 12.18 hrs, Volume= 63,028 cf
Outflow = 9.55 cfs @ 12.31 hrs, Volume= 63,028 cf, Atten= 15%, Lag= 8.0 min
Discarded = 9.55 cfs @ 12.31 hrs, Volume= 63,028 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 160.71' @ 12.31 hrs Surf.Area= 6,687 sf Storage= 1,371 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.8 min ( 828.1 - 827.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 160.50' | 50,670 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

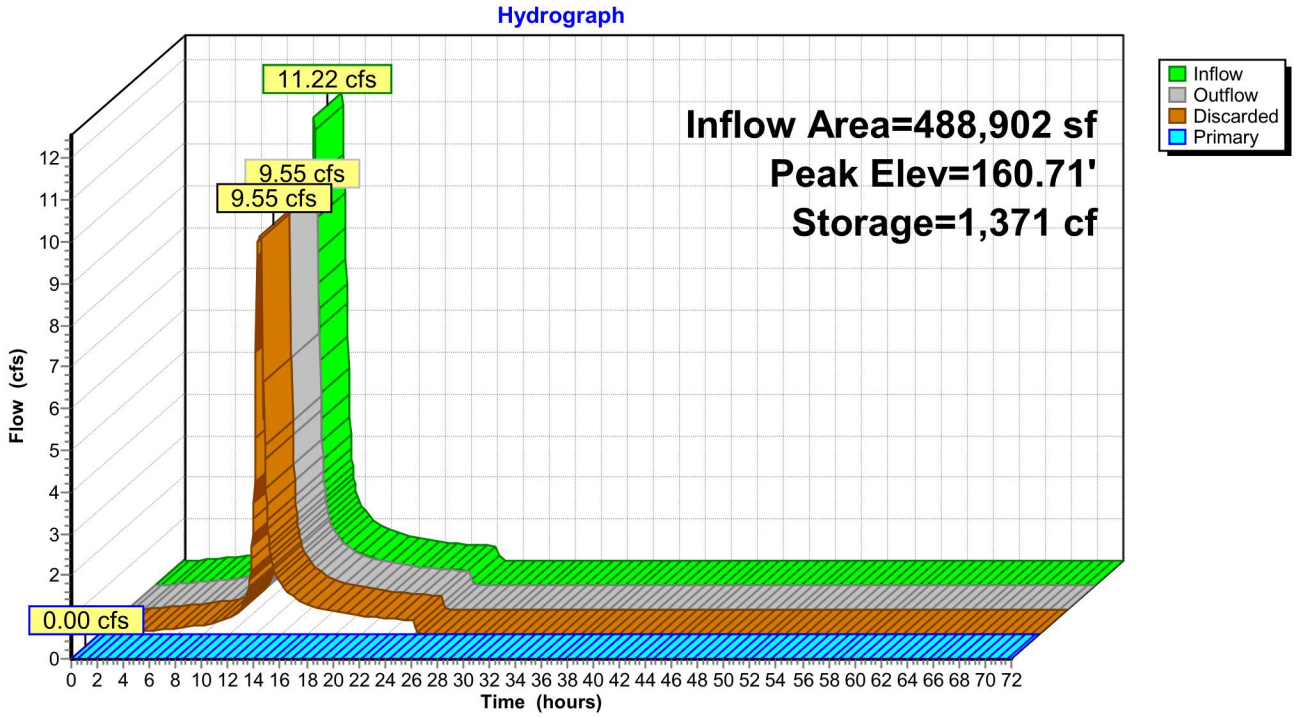
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 160.50 | 6,535 | 0 | 0 |
| 161.00 | 6,901 | 3,359 | 3,359 |
| 162.00 | 7,653 | 7,277 | 10,636 |
| 163.00 | 8,772 | 8,213 | 18,849 |
| 164.00 | 9,753 | 9,263 | 28,111 |
| 165.00 | 17,429 | 13,591 | 41,702 |
| 165.50 | 18,442 | 8,968 | 50,670 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 160.50' | **61.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 163.15' | **15.0" Round Culvert**<br>L= 70.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.15' / 162.80' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

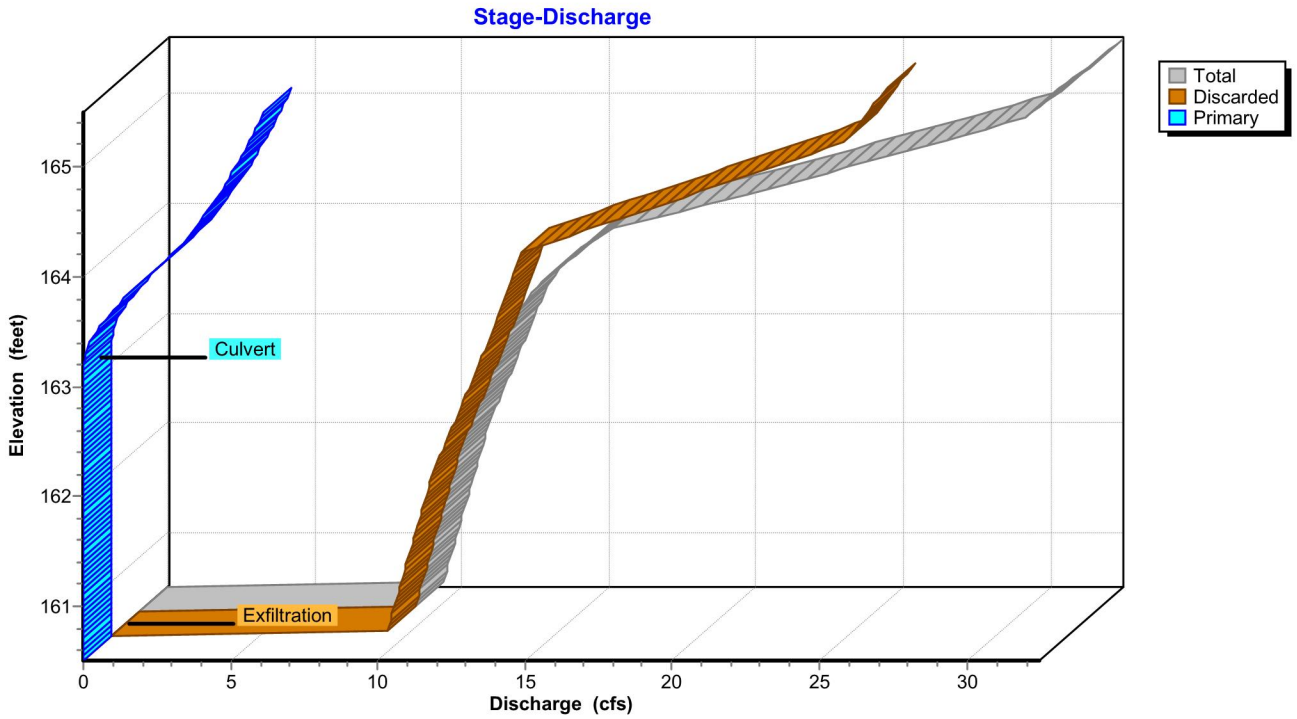
**Discarded OutFlow** Max=9.55 cfs @ 12.31 hrs HW=160.71' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 9.55 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=160.50' (Free Discharge)
↑—**2=Culvert** ( Controls 0.00 cfs)

## Pond IB-1: INFILTRATION BASIN 1




## Pond IB-1: INFILTRATION BASIN 1



## Stage-Area-Storage for Pond IB-1: INFILTRATION BASIN 1

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 160.50 | 6,535 | 0 |
| 160.55 | 6,572 | 328 |
| 160.60 | 6,608 | 657 |
| 160.65 | 6,645 | 988 |
| 160.70 | 6,681 | 1,322 |
| 160.75 | 6,718 | 1,657 |
| 160.80 | 6,755 | 1,993 |
| 160.85 | 6,791 | 2,332 |
| 160.90 | 6,828 | 2,673 |
| 160.95 | 6,864 | 3,015 |
| 161.00 | 6,901 | 3,359 |
| 161.05 | 6,939 | 3,705 |
| 161.10 | 6,976 | 4,053 |
| 161.15 | 7,014 | 4,403 |
| 161.20 | 7,051 | 4,754 |
| 161.25 | 7,089 | 5,108 |
| 161.30 | 7,127 | 5,463 |
| 161.35 | 7,164 | 5,820 |
| 161.40 | 7,202 | 6,180 |
| 161.45 | 7,239 | 6,541 |
| 161.50 | 7,277 | 6,904 |
| 161.55 | 7,315 | 7,268 |
| 161.60 | 7,352 | 7,635 |
| 161.65 | 7,390 | 8,004 |
| 161.70 | 7,427 | 8,374 |
| 161.75 | 7,465 | 8,746 |
| 161.80 | 7,503 | 9,120 |
| 161.85 | 7,540 | 9,497 |
| 161.90 | 7,578 | 9,874 |
| 161.95 | 7,615 | 10,254 |
| 162.00 | 7,653 | 10,636 |
| 162.05 | 7,709 | 11,020 |
| 162.10 | 7,765 | 11,407 |
| 162.15 | 7,821 | 11,797 |
| 162.20 | 7,877 | 12,189 |
| 162.25 | 7,933 | 12,584 |
| 162.30 | 7,989 | 12,982 |
| 162.35 | 8,045 | 13,383 |
| 162.40 | 8,101 | 13,787 |
| 162.45 | 8,157 | 14,193 |
| 162.50 | 8,213 | 14,602 |
| 162.55 | 8,268 | 15,014 |
| 162.60 | 8,324 | 15,429 |
| 162.65 | 8,380 | 15,847 |
| 162.70 | 8,436 | 16,267 |
| 162.75 | 8,492 | 16,690 |
| 162.80 | 8,548 | 17,116 |
| 162.85 | 8,604 | 17,545 |
| 162.90 | 8,660 | 17,977 |
| 162.95 | 8,716 | 18,411 |
| 163.00 | 8,772 | 18,849 |
| 163.05 | 8,821 | 19,288 |
| 163.10 | 8,870 | 19,731 |
| 163.15 | 8,919 | 20,175 |
| 163.20 | 8,968 | 20,623 |
| 163.25 | 9,017 | 21,072 |
| 163.30 | 9,066 | 21,524 |
| 163.35 | 9,115 | 21,979 |
| 163.40 | 9,164 | 22,436 |
| 163.45 | 9,213 | 22,895 |
| 163.50 | 9,263 | 23,357 |
| 163.55 | 9,312 | 23,821 |
| 163.60 | 9,361 | 24,288 |
| 163.65 | 9,410 | 24,758 |
| 163.70 | 9,459 | 25,229 |
| 163.75 | 9,508 | 25,703 |
| 163.80 | 9,557 | 26,180 |
| 163.85 | 9,606 | 26,659 |
| 163.90 | 9,655 | 27,141 |
| 163.95 | 9,704 | 27,625 |
| 164.00 | 9,753 | 28,111 |
| 164.05 | 10,137 | 28,608 |
| 164.10 | 10,521 | 29,125 |
| 164.15 | 10,904 | 29,660 |
| 164.20 | 11,288 | 30,215 |
| 164.25 | 11,672 | 30,789 |
| 164.30 | 12,056 | 31,382 |
| 164.35 | 12,440 | 31,995 |
| 164.40 | 12,823 | 32,626 |
| 164.45 | 13,207 | 33,277 |
| 164.50 | 13,591 | 33,947 |
| 164.55 | 13,975 | 34,636 |
| 164.60 | 14,359 | 35,344 |
| 164.65 | 14,742 | 36,072 |
| 164.70 | 15,126 | 36,819 |
| 164.75 | 15,510 | 37,585 |
| 164.80 | 15,894 | 38,370 |
| 164.85 | 16,278 | 39,174 |
| 164.90 | 16,661 | 39,997 |
| 164.95 | 17,045 | 40,840 |
| 165.00 | 17,429 | 41,702 |
| 165.05 | 17,530 | 42,576 |
| 165.10 | 17,632 | 43,455 |
| 165.15 | 17,733 | 44,339 |
| 165.20 | 17,834 | 45,228 |
| 165.25 | 17,936 | 46,123 |
| 165.30 | 18,037 | 47,022 |
| 165.35 | 18,138 | 47,926 |
| 165.40 | 18,239 | 48,836 |
| 165.45 | 18,341 | 49,750 |
| 165.50 | **18,442** | **50,670** |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=76,401 sf 13.71% Impervious Runoff Depth=2.61"
Flow Length=397' Tc=17.6 min CN=80 Runoff=3.71 cfs 16,598 cf

**Subcatchment 2: DA-2** Runoff Area=108,319 sf 100.00% Impervious Runoff Depth=4.43"
Tc=6.0 min CN=98 Runoff=11.91 cfs 40,021 cf

**Subcatchment 3: DA-3** Runoff Area=193,351 sf 0.48% Impervious Runoff Depth=2.10"
Flow Length=336' Tc=18.1 min CN=74 Runoff=7.36 cfs 33,900 cf

**Subcatchment 4: DA-4** Runoff Area=36,951 sf 43.34% Impervious Runoff Depth=2.79"
Flow Length=178' Tc=8.8 min CN=82 Runoff=2.51 cfs 8,578 cf

**Subcatchment 5: DA-5** Runoff Area=7,317 sf 86.07% Impervious Runoff Depth=3.98"
Tc=6.0 min CN=94 Runoff=0.77 cfs 2,428 cf

**Subcatchment 6: DA-6** Runoff Area=9,667 sf 76.56% Impervious Runoff Depth=3.66"
Tc=6.0 min CN=91 Runoff=0.96 cfs 2,950 cf

**Subcatchment 7: DA-7** Runoff Area=8,414 sf 88.44% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=96 Runoff=0.91 cfs 2,948 cf

**Subcatchment 8: DA-8** Runoff Area=7,009 sf 71.29% Impervious Runoff Depth=3.56"
Tc=6.0 min CN=90 Runoff=0.68 cfs 2,079 cf

**Subcatchment 9: DA-9** Runoff Area=9,188 sf 85.40% Impervious Runoff Depth=3.98"
Tc=6.0 min CN=94 Runoff=0.96 cfs 3,049 cf

**Subcatchment 10: DA-10** Runoff Area=7,734 sf 92.94% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=96 Runoff=0.83 cfs 2,710 cf

**Subcatchment 11: DA-11** Runoff Area=129,794 sf 3.57% Impervious Runoff Depth=1.95"
Flow Length=253' Tc=17.0 min CN=72 Runoff=4.66 cfs 21,058 cf

**Subcatchment 12: DA-12** Runoff Area=15,118 sf 0.00% Impervious Runoff Depth=2.52"
Flow Length=288' Tc=18.9 min CN=79 Runoff=0.69 cfs 3,175 cf

**Pond 2P: Turf Field Storage** Peak Elev=165.97' Storage=5,151 cf Inflow=11.91 cfs 40,021 cf
12.0" Round Culvert n=0.012 L=107.0' S=0.0050 '/' Outflow=5.51 cfs 40,013 cf

**Pond 3P: (new Pond)** Peak Elev=162.80' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.011 L=221.0' S=0.0050 '/' Outflow=0.00 cfs 0 cf

**Pond 4P: FRENCH DRAIN** Inflow=0.69 cfs 3,175 cf
Primary=0.69 cfs 3,175 cf

**Pond CB#1: CB #1** Peak Elev=162.54' Inflow=0.68 cfs 2,079 cf
15.0" Round Culvert n=0.011 L=68.0' S=0.0103 '/' Outflow=0.68 cfs 2,079 cf

**Pond CB#2: CB #2** Peak Elev=163.36' Inflow=0.96 cfs 3,049 cf
15.0" Round Culvert n=0.011 L=122.0' S=0.0052 '/' Outflow=0.96 cfs 3,049 cf

**Pond CB#3: CB #3** Peak Elev=162.95' Inflow=1.80 cfs 5,759 cf
15.0" Round Culvert n=0.011 L=100.0' S=0.0050 '/' Outflow=1.80 cfs 5,759 cf

**Pond CB#4: CB #4** Peak Elev=164.97' Inflow=0.77 cfs 2,428 cf
15.0" Round Culvert n=0.011 L=118.0' S=0.0051 '/' Outflow=0.77 cfs 2,428 cf

**Pond CB#5: CB #5** Peak Elev=164.33' Inflow=1.73 cfs 5,379 cf
18.0" Round Culvert n=0.011 L=93.0' S=0.0051 '/' Outflow=1.73 cfs 5,379 cf

**Pond CB#6: CB #6** Peak Elev=164.04' Inflow=2.63 cfs 8,327 cf
18.0" Round Culvert n=0.011 L=85.0' S=0.0051 '/' Outflow=2.63 cfs 8,327 cf

**Pond DP-1: DP-1** Peak Elev=162.27' Inflow=3.18 cfs 10,656 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=3.18 cfs 10,656 cf

**Pond DP-2: DP-2** Peak Elev=165.86' Inflow=3.71 cfs 16,598 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=3.71 cfs 16,598 cf

**Pond DP-3: DP-3** Peak Elev=0.00'
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Primary=0.00 cfs 0 cf

**Pond EX-1: EX. CB 1** Peak Elev=162.14' Inflow=0.68 cfs 2,079 cf
18.0" Round Culvert n=0.011 L=14.0' S=0.0071 '/' Outflow=0.68 cfs 2,079 cf

**Pond EX-2: EX. CB #2** Peak Elev=161.96' Inflow=0.68 cfs 2,079 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0028 '/' Outflow=0.68 cfs 2,079 cf

**Pond IB-1: INFILTRATION BASIN 1** Peak Elev=162.15' Storage=11,834 cf Inflow=20.02 cfs 112,233 cf
Discarded=11.18 cfs 112,233 cf Primary=0.00 cfs 0 cf Outflow=11.18 cfs 112,233 cf

**Total Runoff Area = 609,263 sf Runoff Volume = 139,496 cf Average Runoff Depth = 2.75"**
**70.20% Pervious = 427,720 sf 29.80% Impervious = 181,543 sf**

## Summary for Subcatchment 1: DA-1

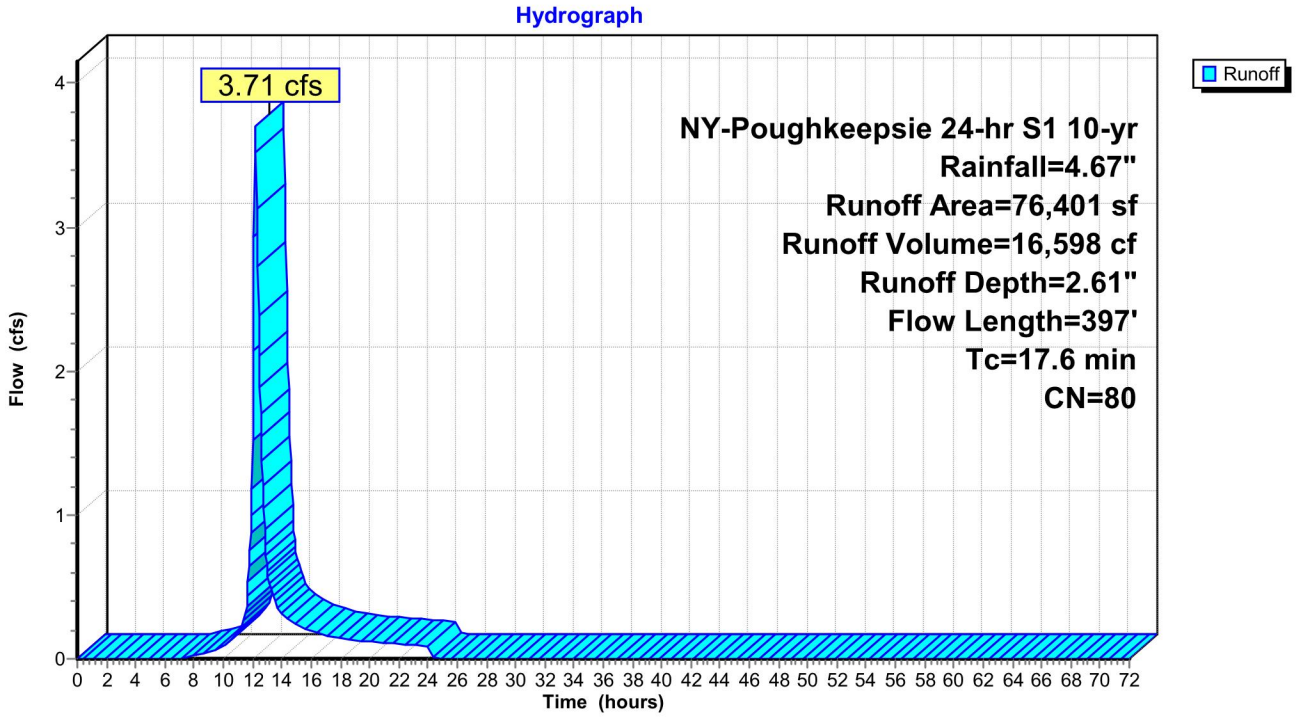
Runoff = 3.71 cfs @ 12.20 hrs, Volume= 16,598 cf, Depth= 2.61"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 3,133 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,203 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 10,478 | 98 | Paved parking, HSG C |
| 76,401 | 80 | Weighted Average |
| 65,923 | | 86.29% Pervious Area |
| 10,478 | | 13.71% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

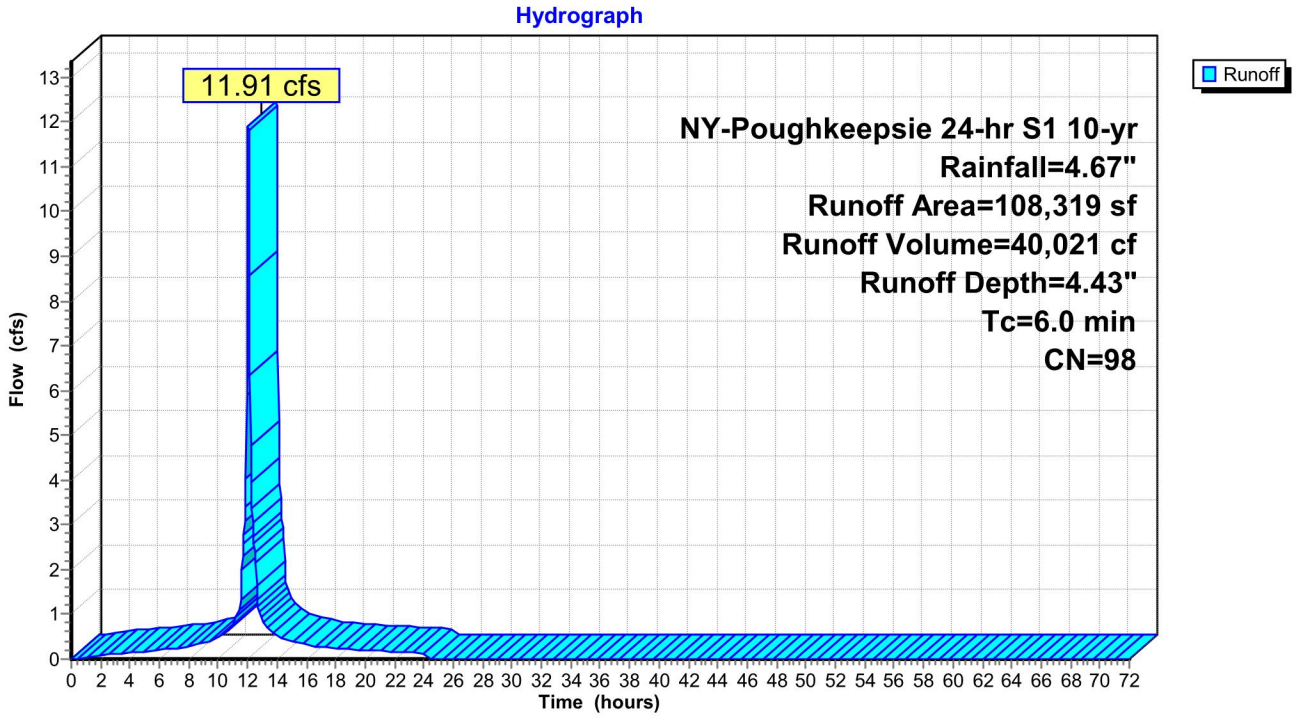
Runoff = 11.91 cfs @ 12.04 hrs, Volume= 40,021 cf, Depth= 4.43"
Routed to Pond 2P : Turf Field Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 100,932 | 98 | Turf Field |
| | 7,387 | 98 | Paved parking, HSG C |
| | 108,319 | 98 | Weighted Average |
| | 108,319 | | 100.00% Impervious Area |

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

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

Regraded Field with Underderain

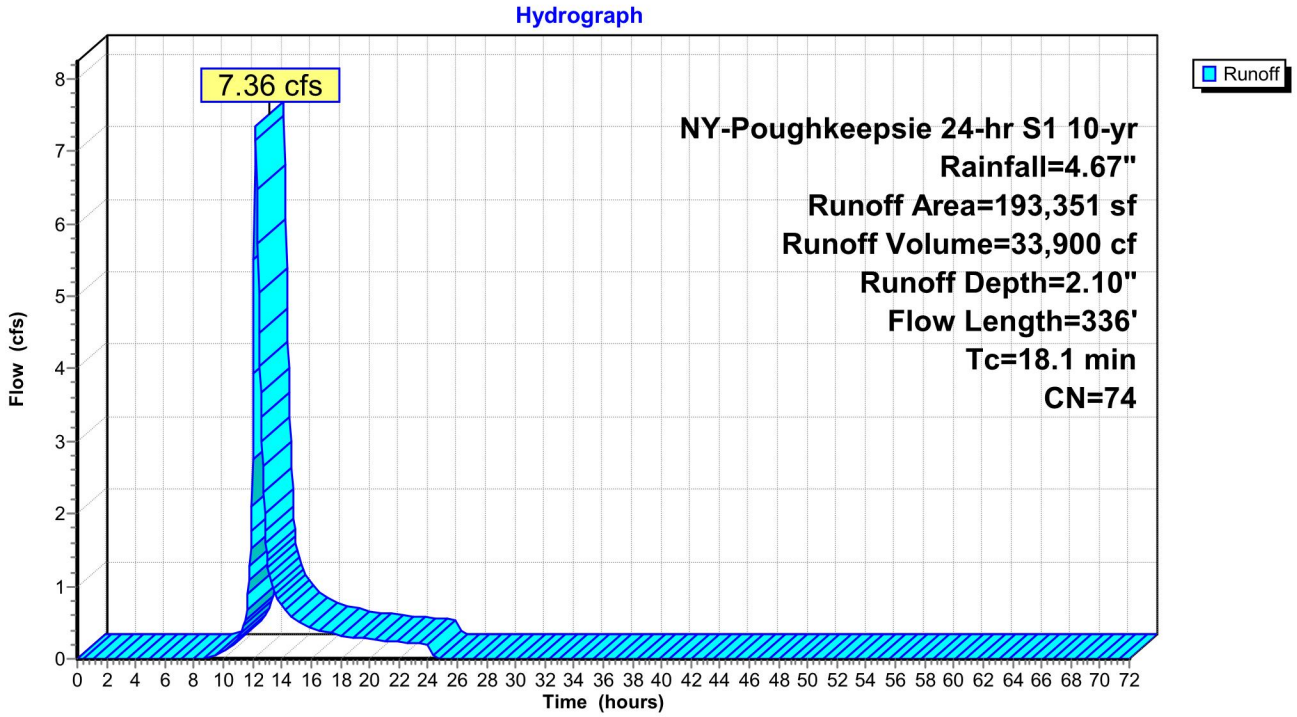
Runoff = 7.36 cfs @ 12.21 hrs, Volume= 33,900 cf, Depth= 2.10"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 96,152 | 74 | >75% Grass cover, Good, HSG C |
| 6,421 | 49 | 50-75% Grass cover, Fair, HSG A |
| 40,341 | 79 | 50-75% Grass cover, Fair, HSG C |
| 49,516 | 73 | Woods, Fair, HSG C |
| 921 | 98 | Paved parking, HSG C |
| 193,351 | 74 | Weighted Average |
| 192,430 | | 99.52% Pervious Area |
| 921 | | 0.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 1.3 | 106 | 0.0380 | 1.36 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 336 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Subcatchment 4: DA-4

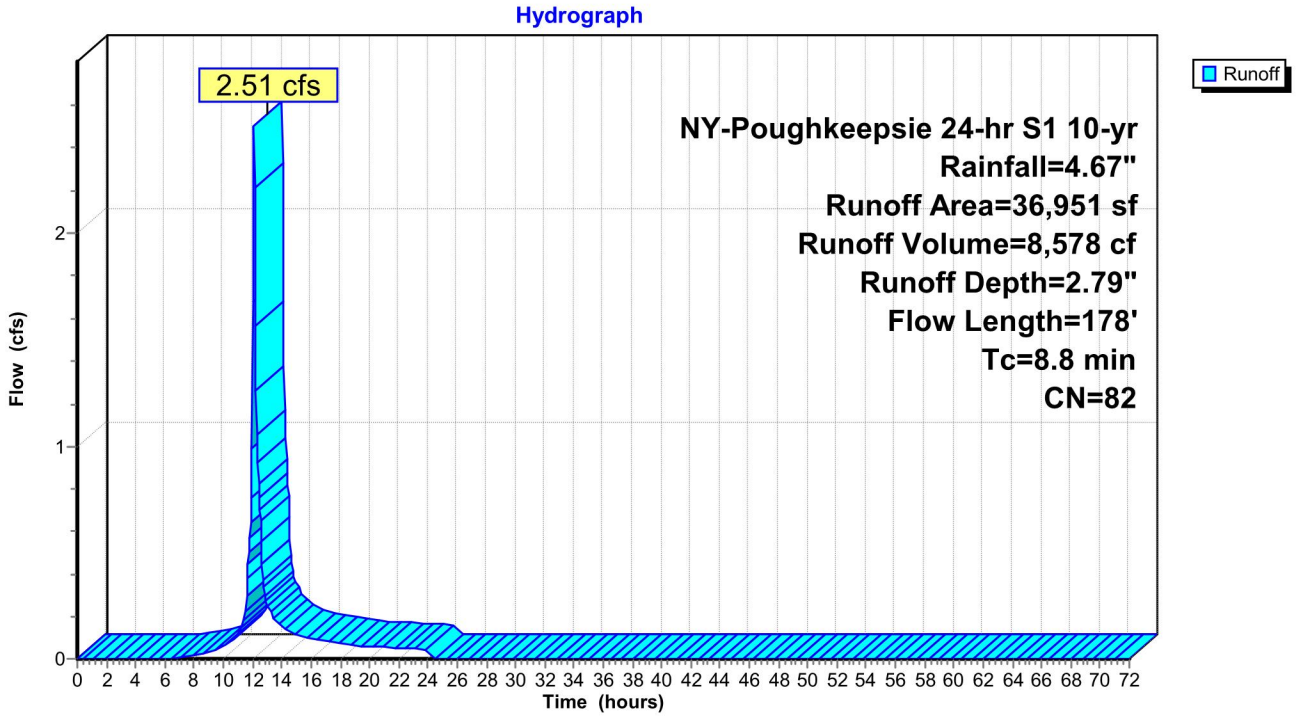
Runoff = 2.51 cfs @ 12.08 hrs, Volume= 8,578 cf, Depth= 2.79"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 20,936 | 69 | 50-75% Grass cover, Fair, HSG B |
| 16,015 | 98 | Paved parking, HSG B |
| 36,951 | 82 | Weighted Average |
| 20,936 | | 56.66% Pervious Area |
| 16,015 | | 43.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.5 | 100 | 0.0400 | 0.22 | | **Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.16" |
| 1.3 | 78 | 0.0190 | 0.96 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 8.8 | 178 | Total | | | |

## Subcatchment 4: DA-4



## Summary for Subcatchment 5: DA-5

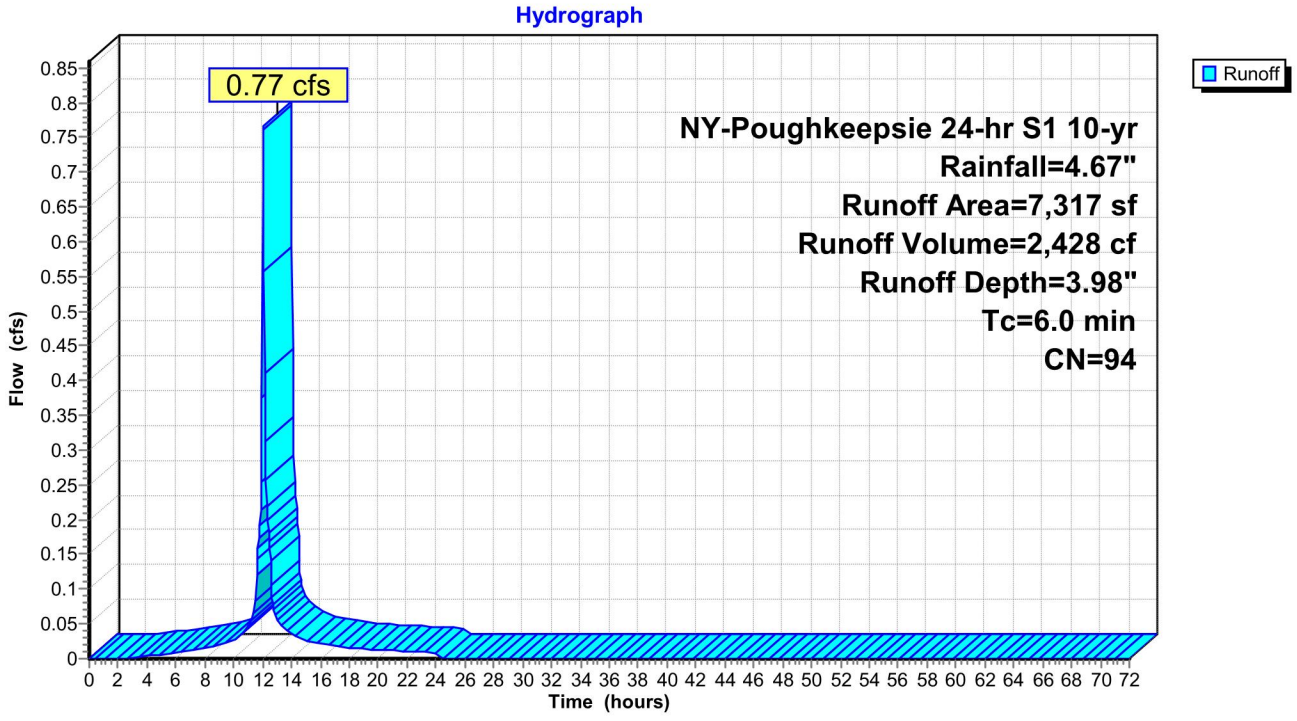
Runoff = 0.77 cfs @ 12.04 hrs, Volume= 2,428 cf, Depth= 3.98"
Routed to Pond CB#4 : CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 1,019 | 69 | 50-75% Grass cover, Fair, HSG B |
| 6,298 | 98 | Paved parking, HSG B |
| 7,317 | 94 | Weighted Average |
| 1,019 | | 13.93% Pervious Area |
| 6,298 | | 86.07% Impervious Area |

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

## Subcatchment 5: DA-5



## Summary for Subcatchment 6: DA-6

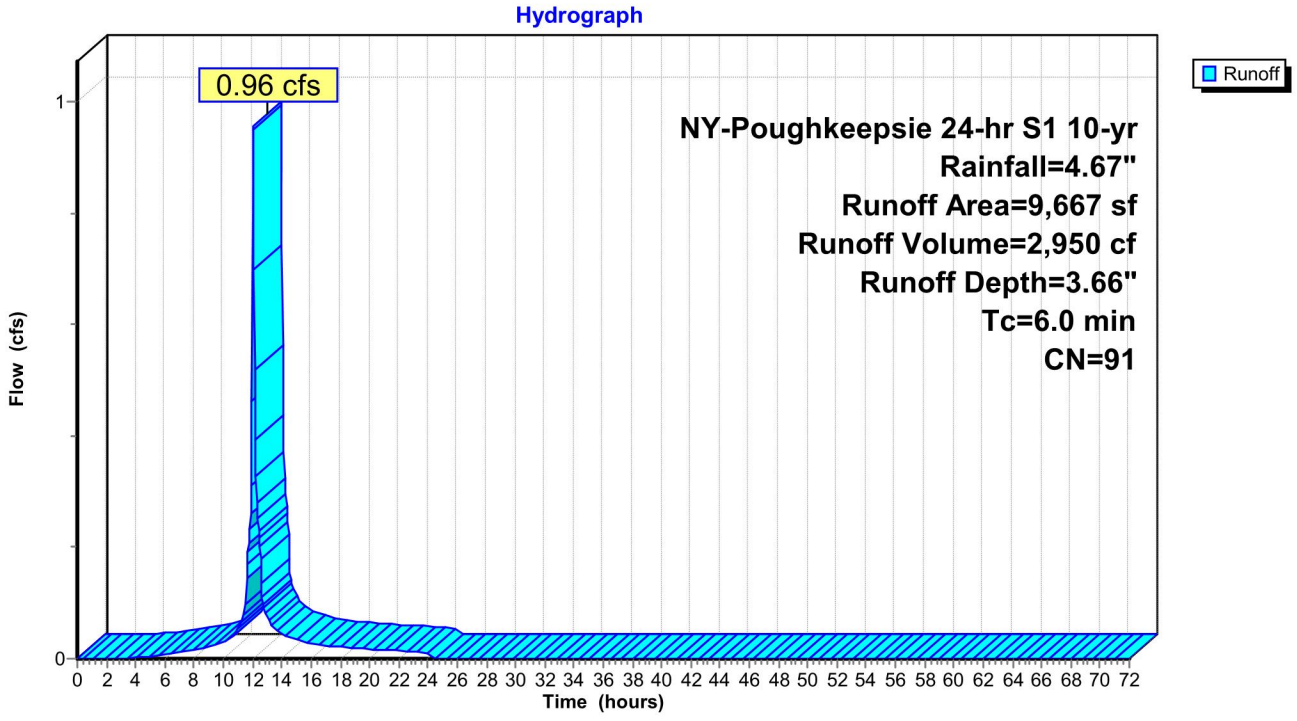
Runoff = 0.96 cfs @ 12.04 hrs, Volume= 2,950 cf, Depth= 3.66"
Routed to Pond CB#5 : CB #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 2,266 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,401 | 98 | Paved parking, HSG B |
| 9,667 | 91 | Weighted Average |
| 2,266 | | 23.44% Pervious Area |
| 7,401 | | 76.56% Impervious Area |

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

## Subcatchment 6: DA-6



## Summary for Subcatchment 7: DA-7

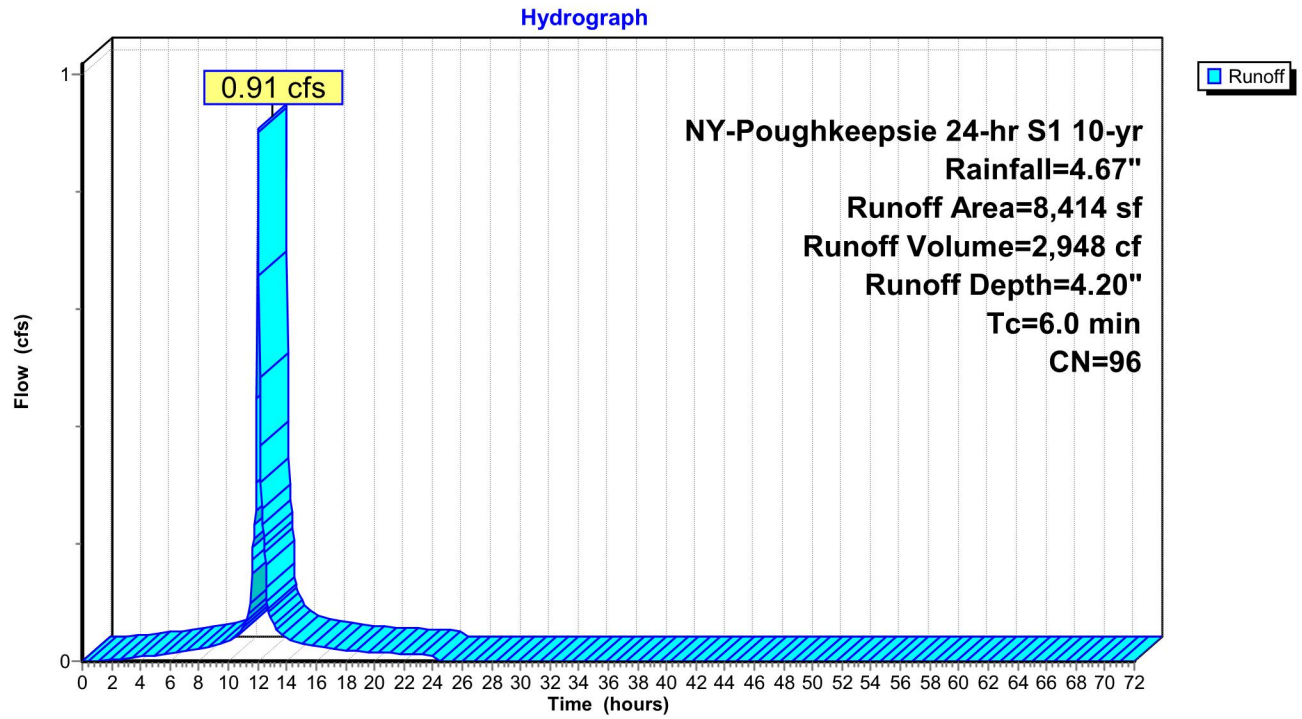
Runoff = 0.91 cfs @ 12.04 hrs, Volume= 2,948 cf, Depth= 4.20"
Routed to Pond CB#6 : CB #6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 46 | 69 | 50-75% Grass cover, Fair, HSG B |
| 927 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,441 | 98 | Paved parking, HSG C |
| 8,414 | 96 | Weighted Average |
| 973 | | 11.56% Pervious Area |
| 7,441 | | 88.44% Impervious Area |

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

## Subcatchment 7: DA-7



## Summary for Subcatchment 8: DA-8

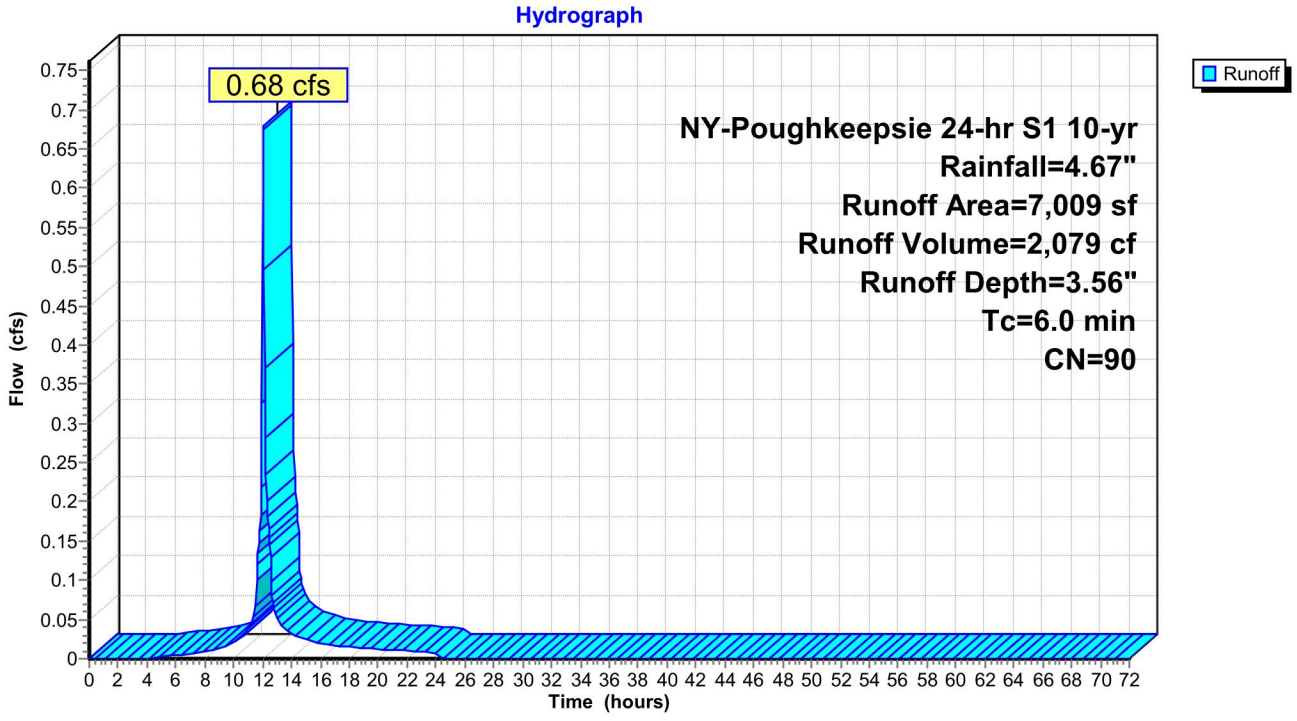
Runoff = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf, Depth= 3.56"
Routed to Pond CB#1 : CB #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 2,012 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,997 | 98 | Paved parking, HSG C |
| 7,009 | 90 | Weighted Average |
| 2,012 | | 28.71% Pervious Area |
| 4,997 | | 71.29% Impervious Area |

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

## Subcatchment 8: DA-8



## Summary for Subcatchment 9: DA-9

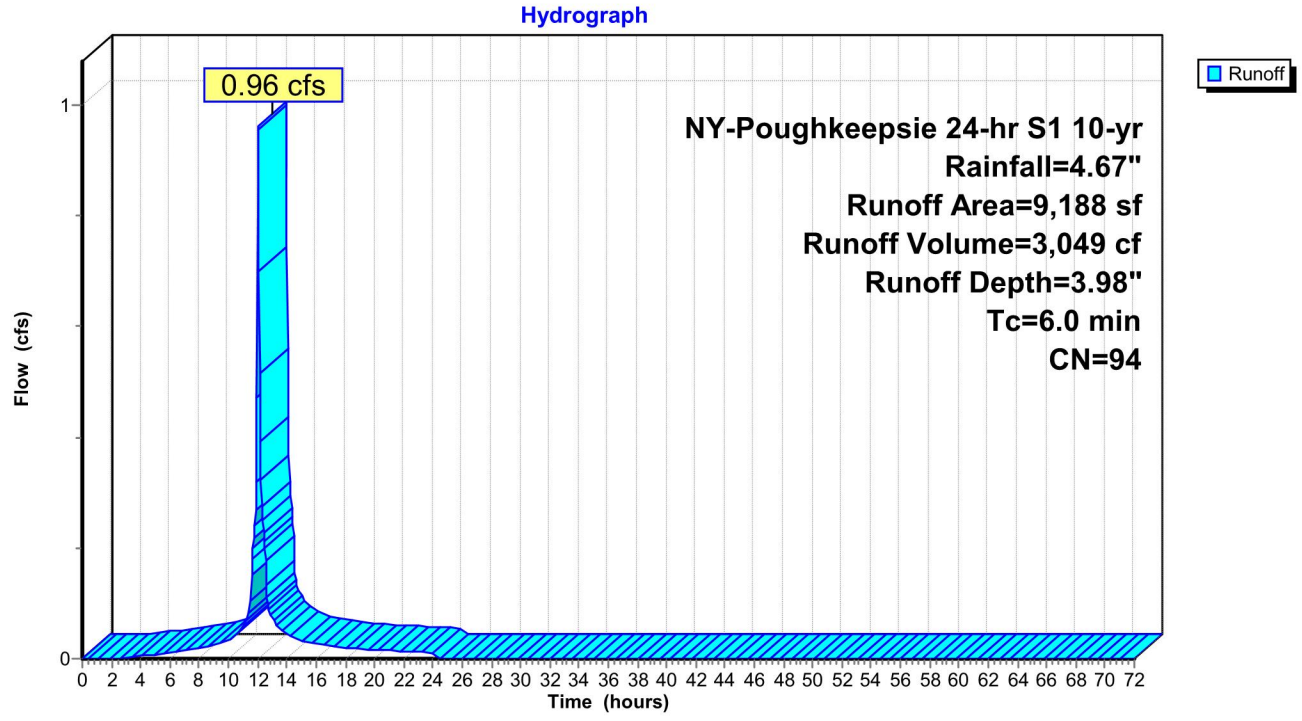
Runoff = 0.96 cfs @ 12.04 hrs, Volume= 3,049 cf, Depth= 3.98"
Routed to Pond CB#2 : CB #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 1,341 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,847 | 98 | Paved parking, HSG B |
| 9,188 | 94 | Weighted Average |
| 1,341 | | 14.60% Pervious Area |
| 7,847 | | 85.40% Impervious Area |

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

### Subcatchment 9: DA-9



## Summary for Subcatchment 10: DA-10

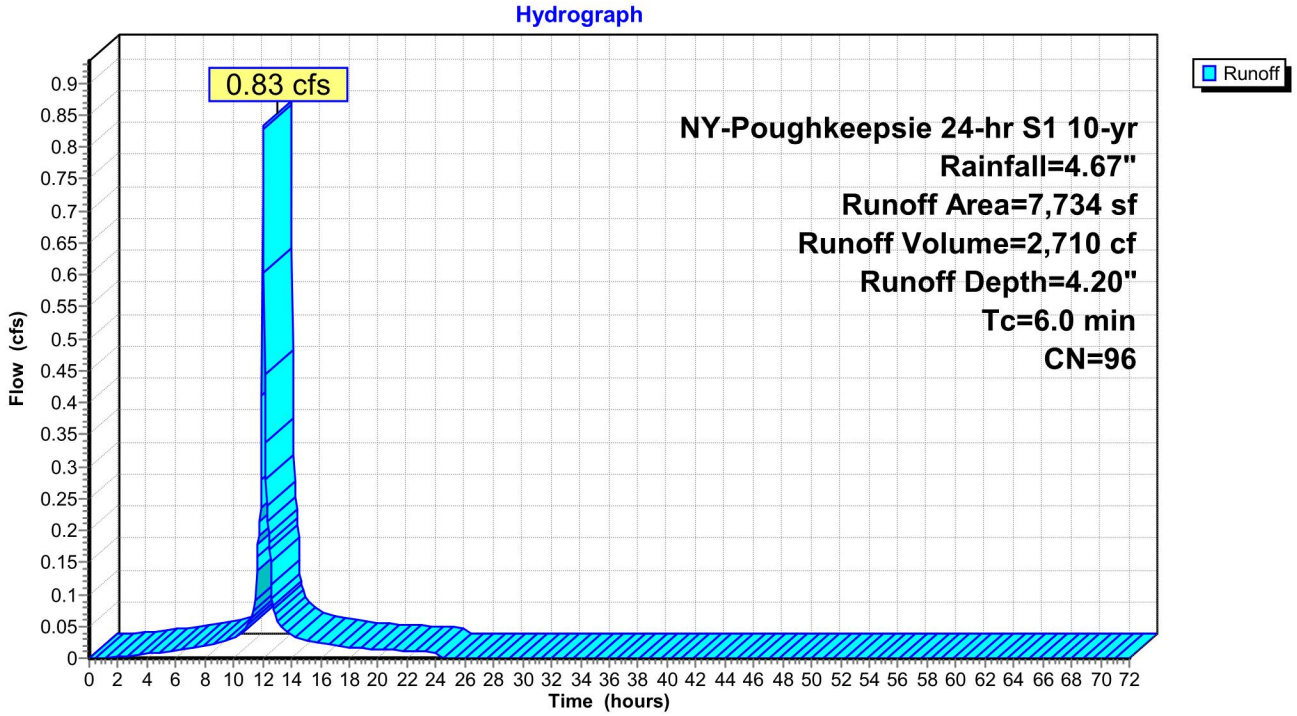
Runoff = 0.83 cfs @ 12.04 hrs, Volume= 2,710 cf, Depth= 4.20"
Routed to Pond CB#3 : CB #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 261 | 69 | 50-75% Grass cover, Fair, HSG B |
| 285 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,188 | 98 | Paved parking, HSG C |
| 7,734 | 96 | Weighted Average |
| 546 | | 7.06% Pervious Area |
| 7,188 | | 92.94% Impervious Area |

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

### Subcatchment 10: DA-10



## Summary for Subcatchment 11: DA-11

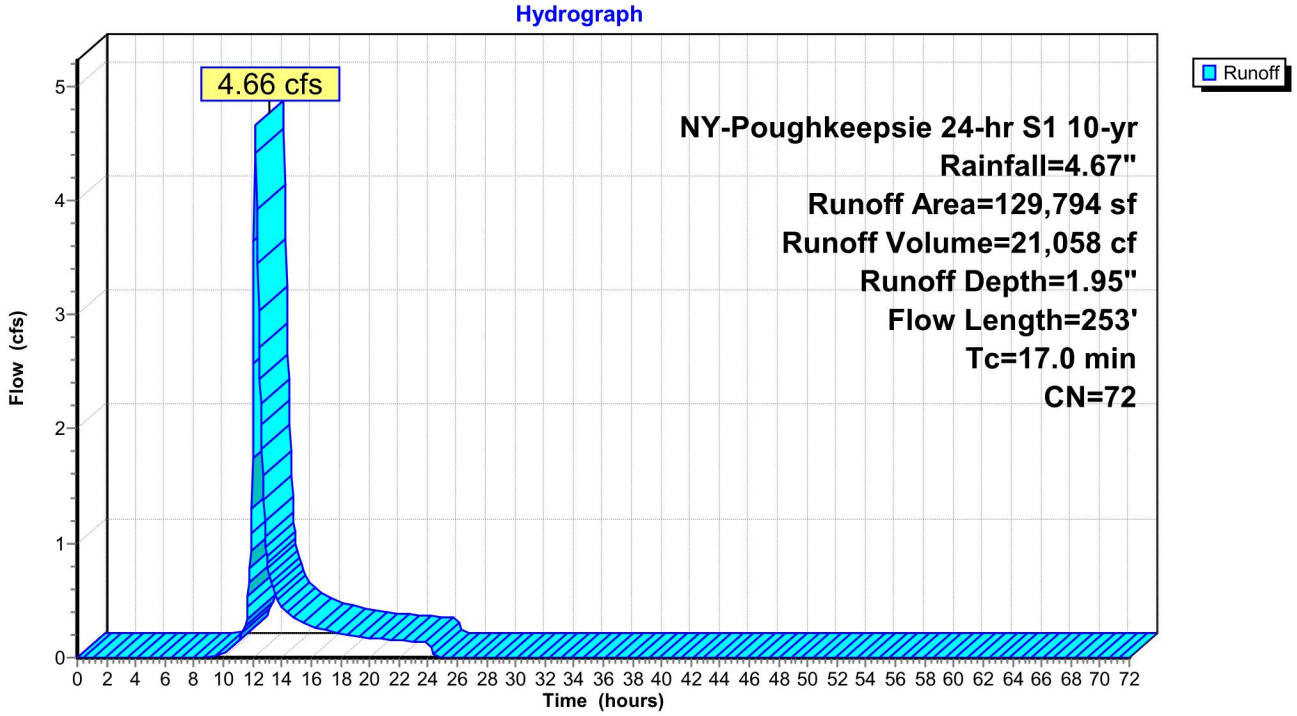
Runoff = 4.66 cfs @ 12.20 hrs, Volume= 21,058 cf, Depth= 1.95"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 12,385 | 49 | 50-75% Grass cover, Fair, HSG A |
| 26,029 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,362 | 60 | Woods, Fair, HSG B |
| 29,624 | 79 | 50-75% Grass cover, Fair, HSG C |
| 52,756 | 73 | Woods, Fair, HSG C |
| 4,638 | 98 | Paved parking, HSG C |
| 129,794 | 72 | Weighted Average |
| 125,156 | | 96.43% Pervious Area |
| 4,638 | | 3.57% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 14.2 | 100 | 0.0575 | 0.12 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 2.8 | 153 | 0.0340 | 0.92 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 17.0 | 253 | Total | | | |

## Subcatchment 11: DA-11



## Summary for Subcatchment 12: DA-12

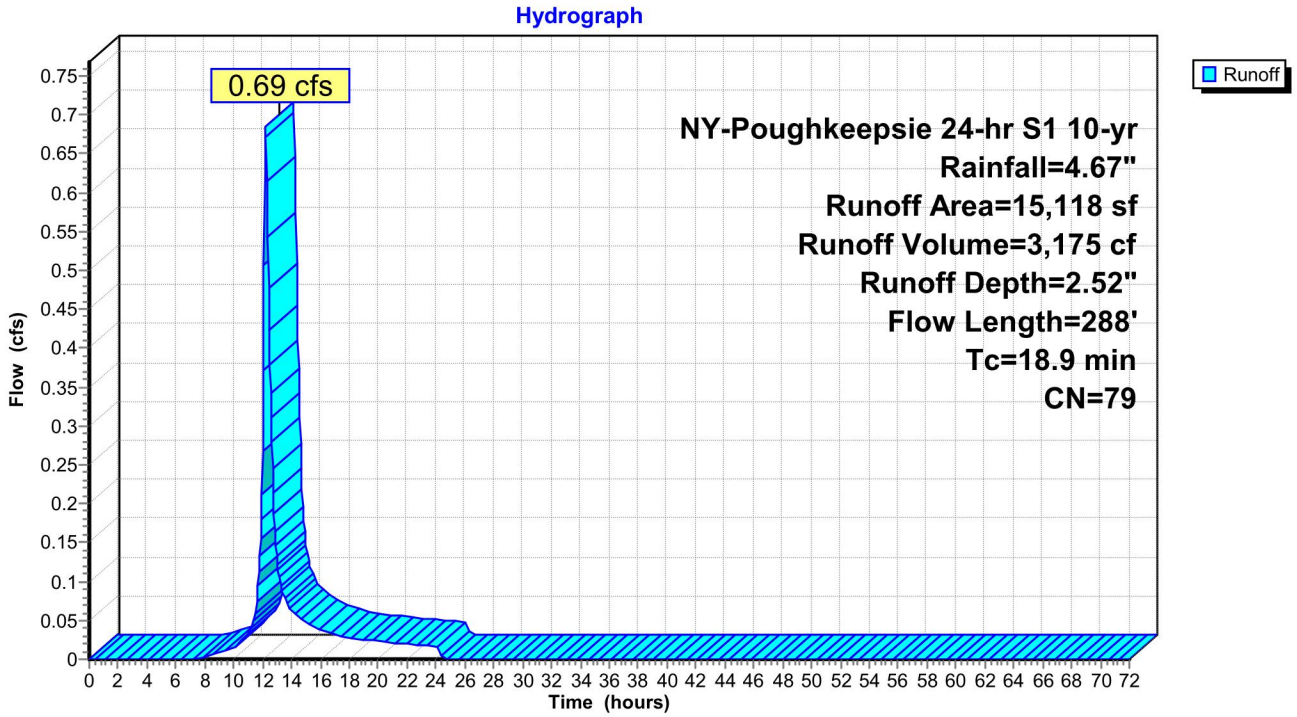
Runoff = 0.69 cfs @ 12.22 hrs, Volume= 3,175 cf, Depth= 2.52"
Routed to Pond 4P : FRENCH DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 10-yr Rainfall=4.67"

| Area (sf) | CN | Description |
|---|---|---|
| 14,997 | 79 | 50-75% Grass cover, Fair, HSG C |
| 121 | 73 | Woods, Fair, HSG C |
| 15,118 | 79 | Weighted Average |
| 15,118 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.0 | 150 | 0.0750 | 0.14 | | **Sheet Flow, A-B** Grass: Bermuda n= 0.410 P2= 3.16" |
| 0.9 | 138 | 0.1380 | 2.60 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 18.9 | 288 | Total | | | |

## Subcatchment 12: DA-12



## Summary for Pond 2P: Turf Field Storage

Inflow Area = 108,319 sf,100.00% Impervious, Inflow Depth = 4.43" for 10-yr event
Inflow = 11.91 cfs @ 12.04 hrs, Volume= 40,021 cf
Outflow = 5.51 cfs @ 12.18 hrs, Volume= 40,013 cf, Atten= 54%, Lag= 8.3 min
Primary = 5.51 cfs @ 12.18 hrs, Volume= 40,013 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.97' @ 12.18 hrs Surf.Area= 3,679 sf Storage= 5,151 cf

Plug-Flow detention time= 8.6 min calculated for 39,985 cf (100% of inflow)
Center-of-Mass det. time= 8.4 min ( 758.4 - 750.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.75' | 237 cf | **8" Pipe Trench (Irregular)** Listed below (Recalc)<br>684 cf Overall - 91 cf Embedded = 593 cf x 40.0% Voids |
| #2 | 163.00' | 69 cf | **8.0" Round 8" Collector** Inside #1<br>L= 197.0' S= 0.0050 '/'<br>91 cf Overall - 0.6" Wall Thickness = 69 cf |
| #3 | 161.93' | 6,068 cf | **12" Pipe Trench (Irregular)** Listed below (Recalc)<br>15,367 cf Overall - 197 cf Embedded = 15,170 cf x 40.0% Voids |
| #4 | 162.18' | 137 cf | **12.0" Round 12" Collector** Inside #3<br>L= 174.0' S= 0.0050 '/'<br>197 cf Overall - 1.2" Wall Thickness = 137 cf |
| #5 | 166.89' | 4,530 cf | **Field Stone (Irregular)** Listed below (Recalc)<br>11,326 cf Overall x 40.0% Voids |
| | | 11,041 cf | Total Available Storage |

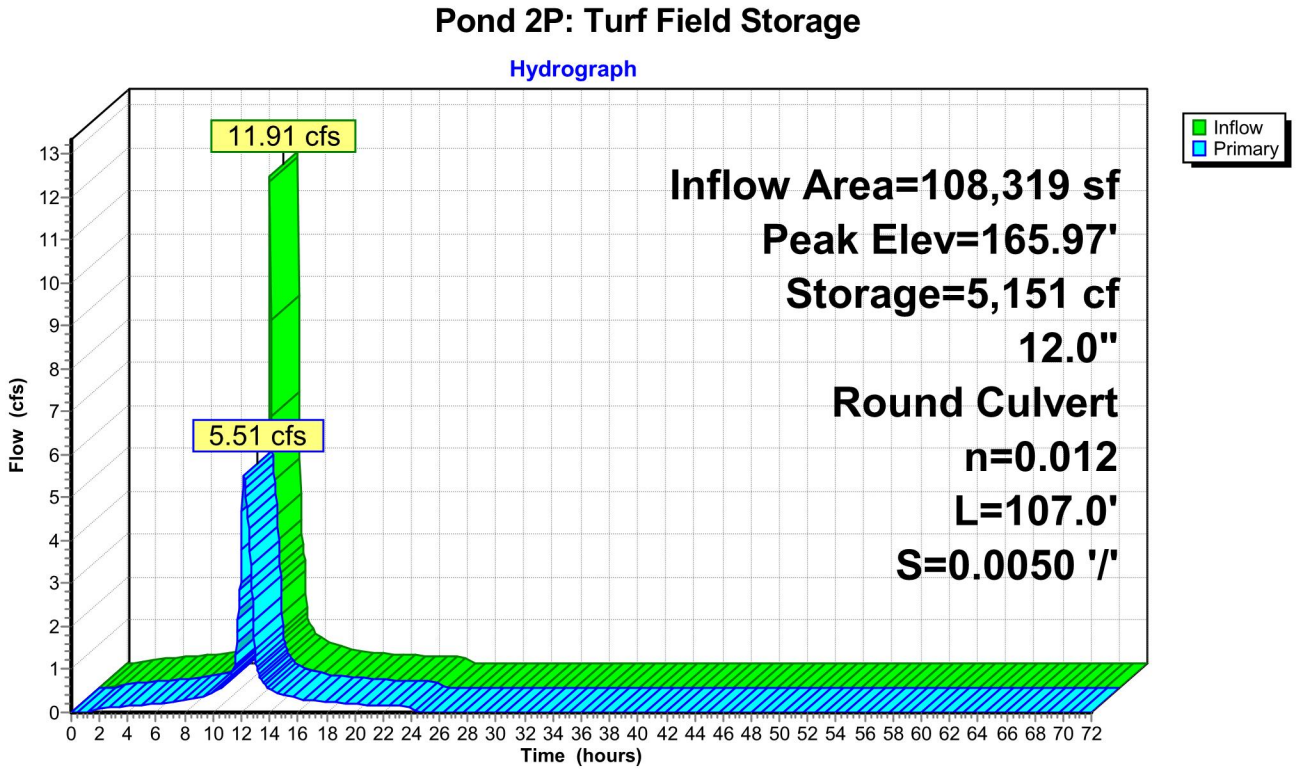
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 162.75 | 0 | 0.0 | 0 | 0 | 0 |
| 163.75 | 197 | 396.0 | 66 | 66 | 12,481 |
| 166.89 | 197 | 396.0 | 619 | 684 | 13,724 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 161.93 | 0 | 0.0 | 0 | 0 | 0 |
| 162.75 | 3,482 | 388.0 | 952 | 952 | 11,981 |
| 166.89 | 3,482 | 388.0 | 14,415 | 15,367 | 13,587 |

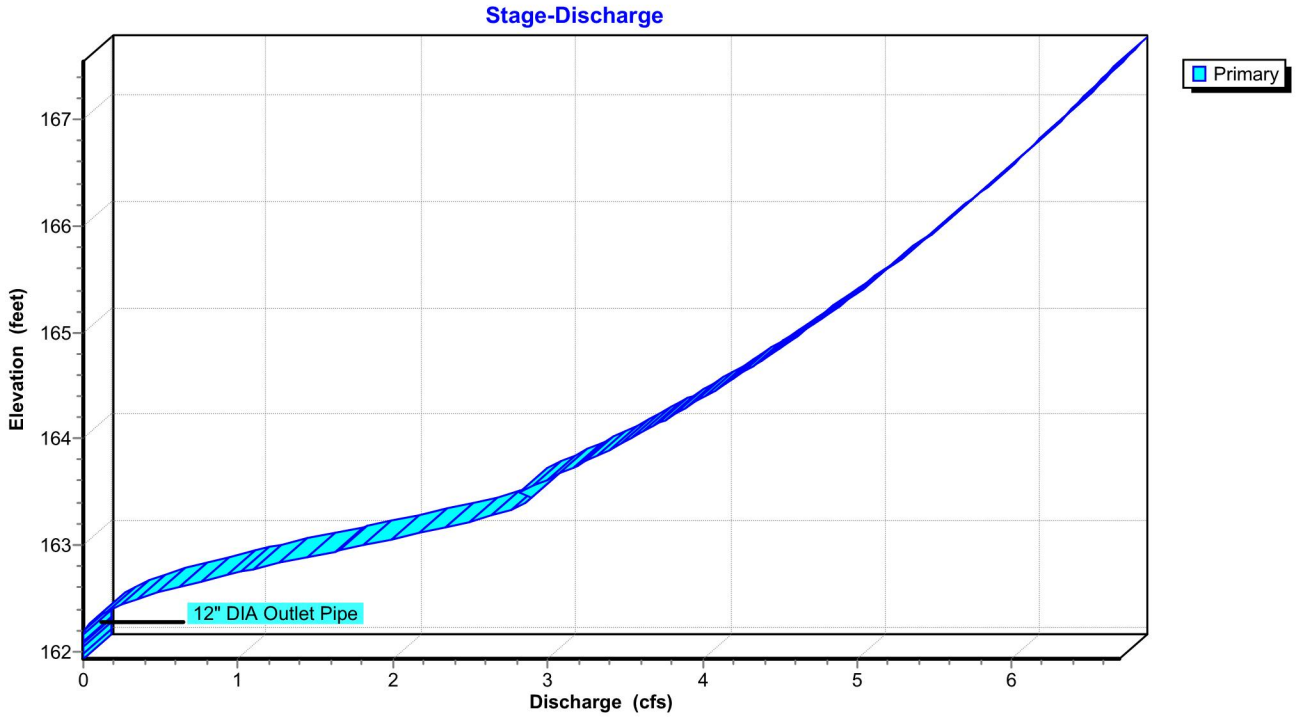
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 166.89 | 0 | 0.0 | 0 | 0 | 0 |
| 167.55 | 51,480 | 1,044.0 | 11,326 | 11,326 | 86,735 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.16' | **12.0" Round 12" DIA Outlet Pipe**<br>L= 107.0' CPP, square edge headwall, Ke= 0.500<br>Inlet / Outlet Invert= 162.16' / 161.63' S= 0.0050 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Primary OutFlow** Max=5.50 cfs @ 12.18 hrs HW=165.95' (Free Discharge)
**1=12" DIA Outlet Pipe** (Barrel Controls 5.50 cfs @ 7.00 fps)



## Pond 2P: Turf Field Storage



## Stage-Area-Storage for Pond 2P: Turf Field Storage

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.93 | 0 | 164.53 | 3,038 | 167.13 | 6,729 |
| 161.98 | 0 | 164.58 | 3,112 | 167.18 | 6,895 |
| 162.03 | 1 | 164.63 | 3,185 | 167.23 | 7,130 |
| 162.08 | 2 | 164.68 | 3,259 | 167.28 | 7,446 |
| 162.13 | 5 | 164.73 | 3,332 | 167.33 | 7,853 |
| 162.18 | 11 | 164.78 | 3,406 | 167.38 | 8,365 |
| 162.23 | 18 | 164.83 | 3,479 | 167.43 | 8,992 |
| 162.28 | 29 | 164.88 | 3,553 | 167.48 | 9,747 |
| 162.33 | 44 | 164.93 | 3,627 | 167.53 | **10,642** |
| 162.38 | 63 | 164.98 | 3,700 | | |
| 162.43 | 86 | 165.03 | 3,774 | | |
| 162.48 | 115 | 165.08 | 3,847 | | |
| 162.53 | 150 | 165.13 | 3,921 | | |
| 162.58 | 192 | 165.18 | 3,994 | | |
| 162.63 | 240 | 165.23 | 4,068 | | |
| 162.68 | 296 | 165.28 | 4,142 | | |
| 162.73 | 360 | 165.33 | 4,215 | | |
| 162.78 | 431 | 165.38 | 4,289 | | |
| 162.83 | 503 | 165.43 | 4,362 | | |
| 162.88 | 576 | 165.48 | 4,436 | | |
| 162.93 | 648 | 165.53 | 4,510 | | |
| 162.98 | 721 | 165.58 | 4,583 | | |
| 163.03 | 794 | 165.63 | 4,657 | | |
| 163.08 | 868 | 165.68 | 4,730 | | |
| 163.13 | 941 | 165.73 | 4,804 | | |
| 163.18 | 1,016 | 165.78 | 4,877 | | |
| 163.23 | 1,090 | 165.83 | 4,951 | | |
| 163.28 | 1,164 | 165.88 | 5,025 | | |
| 163.33 | 1,239 | 165.93 | 5,098 | | |
| 163.38 | 1,313 | 165.98 | 5,172 | | |
| 163.43 | 1,388 | 166.03 | 5,245 | | |
| 163.48 | 1,463 | 166.08 | 5,319 | | |
| 163.53 | 1,538 | 166.13 | 5,393 | | |
| 163.58 | 1,614 | 166.18 | 5,466 | | |
| 163.63 | 1,689 | 166.23 | 5,540 | | |
| 163.68 | 1,765 | 166.28 | 5,613 | | |
| 163.73 | 1,841 | 166.33 | 5,687 | | |
| 163.78 | 1,916 | 166.38 | 5,760 | | |
| 163.83 | 1,992 | 166.43 | 5,834 | | |
| 163.88 | 2,067 | 166.48 | 5,908 | | |
| 163.93 | 2,143 | 166.53 | 5,981 | | |
| 163.98 | 2,218 | 166.58 | 6,055 | | |
| 164.03 | 2,293 | 166.63 | 6,128 | | |
| 164.08 | 2,368 | 166.68 | 6,202 | | |
| 164.13 | 2,443 | 166.73 | 6,275 | | |
| 164.18 | 2,518 | 166.78 | 6,349 | | |
| 164.23 | 2,593 | 166.83 | 6,423 | | |
| 164.28 | 2,667 | 166.88 | 6,496 | | |
| 164.33 | 2,742 | 166.93 | 6,512 | | |
| 164.38 | 2,816 | 166.98 | 6,522 | | |
| 164.43 | 2,890 | 167.03 | 6,554 | | |
| 164.48 | 2,964 | 167.08 | 6,619 | | |

## Summary for Pond 3P: (new Pond)

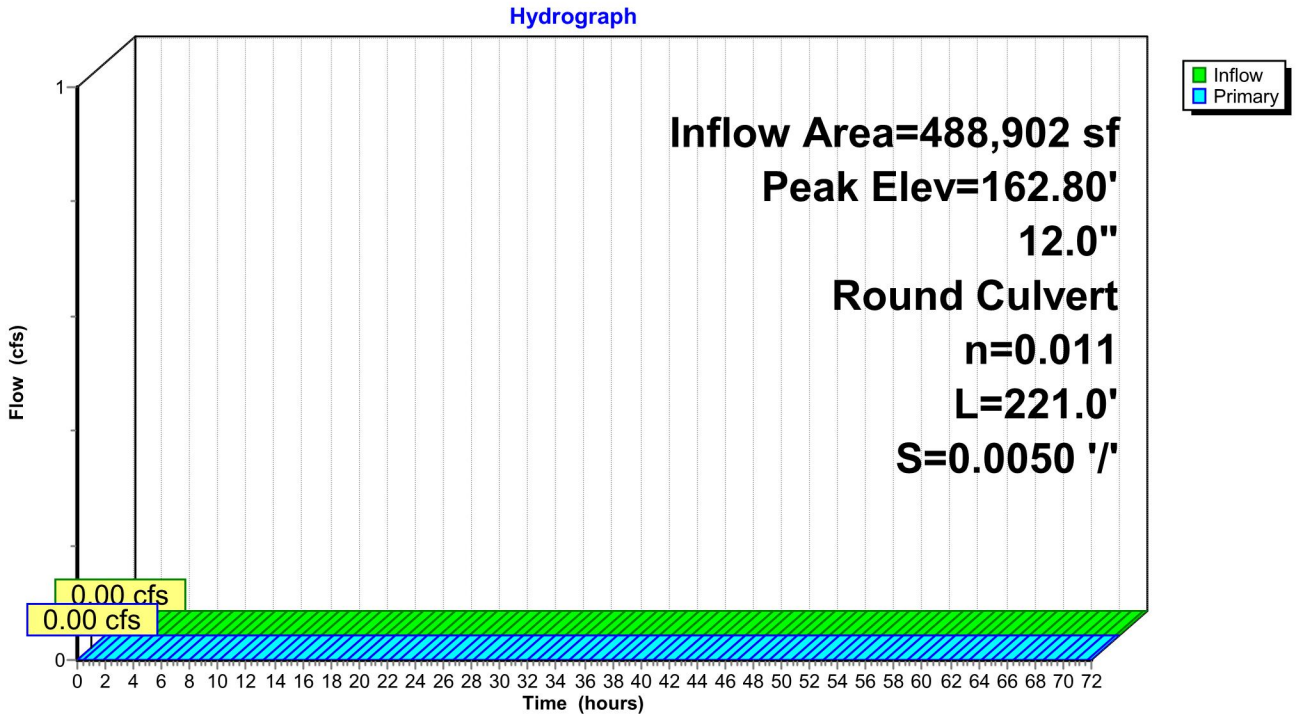
Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.80' @ 0.00 hrs
Flood Elev= 165.50'

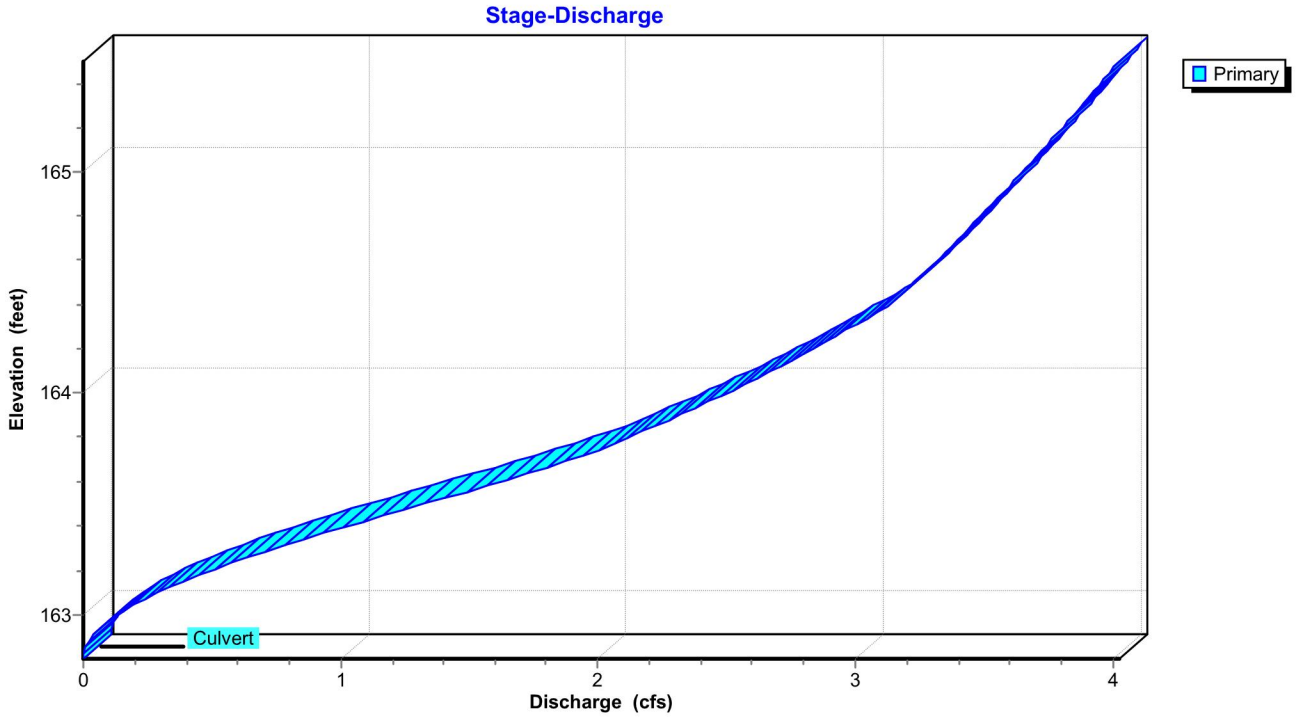
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.80' | **12.0" Round Culvert**<br>L= 221.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.80' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=162.80' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

## Pond 3P: (new Pond)



## Pond 3P: (new Pond)



## Stage-Area-Storage for Pond 3P: (new Pond)

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.80 | **0** | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | 164.98 | 0 |
| 162.92 | 0 | 163.96 | 0 | 165.00 | 0 |
| 162.94 | 0 | 163.98 | 0 | 165.02 | 0 |
| 162.96 | 0 | 164.00 | 0 | 165.04 | 0 |
| 162.98 | 0 | 164.02 | 0 | 165.06 | 0 |
| 163.00 | 0 | 164.04 | 0 | 165.08 | 0 |
| 163.02 | 0 | 164.06 | 0 | 165.10 | 0 |
| 163.04 | 0 | 164.08 | 0 | 165.12 | 0 |
| 163.06 | 0 | 164.10 | 0 | 165.14 | 0 |
| 163.08 | 0 | 164.12 | 0 | 165.16 | 0 |
| 163.10 | 0 | 164.14 | 0 | 165.18 | 0 |
| 163.12 | 0 | 164.16 | 0 | 165.20 | 0 |
| 163.14 | 0 | 164.18 | 0 | 165.22 | 0 |
| 163.16 | 0 | 164.20 | 0 | 165.24 | 0 |
| 163.18 | 0 | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | | |
| 163.46 | 0 | 164.50 | 0 | | |
| 163.48 | 0 | 164.52 | 0 | | |
| 163.50 | 0 | 164.54 | 0 | | |
| 163.52 | 0 | 164.56 | 0 | | |
| 163.54 | 0 | 164.58 | 0 | | |
| 163.56 | 0 | 164.60 | 0 | | |
| 163.58 | 0 | 164.62 | 0 | | |
| 163.60 | 0 | 164.64 | 0 | | |
| 163.62 | 0 | 164.66 | 0 | | |
| 163.64 | 0 | 164.68 | 0 | | |
| 163.66 | 0 | 164.70 | 0 | | |
| 163.68 | 0 | 164.72 | 0 | | |
| 163.70 | 0 | 164.74 | 0 | | |
| 163.72 | 0 | 164.76 | 0 | | |
| 163.74 | 0 | 164.78 | 0 | | |
| 163.76 | 0 | 164.80 | 0 | | |
| 163.78 | 0 | 164.82 | 0 | | |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |

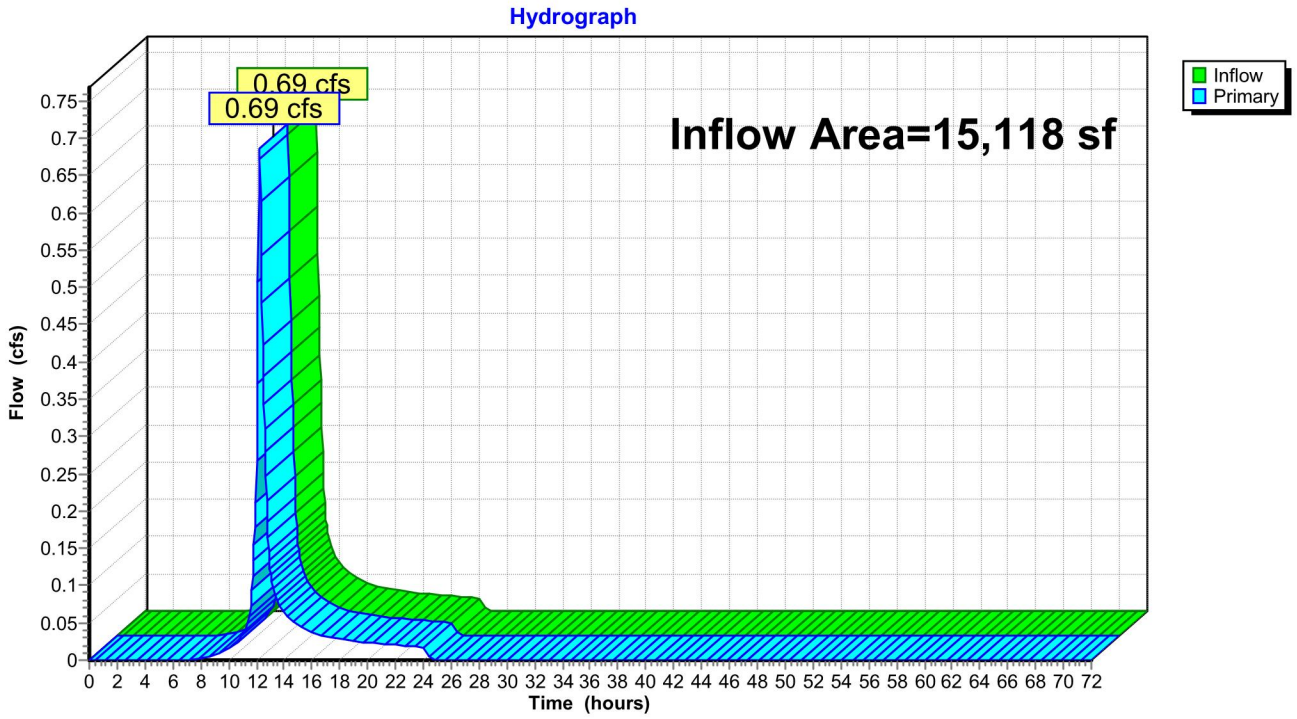
## Summary for Pond 4P: FRENCH DRAIN

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15,118 sf, 0.00% Impervious, Inflow Depth = 2.52" for 10-yr event
Inflow = 0.69 cfs @ 12.22 hrs, Volume= 3,175 cf
Primary = 0.69 cfs @ 12.22 hrs, Volume= 3,175 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Pond 4P: FRENCH DRAIN



## Summary for Pond CB#1: CB #1

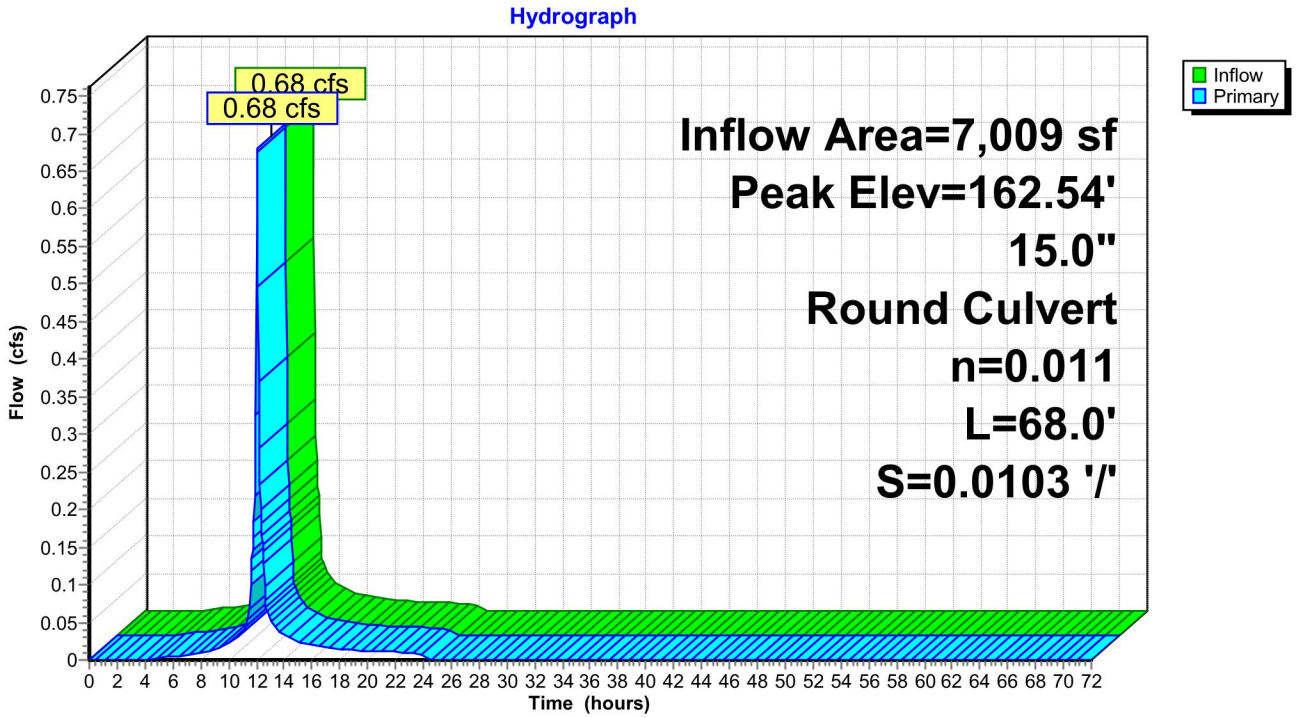
Inflow Area = 7,009 sf, 71.29% Impervious, Inflow Depth = 3.56" for 10-yr event
Inflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Outflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.54' @ 12.04 hrs
Flood Elev= 164.96'

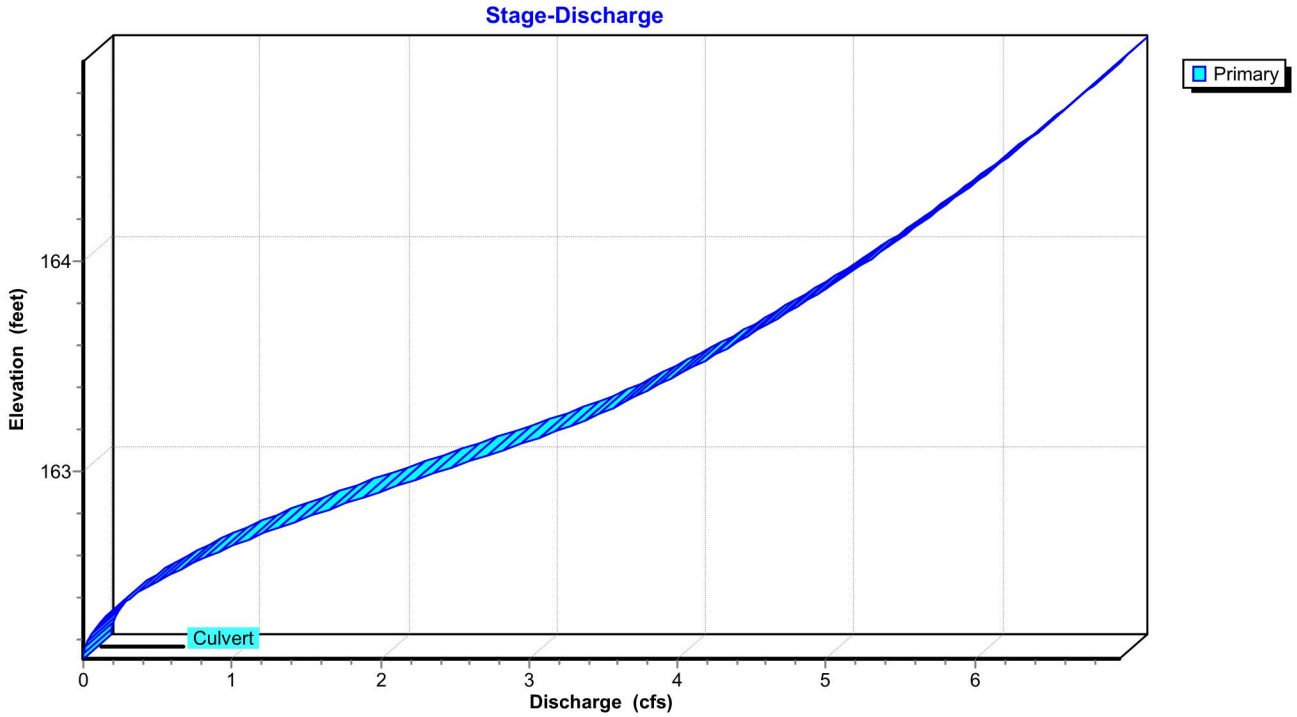
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.10' | **15.0" Round Culvert**<br>L= 68.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.10' / 161.40' S= 0.0103 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.66 cfs @ 12.04 hrs HW=162.53' (Free Discharge)
**1=Culvert** (Inlet Controls 0.66 cfs @ 1.76 fps)

## Pond CB#1: CB #1



## Pond CB#1: CB #1


Stage-Discharge
Primary
Elevation (feet)
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#1: CB #1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.10 | **0** | 163.14 | 0 | 164.18 | 0 |
| 162.12 | 0 | 163.16 | 0 | 164.20 | 0 |
| 162.14 | 0 | 163.18 | 0 | 164.22 | 0 |
| 162.16 | 0 | 163.20 | 0 | 164.24 | 0 |
| 162.18 | 0 | 163.22 | 0 | 164.26 | 0 |
| 162.20 | 0 | 163.24 | 0 | 164.28 | 0 |
| 162.22 | 0 | 163.26 | 0 | 164.30 | 0 |
| 162.24 | 0 | 163.28 | 0 | 164.32 | 0 |
| 162.26 | 0 | 163.30 | 0 | 164.34 | 0 |
| 162.28 | 0 | 163.32 | 0 | 164.36 | 0 |
| 162.30 | 0 | 163.34 | 0 | 164.38 | 0 |
| 162.32 | 0 | 163.36 | 0 | 164.40 | 0 |
| 162.34 | 0 | 163.38 | 0 | 164.42 | 0 |
| 162.36 | 0 | 163.40 | 0 | 164.44 | 0 |
| 162.38 | 0 | 163.42 | 0 | 164.46 | 0 |
| 162.40 | 0 | 163.44 | 0 | 164.48 | 0 |
| 162.42 | 0 | 163.46 | 0 | 164.50 | 0 |
| 162.44 | 0 | 163.48 | 0 | 164.52 | 0 |
| 162.46 | 0 | 163.50 | 0 | 164.54 | 0 |
| 162.48 | 0 | 163.52 | 0 | 164.56 | 0 |
| 162.50 | 0 | 163.54 | 0 | 164.58 | 0 |
| 162.52 | 0 | 163.56 | 0 | 164.60 | 0 |
| 162.54 | 0 | 163.58 | 0 | 164.62 | 0 |
| 162.56 | 0 | 163.60 | 0 | 164.64 | 0 |
| 162.58 | 0 | 163.62 | 0 | 164.66 | 0 |
| 162.60 | 0 | 163.64 | 0 | 164.68 | 0 |
| 162.62 | 0 | 163.66 | 0 | 164.70 | 0 |
| 162.64 | 0 | 163.68 | 0 | 164.72 | 0 |
| 162.66 | 0 | 163.70 | 0 | 164.74 | 0 |
| 162.68 | 0 | 163.72 | 0 | 164.76 | 0 |
| 162.70 | 0 | 163.74 | 0 | 164.78 | 0 |
| 162.72 | 0 | 163.76 | 0 | 164.80 | 0 |
| 162.74 | 0 | 163.78 | 0 | 164.82 | 0 |
| 162.76 | 0 | 163.80 | 0 | 164.84 | 0 |
| 162.78 | 0 | 163.82 | 0 | 164.86 | 0 |
| 162.80 | 0 | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | | |
| 162.92 | 0 | 163.96 | 0 | | |
| 162.94 | 0 | 163.98 | 0 | | |
| 162.96 | 0 | 164.00 | 0 | | |
| 162.98 | 0 | 164.02 | 0 | | |
| 163.00 | 0 | 164.04 | 0 | | |
| 163.02 | 0 | 164.06 | 0 | | |
| 163.04 | 0 | 164.08 | 0 | | |
| 163.06 | 0 | 164.10 | 0 | | |
| 163.08 | 0 | 164.12 | 0 | | |
| 163.10 | 0 | 164.14 | 0 | | |
| 163.12 | 0 | 164.16 | 0 | | |

## Summary for Pond CB#2: CB #2

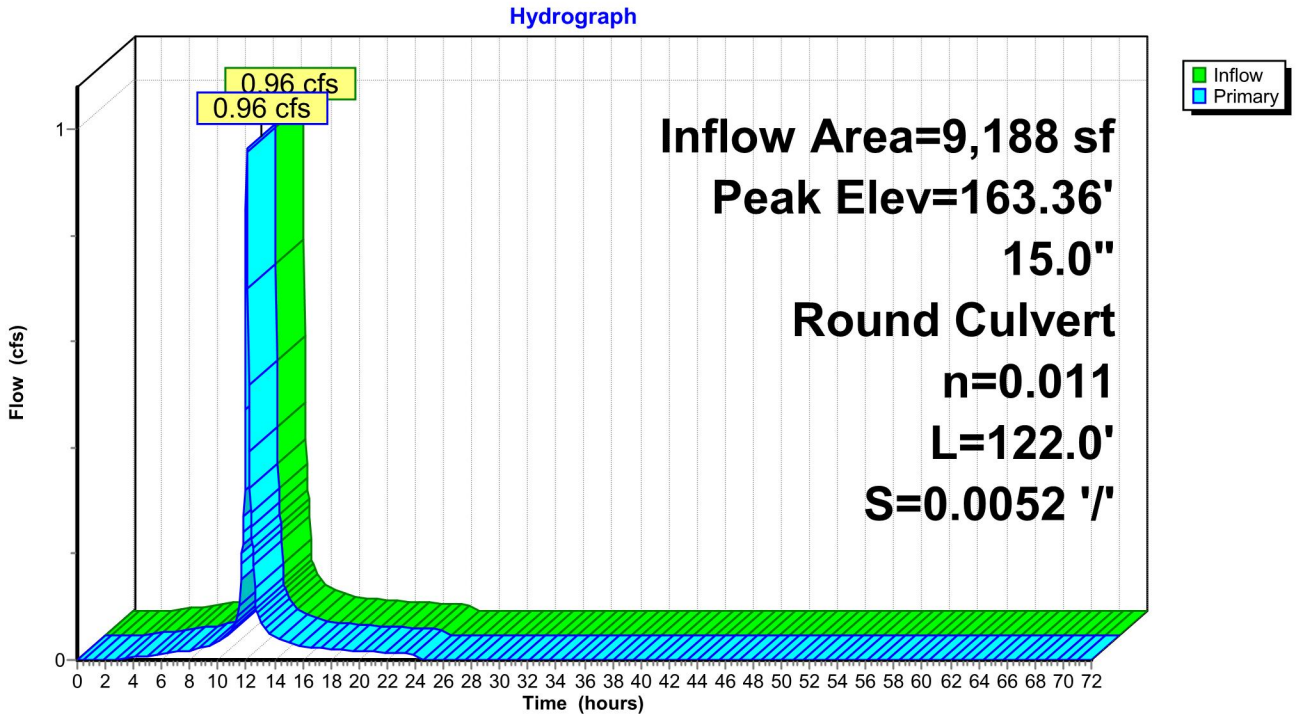
Inflow Area = 9,188 sf, 85.40% Impervious, Inflow Depth = 3.98" for 10-yr event
Inflow = 0.96 cfs @ 12.04 hrs, Volume= 3,049 cf
Outflow = 0.96 cfs @ 12.04 hrs, Volume= 3,049 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.04 hrs, Volume= 3,049 cf
Routed to Pond CB#3 : CB #3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.36' @ 12.04 hrs
Flood Elev= 165.58'

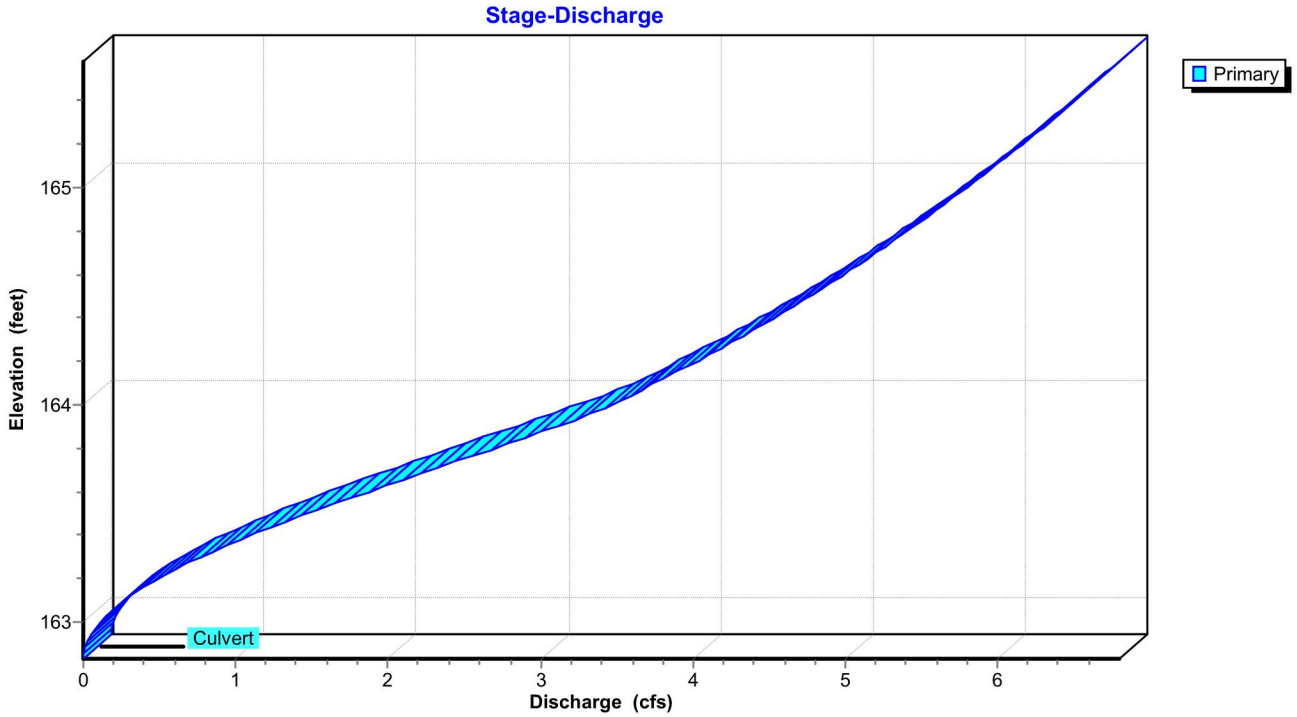
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.83' | **15.0" Round Culvert**<br>L= 122.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.83' / 162.20' S= 0.0052 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.93 cfs @ 12.04 hrs HW=163.35' (Free Discharge)
**1=Culvert** (Inlet Controls 0.93 cfs @ 1.94 fps)

## Pond CB#2: CB #2



## Pond CB#2: CB #2


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#2: CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.83 | **0** | 163.87 | 0 | 164.91 | 0 |
| 162.85 | 0 | 163.89 | 0 | 164.93 | 0 |
| 162.87 | 0 | 163.91 | 0 | 164.95 | 0 |
| 162.89 | 0 | 163.93 | 0 | 164.97 | 0 |
| 162.91 | 0 | 163.95 | 0 | 164.99 | 0 |
| 162.93 | 0 | 163.97 | 0 | 165.01 | 0 |
| 162.95 | 0 | 163.99 | 0 | 165.03 | 0 |
| 162.97 | 0 | 164.01 | 0 | 165.05 | 0 |
| 162.99 | 0 | 164.03 | 0 | 165.07 | 0 |
| 163.01 | 0 | 164.05 | 0 | 165.09 | 0 |
| 163.03 | 0 | 164.07 | 0 | 165.11 | 0 |
| 163.05 | 0 | 164.09 | 0 | 165.13 | 0 |
| 163.07 | 0 | 164.11 | 0 | 165.15 | 0 |
| 163.09 | 0 | 164.13 | 0 | 165.17 | 0 |
| 163.11 | 0 | 164.15 | 0 | 165.19 | 0 |
| 163.13 | 0 | 164.17 | 0 | 165.21 | 0 |
| 163.15 | 0 | 164.19 | 0 | 165.23 | 0 |
| 163.17 | 0 | 164.21 | 0 | 165.25 | 0 |
| 163.19 | 0 | 164.23 | 0 | 165.27 | 0 |
| 163.21 | 0 | 164.25 | 0 | 165.29 | 0 |
| 163.23 | 0 | 164.27 | 0 | 165.31 | 0 |
| 163.25 | 0 | 164.29 | 0 | 165.33 | 0 |
| 163.27 | 0 | 164.31 | 0 | 165.35 | 0 |
| 163.29 | 0 | 164.33 | 0 | 165.37 | 0 |
| 163.31 | 0 | 164.35 | 0 | 165.39 | 0 |
| 163.33 | 0 | 164.37 | 0 | 165.41 | 0 |
| 163.35 | 0 | 164.39 | 0 | 165.43 | 0 |
| 163.37 | 0 | 164.41 | 0 | 165.45 | 0 |
| 163.39 | 0 | 164.43 | 0 | 165.47 | 0 |
| 163.41 | 0 | 164.45 | 0 | 165.49 | 0 |
| 163.43 | 0 | 164.47 | 0 | 165.51 | 0 |
| 163.45 | 0 | 164.49 | 0 | 165.53 | 0 |
| 163.47 | 0 | 164.51 | 0 | 165.55 | 0 |
| 163.49 | 0 | 164.53 | 0 | 165.57 | 0 |
| 163.51 | 0 | 164.55 | 0 | | |
| 163.53 | 0 | 164.57 | 0 | | |
| 163.55 | 0 | 164.59 | 0 | | |
| 163.57 | 0 | 164.61 | 0 | | |
| 163.59 | 0 | 164.63 | 0 | | |
| 163.61 | 0 | 164.65 | 0 | | |
| 163.63 | 0 | 164.67 | 0 | | |
| 163.65 | 0 | 164.69 | 0 | | |
| 163.67 | 0 | 164.71 | 0 | | |
| 163.69 | 0 | 164.73 | 0 | | |
| 163.71 | 0 | 164.75 | 0 | | |
| 163.73 | 0 | 164.77 | 0 | | |
| 163.75 | 0 | 164.79 | 0 | | |
| 163.77 | 0 | 164.81 | 0 | | |
| 163.79 | 0 | 164.83 | 0 | | |
| 163.81 | 0 | 164.85 | 0 | | |
| 163.83 | 0 | 164.87 | 0 | | |
| 163.85 | 0 | 164.89 | 0 | | |

## Summary for Pond CB#3: CB #3

[79] Warning: Submerged Pond CB#2 Primary device # 1 INLET by 0.12'

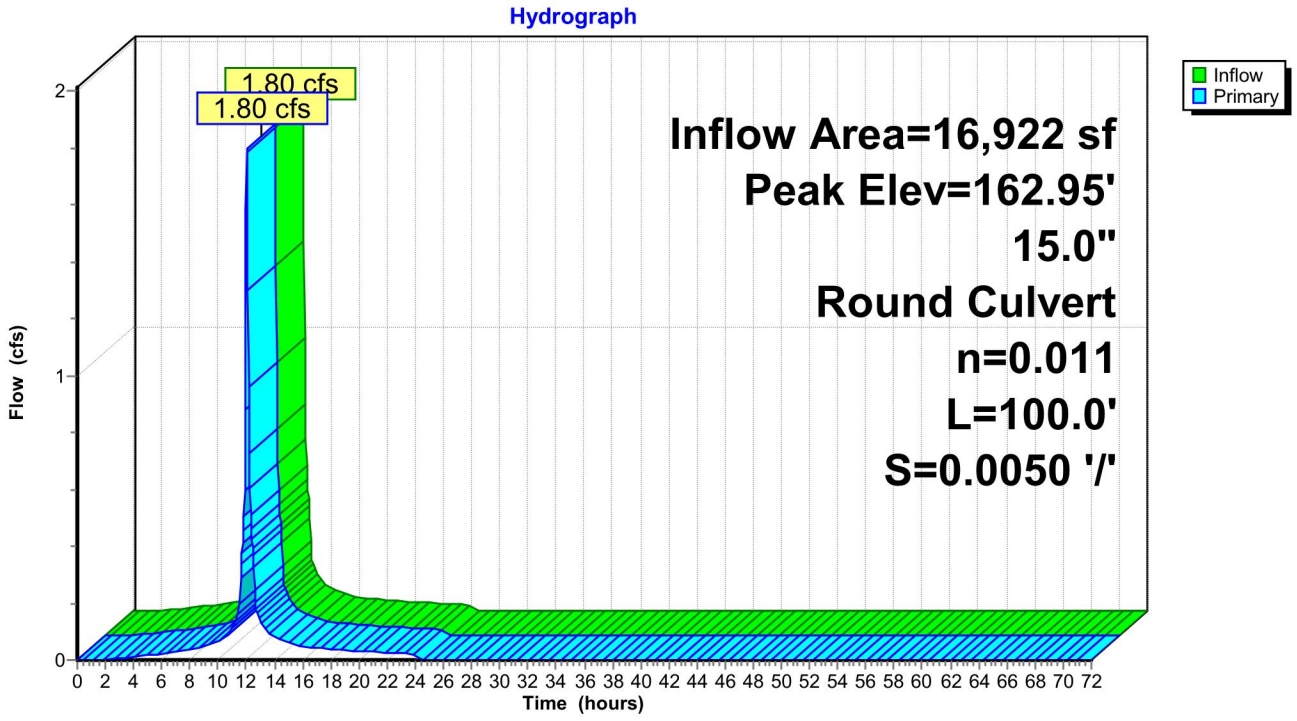
Inflow Area = 16,922 sf, 88.85% Impervious, Inflow Depth = 4.08" for 10-yr event
Inflow = 1.80 cfs @ 12.04 hrs, Volume= 5,759 cf
Outflow = 1.80 cfs @ 12.04 hrs, Volume= 5,759 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.80 cfs @ 12.04 hrs, Volume= 5,759 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.95' @ 12.04 hrs
Flood Elev= 165.70'

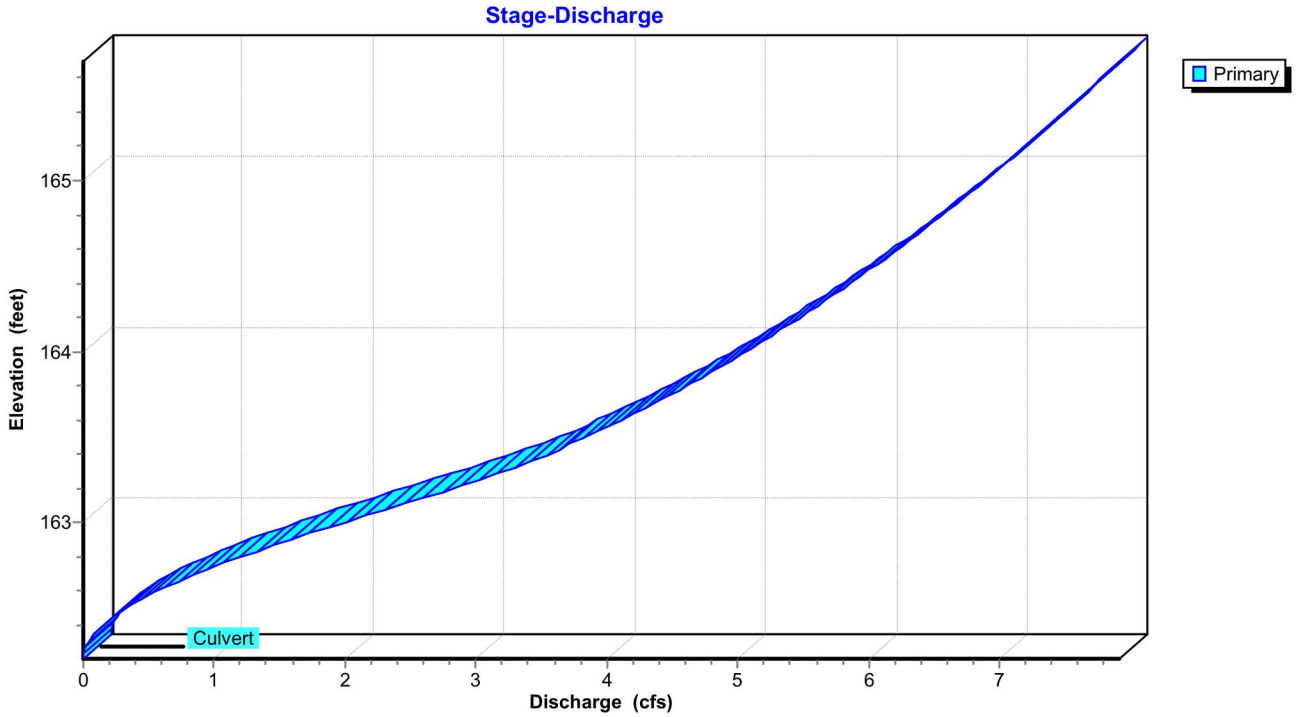
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.20' | **15.0" Round Culvert**<br>L= 100.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.20' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.74 cfs @ 12.04 hrs HW=162.94' (Free Discharge)
**1=Culvert** (Inlet Controls 1.74 cfs @ 2.31 fps)

### Pond CB#3: CB #3



## Pond CB#3: CB #3


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond CB#3: CB #3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 162.20 | **0** | 164.80 | 0 |
| 162.25 | 0 | 164.85 | 0 |
| 162.30 | 0 | 164.90 | 0 |
| 162.35 | 0 | 164.95 | 0 |
| 162.40 | 0 | 165.00 | 0 |
| 162.45 | 0 | 165.05 | 0 |
| 162.50 | 0 | 165.10 | 0 |
| 162.55 | 0 | 165.15 | 0 |
| 162.60 | 0 | 165.20 | 0 |
| 162.65 | 0 | 165.25 | 0 |
| 162.70 | 0 | 165.30 | 0 |
| 162.75 | 0 | 165.35 | 0 |
| 162.80 | 0 | 165.40 | 0 |
| 162.85 | 0 | 165.45 | 0 |
| 162.90 | 0 | 165.50 | 0 |
| 162.95 | 0 | 165.55 | 0 |
| 163.00 | 0 | 165.60 | 0 |
| 163.05 | 0 | 165.65 | 0 |
| 163.10 | 0 | 165.70 | 0 |
| 163.15 | 0 | | |
| 163.20 | 0 | | |
| 163.25 | 0 | | |
| 163.30 | 0 | | |
| 163.35 | 0 | | |
| 163.40 | 0 | | |
| 163.45 | 0 | | |
| 163.50 | 0 | | |
| 163.55 | 0 | | |
| 163.60 | 0 | | |
| 163.65 | 0 | | |
| 163.70 | 0 | | |
| 163.75 | 0 | | |
| 163.80 | 0 | | |
| 163.85 | 0 | | |
| 163.90 | 0 | | |
| 163.95 | 0 | | |
| 164.00 | 0 | | |
| 164.05 | 0 | | |
| 164.10 | 0 | | |
| 164.15 | 0 | | |
| 164.20 | 0 | | |
| 164.25 | 0 | | |
| 164.30 | 0 | | |
| 164.35 | 0 | | |
| 164.40 | 0 | | |
| 164.45 | 0 | | |
| 164.50 | 0 | | |
| 164.55 | 0 | | |
| 164.60 | 0 | | |
| 164.65 | 0 | | |
| 164.70 | 0 | | |
| 164.75 | 0 | | |

## Summary for Pond CB#4: CB #4

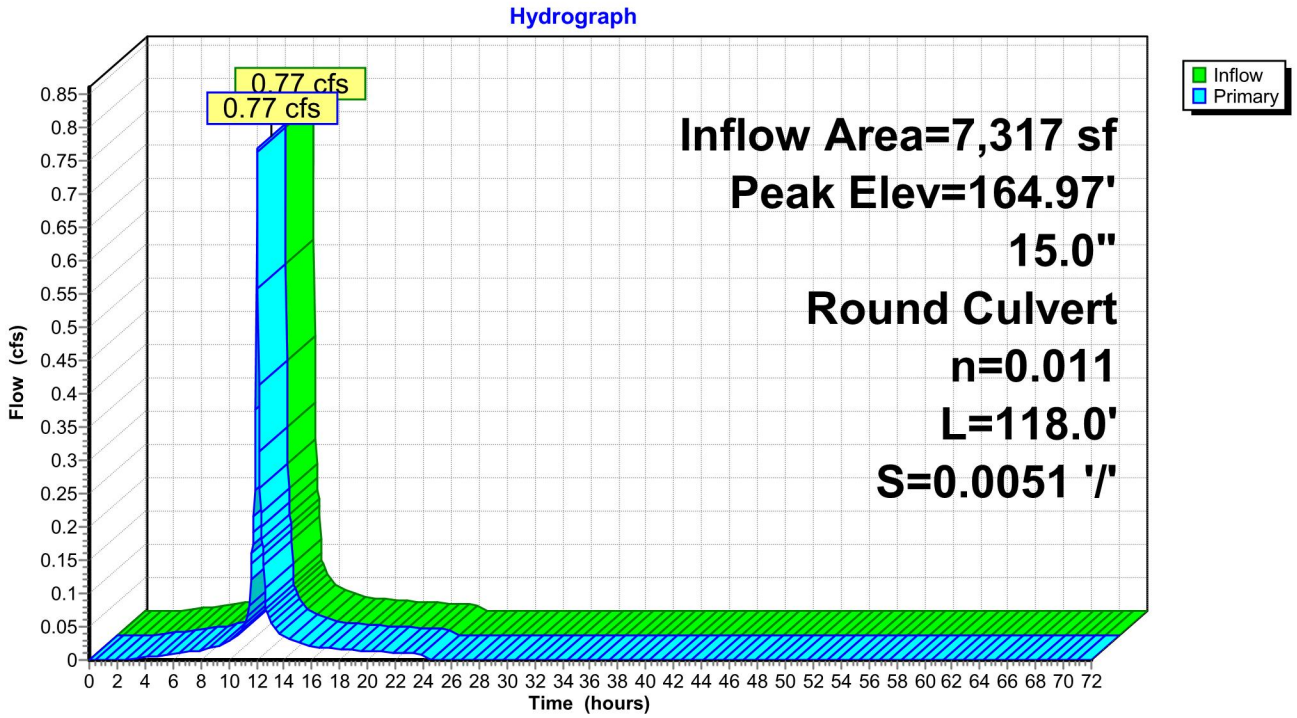
Inflow Area = 7,317 sf, 86.07% Impervious, Inflow Depth = 3.98" for 10-yr event
Inflow = 0.77 cfs @ 12.04 hrs, Volume= 2,428 cf
Outflow = 0.77 cfs @ 12.04 hrs, Volume= 2,428 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.77 cfs @ 12.04 hrs, Volume= 2,428 cf
Routed to Pond CB#5 : CB #5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.97' @ 12.04 hrs
Flood Elev= 167.26'

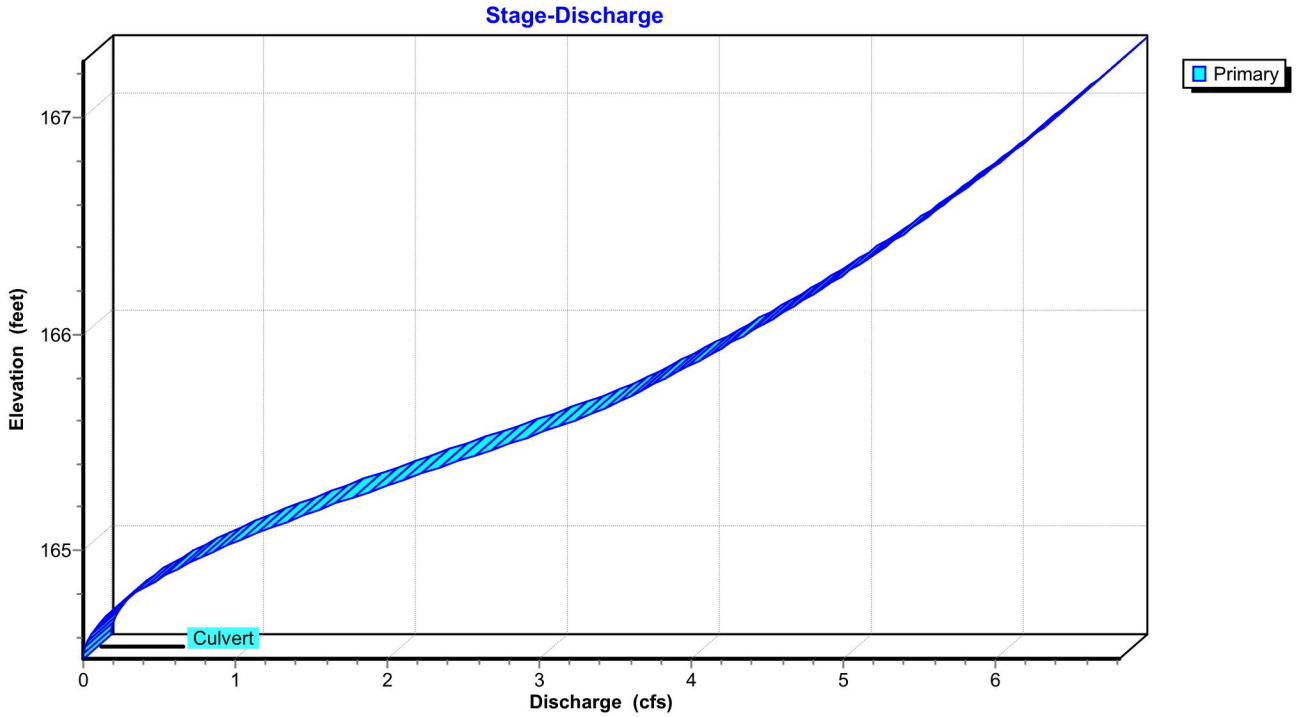
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.50' | **15.0" Round Culvert**<br>L= 118.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.50' / 163.90' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.74 cfs @ 12.04 hrs HW=164.96' (Free Discharge)
**1=Culvert** (Inlet Controls 0.74 cfs @ 1.82 fps)

## Pond CB#4: CB #4



## Pond CB#4: CB #4


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#4: CB #4

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.50 | **0** | 165.54 | 0 | 166.58 | 0 |
| 164.52 | 0 | 165.56 | 0 | 166.60 | 0 |
| 164.54 | 0 | 165.58 | 0 | 166.62 | 0 |
| 164.56 | 0 | 165.60 | 0 | 166.64 | 0 |
| 164.58 | 0 | 165.62 | 0 | 166.66 | 0 |
| 164.60 | 0 | 165.64 | 0 | 166.68 | 0 |
| 164.62 | 0 | 165.66 | 0 | 166.70 | 0 |
| 164.64 | 0 | 165.68 | 0 | 166.72 | 0 |
| 164.66 | 0 | 165.70 | 0 | 166.74 | 0 |
| 164.68 | 0 | 165.72 | 0 | 166.76 | 0 |
| 164.70 | 0 | 165.74 | 0 | 166.78 | 0 |
| 164.72 | 0 | 165.76 | 0 | 166.80 | 0 |
| 164.74 | 0 | 165.78 | 0 | 166.82 | 0 |
| 164.76 | 0 | 165.80 | 0 | 166.84 | 0 |
| 164.78 | 0 | 165.82 | 0 | 166.86 | 0 |
| 164.80 | 0 | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | 167.04 | 0 |
| 164.98 | 0 | 166.02 | 0 | 167.06 | 0 |
| 165.00 | 0 | 166.04 | 0 | 167.08 | 0 |
| 165.02 | 0 | 166.06 | 0 | 167.10 | 0 |
| 165.04 | 0 | 166.08 | 0 | 167.12 | 0 |
| 165.06 | 0 | 166.10 | 0 | 167.14 | 0 |
| 165.08 | 0 | 166.12 | 0 | 167.16 | 0 |
| 165.10 | 0 | 166.14 | 0 | 167.18 | 0 |
| 165.12 | 0 | 166.16 | 0 | 167.20 | 0 |
| 165.14 | 0 | 166.18 | 0 | 167.22 | 0 |
| 165.16 | 0 | 166.20 | 0 | 167.24 | 0 |
| 165.18 | 0 | 166.22 | 0 | 167.26 | 0 |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |

## Summary for Pond CB#5: CB #5

[79] Warning: Submerged Pond CB#4 Primary device # 1 OUTLET by 0.43'

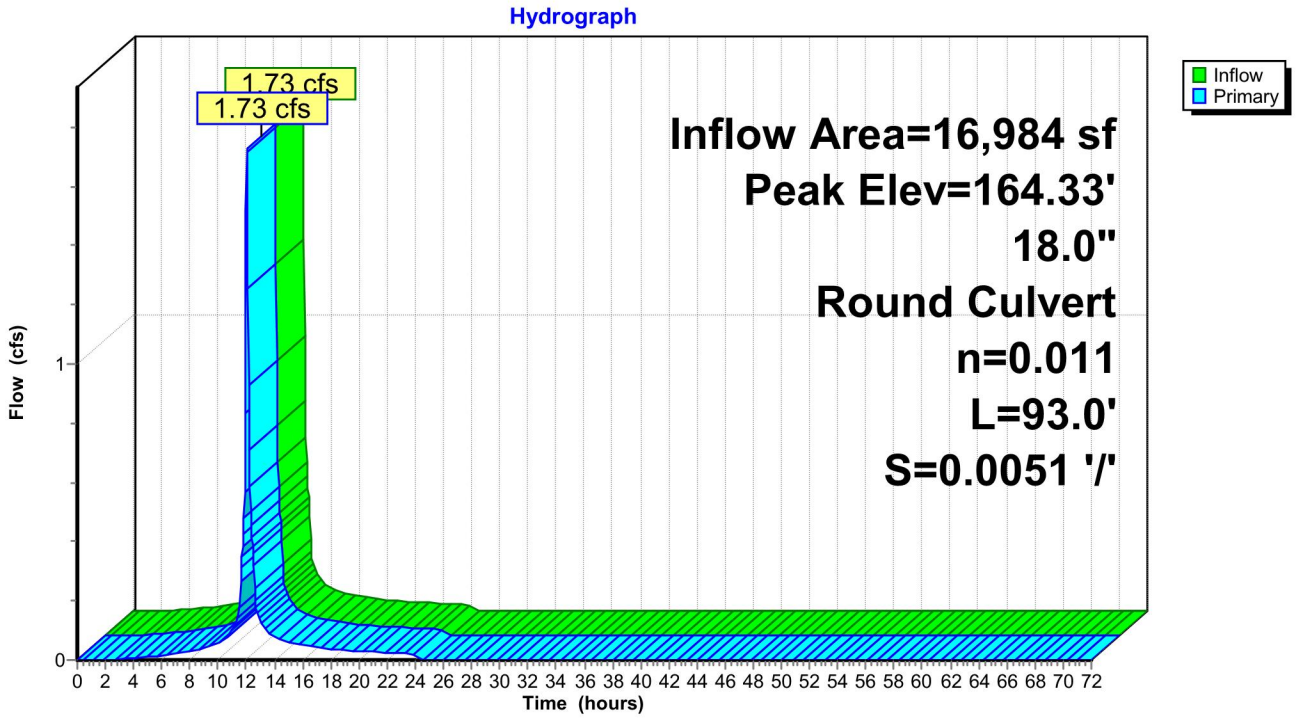
Inflow Area = 16,984 sf, 80.66% Impervious, Inflow Depth = 3.80" for 10-yr event
Inflow = 1.73 cfs @ 12.04 hrs, Volume= 5,379 cf
Outflow = 1.73 cfs @ 12.04 hrs, Volume= 5,379 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.73 cfs @ 12.04 hrs, Volume= 5,379 cf
Routed to Pond CB#6 : CB #6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.33' @ 12.04 hrs
Flood Elev= 166.36'

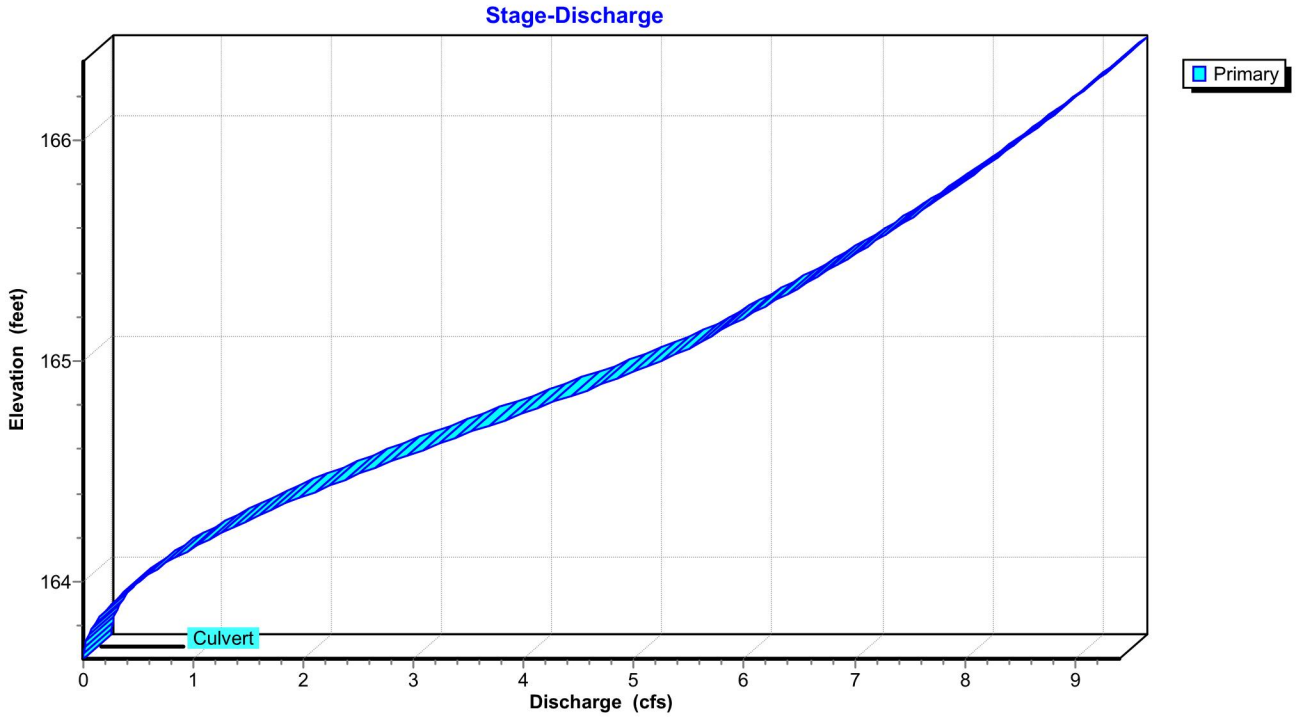
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.65' | **18.0" Round Culvert**<br>L= 93.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.65' / 163.18' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.67 cfs @ 12.04 hrs HW=164.32' (Free Discharge)
**1=Culvert** (Inlet Controls 1.67 cfs @ 2.20 fps)

### Pond CB#5: CB #5



## Pond CB#5: CB #5


Stage-Discharge
Primary
Elevation (feet)
166
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#5: CB #5

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.65 | **0** | 164.69 | 0 | 165.73 | 0 |
| 163.67 | 0 | 164.71 | 0 | 165.75 | 0 |
| 163.69 | 0 | 164.73 | 0 | 165.77 | 0 |
| 163.71 | 0 | 164.75 | 0 | 165.79 | 0 |
| 163.73 | 0 | 164.77 | 0 | 165.81 | 0 |
| 163.75 | 0 | 164.79 | 0 | 165.83 | 0 |
| 163.77 | 0 | 164.81 | 0 | 165.85 | 0 |
| 163.79 | 0 | 164.83 | 0 | 165.87 | 0 |
| 163.81 | 0 | 164.85 | 0 | 165.89 | 0 |
| 163.83 | 0 | 164.87 | 0 | 165.91 | 0 |
| 163.85 | 0 | 164.89 | 0 | 165.93 | 0 |
| 163.87 | 0 | 164.91 | 0 | 165.95 | 0 |
| 163.89 | 0 | 164.93 | 0 | 165.97 | 0 |
| 163.91 | 0 | 164.95 | 0 | 165.99 | 0 |
| 163.93 | 0 | 164.97 | 0 | 166.01 | 0 |
| 163.95 | 0 | 164.99 | 0 | 166.03 | 0 |
| 163.97 | 0 | 165.01 | 0 | 166.05 | 0 |
| 163.99 | 0 | 165.03 | 0 | 166.07 | 0 |
| 164.01 | 0 | 165.05 | 0 | 166.09 | 0 |
| 164.03 | 0 | 165.07 | 0 | 166.11 | 0 |
| 164.05 | 0 | 165.09 | 0 | 166.13 | 0 |
| 164.07 | 0 | 165.11 | 0 | 166.15 | 0 |
| 164.09 | 0 | 165.13 | 0 | 166.17 | 0 |
| 164.11 | 0 | 165.15 | 0 | 166.19 | 0 |
| 164.13 | 0 | 165.17 | 0 | 166.21 | 0 |
| 164.15 | 0 | 165.19 | 0 | 166.23 | 0 |
| 164.17 | 0 | 165.21 | 0 | 166.25 | 0 |
| 164.19 | 0 | 165.23 | 0 | 166.27 | 0 |
| 164.21 | 0 | 165.25 | 0 | 166.29 | 0 |
| 164.23 | 0 | 165.27 | 0 | 166.31 | 0 |
| 164.25 | 0 | 165.29 | 0 | 166.33 | 0 |
| 164.27 | 0 | 165.31 | 0 | 166.35 | 0 |
| 164.29 | 0 | 165.33 | 0 | | |
| 164.31 | 0 | 165.35 | 0 | | |
| 164.33 | 0 | 165.37 | 0 | | |
| 164.35 | 0 | 165.39 | 0 | | |
| 164.37 | 0 | 165.41 | 0 | | |
| 164.39 | 0 | 165.43 | 0 | | |
| 164.41 | 0 | 165.45 | 0 | | |
| 164.43 | 0 | 165.47 | 0 | | |
| 164.45 | 0 | 165.49 | 0 | | |
| 164.47 | 0 | 165.51 | 0 | | |
| 164.49 | 0 | 165.53 | 0 | | |
| 164.51 | 0 | 165.55 | 0 | | |
| 164.53 | 0 | 165.57 | 0 | | |
| 164.55 | 0 | 165.59 | 0 | | |
| 164.57 | 0 | 165.61 | 0 | | |
| 164.59 | 0 | 165.63 | 0 | | |
| 164.61 | 0 | 165.65 | 0 | | |
| 164.63 | 0 | 165.67 | 0 | | |
| 164.65 | 0 | 165.69 | 0 | | |
| 164.67 | 0 | 165.71 | 0 | | |

## Summary for Pond CB#6: CB #6

[79] Warning: Submerged Pond CB#5 Primary device # 1 INLET by 0.39'

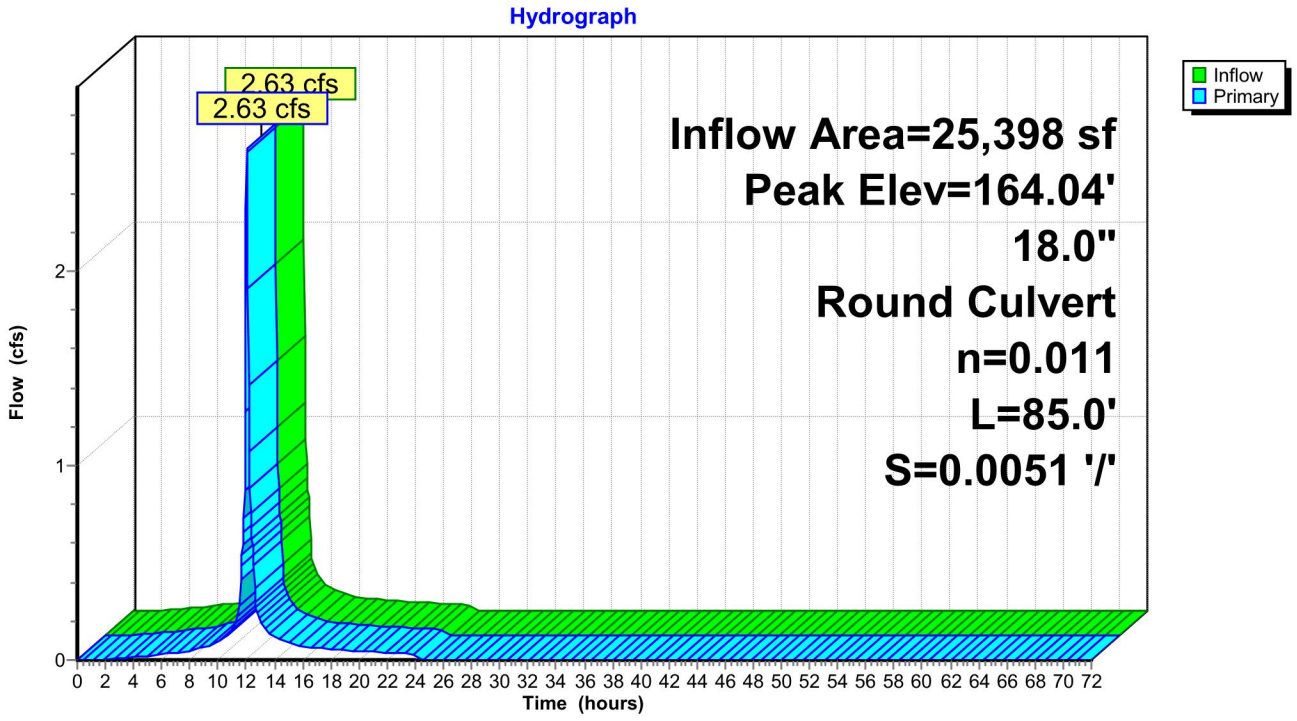
Inflow Area = 25,398 sf, 83.23% Impervious, Inflow Depth = 3.93" for 10-yr event
Inflow = 2.63 cfs @ 12.04 hrs, Volume= 8,327 cf
Outflow = 2.63 cfs @ 12.04 hrs, Volume= 8,327 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.63 cfs @ 12.04 hrs, Volume= 8,327 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.04' @ 12.04 hrs
Flood Elev= 165.87'

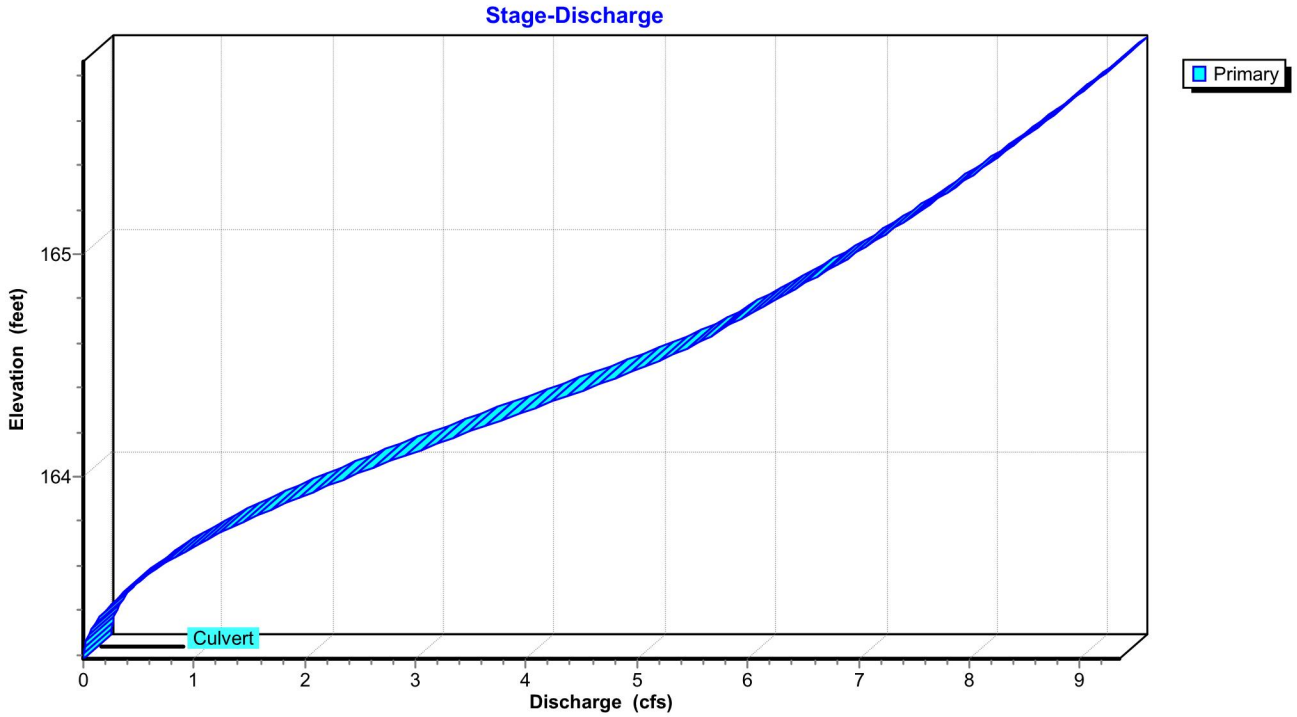
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.18' | **18.0" Round Culvert**<br>L= 85.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.18' / 162.75' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=2.55 cfs @ 12.04 hrs HW=164.03' (Free Discharge)
**1=Culvert** (Inlet Controls 2.55 cfs @ 2.48 fps)

### Pond CB#6: CB #6



## Pond CB#6: CB #6


Stage-Discharge
Primary
Elevation (feet)
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#6: CB #6

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.18 | **0** | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | 165.52 | 0 |
| 163.46 | 0 | 164.50 | 0 | 165.54 | 0 |
| 163.48 | 0 | 164.52 | 0 | 165.56 | 0 |
| 163.50 | 0 | 164.54 | 0 | 165.58 | 0 |
| 163.52 | 0 | 164.56 | 0 | 165.60 | 0 |
| 163.54 | 0 | 164.58 | 0 | 165.62 | 0 |
| 163.56 | 0 | 164.60 | 0 | 165.64 | 0 |
| 163.58 | 0 | 164.62 | 0 | 165.66 | 0 |
| 163.60 | 0 | 164.64 | 0 | 165.68 | 0 |
| 163.62 | 0 | 164.66 | 0 | 165.70 | 0 |
| 163.64 | 0 | 164.68 | 0 | 165.72 | 0 |
| 163.66 | 0 | 164.70 | 0 | 165.74 | 0 |
| 163.68 | 0 | 164.72 | 0 | 165.76 | 0 |
| 163.70 | 0 | 164.74 | 0 | 165.78 | 0 |
| 163.72 | 0 | 164.76 | 0 | 165.80 | 0 |
| 163.74 | 0 | 164.78 | 0 | 165.82 | 0 |
| 163.76 | 0 | 164.80 | 0 | 165.84 | 0 |
| 163.78 | 0 | 164.82 | 0 | 165.86 | 0 |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |
| 163.84 | 0 | 164.88 | 0 | | |
| 163.86 | 0 | 164.90 | 0 | | |
| 163.88 | 0 | 164.92 | 0 | | |
| 163.90 | 0 | 164.94 | 0 | | |
| 163.92 | 0 | 164.96 | 0 | | |
| 163.94 | 0 | 164.98 | 0 | | |
| 163.96 | 0 | 165.00 | 0 | | |
| 163.98 | 0 | 165.02 | 0 | | |
| 164.00 | 0 | 165.04 | 0 | | |
| 164.02 | 0 | 165.06 | 0 | | |
| 164.04 | 0 | 165.08 | 0 | | |
| 164.06 | 0 | 165.10 | 0 | | |
| 164.08 | 0 | 165.12 | 0 | | |
| 164.10 | 0 | 165.14 | 0 | | |
| 164.12 | 0 | 165.16 | 0 | | |
| 164.14 | 0 | 165.18 | 0 | | |
| 164.16 | 0 | 165.20 | 0 | | |
| 164.18 | 0 | 165.22 | 0 | | |
| 164.20 | 0 | 165.24 | 0 | | |

## Summary for Pond DP-1: DP-1

[81] Warning: Exceeded Pond EX-2 by 0.34' @ 12.10 hrs

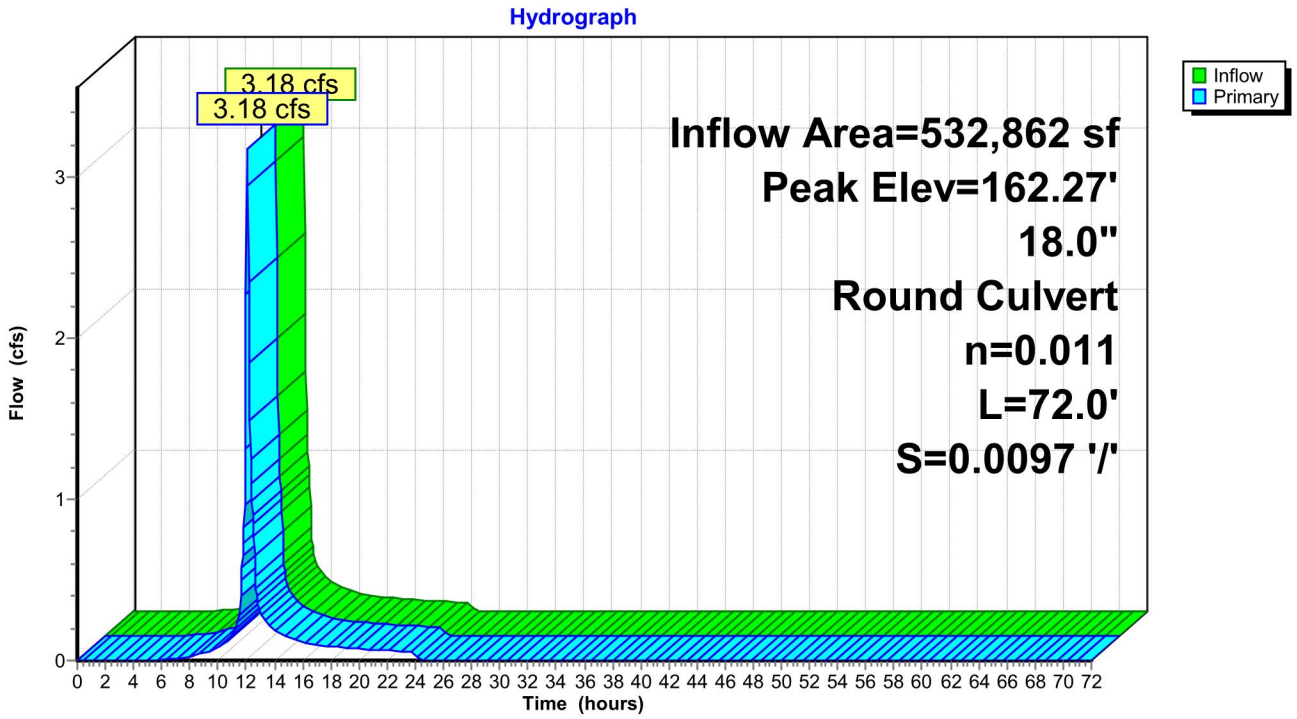
Inflow Area = 532,862 sf, 32.10% Impervious, Inflow Depth = 0.24" for 10-yr event
Inflow = 3.18 cfs @ 12.07 hrs, Volume= 10,656 cf
Outflow = 3.18 cfs @ 12.07 hrs, Volume= 10,656 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.18 cfs @ 12.07 hrs, Volume= 10,656 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.27' @ 12.07 hrs
Flood Elev= 163.41'

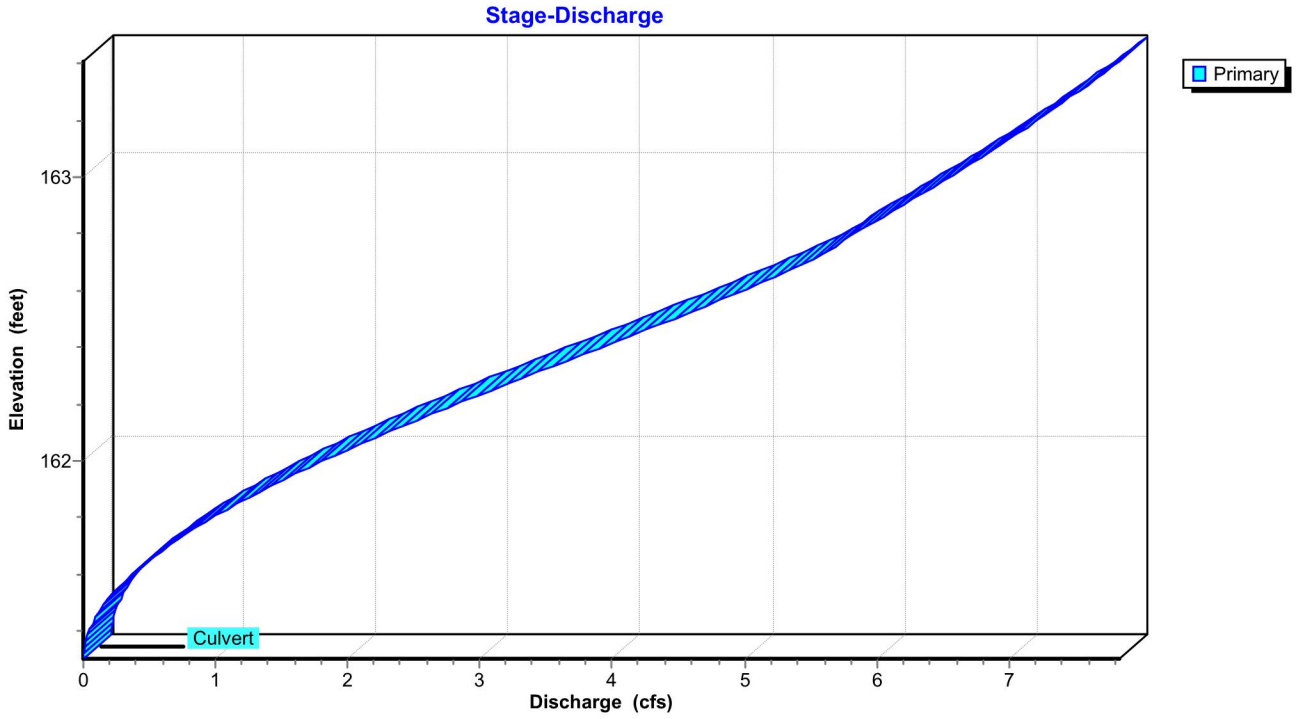
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.07 cfs @ 12.07 hrs HW=162.25' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.07 cfs @ 2.61 fps)

### Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

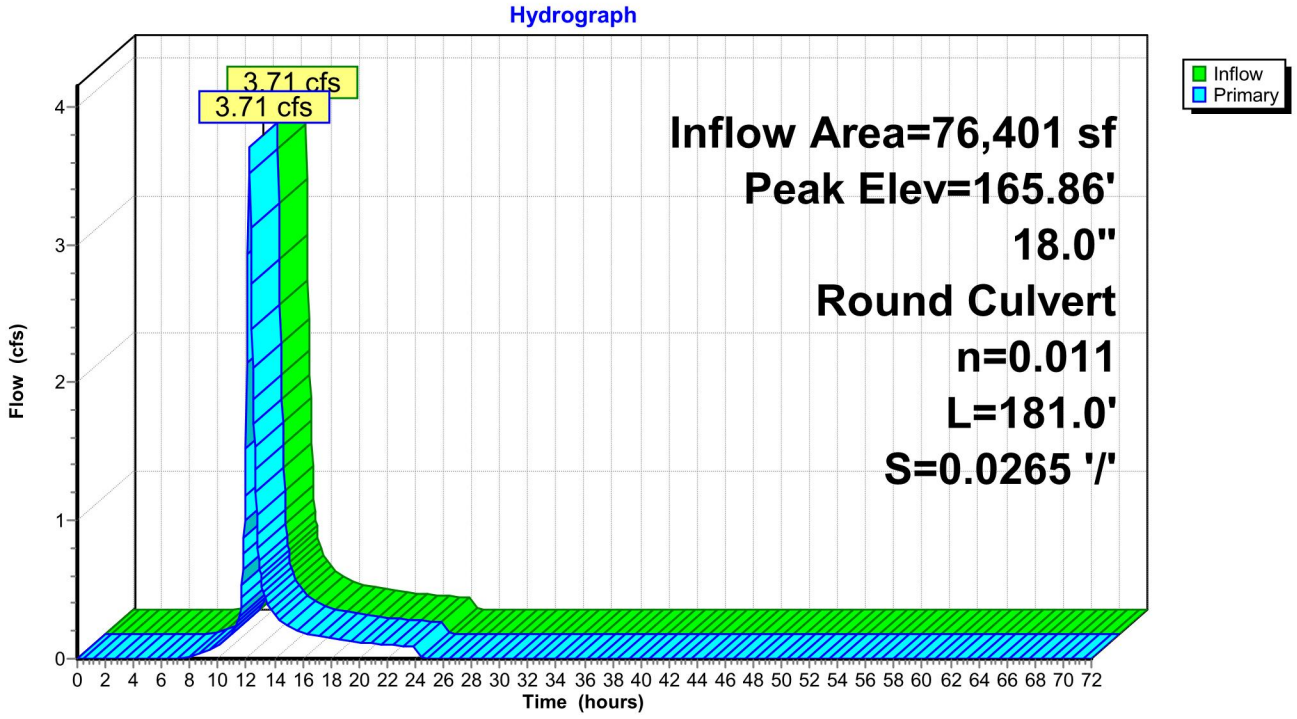
Inflow Area = 76,401 sf, 13.71% Impervious, Inflow Depth = 2.61" for 10-yr event
Inflow = 3.71 cfs @ 12.20 hrs, Volume= 16,598 cf
Outflow = 3.71 cfs @ 12.20 hrs, Volume= 16,598 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.71 cfs @ 12.20 hrs, Volume= 16,598 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.86' @ 12.20 hrs
Flood Elev= 167.03'

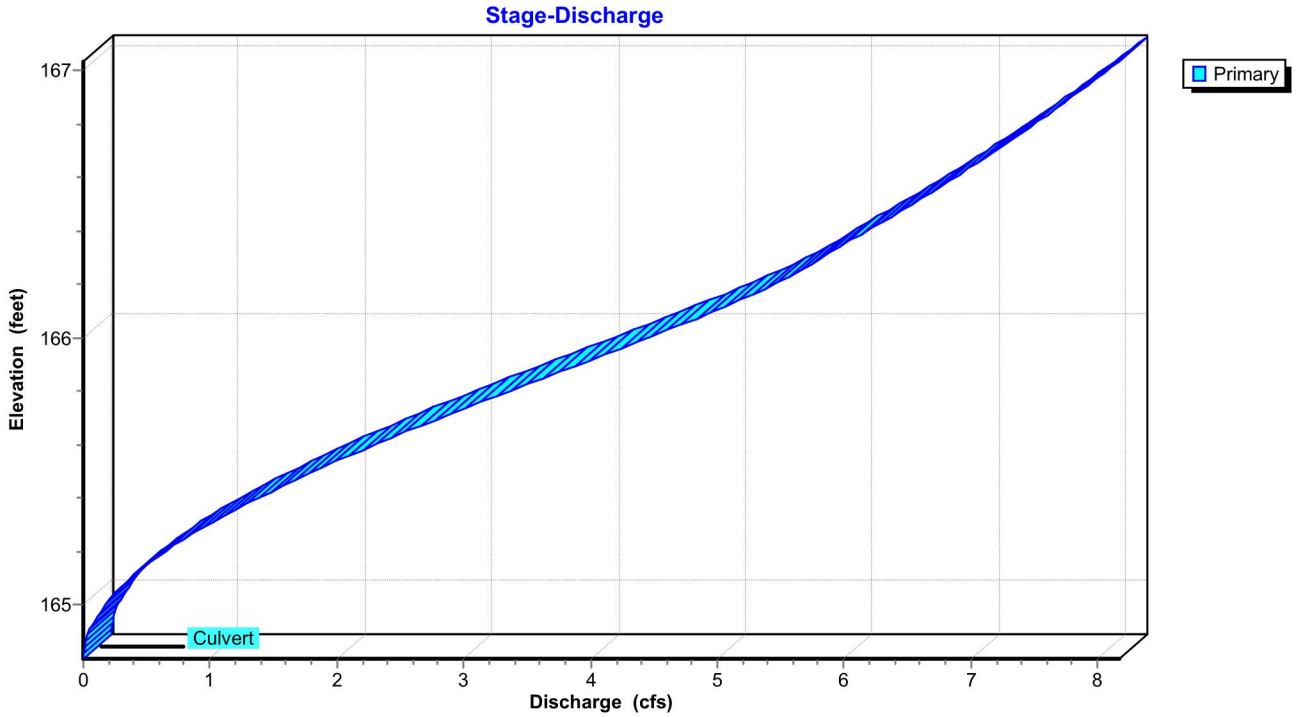
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.70 cfs @ 12.20 hrs HW=165.86' (Free Discharge)
**1=Culvert** (Inlet Controls 3.70 cfs @ 2.77 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

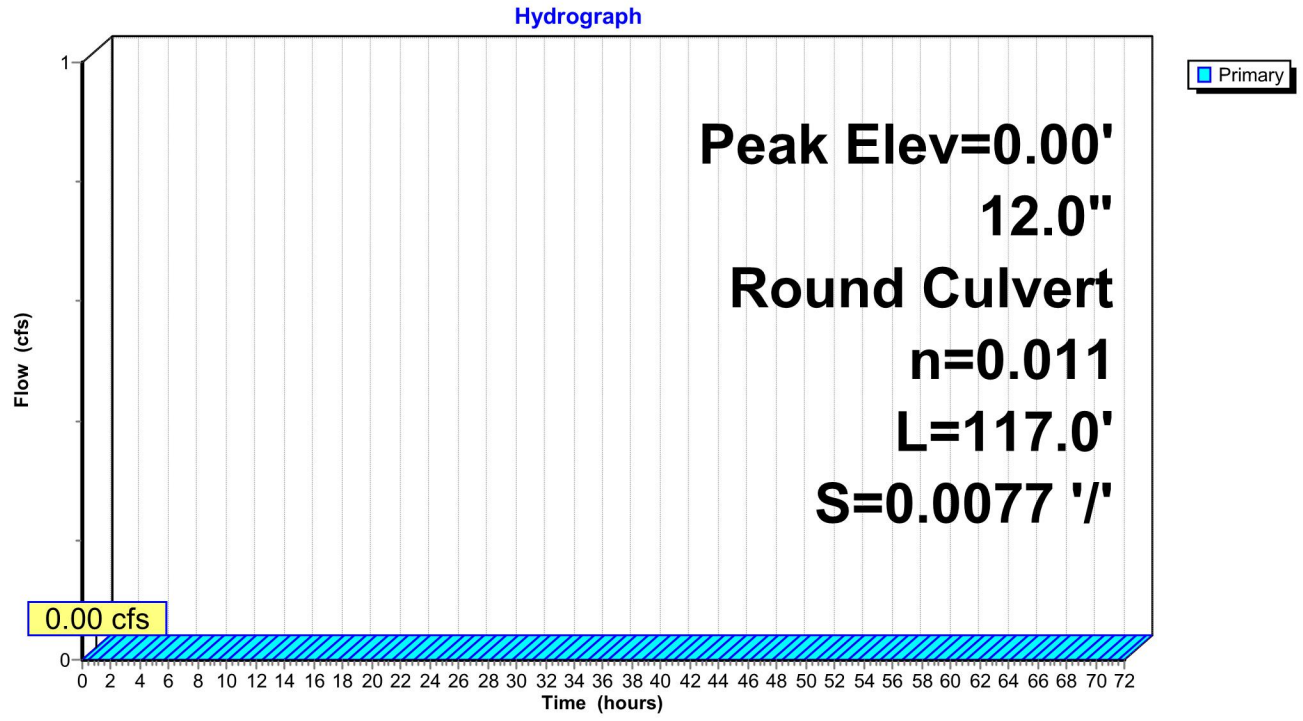
## Summary for Pond DP-3: DP-3

[43] Hint: Has no inflow (Outflow=Zero)

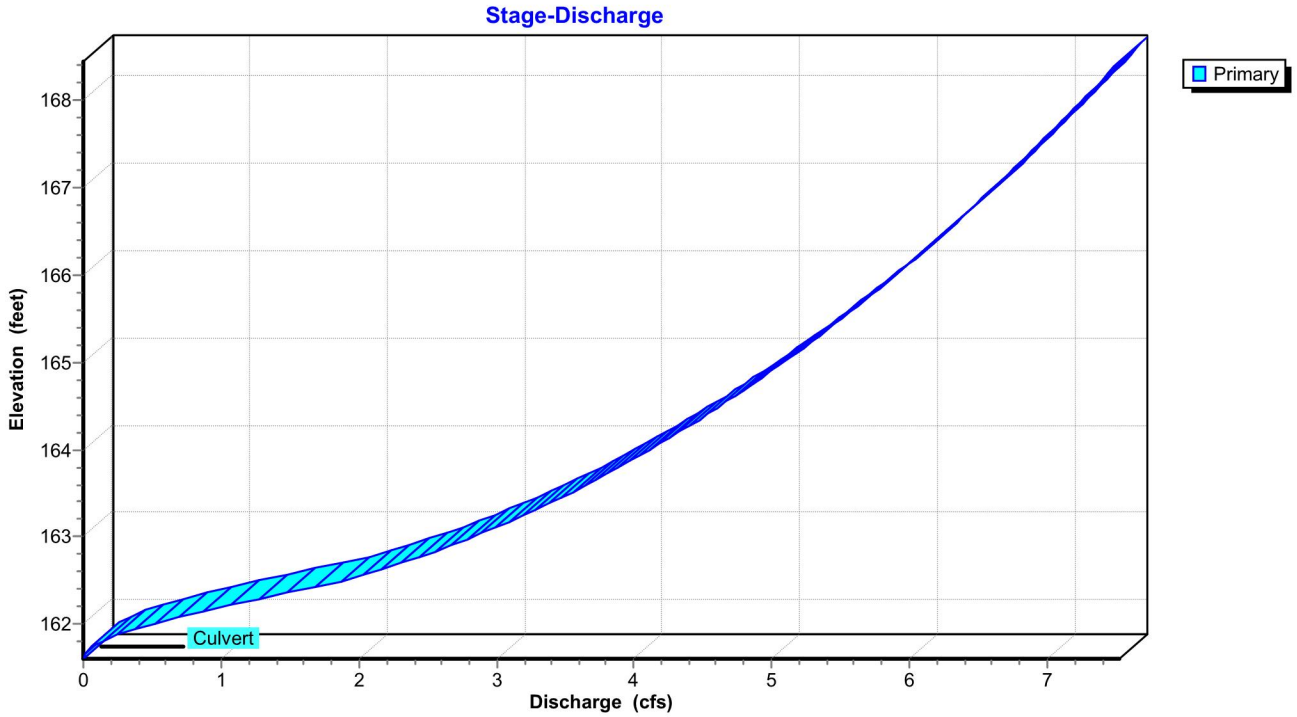
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

## Summary for Pond EX-1: EX. CB 1

[79] Warning: Submerged Pond 3P Primary device # 1 OUTLET by 0.43'
[79] Warning: Submerged Pond CB#1 Primary device # 1 INLET by 0.03'

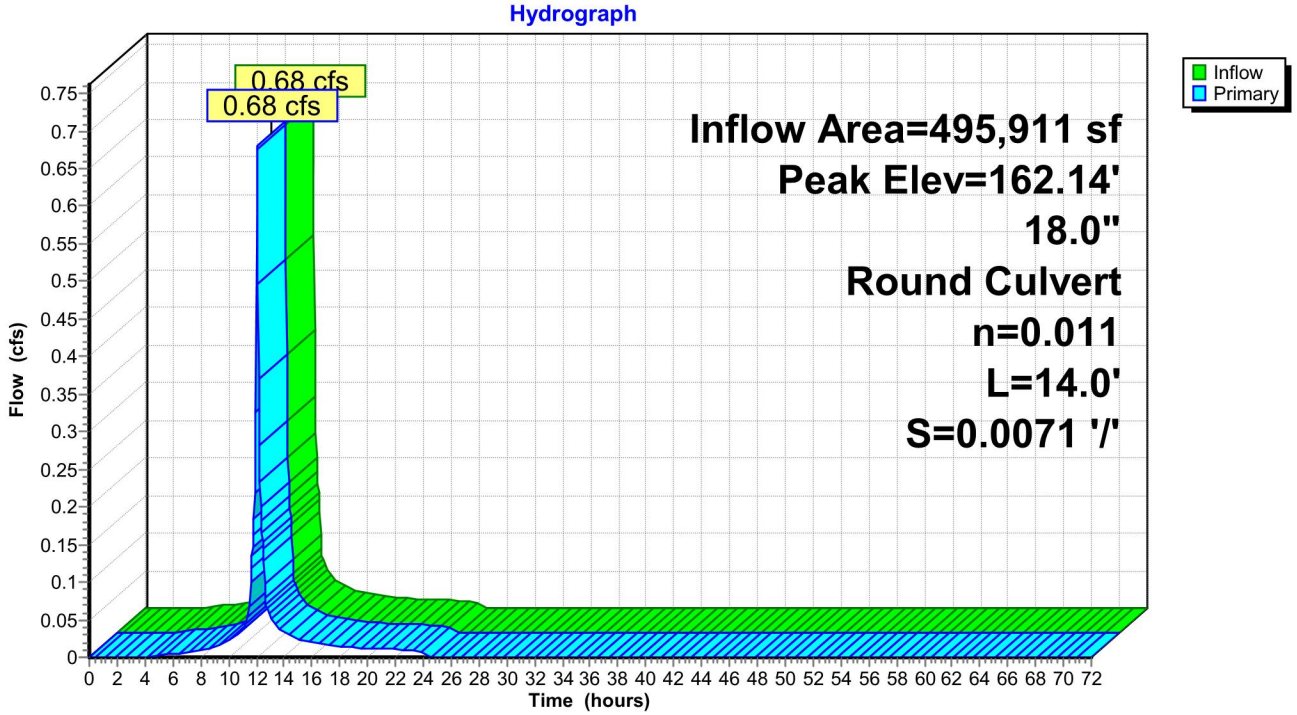
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Outflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Routed to Pond EX-2 : EX. CB #2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.14' @ 12.04 hrs
Flood Elev= 164.02'

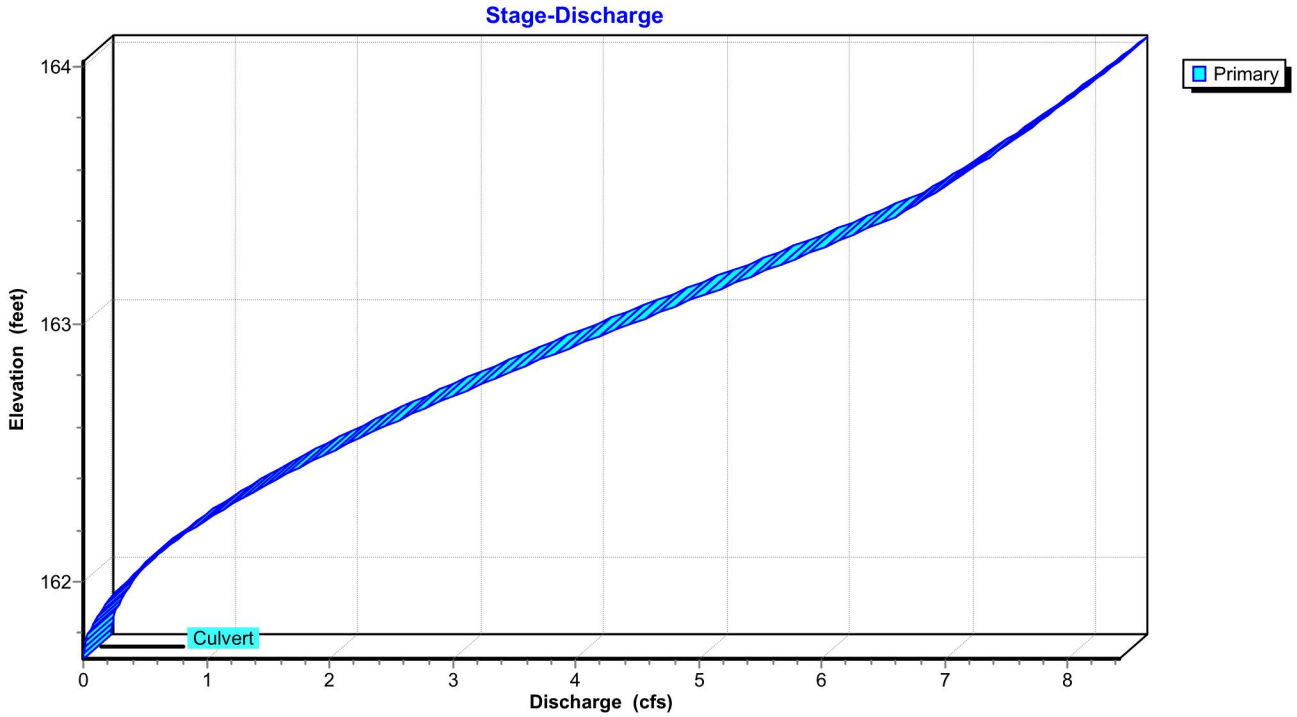
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.70' | **18.0" Round Culvert**<br>L= 14.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.70' / 161.60' S= 0.0071 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.66 cfs @ 12.04 hrs HW=162.13' (Free Discharge)
**1=Culvert** (Barrel Controls 0.66 cfs @ 2.38 fps)

### Pond EX-1: EX. CB 1



## Pond EX-1: EX. CB 1



## Stage-Area-Storage for Pond EX-1: EX. CB 1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.70 | **0** | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | 163.98 | 0 |
| 161.92 | 0 | 162.96 | 0 | 164.00 | 0 |
| 161.94 | 0 | 162.98 | 0 | 164.02 | 0 |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |
| 162.54 | 0 | 163.58 | 0 | | |
| 162.56 | 0 | 163.60 | 0 | | |
| 162.58 | 0 | 163.62 | 0 | | |
| 162.60 | 0 | 163.64 | 0 | | |
| 162.62 | 0 | 163.66 | 0 | | |
| 162.64 | 0 | 163.68 | 0 | | |
| 162.66 | 0 | 163.70 | 0 | | |
| 162.68 | 0 | 163.72 | 0 | | |
| 162.70 | 0 | 163.74 | 0 | | |
| 162.72 | 0 | 163.76 | 0 | | |

## Summary for Pond EX-2: EX. CB #2

[79] Warning: Submerged Pond EX-1 Primary device # 1 INLET by 0.25'

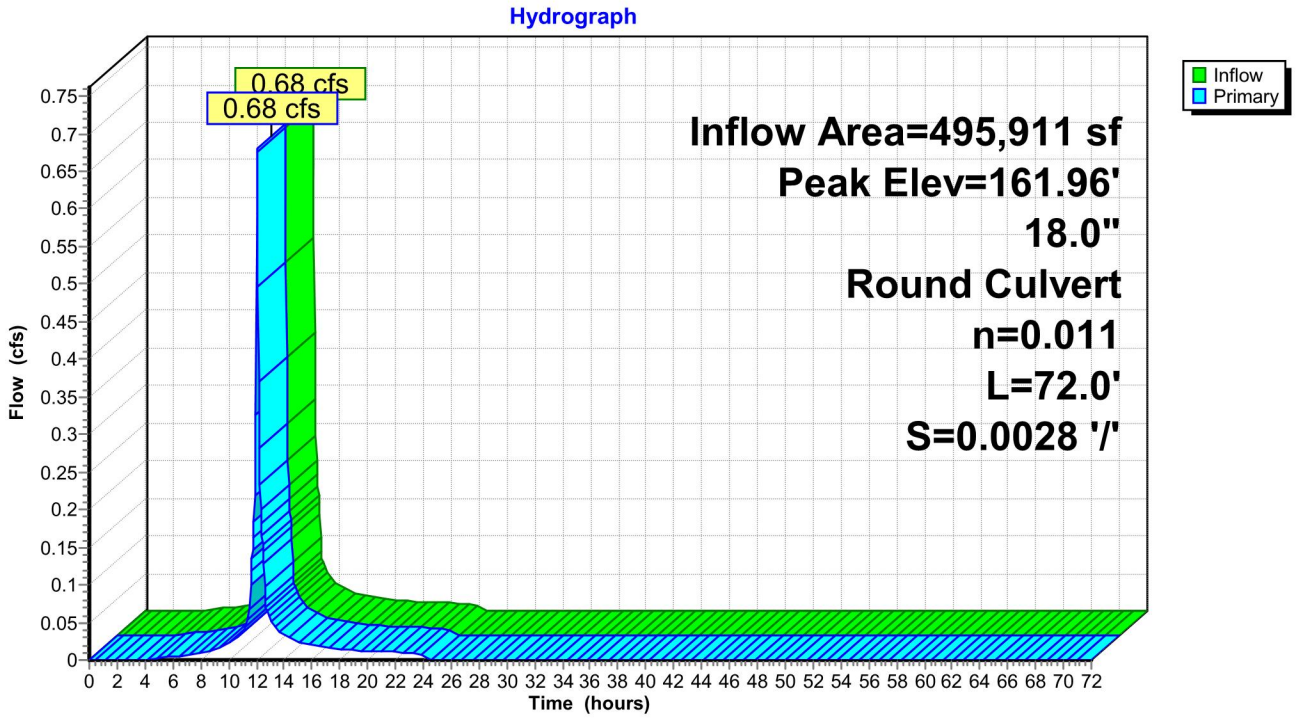
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Outflow = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.04 hrs, Volume= 2,079 cf
Routed to Pond DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 161.96' @ 12.04 hrs
Flood Elev= 163.96'

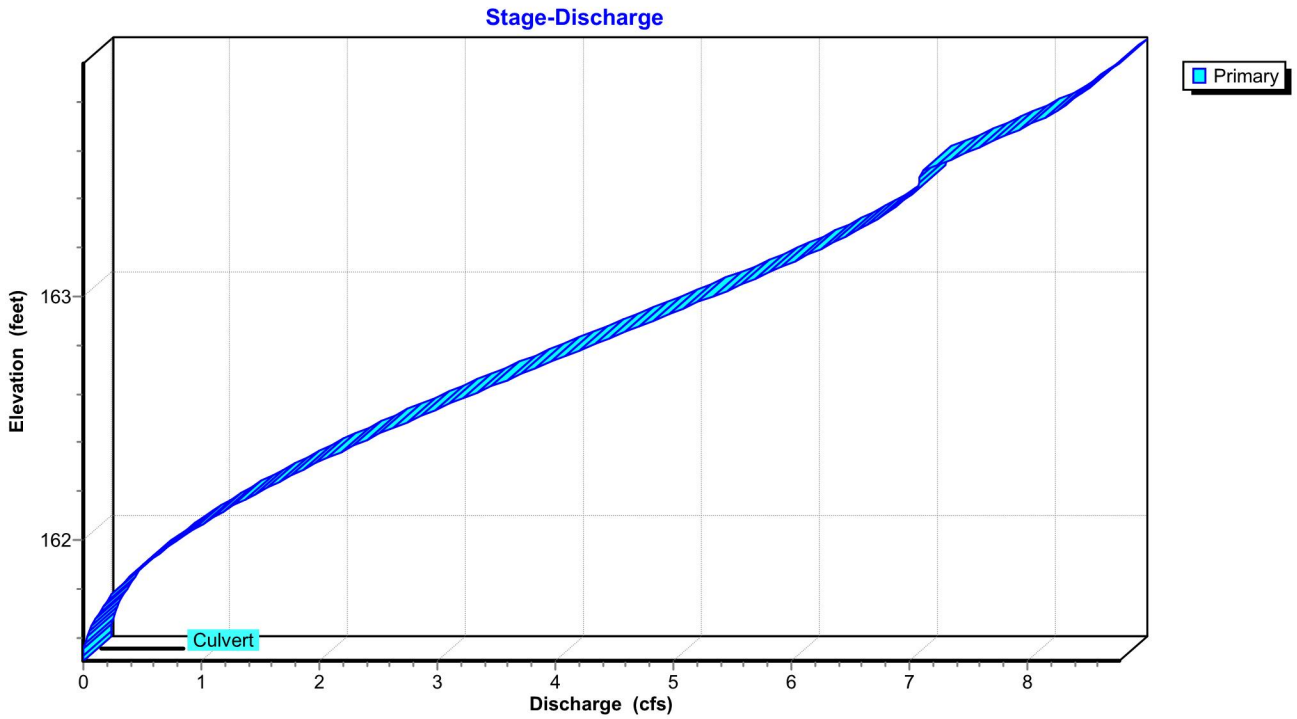
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.50' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.50' / 161.30' S= 0.0028 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.66 cfs @ 12.04 hrs HW=161.95' (Free Discharge)
**1=Culvert** (Barrel Controls 0.66 cfs @ 2.22 fps)

### Pond EX-2: EX. CB #2



## Pond EX-2: EX. CB #2



## Stage-Area-Storage for Pond EX-2: EX. CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.50 | **0** | 162.54 | 0 | 163.58 | 0 |
| 161.52 | 0 | 162.56 | 0 | 163.60 | 0 |
| 161.54 | 0 | 162.58 | 0 | 163.62 | 0 |
| 161.56 | 0 | 162.60 | 0 | 163.64 | 0 |
| 161.58 | 0 | 162.62 | 0 | 163.66 | 0 |
| 161.60 | 0 | 162.64 | 0 | 163.68 | 0 |
| 161.62 | 0 | 162.66 | 0 | 163.70 | 0 |
| 161.64 | 0 | 162.68 | 0 | 163.72 | 0 |
| 161.66 | 0 | 162.70 | 0 | 163.74 | 0 |
| 161.68 | 0 | 162.72 | 0 | 163.76 | 0 |
| 161.70 | 0 | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |

## Summary for Pond IB-1: INFILTRATION BASIN 1

[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.52'
[79] Warning: Submerged Pond CB#3 Primary device # 1 OUTLET by 0.45'

Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 2.75" for 10-yr event
Inflow = 20.02 cfs @ 12.19 hrs, Volume= 112,233 cf
Outflow = 11.18 cfs @ 12.55 hrs, Volume= 112,233 cf, Atten= 44%, Lag= 21.6 min
Discarded = 11.18 cfs @ 12.55 hrs, Volume= 112,233 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.15' @ 12.55 hrs Surf.Area= 7,826 sf Storage= 11,834 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.2 min ( 824.0 - 818.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 160.50' | 50,670 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

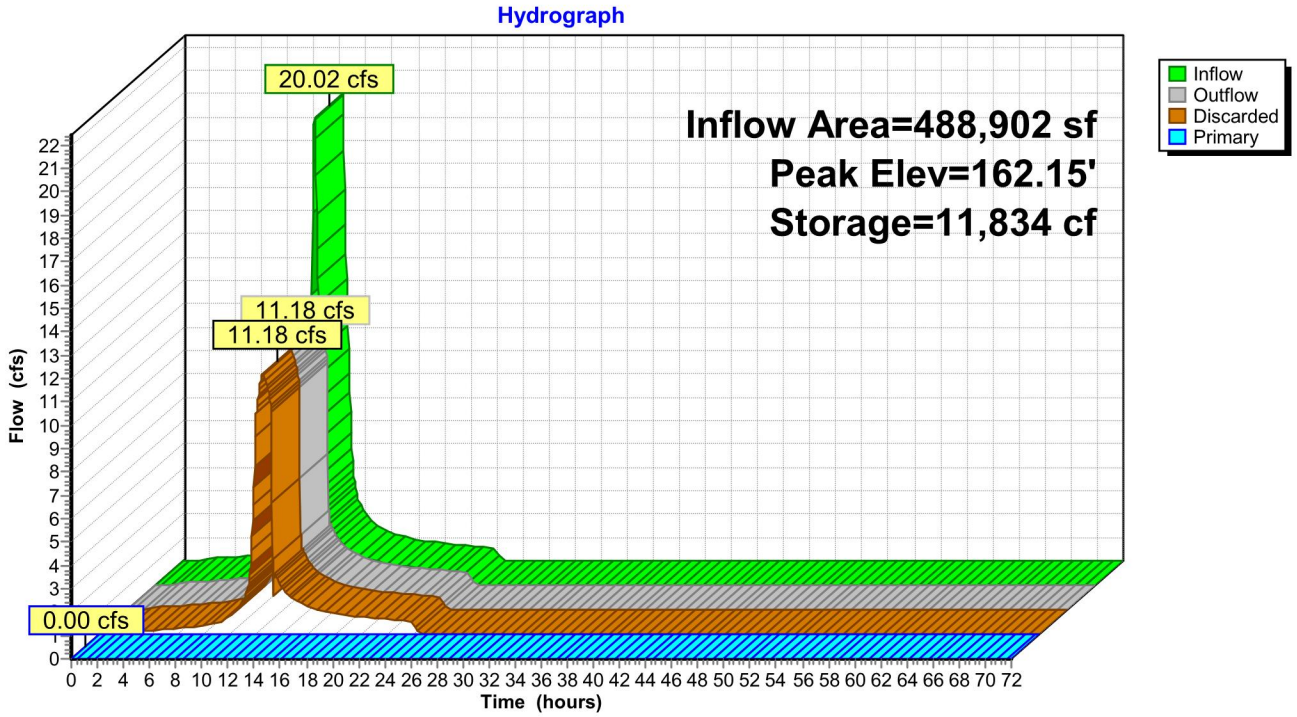
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 160.50 | 6,535 | 0 | 0 |
| 161.00 | 6,901 | 3,359 | 3,359 |
| 162.00 | 7,653 | 7,277 | 10,636 |
| 163.00 | 8,772 | 8,213 | 18,849 |
| 164.00 | 9,753 | 9,263 | 28,111 |
| 165.00 | 17,429 | 13,591 | 41,702 |
| 165.50 | 18,442 | 8,968 | 50,670 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 160.50' | **61.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 163.15' | **15.0" Round Culvert**<br>L= 70.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.15' / 162.80' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

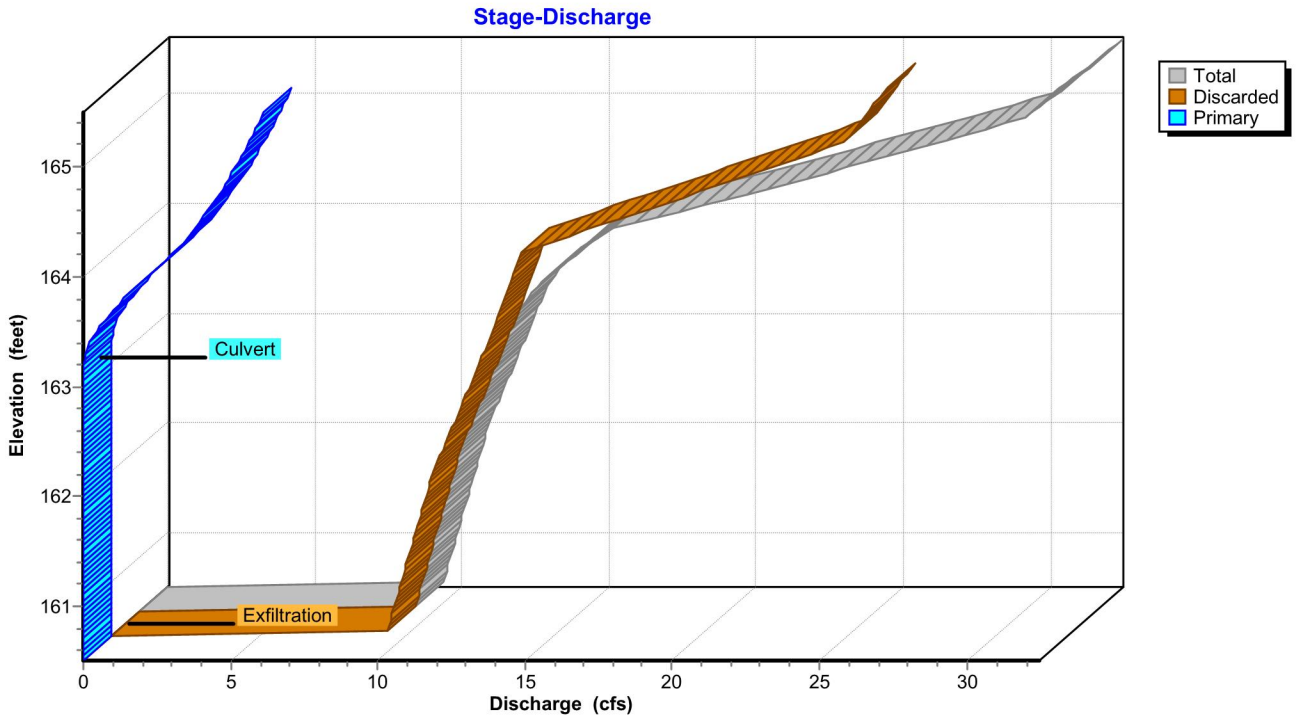
**Discarded OutFlow** Max=11.18 cfs @ 12.55 hrs HW=162.15' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 11.18 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=160.50' (Free Discharge)
↑—**2=Culvert** ( Controls 0.00 cfs)

## Pond IB-1: INFILTRATION BASIN 1




## Pond IB-1: INFILTRATION BASIN 1



## Stage-Area-Storage for Pond IB-1: INFILTRATION BASIN 1

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 160.50 | 6,535 | 0 |
| 160.55 | 6,572 | 328 |
| 160.60 | 6,608 | 657 |
| 160.65 | 6,645 | 988 |
| 160.70 | 6,681 | 1,322 |
| 160.75 | 6,718 | 1,657 |
| 160.80 | 6,755 | 1,993 |
| 160.85 | 6,791 | 2,332 |
| 160.90 | 6,828 | 2,673 |
| 160.95 | 6,864 | 3,015 |
| 161.00 | 6,901 | 3,359 |
| 161.05 | 6,939 | 3,705 |
| 161.10 | 6,976 | 4,053 |
| 161.15 | 7,014 | 4,403 |
| 161.20 | 7,051 | 4,754 |
| 161.25 | 7,089 | 5,108 |
| 161.30 | 7,127 | 5,463 |
| 161.35 | 7,164 | 5,820 |
| 161.40 | 7,202 | 6,180 |
| 161.45 | 7,239 | 6,541 |
| 161.50 | 7,277 | 6,904 |
| 161.55 | 7,315 | 7,268 |
| 161.60 | 7,352 | 7,635 |
| 161.65 | 7,390 | 8,004 |
| 161.70 | 7,427 | 8,374 |
| 161.75 | 7,465 | 8,746 |
| 161.80 | 7,503 | 9,120 |
| 161.85 | 7,540 | 9,497 |
| 161.90 | 7,578 | 9,874 |
| 161.95 | 7,615 | 10,254 |
| 162.00 | 7,653 | 10,636 |
| 162.05 | 7,709 | 11,020 |
| 162.10 | 7,765 | 11,407 |
| 162.15 | 7,821 | 11,797 |
| 162.20 | 7,877 | 12,189 |
| 162.25 | 7,933 | 12,584 |
| 162.30 | 7,989 | 12,982 |
| 162.35 | 8,045 | 13,383 |
| 162.40 | 8,101 | 13,787 |
| 162.45 | 8,157 | 14,193 |
| 162.50 | 8,213 | 14,602 |
| 162.55 | 8,268 | 15,014 |
| 162.60 | 8,324 | 15,429 |
| 162.65 | 8,380 | 15,847 |
| 162.70 | 8,436 | 16,267 |
| 162.75 | 8,492 | 16,690 |
| 162.80 | 8,548 | 17,116 |
| 162.85 | 8,604 | 17,545 |
| 162.90 | 8,660 | 17,977 |
| 162.95 | 8,716 | 18,411 |
| 163.00 | 8,772 | 18,849 |
| 163.05 | 8,821 | 19,288 |
| 163.10 | 8,870 | 19,731 |
| 163.15 | 8,919 | 20,175 |
| 163.20 | 8,968 | 20,623 |
| 163.25 | 9,017 | 21,072 |
| 163.30 | 9,066 | 21,524 |
| 163.35 | 9,115 | 21,979 |
| 163.40 | 9,164 | 22,436 |
| 163.45 | 9,213 | 22,895 |
| 163.50 | 9,263 | 23,357 |
| 163.55 | 9,312 | 23,821 |
| 163.60 | 9,361 | 24,288 |
| 163.65 | 9,410 | 24,758 |
| 163.70 | 9,459 | 25,229 |
| 163.75 | 9,508 | 25,703 |
| 163.80 | 9,557 | 26,180 |
| 163.85 | 9,606 | 26,659 |
| 163.90 | 9,655 | 27,141 |
| 163.95 | 9,704 | 27,625 |
| 164.00 | 9,753 | 28,111 |
| 164.05 | 10,137 | 28,608 |
| 164.10 | 10,521 | 29,125 |
| 164.15 | 10,904 | 29,660 |
| 164.20 | 11,288 | 30,215 |
| 164.25 | 11,672 | 30,789 |
| 164.30 | 12,056 | 31,382 |
| 164.35 | 12,440 | 31,995 |
| 164.40 | 12,823 | 32,626 |
| 164.45 | 13,207 | 33,277 |
| 164.50 | 13,591 | 33,947 |
| 164.55 | 13,975 | 34,636 |
| 164.60 | 14,359 | 35,344 |
| 164.65 | 14,742 | 36,072 |
| 164.70 | 15,126 | 36,819 |
| 164.75 | 15,510 | 37,585 |
| 164.80 | 15,894 | 38,370 |
| 164.85 | 16,278 | 39,174 |
| 164.90 | 16,661 | 39,997 |
| 164.95 | 17,045 | 40,840 |
| 165.00 | 17,429 | 41,702 |
| 165.05 | 17,530 | 42,576 |
| 165.10 | 17,632 | 43,455 |
| 165.15 | 17,733 | 44,339 |
| 165.20 | 17,834 | 45,228 |
| 165.25 | 17,936 | 46,123 |
| 165.30 | 18,037 | 47,022 |
| 165.35 | 18,138 | 47,926 |
| 165.40 | 18,239 | 48,836 |
| 165.45 | 18,341 | 49,750 |
| 165.50 | **18,442** | **50,670** |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=76,401 sf 13.71% Impervious Runoff Depth=5.82"
Flow Length=397' Tc=17.6 min CN=80 Runoff=7.95 cfs 37,068 cf

**Subcatchment 2: DA-2** Runoff Area=108,319 sf 100.00% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=98 Runoff=19.88 cfs 71,943 cf

**Subcatchment 3: DA-3** Runoff Area=193,351 sf 0.48% Impervious Runoff Depth=5.11"
Flow Length=336' Tc=18.1 min CN=74 Runoff=17.64 cfs 82,398 cf

**Subcatchment 4: DA-4** Runoff Area=36,951 sf 43.34% Impervious Runoff Depth=6.06"
Flow Length=178' Tc=8.8 min CN=82 Runoff=5.19 cfs 18,658 cf

**Subcatchment 5: DA-5** Runoff Area=7,317 sf 86.07% Impervious Runoff Depth=7.49"
Tc=6.0 min CN=94 Runoff=1.32 cfs 4,567 cf

**Subcatchment 6: DA-6** Runoff Area=9,667 sf 76.56% Impervious Runoff Depth=7.13"
Tc=6.0 min CN=91 Runoff=1.70 cfs 5,745 cf

**Subcatchment 7: DA-7** Runoff Area=8,414 sf 88.44% Impervious Runoff Depth=7.73"
Tc=6.0 min CN=96 Runoff=1.53 cfs 5,420 cf

**Subcatchment 8: DA-8** Runoff Area=7,009 sf 71.29% Impervious Runoff Depth=7.01"
Tc=6.0 min CN=90 Runoff=1.22 cfs 4,096 cf

**Subcatchment 9: DA-9** Runoff Area=9,188 sf 85.40% Impervious Runoff Depth=7.49"
Tc=6.0 min CN=94 Runoff=1.66 cfs 5,735 cf

**Subcatchment 10: DA-10** Runoff Area=7,734 sf 92.94% Impervious Runoff Depth=7.73"
Tc=6.0 min CN=96 Runoff=1.41 cfs 4,982 cf

**Subcatchment 11: DA-11** Runoff Area=129,794 sf 3.57% Impervious Runoff Depth=4.88"
Flow Length=253' Tc=17.0 min CN=72 Runoff=11.63 cfs 52,774 cf

**Subcatchment 12: DA-12** Runoff Area=15,118 sf 0.00% Impervious Runoff Depth=5.70"
Flow Length=288' Tc=18.9 min CN=79 Runoff=1.50 cfs 7,186 cf

**Pond 2P: Turf Field Storage** Peak Elev=177.57' Storage=11,041 cf Inflow=19.88 cfs 71,943 cf
12.0" Round Culvert n=0.012 L=107.0' S=0.0050 '/' Outflow=11.66 cfs 71,934 cf

**Pond 3P: (new Pond)** Peak Elev=166.00' Inflow=4.37 cfs 11,060 cf
12.0" Round Culvert n=0.011 L=221.0' S=0.0050 '/' Outflow=4.37 cfs 11,060 cf

**Pond 4P: FRENCH DRAIN** Inflow=1.50 cfs 7,186 cf
Primary=1.50 cfs 7,186 cf

**Pond CB#1: CB #1** Peak Elev=162.70' Inflow=1.22 cfs 4,096 cf
15.0" Round Culvert n=0.011 L=68.0' S=0.0103 '/' Outflow=1.22 cfs 4,096 cf

**Pond CB#2: CB #2** Peak Elev=163.55' Inflow=1.66 cfs 5,735 cf
15.0" Round Culvert n=0.011 L=122.0' S=0.0052 '/' Outflow=1.66 cfs 5,735 cf

**Pond CB#3: CB #3** Peak Elev=163.26' Inflow=3.07 cfs 10,718 cf
15.0" Round Culvert n=0.011 L=100.0' S=0.0050 '/' Outflow=3.07 cfs 10,718 cf

**Pond CB#4: CB #4** Peak Elev=165.13' Inflow=1.32 cfs 4,567 cf
15.0" Round Culvert n=0.011 L=118.0' S=0.0051 '/' Outflow=1.32 cfs 4,567 cf

**Pond CB#5: CB #5** Peak Elev=164.59' Inflow=3.02 cfs 10,313 cf
18.0" Round Culvert n=0.011 L=93.0' S=0.0051 '/' Outflow=3.02 cfs 10,313 cf

**Pond CB#6: CB #6** Peak Elev=164.40' Inflow=4.55 cfs 15,733 cf
18.0" Round Culvert n=0.011 L=85.0' S=0.0051 '/' Outflow=4.55 cfs 15,733 cf

**Pond DP-1: DP-1** Peak Elev=162.95' Inflow=6.37 cfs 33,814 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=6.37 cfs 33,814 cf

**Pond DP-2: DP-2** Peak Elev=166.95' Inflow=7.95 cfs 37,068 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=7.95 cfs 37,068 cf

**Pond DP-3: DP-3** Peak Elev=0.00'
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Primary=0.00 cfs 0 cf

**Pond EX-1: EX. CB 1** Peak Elev=163.04' Inflow=4.66 cfs 15,156 cf
18.0" Round Culvert n=0.011 L=14.0' S=0.0071 '/' Outflow=4.66 cfs 15,156 cf

**Pond EX-2: EX. CB #2** Peak Elev=162.87' Inflow=4.66 cfs 15,156 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0028 '/' Outflow=4.66 cfs 15,156 cf

**Pond IB-1: INFILTRATION BASIN 1** Peak Elev=164.65' Storage=36,090 cf Inflow=45.74 cfs 240,743 cf
Discarded=21.07 cfs 229,683 cf Primary=4.37 cfs 11,060 cf Outflow=25.44 cfs 240,743 cf

**Total Runoff Area = 609,263 sf Runoff Volume = 300,574 cf Average Runoff Depth = 5.92"**
**70.20% Pervious = 427,720 sf 29.80% Impervious = 181,543 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 189% of capacity of segment #4

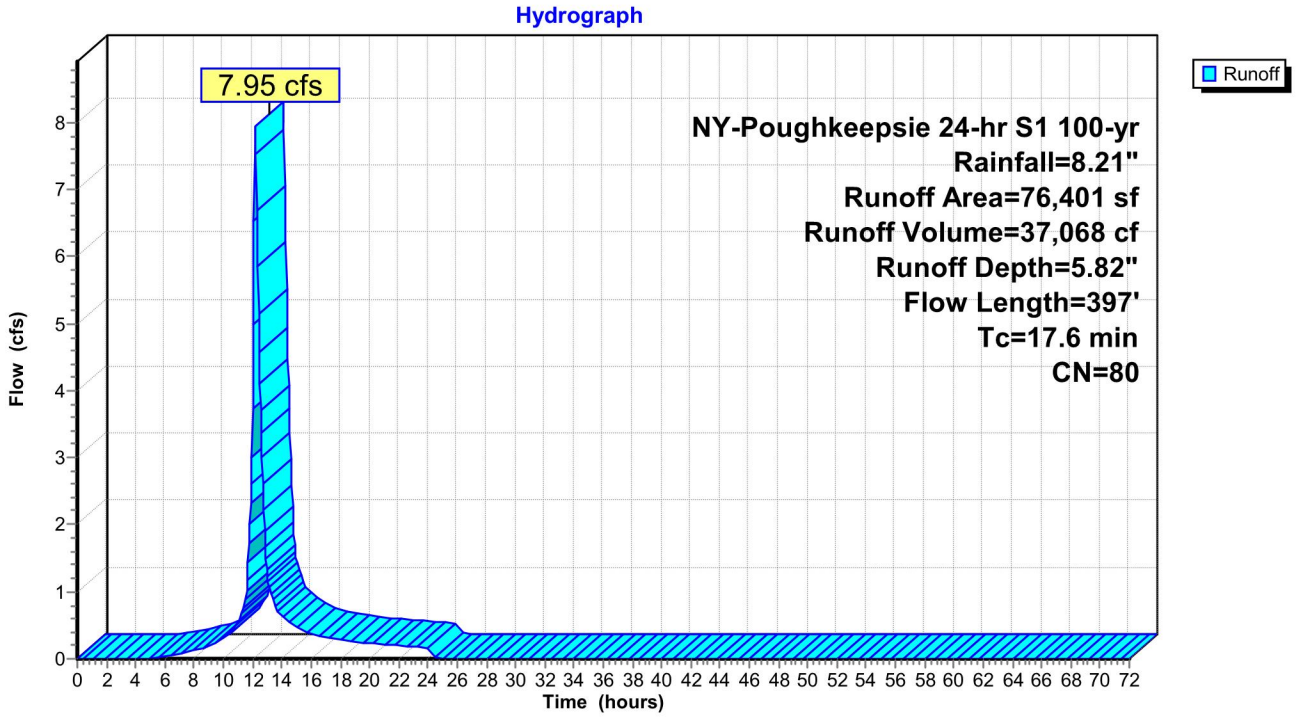
Runoff = 7.95 cfs @ 12.20 hrs, Volume= 37,068 cf, Depth= 5.82"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 3,133 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,203 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 10,478 | 98 | Paved parking, HSG C |
| 76,401 | 80 | Weighted Average |
| 65,923 | | 86.29% Pervious Area |
| 10,478 | | 13.71% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

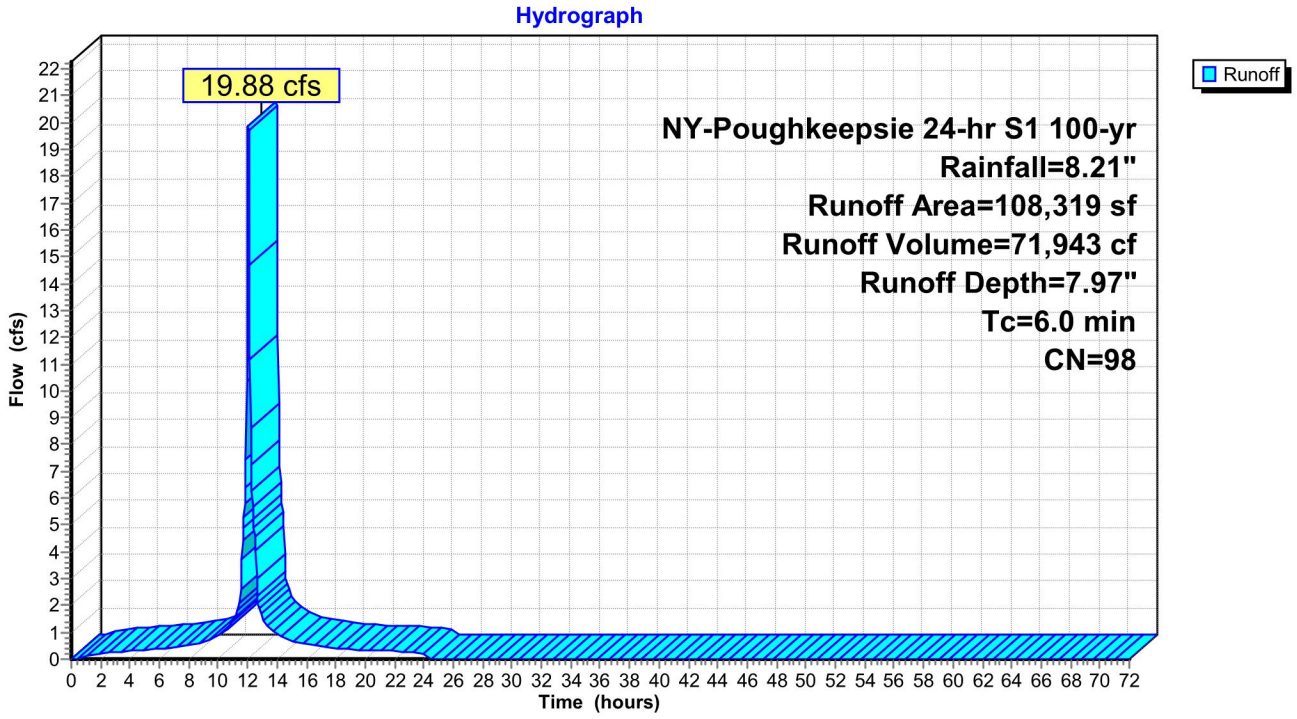
Runoff = 19.88 cfs @ 12.04 hrs, Volume= 71,943 cf, Depth= 7.97"
Routed to Pond 2P : Turf Field Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 100,932 | 98 | Turf Field |
| | 7,387 | 98 | Paved parking, HSG C |
| | 108,319 | 98 | Weighted Average |
| | 108,319 | | 100.00% Impervious Area |

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

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

Regraded Field with Underderain

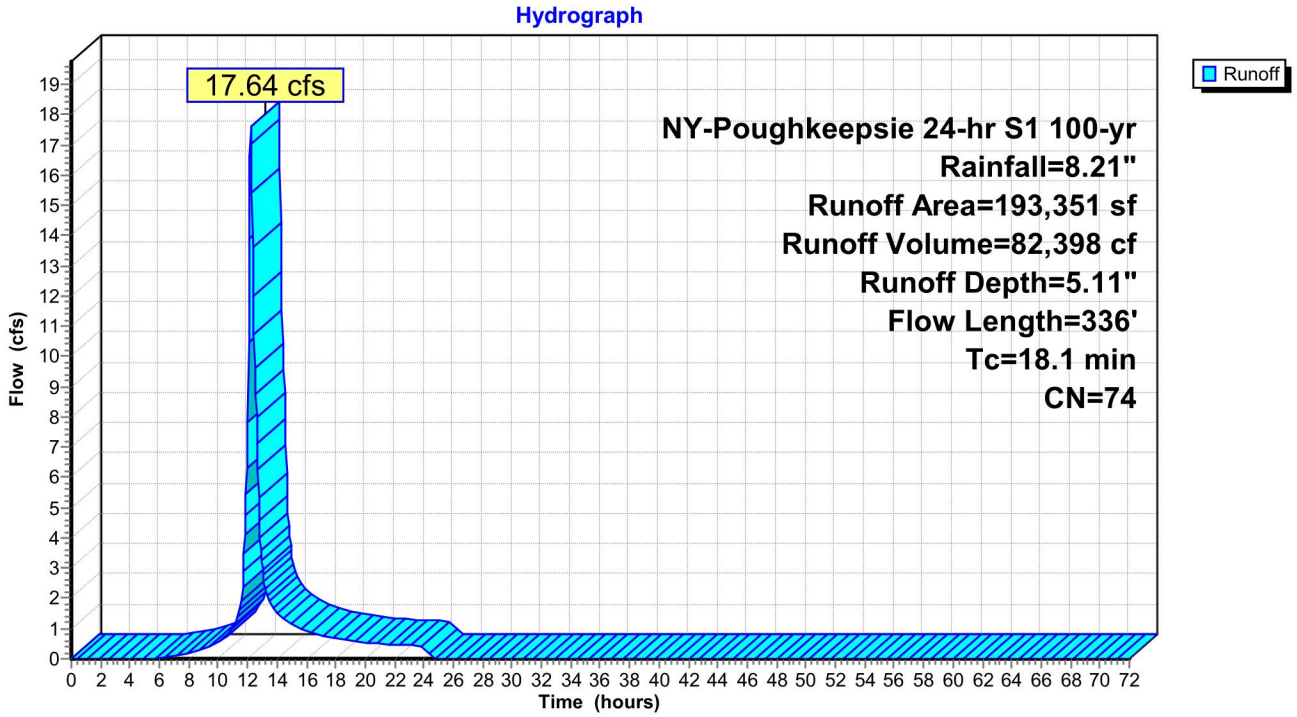
Runoff = 17.64 cfs @ 12.21 hrs, Volume= 82,398 cf, Depth= 5.11"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 96,152 | 74 | >75% Grass cover, Good, HSG C |
| 6,421 | 49 | 50-75% Grass cover, Fair, HSG A |
| 40,341 | 79 | 50-75% Grass cover, Fair, HSG C |
| 49,516 | 73 | Woods, Fair, HSG C |
| 921 | 98 | Paved parking, HSG C |
| 193,351 | 74 | Weighted Average |
| 192,430 | | 99.52% Pervious Area |
| 921 | | 0.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 1.3 | 106 | 0.0380 | 1.36 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 336 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Subcatchment 4: DA-4

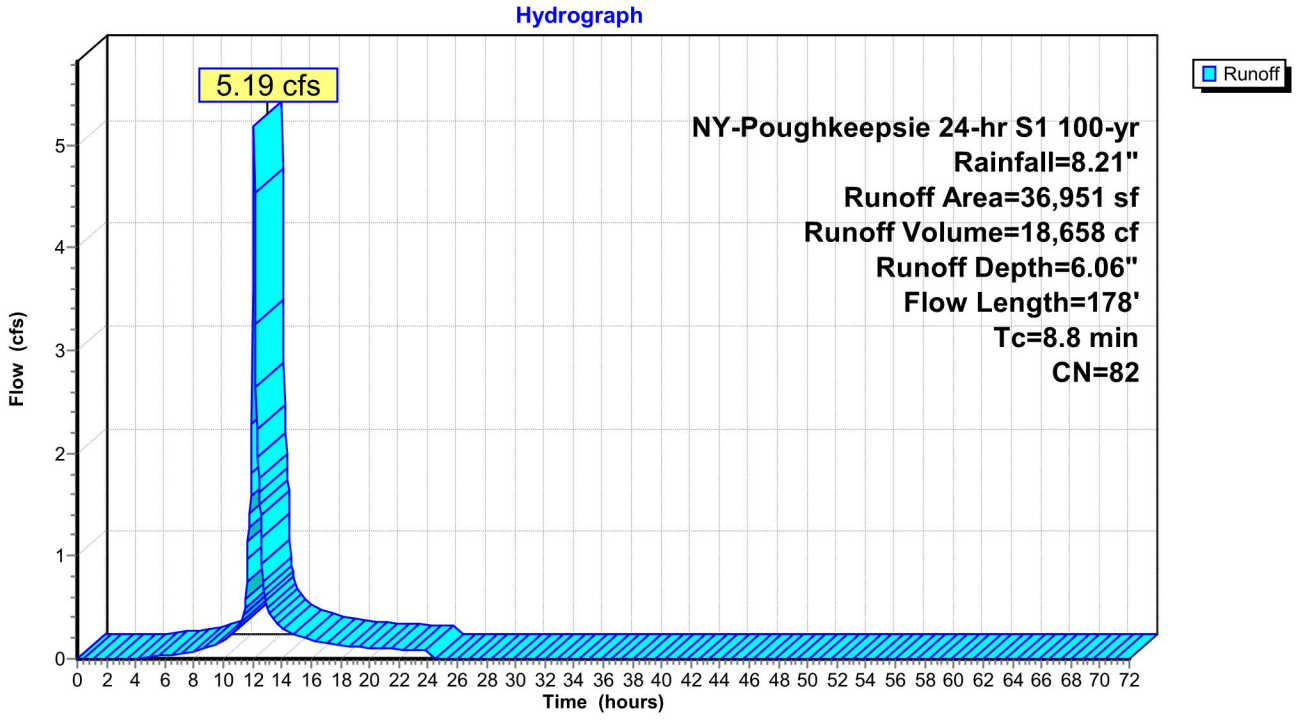
Runoff = 5.19 cfs @ 12.07 hrs, Volume= 18,658 cf, Depth= 6.06"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 20,936 | 69 | 50-75% Grass cover, Fair, HSG B |
| 16,015 | 98 | Paved parking, HSG B |
| 36,951 | 82 | Weighted Average |
| 20,936 | | 56.66% Pervious Area |
| 16,015 | | 43.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.5 | 100 | 0.0400 | 0.22 | | **Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.16" |
| 1.3 | 78 | 0.0190 | 0.96 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 8.8 | 178 | Total | | | |

## Subcatchment 4: DA-4



## Summary for Subcatchment 5: DA-5

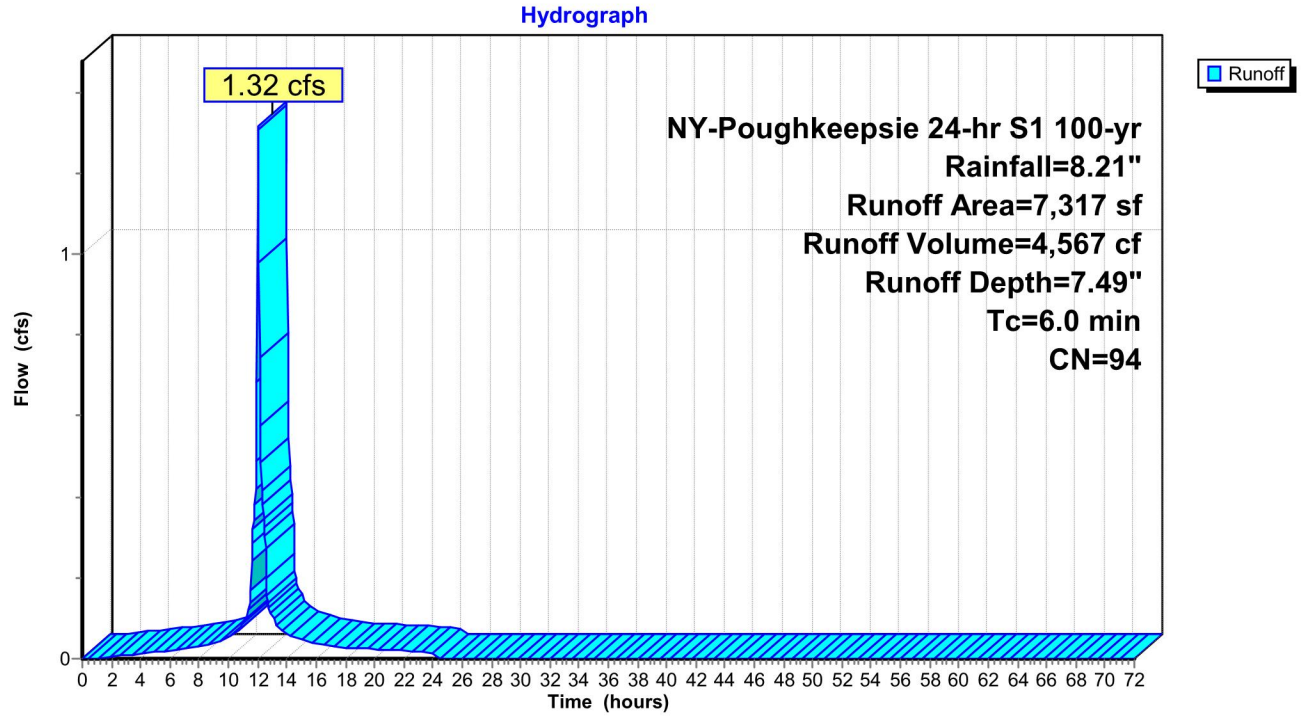
Runoff = 1.32 cfs @ 12.04 hrs, Volume= 4,567 cf, Depth= 7.49"
Routed to Pond CB#4 : CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 1,019 | 69 | 50-75% Grass cover, Fair, HSG B |
| 6,298 | 98 | Paved parking, HSG B |
| 7,317 | 94 | Weighted Average |
| 1,019 | | 13.93% Pervious Area |
| 6,298 | | 86.07% Impervious Area |

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

## Subcatchment 5: DA-5



## Summary for Subcatchment 6: DA-6

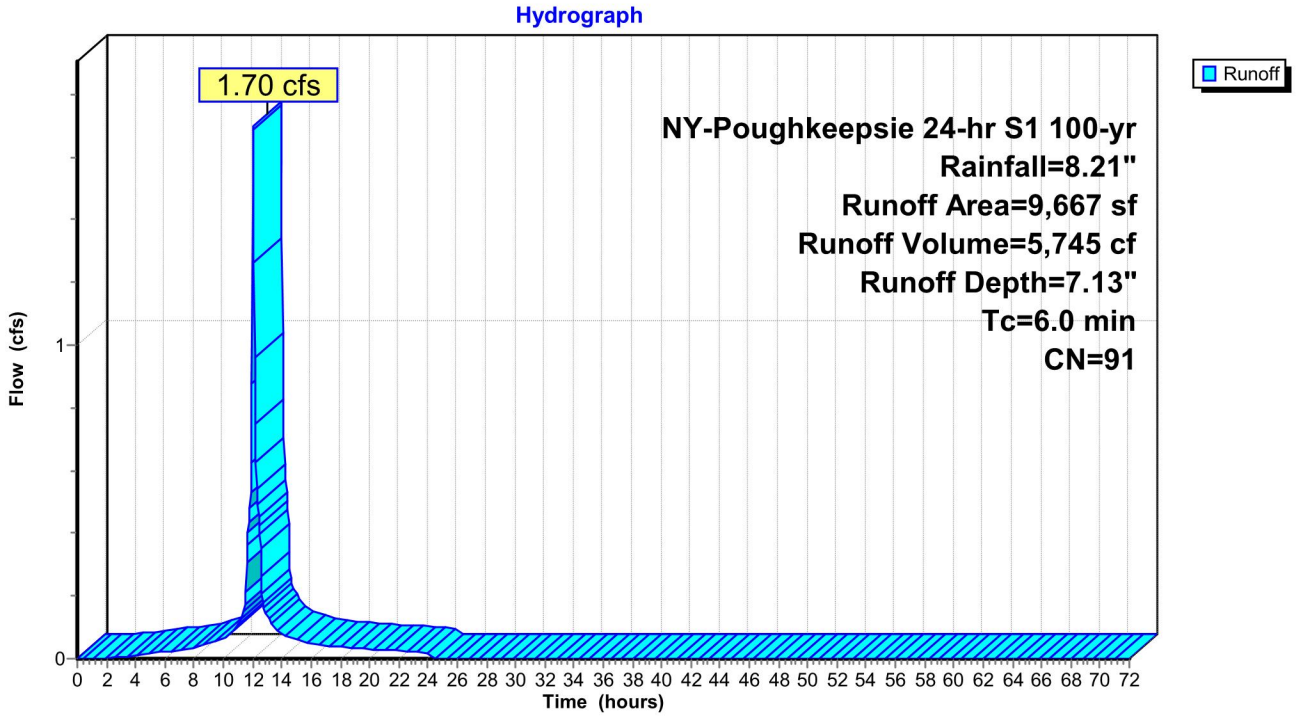
Runoff = 1.70 cfs @ 12.04 hrs, Volume= 5,745 cf, Depth= 7.13"
Routed to Pond CB#5 : CB #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 2,266 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,401 | 98 | Paved parking, HSG B |
| 9,667 | 91 | Weighted Average |
| 2,266 | | 23.44% Pervious Area |
| 7,401 | | 76.56% Impervious Area |

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

## Subcatchment 6: DA-6



## Summary for Subcatchment 7: DA-7

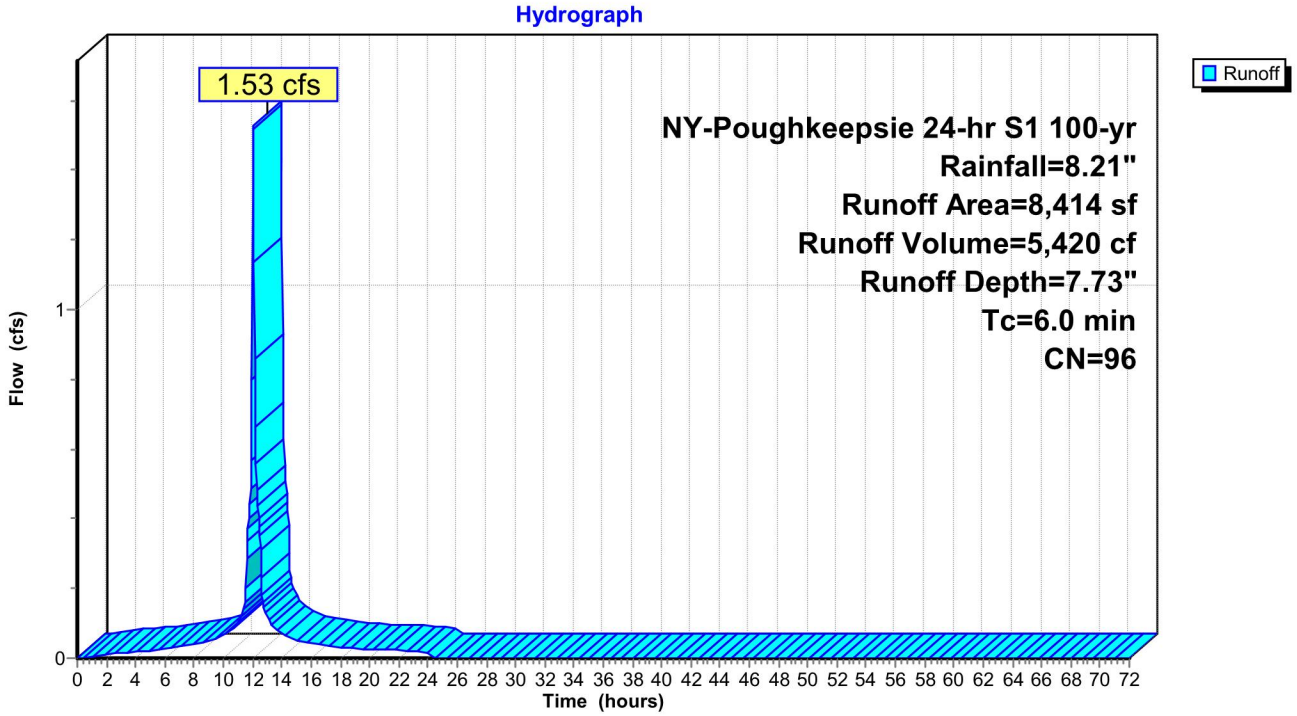
Runoff = 1.53 cfs @ 12.04 hrs, Volume= 5,420 cf, Depth= 7.73"
Routed to Pond CB#6 : CB #6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 46 | 69 | 50-75% Grass cover, Fair, HSG B |
| 927 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,441 | 98 | Paved parking, HSG C |
| 8,414 | 96 | Weighted Average |
| 973 | | 11.56% Pervious Area |
| 7,441 | | 88.44% Impervious Area |

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

### Subcatchment 7: DA-7



## Summary for Subcatchment 8: DA-8

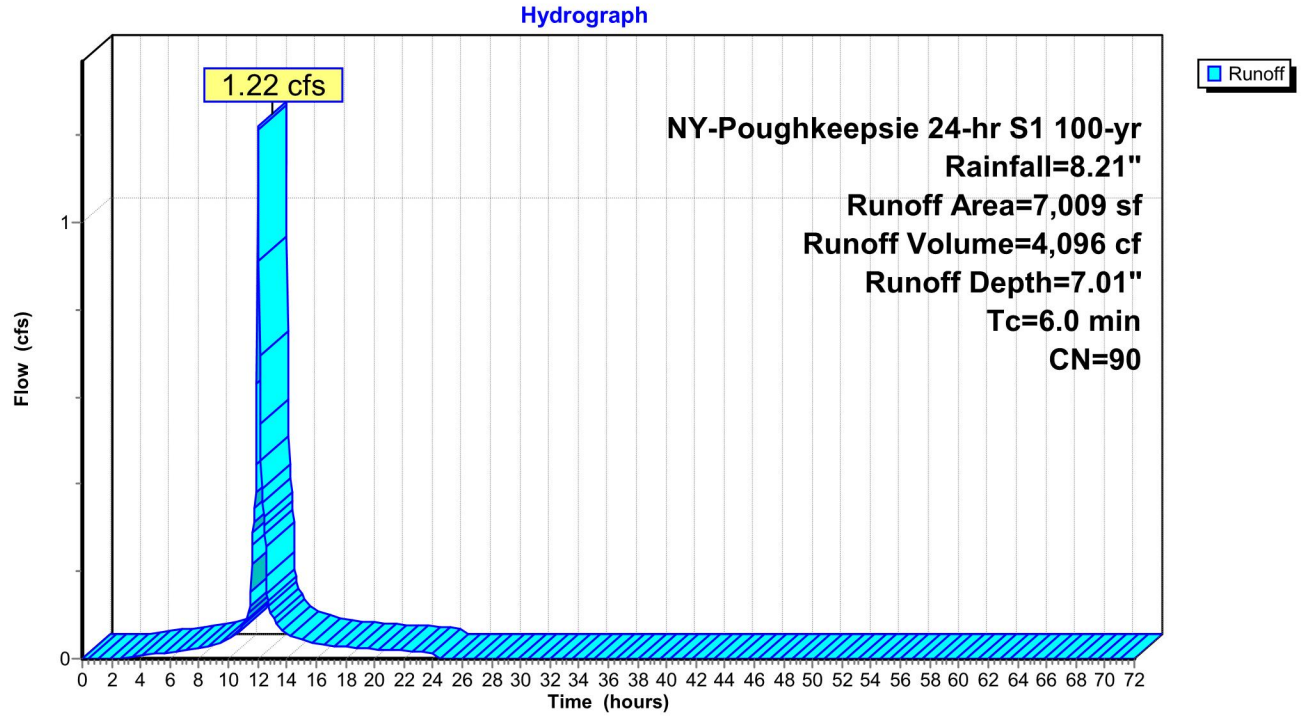
Runoff = 1.22 cfs @ 12.04 hrs, Volume= 4,096 cf, Depth= 7.01"
Routed to Pond CB#1 : CB #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 2,012 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,997 | 98 | Paved parking, HSG C |
| 7,009 | 90 | Weighted Average |
| 2,012 | | 28.71% Pervious Area |
| 4,997 | | 71.29% Impervious Area |

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

## Subcatchment 8: DA-8



## Summary for Subcatchment 9: DA-9

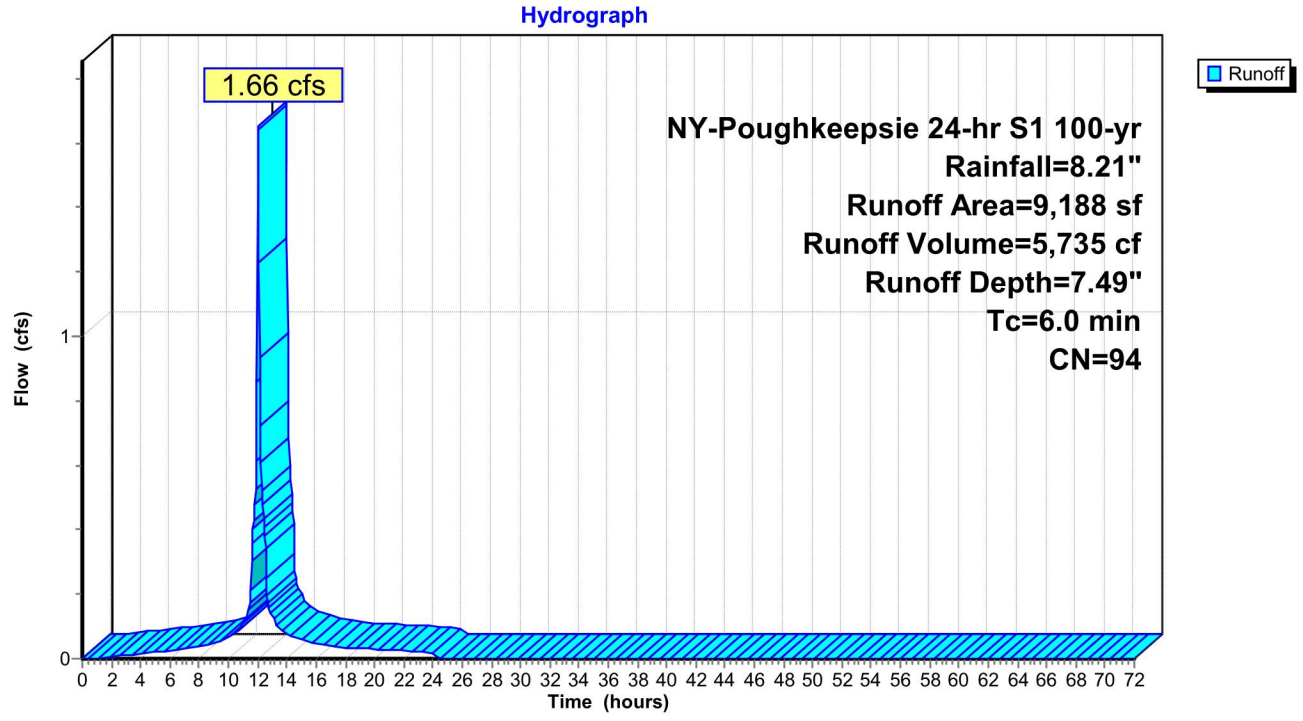
Runoff = 1.66 cfs @ 12.04 hrs, Volume= 5,735 cf, Depth= 7.49"
Routed to Pond CB#2 : CB #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 1,341 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,847 | 98 | Paved parking, HSG B |
| 9,188 | 94 | Weighted Average |
| 1,341 | | 14.60% Pervious Area |
| 7,847 | | 85.40% Impervious Area |

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

### Subcatchment 9: DA-9



## Summary for Subcatchment 10: DA-10

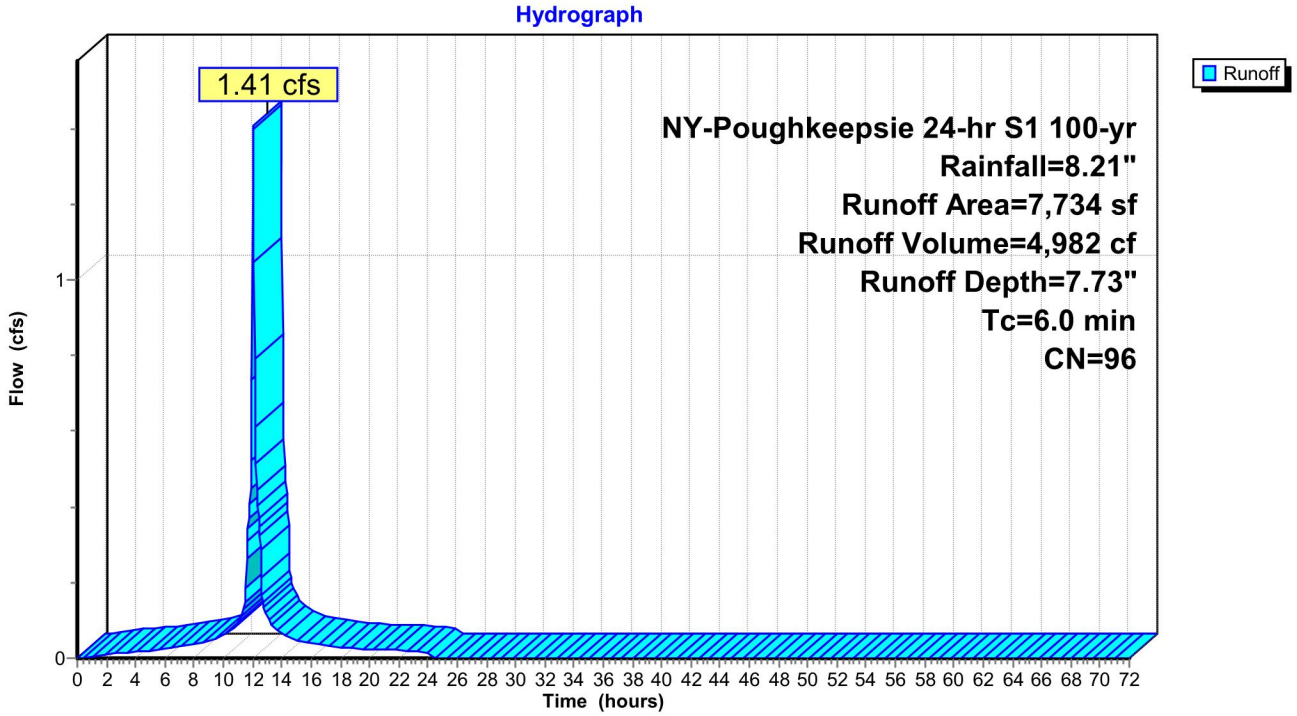
Runoff = 1.41 cfs @ 12.04 hrs, Volume= 4,982 cf, Depth= 7.73"
Routed to Pond CB#3 : CB #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 261 | 69 | 50-75% Grass cover, Fair, HSG B |
| 285 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,188 | 98 | Paved parking, HSG C |
| 7,734 | 96 | Weighted Average |
| 546 | | 7.06% Pervious Area |
| 7,188 | | 92.94% Impervious Area |

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

### Subcatchment 10: DA-10



## Summary for Subcatchment 11: DA-11

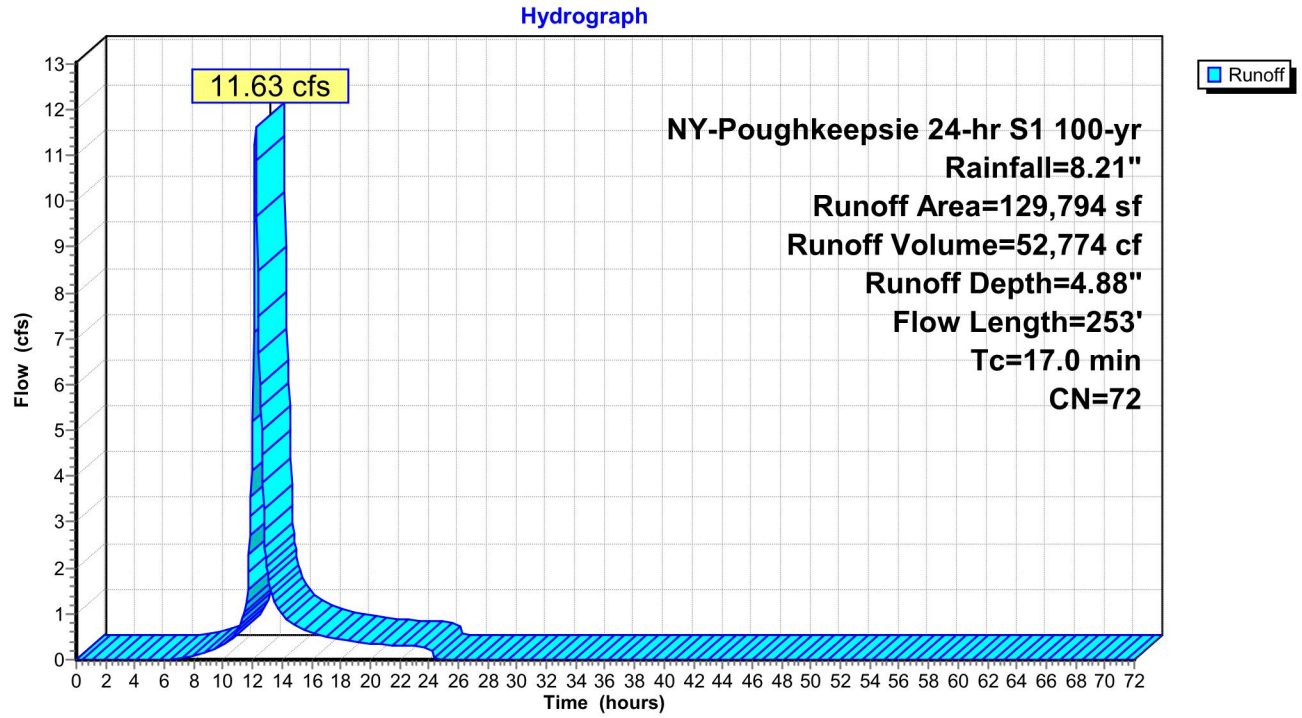
Runoff = 11.63 cfs @ 12.19 hrs, Volume= 52,774 cf, Depth= 4.88"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 12,385 | 49 | 50-75% Grass cover, Fair, HSG A |
| 26,029 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,362 | 60 | Woods, Fair, HSG B |
| 29,624 | 79 | 50-75% Grass cover, Fair, HSG C |
| 52,756 | 73 | Woods, Fair, HSG C |
| 4,638 | 98 | Paved parking, HSG C |
| 129,794 | 72 | Weighted Average |
| 125,156 | | 96.43% Pervious Area |
| 4,638 | | 3.57% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 14.2 | 100 | 0.0575 | 0.12 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 2.8 | 153 | 0.0340 | 0.92 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 17.0 | 253 | Total | | | |

## Subcatchment 11: DA-11



## Summary for Subcatchment 12: DA-12

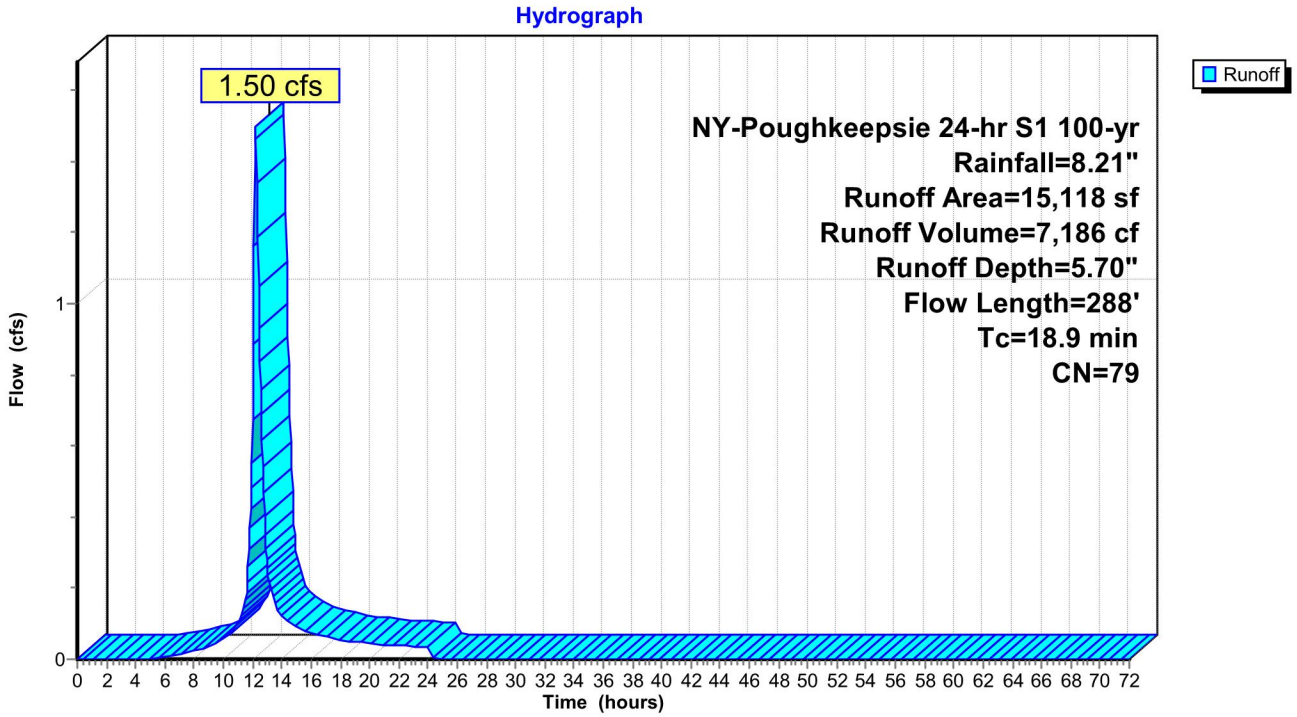
Runoff = 1.50 cfs @ 12.21 hrs, Volume= 7,186 cf, Depth= 5.70"
Routed to Pond 4P : FRENCH DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 100-yr Rainfall=8.21"

| Area (sf) | CN | Description |
|---|---|---|
| 14,997 | 79 | 50-75% Grass cover, Fair, HSG C |
| 121 | 73 | Woods, Fair, HSG C |
| 15,118 | 79 | Weighted Average |
| 15,118 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.0 | 150 | 0.0750 | 0.14 | | **Sheet Flow, A-B** Grass: Bermuda n= 0.410 P2= 3.16" |
| 0.9 | 138 | 0.1380 | 2.60 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 18.9 | 288 | Total | | | |

## Subcatchment 12: DA-12



## Summary for Pond 2P: Turf Field Storage

[93] Warning: Storage range exceeded by 10.02'

Inflow Area = 108,319 sf,100.00% Impervious, Inflow Depth = 7.97" for 100-yr event
Inflow = 19.88 cfs @ 12.04 hrs, Volume= 71,943 cf
Outflow = 11.66 cfs @ 12.20 hrs, Volume= 71,934 cf, Atten= 41%, Lag= 9.6 min
Primary = 11.66 cfs @ 12.20 hrs, Volume= 71,934 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 177.57' @ 12.20 hrs Surf.Area= 55,159 sf Storage= 11,041 cf

Plug-Flow detention time= 11.7 min calculated for 71,934 cf (100% of inflow)
Center-of-Mass det. time= 11.6 min ( 752.4 - 740.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.75' | 237 cf | **8" Pipe Trench (Irregular)** Listed below (Recalc)<br>684 cf Overall - 91 cf Embedded = 593 cf x 40.0% Voids |
| #2 | 163.00' | 69 cf | **8.0" Round 8" Collector** Inside #1<br>L= 197.0' S= 0.0050 '/'<br>91 cf Overall - 0.6" Wall Thickness = 69 cf |
| #3 | 161.93' | 6,068 cf | **12" Pipe Trench (Irregular)** Listed below (Recalc)<br>15,367 cf Overall - 197 cf Embedded = 15,170 cf x 40.0% Voids |
| #4 | 162.18' | 137 cf | **12.0" Round 12" Collector** Inside #3<br>L= 174.0' S= 0.0050 '/'<br>197 cf Overall - 1.2" Wall Thickness = 137 cf |
| #5 | 166.89' | 4,530 cf | **Field Stone (Irregular)** Listed below (Recalc)<br>11,326 cf Overall x 40.0% Voids |
| | | 11,041 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 162.75 | 0 | 0.0 | 0 | 0 | 0 |
| 163.75 | 197 | 396.0 | 66 | 66 | 12,481 |
| 166.89 | 197 | 396.0 | 619 | 684 | 13,724 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 161.93 | 0 | 0.0 | 0 | 0 | 0 |
| 162.75 | 3,482 | 388.0 | 952 | 952 | 11,981 |
| 166.89 | 3,482 | 388.0 | 14,415 | 15,367 | 13,587 |

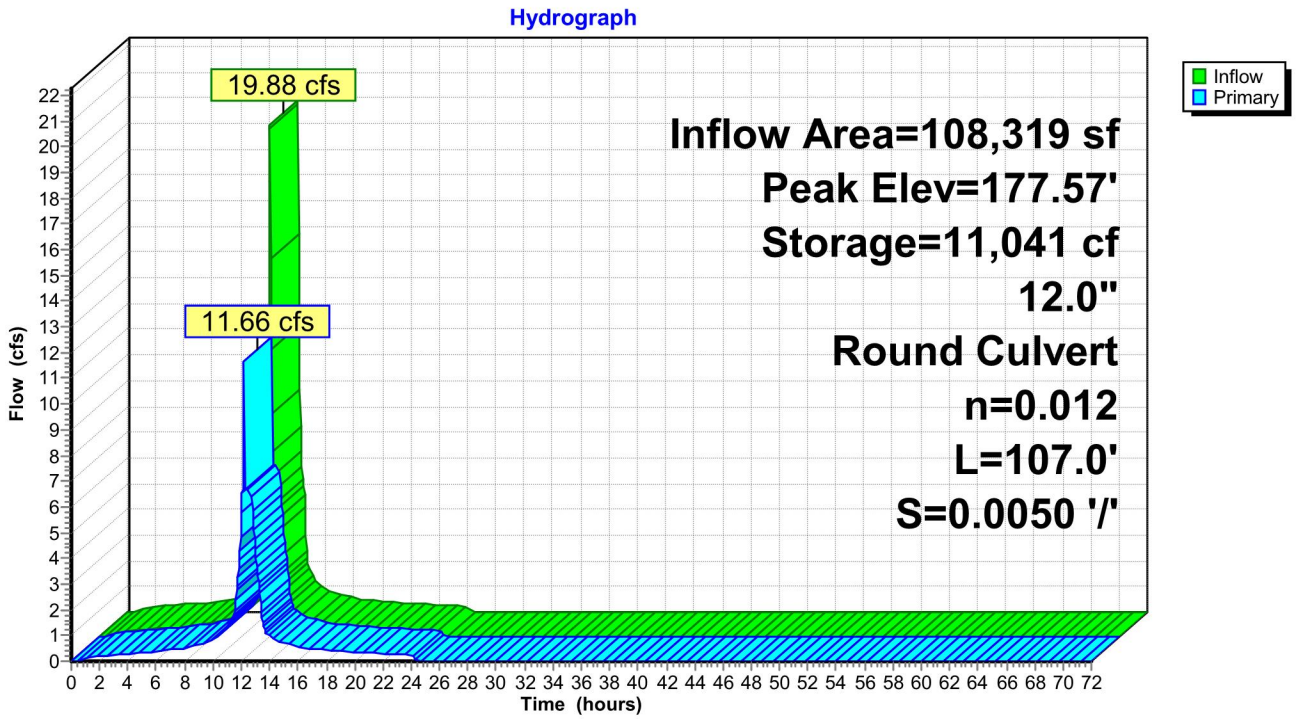
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 166.89 | 0 | 0.0 | 0 | 0 | 0 |
| 167.55 | 51,480 | 1,044.0 | 11,326 | 11,326 | 86,735 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.16' | **12.0" Round 12" DIA Outlet Pipe**<br>L= 107.0' CPP, square edge headwall, Ke= 0.500 |

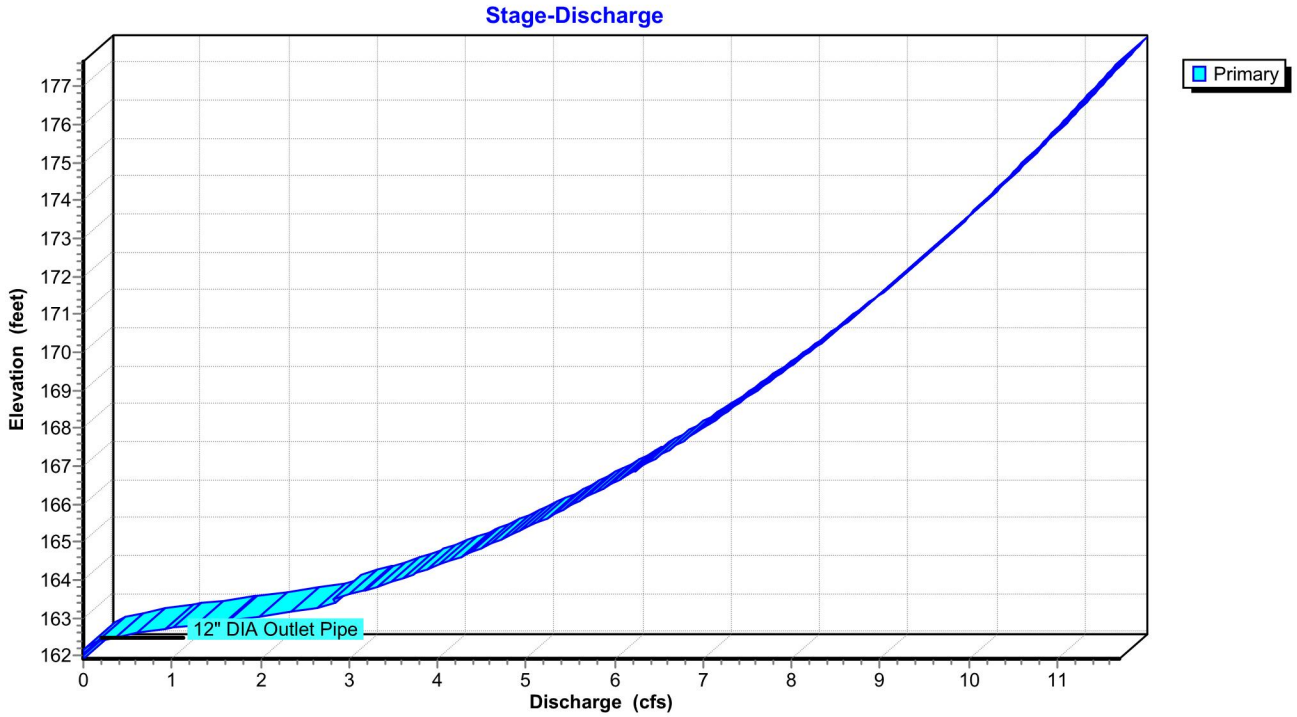
Inlet / Outlet Invert= 162.16' / 161.63' S= 0.0050 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

**Primary OutFlow** Max=11.66 cfs @ 12.20 hrs HW=177.57' (Free Discharge)
**1=12" DIA Outlet Pipe** (Barrel Controls 11.66 cfs @ 14.85 fps)

## Pond 2P: Turf Field Storage



## Pond 2P: Turf Field Storage



## Stage-Area-Storage for Pond 2P: Turf Field Storage

| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 161.93 | 0 |
| 162.13 | 5 |
| 162.33 | 44 |
| 162.53 | 150 |
| 162.73 | 360 |
| 162.93 | 648 |
| 163.13 | 941 |
| 163.33 | 1,239 |
| 163.53 | 1,538 |
| 163.73 | 1,841 |
| 163.93 | 2,143 |
| 164.13 | 2,443 |
| 164.33 | 2,742 |
| 164.53 | 3,038 |
| 164.73 | 3,332 |
| 164.93 | 3,627 |
| 165.13 | 3,921 |
| 165.33 | 4,215 |
| 165.53 | 4,510 |
| 165.73 | 4,804 |
| 165.93 | 5,098 |
| 166.13 | 5,393 |
| 166.33 | 5,687 |
| 166.53 | 5,981 |
| 166.73 | 6,275 |
| 166.93 | 6,512 |
| 167.13 | 6,729 |
| 167.33 | 7,853 |
| 167.53 | **10,642** |
| 167.73 | **11,041** |
| 167.93 | 11,041 |
| 168.13 | 11,041 |
| 168.33 | 11,041 |
| 168.53 | 11,041 |
| 168.73 | 11,041 |
| 168.93 | 11,041 |
| 169.13 | 11,041 |
| 169.33 | 11,041 |
| 169.53 | 11,041 |
| 169.73 | 11,041 |
| 169.93 | 11,041 |
| 170.13 | 11,041 |
| 170.33 | 11,041 |
| 170.53 | 11,041 |
| 170.73 | 11,041 |
| 170.93 | 11,041 |
| 171.13 | 11,041 |
| 171.33 | 11,041 |
| 171.53 | 11,041 |
| 171.73 | 11,041 |
| 171.93 | 11,041 |
| 172.13 | 11,041 |
| 172.33 | 11,041 |
| 172.53 | 11,041 |
| 172.73 | 11,041 |
| 172.93 | 11,041 |
| 173.13 | 11,041 |
| 173.33 | 11,041 |
| 173.53 | 11,041 |
| 173.73 | 11,041 |
| 173.93 | 11,041 |
| 174.13 | 11,041 |
| 174.33 | 11,041 |
| 174.53 | 11,041 |
| 174.73 | 11,041 |
| 174.93 | 11,041 |
| 175.13 | 11,041 |
| 175.33 | 11,041 |
| 175.53 | 11,041 |
| 175.73 | 11,041 |
| 175.93 | 11,041 |
| 176.13 | 11,041 |
| 176.33 | 11,041 |
| 176.53 | 11,041 |
| 176.73 | 11,041 |
| 176.93 | 11,041 |
| 177.13 | 11,041 |
| 177.33 | 11,041 |
| 177.53 | 11,041 |

## Summary for Pond 3P: (new Pond)

[58] Hint: Peaked 0.50' above defined flood level
[81] Warning: Exceeded Pond IB-1 by 1.34' @ 12.50 hrs

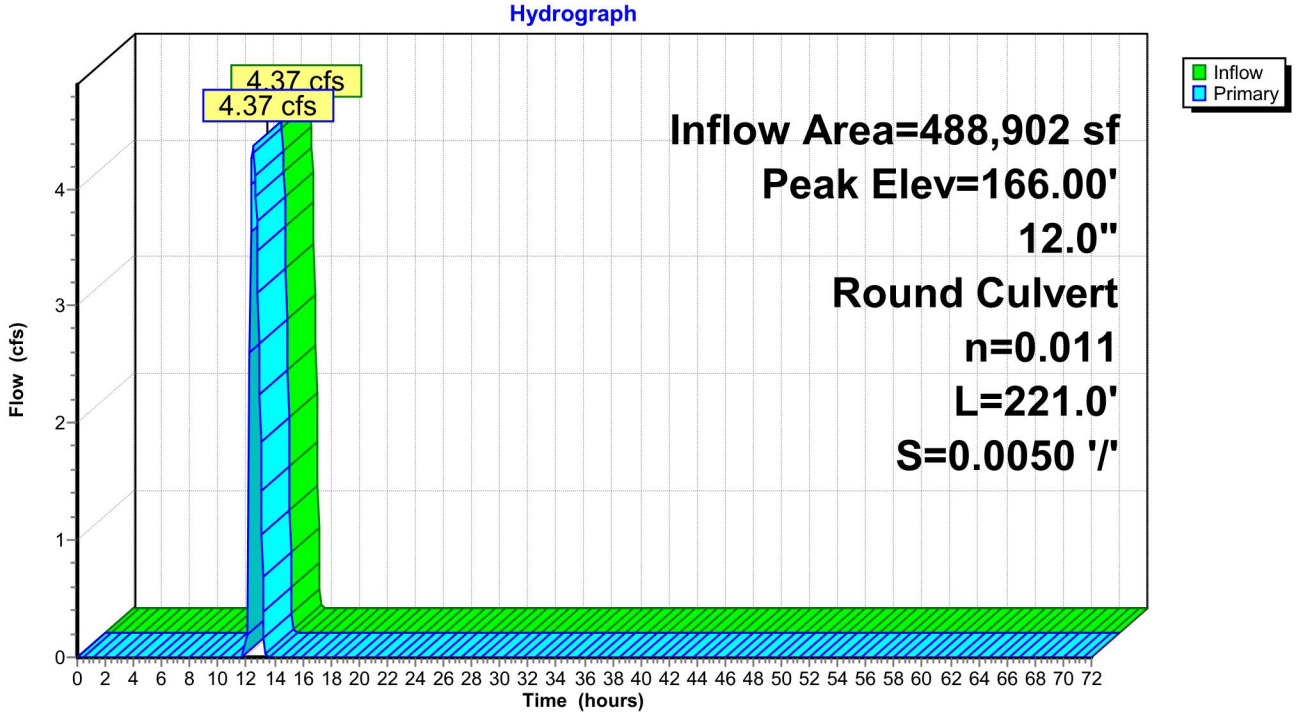
Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 0.27" for 100-yr event
Inflow = 4.37 cfs @ 12.49 hrs, Volume= 11,060 cf
Outflow = 4.37 cfs @ 12.49 hrs, Volume= 11,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.37 cfs @ 12.49 hrs, Volume= 11,060 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 166.00' @ 12.49 hrs
Flood Elev= 165.50'

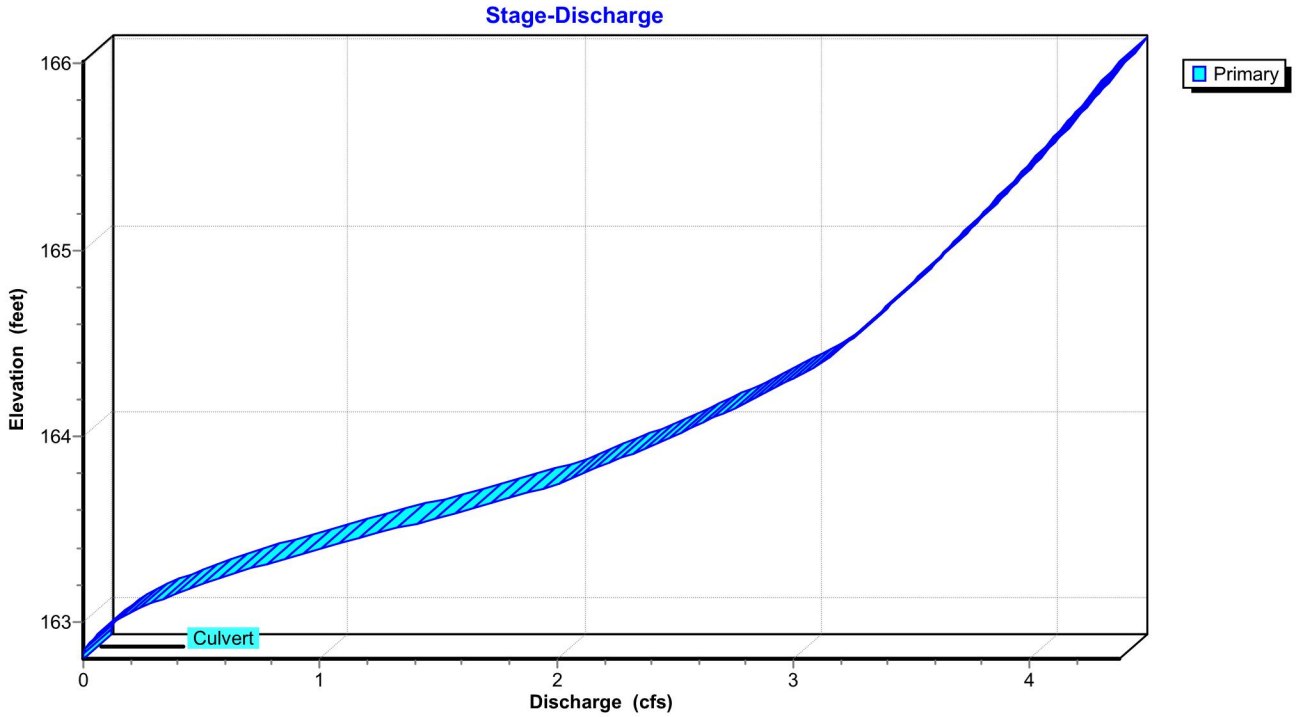
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.80' | **12.0" Round Culvert**<br>L= 221.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.80' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 0.79 sf |

**Primary OutFlow** Max=4.36 cfs @ 12.49 hrs HW=165.99' (Free Discharge)
**1=Culvert** (Barrel Controls 4.36 cfs @ 5.55 fps)

### Pond 3P: (new Pond)



## Pond 3P: (new Pond)



## Stage-Area-Storage for Pond 3P: (new Pond)

| Elevation (feet) | Storage (cubic-feet) |
|---|---|
| 162.80 | **0** |
| 162.85 | 0 |
| 162.90 | 0 |
| 162.95 | 0 |
| 163.00 | 0 |
| 163.05 | 0 |
| 163.10 | 0 |
| 163.15 | 0 |
| 163.20 | 0 |
| 163.25 | 0 |
| 163.30 | 0 |
| 163.35 | 0 |
| 163.40 | 0 |
| 163.45 | 0 |
| 163.50 | 0 |
| 163.55 | 0 |
| 163.60 | 0 |
| 163.65 | 0 |
| 163.70 | 0 |
| 163.75 | 0 |
| 163.80 | 0 |
| 163.85 | 0 |
| 163.90 | 0 |
| 163.95 | 0 |
| 164.00 | 0 |
| 164.05 | 0 |
| 164.10 | 0 |
| 164.15 | 0 |
| 164.20 | 0 |
| 164.25 | 0 |
| 164.30 | 0 |
| 164.35 | 0 |
| 164.40 | 0 |
| 164.45 | 0 |
| 164.50 | 0 |
| 164.55 | 0 |
| 164.60 | 0 |
| 164.65 | 0 |
| 164.70 | 0 |
| 164.75 | 0 |
| 164.80 | 0 |
| 164.85 | 0 |
| 164.90 | 0 |
| 164.95 | 0 |
| 165.00 | 0 |
| 165.05 | 0 |
| 165.10 | 0 |
| 165.15 | 0 |
| 165.20 | 0 |
| 165.25 | 0 |
| 165.30 | 0 |
| 165.35 | 0 |
| 165.40 | 0 |
| 165.45 | 0 |
| 165.50 | 0 |
| 165.55 | 0 |
| 165.60 | 0 |
| 165.65 | 0 |
| 165.70 | 0 |
| 165.75 | 0 |
| 165.80 | 0 |
| 165.85 | 0 |
| 165.90 | 0 |
| 165.95 | 0 |
| 166.00 | 0 |

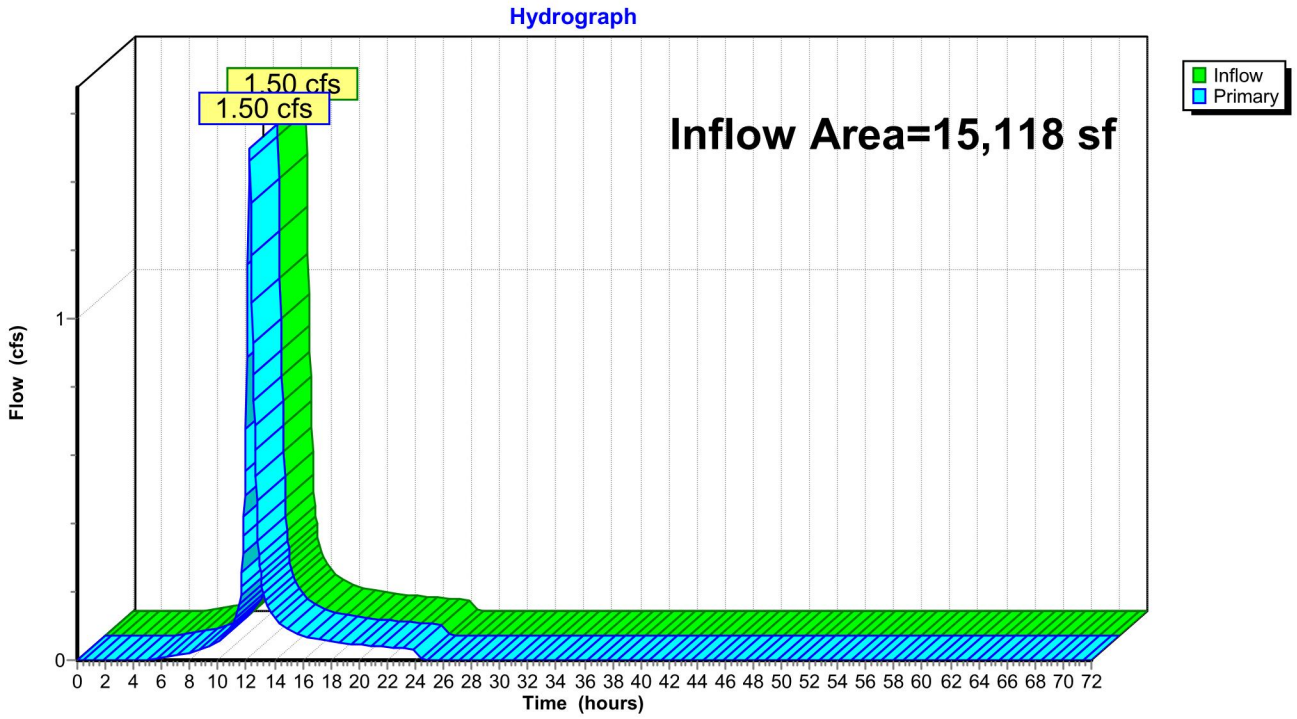
## Summary for Pond 4P: FRENCH DRAIN

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15,118 sf, 0.00% Impervious, Inflow Depth = 5.70" for 100-yr event
Inflow = 1.50 cfs @ 12.21 hrs, Volume= 7,186 cf
Primary = 1.50 cfs @ 12.21 hrs, Volume= 7,186 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Pond 4P: FRENCH DRAIN



## Summary for Pond CB#1: CB #1

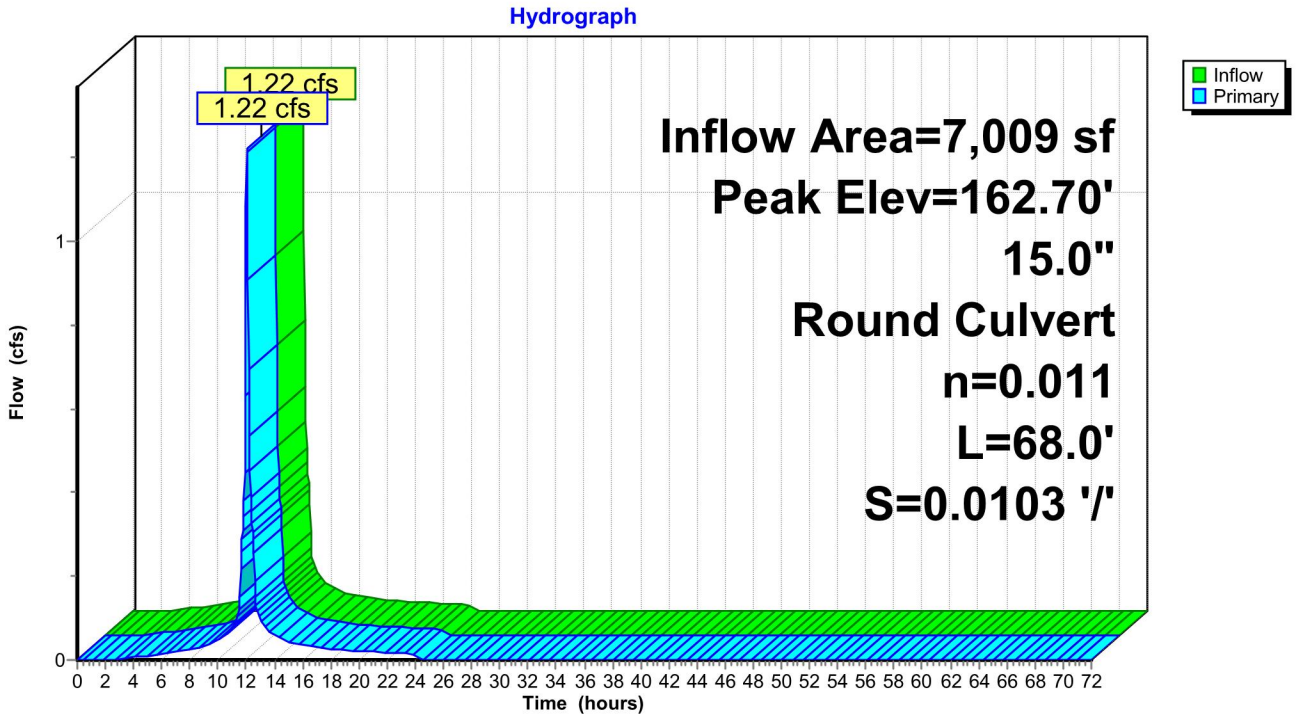
Inflow Area = 7,009 sf, 71.29% Impervious, Inflow Depth = 7.01" for 100-yr event
Inflow = 1.22 cfs @ 12.04 hrs, Volume= 4,096 cf
Outflow = 1.22 cfs @ 12.04 hrs, Volume= 4,096 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.04 hrs, Volume= 4,096 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.70' @ 12.04 hrs
Flood Elev= 164.96'

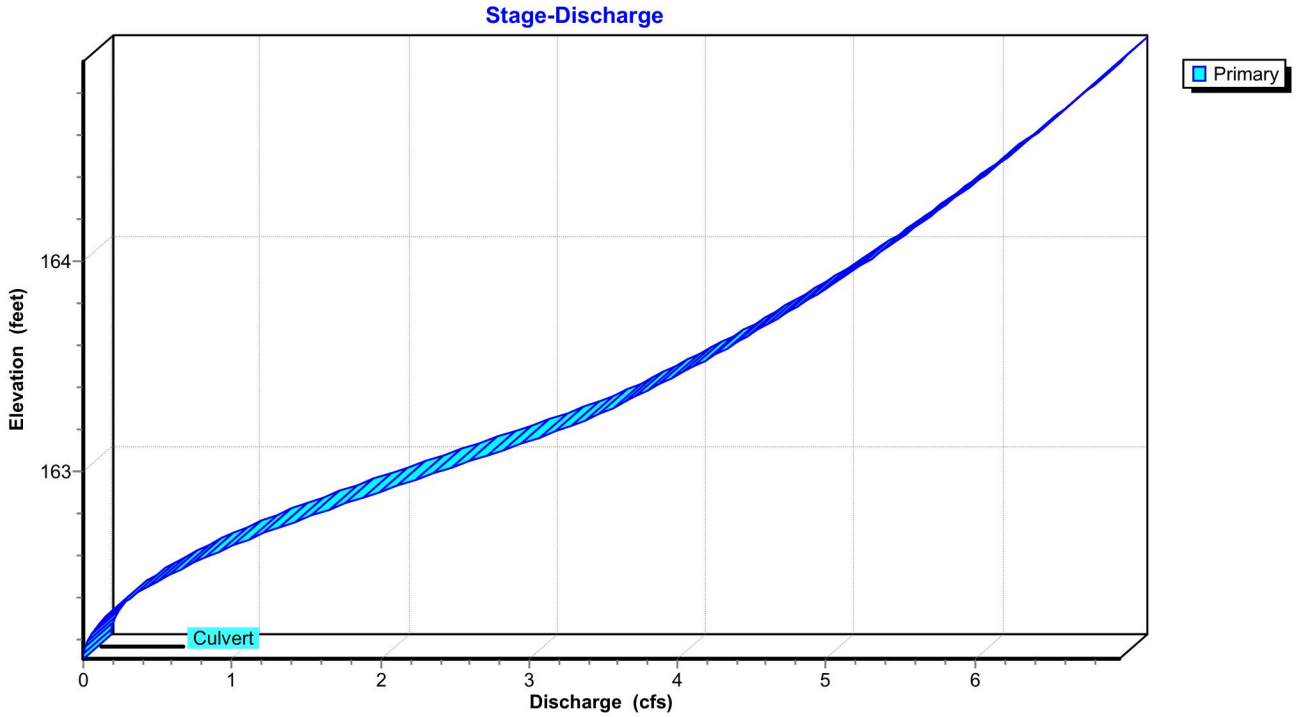
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.10' | **15.0" Round Culvert**<br>L= 68.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.10' / 161.40' S= 0.0103 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.19 cfs @ 12.04 hrs HW=162.69' (Free Discharge)
**1=Culvert** (Inlet Controls 1.19 cfs @ 2.07 fps)

### Pond CB#1: CB #1



## Pond CB#1: CB #1


Stage-Discharge
Primary
Elevation (feet)
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#1: CB #1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.10 | **0** | 163.14 | 0 | 164.18 | 0 |
| 162.12 | 0 | 163.16 | 0 | 164.20 | 0 |
| 162.14 | 0 | 163.18 | 0 | 164.22 | 0 |
| 162.16 | 0 | 163.20 | 0 | 164.24 | 0 |
| 162.18 | 0 | 163.22 | 0 | 164.26 | 0 |
| 162.20 | 0 | 163.24 | 0 | 164.28 | 0 |
| 162.22 | 0 | 163.26 | 0 | 164.30 | 0 |
| 162.24 | 0 | 163.28 | 0 | 164.32 | 0 |
| 162.26 | 0 | 163.30 | 0 | 164.34 | 0 |
| 162.28 | 0 | 163.32 | 0 | 164.36 | 0 |
| 162.30 | 0 | 163.34 | 0 | 164.38 | 0 |
| 162.32 | 0 | 163.36 | 0 | 164.40 | 0 |
| 162.34 | 0 | 163.38 | 0 | 164.42 | 0 |
| 162.36 | 0 | 163.40 | 0 | 164.44 | 0 |
| 162.38 | 0 | 163.42 | 0 | 164.46 | 0 |
| 162.40 | 0 | 163.44 | 0 | 164.48 | 0 |
| 162.42 | 0 | 163.46 | 0 | 164.50 | 0 |
| 162.44 | 0 | 163.48 | 0 | 164.52 | 0 |
| 162.46 | 0 | 163.50 | 0 | 164.54 | 0 |
| 162.48 | 0 | 163.52 | 0 | 164.56 | 0 |
| 162.50 | 0 | 163.54 | 0 | 164.58 | 0 |
| 162.52 | 0 | 163.56 | 0 | 164.60 | 0 |
| 162.54 | 0 | 163.58 | 0 | 164.62 | 0 |
| 162.56 | 0 | 163.60 | 0 | 164.64 | 0 |
| 162.58 | 0 | 163.62 | 0 | 164.66 | 0 |
| 162.60 | 0 | 163.64 | 0 | 164.68 | 0 |
| 162.62 | 0 | 163.66 | 0 | 164.70 | 0 |
| 162.64 | 0 | 163.68 | 0 | 164.72 | 0 |
| 162.66 | 0 | 163.70 | 0 | 164.74 | 0 |
| 162.68 | 0 | 163.72 | 0 | 164.76 | 0 |
| 162.70 | 0 | 163.74 | 0 | 164.78 | 0 |
| 162.72 | 0 | 163.76 | 0 | 164.80 | 0 |
| 162.74 | 0 | 163.78 | 0 | 164.82 | 0 |
| 162.76 | 0 | 163.80 | 0 | 164.84 | 0 |
| 162.78 | 0 | 163.82 | 0 | 164.86 | 0 |
| 162.80 | 0 | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | | |
| 162.92 | 0 | 163.96 | 0 | | |
| 162.94 | 0 | 163.98 | 0 | | |
| 162.96 | 0 | 164.00 | 0 | | |
| 162.98 | 0 | 164.02 | 0 | | |
| 163.00 | 0 | 164.04 | 0 | | |
| 163.02 | 0 | 164.06 | 0 | | |
| 163.04 | 0 | 164.08 | 0 | | |
| 163.06 | 0 | 164.10 | 0 | | |
| 163.08 | 0 | 164.12 | 0 | | |
| 163.10 | 0 | 164.14 | 0 | | |
| 163.12 | 0 | 164.16 | 0 | | |

## Summary for Pond CB#2: CB #2

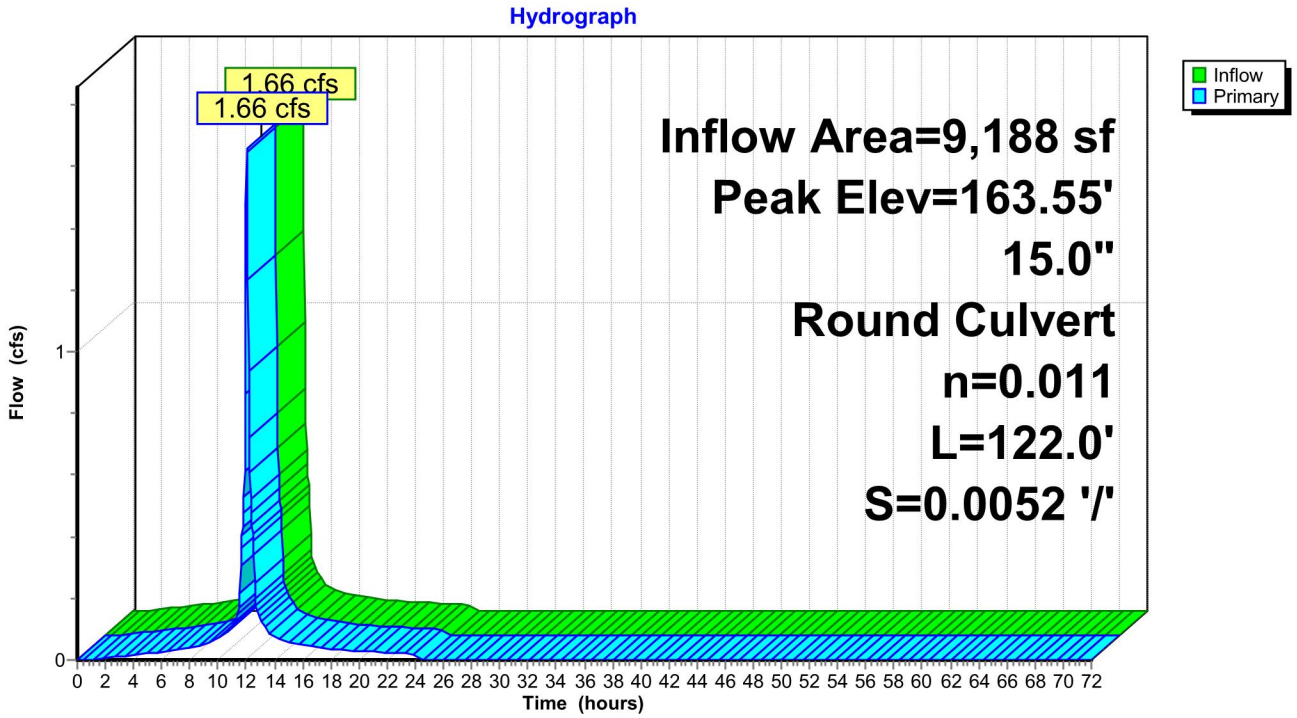
Inflow Area = 9,188 sf, 85.40% Impervious, Inflow Depth = 7.49" for 100-yr event
Inflow = 1.66 cfs @ 12.04 hrs, Volume= 5,735 cf
Outflow = 1.66 cfs @ 12.04 hrs, Volume= 5,735 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.04 hrs, Volume= 5,735 cf
Routed to Pond CB#3 : CB #3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.55' @ 12.04 hrs
Flood Elev= 165.58'

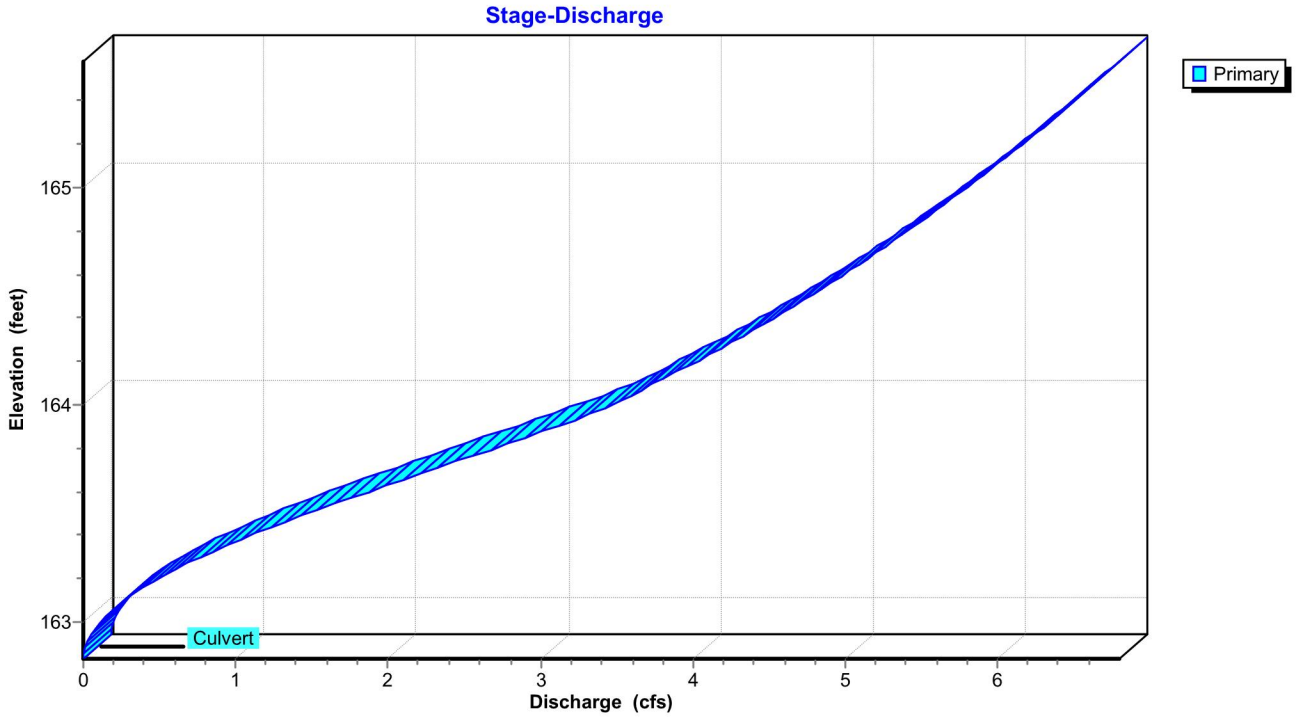
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.83' | **15.0" Round Culvert**<br>L= 122.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.83' / 162.20' S= 0.0052 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.61 cfs @ 12.04 hrs HW=163.53' (Free Discharge)
**1=Culvert** (Inlet Controls 1.61 cfs @ 2.26 fps)

## Pond CB#2: CB #2



## Pond CB#2: CB #2


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#2: CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.83 | **0** | 163.87 | 0 | 164.91 | 0 |
| 162.85 | 0 | 163.89 | 0 | 164.93 | 0 |
| 162.87 | 0 | 163.91 | 0 | 164.95 | 0 |
| 162.89 | 0 | 163.93 | 0 | 164.97 | 0 |
| 162.91 | 0 | 163.95 | 0 | 164.99 | 0 |
| 162.93 | 0 | 163.97 | 0 | 165.01 | 0 |
| 162.95 | 0 | 163.99 | 0 | 165.03 | 0 |
| 162.97 | 0 | 164.01 | 0 | 165.05 | 0 |
| 162.99 | 0 | 164.03 | 0 | 165.07 | 0 |
| 163.01 | 0 | 164.05 | 0 | 165.09 | 0 |
| 163.03 | 0 | 164.07 | 0 | 165.11 | 0 |
| 163.05 | 0 | 164.09 | 0 | 165.13 | 0 |
| 163.07 | 0 | 164.11 | 0 | 165.15 | 0 |
| 163.09 | 0 | 164.13 | 0 | 165.17 | 0 |
| 163.11 | 0 | 164.15 | 0 | 165.19 | 0 |
| 163.13 | 0 | 164.17 | 0 | 165.21 | 0 |
| 163.15 | 0 | 164.19 | 0 | 165.23 | 0 |
| 163.17 | 0 | 164.21 | 0 | 165.25 | 0 |
| 163.19 | 0 | 164.23 | 0 | 165.27 | 0 |
| 163.21 | 0 | 164.25 | 0 | 165.29 | 0 |
| 163.23 | 0 | 164.27 | 0 | 165.31 | 0 |
| 163.25 | 0 | 164.29 | 0 | 165.33 | 0 |
| 163.27 | 0 | 164.31 | 0 | 165.35 | 0 |
| 163.29 | 0 | 164.33 | 0 | 165.37 | 0 |
| 163.31 | 0 | 164.35 | 0 | 165.39 | 0 |
| 163.33 | 0 | 164.37 | 0 | 165.41 | 0 |
| 163.35 | 0 | 164.39 | 0 | 165.43 | 0 |
| 163.37 | 0 | 164.41 | 0 | 165.45 | 0 |
| 163.39 | 0 | 164.43 | 0 | 165.47 | 0 |
| 163.41 | 0 | 164.45 | 0 | 165.49 | 0 |
| 163.43 | 0 | 164.47 | 0 | 165.51 | 0 |
| 163.45 | 0 | 164.49 | 0 | 165.53 | 0 |
| 163.47 | 0 | 164.51 | 0 | 165.55 | 0 |
| 163.49 | 0 | 164.53 | 0 | 165.57 | 0 |
| 163.51 | 0 | 164.55 | 0 | | |
| 163.53 | 0 | 164.57 | 0 | | |
| 163.55 | 0 | 164.59 | 0 | | |
| 163.57 | 0 | 164.61 | 0 | | |
| 163.59 | 0 | 164.63 | 0 | | |
| 163.61 | 0 | 164.65 | 0 | | |
| 163.63 | 0 | 164.67 | 0 | | |
| 163.65 | 0 | 164.69 | 0 | | |
| 163.67 | 0 | 164.71 | 0 | | |
| 163.69 | 0 | 164.73 | 0 | | |
| 163.71 | 0 | 164.75 | 0 | | |
| 163.73 | 0 | 164.77 | 0 | | |
| 163.75 | 0 | 164.79 | 0 | | |
| 163.77 | 0 | 164.81 | 0 | | |
| 163.79 | 0 | 164.83 | 0 | | |
| 163.81 | 0 | 164.85 | 0 | | |
| 163.83 | 0 | 164.87 | 0 | | |
| 163.85 | 0 | 164.89 | 0 | | |

## Summary for Pond CB#3: CB #3

[79] Warning: Submerged Pond CB#2 Primary device # 1 INLET by 0.42'

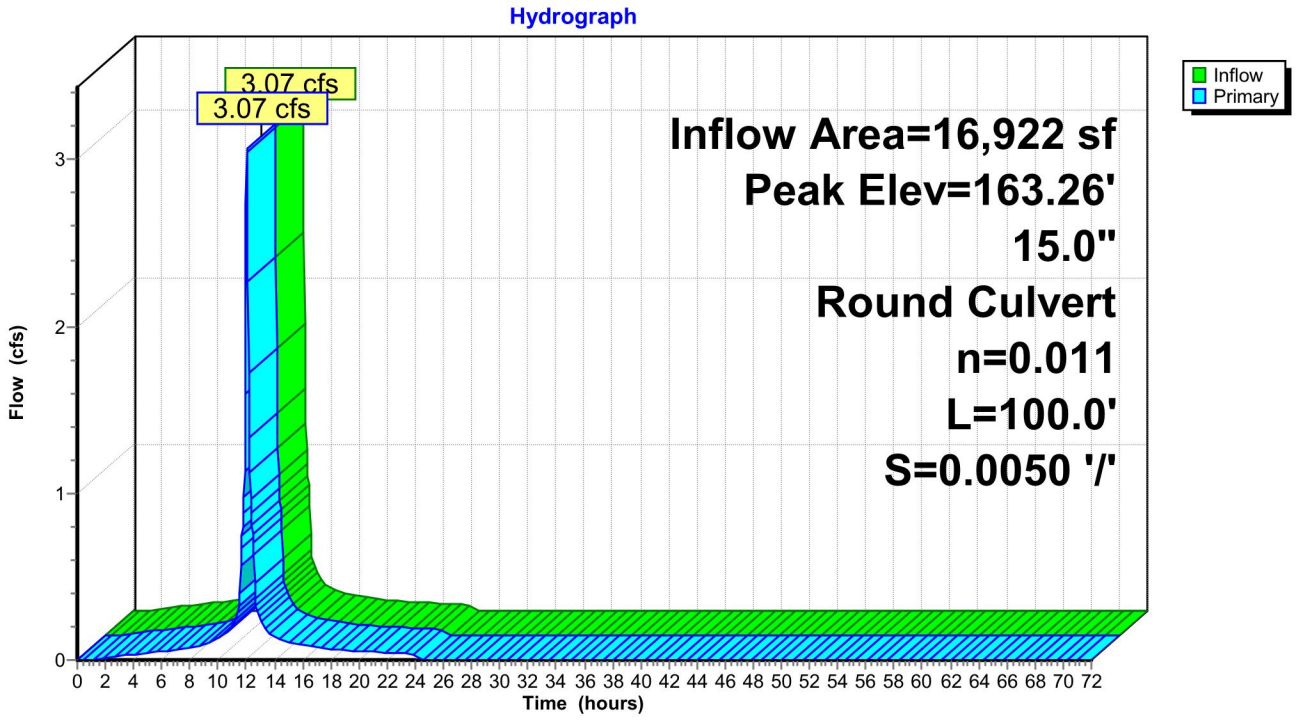
Inflow Area = 16,922 sf, 88.85% Impervious, Inflow Depth = 7.60" for 100-yr event
Inflow = 3.07 cfs @ 12.04 hrs, Volume= 10,718 cf
Outflow = 3.07 cfs @ 12.04 hrs, Volume= 10,718 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.07 cfs @ 12.04 hrs, Volume= 10,718 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.26' @ 12.04 hrs
Flood Elev= 165.70'

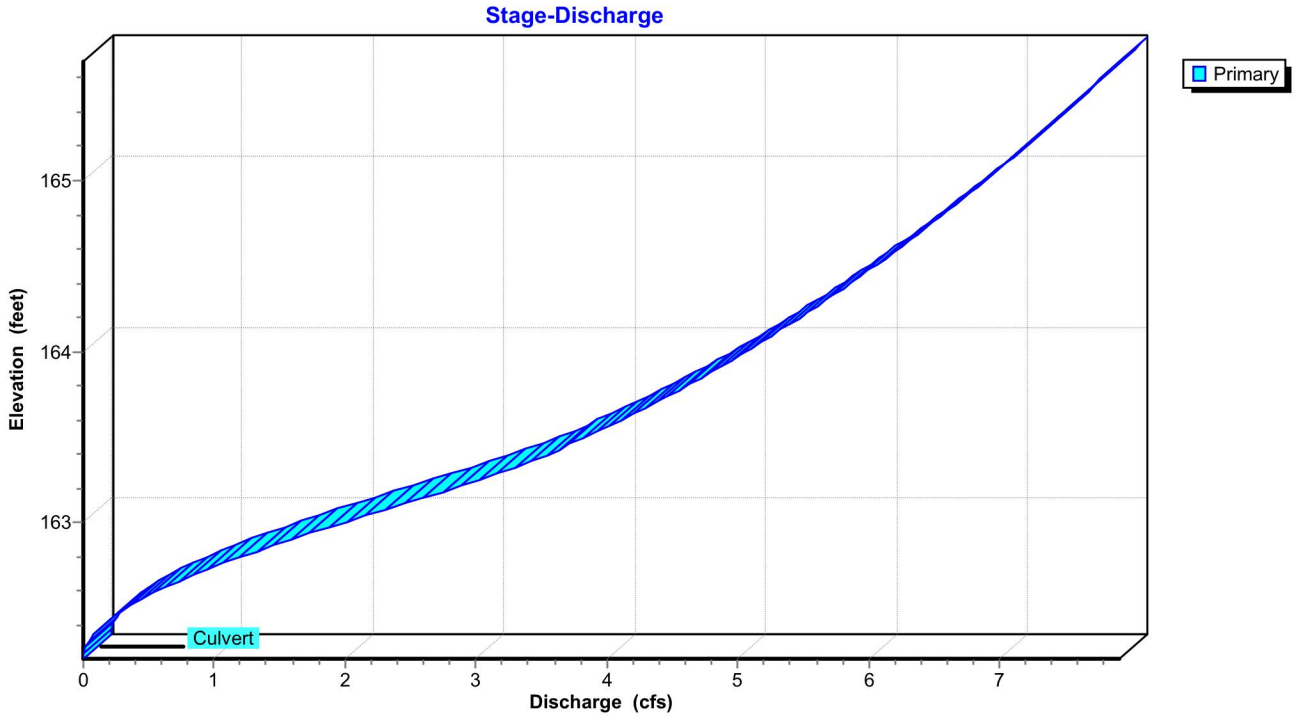
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.20' | **15.0" Round Culvert**<br>L= 100.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.20' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=2.98 cfs @ 12.04 hrs HW=163.24' (Free Discharge)
**1=Culvert** (Inlet Controls 2.98 cfs @ 2.74 fps)

### Pond CB#3: CB #3



## Pond CB#3: CB #3


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond CB#3: CB #3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 162.20 | **0** | 164.80 | 0 |
| 162.25 | 0 | 164.85 | 0 |
| 162.30 | 0 | 164.90 | 0 |
| 162.35 | 0 | 164.95 | 0 |
| 162.40 | 0 | 165.00 | 0 |
| 162.45 | 0 | 165.05 | 0 |
| 162.50 | 0 | 165.10 | 0 |
| 162.55 | 0 | 165.15 | 0 |
| 162.60 | 0 | 165.20 | 0 |
| 162.65 | 0 | 165.25 | 0 |
| 162.70 | 0 | 165.30 | 0 |
| 162.75 | 0 | 165.35 | 0 |
| 162.80 | 0 | 165.40 | 0 |
| 162.85 | 0 | 165.45 | 0 |
| 162.90 | 0 | 165.50 | 0 |
| 162.95 | 0 | 165.55 | 0 |
| 163.00 | 0 | 165.60 | 0 |
| 163.05 | 0 | 165.65 | 0 |
| 163.10 | 0 | 165.70 | 0 |
| 163.15 | 0 | | |
| 163.20 | 0 | | |
| 163.25 | 0 | | |
| 163.30 | 0 | | |
| 163.35 | 0 | | |
| 163.40 | 0 | | |
| 163.45 | 0 | | |
| 163.50 | 0 | | |
| 163.55 | 0 | | |
| 163.60 | 0 | | |
| 163.65 | 0 | | |
| 163.70 | 0 | | |
| 163.75 | 0 | | |
| 163.80 | 0 | | |
| 163.85 | 0 | | |
| 163.90 | 0 | | |
| 163.95 | 0 | | |
| 164.00 | 0 | | |
| 164.05 | 0 | | |
| 164.10 | 0 | | |
| 164.15 | 0 | | |
| 164.20 | 0 | | |
| 164.25 | 0 | | |
| 164.30 | 0 | | |
| 164.35 | 0 | | |
| 164.40 | 0 | | |
| 164.45 | 0 | | |
| 164.50 | 0 | | |
| 164.55 | 0 | | |
| 164.60 | 0 | | |
| 164.65 | 0 | | |
| 164.70 | 0 | | |
| 164.75 | 0 | | |

## Summary for Pond CB#4: CB #4

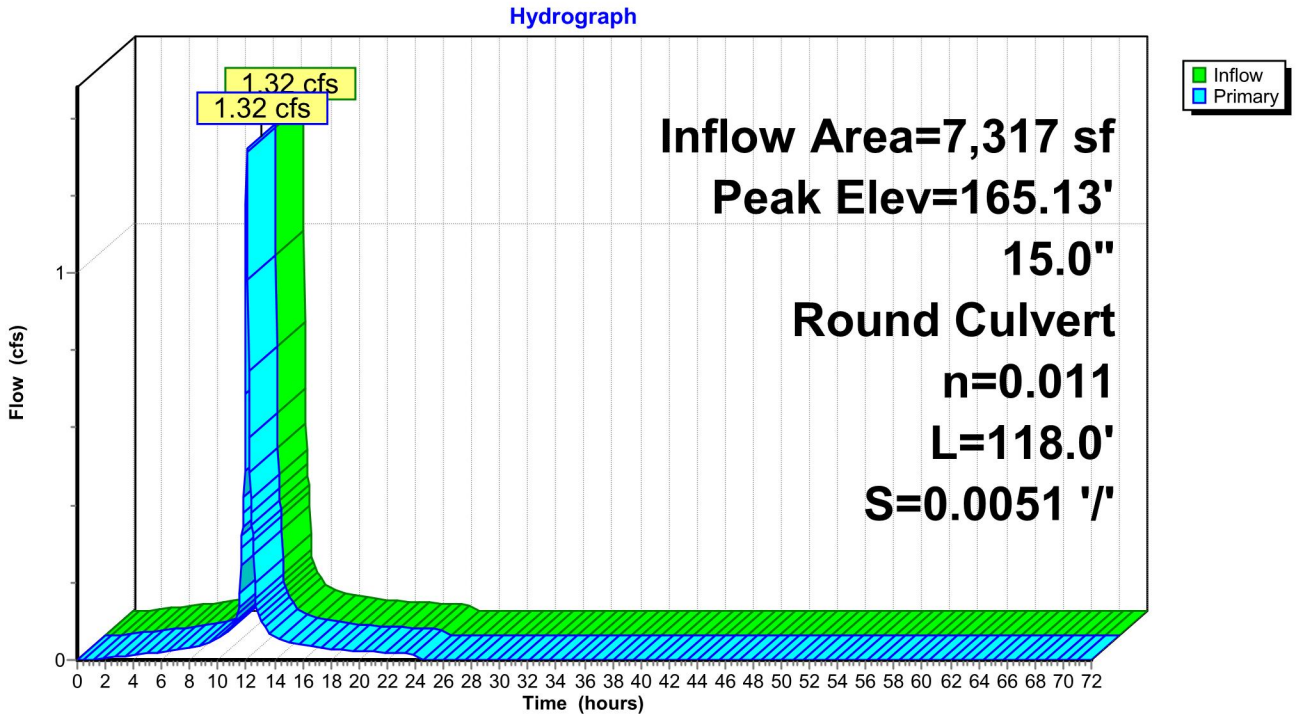
Inflow Area = 7,317 sf, 86.07% Impervious, Inflow Depth = 7.49" for 100-yr event
Inflow = 1.32 cfs @ 12.04 hrs, Volume= 4,567 cf
Outflow = 1.32 cfs @ 12.04 hrs, Volume= 4,567 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.04 hrs, Volume= 4,567 cf
Routed to Pond CB#5 : CB #5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.13' @ 12.04 hrs
Flood Elev= 167.26'

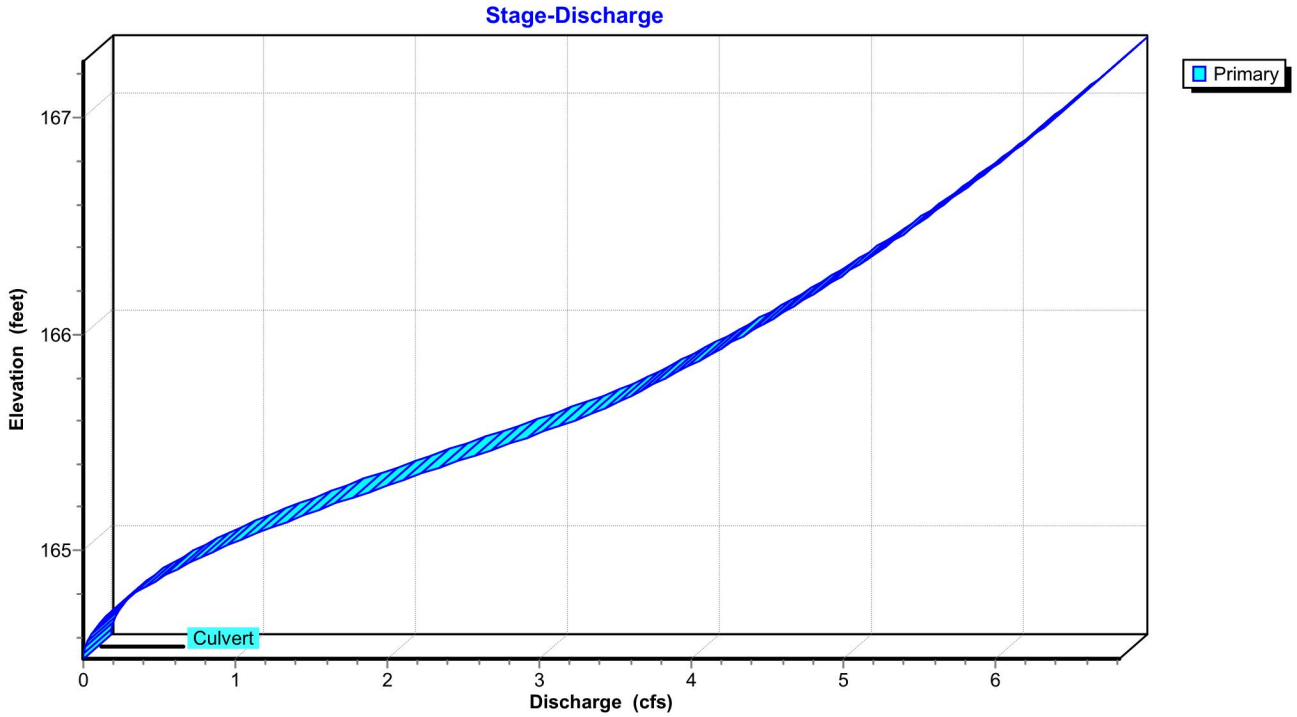
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.50' | **15.0" Round Culvert**<br>L= 118.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.50' / 163.90' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.28 cfs @ 12.04 hrs HW=165.12' (Free Discharge)
**1=Culvert** (Inlet Controls 1.28 cfs @ 2.11 fps)

## Pond CB#4: CB #4



## Pond CB#4: CB #4


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#4: CB #4

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.50 | **0** | 165.54 | 0 | 166.58 | 0 |
| 164.52 | 0 | 165.56 | 0 | 166.60 | 0 |
| 164.54 | 0 | 165.58 | 0 | 166.62 | 0 |
| 164.56 | 0 | 165.60 | 0 | 166.64 | 0 |
| 164.58 | 0 | 165.62 | 0 | 166.66 | 0 |
| 164.60 | 0 | 165.64 | 0 | 166.68 | 0 |
| 164.62 | 0 | 165.66 | 0 | 166.70 | 0 |
| 164.64 | 0 | 165.68 | 0 | 166.72 | 0 |
| 164.66 | 0 | 165.70 | 0 | 166.74 | 0 |
| 164.68 | 0 | 165.72 | 0 | 166.76 | 0 |
| 164.70 | 0 | 165.74 | 0 | 166.78 | 0 |
| 164.72 | 0 | 165.76 | 0 | 166.80 | 0 |
| 164.74 | 0 | 165.78 | 0 | 166.82 | 0 |
| 164.76 | 0 | 165.80 | 0 | 166.84 | 0 |
| 164.78 | 0 | 165.82 | 0 | 166.86 | 0 |
| 164.80 | 0 | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | 167.04 | 0 |
| 164.98 | 0 | 166.02 | 0 | 167.06 | 0 |
| 165.00 | 0 | 166.04 | 0 | 167.08 | 0 |
| 165.02 | 0 | 166.06 | 0 | 167.10 | 0 |
| 165.04 | 0 | 166.08 | 0 | 167.12 | 0 |
| 165.06 | 0 | 166.10 | 0 | 167.14 | 0 |
| 165.08 | 0 | 166.12 | 0 | 167.16 | 0 |
| 165.10 | 0 | 166.14 | 0 | 167.18 | 0 |
| 165.12 | 0 | 166.16 | 0 | 167.20 | 0 |
| 165.14 | 0 | 166.18 | 0 | 167.22 | 0 |
| 165.16 | 0 | 166.20 | 0 | 167.24 | 0 |
| 165.18 | 0 | 166.22 | 0 | 167.26 | 0 |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |

## Summary for Pond CB#5: CB #5

[79] Warning: Submerged Pond CB#4 Primary device # 1 INLET by 0.08'

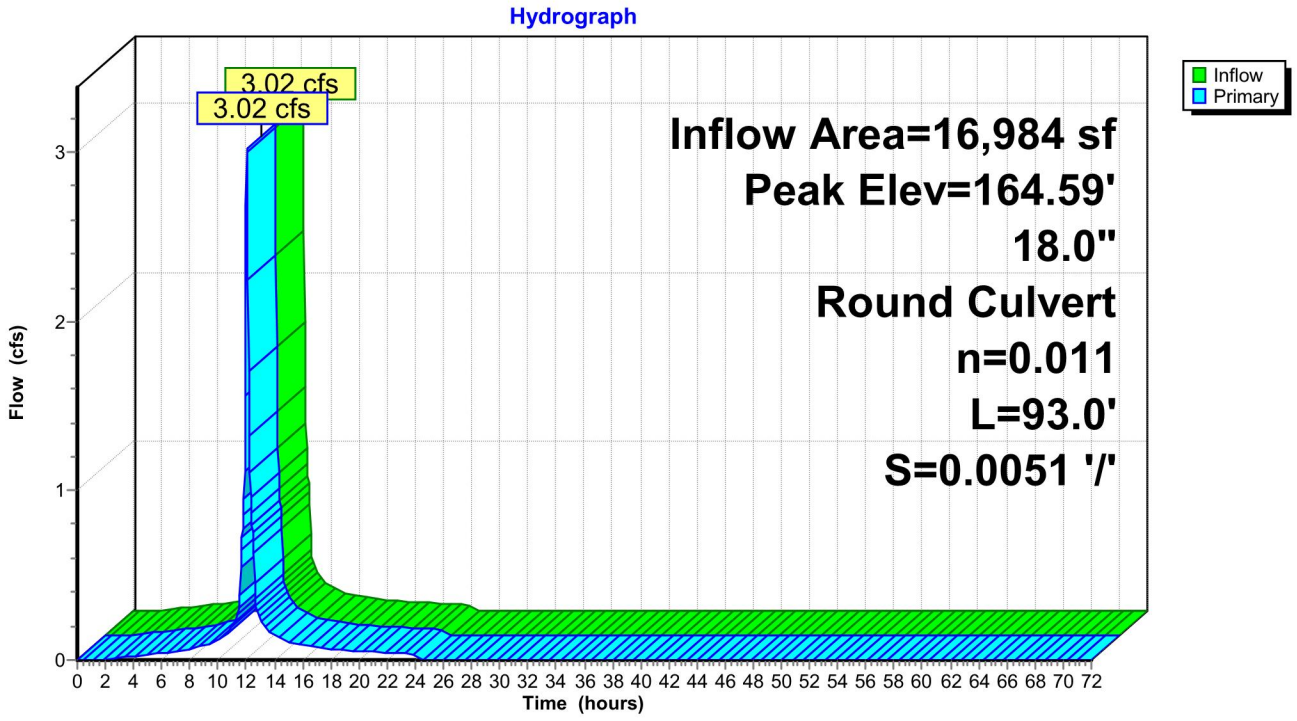
Inflow Area = 16,984 sf, 80.66% Impervious, Inflow Depth = 7.29" for 100-yr event
Inflow = 3.02 cfs @ 12.04 hrs, Volume= 10,313 cf
Outflow = 3.02 cfs @ 12.04 hrs, Volume= 10,313 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.02 cfs @ 12.04 hrs, Volume= 10,313 cf
Routed to Pond CB#6 : CB #6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.59' @ 12.04 hrs
Flood Elev= 166.36'

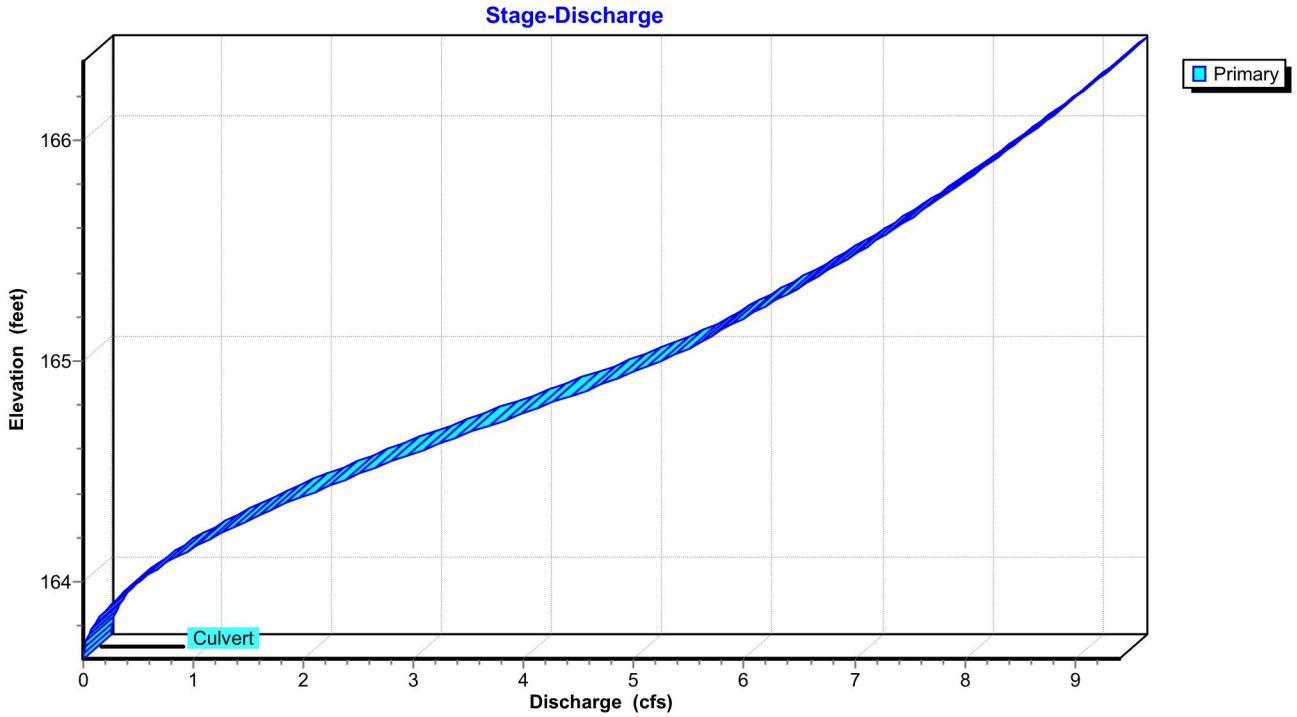
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.65' | **18.0" Round Culvert**<br>L= 93.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.65' / 163.18' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=2.93 cfs @ 12.04 hrs HW=164.57' (Free Discharge)
**1=Culvert** (Inlet Controls 2.93 cfs @ 2.58 fps)

### Pond CB#5: CB #5



## Pond CB#5: CB #5


Stage-Discharge
Primary
Elevation (feet)
166
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#5: CB #5

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.65 | **0** | 164.69 | 0 | 165.73 | 0 |
| 163.67 | 0 | 164.71 | 0 | 165.75 | 0 |
| 163.69 | 0 | 164.73 | 0 | 165.77 | 0 |
| 163.71 | 0 | 164.75 | 0 | 165.79 | 0 |
| 163.73 | 0 | 164.77 | 0 | 165.81 | 0 |
| 163.75 | 0 | 164.79 | 0 | 165.83 | 0 |
| 163.77 | 0 | 164.81 | 0 | 165.85 | 0 |
| 163.79 | 0 | 164.83 | 0 | 165.87 | 0 |
| 163.81 | 0 | 164.85 | 0 | 165.89 | 0 |
| 163.83 | 0 | 164.87 | 0 | 165.91 | 0 |
| 163.85 | 0 | 164.89 | 0 | 165.93 | 0 |
| 163.87 | 0 | 164.91 | 0 | 165.95 | 0 |
| 163.89 | 0 | 164.93 | 0 | 165.97 | 0 |
| 163.91 | 0 | 164.95 | 0 | 165.99 | 0 |
| 163.93 | 0 | 164.97 | 0 | 166.01 | 0 |
| 163.95 | 0 | 164.99 | 0 | 166.03 | 0 |
| 163.97 | 0 | 165.01 | 0 | 166.05 | 0 |
| 163.99 | 0 | 165.03 | 0 | 166.07 | 0 |
| 164.01 | 0 | 165.05 | 0 | 166.09 | 0 |
| 164.03 | 0 | 165.07 | 0 | 166.11 | 0 |
| 164.05 | 0 | 165.09 | 0 | 166.13 | 0 |
| 164.07 | 0 | 165.11 | 0 | 166.15 | 0 |
| 164.09 | 0 | 165.13 | 0 | 166.17 | 0 |
| 164.11 | 0 | 165.15 | 0 | 166.19 | 0 |
| 164.13 | 0 | 165.17 | 0 | 166.21 | 0 |
| 164.15 | 0 | 165.19 | 0 | 166.23 | 0 |
| 164.17 | 0 | 165.21 | 0 | 166.25 | 0 |
| 164.19 | 0 | 165.23 | 0 | 166.27 | 0 |
| 164.21 | 0 | 165.25 | 0 | 166.29 | 0 |
| 164.23 | 0 | 165.27 | 0 | 166.31 | 0 |
| 164.25 | 0 | 165.29 | 0 | 166.33 | 0 |
| 164.27 | 0 | 165.31 | 0 | 166.35 | 0 |
| 164.29 | 0 | 165.33 | 0 | | |
| 164.31 | 0 | 165.35 | 0 | | |
| 164.33 | 0 | 165.37 | 0 | | |
| 164.35 | 0 | 165.39 | 0 | | |
| 164.37 | 0 | 165.41 | 0 | | |
| 164.39 | 0 | 165.43 | 0 | | |
| 164.41 | 0 | 165.45 | 0 | | |
| 164.43 | 0 | 165.47 | 0 | | |
| 164.45 | 0 | 165.49 | 0 | | |
| 164.47 | 0 | 165.51 | 0 | | |
| 164.49 | 0 | 165.53 | 0 | | |
| 164.51 | 0 | 165.55 | 0 | | |
| 164.53 | 0 | 165.57 | 0 | | |
| 164.55 | 0 | 165.59 | 0 | | |
| 164.57 | 0 | 165.61 | 0 | | |
| 164.59 | 0 | 165.63 | 0 | | |
| 164.61 | 0 | 165.65 | 0 | | |
| 164.63 | 0 | 165.67 | 0 | | |
| 164.65 | 0 | 165.69 | 0 | | |
| 164.67 | 0 | 165.71 | 0 | | |

## Summary for Pond CB#6: CB #6

[79] Warning: Submerged Pond CB#5 Primary device # 1 INLET by 0.74'

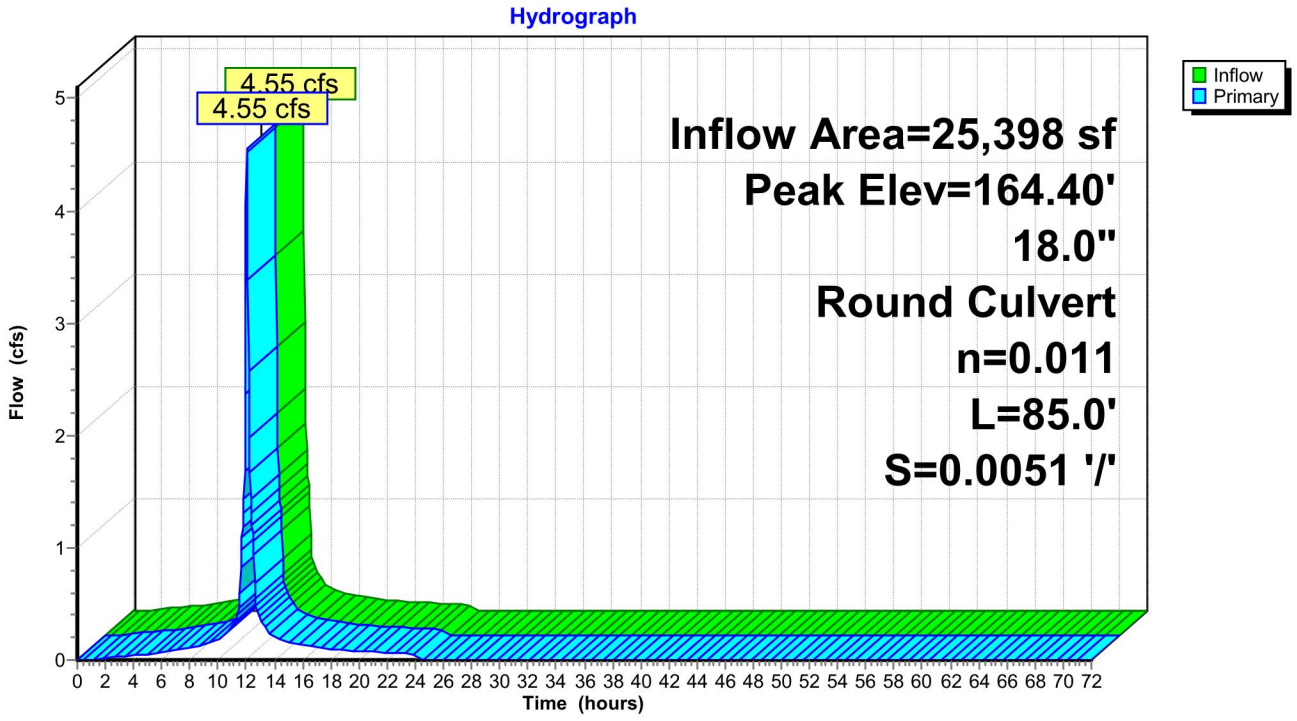
Inflow Area = 25,398 sf, 83.23% Impervious, Inflow Depth = 7.43" for 100-yr event
Inflow = 4.55 cfs @ 12.04 hrs, Volume= 15,733 cf
Outflow = 4.55 cfs @ 12.04 hrs, Volume= 15,733 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.55 cfs @ 12.04 hrs, Volume= 15,733 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.40' @ 12.04 hrs
Flood Elev= 165.87'

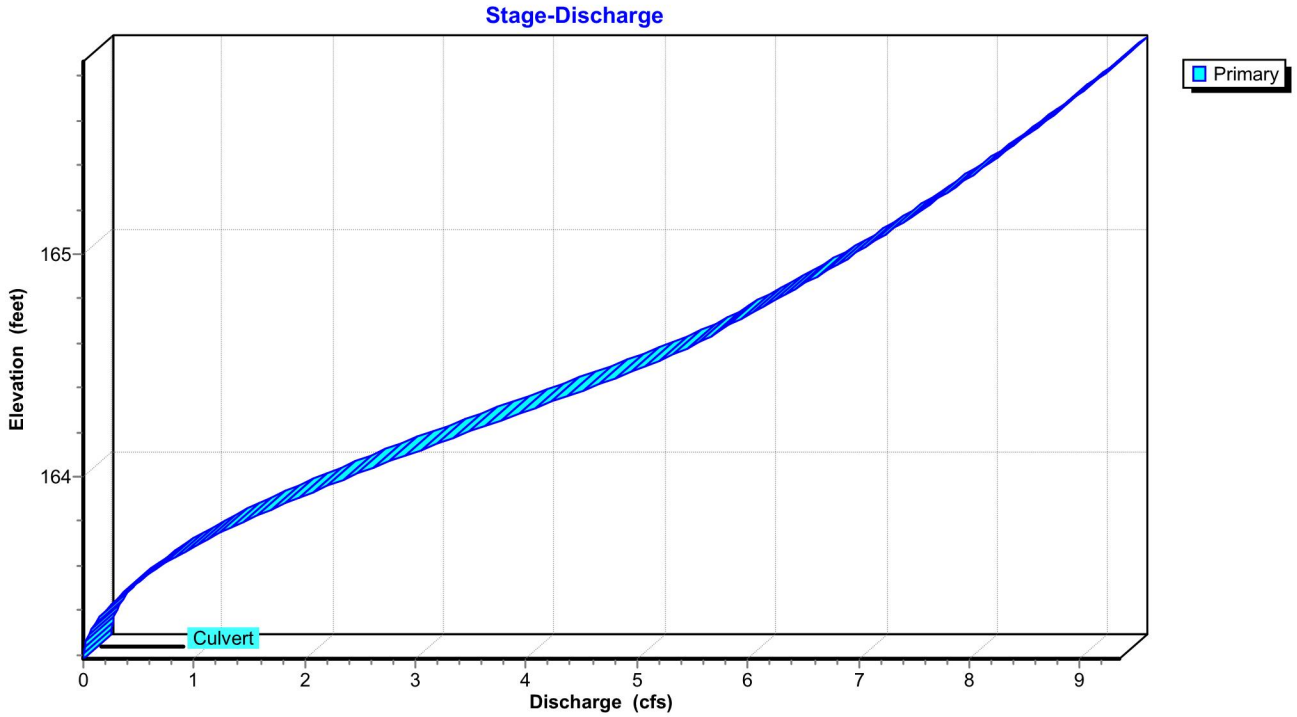
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.18' | **18.0" Round Culvert**<br>L= 85.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.18' / 162.75' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.42 cfs @ 12.04 hrs HW=164.37' (Free Discharge)
**1=Culvert** (Inlet Controls 4.42 cfs @ 2.94 fps)

### Pond CB#6: CB #6



## Pond CB#6: CB #6


Stage-Discharge
Primary
Elevation (feet)
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#6: CB #6

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.18 | **0** | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | 165.52 | 0 |
| 163.46 | 0 | 164.50 | 0 | 165.54 | 0 |
| 163.48 | 0 | 164.52 | 0 | 165.56 | 0 |
| 163.50 | 0 | 164.54 | 0 | 165.58 | 0 |
| 163.52 | 0 | 164.56 | 0 | 165.60 | 0 |
| 163.54 | 0 | 164.58 | 0 | 165.62 | 0 |
| 163.56 | 0 | 164.60 | 0 | 165.64 | 0 |
| 163.58 | 0 | 164.62 | 0 | 165.66 | 0 |
| 163.60 | 0 | 164.64 | 0 | 165.68 | 0 |
| 163.62 | 0 | 164.66 | 0 | 165.70 | 0 |
| 163.64 | 0 | 164.68 | 0 | 165.72 | 0 |
| 163.66 | 0 | 164.70 | 0 | 165.74 | 0 |
| 163.68 | 0 | 164.72 | 0 | 165.76 | 0 |
| 163.70 | 0 | 164.74 | 0 | 165.78 | 0 |
| 163.72 | 0 | 164.76 | 0 | 165.80 | 0 |
| 163.74 | 0 | 164.78 | 0 | 165.82 | 0 |
| 163.76 | 0 | 164.80 | 0 | 165.84 | 0 |
| 163.78 | 0 | 164.82 | 0 | 165.86 | 0 |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |
| 163.84 | 0 | 164.88 | 0 | | |
| 163.86 | 0 | 164.90 | 0 | | |
| 163.88 | 0 | 164.92 | 0 | | |
| 163.90 | 0 | 164.94 | 0 | | |
| 163.92 | 0 | 164.96 | 0 | | |
| 163.94 | 0 | 164.98 | 0 | | |
| 163.96 | 0 | 165.00 | 0 | | |
| 163.98 | 0 | 165.02 | 0 | | |
| 164.00 | 0 | 165.04 | 0 | | |
| 164.02 | 0 | 165.06 | 0 | | |
| 164.04 | 0 | 165.08 | 0 | | |
| 164.06 | 0 | 165.10 | 0 | | |
| 164.08 | 0 | 165.12 | 0 | | |
| 164.10 | 0 | 165.14 | 0 | | |
| 164.12 | 0 | 165.16 | 0 | | |
| 164.14 | 0 | 165.18 | 0 | | |
| 164.16 | 0 | 165.20 | 0 | | |
| 164.18 | 0 | 165.22 | 0 | | |
| 164.20 | 0 | 165.24 | 0 | | |

## Summary for Pond DP-1: DP-1

[81] Warning: Exceeded Pond EX-2 by 0.79' @ 12.05 hrs

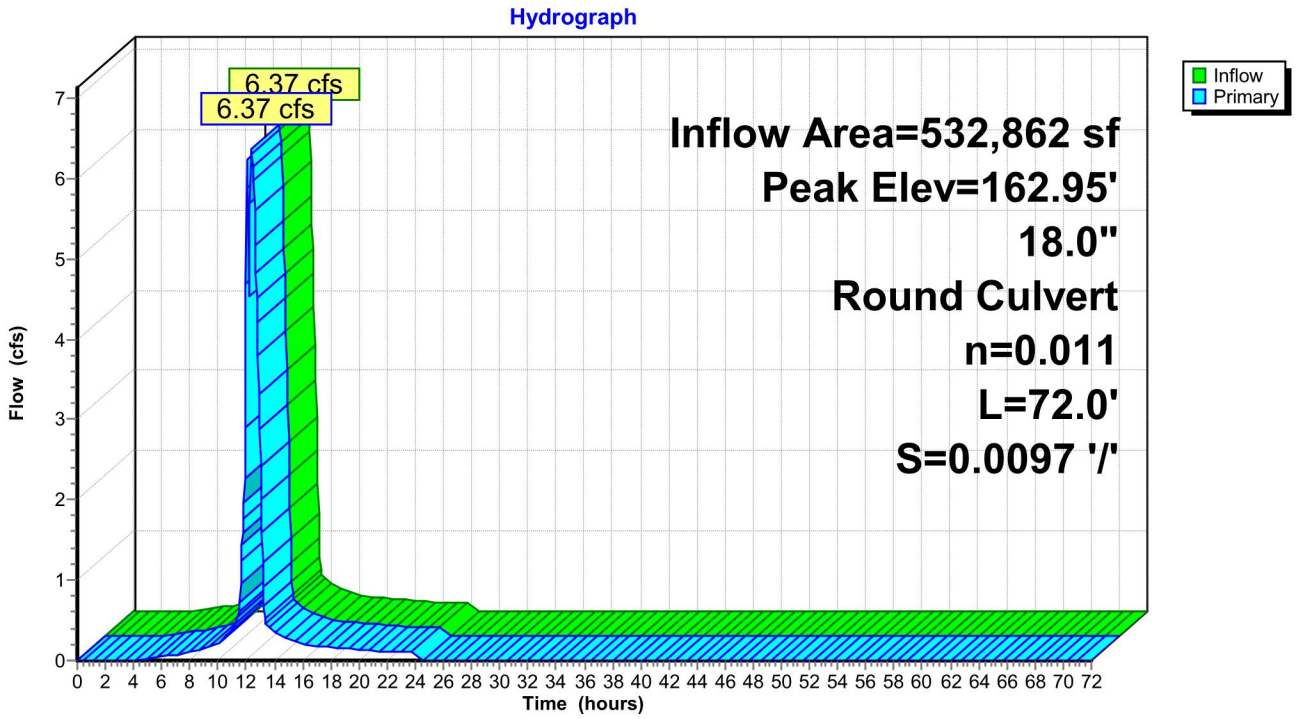
Inflow Area = 532,862 sf, 32.10% Impervious, Inflow Depth = 0.76" for 100-yr event
Inflow = 6.37 cfs @ 12.37 hrs, Volume= 33,814 cf
Outflow = 6.37 cfs @ 12.37 hrs, Volume= 33,814 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.37 cfs @ 12.37 hrs, Volume= 33,814 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.95' @ 12.37 hrs
Flood Elev= 163.41'

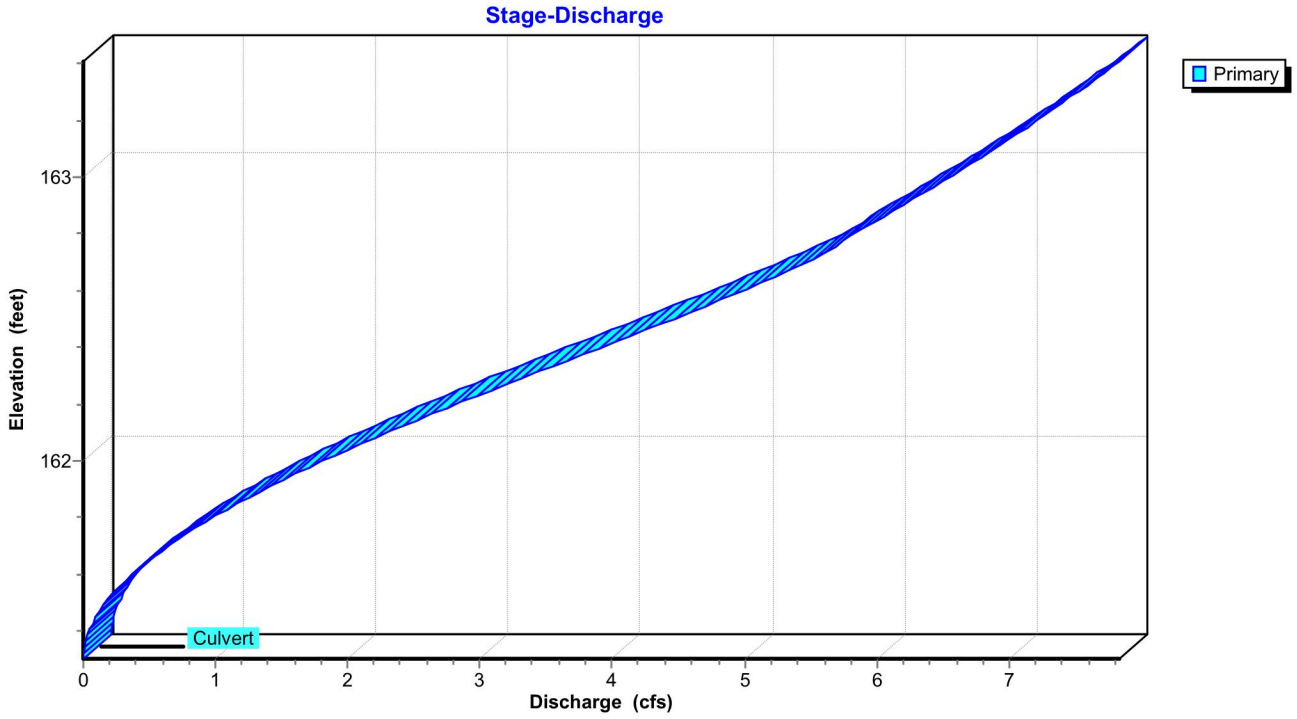
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=6.35 cfs @ 12.37 hrs HW=162.94' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 6.35 cfs @ 3.60 fps)

### Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

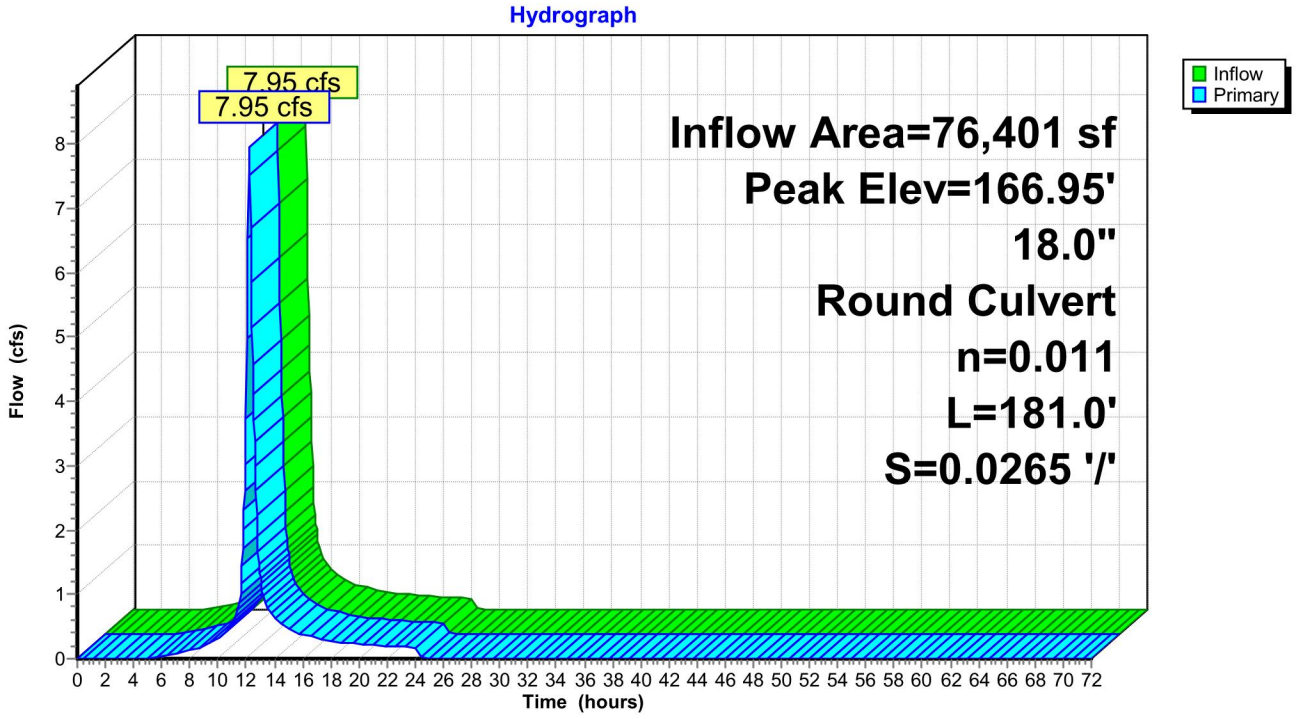
Inflow Area = 76,401 sf, 13.71% Impervious, Inflow Depth = 5.82" for 100-yr event
Inflow = 7.95 cfs @ 12.20 hrs, Volume= 37,068 cf
Outflow = 7.95 cfs @ 12.20 hrs, Volume= 37,068 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.95 cfs @ 12.20 hrs, Volume= 37,068 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 166.95' @ 12.20 hrs
Flood Elev= 167.03'

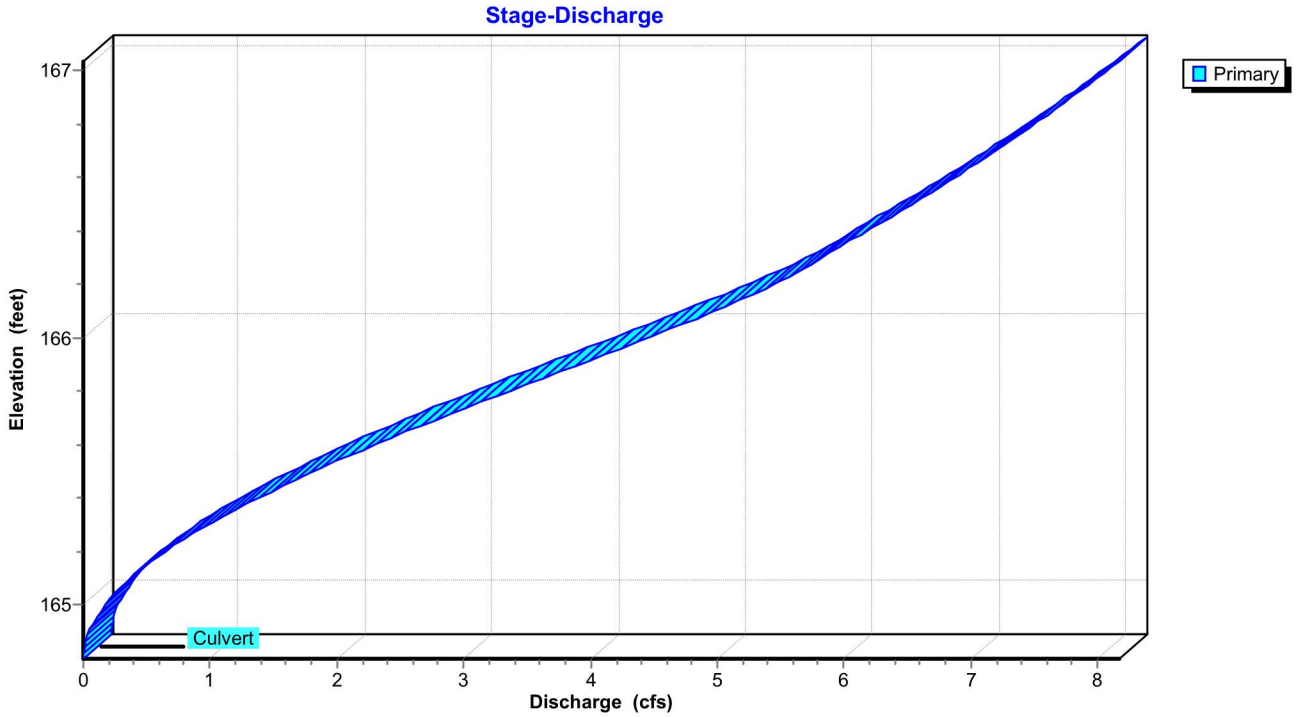
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=7.92 cfs @ 12.20 hrs HW=166.94' (Free Discharge)
**1=Culvert** (Inlet Controls 7.92 cfs @ 4.48 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

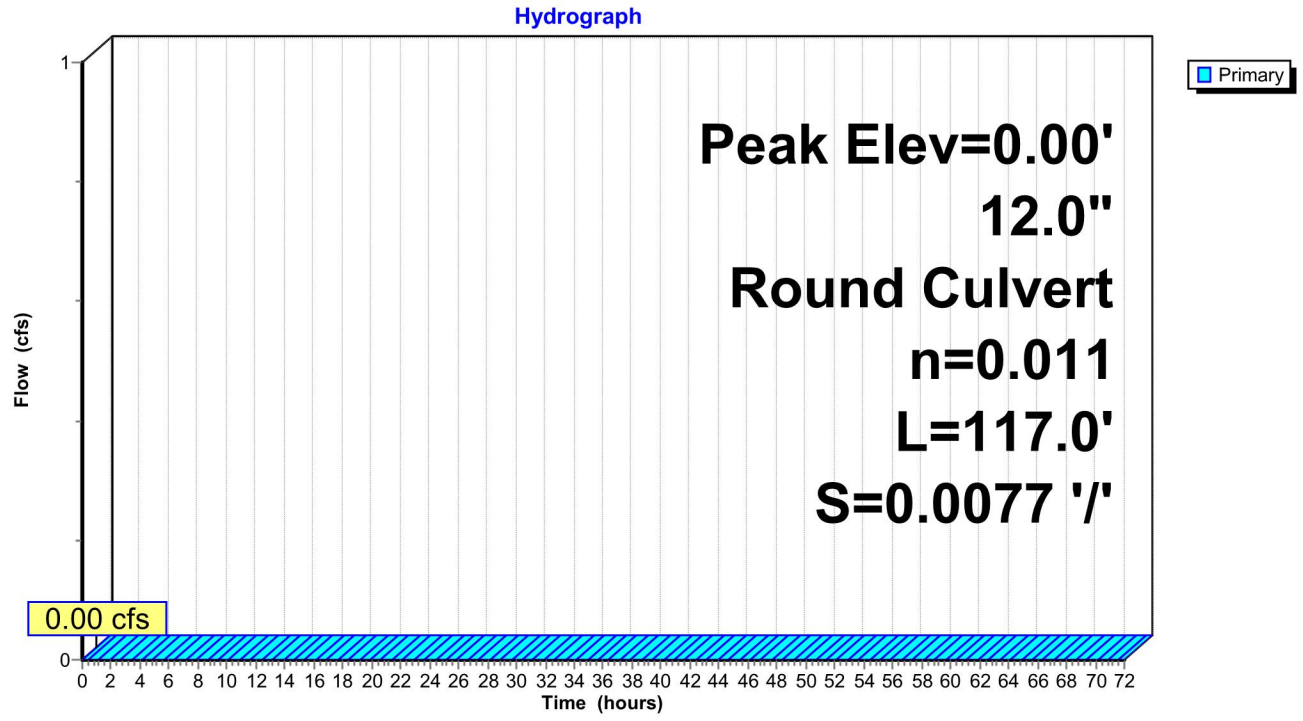
## Summary for Pond DP-3: DP-3

[43] Hint: Has no inflow (Outflow=Zero)

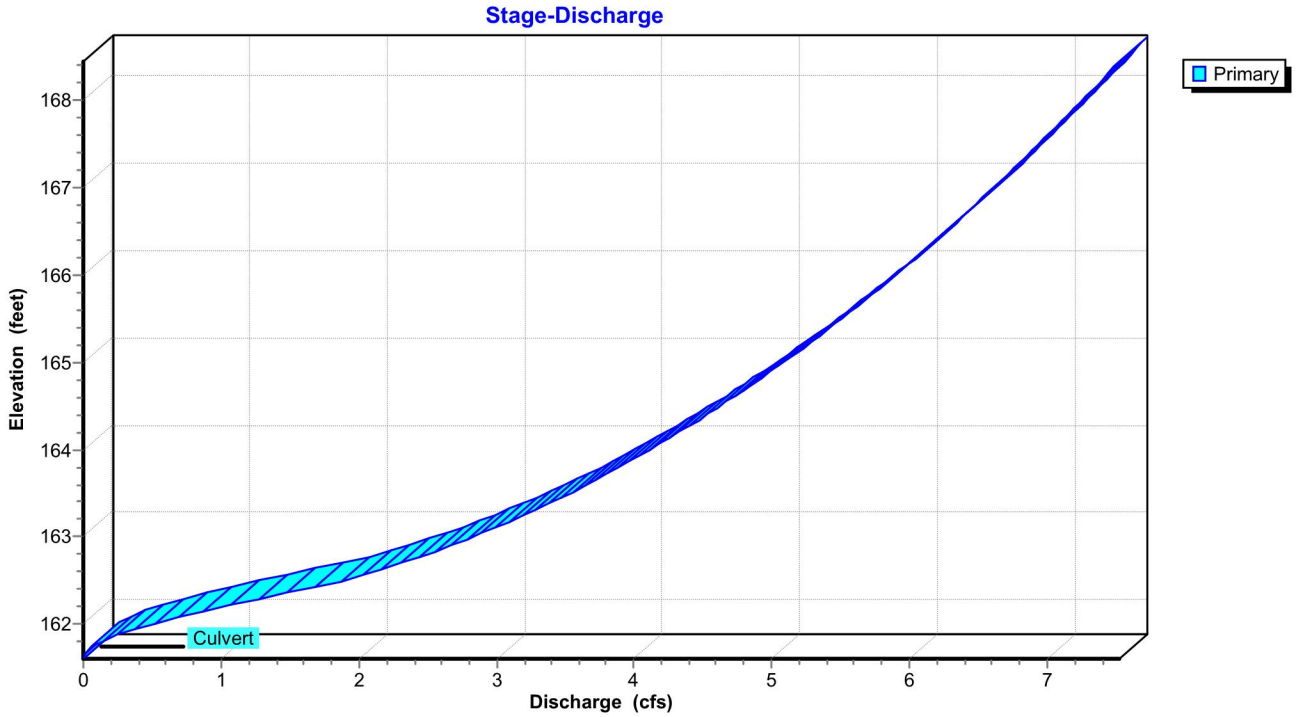
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

## Summary for Pond EX-1: EX. CB 1

[79] Warning: Submerged Pond 3P Primary device # 1 INLET by 0.24'
[81] Warning: Exceeded Pond CB#1 by 0.68' @ 12.60 hrs

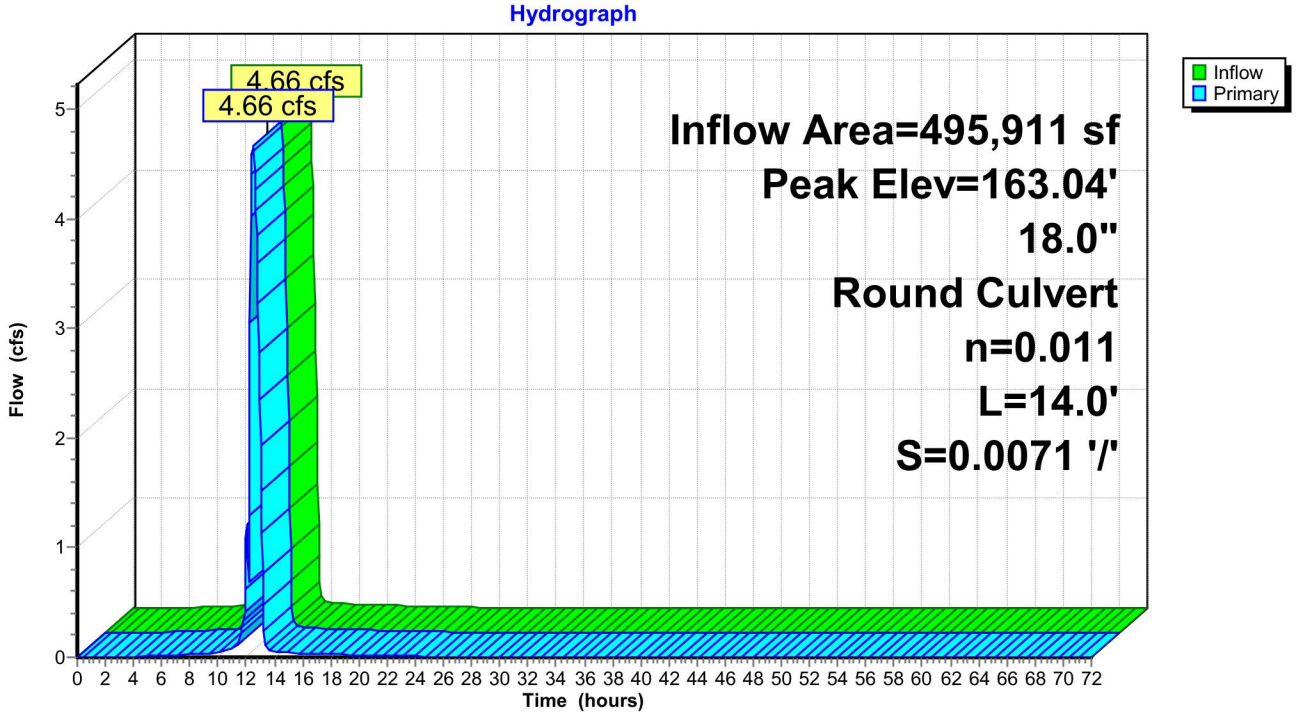
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.37" for 100-yr event
Inflow = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf
Outflow = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf
Routed to Pond EX-2 : EX. CB #2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.04' @ 12.47 hrs
Flood Elev= 164.02'

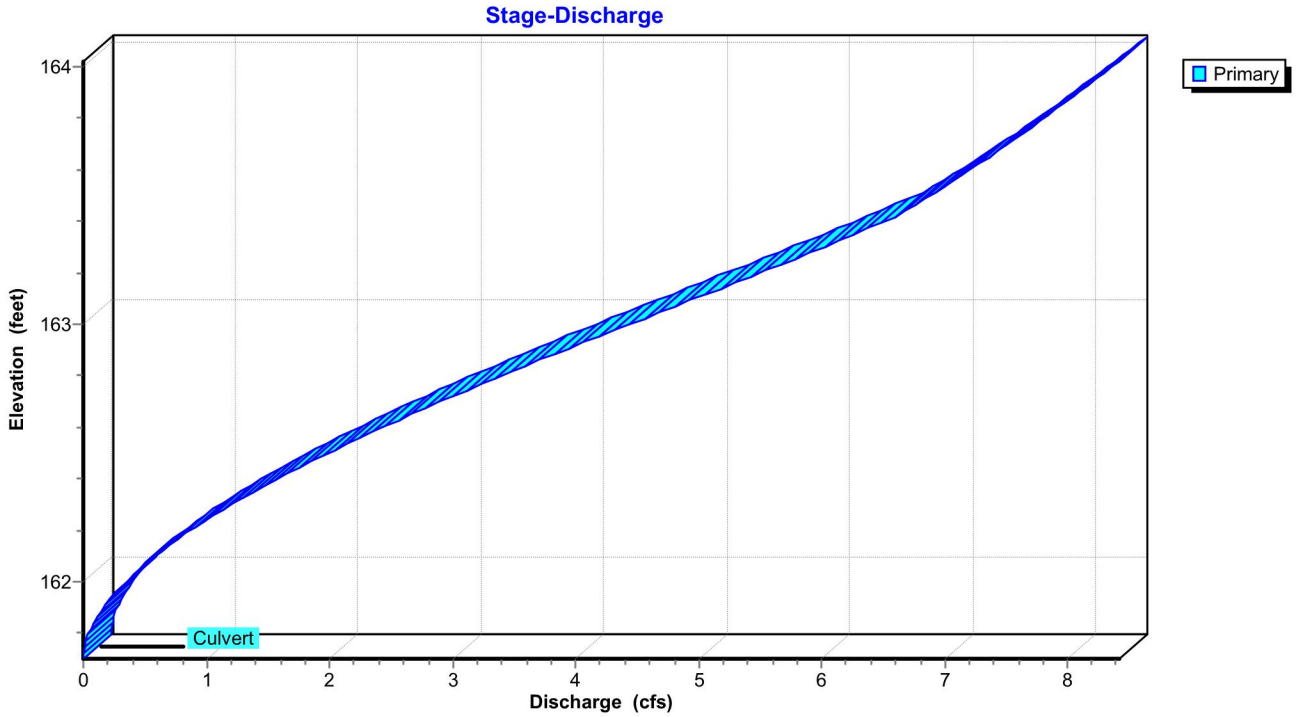
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.70' | **18.0" Round Culvert**<br>L= 14.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.70' / 161.60' S= 0.0071 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.65 cfs @ 12.47 hrs HW=163.04' (Free Discharge)
**1=Culvert** (Barrel Controls 4.65 cfs @ 3.70 fps)

### Pond EX-1: EX. CB 1



## Pond EX-1: EX. CB 1



## Stage-Area-Storage for Pond EX-1: EX. CB 1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.70 | **0** | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | 163.98 | 0 |
| 161.92 | 0 | 162.96 | 0 | 164.00 | 0 |
| 161.94 | 0 | 162.98 | 0 | 164.02 | 0 |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |
| 162.54 | 0 | 163.58 | 0 | | |
| 162.56 | 0 | 163.60 | 0 | | |
| 162.58 | 0 | 163.62 | 0 | | |
| 162.60 | 0 | 163.64 | 0 | | |
| 162.62 | 0 | 163.66 | 0 | | |
| 162.64 | 0 | 163.68 | 0 | | |
| 162.66 | 0 | 163.70 | 0 | | |
| 162.68 | 0 | 163.72 | 0 | | |
| 162.70 | 0 | 163.74 | 0 | | |
| 162.72 | 0 | 163.76 | 0 | | |

## Summary for Pond EX-2: EX. CB #2

[79] Warning: Submerged Pond EX-1 Primary device # 1 INLET by 1.17'

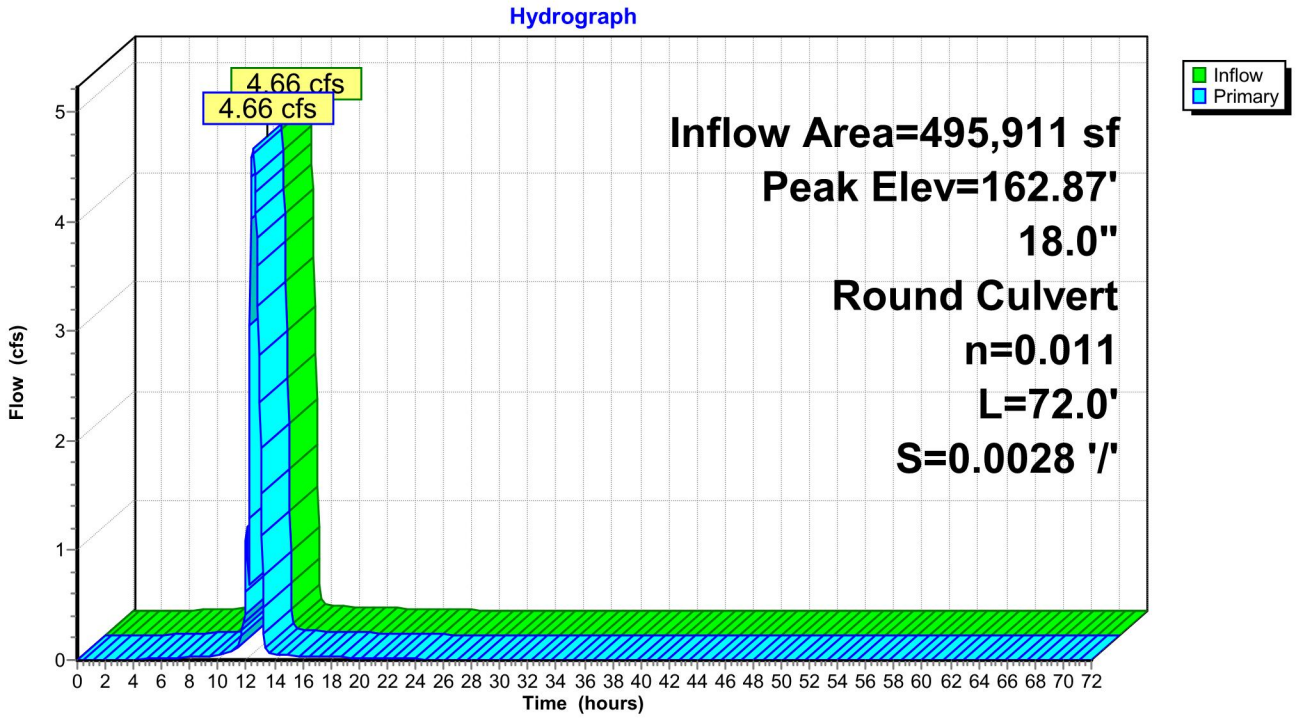
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.37" for 100-yr event
Inflow = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf
Outflow = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.66 cfs @ 12.47 hrs, Volume= 15,156 cf
Routed to Pond DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.87' @ 12.47 hrs
Flood Elev= 163.96'

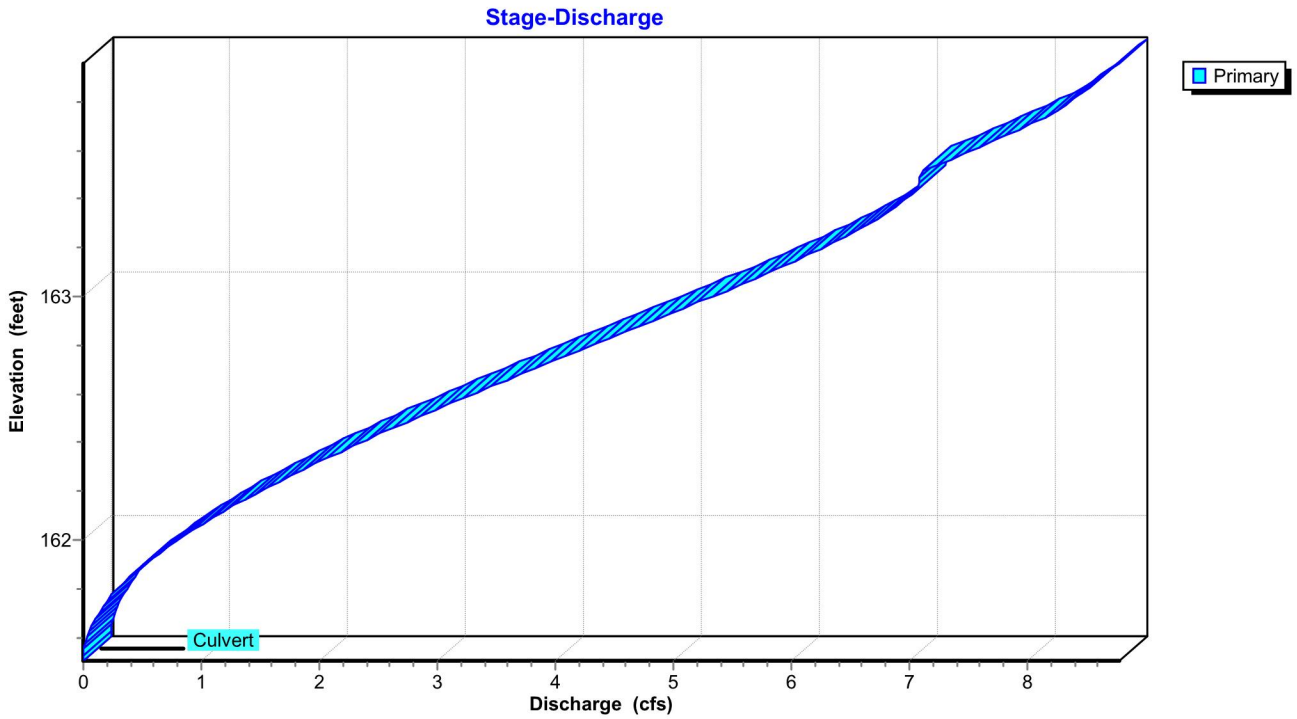
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.50' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.50' / 161.30' S= 0.0028 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.65 cfs @ 12.47 hrs HW=162.87' (Free Discharge)
**1=Culvert** (Barrel Controls 4.65 cfs @ 3.62 fps)

### Pond EX-2: EX. CB #2



## Pond EX-2: EX. CB #2



## Stage-Area-Storage for Pond EX-2: EX. CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.50 | **0** | 162.54 | 0 | 163.58 | 0 |
| 161.52 | 0 | 162.56 | 0 | 163.60 | 0 |
| 161.54 | 0 | 162.58 | 0 | 163.62 | 0 |
| 161.56 | 0 | 162.60 | 0 | 163.64 | 0 |
| 161.58 | 0 | 162.62 | 0 | 163.66 | 0 |
| 161.60 | 0 | 162.64 | 0 | 163.68 | 0 |
| 161.62 | 0 | 162.66 | 0 | 163.70 | 0 |
| 161.64 | 0 | 162.68 | 0 | 163.72 | 0 |
| 161.66 | 0 | 162.70 | 0 | 163.74 | 0 |
| 161.68 | 0 | 162.72 | 0 | 163.76 | 0 |
| 161.70 | 0 | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |

## Summary for Pond IB-1: INFILTRATION BASIN 1

[79] Warning: Submerged Pond 2P Primary device # 1 INLET by 2.49'
[81] Warning: Exceeded Pond CB#3 by 2.05' @ 12.60 hrs
[81] Warning: Exceeded Pond CB#6 by 1.01' @ 12.60 hrs

Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 5.91" for 100-yr event
Inflow = 45.74 cfs @ 12.20 hrs, Volume= 240,743 cf
Outflow = 25.44 cfs @ 12.49 hrs, Volume= 240,743 cf, Atten= 44%, Lag= 17.5 min
Discarded = 21.07 cfs @ 12.49 hrs, Volume= 229,683 cf
Primary = 4.37 cfs @ 12.49 hrs, Volume= 11,060 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.65' @ 12.49 hrs Surf.Area= 14,752 sf Storage= 36,090 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 11.8 min ( 816.4 - 804.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 160.50' | 50,670 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

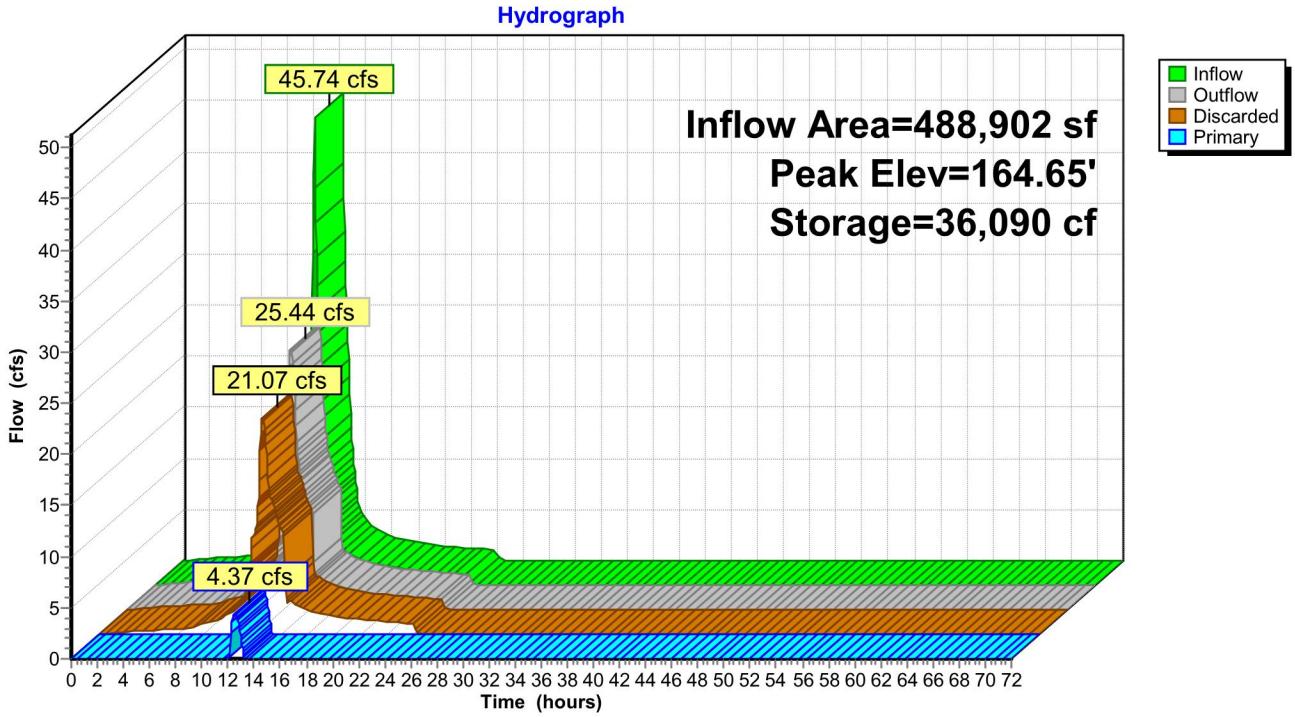
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 160.50 | 6,535 | 0 | 0 |
| 161.00 | 6,901 | 3,359 | 3,359 |
| 162.00 | 7,653 | 7,277 | 10,636 |
| 163.00 | 8,772 | 8,213 | 18,849 |
| 164.00 | 9,753 | 9,263 | 28,111 |
| 165.00 | 17,429 | 13,591 | 41,702 |
| 165.50 | 18,442 | 8,968 | 50,670 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 160.50' | **61.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 163.15' | **15.0" Round Culvert**<br>L= 70.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.15' / 162.80' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

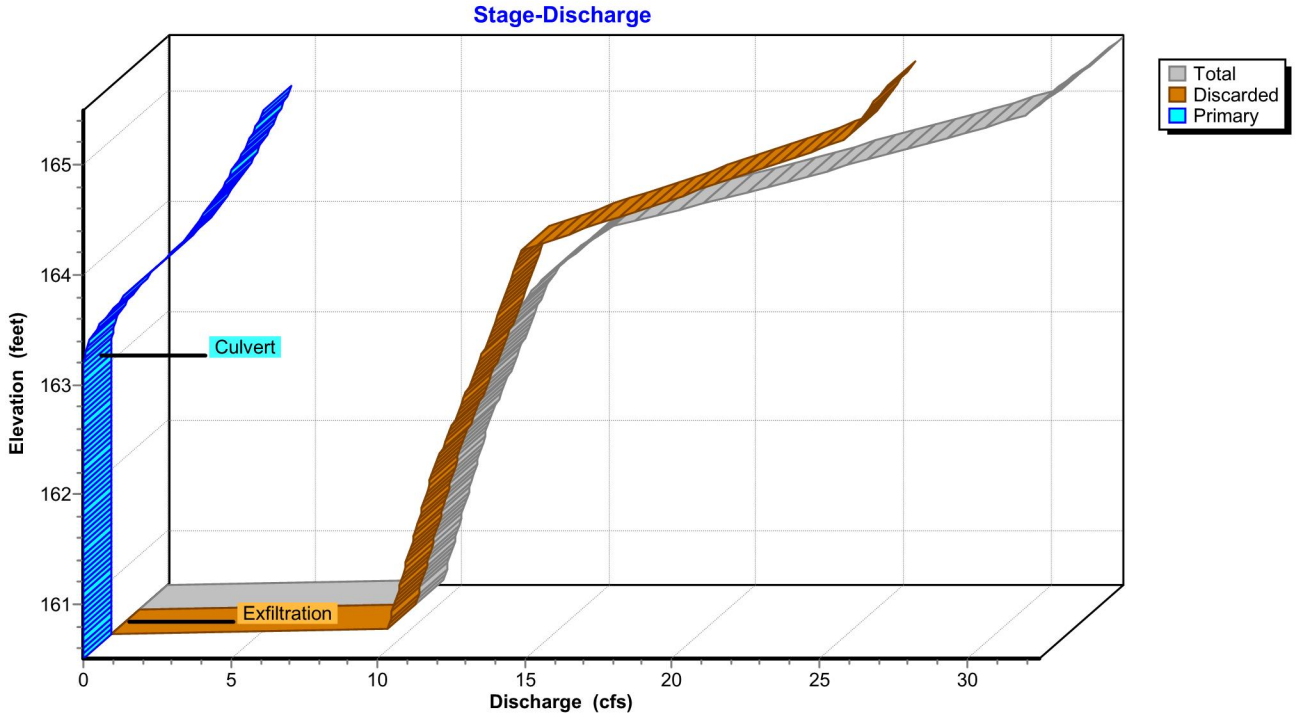
**Discarded OutFlow** Max=21.05 cfs @ 12.49 hrs HW=164.65' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 21.05 cfs)

**Primary OutFlow** Max=4.36 cfs @ 12.49 hrs HW=164.65' (Free Discharge)
**2=Culvert** (Inlet Controls 4.36 cfs @ 3.55 fps)

## Pond IB-1: INFILTRATION BASIN 1




## Pond IB-1: INFILTRATION BASIN 1



## Stage-Area-Storage for Pond IB-1: INFILTRATION BASIN 1

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 160.50 | 6,535 | 0 |
| 160.55 | 6,572 | 328 |
| 160.60 | 6,608 | 657 |
| 160.65 | 6,645 | 988 |
| 160.70 | 6,681 | 1,322 |
| 160.75 | 6,718 | 1,657 |
| 160.80 | 6,755 | 1,993 |
| 160.85 | 6,791 | 2,332 |
| 160.90 | 6,828 | 2,673 |
| 160.95 | 6,864 | 3,015 |
| 161.00 | 6,901 | 3,359 |
| 161.05 | 6,939 | 3,705 |
| 161.10 | 6,976 | 4,053 |
| 161.15 | 7,014 | 4,403 |
| 161.20 | 7,051 | 4,754 |
| 161.25 | 7,089 | 5,108 |
| 161.30 | 7,127 | 5,463 |
| 161.35 | 7,164 | 5,820 |
| 161.40 | 7,202 | 6,180 |
| 161.45 | 7,239 | 6,541 |
| 161.50 | 7,277 | 6,904 |
| 161.55 | 7,315 | 7,268 |
| 161.60 | 7,352 | 7,635 |
| 161.65 | 7,390 | 8,004 |
| 161.70 | 7,427 | 8,374 |
| 161.75 | 7,465 | 8,746 |
| 161.80 | 7,503 | 9,120 |
| 161.85 | 7,540 | 9,497 |
| 161.90 | 7,578 | 9,874 |
| 161.95 | 7,615 | 10,254 |
| 162.00 | 7,653 | 10,636 |
| 162.05 | 7,709 | 11,020 |
| 162.10 | 7,765 | 11,407 |
| 162.15 | 7,821 | 11,797 |
| 162.20 | 7,877 | 12,189 |
| 162.25 | 7,933 | 12,584 |
| 162.30 | 7,989 | 12,982 |
| 162.35 | 8,045 | 13,383 |
| 162.40 | 8,101 | 13,787 |
| 162.45 | 8,157 | 14,193 |
| 162.50 | 8,213 | 14,602 |
| 162.55 | 8,268 | 15,014 |
| 162.60 | 8,324 | 15,429 |
| 162.65 | 8,380 | 15,847 |
| 162.70 | 8,436 | 16,267 |
| 162.75 | 8,492 | 16,690 |
| 162.80 | 8,548 | 17,116 |
| 162.85 | 8,604 | 17,545 |
| 162.90 | 8,660 | 17,977 |
| 162.95 | 8,716 | 18,411 |
| 163.00 | 8,772 | 18,849 |
| 163.05 | 8,821 | 19,288 |
| 163.10 | 8,870 | 19,731 |
| 163.15 | 8,919 | 20,175 |
| 163.20 | 8,968 | 20,623 |
| 163.25 | 9,017 | 21,072 |
| 163.30 | 9,066 | 21,524 |
| 163.35 | 9,115 | 21,979 |
| 163.40 | 9,164 | 22,436 |
| 163.45 | 9,213 | 22,895 |
| 163.50 | 9,263 | 23,357 |
| 163.55 | 9,312 | 23,821 |
| 163.60 | 9,361 | 24,288 |
| 163.65 | 9,410 | 24,758 |
| 163.70 | 9,459 | 25,229 |
| 163.75 | 9,508 | 25,703 |
| 163.80 | 9,557 | 26,180 |
| 163.85 | 9,606 | 26,659 |
| 163.90 | 9,655 | 27,141 |
| 163.95 | 9,704 | 27,625 |
| 164.00 | 9,753 | 28,111 |
| 164.05 | 10,137 | 28,608 |
| 164.10 | 10,521 | 29,125 |
| 164.15 | 10,904 | 29,660 |
| 164.20 | 11,288 | 30,215 |
| 164.25 | 11,672 | 30,789 |
| 164.30 | 12,056 | 31,382 |
| 164.35 | 12,440 | 31,995 |
| 164.40 | 12,823 | 32,626 |
| 164.45 | 13,207 | 33,277 |
| 164.50 | 13,591 | 33,947 |
| 164.55 | 13,975 | 34,636 |
| 164.60 | 14,359 | 35,344 |
| 164.65 | 14,742 | 36,072 |
| 164.70 | 15,126 | 36,819 |
| 164.75 | 15,510 | 37,585 |
| 164.80 | 15,894 | 38,370 |
| 164.85 | 16,278 | 39,174 |
| 164.90 | 16,661 | 39,997 |
| 164.95 | 17,045 | 40,840 |
| 165.00 | 17,429 | 41,702 |
| 165.05 | 17,530 | 42,576 |
| 165.10 | 17,632 | 43,455 |
| 165.15 | 17,733 | 44,339 |
| 165.20 | 17,834 | 45,228 |
| 165.25 | 17,936 | 46,123 |
| 165.30 | 18,037 | 47,022 |
| 165.35 | 18,138 | 47,926 |
| 165.40 | 18,239 | 48,836 |
| 165.45 | 18,341 | 49,750 |
| 165.50 | **18,442** | **50,670** |

# APPENDIX K

Rainfall Data and Soil Map

# Extreme Precipitation Tables

## Northeast Regional Climate Center

***Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.***

| Metadata for Point | |
|---|---|
| **Smoothing** | Yes |
| **State** | New York |
| **Location** | New York, United States |
| **Latitude** | 41.687 degrees North |
| **Longitude** | 73.904 degrees West |
| **Elevation** | 50 feet |
| **Date/Time** | Tue Jan 13 2026 13:22:54 GMT-0500 (Eastern Standard Time) |

## Extreme Precipitation Estimates

| | 5min | 10min | 15min | 30min | 60min | 120min | | 1hr | 2hr | 3hr | 6hr | 12hr | 24hr | 48hr | | 1day | 2day | 4day | 7day | 10day | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1yr** | 0.32 | 0.49 | 0.60 | 0.79 | 0.99 | 1.23 | **1yr** | 0.85 | 1.15 | 1.41 | 1.74 | 2.13 | 2.61 | 2.95 | **1yr** | 2.31 | 2.84 | 3.30 | 3.97 | 4.57 | **1yr** |
| **2yr** | 0.38 | 0.58 | 0.73 | 0.96 | 1.20 | 1.50 | **2yr** | 1.04 | 1.39 | 1.72 | 2.12 | 2.59 | 3.16 | 3.56 | **2yr** | 2.79 | 3.42 | 3.92 | 4.62 | 5.25 | **2yr** |
| **5yr** | 0.45 | 0.70 | 0.88 | 1.18 | 1.51 | 1.89 | **5yr** | 1.30 | 1.71 | 2.18 | 2.68 | 3.26 | 3.95 | 4.50 | **5yr** | 3.49 | 4.33 | 4.96 | 5.73 | 6.48 | **5yr** |
| **10yr** | 0.51 | 0.80 | 1.01 | 1.38 | 1.79 | 2.26 | **10yr** | 1.54 | 2.02 | 2.61 | 3.20 | 3.88 | 4.67 | 5.38 | **10yr** | 4.13 | 5.17 | 5.93 | 6.74 | 7.60 | **10yr** |
| **25yr** | 0.60 | 0.96 | 1.22 | 1.69 | 2.24 | 2.87 | **25yr** | 1.94 | 2.50 | 3.31 | 4.06 | 4.90 | 5.84 | 6.81 | **25yr** | 5.17 | 6.54 | 7.52 | 8.37 | 9.39 | **25yr** |
| **50yr** | 0.69 | 1.11 | 1.42 | 1.99 | 2.67 | 3.43 | **50yr** | 2.31 | 2.94 | 3.97 | 4.86 | 5.84 | 6.93 | 8.14 | **50yr** | 6.13 | 7.83 | 9.00 | 9.86 | 11.02 | **50yr** |
| **100yr** | 0.79 | 1.28 | 1.65 | 2.34 | 3.19 | 4.11 | **100yr** | 2.75 | 3.46 | 4.76 | 5.81 | 6.96 | 8.21 | 9.74 | **100yr** | 7.27 | 9.36 | 10.79 | 11.62 | 12.95 | **100yr** |
| **200yr** | 0.91 | 1.48 | 1.92 | 2.75 | 3.80 | 4.93 | **200yr** | 3.28 | 4.08 | 5.71 | 6.96 | 8.30 | 9.74 | 11.66 | **200yr** | 8.62 | 11.21 | 12.94 | 13.70 | 15.22 | **200yr** |
| **500yr** | 1.11 | 1.82 | 2.37 | 3.44 | 4.81 | 6.26 | **500yr** | 4.15 | 5.07 | 7.25 | 8.82 | 10.47 | 12.21 | 14.80 | **500yr** | 10.81 | 14.23 | 16.47 | 17.04 | 18.85 | **500yr** |

## Lower Confidence Limits

| | 5min | 10min | 15min | 30min | 60min | 120min | | 1hr | 2hr | 3hr | 6hr | 12hr | 24hr | 48hr | | 1day | 2day | 4day | 7day | 10day | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1yr** | 0.27 | 0.42 | 0.51 | 0.69 | 0.85 | 1.02 | **1yr** | 0.73 | 1.00 | 1.21 | 1.53 | 1.92 | 2.28 | 2.57 | **1yr** | 2.02 | 2.47 | 3.04 | 3.60 | 4.11 | **1yr** |
| **2yr** | 0.37 | 0.57 | 0.70 | 0.94 | 1.16 | 1.37 | **2yr** | 1.01 | 1.34 | 1.55 | 1.98 | 2.50 | 3.06 | 3.45 | **2yr** | 2.71 | 3.32 | 3.81 | 4.55 | 5.17 | **2yr** |
| **5yr** | 0.41 | 0.64 | 0.79 | 1.09 | 1.39 | 1.60 | **5yr** | 1.20 | 1.56 | 1.81 | 2.33 | 2.89 | 3.67 | 4.16 | **5yr** | 3.24 | 4.00 | 4.68 | 5.41 | 6.13 | **5yr** |
| **10yr** | 0.46 | 0.71 | 0.88 | 1.24 | 1.60 | 1.79 | **10yr** | 1.38 | 1.75 | 2.03 | 2.60 | 3.21 | 4.19 | 4.76 | **10yr** | 3.71 | 4.58 | 5.39 | 6.14 | 6.96 | **10yr** |
| **25yr** | 0.54 | 0.82 | 1.02 | 1.46 | 1.91 | 2.06 | **25yr** | 1.65 | 2.01 | 2.34 | 2.89 | 3.68 | 5.01 | 5.68 | **25yr** | 4.43 | 5.46 | 6.47 | 7.27 | 8.25 | **25yr** |
| **50yr** | 0.61 | 0.92 | 1.15 | 1.65 | 2.22 | 2.28 | **50yr** | 1.92 | 2.23 | 2.63 | 3.20 | 4.09 | 5.74 | 6.51 | **50yr** | 5.08 | 6.26 | 7.40 | 8.25 | 9.37 | **50yr** |
| **100yr** | 0.69 | 1.04 | 1.30 | 1.88 | 2.58 | 2.56 | **100yr** | 2.22 | 2.50 | 2.96 | 3.55 | 4.56 | 6.60 | 7.48 | **100yr** | 5.84 | 7.19 | 8.48 | 9.35 | 10.66 | **100yr** |
| **200yr** | 0.78 | 1.18 | 1.49 | 2.16 | 3.02 | 2.84 | **200yr** | 2.60 | 2.78 | 3.32 | 3.94 | 5.06 | 7.56 | 8.61 | **200yr** | 6.69 | 8.28 | 9.68 | 10.64 | 12.12 | **200yr** |
| **500yr** | 0.94 | 1.40 | 1.81 | 2.62 | 3.73 | 3.30 | **500yr** | 3.22 | 3.23 | 3.89 | 4.53 | 5.84 | 9.11 | 10.40 | **500yr** | 8.06 | 10.00 | 11.57 | 12.58 | 14.40 | **500yr** |

## Upper Confidence Limits

| | 5min | 10min | 15min | 30min | 60min | 120min | | 1hr | 2hr | 3hr | 6hr | 12hr | 24hr | 48hr | | 1day | 2day | 4day | 7day | 10day | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1yr** | 0.35 | 0.54 | 0.66 | 0.89 | 1.09 | 1.31 | **1yr** | 0.94 | 1.28 | 1.46 | 1.88 | 2.36 | 2.86 | 3.21 | **1yr** | 2.53 | 3.08 | 3.61 | 4.22 | 4.86 | **1yr** |
| **2yr** | 0.40 | 0.61 | 0.75 | 1.02 | 1.26 | 1.50 | **2yr** | 1.09 | 1.47 | 1.70 | 2.18 | 2.74 | 3.26 | 3.73 | **2yr** | 2.89 | 3.58 | 4.15 | 4.72 | 5.35 | **2yr** |
| **5yr** | 0.49 | 0.75 | 0.93 | 1.28 | 1.63 | 1.92 | **5yr** | 1.41 | 1.87 | 2.21 | 2.82 | 3.57 | 4.25 | 4.88 | **5yr** | 3.76 | 4.70 | 5.27 | 6.10 | 6.85 | **5yr** |
| **10yr** | 0.58 | 0.89 | 1.11 | 1.55 | 2.00 | 2.33 | **10yr** | 1.72 | 2.28 | 2.70 | 3.47 | 4.37 | 5.19 | 6.03 | **10yr** | 4.59 | 5.80 | 6.49 | 7.42 | 8.28 | **10yr** |
| **25yr** | 0.73 | 1.11 | 1.38 | 1.97 | 2.60 | 3.03 | **25yr** | 2.24 | 2.96 | 3.55 | 4.71 | 5.74 | 6.78 | 7.97 | **25yr** | 6.00 | 7.67 | 8.60 | 9.65 | 10.64 | **25yr** |
| **50yr** | 0.87 | 1.32 | 1.64 | 2.36 | 3.18 | 3.70 | **50yr** | 2.74 | 3.62 | 4.37 | 5.85 | 7.05 | 8.28 | 9.86 | **50yr** | 7.33 | 9.48 | 10.67 | 11.79 | 12.89 | **50yr** |
| **100yr** | 1.04 | 1.56 | 1.96 | 2.83 | 3.88 | 4.53 | **100yr** | 3.35 | 4.43 | 5.38 | 7.28 | 8.66 | 10.13 | 12.19 | **100yr** | 8.96 | 11.72 | 13.25 | 14.42 | 15.61 | **100yr** |
| **200yr** | 1.23 | 1.85 | 2.35 | 3.40 | 4.74 | 5.52 | **200yr** | 4.09 | 5.40 | 6.64 | 9.03 | 10.65 | 12.39 | 15.08 | **200yr** | 10.97 | 14.50 | 16.49 | 17.66 | 18.91 | **200yr** |
| **500yr** | 1.56 | 2.33 | 2.99 | 4.35 | 6.18 | 7.20 | **500yr** | 5.33 | 7.04 | 8.75 | 12.07 | 14.02 | 16.18 | 19.94 | **500yr** | 14.32 | 19.17 | 22.08 | 23.10 | 24.42 | **500yr** |

Powered by ACIS Northeast Regional Climate Center




Map Scale: 1:4,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

- Area of Interest (AOI)

**Soils**

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**

- Streams and Canals

**Transportation**

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**

- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 22, Sep 2, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| Fr | Fredon silt loam | 13.3 | 23.9% |
| HeA | Haven loam, nearly level | 28.8 | 51.7% |
| KuA | Knickerbocker-Urban land complex, nearly level | 2.2 | 3.9% |
| NwB | Nassau-Cardigan complex, undulating, very rocky | 11.4 | 20.5% |
| **Totals for Area of Interest** | | **55.8** | **100.0%** |

# APPENDIX L

Supporting Design Calculations

# Performance Summary

| Design Criteria & Performance Summary | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **SUMMARY OF OVERALL WATERSHEDS** | | | | | |
| Design Criteria | *min req'd* | | Performance Summary: | | |
| *criteria* | *amount* | *unit* | *Provided* | | *notes/information* |
| WQv: | | | | | |
| total | 19,143 | cft | 20,177 | cft | Infiltration Basin |
| | 0.44 | ac-ft | 0.46 | ac-ft | |
| Cpv: | | | | | |
| volume | NA | cft | NA | cft | NA if reduction of CPv achieed through RRv Practices |
| Qp: | | | | | |
| discharge | 19.5 | cfs | 6.9 | cfs | Pre to Post reduced See Hydro CAD |
| Qf | | | | | |
| discharge | 46.0 | cfs | 14.3 | cfs | Pre to Post reduced See Hydro CAD |
| RRv: | | | | | |
| total | 5,851 | cft | 19,143 | cft | |
| | 0.13 | ac-ft | 0.44 | ac-ft | |

# Water Quality
# Volume Calculations
# Standard

| Water Quality Volume Calculations | | | STANDARD |
|---|---|---|---|
| Trib Area | 11.27 | ac | |
| Imperv Cover: | 3.56 | ac | |
| Imperv. % | 31.59 | | |
| **Stormwater Management Practice Selection:** | | | |
| Infiltration Basin | | | |
| **Uniform Sizing Criteria:** | | | |
| Water Quality (WQv) | P= | 1.40 | |
| | *I*= | *31.6* | |
| | Rv= | 0.3343 | |
| | A= | 11.27 | |
| | WQv= | 0.44 | AC-FT |
| | | 19,143.2 | CF |

## Minimum Runoff Reduction Requirements

RRV = 90% rain (P) x Rv* x S x total impervious area (AI from #2) / 12
with S = .55 (A soils); .40 (B soils); .30 (C soils); .20(D soils) OR weighted HSG average in DA

Weighted HSG= 0.3405

| | | |
|---|---|---|
| **Min RRV** = | 0.134 | ac-ft |
| **Min RRV** = | 5,851.4 | cu ft |

# Runoff Summary Table

| RUNOFF REDUCTION VOLUME AND TREATED VOLUMES | | | | | | |
|---|---|---|---|---|---|---|
| **Runoff Reduction Techniques/Standard SMPs** | | | **Total Contributing Area (acres)** | **Total Contributing Impervious Area (acres)** | **Runoff Reduction (RRv) (cf)** | **Water Quality (WQv) (cf)** |
| Area/Volume Reduction | Conservation of Natural Areas | RR-1 | | | | |
| | Sheetflow to Riparian Buffers/Filter Strips | RR-2 | | | | |
| | Tree Planting/Tree Pit | RR-3 | | | | |
| | Disconnection of Rooftop Runoff | RR-4 | | | | |
| | Vegetated Swale | RR-5 | | | | |
| | Rain Garden | RR-6 | | | | |
| | Stormwater Planter | RR-7 | | | | |
| | Rain Barrel/Cistern | RR-8 | | | | |
| | Porous Pavement | RR-9 | | | | |
| | Green Roof (Intensive & Extensive) | RR-10 | | | | |
| Standard SMPs w/RRv Capacity | Infiltration Trench | I-1 | | | | |
| | Infiltration Basin | I-2 | 11.27 | 3.56 | 19,143 | 20,177 |
| | Dry Well | I-3 | | | | |
| | Underground Infiltration System | I-4 | | | | |
| | Bioretention & Infiltration Bioretention | F-5 | | | | |
| | Dry swale | O-1 | | | | |
| | | **Total** | **11.27** | **3.56** | **19,143** | **20,177** |

# Infiltration Basin Worksheet

| Practice #: | IB-1 |
|---|---|

| Site Data for Drainage Area to be Treated by Practice | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Catchment Number** | **Total Area (acres)** | **Impervious Area (acres)** | **Percent Impervious %** | **Rv** | **Precipiration (in)** | **WQv ($ft^3$)** | **RRv ($ft^3$)** |
| TOTAL | 11.27 | 3.56 | 31.59% | | 1.40 | 19,143 | 6,321 |

*Drainage Area exceeds the maximum allowable unless soil infiltration rate exceeds 5 in/hr*

| Design Elements | | | |
|---|---|---|---|
| Test Pit Number | TP-1 & TP-3 | | |
| Depth to Rock of Ground Water | 7 | | |
| Elevation of Test Pit | 165.5 | | |
| Elevation of Rock or Ground Water | 158.5 | | |
| Soil Group | C | | |
| Infiltration Rate | 61.7 | *in/hr* | |
| Pretreatment Sizing | 100% | *of WQv* | *25% Minimum*<br>*50% if > 2 in/hr*<br>*100% if > 5 in/hr* |
| Required Pretreatment Volume | 19,143 | $ft^3$ | |
| Pretreatment Techniques Utilized | Deep Sumps | | *Pretreatment can be provided in the form of a sediment basin, sump pit, grass channel, plunge pool or other measure* |

| Infiltration Basin Sizing | | | |
|---|---|---|---|
| Design Volume | 19,143 | $ft^3$ | *WQv* |
| Basal Area Required | 3,829 | $ft^2$ | *Infiltration practices shall be designed to exfiltrate the entire WQv through the floor of the practice* |
| Basal Area Provided | 6,535 | $ft^2$ | |
| Design Depth | 5 | *ft* | |
| Volume Provided | 32,675 | $ft^3$ | *Storage Volume provided in infiltration basin not including pretreatment* |
| Volume Provided | 20,177 | $ft^3$ | *Storage Volume below provided outlet* |

| Runoff Reduction and Water Quality Volume | | | |
|---|---|---|---|
| **RRv** | **19,143** | **$ft^3$** | ***90% of the storage provided in the basin or WQv whichever is smaller*** |
| **WQv** | **20,177** | **$ft^3$** | |

# Pre Post Flow Analysis

| Peak Flow Discharge Rate DP-1 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 3.7 | 1.3 | **-2.3** |
| 2 | 5.7 | 1.8 | **-3.8** |
| 10 | 11.8 | 3.2 | **-8.6** |
| 100 | 27.7 | 6.4 | **-21.4** |

| Peak Flow Discharge Rate DP-2 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 1.3 | 1.4 | **0.0** |
| 2 | 1.9 | 2.0 | **0.0** |
| 10 | 3.7 | 3.7 | **0.0** |
| 100 | 8.1 | 8.0 | **-0.1** |

| Peak Flow Discharge Rate DP-3 | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 1.0 | 0.0 | **-1.0** |
| 2 | 1.7 | 0.0 | **-1.7** |
| 10 | 4.0 | 0.0 | **-4.0** |
| 100 | 10.2 | 0.0 | **-10.2** |

| Peak Flow Discharge Rate OVERALL | | | |
|---|---|---|---|
| **Storm Event** | **Pre (cfs)** | **Post (cfs)** | **Net Reduction (cfs)** |
| 1 | 6.0 | 2.7 | **-3.3** |
| 2 | 9.3 | 3.8 | **-5.5** |
| 10 | 19.5 | 6.9 | **-12.6** |
| 100 | 46.0 | 14.3 | **-31.7** |

# APPENDIX M

Soil Test Information

# TEST PIT LOG

## Project: VC Turf Field

Completed By: Eric Lore

Dated: January 9, 2026

| Test Hole | Total Depth | Water Level | Rock Level | Soils |
|---|---|---|---|---|
| 1 | 9' | 7' | NA | 0-3" Top Soil |
| | | | | 3"-4' Sandy Loam |
| | | | | 4'-7' Silty Loam |
| 2 | 8' | 8' | NA | 0-3" Top Soil |
| | | | | 3"-4' Sandy Loam |
| | | | | 4'-8' Silty Loam |
| 3 | 9' | 9' | NA | 0-3" Top Soil |
| | | | | 3"-4' Sandy Loam |
| | | | | 4'-9' Silty Loam |

Location of test pits shown on DA-1

# TEST PIT LOG

## Project: VC Turf Field

Completed By: Eric Lore

Dated: January 9, 2026

| Test Hole | Total Depth | Run One (in/hr) | Run Two (in/hr) | Run Three (in/hr) | Average Run (in/hr) |
|---|---|---|---|---|---|
| 1 | 6 | 17 | 48 | 120 | 61.7 |
| 2 | 6 | 150 | 68 | | 109.0 |
| 3 | 6 | 142 | 71 | 160 | 124.3 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Location of Infiltration Tests shown on DA-1

# APPENDIX N

NYSOPRHP Correspondence

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

KATHY MOSER
Acting Commissioner

January 13, 2026

Aime Patane
Land Resource Consultants Engineering & Surveying, LLC
85 Civic Center Plaza, Suite 204
Poughkeepsie, NY 12603

Re: DEC
Vassar College-Prentiss Fields
Brewers Lane, Town of Poughkeepsie, Dutchess County, NY
25PR11205

Dear Aime Patane:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

The above-noted project is located within the State and National Register Eligible Vassar College Building District (USN 02714.000578). OPRHP has reviewed the Phase IA Literature Search and Sensitivity Assessment & Archaeological Monitoring report prepared for this project by Hudson Cultural Services (HCS) (November 2025; 25SR00603). No archaeological sites were identified during this investigation; therefore, no further archaeological investigations are warranted. Based on our review, it is the opinion of the OPRHP that the proposed project will have no adverse impacts on properties, including archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

If you have any questions, I can be reached at Josalyn.Ferguson@parks.ny.gov.

Sincerely,



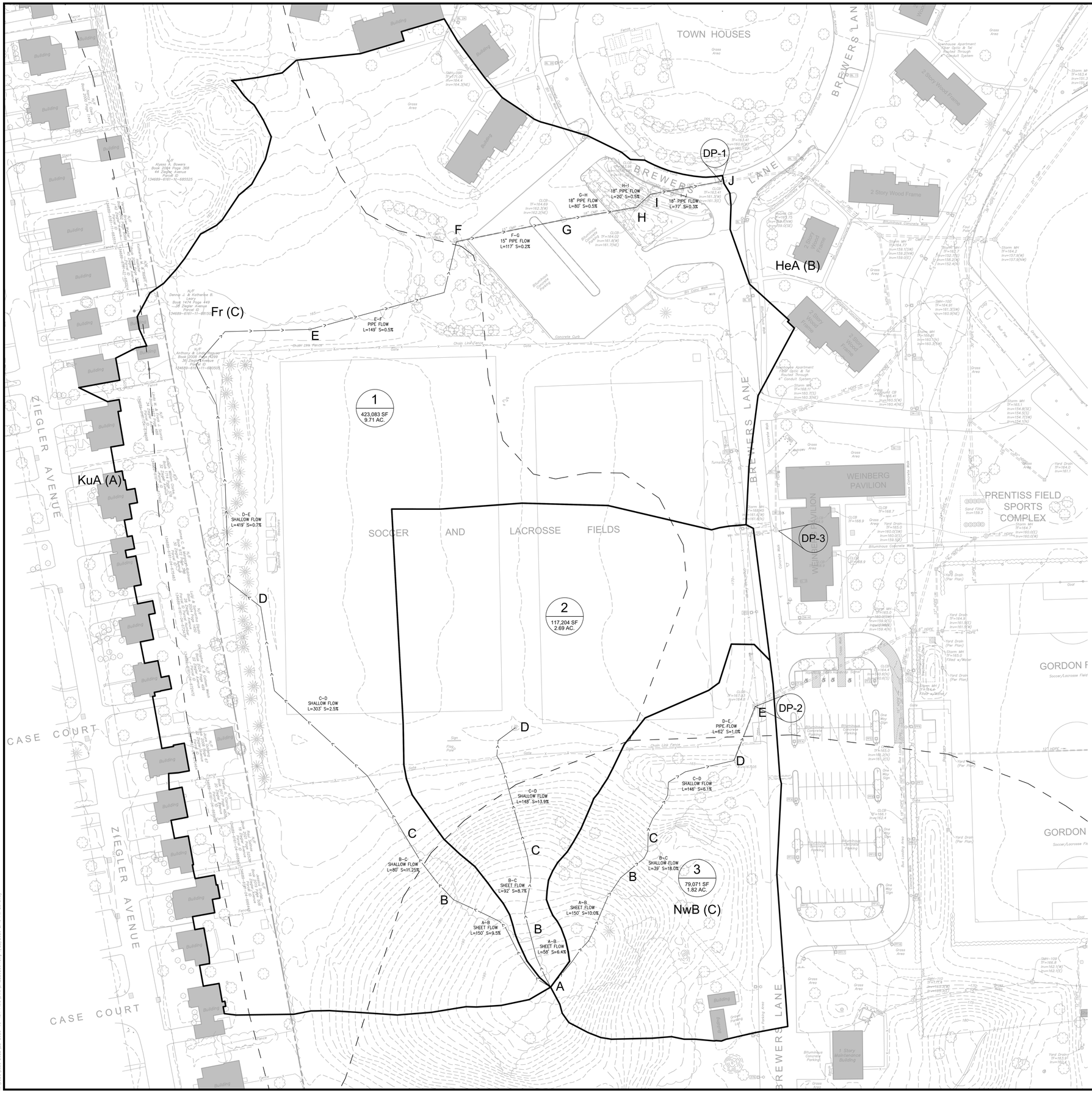
Josalyn Ferguson, Ph.D.
Scientist – Archaeology

*via email only*

c.c. Beth Selig, HCS

# APPENDIX O

Map Packet: Pre & Post Development Drainage Area Maps




## LEGEND

| | |
|---|---|
| 120 | EXISTING MAJOR CONTOUR LINE |
| 123 | EXISTING MINOR CONTOUR LINE |
| 120 | PROPOSED MAJOR CONTOUR LINE |
| 123 | PROPOSED MINOR CONTOUR LINE |
| | DRAINAGE LINE |
| | SOIL BOUNDARY LINE |
| A > B | TIME OF CONCENTRATION LINE |
| | TEST PIT LOCATION |
| MgB | SOIL TYPE DESIGNATION |
| 1 XX,XXX SF X.XX AC. | DRAINAGE AREA DESIGNATION |

Vassar College

124 Raymond Avenue
Poughkeepsie, NY
12604

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CATELLA ENGINEERING, LLC
P.O. BOX 464
DELHI, N.Y.
13753-1282

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

REVISIONS

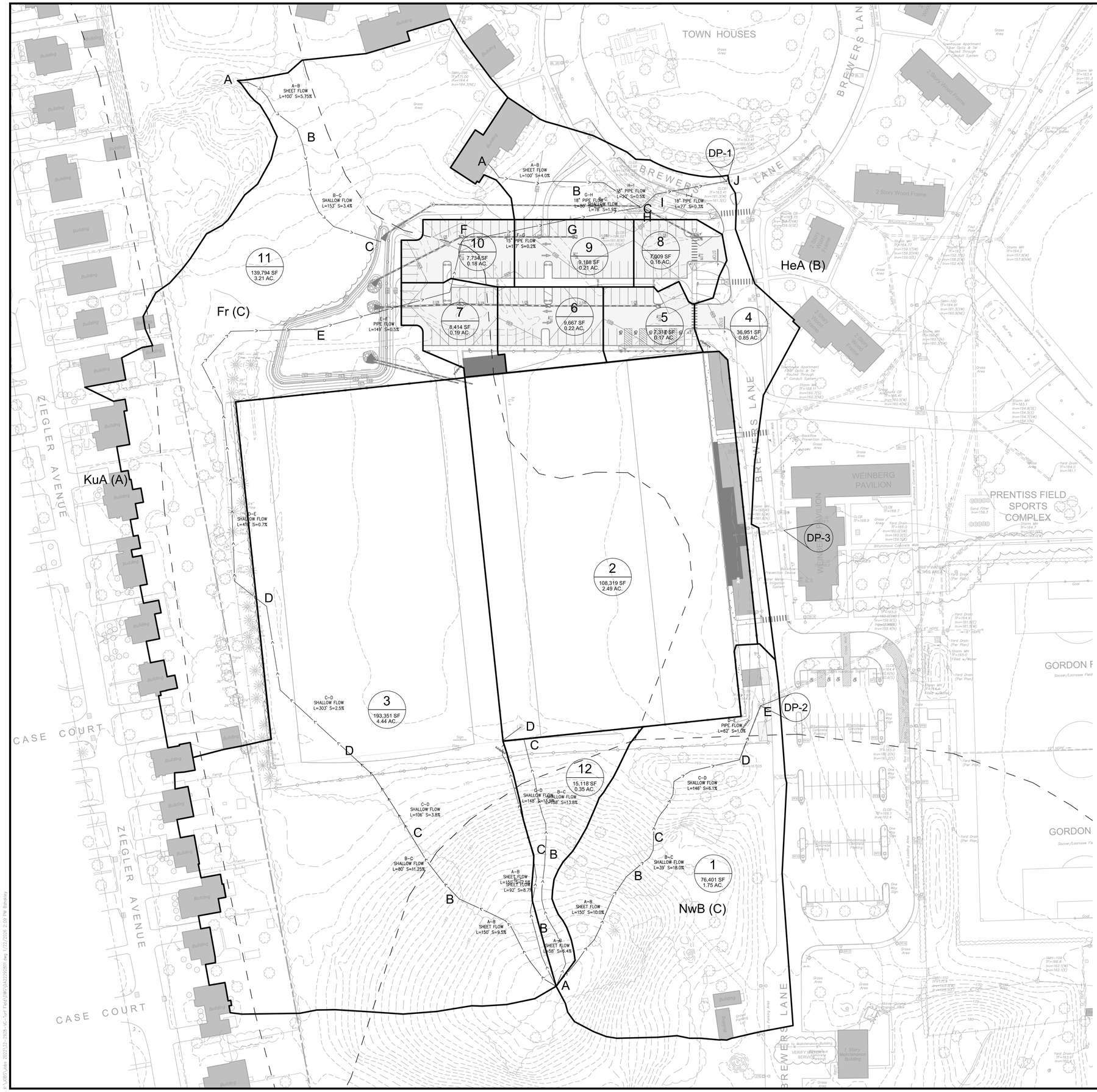
| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | DA22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=40' |

GRAPHIC SCALE
40 20 0 40
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

DRAINAGE AREA MAP
(PRE-DEVELOPMENT)

Drawing No.
DA-1




## LEGEND

| | |
|---|---|
| 120 | EXISTING MAJOR CONTOUR LINE |
| 123 | EXISTING MINOR CONTOUR LINE |
| P20 | PROPOSED MAJOR CONTOUR LINE |
| P20 | PROPOSED MINOR CONTOUR LINE |
| | DRAINAGE LINE |
| | SOIL BOUNDARY LINE |
| A > B | TIME OF CONCENTRATION LINE |
| | TEST PIT LOCATION |
| MgB | SOIL TYPE DESIGNATION |
| 1 XX.XXX SF X.XX AC. | DRAINAGE AREA DESIGNATION |

Vassar College

124 Raymond Avenue
Poughkeepsie, NY
12604

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| NO. | DATE | DESCRIPTION |
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REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | DA22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

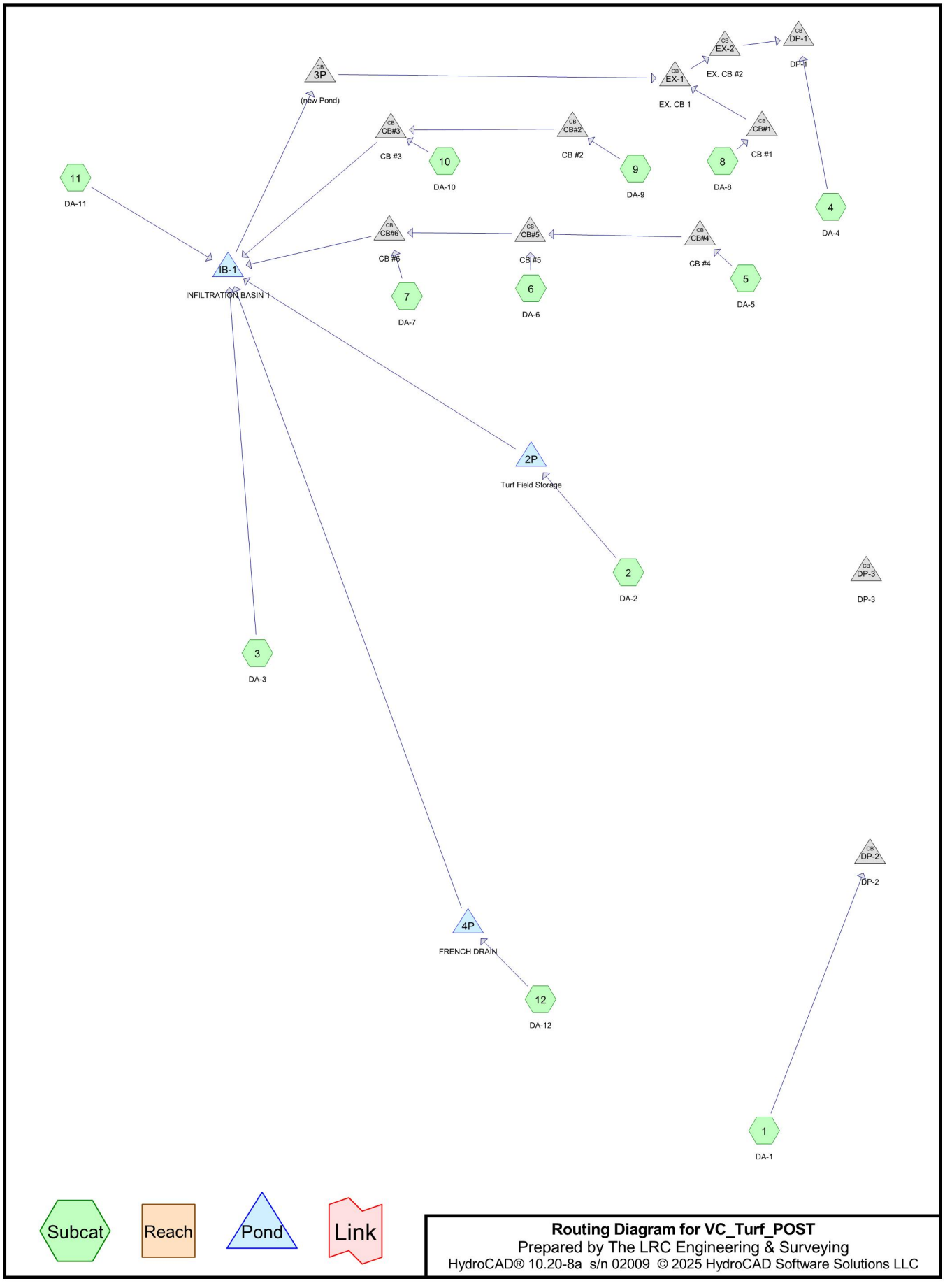
VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

DRAINAGE AREA MAP
(POST-DEVELOPMENT)

Drawing No.
DA-2

# APPENDIX P

25-Year Hydraulic Analysis




**Routing Diagram for VC_Turf_POST**
Prepared by The LRC Engineering & Surveying
HydroCAD® 10.20-8a s/n 02009 © 2025 HydroCAD Software Solutions LLC

## Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 25-yr | NY-Poughkeepsie 24-hr S1 | 25-yr | Default | 24.00 | 1 | 5.84 | 2 |

## Area Listing (all nodes)

| Area (sq-ft) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 18,806 | 49 | 50-75% Grass cover, Fair, HSG A (3, 11) |
| 57,043 | 69 | 50-75% Grass cover, Fair, HSG B (1, 4, 5, 6, 7, 8, 9, 10, 11) |
| 134,377 | 79 | 50-75% Grass cover, Fair, HSG C (1, 3, 7, 10, 11, 12) |
| 96,152 | 74 | >75% Grass cover, Good, HSG C (3) |
| 37,561 | 98 | Paved parking, HSG B (4, 5, 6, 9) |
| 43,050 | 98 | Paved parking, HSG C (1, 2, 3, 7, 8, 10, 11) |
| 100,932 | 98 | Turf Field (2) |
| 4,362 | 60 | Woods, Fair, HSG B (11) |
| 116,980 | 73 | Woods, Fair, HSG C (1, 3, 11, 12) |
| **609,263** | **81** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (sq-ft) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 18,806 | HSG A | 3, 11 |
| 98,966 | HSG B | 1, 4, 5, 6, 7, 8, 9, 10, 11 |
| 390,559 | HSG C | 1, 2, 3, 7, 8, 10, 11, 12 |
| 0 | HSG D | |
| 100,932 | Other | 2 |
| **609,263** | | **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 | Su Nu |
|---|---|---|---|---|---|---|---|
| 18,806 | 57,043 | 134,377 | 0 | 0 | 210,226 | 50-75% Grass cover, Fair | |
| 0 | 0 | 96,152 | 0 | 0 | 96,152 | >75% Grass cover, Good | |
| 0 | 37,561 | 43,050 | 0 | 0 | 80,611 | Paved parking | |
| 0 | 0 | 0 | 0 | 100,932 | 100,932 | Turf Field | |
| 0 | 4,362 | 116,980 | 0 | 0 | 121,342 | Woods, Fair | |
| **18,806** | **98,966** | **390,559** | **0** | **100,932** | **609,263** | **TOTAL AREA** | |

## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 0.00 | 62.0 | 0.0100 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 2 | 2P | 162.16 | 161.63 | 107.0 | 0.0050 | 0.012 | 0.0 | 12.0 | 0.0 | |
| 3 | 3P | 162.80 | 161.70 | 221.0 | 0.0050 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 4 | CB#1 | 162.10 | 161.40 | 68.0 | 0.0103 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 5 | CB#2 | 162.83 | 162.20 | 122.0 | 0.0052 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 6 | CB#3 | 162.20 | 161.70 | 100.0 | 0.0050 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 7 | CB#4 | 164.50 | 163.90 | 118.0 | 0.0051 | 0.011 | 0.0 | 15.0 | 0.0 | |
| 8 | CB#5 | 163.65 | 163.18 | 93.0 | 0.0051 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 9 | CB#6 | 163.18 | 162.75 | 85.0 | 0.0051 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 10 | DP-1 | 161.30 | 160.60 | 72.0 | 0.0097 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 11 | DP-2 | 164.80 | 160.00 | 181.0 | 0.0265 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 12 | DP-3 | 161.60 | 160.70 | 117.0 | 0.0077 | 0.011 | 0.0 | 12.0 | 0.0 | |
| 13 | EX-1 | 161.70 | 161.60 | 14.0 | 0.0071 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 14 | EX-2 | 161.50 | 161.30 | 72.0 | 0.0028 | 0.011 | 0.0 | 18.0 | 0.0 | |
| 15 | IB-1 | 163.15 | 162.80 | 70.0 | 0.0050 | 0.011 | 0.0 | 15.0 | 0.0 | |

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: DA-1** Runoff Area=76,401 sf 13.71% Impervious Runoff Depth=3.64"
Flow Length=397' Tc=17.6 min CN=80 Runoff=5.09 cfs 23,157 cf

**Subcatchment 2: DA-2** Runoff Area=108,319 sf 100.00% Impervious Runoff Depth=5.60"
Tc=6.0 min CN=98 Runoff=14.55 cfs 50,567 cf

**Subcatchment 3: DA-3** Runoff Area=193,351 sf 0.48% Impervious Runoff Depth=3.05"
Flow Length=336' Tc=18.1 min CN=74 Runoff=10.64 cfs 49,156 cf

**Subcatchment 4: DA-4** Runoff Area=36,951 sf 43.34% Impervious Runoff Depth=3.84"
Flow Length=178' Tc=8.8 min CN=82 Runoff=3.42 cfs 11,825 cf

**Subcatchment 5: DA-5** Runoff Area=7,317 sf 86.07% Impervious Runoff Depth=5.14"
Tc=6.0 min CN=94 Runoff=0.95 cfs 3,133 cf

**Subcatchment 6: DA-6** Runoff Area=9,667 sf 76.56% Impervious Runoff Depth=4.80"
Tc=6.0 min CN=91 Runoff=1.21 cfs 3,867 cf

**Subcatchment 7: DA-7** Runoff Area=8,414 sf 88.44% Impervious Runoff Depth=5.37"
Tc=6.0 min CN=96 Runoff=1.12 cfs 3,764 cf

**Subcatchment 8: DA-8** Runoff Area=7,009 sf 71.29% Impervious Runoff Depth=4.69"
Tc=6.0 min CN=90 Runoff=0.86 cfs 2,739 cf

**Subcatchment 9: DA-9** Runoff Area=9,188 sf 85.40% Impervious Runoff Depth=5.14"
Tc=6.0 min CN=94 Runoff=1.20 cfs 3,934 cf

**Subcatchment 10: DA-10** Runoff Area=7,734 sf 92.94% Impervious Runoff Depth=5.37"
Tc=6.0 min CN=96 Runoff=1.03 cfs 3,460 cf

**Subcatchment 11: DA-11** Runoff Area=129,794 sf 3.57% Impervious Runoff Depth=2.86"
Flow Length=253' Tc=17.0 min CN=72 Runoff=6.87 cfs 30,966 cf

**Subcatchment 12: DA-12** Runoff Area=15,118 sf 0.00% Impervious Runoff Depth=3.54"
Flow Length=288' Tc=18.9 min CN=79 Runoff=0.95 cfs 4,456 cf

**Pond 2P: Turf Field Storage** Peak Elev=167.18' Storage=6,891 cf Inflow=14.55 cfs 50,567 cf
12.0" Round Culvert n=0.012 L=107.0' S=0.0050 '/' Outflow=6.44 cfs 50,559 cf

**Pond 3P: (new Pond)** Peak Elev=163.04' Inflow=0.19 cfs 154 cf
12.0" Round Culvert n=0.011 L=221.0' S=0.0050 '/' Outflow=0.19 cfs 154 cf

**Pond 4P: FRENCH DRAIN** Inflow=0.95 cfs 4,456 cf
Primary=0.95 cfs 4,456 cf

**Pond CB#1: CB #1** Peak Elev=162.60' Inflow=0.86 cfs 2,739 cf
15.0" Round Culvert n=0.011 L=68.0' S=0.0103 '/' Outflow=0.86 cfs 2,739 cf

**Pond CB#2: CB #2** Peak Elev=163.43' Inflow=1.20 cfs 3,934 cf
15.0" Round Culvert n=0.011 L=122.0' S=0.0052 '/' Outflow=1.20 cfs 3,934 cf

**Pond CB#3: CB #3** Peak Elev=163.05' Inflow=2.22 cfs 7,394 cf
15.0" Round Culvert n=0.011 L=100.0' S=0.0050 '/' Outflow=2.22 cfs 7,394 cf

**Pond CB#4: CB #4** Peak Elev=165.02' Inflow=0.95 cfs 3,133 cf
15.0" Round Culvert n=0.011 L=118.0' S=0.0051 '/' Outflow=0.95 cfs 3,133 cf

**Pond CB#5: CB #5** Peak Elev=164.42' Inflow=2.16 cfs 7,000 cf
18.0" Round Culvert n=0.011 L=93.0' S=0.0051 '/' Outflow=2.16 cfs 7,000 cf

**Pond CB#6: CB #6** Peak Elev=164.16' Inflow=3.28 cfs 10,764 cf
18.0" Round Culvert n=0.011 L=85.0' S=0.0051 '/' Outflow=3.28 cfs 10,764 cf

**Pond DP-1: DP-1** Peak Elev=162.46' Inflow=4.22 cfs 14,718 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0097 '/' Outflow=4.22 cfs 14,718 cf

**Pond DP-2: DP-2** Peak Elev=166.12' Inflow=5.09 cfs 23,157 cf
18.0" Round Culvert n=0.011 L=181.0' S=0.0265 '/' Outflow=5.09 cfs 23,157 cf

**Pond DP-3: DP-3** Peak Elev=0.00'
12.0" Round Culvert n=0.011 L=117.0' S=0.0077 '/' Primary=0.00 cfs 0 cf

**Pond EX-1: EX. CB 1** Peak Elev=162.20' Inflow=0.86 cfs 2,893 cf
18.0" Round Culvert n=0.011 L=14.0' S=0.0071 '/' Outflow=0.86 cfs 2,893 cf

**Pond EX-2: EX. CB #2** Peak Elev=162.02' Inflow=0.86 cfs 2,893 cf
18.0" Round Culvert n=0.011 L=72.0' S=0.0028 '/' Outflow=0.86 cfs 2,893 cf

**Pond IB-1: INFILTRATION BASIN 1** Peak Elev=163.37' Storage=22,203 cf Inflow=27.22 cfs 153,295 cf
Discarded=13.05 cfs 153,141 cf Primary=0.19 cfs 154 cf Outflow=13.25 cfs 153,295 cf

**Total Runoff Area = 609,263 sf Runoff Volume = 191,025 cf Average Runoff Depth = 3.76"**
**70.20% Pervious = 427,720 sf 29.80% Impervious = 181,543 sf**

## Summary for Subcatchment 1: DA-1

[47] Hint: Peak is 121% of capacity of segment #4

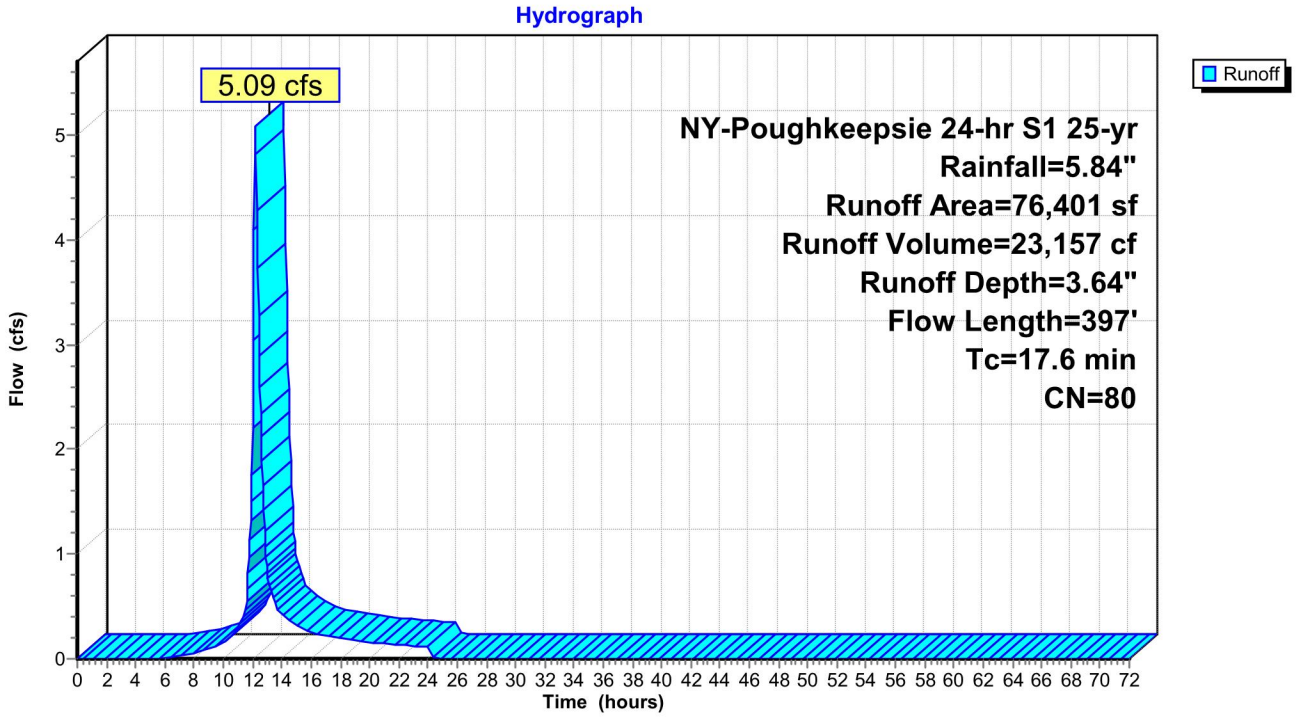
Runoff = 5.09 cfs @ 12.20 hrs, Volume= 23,157 cf, Depth= 3.64"
Routed to Pond DP-2 : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 3,133 | 69 | 50-75% Grass cover, Fair, HSG B |
| 48,203 | 79 | 50-75% Grass cover, Fair, HSG C |
| 14,587 | 73 | Woods, Fair, HSG C |
| 10,478 | 98 | Paved parking, HSG C |
| 76,401 | 80 | Weighted Average |
| 65,923 | | 86.29% Pervious Area |
| 10,478 | | 13.71% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.7 | 150 | 0.1000 | 0.16 | | **Sheet Flow, A-B**<br>Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.3 | 39 | 0.1800 | 2.12 | | **Shallow Concentrated Flow, B-C**<br>Woodland Kv= 5.0 fps |
| 1.4 | 146 | 0.0610 | 1.73 | | **Shallow Concentrated Flow, C-D**<br>Short Grass Pasture Kv= 7.0 fps |
| 0.2 | 62 | 0.0100 | 5.36 | 4.21 | **Pipe Channel, D-E**<br>12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'<br>n= 0.011 |
| 17.6 | 397 | Total | | | |

## Subcatchment 1: DA-1



## Summary for Subcatchment 2: DA-2

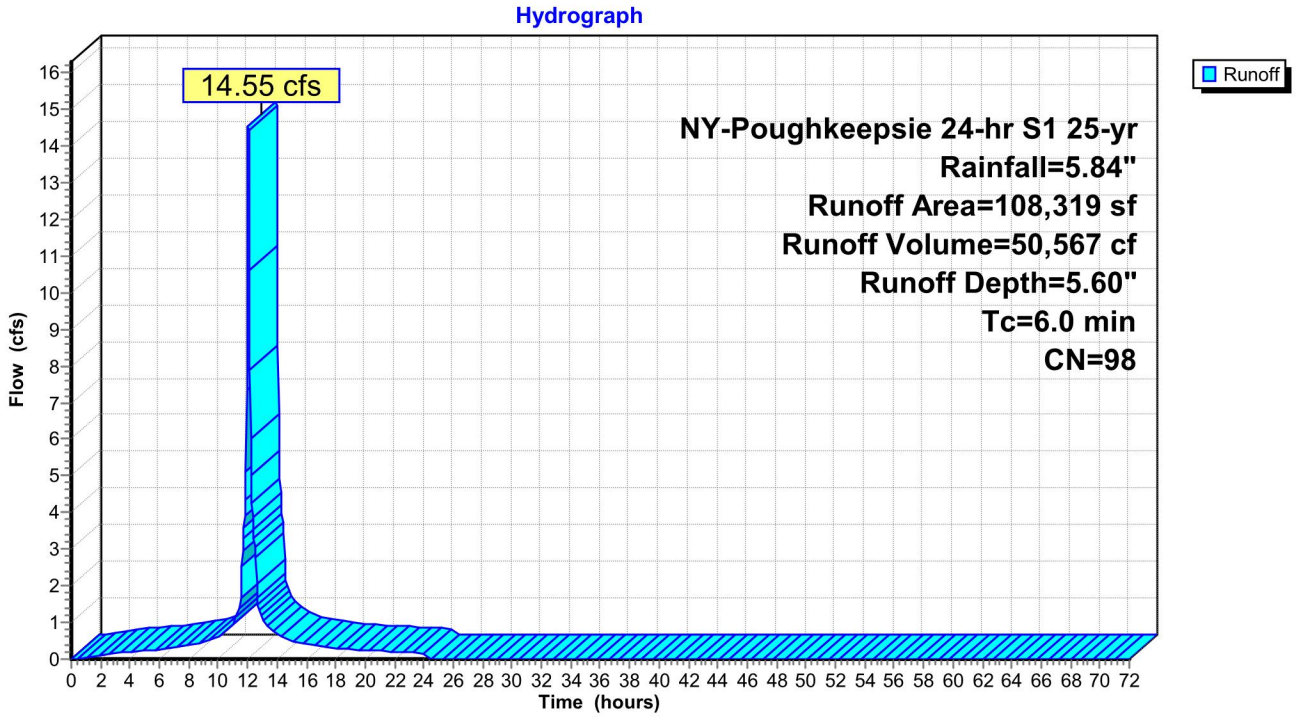
Runoff = 14.55 cfs @ 12.04 hrs, Volume= 50,567 cf, Depth= 5.60"
Routed to Pond 2P : Turf Field Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 100,932 | 98 | Turf Field |
| | 7,387 | 98 | Paved parking, HSG C |
| | 108,319 | 98 | Weighted Average |
| | 108,319 | | 100.00% Impervious Area |

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

## Subcatchment 2: DA-2



## Summary for Subcatchment 3: DA-3

Regraded Field with Underderain

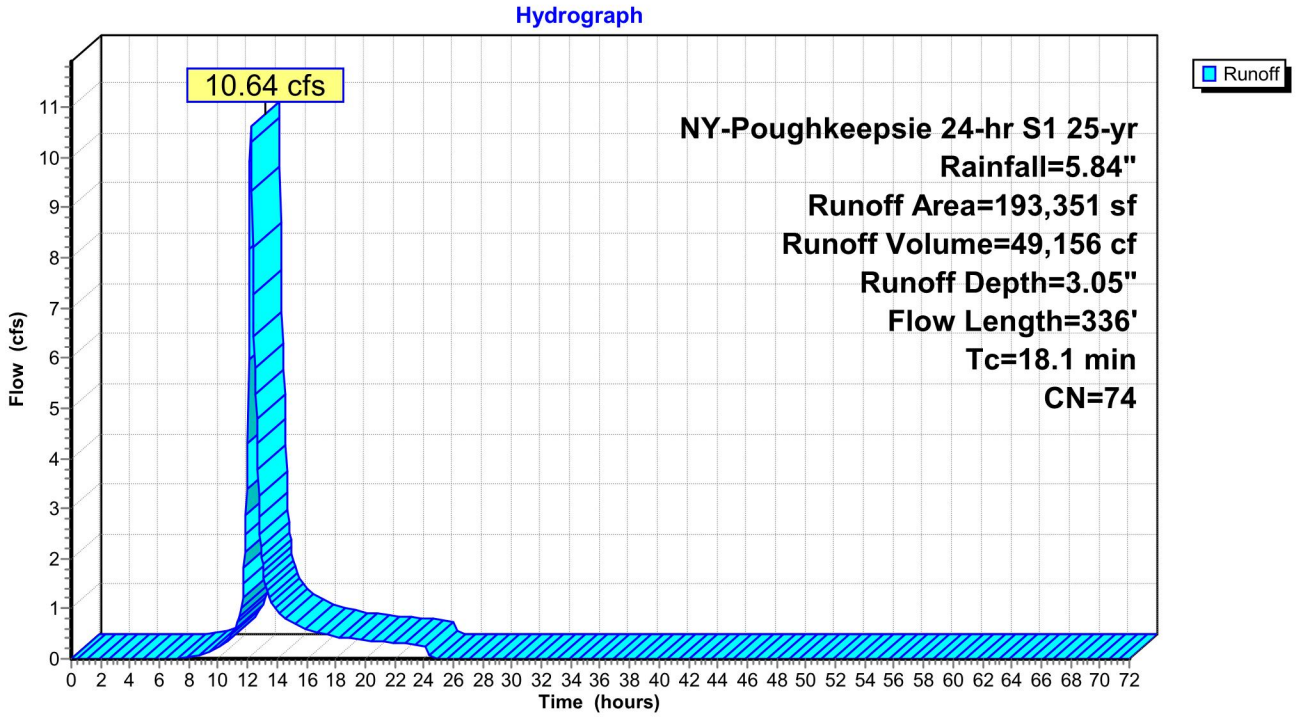
Runoff = 10.64 cfs @ 12.21 hrs, Volume= 49,156 cf, Depth= 3.05"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 96,152 | 74 | >75% Grass cover, Good, HSG C |
| 6,421 | 49 | 50-75% Grass cover, Fair, HSG A |
| 40,341 | 79 | 50-75% Grass cover, Fair, HSG C |
| 49,516 | 73 | Woods, Fair, HSG C |
| 921 | 98 | Paved parking, HSG C |
| 193,351 | 74 | Weighted Average |
| 192,430 | | 99.52% Pervious Area |
| 921 | | 0.48% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 16.0 | 150 | 0.0950 | 0.16 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 0.8 | 80 | 0.1125 | 1.68 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 1.3 | 106 | 0.0380 | 1.36 | | **Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 336 | Total | | | |

## Subcatchment 3: DA-3



## Summary for Subcatchment 4: DA-4

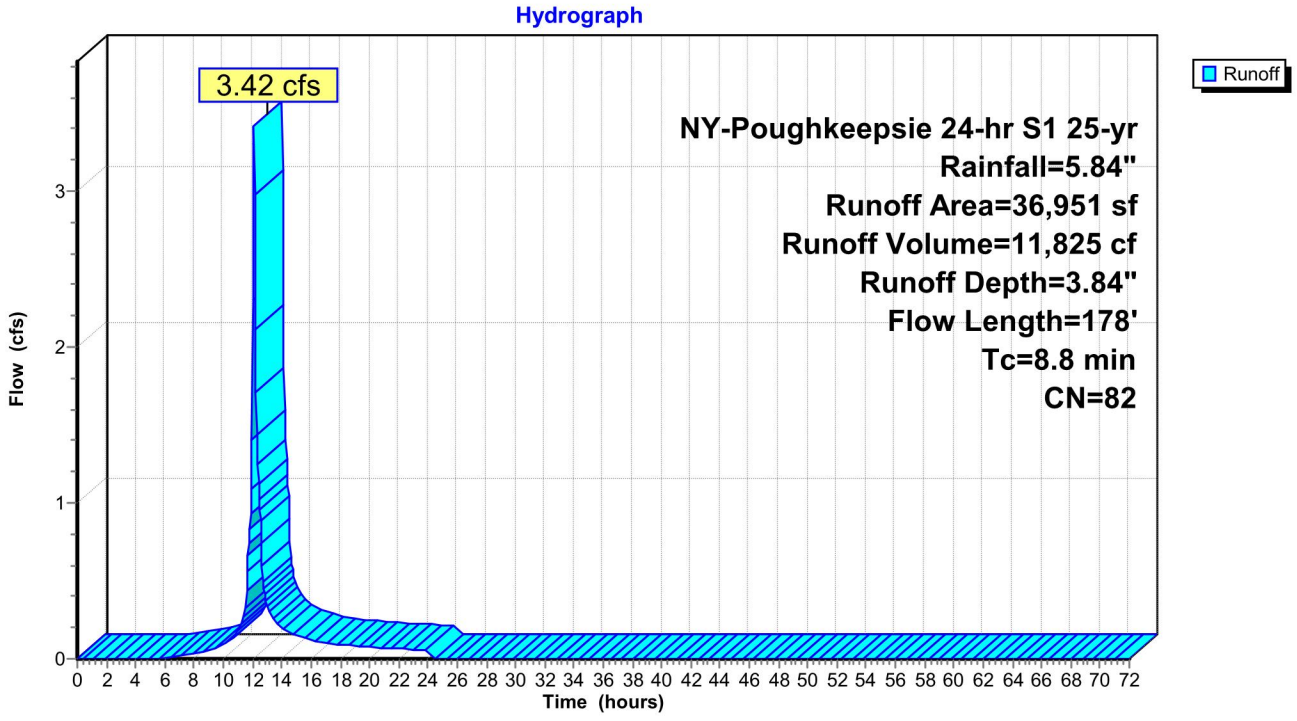
Runoff = 3.42 cfs @ 12.07 hrs, Volume= 11,825 cf, Depth= 3.84"
Routed to Pond DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 20,936 | 69 | 50-75% Grass cover, Fair, HSG B |
| 16,015 | 98 | Paved parking, HSG B |
| 36,951 | 82 | Weighted Average |
| 20,936 | | 56.66% Pervious Area |
| 16,015 | | 43.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.5 | 100 | 0.0400 | 0.22 | | **Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.16" |
| 1.3 | 78 | 0.0190 | 0.96 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 8.8 | 178 | Total | | | |

## Subcatchment 4: DA-4



## Summary for Subcatchment 5: DA-5

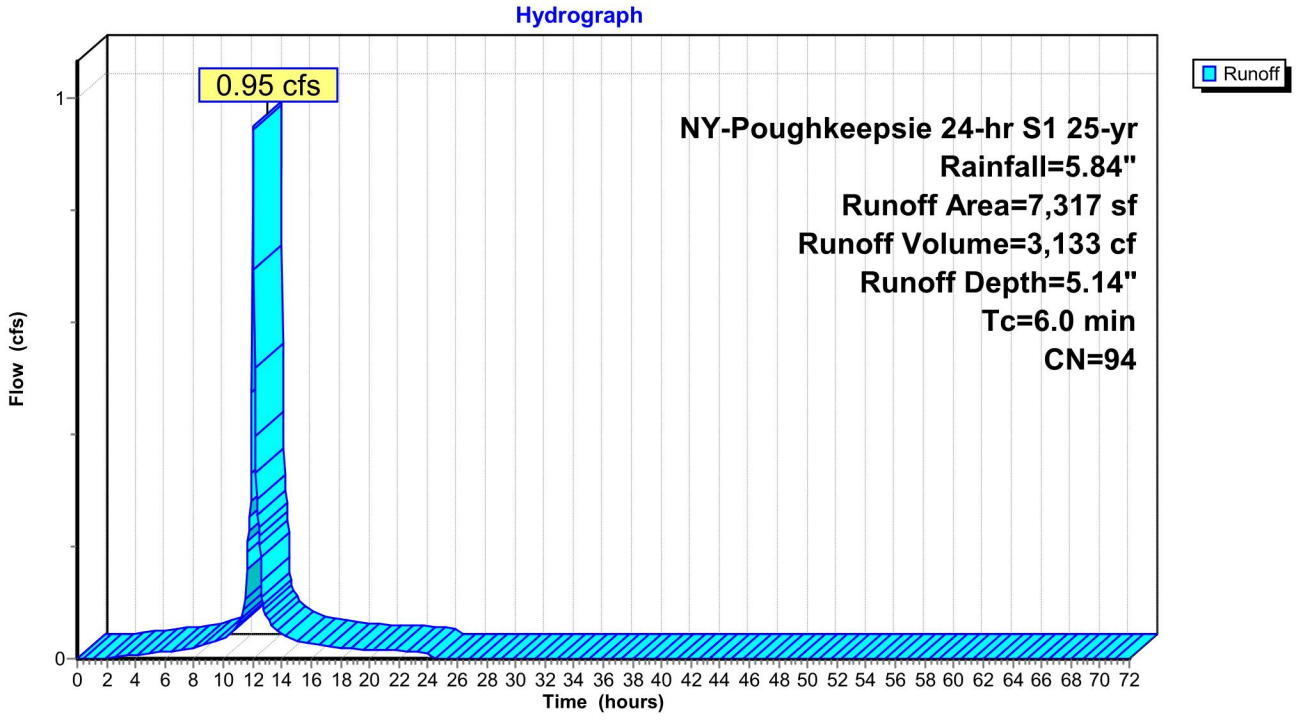
Runoff = 0.95 cfs @ 12.04 hrs, Volume= 3,133 cf, Depth= 5.14"
Routed to Pond CB#4 : CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 1,019 | 69 | 50-75% Grass cover, Fair, HSG B |
| 6,298 | 98 | Paved parking, HSG B |
| 7,317 | 94 | Weighted Average |
| 1,019 | | 13.93% Pervious Area |
| 6,298 | | 86.07% Impervious Area |

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

## Subcatchment 5: DA-5



## Summary for Subcatchment 6: DA-6

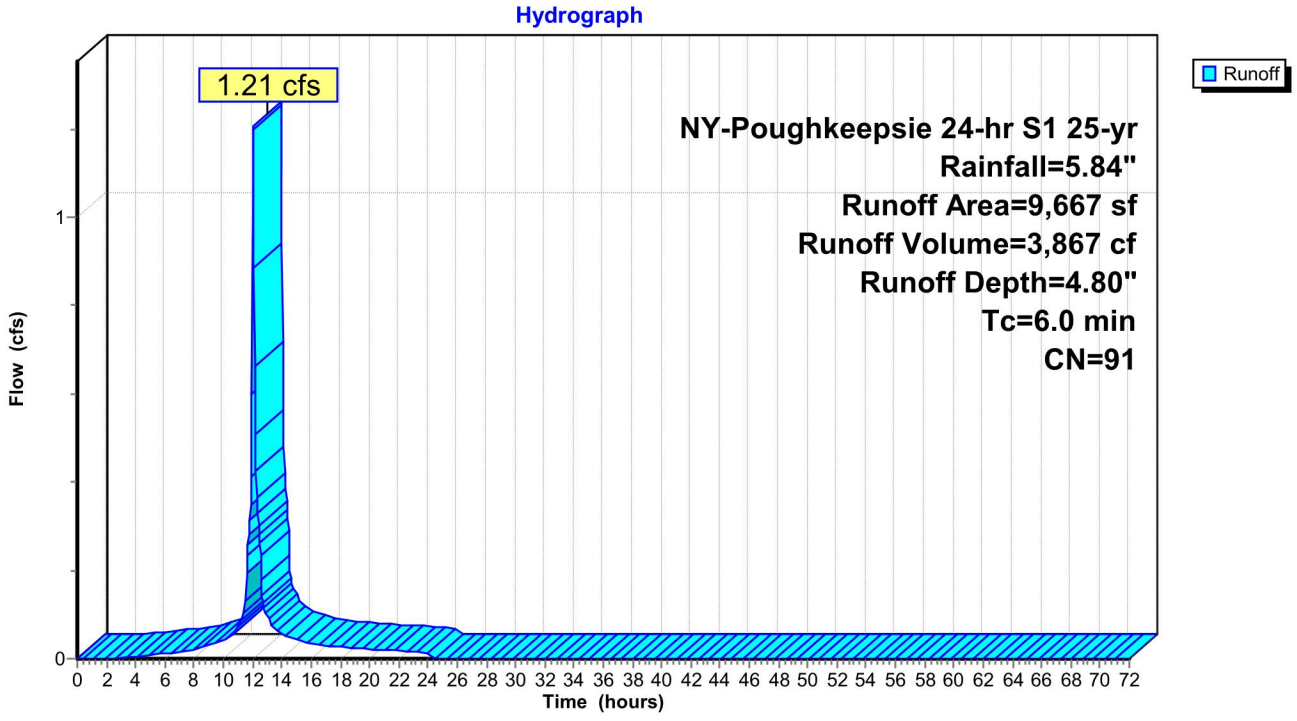
Runoff = 1.21 cfs @ 12.04 hrs, Volume= 3,867 cf, Depth= 4.80"
Routed to Pond CB#5 : CB #5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 2,266 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,401 | 98 | Paved parking, HSG B |
| 9,667 | 91 | Weighted Average |
| 2,266 | | 23.44% Pervious Area |
| 7,401 | | 76.56% Impervious Area |

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

## Subcatchment 6: DA-6



## Summary for Subcatchment 7: DA-7

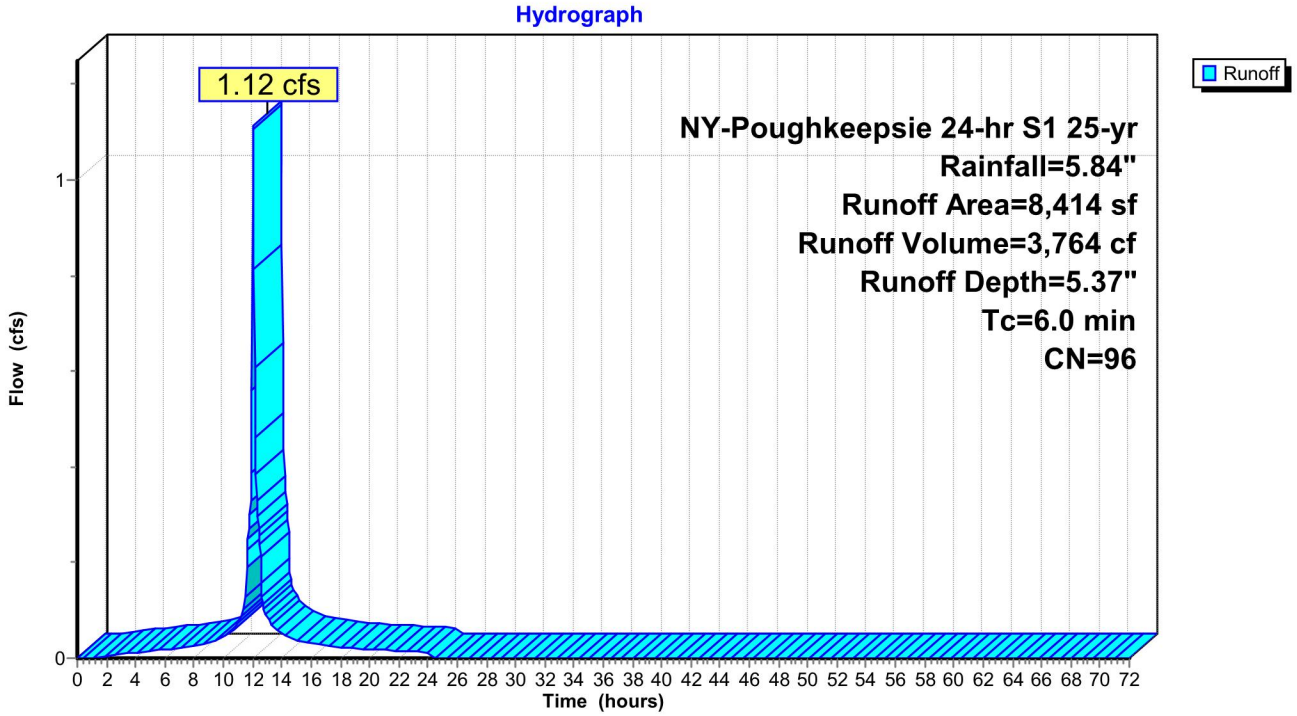
Runoff = 1.12 cfs @ 12.04 hrs, Volume= 3,764 cf, Depth= 5.37"
Routed to Pond CB#6 : CB #6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 46 | 69 | 50-75% Grass cover, Fair, HSG B |
| 927 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,441 | 98 | Paved parking, HSG C |
| 8,414 | 96 | Weighted Average |
| 973 | | 11.56% Pervious Area |
| 7,441 | | 88.44% Impervious Area |

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

### Subcatchment 7: DA-7



## Summary for Subcatchment 8: DA-8

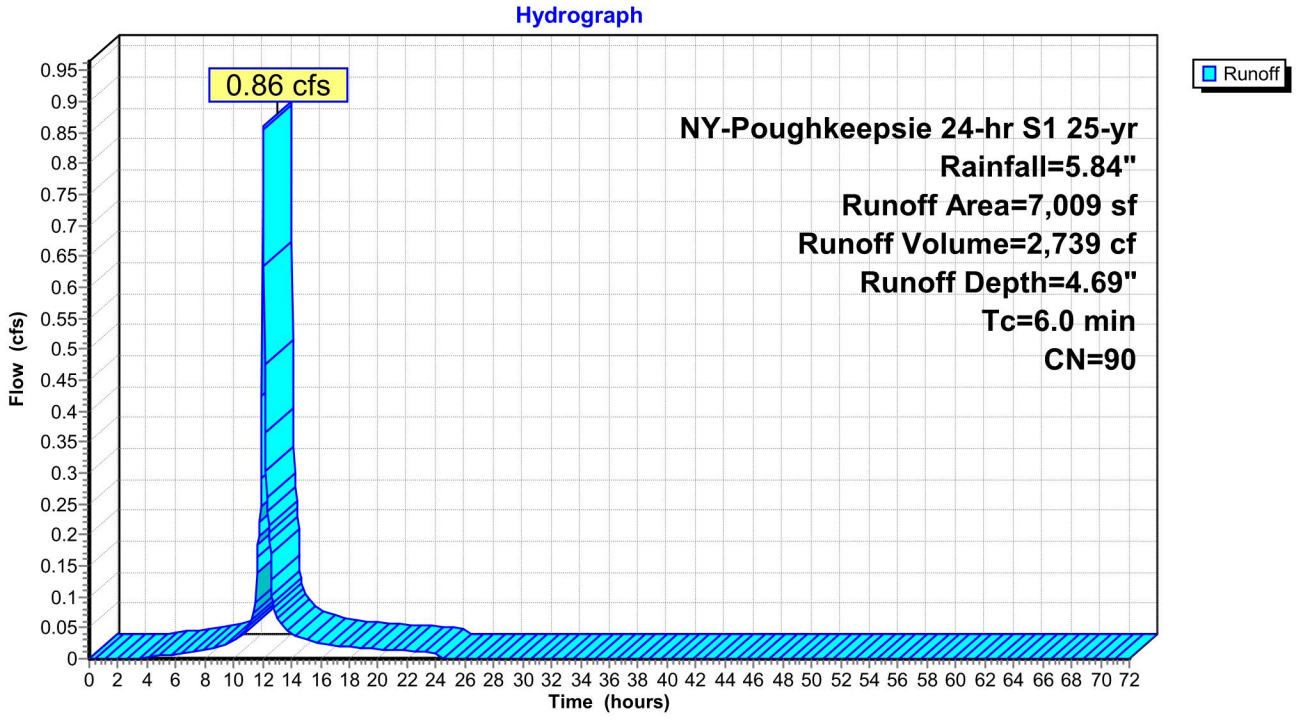
Runoff = 0.86 cfs @ 12.04 hrs, Volume= 2,739 cf, Depth= 4.69"
Routed to Pond CB#1 : CB #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 2,012 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,997 | 98 | Paved parking, HSG C |
| 7,009 | 90 | Weighted Average |
| 2,012 | | 28.71% Pervious Area |
| 4,997 | | 71.29% Impervious Area |

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

## Subcatchment 8: DA-8



## Summary for Subcatchment 9: DA-9

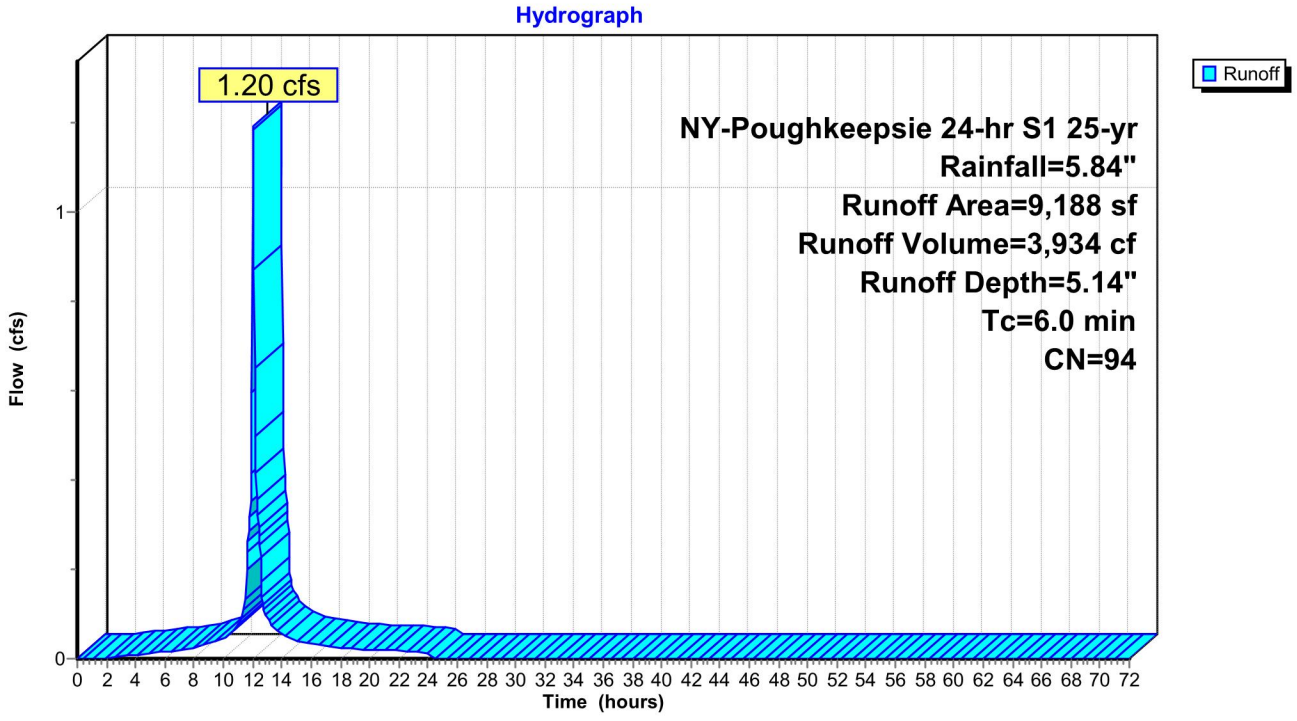
Runoff = 1.20 cfs @ 12.04 hrs, Volume= 3,934 cf, Depth= 5.14"
Routed to Pond CB#2 : CB #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 1,341 | 69 | 50-75% Grass cover, Fair, HSG B |
| 7,847 | 98 | Paved parking, HSG B |
| 9,188 | 94 | Weighted Average |
| 1,341 | | 14.60% Pervious Area |
| 7,847 | | 85.40% Impervious Area |

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

## Subcatchment 9: DA-9



## Summary for Subcatchment 10: DA-10

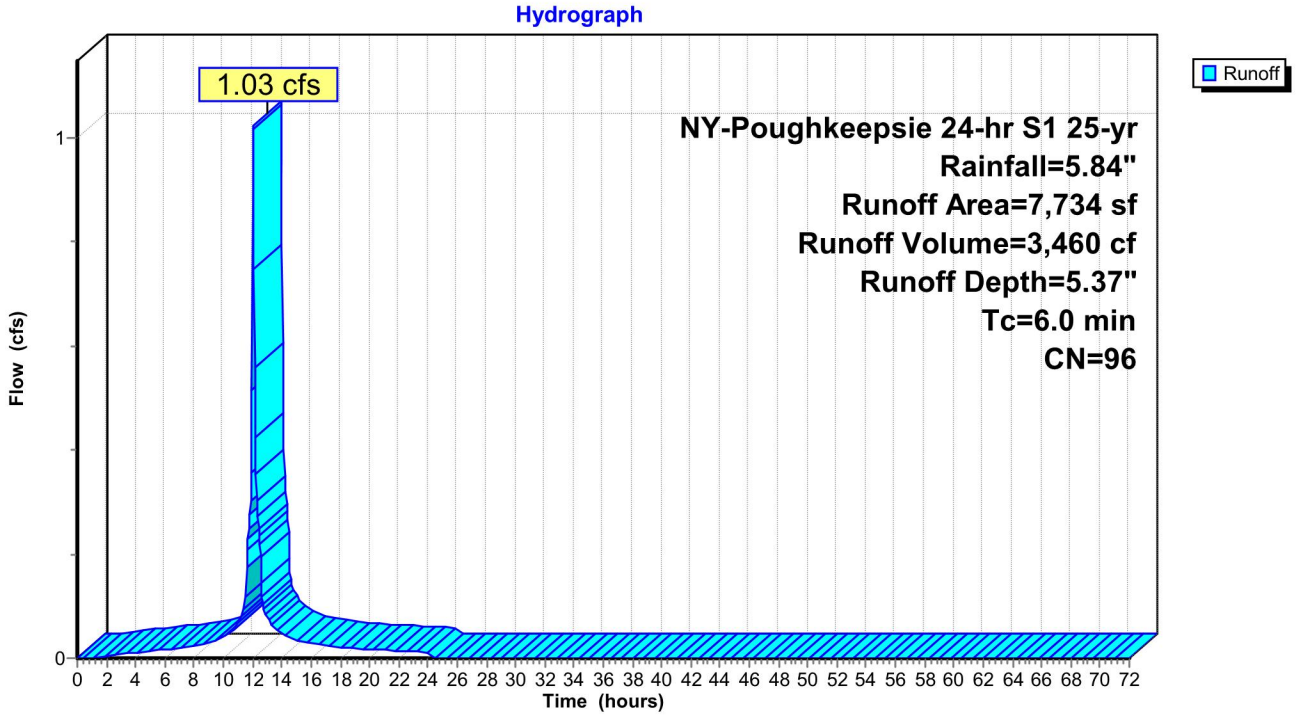
Runoff = 1.03 cfs @ 12.04 hrs, Volume= 3,460 cf, Depth= 5.37"
Routed to Pond CB#3 : CB #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 261 | 69 | 50-75% Grass cover, Fair, HSG B |
| 285 | 79 | 50-75% Grass cover, Fair, HSG C |
| 7,188 | 98 | Paved parking, HSG C |
| 7,734 | 96 | Weighted Average |
| 546 | | 7.06% Pervious Area |
| 7,188 | | 92.94% Impervious Area |

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

### Subcatchment 10: DA-10



## Summary for Subcatchment 11: DA-11

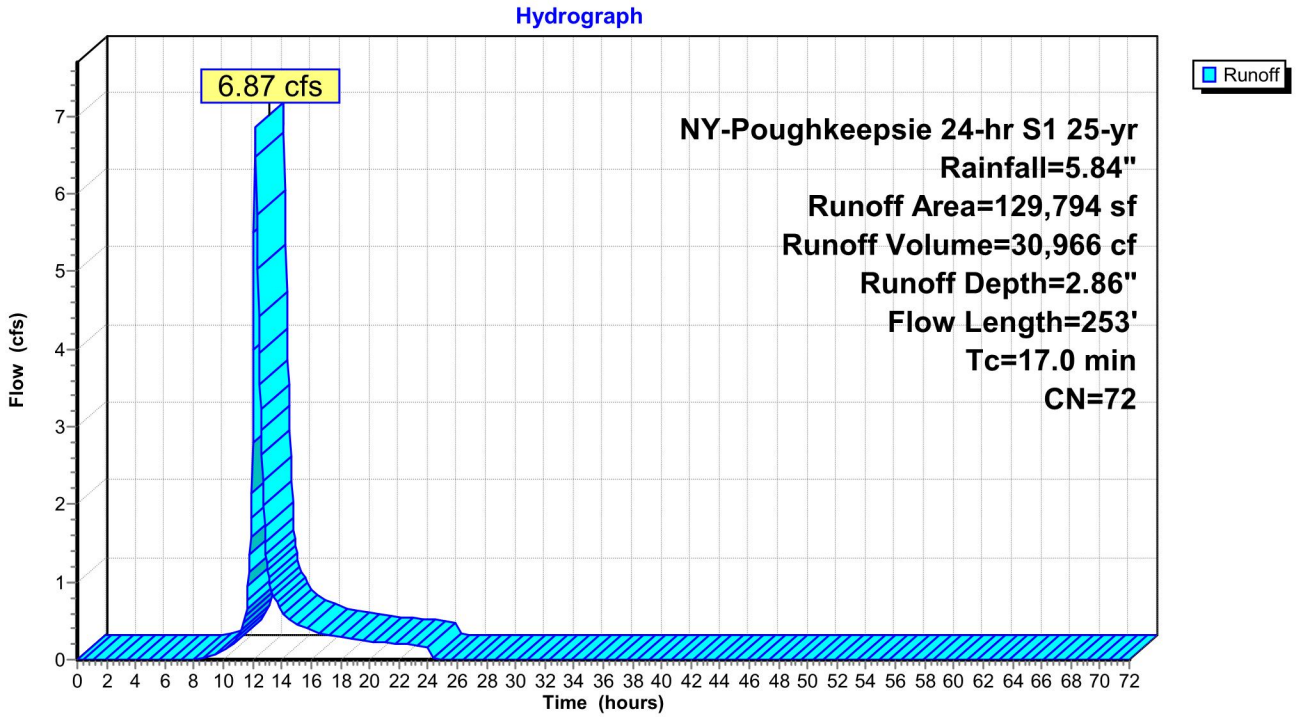
Runoff = 6.87 cfs @ 12.20 hrs, Volume= 30,966 cf, Depth= 2.86"
Routed to Pond IB-1 : INFILTRATION BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 12,385 | 49 | 50-75% Grass cover, Fair, HSG A |
| 26,029 | 69 | 50-75% Grass cover, Fair, HSG B |
| 4,362 | 60 | Woods, Fair, HSG B |
| 29,624 | 79 | 50-75% Grass cover, Fair, HSG C |
| 52,756 | 73 | Woods, Fair, HSG C |
| 4,638 | 98 | Paved parking, HSG C |
| 129,794 | 72 | Weighted Average |
| 125,156 | | 96.43% Pervious Area |
| 4,638 | | 3.57% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 14.2 | 100 | 0.0575 | 0.12 | | **Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.16" |
| 2.8 | 153 | 0.0340 | 0.92 | | **Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps |
| 17.0 | 253 | Total | | | |

## Subcatchment 11: DA-11



## Summary for Subcatchment 12: DA-12

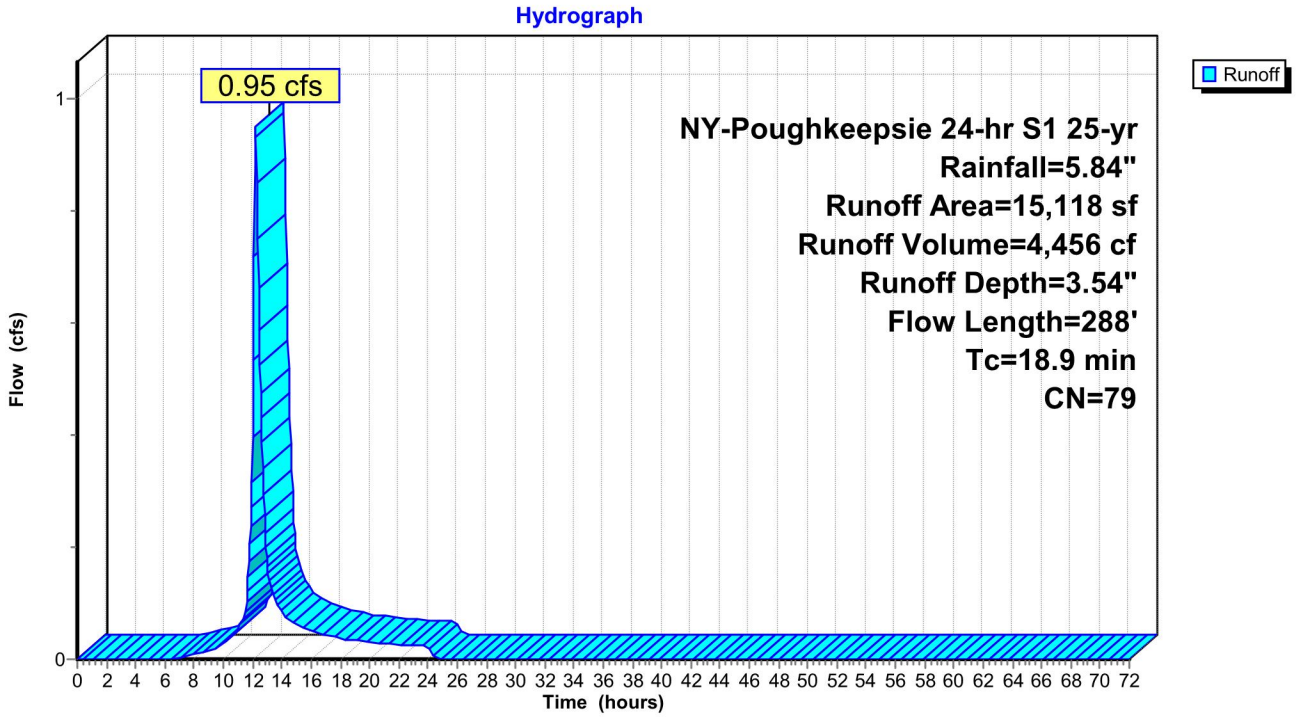
Runoff = 0.95 cfs @ 12.22 hrs, Volume= 4,456 cf, Depth= 3.54"
Routed to Pond 4P : FRENCH DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Poughkeepsie 24-hr S1 25-yr Rainfall=5.84"

| Area (sf) | CN | Description |
|---|---|---|
| 14,997 | 79 | 50-75% Grass cover, Fair, HSG C |
| 121 | 73 | Woods, Fair, HSG C |
| 15,118 | 79 | Weighted Average |
| 15,118 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.0 | 150 | 0.0750 | 0.14 | | **Sheet Flow, A-B** Grass: Bermuda n= 0.410 P2= 3.16" |
| 0.9 | 138 | 0.1380 | 2.60 | | **Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps |
| 18.9 | 288 | Total | | | |

## Subcatchment 12: DA-12



## Summary for Pond 2P: Turf Field Storage

Inflow Area = 108,319 sf,100.00% Impervious, Inflow Depth = 5.60" for 25-yr event
Inflow = 14.55 cfs @ 12.04 hrs, Volume= 50,567 cf
Outflow = 6.44 cfs @ 12.19 hrs, Volume= 50,559 cf, Atten= 56%, Lag= 9.1 min
Primary = 6.44 cfs @ 12.19 hrs, Volume= 50,559 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 167.18' @ 12.19 hrs Surf.Area= 13,539 sf Storage= 6,891 cf

Plug-Flow detention time= 9.5 min calculated for 50,559 cf (100% of inflow)
Center-of-Mass det. time= 9.2 min ( 755.2 - 746.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.75' | 237 cf | **8" Pipe Trench (Irregular)** Listed below (Recalc)<br>684 cf Overall - 91 cf Embedded = 593 cf x 40.0% Voids |
| #2 | 163.00' | 69 cf | **8.0" Round 8" Collector** Inside #1<br>L= 197.0' S= 0.0050 '/'<br>91 cf Overall - 0.6" Wall Thickness = 69 cf |
| #3 | 161.93' | 6,068 cf | **12" Pipe Trench (Irregular)** Listed below (Recalc)<br>15,367 cf Overall - 197 cf Embedded = 15,170 cf x 40.0% Voids |
| #4 | 162.18' | 137 cf | **12.0" Round 12" Collector** Inside #3<br>L= 174.0' S= 0.0050 '/'<br>197 cf Overall - 1.2" Wall Thickness = 137 cf |
| #5 | 166.89' | 4,530 cf | **Field Stone (Irregular)** Listed below (Recalc)<br>11,326 cf Overall x 40.0% Voids |
| | | 11,041 cf | Total Available Storage |

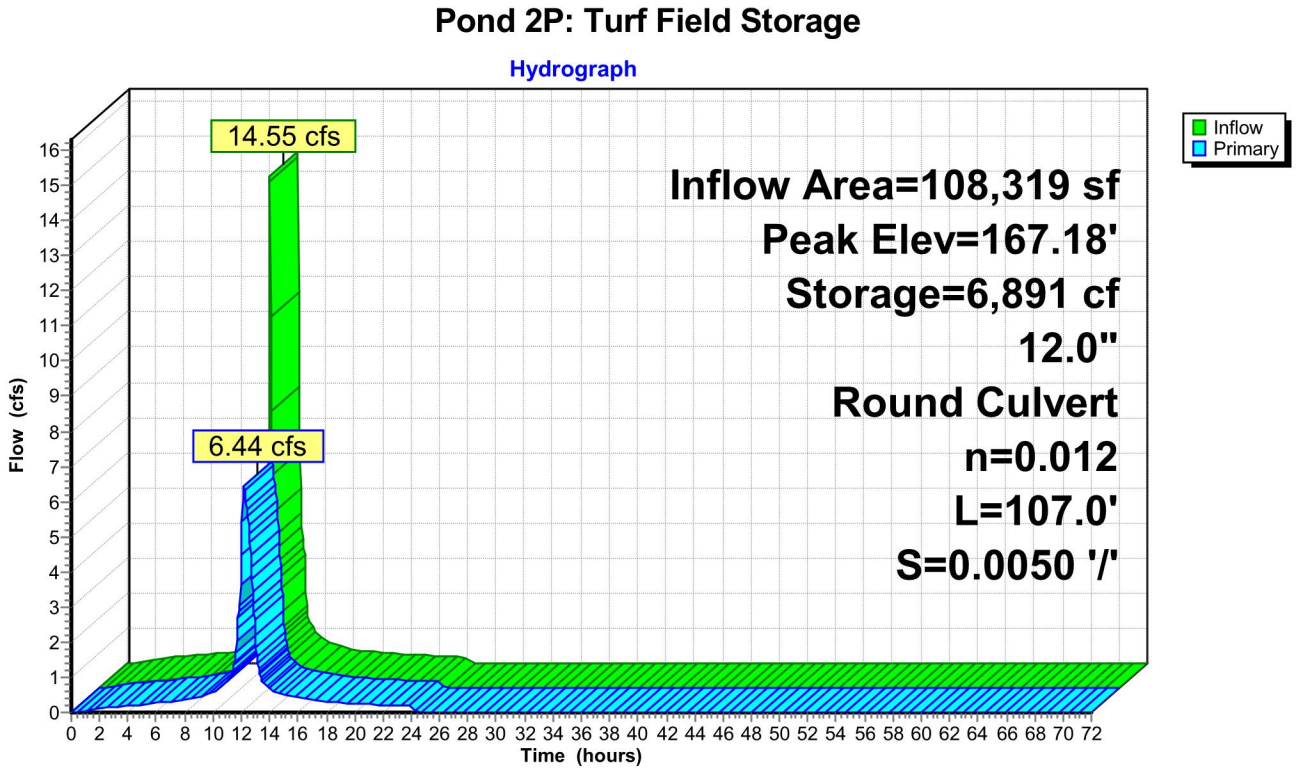
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 162.75 | 0 | 0.0 | 0 | 0 | 0 |
| 163.75 | 197 | 396.0 | 66 | 66 | 12,481 |
| 166.89 | 197 | 396.0 | 619 | 684 | 13,724 |

| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 161.93 | 0 | 0.0 | 0 | 0 | 0 |
| 162.75 | 3,482 | 388.0 | 952 | 952 | 11,981 |
| 166.89 | 3,482 | 388.0 | 14,415 | 15,367 | 13,587 |

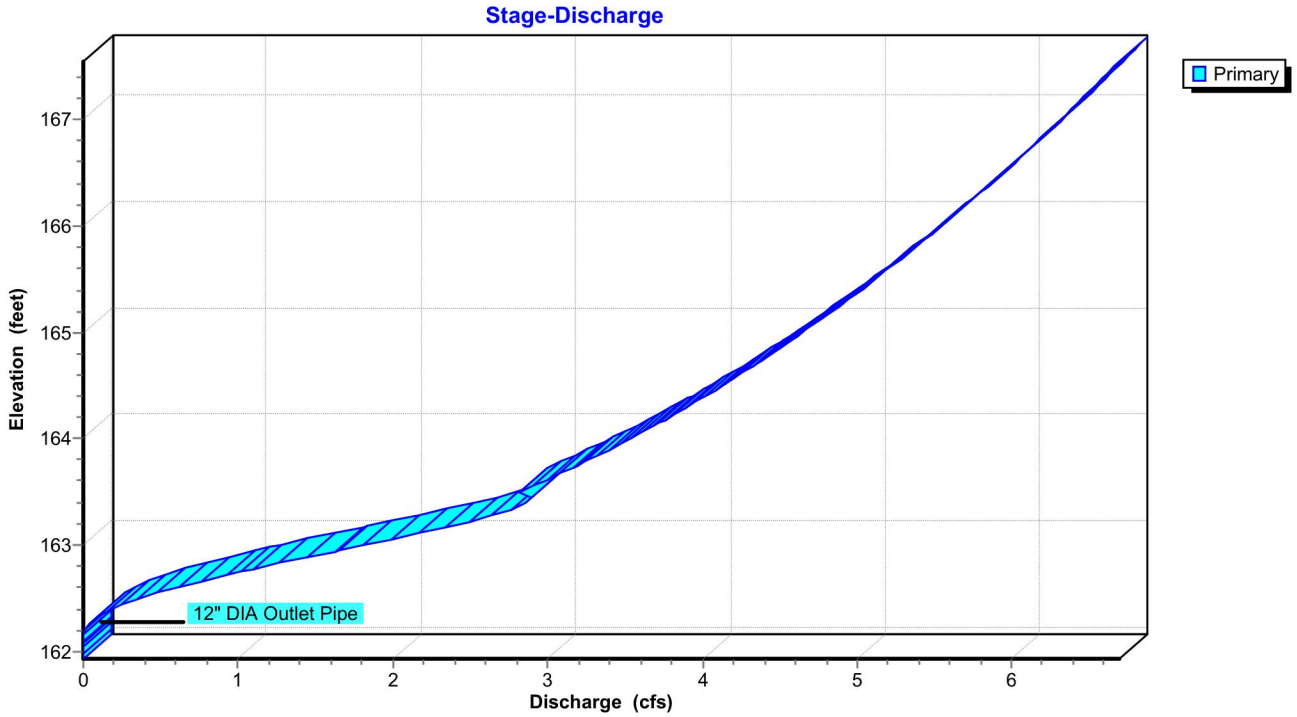
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) |
|---|---|---|---|---|---|
| 166.89 | 0 | 0.0 | 0 | 0 | 0 |
| 167.55 | 51,480 | 1,044.0 | 11,326 | 11,326 | 86,735 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.16' | **12.0" Round 12" DIA Outlet Pipe**<br>L= 107.0' CPP, square edge headwall, Ke= 0.500<br>Inlet / Outlet Invert= 162.16' / 161.63' S= 0.0050 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Primary OutFlow** Max=6.43 cfs @ 12.19 hrs HW=167.17' (Free Discharge)
**1=12" DIA Outlet Pipe** (Barrel Controls 6.43 cfs @ 8.19 fps)



## Pond 2P: Turf Field Storage



## Stage-Area-Storage for Pond 2P: Turf Field Storage

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.93 | 0 | 164.53 | 3,038 | 167.13 | 6,729 |
| 161.98 | 0 | 164.58 | 3,112 | 167.18 | 6,895 |
| 162.03 | 1 | 164.63 | 3,185 | 167.23 | 7,130 |
| 162.08 | 2 | 164.68 | 3,259 | 167.28 | 7,446 |
| 162.13 | 5 | 164.73 | 3,332 | 167.33 | 7,853 |
| 162.18 | 11 | 164.78 | 3,406 | 167.38 | 8,365 |
| 162.23 | 18 | 164.83 | 3,479 | 167.43 | 8,992 |
| 162.28 | 29 | 164.88 | 3,553 | 167.48 | 9,747 |
| 162.33 | 44 | 164.93 | 3,627 | 167.53 | **10,642** |
| 162.38 | 63 | 164.98 | 3,700 | | |
| 162.43 | 86 | 165.03 | 3,774 | | |
| 162.48 | 115 | 165.08 | 3,847 | | |
| 162.53 | 150 | 165.13 | 3,921 | | |
| 162.58 | 192 | 165.18 | 3,994 | | |
| 162.63 | 240 | 165.23 | 4,068 | | |
| 162.68 | 296 | 165.28 | 4,142 | | |
| 162.73 | 360 | 165.33 | 4,215 | | |
| 162.78 | 431 | 165.38 | 4,289 | | |
| 162.83 | 503 | 165.43 | 4,362 | | |
| 162.88 | 576 | 165.48 | 4,436 | | |
| 162.93 | 648 | 165.53 | 4,510 | | |
| 162.98 | 721 | 165.58 | 4,583 | | |
| 163.03 | 794 | 165.63 | 4,657 | | |
| 163.08 | 868 | 165.68 | 4,730 | | |
| 163.13 | 941 | 165.73 | 4,804 | | |
| 163.18 | 1,016 | 165.78 | 4,877 | | |
| 163.23 | 1,090 | 165.83 | 4,951 | | |
| 163.28 | 1,164 | 165.88 | 5,025 | | |
| 163.33 | 1,239 | 165.93 | 5,098 | | |
| 163.38 | 1,313 | 165.98 | 5,172 | | |
| 163.43 | 1,388 | 166.03 | 5,245 | | |
| 163.48 | 1,463 | 166.08 | 5,319 | | |
| 163.53 | 1,538 | 166.13 | 5,393 | | |
| 163.58 | 1,614 | 166.18 | 5,466 | | |
| 163.63 | 1,689 | 166.23 | 5,540 | | |
| 163.68 | 1,765 | 166.28 | 5,613 | | |
| 163.73 | 1,841 | 166.33 | 5,687 | | |
| 163.78 | 1,916 | 166.38 | 5,760 | | |
| 163.83 | 1,992 | 166.43 | 5,834 | | |
| 163.88 | 2,067 | 166.48 | 5,908 | | |
| 163.93 | 2,143 | 166.53 | 5,981 | | |
| 163.98 | 2,218 | 166.58 | 6,055 | | |
| 164.03 | 2,293 | 166.63 | 6,128 | | |
| 164.08 | 2,368 | 166.68 | 6,202 | | |
| 164.13 | 2,443 | 166.73 | 6,275 | | |
| 164.18 | 2,518 | 166.78 | 6,349 | | |
| 164.23 | 2,593 | 166.83 | 6,423 | | |
| 164.28 | 2,667 | 166.88 | 6,496 | | |
| 164.33 | 2,742 | 166.93 | 6,512 | | |
| 164.38 | 2,816 | 166.98 | 6,522 | | |
| 164.43 | 2,890 | 167.03 | 6,554 | | |
| 164.48 | 2,964 | 167.08 | 6,619 | | |

## Summary for Pond 3P: (new Pond)

[79] Warning: Submerged Pond IB-1 Primary device # 2 OUTLET by 0.24'

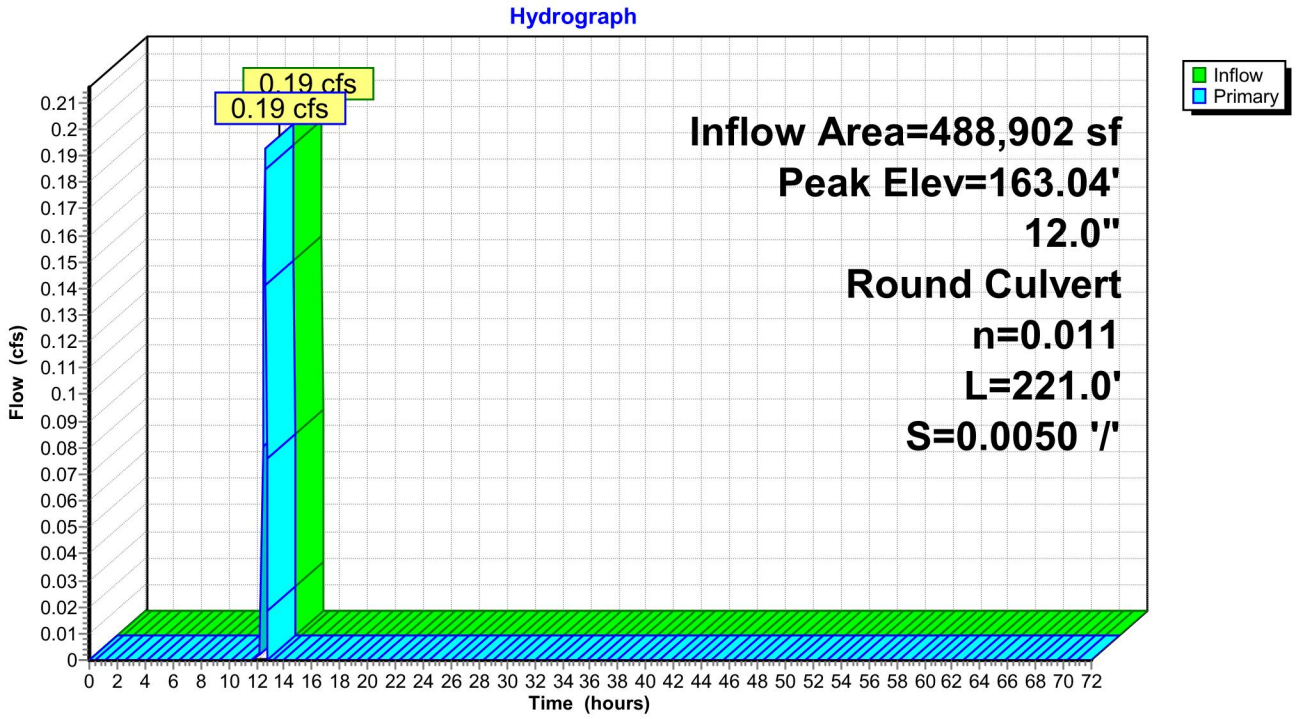
Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.19 cfs @ 12.62 hrs, Volume= 154 cf
Outflow = 0.19 cfs @ 12.62 hrs, Volume= 154 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.62 hrs, Volume= 154 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.04' @ 12.62 hrs
Flood Elev= 165.50'

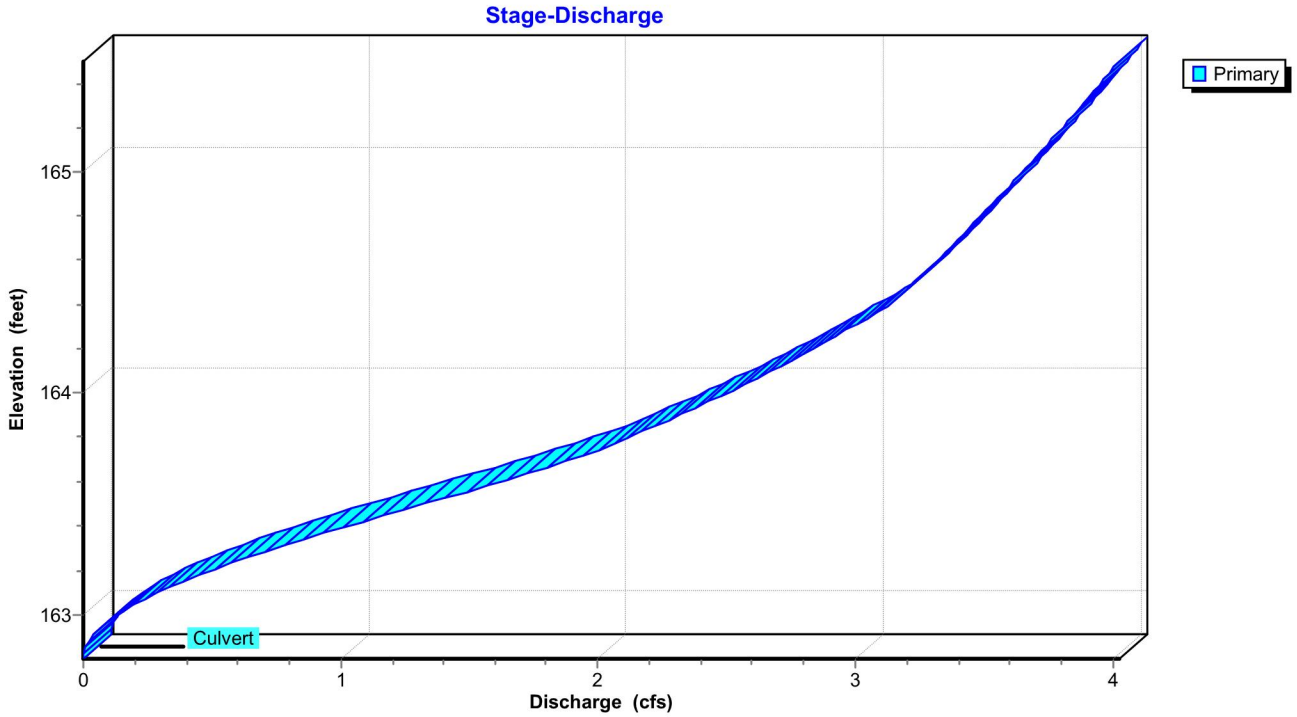
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.80' | **12.0" Round Culvert**<br>L= 221.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.80' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.19 cfs @ 12.62 hrs HW=163.04' (Free Discharge)
**1=Culvert** (Inlet Controls 0.19 cfs @ 1.31 fps)

### Pond 3P: (new Pond)



## Pond 3P: (new Pond)



## Stage-Area-Storage for Pond 3P: (new Pond)

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.80 | **0** | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | 164.98 | 0 |
| 162.92 | 0 | 163.96 | 0 | 165.00 | 0 |
| 162.94 | 0 | 163.98 | 0 | 165.02 | 0 |
| 162.96 | 0 | 164.00 | 0 | 165.04 | 0 |
| 162.98 | 0 | 164.02 | 0 | 165.06 | 0 |
| 163.00 | 0 | 164.04 | 0 | 165.08 | 0 |
| 163.02 | 0 | 164.06 | 0 | 165.10 | 0 |
| 163.04 | 0 | 164.08 | 0 | 165.12 | 0 |
| 163.06 | 0 | 164.10 | 0 | 165.14 | 0 |
| 163.08 | 0 | 164.12 | 0 | 165.16 | 0 |
| 163.10 | 0 | 164.14 | 0 | 165.18 | 0 |
| 163.12 | 0 | 164.16 | 0 | 165.20 | 0 |
| 163.14 | 0 | 164.18 | 0 | 165.22 | 0 |
| 163.16 | 0 | 164.20 | 0 | 165.24 | 0 |
| 163.18 | 0 | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | | |
| 163.46 | 0 | 164.50 | 0 | | |
| 163.48 | 0 | 164.52 | 0 | | |
| 163.50 | 0 | 164.54 | 0 | | |
| 163.52 | 0 | 164.56 | 0 | | |
| 163.54 | 0 | 164.58 | 0 | | |
| 163.56 | 0 | 164.60 | 0 | | |
| 163.58 | 0 | 164.62 | 0 | | |
| 163.60 | 0 | 164.64 | 0 | | |
| 163.62 | 0 | 164.66 | 0 | | |
| 163.64 | 0 | 164.68 | 0 | | |
| 163.66 | 0 | 164.70 | 0 | | |
| 163.68 | 0 | 164.72 | 0 | | |
| 163.70 | 0 | 164.74 | 0 | | |
| 163.72 | 0 | 164.76 | 0 | | |
| 163.74 | 0 | 164.78 | 0 | | |
| 163.76 | 0 | 164.80 | 0 | | |
| 163.78 | 0 | 164.82 | 0 | | |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |

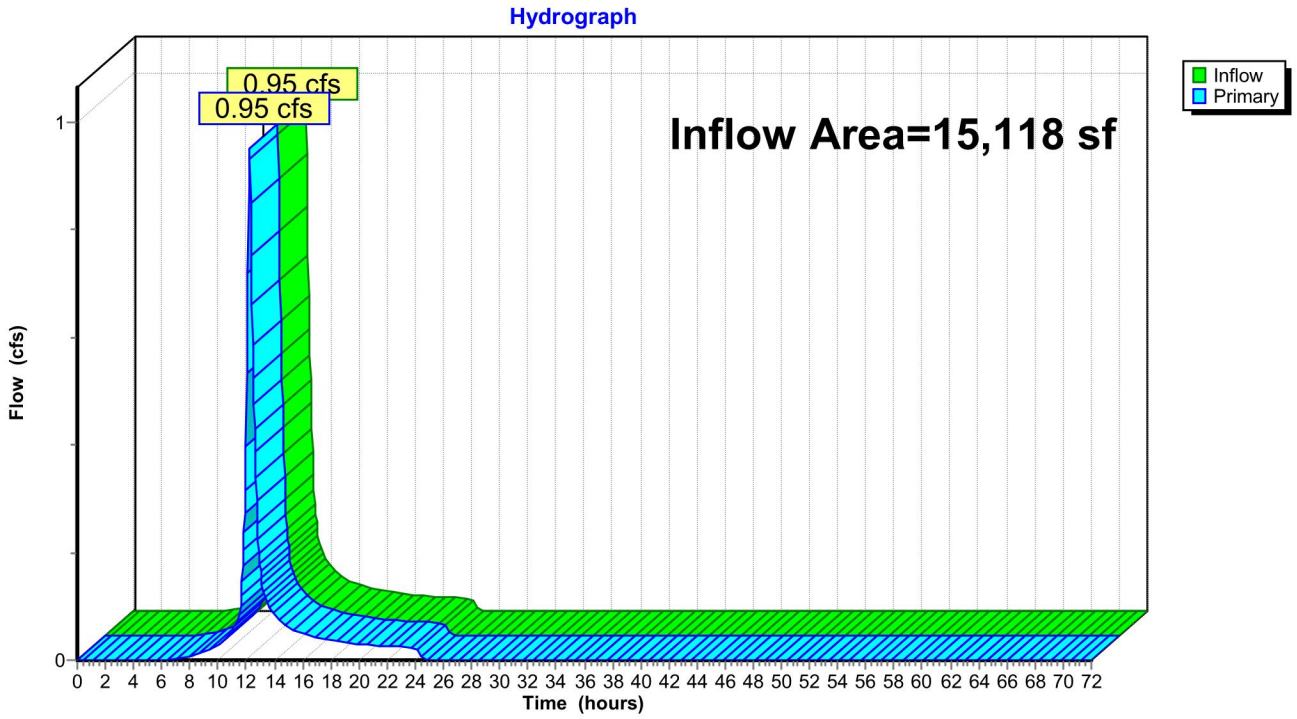
## Summary for Pond 4P: FRENCH DRAIN

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 15,118 sf, 0.00% Impervious, Inflow Depth = 3.54" for 25-yr event
Inflow = 0.95 cfs @ 12.22 hrs, Volume= 4,456 cf
Primary = 0.95 cfs @ 12.22 hrs, Volume= 4,456 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

### Pond 4P: FRENCH DRAIN



## Summary for Pond CB#1: CB #1

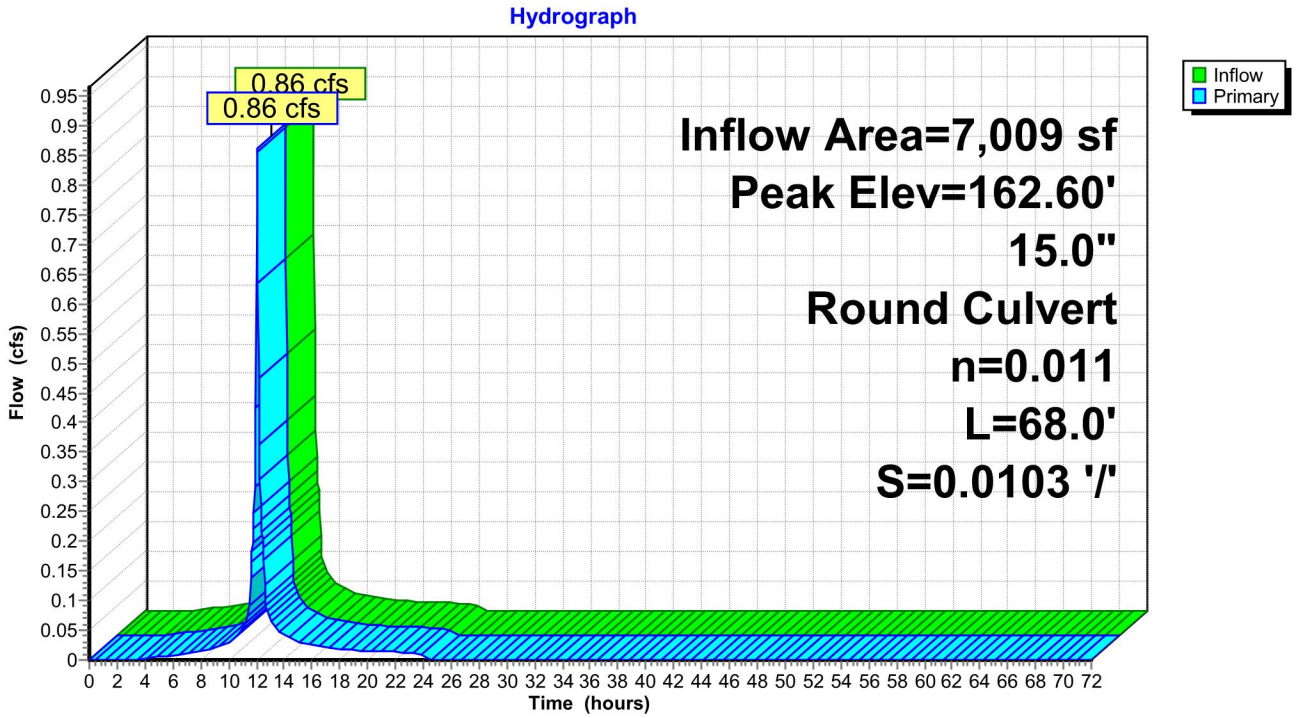
Inflow Area = 7,009 sf, 71.29% Impervious, Inflow Depth = 4.69" for 25-yr event
Inflow = 0.86 cfs @ 12.04 hrs, Volume= 2,739 cf
Outflow = 0.86 cfs @ 12.04 hrs, Volume= 2,739 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 12.04 hrs, Volume= 2,739 cf
Routed to Pond EX-1 : EX. CB 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.60' @ 12.04 hrs
Flood Elev= 164.96'

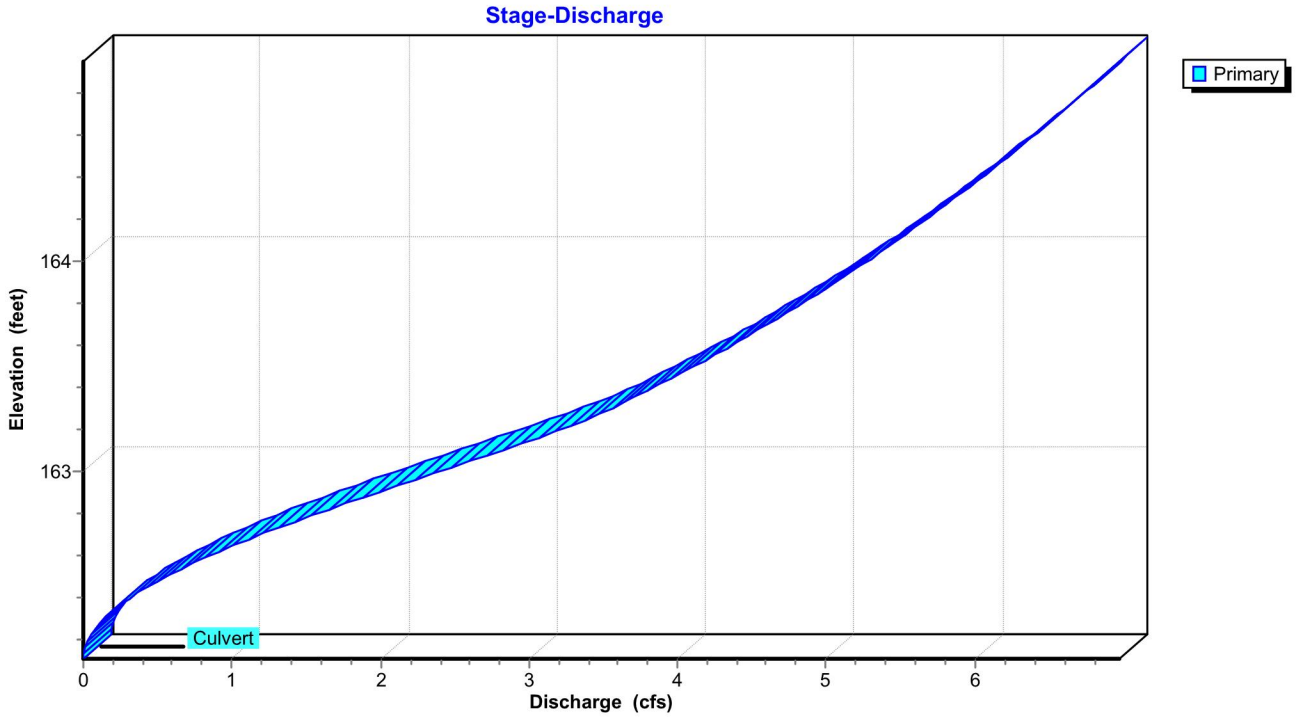
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.10' | **15.0" Round Culvert**<br>L= 68.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.10' / 161.40' S= 0.0103 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.84 cfs @ 12.04 hrs HW=162.59' (Free Discharge)
**1=Culvert** (Inlet Controls 0.84 cfs @ 1.88 fps)

## Pond CB#1: CB #1



## Pond CB#1: CB #1


Stage-Discharge
Primary
Elevation (feet)
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#1: CB #1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.10 | **0** | 163.14 | 0 | 164.18 | 0 |
| 162.12 | 0 | 163.16 | 0 | 164.20 | 0 |
| 162.14 | 0 | 163.18 | 0 | 164.22 | 0 |
| 162.16 | 0 | 163.20 | 0 | 164.24 | 0 |
| 162.18 | 0 | 163.22 | 0 | 164.26 | 0 |
| 162.20 | 0 | 163.24 | 0 | 164.28 | 0 |
| 162.22 | 0 | 163.26 | 0 | 164.30 | 0 |
| 162.24 | 0 | 163.28 | 0 | 164.32 | 0 |
| 162.26 | 0 | 163.30 | 0 | 164.34 | 0 |
| 162.28 | 0 | 163.32 | 0 | 164.36 | 0 |
| 162.30 | 0 | 163.34 | 0 | 164.38 | 0 |
| 162.32 | 0 | 163.36 | 0 | 164.40 | 0 |
| 162.34 | 0 | 163.38 | 0 | 164.42 | 0 |
| 162.36 | 0 | 163.40 | 0 | 164.44 | 0 |
| 162.38 | 0 | 163.42 | 0 | 164.46 | 0 |
| 162.40 | 0 | 163.44 | 0 | 164.48 | 0 |
| 162.42 | 0 | 163.46 | 0 | 164.50 | 0 |
| 162.44 | 0 | 163.48 | 0 | 164.52 | 0 |
| 162.46 | 0 | 163.50 | 0 | 164.54 | 0 |
| 162.48 | 0 | 163.52 | 0 | 164.56 | 0 |
| 162.50 | 0 | 163.54 | 0 | 164.58 | 0 |
| 162.52 | 0 | 163.56 | 0 | 164.60 | 0 |
| 162.54 | 0 | 163.58 | 0 | 164.62 | 0 |
| 162.56 | 0 | 163.60 | 0 | 164.64 | 0 |
| 162.58 | 0 | 163.62 | 0 | 164.66 | 0 |
| 162.60 | 0 | 163.64 | 0 | 164.68 | 0 |
| 162.62 | 0 | 163.66 | 0 | 164.70 | 0 |
| 162.64 | 0 | 163.68 | 0 | 164.72 | 0 |
| 162.66 | 0 | 163.70 | 0 | 164.74 | 0 |
| 162.68 | 0 | 163.72 | 0 | 164.76 | 0 |
| 162.70 | 0 | 163.74 | 0 | 164.78 | 0 |
| 162.72 | 0 | 163.76 | 0 | 164.80 | 0 |
| 162.74 | 0 | 163.78 | 0 | 164.82 | 0 |
| 162.76 | 0 | 163.80 | 0 | 164.84 | 0 |
| 162.78 | 0 | 163.82 | 0 | 164.86 | 0 |
| 162.80 | 0 | 163.84 | 0 | 164.88 | 0 |
| 162.82 | 0 | 163.86 | 0 | 164.90 | 0 |
| 162.84 | 0 | 163.88 | 0 | 164.92 | 0 |
| 162.86 | 0 | 163.90 | 0 | 164.94 | 0 |
| 162.88 | 0 | 163.92 | 0 | 164.96 | 0 |
| 162.90 | 0 | 163.94 | 0 | | |
| 162.92 | 0 | 163.96 | 0 | | |
| 162.94 | 0 | 163.98 | 0 | | |
| 162.96 | 0 | 164.00 | 0 | | |
| 162.98 | 0 | 164.02 | 0 | | |
| 163.00 | 0 | 164.04 | 0 | | |
| 163.02 | 0 | 164.06 | 0 | | |
| 163.04 | 0 | 164.08 | 0 | | |
| 163.06 | 0 | 164.10 | 0 | | |
| 163.08 | 0 | 164.12 | 0 | | |
| 163.10 | 0 | 164.14 | 0 | | |
| 163.12 | 0 | 164.16 | 0 | | |

## Summary for Pond CB#2: CB #2

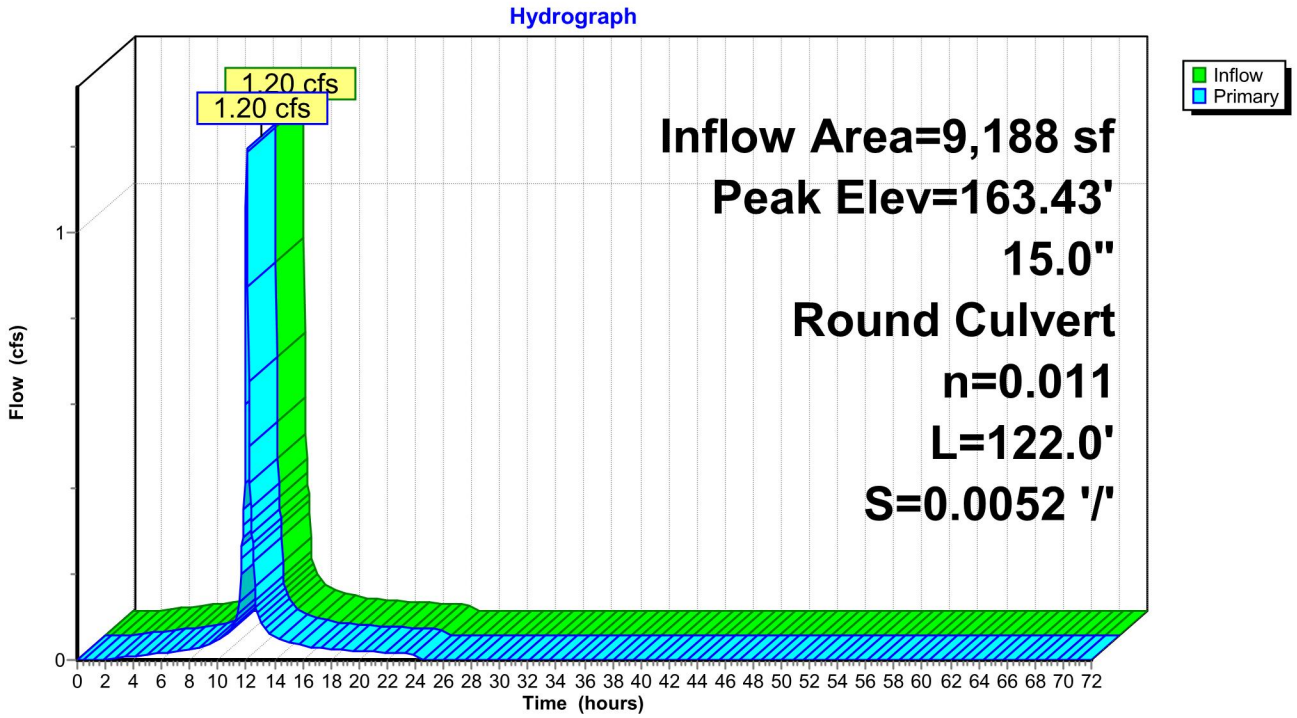
Inflow Area = 9,188 sf, 85.40% Impervious, Inflow Depth = 5.14" for 25-yr event
Inflow = 1.20 cfs @ 12.04 hrs, Volume= 3,934 cf
Outflow = 1.20 cfs @ 12.04 hrs, Volume= 3,934 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 12.04 hrs, Volume= 3,934 cf
Routed to Pond CB#3 : CB #3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.43' @ 12.04 hrs
Flood Elev= 165.58'

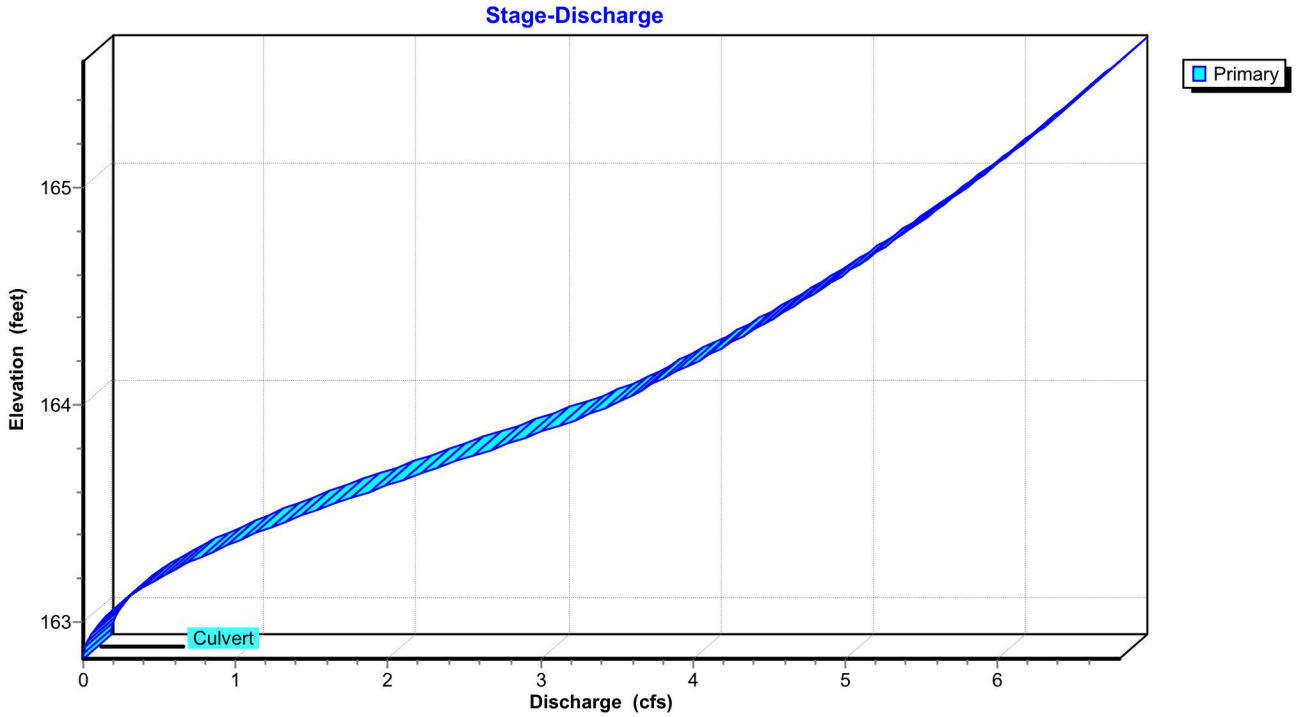
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.83' | **15.0" Round Culvert**<br>L= 122.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.83' / 162.20' S= 0.0052 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.16 cfs @ 12.04 hrs HW=163.41' (Free Discharge)
**1=Culvert** (Inlet Controls 1.16 cfs @ 2.06 fps)

## Pond CB#2: CB #2



## Pond CB#2: CB #2


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#2: CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 162.83 | **0** | 163.87 | 0 | 164.91 | 0 |
| 162.85 | 0 | 163.89 | 0 | 164.93 | 0 |
| 162.87 | 0 | 163.91 | 0 | 164.95 | 0 |
| 162.89 | 0 | 163.93 | 0 | 164.97 | 0 |
| 162.91 | 0 | 163.95 | 0 | 164.99 | 0 |
| 162.93 | 0 | 163.97 | 0 | 165.01 | 0 |
| 162.95 | 0 | 163.99 | 0 | 165.03 | 0 |
| 162.97 | 0 | 164.01 | 0 | 165.05 | 0 |
| 162.99 | 0 | 164.03 | 0 | 165.07 | 0 |
| 163.01 | 0 | 164.05 | 0 | 165.09 | 0 |
| 163.03 | 0 | 164.07 | 0 | 165.11 | 0 |
| 163.05 | 0 | 164.09 | 0 | 165.13 | 0 |
| 163.07 | 0 | 164.11 | 0 | 165.15 | 0 |
| 163.09 | 0 | 164.13 | 0 | 165.17 | 0 |
| 163.11 | 0 | 164.15 | 0 | 165.19 | 0 |
| 163.13 | 0 | 164.17 | 0 | 165.21 | 0 |
| 163.15 | 0 | 164.19 | 0 | 165.23 | 0 |
| 163.17 | 0 | 164.21 | 0 | 165.25 | 0 |
| 163.19 | 0 | 164.23 | 0 | 165.27 | 0 |
| 163.21 | 0 | 164.25 | 0 | 165.29 | 0 |
| 163.23 | 0 | 164.27 | 0 | 165.31 | 0 |
| 163.25 | 0 | 164.29 | 0 | 165.33 | 0 |
| 163.27 | 0 | 164.31 | 0 | 165.35 | 0 |
| 163.29 | 0 | 164.33 | 0 | 165.37 | 0 |
| 163.31 | 0 | 164.35 | 0 | 165.39 | 0 |
| 163.33 | 0 | 164.37 | 0 | 165.41 | 0 |
| 163.35 | 0 | 164.39 | 0 | 165.43 | 0 |
| 163.37 | 0 | 164.41 | 0 | 165.45 | 0 |
| 163.39 | 0 | 164.43 | 0 | 165.47 | 0 |
| 163.41 | 0 | 164.45 | 0 | 165.49 | 0 |
| 163.43 | 0 | 164.47 | 0 | 165.51 | 0 |
| 163.45 | 0 | 164.49 | 0 | 165.53 | 0 |
| 163.47 | 0 | 164.51 | 0 | 165.55 | 0 |
| 163.49 | 0 | 164.53 | 0 | 165.57 | 0 |
| 163.51 | 0 | 164.55 | 0 | | |
| 163.53 | 0 | 164.57 | 0 | | |
| 163.55 | 0 | 164.59 | 0 | | |
| 163.57 | 0 | 164.61 | 0 | | |
| 163.59 | 0 | 164.63 | 0 | | |
| 163.61 | 0 | 164.65 | 0 | | |
| 163.63 | 0 | 164.67 | 0 | | |
| 163.65 | 0 | 164.69 | 0 | | |
| 163.67 | 0 | 164.71 | 0 | | |
| 163.69 | 0 | 164.73 | 0 | | |
| 163.71 | 0 | 164.75 | 0 | | |
| 163.73 | 0 | 164.77 | 0 | | |
| 163.75 | 0 | 164.79 | 0 | | |
| 163.77 | 0 | 164.81 | 0 | | |
| 163.79 | 0 | 164.83 | 0 | | |
| 163.81 | 0 | 164.85 | 0 | | |
| 163.83 | 0 | 164.87 | 0 | | |
| 163.85 | 0 | 164.89 | 0 | | |

## Summary for Pond CB#3: CB #3

[79] Warning: Submerged Pond CB#2 Primary device # 1 INLET by 0.22'

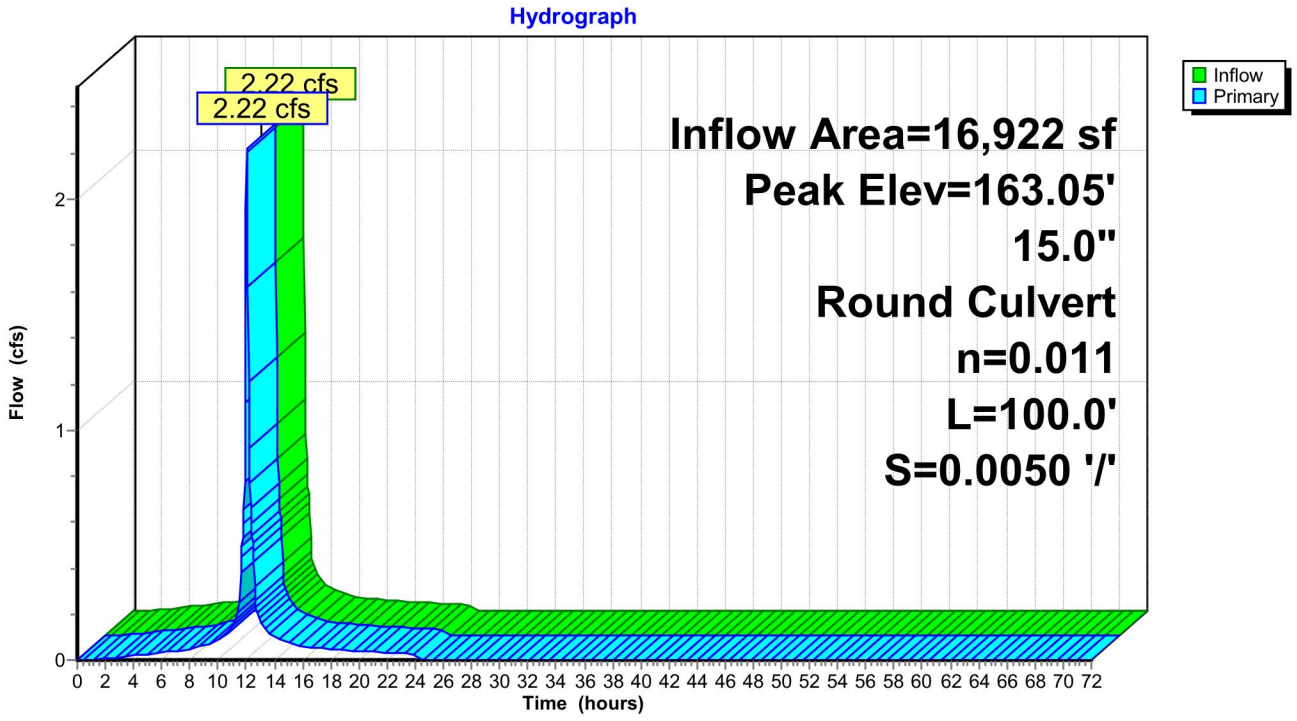
Inflow Area = 16,922 sf, 88.85% Impervious, Inflow Depth = 5.24" for 25-yr event
Inflow = 2.22 cfs @ 12.04 hrs, Volume= 7,394 cf
Outflow = 2.22 cfs @ 12.04 hrs, Volume= 7,394 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.22 cfs @ 12.04 hrs, Volume= 7,394 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.05' @ 12.04 hrs
Flood Elev= 165.70'

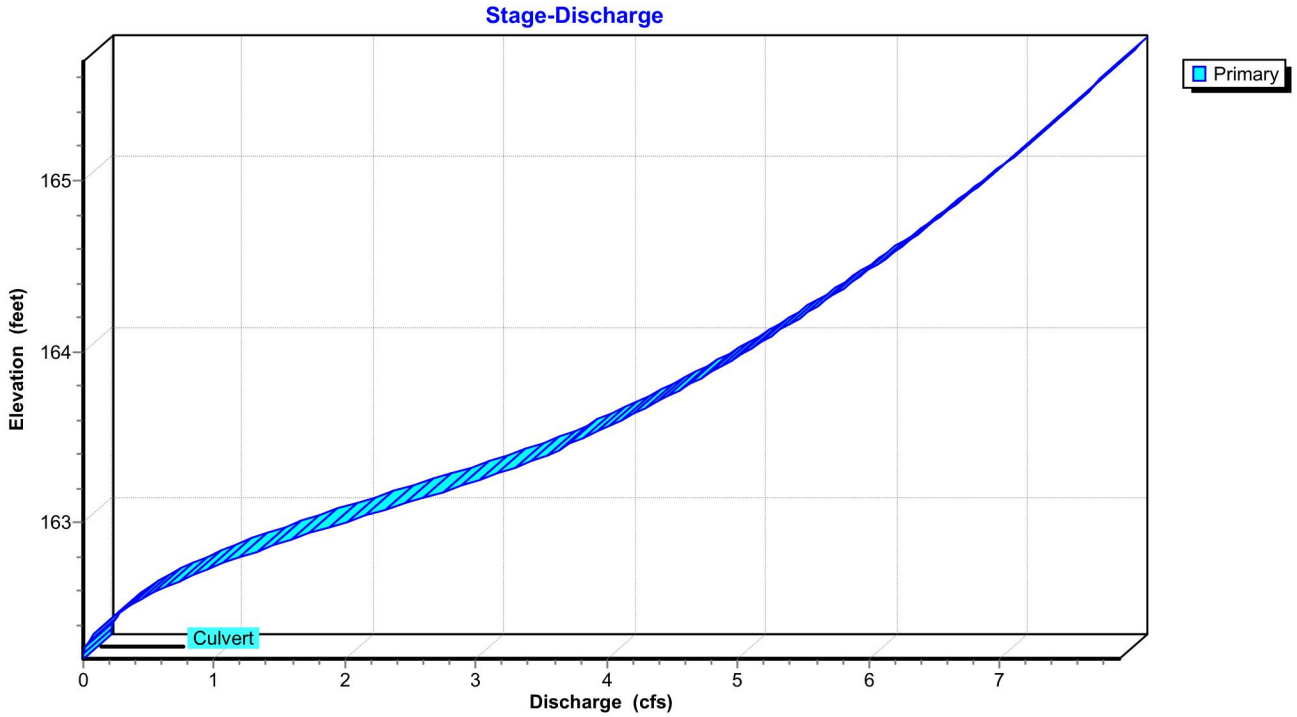
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 162.20' | **15.0" Round Culvert**<br>L= 100.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 162.20' / 161.70' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=2.15 cfs @ 12.04 hrs HW=163.04' (Free Discharge)
**1=Culvert** (Inlet Controls 2.15 cfs @ 2.46 fps)

### Pond CB#3: CB #3



## Pond CB#3: CB #3


Stage-Discharge
Primary
Elevation (feet)
165
164
163
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond CB#3: CB #3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|
| 162.20 | **0** | 164.80 | 0 |
| 162.25 | 0 | 164.85 | 0 |
| 162.30 | 0 | 164.90 | 0 |
| 162.35 | 0 | 164.95 | 0 |
| 162.40 | 0 | 165.00 | 0 |
| 162.45 | 0 | 165.05 | 0 |
| 162.50 | 0 | 165.10 | 0 |
| 162.55 | 0 | 165.15 | 0 |
| 162.60 | 0 | 165.20 | 0 |
| 162.65 | 0 | 165.25 | 0 |
| 162.70 | 0 | 165.30 | 0 |
| 162.75 | 0 | 165.35 | 0 |
| 162.80 | 0 | 165.40 | 0 |
| 162.85 | 0 | 165.45 | 0 |
| 162.90 | 0 | 165.50 | 0 |
| 162.95 | 0 | 165.55 | 0 |
| 163.00 | 0 | 165.60 | 0 |
| 163.05 | 0 | 165.65 | 0 |
| 163.10 | 0 | 165.70 | 0 |
| 163.15 | 0 | | |
| 163.20 | 0 | | |
| 163.25 | 0 | | |
| 163.30 | 0 | | |
| 163.35 | 0 | | |
| 163.40 | 0 | | |
| 163.45 | 0 | | |
| 163.50 | 0 | | |
| 163.55 | 0 | | |
| 163.60 | 0 | | |
| 163.65 | 0 | | |
| 163.70 | 0 | | |
| 163.75 | 0 | | |
| 163.80 | 0 | | |
| 163.85 | 0 | | |
| 163.90 | 0 | | |
| 163.95 | 0 | | |
| 164.00 | 0 | | |
| 164.05 | 0 | | |
| 164.10 | 0 | | |
| 164.15 | 0 | | |
| 164.20 | 0 | | |
| 164.25 | 0 | | |
| 164.30 | 0 | | |
| 164.35 | 0 | | |
| 164.40 | 0 | | |
| 164.45 | 0 | | |
| 164.50 | 0 | | |
| 164.55 | 0 | | |
| 164.60 | 0 | | |
| 164.65 | 0 | | |
| 164.70 | 0 | | |
| 164.75 | 0 | | |

## Summary for Pond CB#4: CB #4

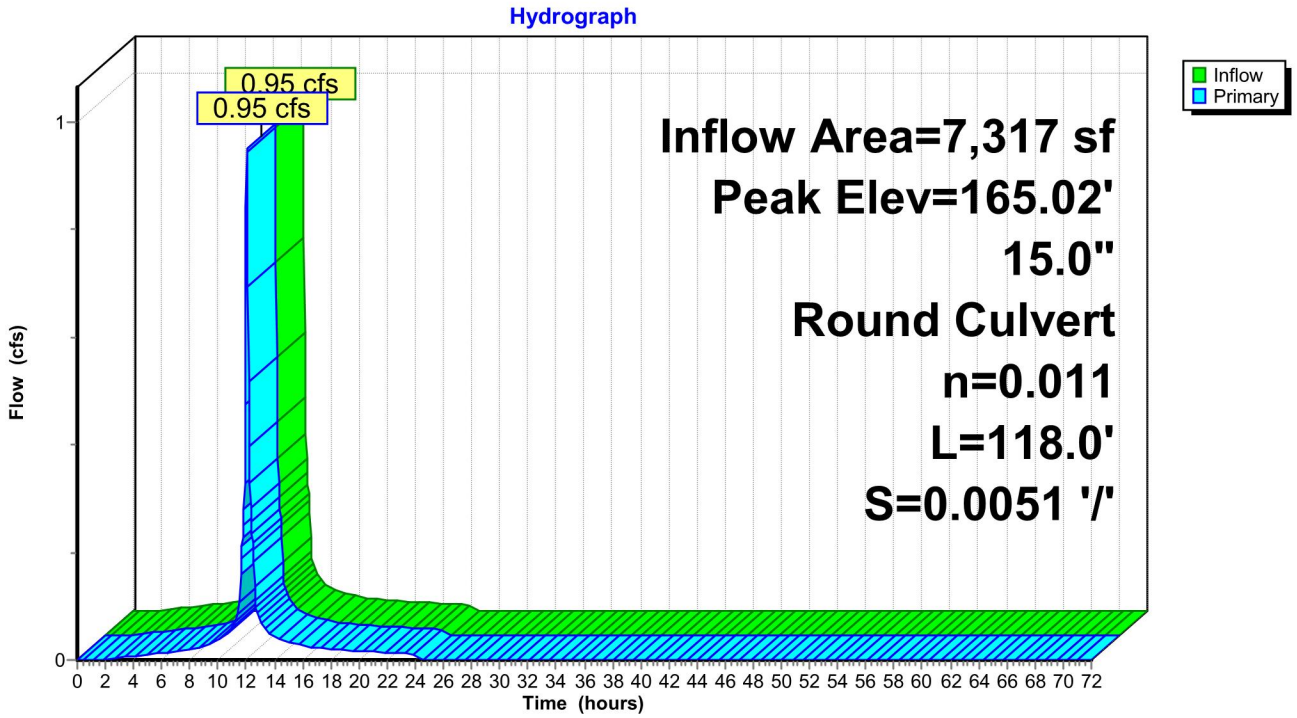
Inflow Area = 7,317 sf, 86.07% Impervious, Inflow Depth = 5.14" for 25-yr event
Inflow = 0.95 cfs @ 12.04 hrs, Volume= 3,133 cf
Outflow = 0.95 cfs @ 12.04 hrs, Volume= 3,133 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.95 cfs @ 12.04 hrs, Volume= 3,133 cf
Routed to Pond CB#5 : CB #5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 165.02' @ 12.04 hrs
Flood Elev= 167.26'

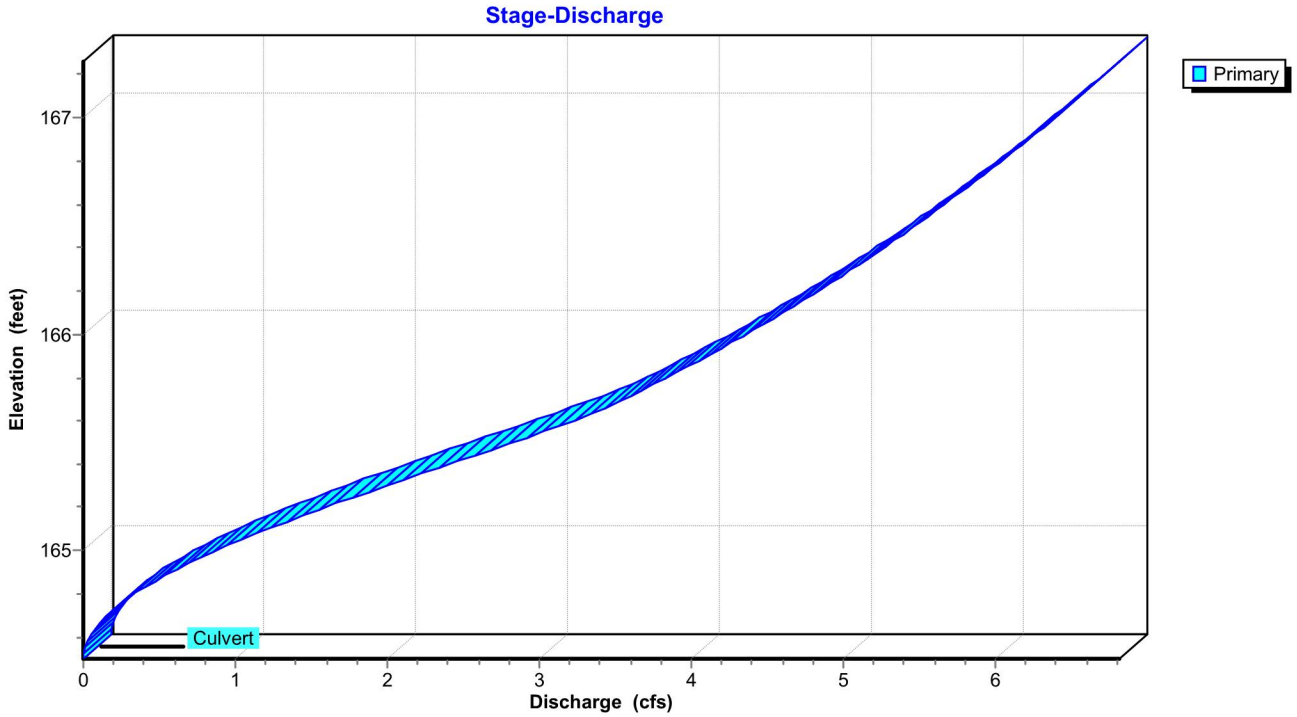
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.50' | **15.0" Round Culvert**<br>L= 118.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.50' / 163.90' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.92 cfs @ 12.04 hrs HW=165.02' (Free Discharge)
**1=Culvert** (Inlet Controls 0.92 cfs @ 1.93 fps)

## Pond CB#4: CB #4



## Pond CB#4: CB #4


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
Discharge (cfs)

## Stage-Area-Storage for Pond CB#4: CB #4

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.50 | **0** | 165.54 | 0 | 166.58 | 0 |
| 164.52 | 0 | 165.56 | 0 | 166.60 | 0 |
| 164.54 | 0 | 165.58 | 0 | 166.62 | 0 |
| 164.56 | 0 | 165.60 | 0 | 166.64 | 0 |
| 164.58 | 0 | 165.62 | 0 | 166.66 | 0 |
| 164.60 | 0 | 165.64 | 0 | 166.68 | 0 |
| 164.62 | 0 | 165.66 | 0 | 166.70 | 0 |
| 164.64 | 0 | 165.68 | 0 | 166.72 | 0 |
| 164.66 | 0 | 165.70 | 0 | 166.74 | 0 |
| 164.68 | 0 | 165.72 | 0 | 166.76 | 0 |
| 164.70 | 0 | 165.74 | 0 | 166.78 | 0 |
| 164.72 | 0 | 165.76 | 0 | 166.80 | 0 |
| 164.74 | 0 | 165.78 | 0 | 166.82 | 0 |
| 164.76 | 0 | 165.80 | 0 | 166.84 | 0 |
| 164.78 | 0 | 165.82 | 0 | 166.86 | 0 |
| 164.80 | 0 | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | 167.04 | 0 |
| 164.98 | 0 | 166.02 | 0 | 167.06 | 0 |
| 165.00 | 0 | 166.04 | 0 | 167.08 | 0 |
| 165.02 | 0 | 166.06 | 0 | 167.10 | 0 |
| 165.04 | 0 | 166.08 | 0 | 167.12 | 0 |
| 165.06 | 0 | 166.10 | 0 | 167.14 | 0 |
| 165.08 | 0 | 166.12 | 0 | 167.16 | 0 |
| 165.10 | 0 | 166.14 | 0 | 167.18 | 0 |
| 165.12 | 0 | 166.16 | 0 | 167.20 | 0 |
| 165.14 | 0 | 166.18 | 0 | 167.22 | 0 |
| 165.16 | 0 | 166.20 | 0 | 167.24 | 0 |
| 165.18 | 0 | 166.22 | 0 | 167.26 | 0 |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |

## Summary for Pond CB#5: CB #5

[79] Warning: Submerged Pond CB#4 Primary device # 1 OUTLET by 0.52'

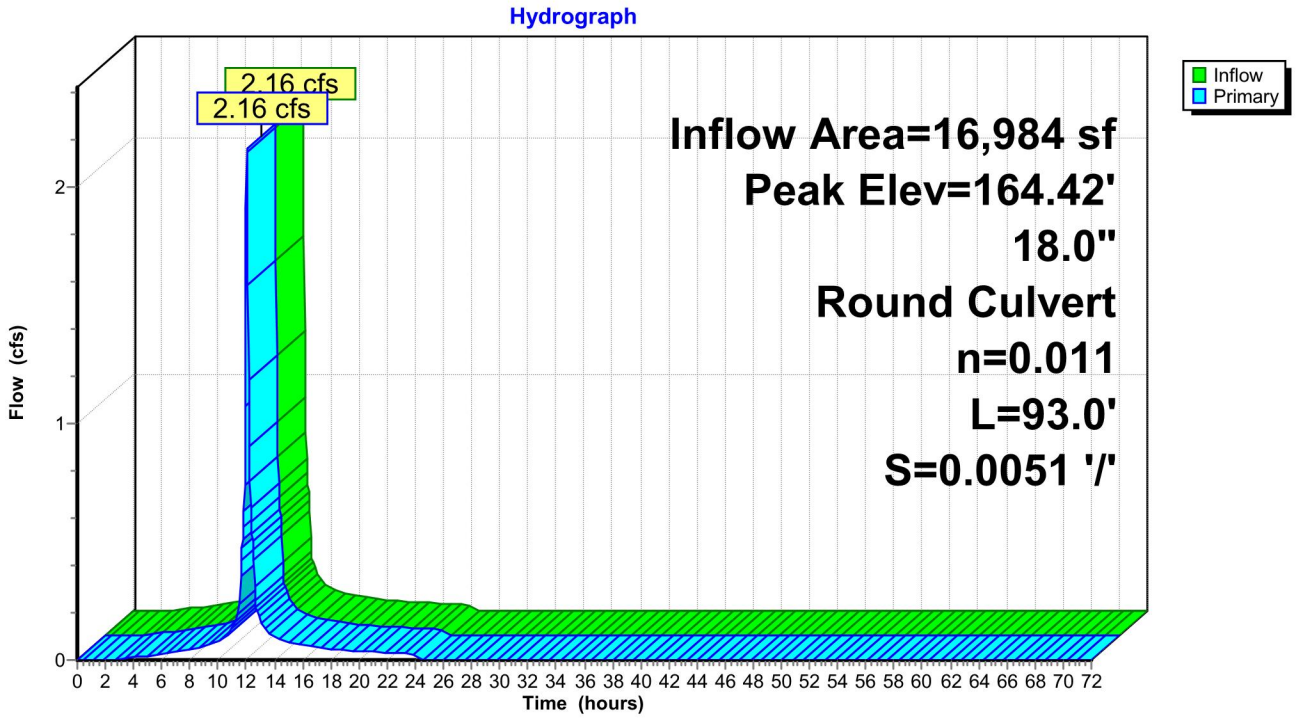
Inflow Area = 16,984 sf, 80.66% Impervious, Inflow Depth = 4.95" for 25-yr event
Inflow = 2.16 cfs @ 12.04 hrs, Volume= 7,000 cf
Outflow = 2.16 cfs @ 12.04 hrs, Volume= 7,000 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.16 cfs @ 12.04 hrs, Volume= 7,000 cf
Routed to Pond CB#6 : CB #6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.42' @ 12.04 hrs
Flood Elev= 166.36'

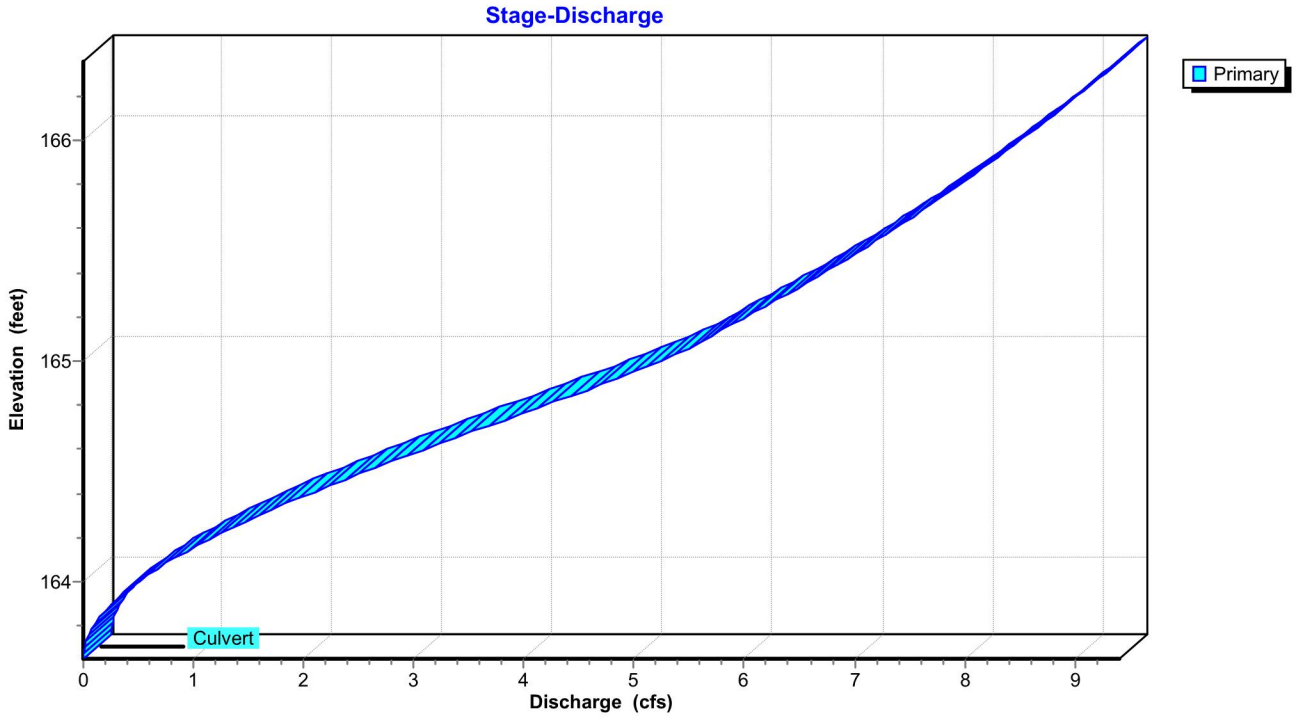
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.65' | **18.0" Round Culvert**<br>L= 93.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.65' / 163.18' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=2.09 cfs @ 12.04 hrs HW=164.41' (Free Discharge)
**1=Culvert** (Inlet Controls 2.09 cfs @ 2.34 fps)

### Pond CB#5: CB #5



## Pond CB#5: CB #5


Stage-Discharge
Primary
Elevation (feet)
166
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#5: CB #5

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.65 | **0** | 164.69 | 0 | 165.73 | 0 |
| 163.67 | 0 | 164.71 | 0 | 165.75 | 0 |
| 163.69 | 0 | 164.73 | 0 | 165.77 | 0 |
| 163.71 | 0 | 164.75 | 0 | 165.79 | 0 |
| 163.73 | 0 | 164.77 | 0 | 165.81 | 0 |
| 163.75 | 0 | 164.79 | 0 | 165.83 | 0 |
| 163.77 | 0 | 164.81 | 0 | 165.85 | 0 |
| 163.79 | 0 | 164.83 | 0 | 165.87 | 0 |
| 163.81 | 0 | 164.85 | 0 | 165.89 | 0 |
| 163.83 | 0 | 164.87 | 0 | 165.91 | 0 |
| 163.85 | 0 | 164.89 | 0 | 165.93 | 0 |
| 163.87 | 0 | 164.91 | 0 | 165.95 | 0 |
| 163.89 | 0 | 164.93 | 0 | 165.97 | 0 |
| 163.91 | 0 | 164.95 | 0 | 165.99 | 0 |
| 163.93 | 0 | 164.97 | 0 | 166.01 | 0 |
| 163.95 | 0 | 164.99 | 0 | 166.03 | 0 |
| 163.97 | 0 | 165.01 | 0 | 166.05 | 0 |
| 163.99 | 0 | 165.03 | 0 | 166.07 | 0 |
| 164.01 | 0 | 165.05 | 0 | 166.09 | 0 |
| 164.03 | 0 | 165.07 | 0 | 166.11 | 0 |
| 164.05 | 0 | 165.09 | 0 | 166.13 | 0 |
| 164.07 | 0 | 165.11 | 0 | 166.15 | 0 |
| 164.09 | 0 | 165.13 | 0 | 166.17 | 0 |
| 164.11 | 0 | 165.15 | 0 | 166.19 | 0 |
| 164.13 | 0 | 165.17 | 0 | 166.21 | 0 |
| 164.15 | 0 | 165.19 | 0 | 166.23 | 0 |
| 164.17 | 0 | 165.21 | 0 | 166.25 | 0 |
| 164.19 | 0 | 165.23 | 0 | 166.27 | 0 |
| 164.21 | 0 | 165.25 | 0 | 166.29 | 0 |
| 164.23 | 0 | 165.27 | 0 | 166.31 | 0 |
| 164.25 | 0 | 165.29 | 0 | 166.33 | 0 |
| 164.27 | 0 | 165.31 | 0 | 166.35 | 0 |
| 164.29 | 0 | 165.33 | 0 | | |
| 164.31 | 0 | 165.35 | 0 | | |
| 164.33 | 0 | 165.37 | 0 | | |
| 164.35 | 0 | 165.39 | 0 | | |
| 164.37 | 0 | 165.41 | 0 | | |
| 164.39 | 0 | 165.43 | 0 | | |
| 164.41 | 0 | 165.45 | 0 | | |
| 164.43 | 0 | 165.47 | 0 | | |
| 164.45 | 0 | 165.49 | 0 | | |
| 164.47 | 0 | 165.51 | 0 | | |
| 164.49 | 0 | 165.53 | 0 | | |
| 164.51 | 0 | 165.55 | 0 | | |
| 164.53 | 0 | 165.57 | 0 | | |
| 164.55 | 0 | 165.59 | 0 | | |
| 164.57 | 0 | 165.61 | 0 | | |
| 164.59 | 0 | 165.63 | 0 | | |
| 164.61 | 0 | 165.65 | 0 | | |
| 164.63 | 0 | 165.67 | 0 | | |
| 164.65 | 0 | 165.69 | 0 | | |
| 164.67 | 0 | 165.71 | 0 | | |

## Summary for Pond CB#6: CB #6

[79] Warning: Submerged Pond CB#5 Primary device # 1 INLET by 0.51'

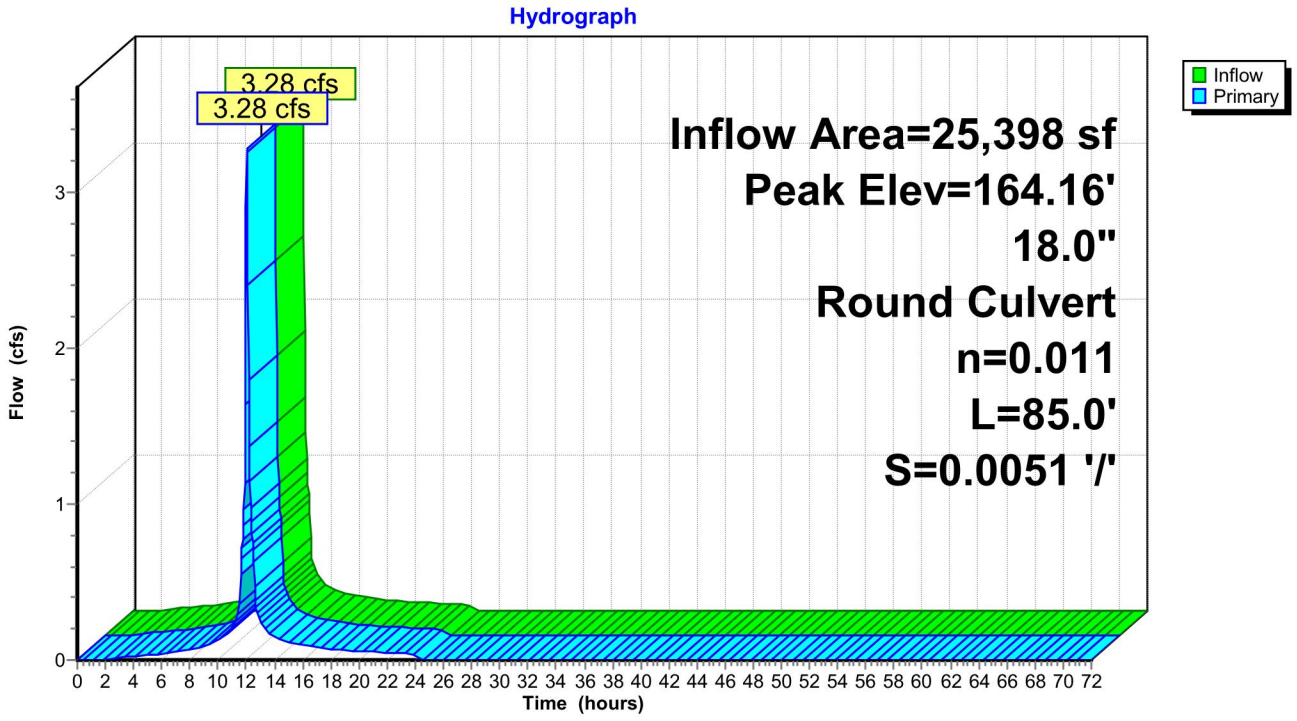
Inflow Area = 25,398 sf, 83.23% Impervious, Inflow Depth = 5.09" for 25-yr event
Inflow = 3.28 cfs @ 12.04 hrs, Volume= 10,764 cf
Outflow = 3.28 cfs @ 12.04 hrs, Volume= 10,764 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.28 cfs @ 12.04 hrs, Volume= 10,764 cf
Routed to Pond IB-1 : INFILTRATION BASIN 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 164.16' @ 12.04 hrs
Flood Elev= 165.87'

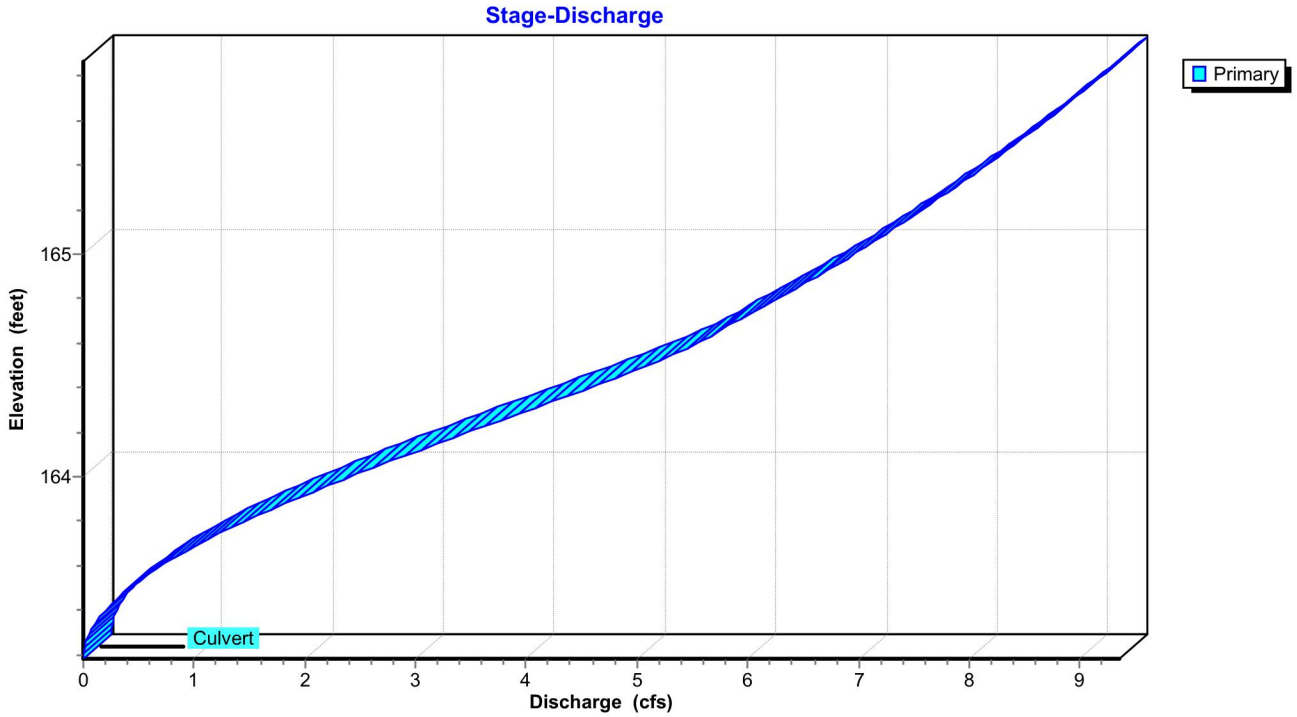
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 163.18' | **18.0" Round Culvert**<br>L= 85.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.18' / 162.75' S= 0.0051 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.18 cfs @ 12.04 hrs HW=164.15' (Free Discharge)
**1=Culvert** (Inlet Controls 3.18 cfs @ 2.64 fps)

### Pond CB#6: CB #6



## Pond CB#6: CB #6


Stage-Discharge
Primary
Elevation (feet)
165
164
Culvert
0
1
2
3
4
5
6
7
8
9
Discharge (cfs)

## Stage-Area-Storage for Pond CB#6: CB #6

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 163.18 | **0** | 164.22 | 0 | 165.26 | 0 |
| 163.20 | 0 | 164.24 | 0 | 165.28 | 0 |
| 163.22 | 0 | 164.26 | 0 | 165.30 | 0 |
| 163.24 | 0 | 164.28 | 0 | 165.32 | 0 |
| 163.26 | 0 | 164.30 | 0 | 165.34 | 0 |
| 163.28 | 0 | 164.32 | 0 | 165.36 | 0 |
| 163.30 | 0 | 164.34 | 0 | 165.38 | 0 |
| 163.32 | 0 | 164.36 | 0 | 165.40 | 0 |
| 163.34 | 0 | 164.38 | 0 | 165.42 | 0 |
| 163.36 | 0 | 164.40 | 0 | 165.44 | 0 |
| 163.38 | 0 | 164.42 | 0 | 165.46 | 0 |
| 163.40 | 0 | 164.44 | 0 | 165.48 | 0 |
| 163.42 | 0 | 164.46 | 0 | 165.50 | 0 |
| 163.44 | 0 | 164.48 | 0 | 165.52 | 0 |
| 163.46 | 0 | 164.50 | 0 | 165.54 | 0 |
| 163.48 | 0 | 164.52 | 0 | 165.56 | 0 |
| 163.50 | 0 | 164.54 | 0 | 165.58 | 0 |
| 163.52 | 0 | 164.56 | 0 | 165.60 | 0 |
| 163.54 | 0 | 164.58 | 0 | 165.62 | 0 |
| 163.56 | 0 | 164.60 | 0 | 165.64 | 0 |
| 163.58 | 0 | 164.62 | 0 | 165.66 | 0 |
| 163.60 | 0 | 164.64 | 0 | 165.68 | 0 |
| 163.62 | 0 | 164.66 | 0 | 165.70 | 0 |
| 163.64 | 0 | 164.68 | 0 | 165.72 | 0 |
| 163.66 | 0 | 164.70 | 0 | 165.74 | 0 |
| 163.68 | 0 | 164.72 | 0 | 165.76 | 0 |
| 163.70 | 0 | 164.74 | 0 | 165.78 | 0 |
| 163.72 | 0 | 164.76 | 0 | 165.80 | 0 |
| 163.74 | 0 | 164.78 | 0 | 165.82 | 0 |
| 163.76 | 0 | 164.80 | 0 | 165.84 | 0 |
| 163.78 | 0 | 164.82 | 0 | 165.86 | 0 |
| 163.80 | 0 | 164.84 | 0 | | |
| 163.82 | 0 | 164.86 | 0 | | |
| 163.84 | 0 | 164.88 | 0 | | |
| 163.86 | 0 | 164.90 | 0 | | |
| 163.88 | 0 | 164.92 | 0 | | |
| 163.90 | 0 | 164.94 | 0 | | |
| 163.92 | 0 | 164.96 | 0 | | |
| 163.94 | 0 | 164.98 | 0 | | |
| 163.96 | 0 | 165.00 | 0 | | |
| 163.98 | 0 | 165.02 | 0 | | |
| 164.00 | 0 | 165.04 | 0 | | |
| 164.02 | 0 | 165.06 | 0 | | |
| 164.04 | 0 | 165.08 | 0 | | |
| 164.06 | 0 | 165.10 | 0 | | |
| 164.08 | 0 | 165.12 | 0 | | |
| 164.10 | 0 | 165.14 | 0 | | |
| 164.12 | 0 | 165.16 | 0 | | |
| 164.14 | 0 | 165.18 | 0 | | |
| 164.16 | 0 | 165.20 | 0 | | |
| 164.18 | 0 | 165.22 | 0 | | |
| 164.20 | 0 | 165.24 | 0 | | |

## Summary for Pond DP-1: DP-1

[81] Warning: Exceeded Pond EX-2 by 0.46' @ 12.10 hrs

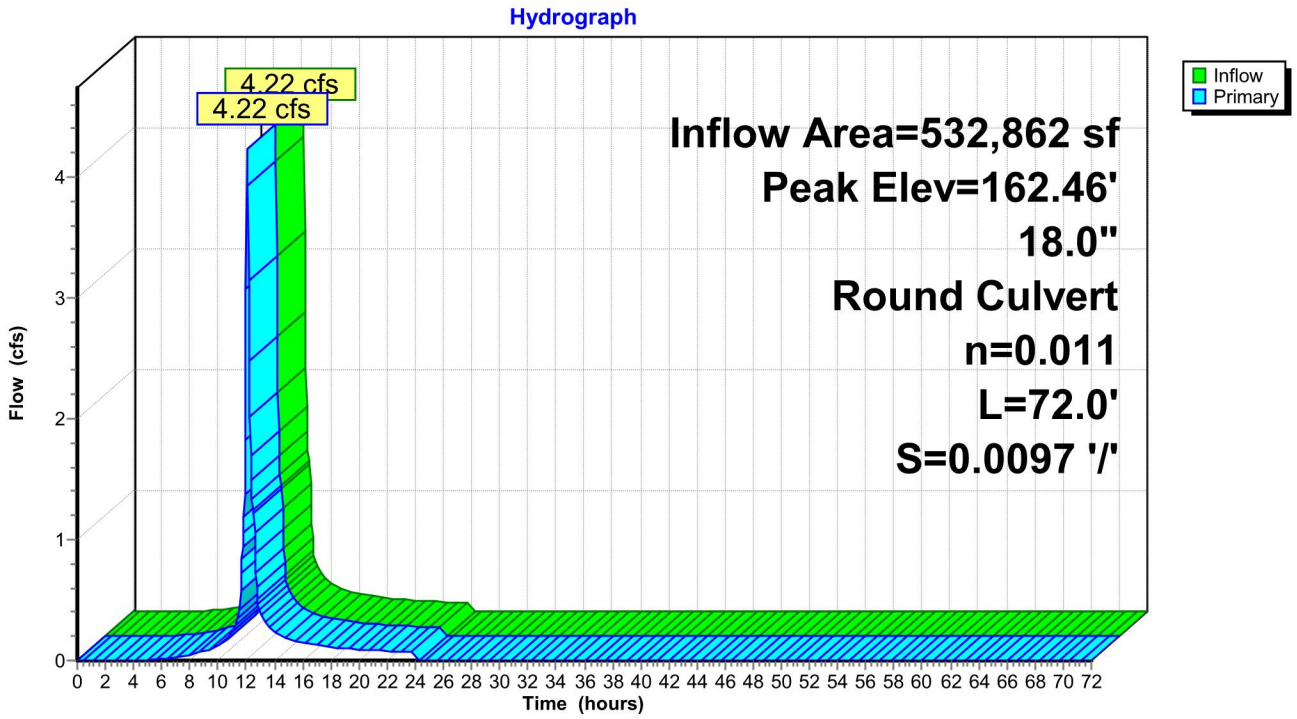
Inflow Area = 532,862 sf, 32.10% Impervious, Inflow Depth = 0.33" for 25-yr event
Inflow = 4.22 cfs @ 12.07 hrs, Volume= 14,718 cf
Outflow = 4.22 cfs @ 12.07 hrs, Volume= 14,718 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.22 cfs @ 12.07 hrs, Volume= 14,718 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.46' @ 12.07 hrs
Flood Elev= 163.41'

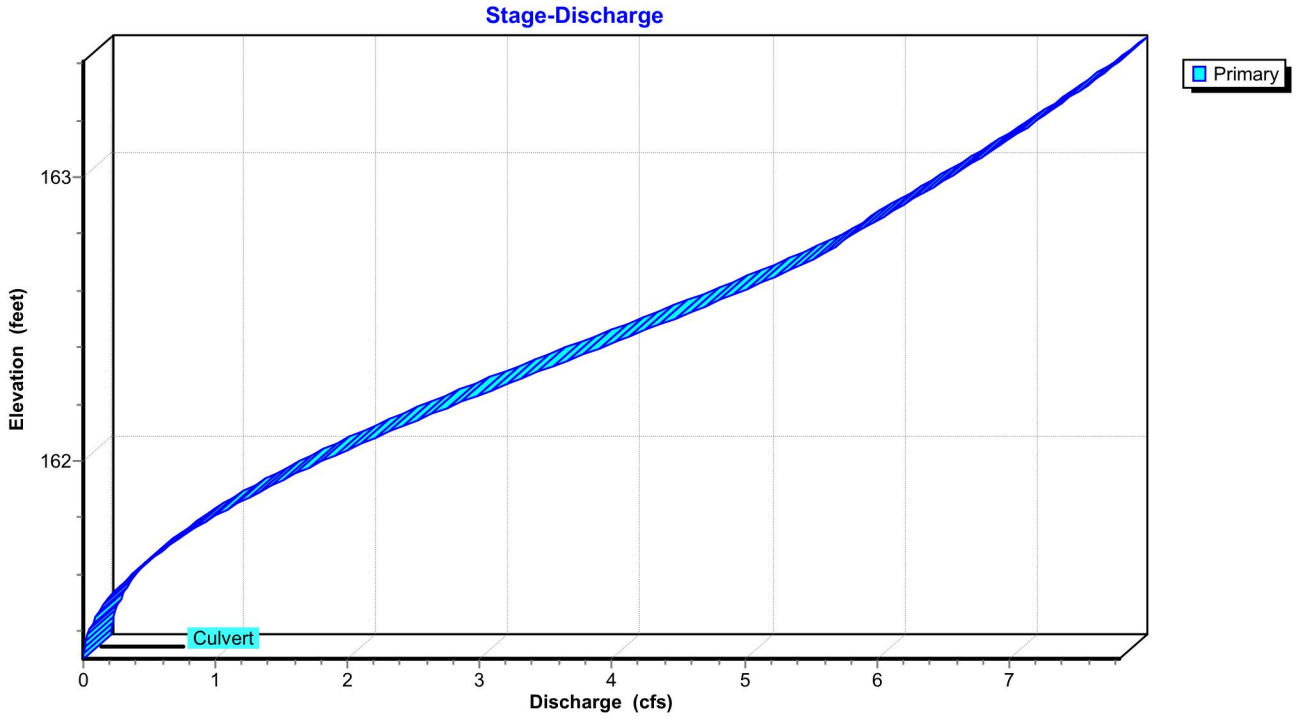
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.30' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.30' / 160.60' S= 0.0097 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.08 cfs @ 12.07 hrs HW=162.43' (Free Discharge)
↳**1=Culvert** (Inlet Controls 4.08 cfs @ 2.86 fps)

### Pond DP-1: DP-1



## Pond DP-1: DP-1


Stage-Discharge
Primary
Elevation (feet)
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-1: DP-1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.30 | **0** | 162.34 | 0 | 163.38 | 0 |
| 161.32 | 0 | 162.36 | 0 | 163.40 | 0 |
| 161.34 | 0 | 162.38 | 0 | | |
| 161.36 | 0 | 162.40 | 0 | | |
| 161.38 | 0 | 162.42 | 0 | | |
| 161.40 | 0 | 162.44 | 0 | | |
| 161.42 | 0 | 162.46 | 0 | | |
| 161.44 | 0 | 162.48 | 0 | | |
| 161.46 | 0 | 162.50 | 0 | | |
| 161.48 | 0 | 162.52 | 0 | | |
| 161.50 | 0 | 162.54 | 0 | | |
| 161.52 | 0 | 162.56 | 0 | | |
| 161.54 | 0 | 162.58 | 0 | | |
| 161.56 | 0 | 162.60 | 0 | | |
| 161.58 | 0 | 162.62 | 0 | | |
| 161.60 | 0 | 162.64 | 0 | | |
| 161.62 | 0 | 162.66 | 0 | | |
| 161.64 | 0 | 162.68 | 0 | | |
| 161.66 | 0 | 162.70 | 0 | | |
| 161.68 | 0 | 162.72 | 0 | | |
| 161.70 | 0 | 162.74 | 0 | | |
| 161.72 | 0 | 162.76 | 0 | | |
| 161.74 | 0 | 162.78 | 0 | | |
| 161.76 | 0 | 162.80 | 0 | | |
| 161.78 | 0 | 162.82 | 0 | | |
| 161.80 | 0 | 162.84 | 0 | | |
| 161.82 | 0 | 162.86 | 0 | | |
| 161.84 | 0 | 162.88 | 0 | | |
| 161.86 | 0 | 162.90 | 0 | | |
| 161.88 | 0 | 162.92 | 0 | | |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |

## Summary for Pond DP-2: DP-2

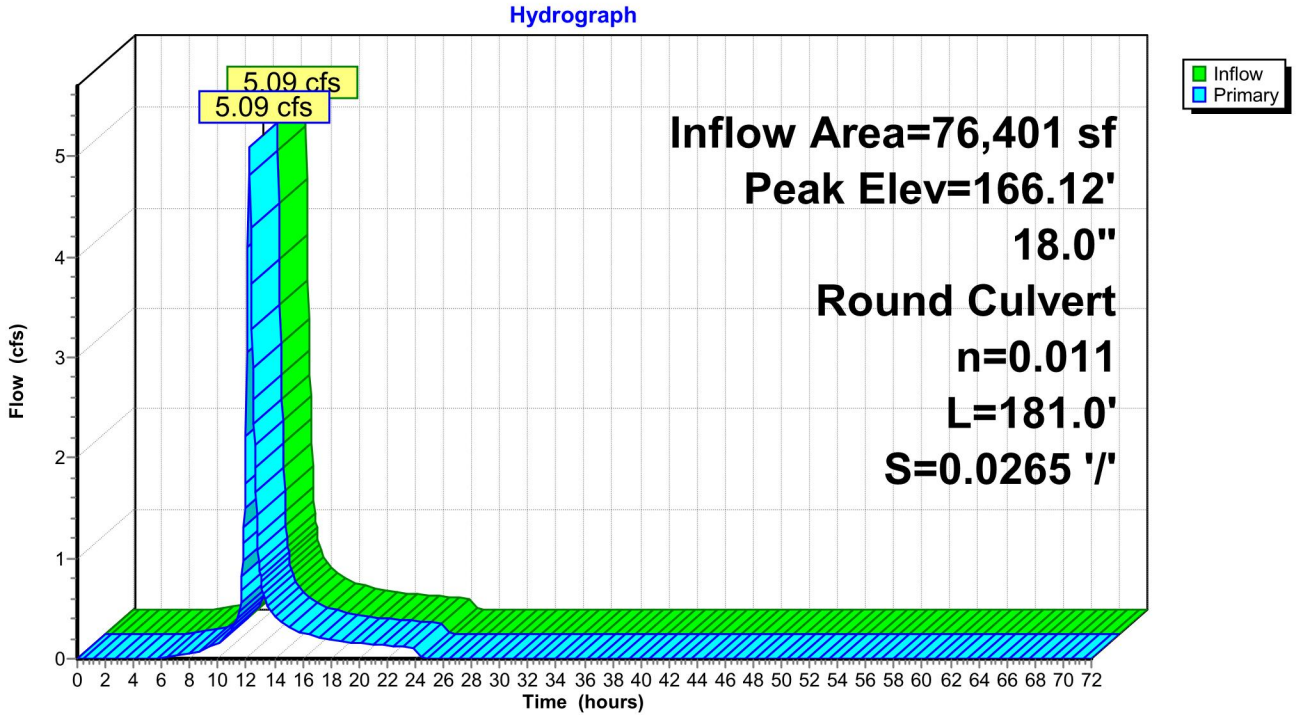
Inflow Area = 76,401 sf, 13.71% Impervious, Inflow Depth = 3.64" for 25-yr event
Inflow = 5.09 cfs @ 12.20 hrs, Volume= 23,157 cf
Outflow = 5.09 cfs @ 12.20 hrs, Volume= 23,157 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.09 cfs @ 12.20 hrs, Volume= 23,157 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 166.12' @ 12.20 hrs
Flood Elev= 167.03'

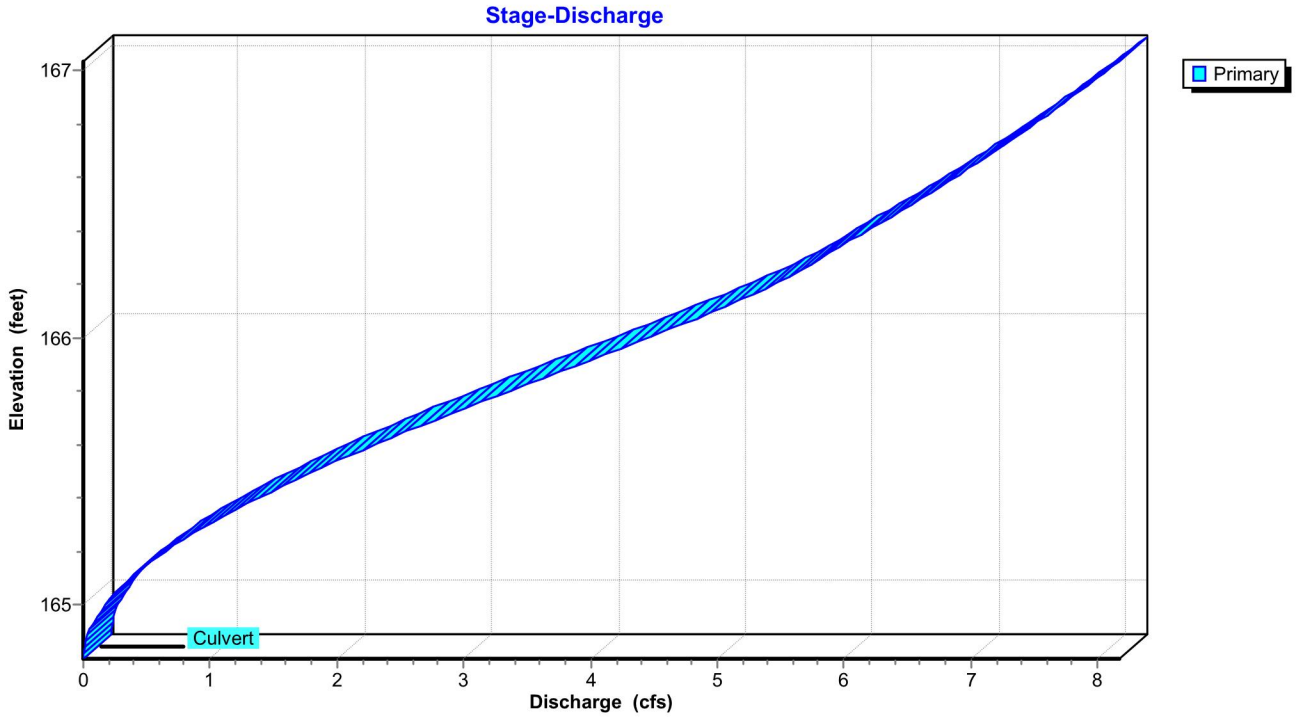
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 164.80' | **18.0" Round Culvert**<br>L= 181.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 164.80' / 160.00' S= 0.0265 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=5.08 cfs @ 12.20 hrs HW=166.12' (Free Discharge)
**1=Culvert** (Inlet Controls 5.08 cfs @ 3.09 fps)

## Pond DP-2: DP-2



## Pond DP-2: DP-2


Stage-Discharge
Primary
Elevation (feet)
167
166
165
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

## Stage-Area-Storage for Pond DP-2: DP-2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 164.80 | **0** | 165.84 | 0 | 166.88 | 0 |
| 164.82 | 0 | 165.86 | 0 | 166.90 | 0 |
| 164.84 | 0 | 165.88 | 0 | 166.92 | 0 |
| 164.86 | 0 | 165.90 | 0 | 166.94 | 0 |
| 164.88 | 0 | 165.92 | 0 | 166.96 | 0 |
| 164.90 | 0 | 165.94 | 0 | 166.98 | 0 |
| 164.92 | 0 | 165.96 | 0 | 167.00 | 0 |
| 164.94 | 0 | 165.98 | 0 | 167.02 | 0 |
| 164.96 | 0 | 166.00 | 0 | | |
| 164.98 | 0 | 166.02 | 0 | | |
| 165.00 | 0 | 166.04 | 0 | | |
| 165.02 | 0 | 166.06 | 0 | | |
| 165.04 | 0 | 166.08 | 0 | | |
| 165.06 | 0 | 166.10 | 0 | | |
| 165.08 | 0 | 166.12 | 0 | | |
| 165.10 | 0 | 166.14 | 0 | | |
| 165.12 | 0 | 166.16 | 0 | | |
| 165.14 | 0 | 166.18 | 0 | | |
| 165.16 | 0 | 166.20 | 0 | | |
| 165.18 | 0 | 166.22 | 0 | | |
| 165.20 | 0 | 166.24 | 0 | | |
| 165.22 | 0 | 166.26 | 0 | | |
| 165.24 | 0 | 166.28 | 0 | | |
| 165.26 | 0 | 166.30 | 0 | | |
| 165.28 | 0 | 166.32 | 0 | | |
| 165.30 | 0 | 166.34 | 0 | | |
| 165.32 | 0 | 166.36 | 0 | | |
| 165.34 | 0 | 166.38 | 0 | | |
| 165.36 | 0 | 166.40 | 0 | | |
| 165.38 | 0 | 166.42 | 0 | | |
| 165.40 | 0 | 166.44 | 0 | | |
| 165.42 | 0 | 166.46 | 0 | | |
| 165.44 | 0 | 166.48 | 0 | | |
| 165.46 | 0 | 166.50 | 0 | | |
| 165.48 | 0 | 166.52 | 0 | | |
| 165.50 | 0 | 166.54 | 0 | | |
| 165.52 | 0 | 166.56 | 0 | | |
| 165.54 | 0 | 166.58 | 0 | | |
| 165.56 | 0 | 166.60 | 0 | | |
| 165.58 | 0 | 166.62 | 0 | | |
| 165.60 | 0 | 166.64 | 0 | | |
| 165.62 | 0 | 166.66 | 0 | | |
| 165.64 | 0 | 166.68 | 0 | | |
| 165.66 | 0 | 166.70 | 0 | | |
| 165.68 | 0 | 166.72 | 0 | | |
| 165.70 | 0 | 166.74 | 0 | | |
| 165.72 | 0 | 166.76 | 0 | | |
| 165.74 | 0 | 166.78 | 0 | | |
| 165.76 | 0 | 166.80 | 0 | | |
| 165.78 | 0 | 166.82 | 0 | | |
| 165.80 | 0 | 166.84 | 0 | | |
| 165.82 | 0 | 166.86 | 0 | | |

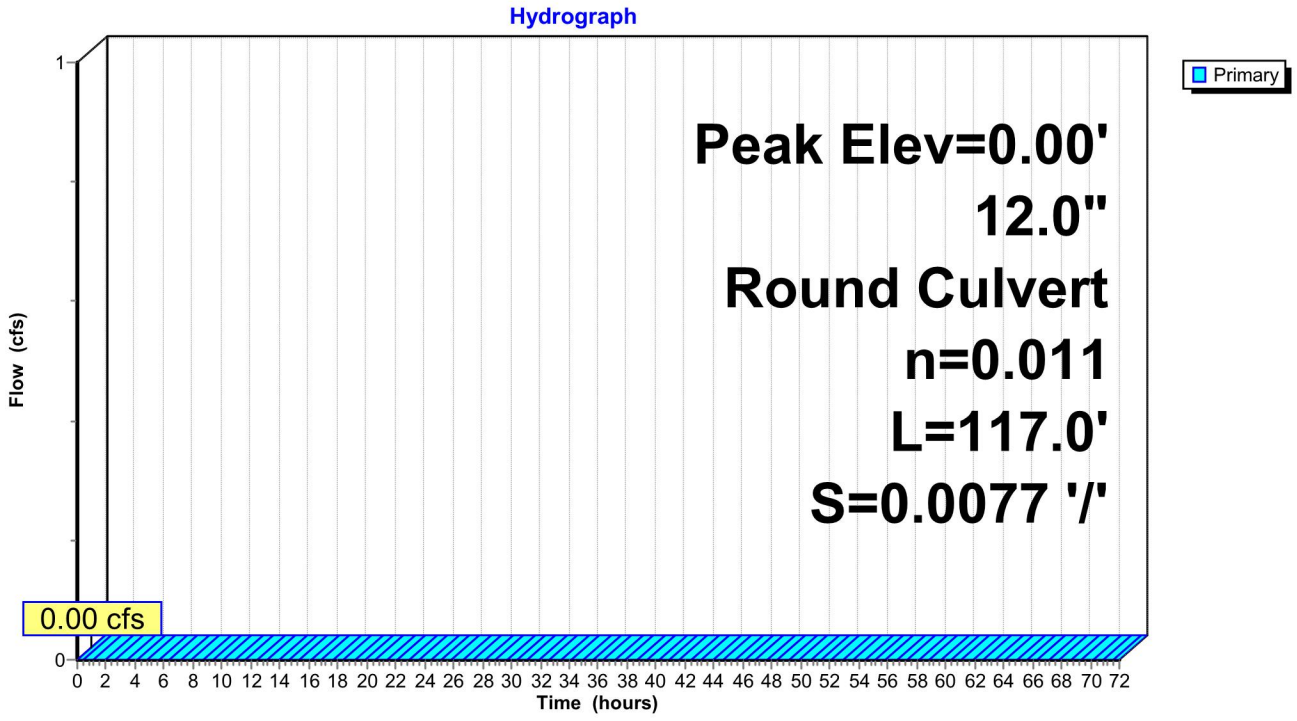
## Summary for Pond DP-3: DP-3

[43] Hint: Has no inflow (Outflow=Zero)

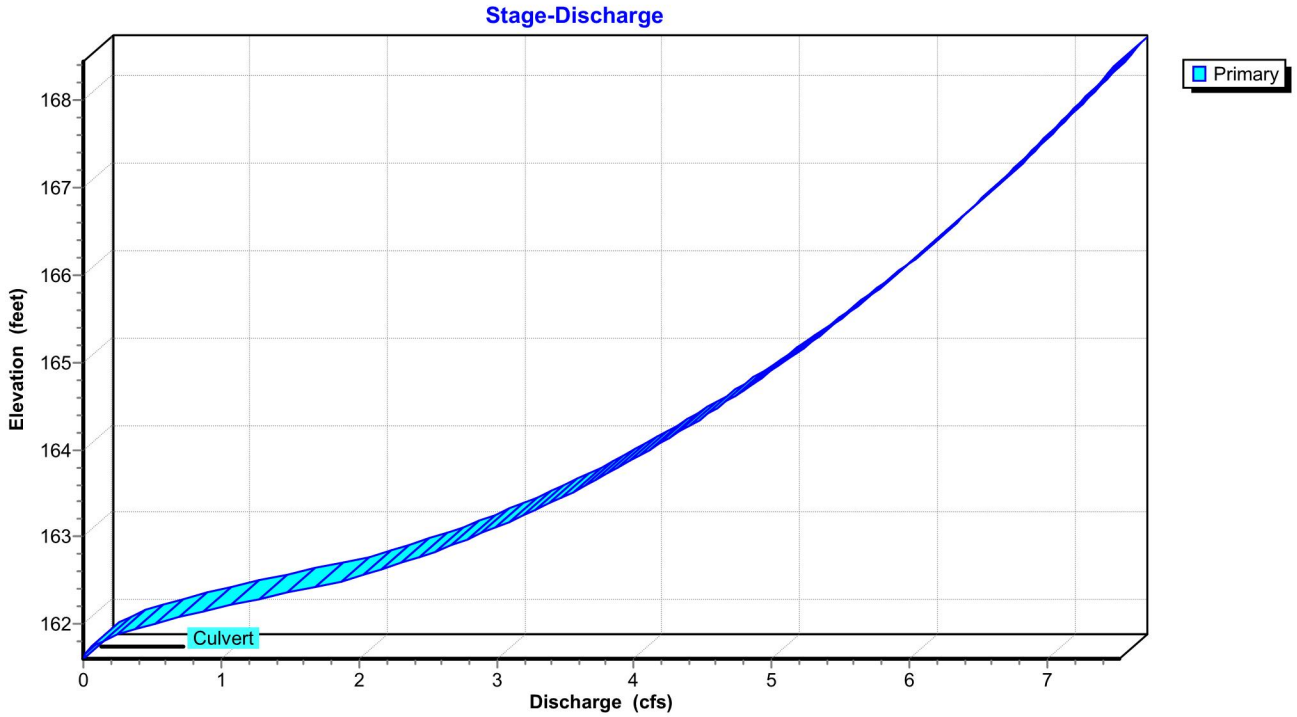
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.60' | **12.0" Round Culvert**<br>L= 117.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.60' / 160.70' S= 0.0077 '/' Cc= 0.900<br>n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
**1=Culvert** ( Controls 0.00 cfs)

### Pond DP-3: DP-3



## Pond DP-3: DP-3


Stage-Discharge
Primary
Elevation (feet)
168
167
166
165
164
163
162
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

## Stage-Area-Storage for Pond DP-3: DP-3

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.60 | **0** | 164.20 | 0 | 166.80 | 0 |
| 161.65 | 0 | 164.25 | 0 | 166.85 | 0 |
| 161.70 | 0 | 164.30 | 0 | 166.90 | 0 |
| 161.75 | 0 | 164.35 | 0 | 166.95 | 0 |
| 161.80 | 0 | 164.40 | 0 | 167.00 | 0 |
| 161.85 | 0 | 164.45 | 0 | 167.05 | 0 |
| 161.90 | 0 | 164.50 | 0 | 167.10 | 0 |
| 161.95 | 0 | 164.55 | 0 | 167.15 | 0 |
| 162.00 | 0 | 164.60 | 0 | 167.20 | 0 |
| 162.05 | 0 | 164.65 | 0 | 167.25 | 0 |
| 162.10 | 0 | 164.70 | 0 | 167.30 | 0 |
| 162.15 | 0 | 164.75 | 0 | 167.35 | 0 |
| 162.20 | 0 | 164.80 | 0 | 167.40 | 0 |
| 162.25 | 0 | 164.85 | 0 | 167.45 | 0 |
| 162.30 | 0 | 164.90 | 0 | 167.50 | 0 |
| 162.35 | 0 | 164.95 | 0 | 167.55 | 0 |
| 162.40 | 0 | 165.00 | 0 | 167.60 | 0 |
| 162.45 | 0 | 165.05 | 0 | 167.65 | 0 |
| 162.50 | 0 | 165.10 | 0 | 167.70 | 0 |
| 162.55 | 0 | 165.15 | 0 | 167.75 | 0 |
| 162.60 | 0 | 165.20 | 0 | 167.80 | 0 |
| 162.65 | 0 | 165.25 | 0 | 167.85 | 0 |
| 162.70 | 0 | 165.30 | 0 | 167.90 | 0 |
| 162.75 | 0 | 165.35 | 0 | 167.95 | 0 |
| 162.80 | 0 | 165.40 | 0 | 168.00 | 0 |
| 162.85 | 0 | 165.45 | 0 | 168.05 | 0 |
| 162.90 | 0 | 165.50 | 0 | 168.10 | 0 |
| 162.95 | 0 | 165.55 | 0 | 168.15 | 0 |
| 163.00 | 0 | 165.60 | 0 | 168.20 | 0 |
| 163.05 | 0 | 165.65 | 0 | 168.25 | 0 |
| 163.10 | 0 | 165.70 | 0 | 168.30 | 0 |
| 163.15 | 0 | 165.75 | 0 | 168.35 | 0 |
| 163.20 | 0 | 165.80 | 0 | 168.40 | 0 |
| 163.25 | 0 | 165.85 | 0 | 168.45 | 0 |
| 163.30 | 0 | 165.90 | 0 | | |
| 163.35 | 0 | 165.95 | 0 | | |
| 163.40 | 0 | 166.00 | 0 | | |
| 163.45 | 0 | 166.05 | 0 | | |
| 163.50 | 0 | 166.10 | 0 | | |
| 163.55 | 0 | 166.15 | 0 | | |
| 163.60 | 0 | 166.20 | 0 | | |
| 163.65 | 0 | 166.25 | 0 | | |
| 163.70 | 0 | 166.30 | 0 | | |
| 163.75 | 0 | 166.35 | 0 | | |
| 163.80 | 0 | 166.40 | 0 | | |
| 163.85 | 0 | 166.45 | 0 | | |
| 163.90 | 0 | 166.50 | 0 | | |
| 163.95 | 0 | 166.55 | 0 | | |
| 164.00 | 0 | 166.60 | 0 | | |
| 164.05 | 0 | 166.65 | 0 | | |
| 164.10 | 0 | 166.70 | 0 | | |
| 164.15 | 0 | 166.75 | 0 | | |

## Summary for Pond EX-1: EX. CB 1

[79] Warning: Submerged Pond 3P Primary device # 1 OUTLET by 0.49'
[79] Warning: Submerged Pond CB#1 Primary device # 1 INLET by 0.09'

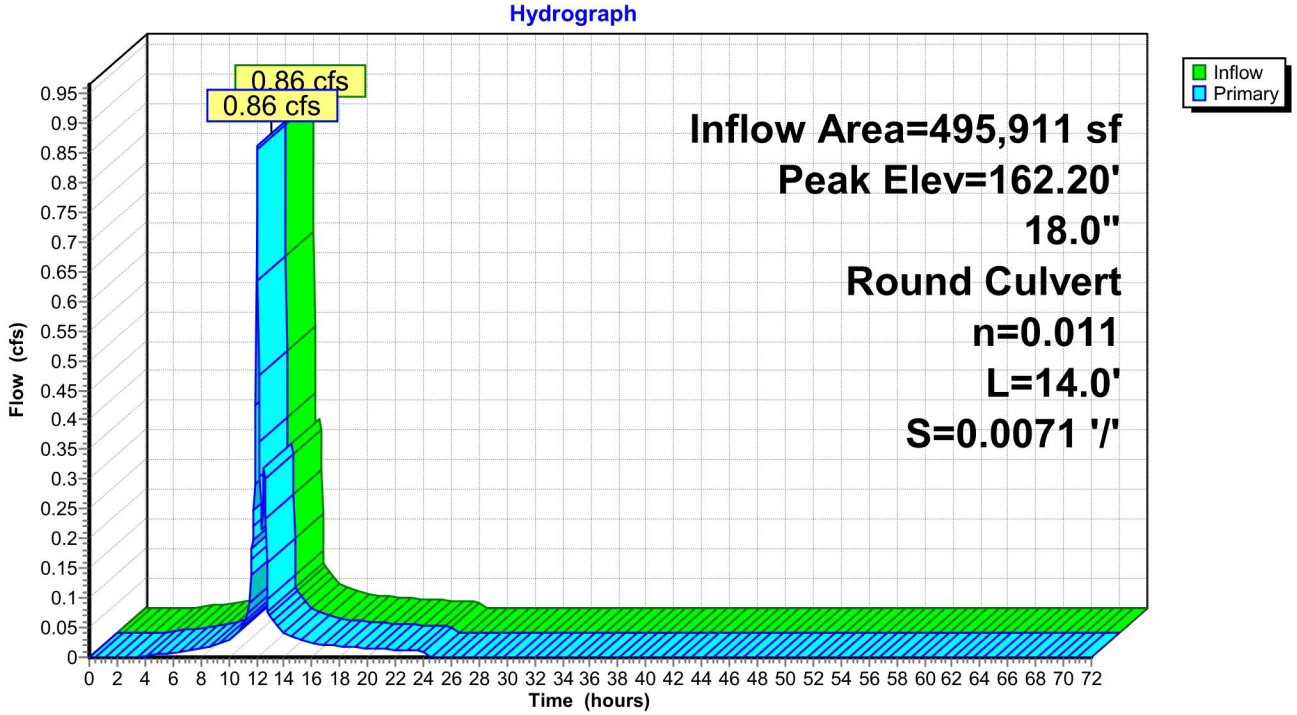
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.07" for 25-yr event
Inflow = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf
Outflow = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf
Routed to Pond EX-2 : EX. CB #2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.20' @ 12.04 hrs
Flood Elev= 164.02'

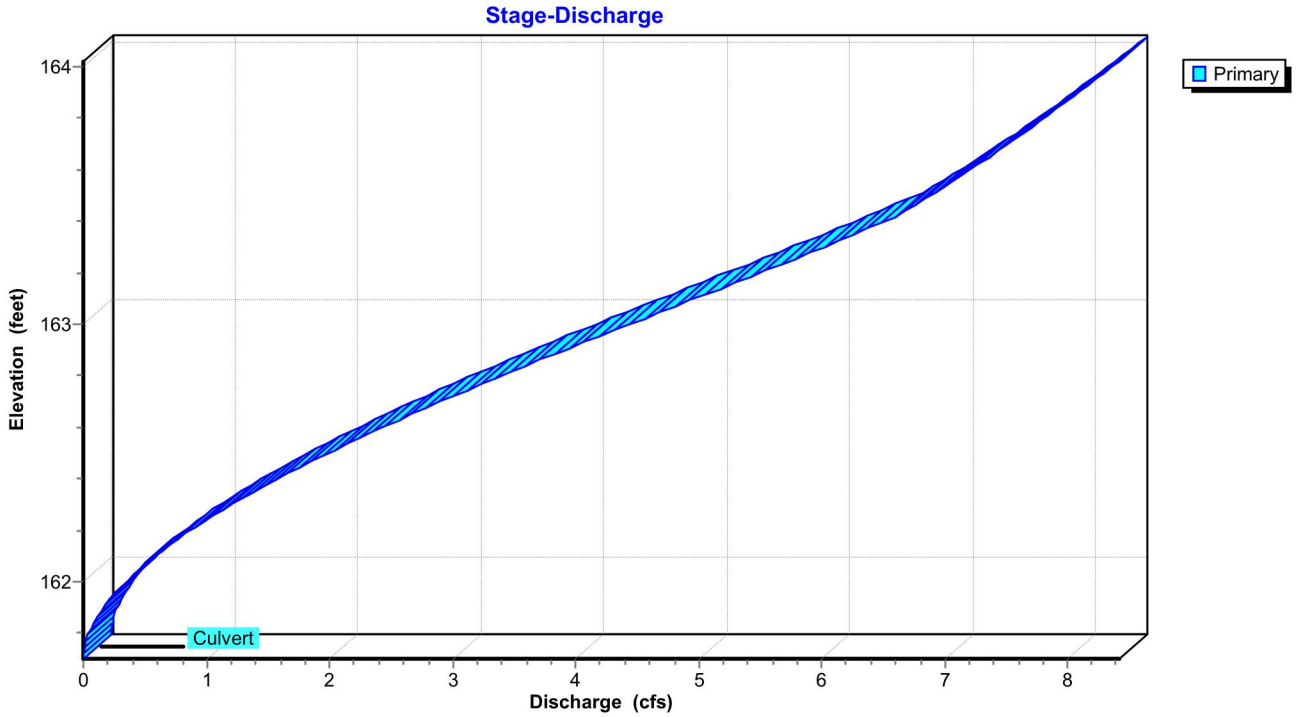
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.70' | **18.0" Round Culvert**<br>L= 14.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.70' / 161.60' S= 0.0071 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.84 cfs @ 12.04 hrs HW=162.19' (Free Discharge)
**1=Culvert** (Barrel Controls 0.84 cfs @ 2.50 fps)

## Pond EX-1: EX. CB 1



## Pond EX-1: EX. CB 1



## Stage-Area-Storage for Pond EX-1: EX. CB 1

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.70 | **0** | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | 163.98 | 0 |
| 161.92 | 0 | 162.96 | 0 | 164.00 | 0 |
| 161.94 | 0 | 162.98 | 0 | 164.02 | 0 |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |
| 162.54 | 0 | 163.58 | 0 | | |
| 162.56 | 0 | 163.60 | 0 | | |
| 162.58 | 0 | 163.62 | 0 | | |
| 162.60 | 0 | 163.64 | 0 | | |
| 162.62 | 0 | 163.66 | 0 | | |
| 162.64 | 0 | 163.68 | 0 | | |
| 162.66 | 0 | 163.70 | 0 | | |
| 162.68 | 0 | 163.72 | 0 | | |
| 162.70 | 0 | 163.74 | 0 | | |
| 162.72 | 0 | 163.76 | 0 | | |

## Summary for Pond EX-2: EX. CB #2

[79] Warning: Submerged Pond EX-1 Primary device # 1 INLET by 0.32'

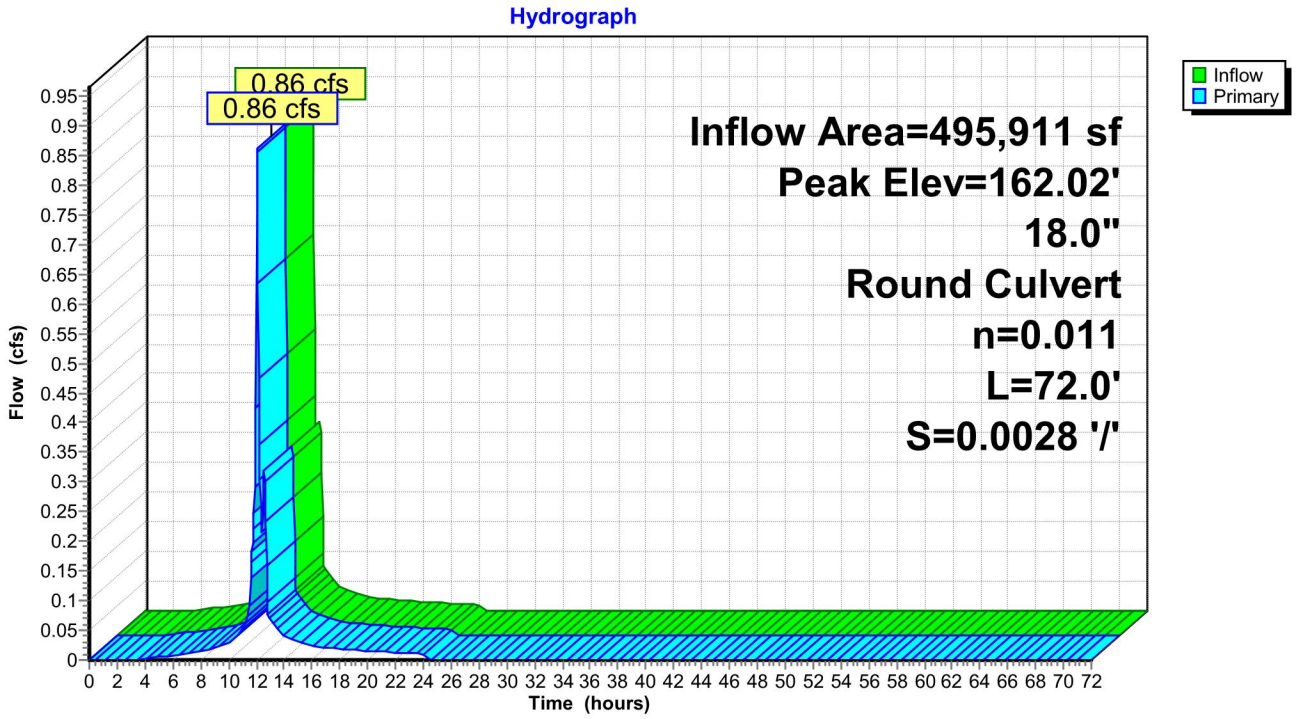
Inflow Area = 495,911 sf, 31.27% Impervious, Inflow Depth = 0.07" for 25-yr event
Inflow = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf
Outflow = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 12.04 hrs, Volume= 2,893 cf
Routed to Pond DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 162.02' @ 12.04 hrs
Flood Elev= 163.96'

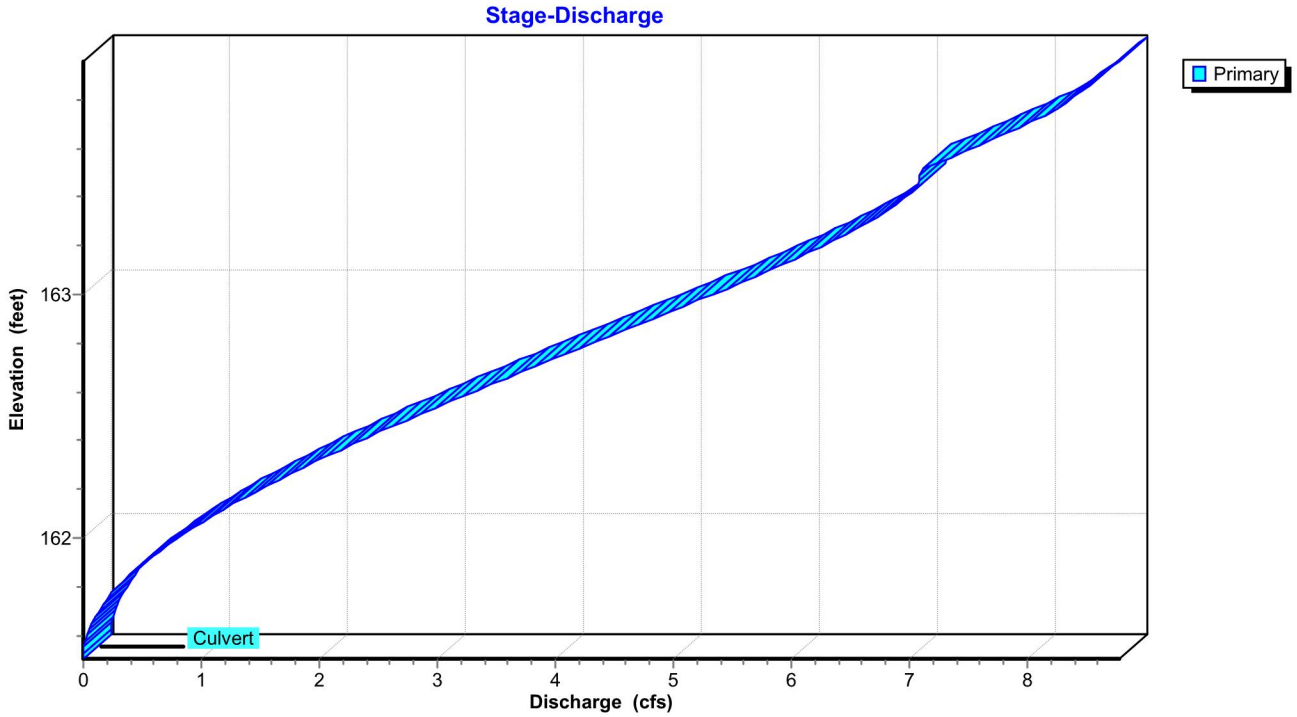
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 161.50' | **18.0" Round Culvert**<br>L= 72.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 161.50' / 161.30' S= 0.0028 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.84 cfs @ 12.04 hrs HW=162.01' (Free Discharge)
**1=Culvert** (Barrel Controls 0.84 cfs @ 2.36 fps)

### Pond EX-2: EX. CB #2



## Pond EX-2: EX. CB #2



## Stage-Area-Storage for Pond EX-2: EX. CB #2

| Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) | Elevation (feet) | Storage (cubic-feet) |
|---|---|---|---|---|---|
| 161.50 | **0** | 162.54 | 0 | 163.58 | 0 |
| 161.52 | 0 | 162.56 | 0 | 163.60 | 0 |
| 161.54 | 0 | 162.58 | 0 | 163.62 | 0 |
| 161.56 | 0 | 162.60 | 0 | 163.64 | 0 |
| 161.58 | 0 | 162.62 | 0 | 163.66 | 0 |
| 161.60 | 0 | 162.64 | 0 | 163.68 | 0 |
| 161.62 | 0 | 162.66 | 0 | 163.70 | 0 |
| 161.64 | 0 | 162.68 | 0 | 163.72 | 0 |
| 161.66 | 0 | 162.70 | 0 | 163.74 | 0 |
| 161.68 | 0 | 162.72 | 0 | 163.76 | 0 |
| 161.70 | 0 | 162.74 | 0 | 163.78 | 0 |
| 161.72 | 0 | 162.76 | 0 | 163.80 | 0 |
| 161.74 | 0 | 162.78 | 0 | 163.82 | 0 |
| 161.76 | 0 | 162.80 | 0 | 163.84 | 0 |
| 161.78 | 0 | 162.82 | 0 | 163.86 | 0 |
| 161.80 | 0 | 162.84 | 0 | 163.88 | 0 |
| 161.82 | 0 | 162.86 | 0 | 163.90 | 0 |
| 161.84 | 0 | 162.88 | 0 | 163.92 | 0 |
| 161.86 | 0 | 162.90 | 0 | 163.94 | 0 |
| 161.88 | 0 | 162.92 | 0 | 163.96 | 0 |
| 161.90 | 0 | 162.94 | 0 | | |
| 161.92 | 0 | 162.96 | 0 | | |
| 161.94 | 0 | 162.98 | 0 | | |
| 161.96 | 0 | 163.00 | 0 | | |
| 161.98 | 0 | 163.02 | 0 | | |
| 162.00 | 0 | 163.04 | 0 | | |
| 162.02 | 0 | 163.06 | 0 | | |
| 162.04 | 0 | 163.08 | 0 | | |
| 162.06 | 0 | 163.10 | 0 | | |
| 162.08 | 0 | 163.12 | 0 | | |
| 162.10 | 0 | 163.14 | 0 | | |
| 162.12 | 0 | 163.16 | 0 | | |
| 162.14 | 0 | 163.18 | 0 | | |
| 162.16 | 0 | 163.20 | 0 | | |
| 162.18 | 0 | 163.22 | 0 | | |
| 162.20 | 0 | 163.24 | 0 | | |
| 162.22 | 0 | 163.26 | 0 | | |
| 162.24 | 0 | 163.28 | 0 | | |
| 162.26 | 0 | 163.30 | 0 | | |
| 162.28 | 0 | 163.32 | 0 | | |
| 162.30 | 0 | 163.34 | 0 | | |
| 162.32 | 0 | 163.36 | 0 | | |
| 162.34 | 0 | 163.38 | 0 | | |
| 162.36 | 0 | 163.40 | 0 | | |
| 162.38 | 0 | 163.42 | 0 | | |
| 162.40 | 0 | 163.44 | 0 | | |
| 162.42 | 0 | 163.46 | 0 | | |
| 162.44 | 0 | 163.48 | 0 | | |
| 162.46 | 0 | 163.50 | 0 | | |
| 162.48 | 0 | 163.52 | 0 | | |
| 162.50 | 0 | 163.54 | 0 | | |
| 162.52 | 0 | 163.56 | 0 | | |

## Summary for Pond IB-1: INFILTRATION BASIN 1

[79] Warning: Submerged Pond 2P Primary device # 1 INLET by 1.21'
[81] Warning: Exceeded Pond CB#3 by 0.91' @ 12.65 hrs
[79] Warning: Submerged Pond CB#6 Primary device # 1 INLET by 0.19'

Inflow Area = 488,902 sf, 30.69% Impervious, Inflow Depth = 3.76" for 25-yr event
Inflow = 27.22 cfs @ 12.19 hrs, Volume= 153,295 cf
Outflow = 13.25 cfs @ 12.62 hrs, Volume= 153,295 cf, Atten= 51%, Lag= 26.0 min
Discarded = 13.05 cfs @ 12.62 hrs, Volume= 153,141 cf
Primary = 0.19 cfs @ 12.62 hrs, Volume= 154 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 163.37' @ 12.62 hrs Surf.Area= 9,139 sf Storage= 22,203 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 9.2 min ( 822.6 - 813.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 160.50' | 50,670 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

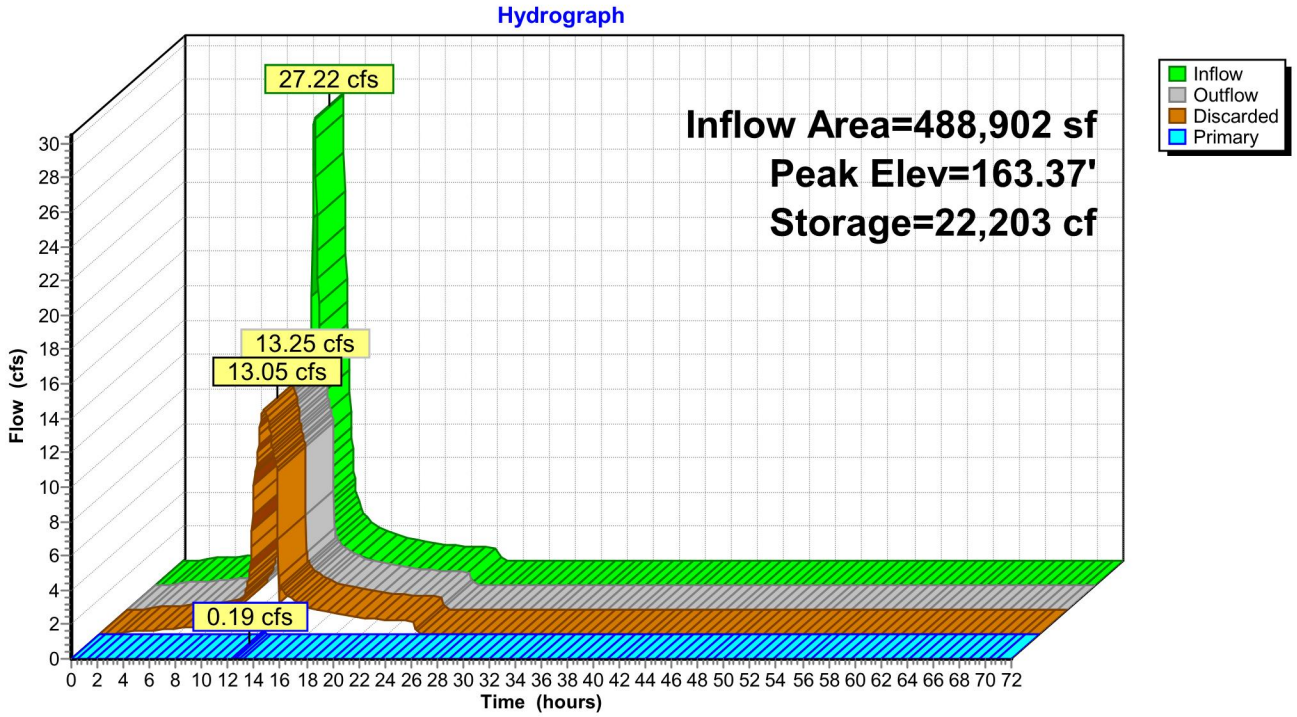
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 160.50 | 6,535 | 0 | 0 |
| 161.00 | 6,901 | 3,359 | 3,359 |
| 162.00 | 7,653 | 7,277 | 10,636 |
| 163.00 | 8,772 | 8,213 | 18,849 |
| 164.00 | 9,753 | 9,263 | 28,111 |
| 165.00 | 17,429 | 13,591 | 41,702 |
| 165.50 | 18,442 | 8,968 | 50,670 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 160.50' | **61.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 163.15' | **15.0" Round Culvert**<br>L= 70.0' CMP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 163.15' / 162.80' S= 0.0050 '/' Cc= 0.900<br>n= 0.011, Flow Area= 1.23 sf |

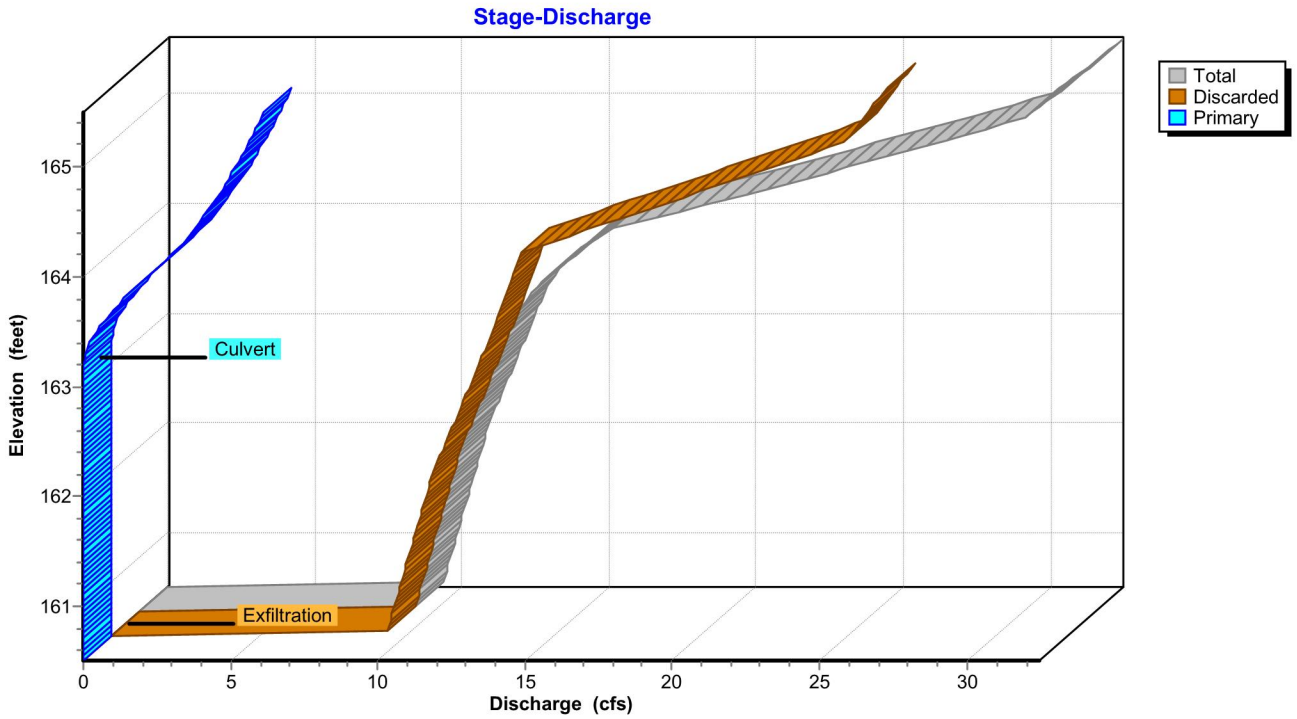
**Discarded OutFlow** Max=13.05 cfs @ 12.62 hrs HW=163.37' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 13.05 cfs)

**Primary OutFlow** Max=0.19 cfs @ 12.62 hrs HW=163.37' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.19 cfs @ 1.26 fps)

## Pond IB-1: INFILTRATION BASIN 1




## Pond IB-1: INFILTRATION BASIN 1



## Stage-Area-Storage for Pond IB-1: INFILTRATION BASIN 1

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 160.50 | 6,535 | 0 |
| 160.55 | 6,572 | 328 |
| 160.60 | 6,608 | 657 |
| 160.65 | 6,645 | 988 |
| 160.70 | 6,681 | 1,322 |
| 160.75 | 6,718 | 1,657 |
| 160.80 | 6,755 | 1,993 |
| 160.85 | 6,791 | 2,332 |
| 160.90 | 6,828 | 2,673 |
| 160.95 | 6,864 | 3,015 |
| 161.00 | 6,901 | 3,359 |
| 161.05 | 6,939 | 3,705 |
| 161.10 | 6,976 | 4,053 |
| 161.15 | 7,014 | 4,403 |
| 161.20 | 7,051 | 4,754 |
| 161.25 | 7,089 | 5,108 |
| 161.30 | 7,127 | 5,463 |
| 161.35 | 7,164 | 5,820 |
| 161.40 | 7,202 | 6,180 |
| 161.45 | 7,239 | 6,541 |
| 161.50 | 7,277 | 6,904 |
| 161.55 | 7,315 | 7,268 |
| 161.60 | 7,352 | 7,635 |
| 161.65 | 7,390 | 8,004 |
| 161.70 | 7,427 | 8,374 |
| 161.75 | 7,465 | 8,746 |
| 161.80 | 7,503 | 9,120 |
| 161.85 | 7,540 | 9,497 |
| 161.90 | 7,578 | 9,874 |
| 161.95 | 7,615 | 10,254 |
| 162.00 | 7,653 | 10,636 |
| 162.05 | 7,709 | 11,020 |
| 162.10 | 7,765 | 11,407 |
| 162.15 | 7,821 | 11,797 |
| 162.20 | 7,877 | 12,189 |
| 162.25 | 7,933 | 12,584 |
| 162.30 | 7,989 | 12,982 |
| 162.35 | 8,045 | 13,383 |
| 162.40 | 8,101 | 13,787 |
| 162.45 | 8,157 | 14,193 |
| 162.50 | 8,213 | 14,602 |
| 162.55 | 8,268 | 15,014 |
| 162.60 | 8,324 | 15,429 |
| 162.65 | 8,380 | 15,847 |
| 162.70 | 8,436 | 16,267 |
| 162.75 | 8,492 | 16,690 |
| 162.80 | 8,548 | 17,116 |
| 162.85 | 8,604 | 17,545 |
| 162.90 | 8,660 | 17,977 |
| 162.95 | 8,716 | 18,411 |
| 163.00 | 8,772 | 18,849 |
| 163.05 | 8,821 | 19,288 |
| 163.10 | 8,870 | 19,731 |
| 163.15 | 8,919 | 20,175 |
| 163.20 | 8,968 | 20,623 |
| 163.25 | 9,017 | 21,072 |
| 163.30 | 9,066 | 21,524 |
| 163.35 | 9,115 | 21,979 |
| 163.40 | 9,164 | 22,436 |
| 163.45 | 9,213 | 22,895 |
| 163.50 | 9,263 | 23,357 |
| 163.55 | 9,312 | 23,821 |
| 163.60 | 9,361 | 24,288 |
| 163.65 | 9,410 | 24,758 |
| 163.70 | 9,459 | 25,229 |
| 163.75 | 9,508 | 25,703 |
| 163.80 | 9,557 | 26,180 |
| 163.85 | 9,606 | 26,659 |
| 163.90 | 9,655 | 27,141 |
| 163.95 | 9,704 | 27,625 |
| 164.00 | 9,753 | 28,111 |
| 164.05 | 10,137 | 28,608 |
| 164.10 | 10,521 | 29,125 |
| 164.15 | 10,904 | 29,660 |
| 164.20 | 11,288 | 30,215 |
| 164.25 | 11,672 | 30,789 |
| 164.30 | 12,056 | 31,382 |
| 164.35 | 12,440 | 31,995 |
| 164.40 | 12,823 | 32,626 |
| 164.45 | 13,207 | 33,277 |
| 164.50 | 13,591 | 33,947 |
| 164.55 | 13,975 | 34,636 |
| 164.60 | 14,359 | 35,344 |
| 164.65 | 14,742 | 36,072 |
| 164.70 | 15,126 | 36,819 |
| 164.75 | 15,510 | 37,585 |
| 164.80 | 15,894 | 38,370 |
| 164.85 | 16,278 | 39,174 |
| 164.90 | 16,661 | 39,997 |
| 164.95 | 17,045 | 40,840 |
| 165.00 | 17,429 | 41,702 |
| 165.05 | 17,530 | 42,576 |
| 165.10 | 17,632 | 43,455 |
| 165.15 | 17,733 | 44,339 |
| 165.20 | 17,834 | 45,228 |
| 165.25 | 17,936 | 46,123 |
| 165.30 | 18,037 | 47,022 |
| 165.35 | 18,138 | 47,926 |
| 165.40 | 18,239 | 48,836 |
| 165.45 | 18,341 | 49,750 |
| 165.50 | **18,442** | **50,670** |

# SITE PLAN SUBMISSION SET

## VASSAR COLLEGE TURF FIELD

### 334 HOOKER AVE
### TOWN OF POUGHKEEPSIE,
### DUTCHESS COUNTY, NEW YORK

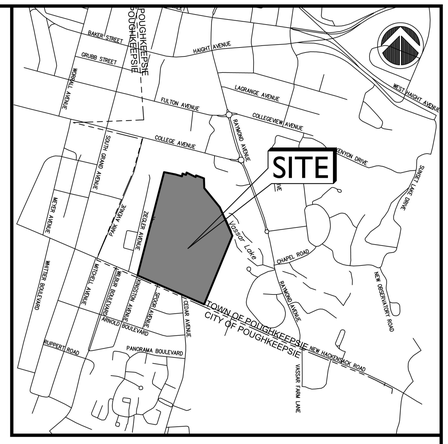
TAX MAP ID # 134689-6161-04-740465

REVISED: JANUARY 26, 2026




LOCATION MAP

SCALE: 1"=1,000'




VICINITY MAP

SCALE: 1"=1,000'

TOWN OF POUGHKEEPSIE PLANNING BOARD
OWNER/APPLICANT SIGNATURES

THE UNDERSIGNED APPLICANT(S) FOR THE PROPERTY AND THE UNDERSIGNED OWNER(S) OF THE PROPERTY SHOWN HEREIN CERTIFY THAT THEY AREA FAMILIAR WITH THIS MAP AND ITS NOTES AND ITS CONTENTS AS STATED HEREON INCLUDING ALL CONDITIONS OF APPROVAL. THE APPLICANT AND THE OWNER UNDERSTAND THEIR OBLIGATION TO THE TOWN TO KEEP THE PREMISES AS PER PLAN APPROVAL BY THE PLANNING BOARD UNTIL A NEW OR REVISED PLAN FOR DEVELOPMENT OR USE OF THE SITE IS APPROVED BY THE PLANNING BOARD. THE APPLICANT AND THE OWNER UNDERSTAND THEIR OBLIGATION TO THE TOWN NOT TO OCCUPY THE PREMISES BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED BY THE TOWN FOR THE OCCUPANCY AS APPROVED HEREON.

OWNER

DATE

APPLICANT

DATE

TOWN OF POUGHKEEPSIE DEPARTMENTAL SIGNATURES
(REQUIRED BEFORE CHAIRMAN'S SIGNATURE)

PLANNING DEPARTMENT — DATE

BUILDING DEPARTMENT — DATE

FIRE DEPARTMENT — DATE

WATER DEPARTMENT — DATE

SEWER DEPARTMENT — DATE

ZONING DEPARTMENT — DATE

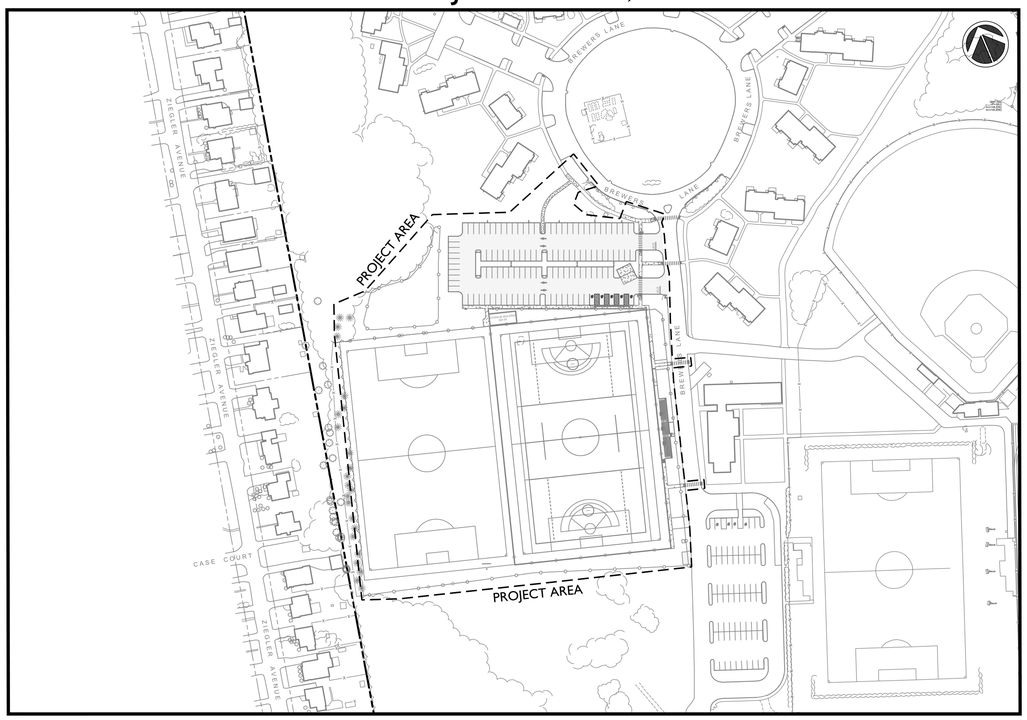
ENGINEERING DEPARTMENT — DATE

TOWN OF POUGHKEEPSIE PLANNING BOARD
PLAN APPROVAL

THE PLAN OF DEVELOPMENT FOR THE PROPERTY AS DEPICTED HEREON WAS APPROVED BY A MAJORITY OF THE MEMBERS OF THE TOWN OF POUGHKEEPSIE PLANNING BOARD AT A MEETING HELD ON _____ , AND THE CONDITIONS OF SITE PLAN APPROVAL HAVE BEEN SATISFIED OR ARRANGEMENTS HAVE BEEN MADE TO ENSURE THE COMPLETION OF ANY OUTSTANDING OR INCOMPLETE CONDITIONS.

CHAIRMAN

DATE




OVERALL SITE PLAN

SCALE: 1"=100'

## INDEX OF CIVIL DRAWINGS


| | |
|---|---|
| CV-1 | COVER SHEET |
| EX-1 | MAP OF EXISTING CONDITIONS |
| DM-1 | DEMOLITION PLAN |
| OP-1 | OVERALL SITE PLAN |
| SP-1 | SITE PLAN |
| SG-1 | SITE GRADING PLAN |
| SD-1 | SITE DRAINAGE PLAN |
| EC-1 | EROSION & SEDIMENTATION CONTROL PLAN |
| LL-1 | LANDSCAPE PLAN |
| LP-1 | SITE LIGHTING & PHOTOMETRY PLAN |
| PH-1 | PHASING PLAN |
| DN-1 | DETAILS |
| DN-2 | DETAILS |
| DN-3 | STORMWATER DETAILS |
| DN-4 | EROSION CONTROL DETAILS / VEHICLE TURNING PLAN |
| AF-1 | ATHLETIC FIELD EXISTING DRAINAGE |
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| AF-4 | ATHLETIC FIELD GRADING AND DRAINAGE |
| AF-5 | ATHLETIC FIELD UTILITIES |
| AF-6 | ATHLETIC FIELD ILLUMINATION |
| AF-D-1 | ATHLETIC FIELD DETAILS NATURAL GRASS FIELD |
| AF-D-2 | ATHLETIC FIELD DETAILS SYNTHETIC TURF FIELD |
| AF-D-3 | ATHLETIC FIELD DETAILS BLEACHERS |
| AF-D-4 | ATHLETIC FIELD DETAILS STORAGE BUILDING |
| AF-D-5 | ATHLETIC FIELD DETAILS MUSCO LIGHTING LIGHT LEVELS |
| AF-D-6 | ATHLETIC FIELD DETAILS MUSCO LIGHTING FIELD SPILL |
| AF-D-7 | ATHLETIC FIELD DETAILS MUSCO LIGHTING DETAILS |



SITE PLANNER / CIVIL ENGINEER:

LRC Engineering & Surveying
A Loureiro Company

- Civil Engineering
- Land Surveying
- Landscape Architecture
- Land Planning
- Laser Scanning & BIM
- Subsurface Utility Engineering

Land Resource Consultants
Engineering & Surveying, LLC
Loureiro NY, P.C.

85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
(845) 243-2880

160 West Street, Suite E
Cromwell, CT 06416
(860) 635-2877

www.lrcconsult.com

STATE OF NEW YORK — ROBERT E. MORRISON — LICENSED PROFESSIONAL ENGINEER — 074194 — NOT VALID WITHOUT SIGNATURE

OWNER / APPLICANT:

VASSAR COLLEGE
124 RAYMOND AVE.
POUGHKEEPSIE, NEW YORK 12603

ATHLETIC FIELD SPECIALIST:

CLARK COMPANIES
208 PHOEBE LANE
DELHI, NY, 13753
(607) 746-2727

CLARK COMPANIES
208 PHOEBE LANE, P.O. BOX 427, DELHI, NY. 1375
PHONE: (607)746-2727 FAX:(607)746-3107

CATELLA ENGINEERING, LLC
P.O. BOX 464
DELHI, N.Y. 13753-1282


REVISION NOTE #1: 01-26-2026
ORIGINALLY SUBMITTED: 12-19-2025

VASSAR COLLEGE
TURF FIELD
TOWN OF POUGHKEEPSIE

COVER SHEET

Drawing No.
CV-1



X:\JOBS\Jobs 2022\22-2928-VC-Turf Field\DWG\V22292801.dwg 1/22/2026 3:17 PM SGorrow

# LEGEND

- Property Line
- Easement Line
- 200 Index Contour
- Intermediate Contour
- Treeline
- Hedge/Shrub Line
- Stone Wall
- Retaining Wall
- Fence
- Guide Rail
- Stream/Edge of Water
- Limit of Wetlands
- Detectable Warning Strip
- Rip-Rap
- E — E — E Electric Line
- SL — SL — SL Sitelight Electric Line
- G — G — G Gas Line
- S — S — S Sanitary Sewer (Vassar)
- S — S — S Sanitary Sewer (Vassar) Abandoned
- Storm Sewer
- T — T — T Telephone Line
- T — T — T Telephone Line Abandoned
- W — W — W Water Line (Vassar)-Domestic & Fire Protection
- W — W — W Water Line (Vassar) Abandoned
- W — W — W Water Line (Town)
- Overhead Wires
- Deciduous Tree
- Coniferous Tree
- Shrub
- Sign
- Handicap Parking
- Bollard
- Mailbox
- GV Gas Valve
- WV Water Valve (Vassar)
- FDC Hydrant (Vassar)
- Fire Department Connection
- D Storm Drainage Manhole
- S Sanitary Manhole (Vassar)
- E Electric Manhole
- Curbless Catch Basin
- Double Curbless Catch Basin
- Double Curbless Catch Basin
- Yard Drain with Square Grate
- Yard Drain with Round Grate
- Covered Dry Well
- Dry Well with Grate
- RL Roof Leader
- RD Roof Drain/Underground Leader
- CO Sanitary or Storm Cleanout
- Utility Pole
- Utility Pole with Light
- Guy Wire
- Single Lamp Post
- Double Lamp Post
- Street Light
- Bollard Light
- Ground/Landscape Light
- Flood Light
- Electric Handhole
- Sitelight Electric Handhole
- Telephone Handhole

## Map Notes

1. Unauthorized alteration or addition to a survey map bearing a licensed land surveyor's seal is a violation of section 7209, sub-division 2, of the New York State Education Law.
2. Only copies from the original of this survey marked with an original of the land surveyor's seal shall be considered to be a true copy.
3. The above certification shall run only to the person for whom the survey is prepared , and on his behalf to the title company, governmental agency and lending institution. Certifications are not transferable to additional institutions or subsequent owners.
4. North Arrow and Coordinates are referenced to the North American Datum of 1983 (NAD83) projected onto the New York State Plane East Coordinate System based on GPS observations made on December 2, 2020 and January 6, 2021 utilizing the Keystone KeyNetGPS VRS GPS network.
5. Elevations are referenced to the North American Vertical Datum of 1988 (NAVD88) based on GPS observations made on December 2, 2020 and January 6, 2021 utilizing the Keystone KeyNetGPS VRS GPS network.
6. Existing site features and topography were compiled by Golden Aerial Surveys, Inc., utilizing photogrammetric methods, based on aerial imagery obtained on November 18, 2020.
7. Parcel is identified as Tax ID # 134689-6161-04-740465 according to the Dutchess County Parcel Access.
8. Property is located in Zone "X" as depicted on Flood Insurance Rate Map (FIRM) Panel 0367E, Dutchess County, New York, Town of Poughkeepsie, Community Number 361142, Map Number 36027C0367E, with an effective date of May 2, 2012.
9. The subsurface utilities depicted hereon conform to the following Utility Quality Levels, as defined by the American Society of Civil Engineers (ASCE) in Document C/ASCE 38-02 titled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data":
   - Sanitary Sewer: QLC and QLD
   - Storm Sewer: QLC and QLD
   - Water: QLC and QLD
   - Natural Gas: QLC and QLD
   - Electric: QLC and QLD
   - Communications: QLC and QLD

   The subsurface utilities were compiled from parol evidence, record drawings, and surficial evidence located during the field survey. The Surveyor has not physically exposed the subsurface utilities, and makes no guarantee that the subsurface utilities depicted hereon comprise all such utilities within the surveyed area, either in service or abandoned. The Surveyor further does not warrant or guarantee that the subsurface utilities are in the exact location depicted, though they have been plotted, in accordance with the standard of care, from information available.

   The contractor is required to utilize the local utility one call system prior to excavation for the purpose of verifying the subsurface utilities in the area.

## Certification

I hereby declare this map to be prepared in accordance with the Code of Practice of the New York State Association of Land Surveyors, adopted October, 1996 and revised through July 18, 1997.

JOHN F. WAGENBLATT L.S. Lic. No. 050,5

STATE OF NEW YORK — JOHN F. WAGENBLATT — 050547 — LICENSED LAND SURVEYOR





Vassar College

124 Raymond Avenue
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12604

LRC Engineering & Surveying, A Loureiro Company

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DELHI, N.Y. 13753-1222
286 PHOEBE LANE
PHONE: (607)746-7727


| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01-21-26 | Address Planning Comments |

REVISIONS

| | |
|---|---|
| Design/Calcs | LRC |
| Drawn | LRC |
| Checked | JW |
| Approved | JW |
| CAD File | EX22292801.dwg |
| Project No. | 22-2928 |
| Date | 02-06-2023 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

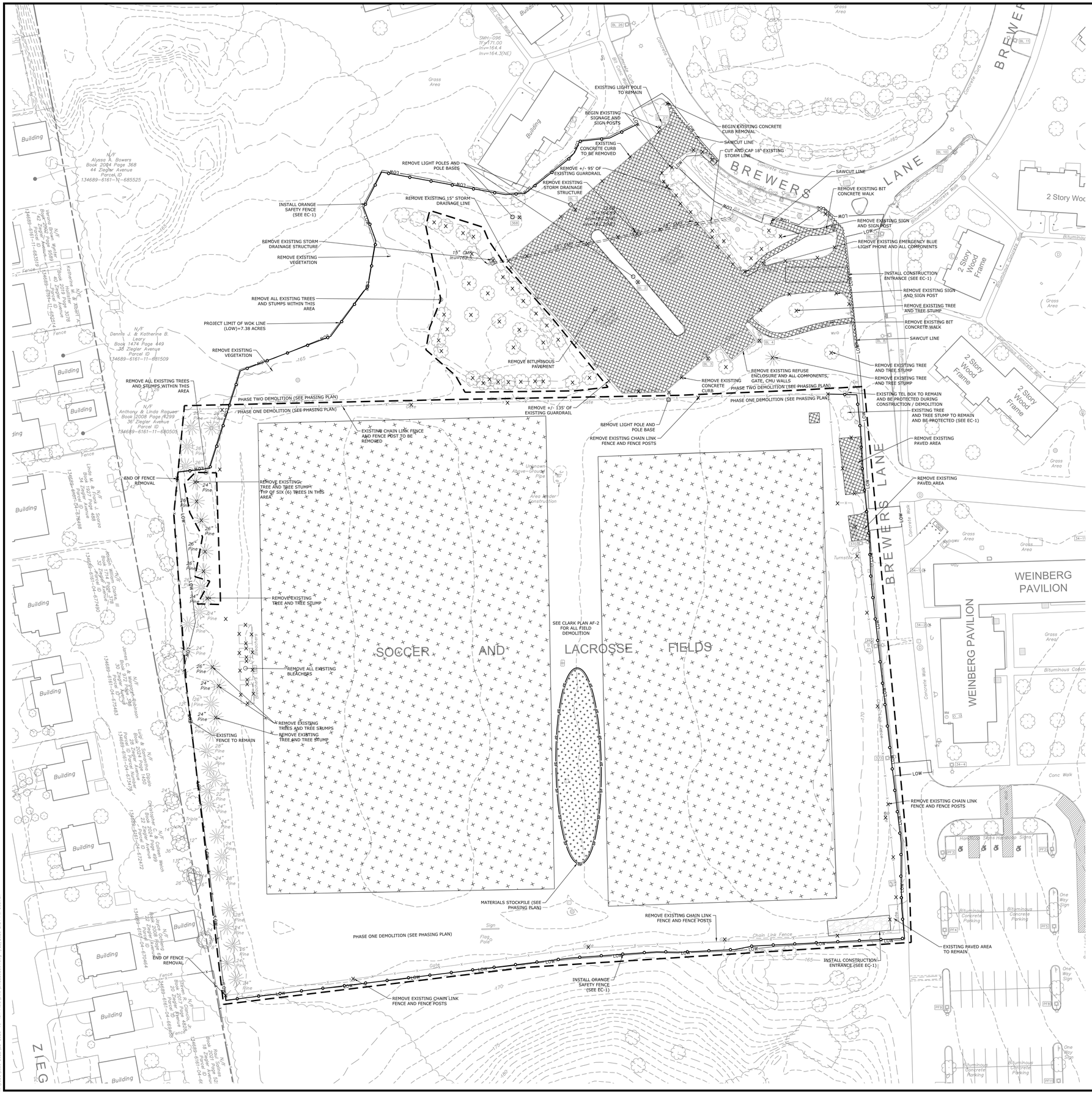
VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

EXISTING CONDITIONS

Drawing No.
EX-1

SHEET 2 OF 28

K:\JOBS\Jobs 2022\22-2928-VC-Turf Field\DWG\EX22292801.dwg 1/23/2026 12:45 PM Coerbin


EXISTING LIGHT POLE TO REMAIN
BEGIN EXISTING SIGNAGE AND SIGN POSTS
EXISTING CONCRETE CURB TO BE REMOVED
REMOVE LIGHT POLES AND POLE BASES
REMOVE +/- 95' OF EXISTING GUARDRAIL
REMOVE EXISTING STORM DRAINAGE STRUCTURE
REMOVE EXISTING 15" STORM DRAINAGE LINE
INSTALL ORANGE SAFETY FENCE (SEE EC-1)
REMOVE EXISTING STORM DRAINAGE STRUCTURE
REMOVE EXISTING VEGETATION
REMOVE ALL EXISTING TREES AND STUMPS WITHIN THIS AREA
PROJECT LIMIT OF WOK LINE (LOW)=7.38 ACRES
REMOVE EXISTING VEGETATION
REMOVE ALL EXISTING TREES AND STUMPS WITHIN THIS AREA
PHASE TWO DEMOLITION (SEE PHASING PLAN)
PHASE ONE DEMOLITION (SEE PHASING PLAN)
EXISTING CHAIN LINK FENCE AND FENCE POST TO BE REMOVED
END OF FENCE REMOVAL
REMOVE EXISTING TREE AND TREE STUMP, TYP OF SIX (6) TREES IN THIS AREA
REMOVE EXISTING TREE AND TREE STUMP
REMOVE ALL EXISTING BLEACHERS
REMOVE EXISTING TREES AND TREE STUMPS
REMOVE EXISTING TREE AND TREE STUMP
EXISTING FENCE TO REMAIN
END OF FENCE REMOVAL
REMOVE EXISTING CHAIN LINK FENCE AND FENCE POSTS
SOCCER AND LACROSSE FIELDS
SEE CLARK PLAN AF-2 FOR ALL FIELD DEMOLITION
MATERIALS STOCKPILE (SEE PHASING PLAN)
PHASE ONE DEMOLITION (SEE PHASING PLAN)
REMOVE EXISTING CHAIN LINK FENCE AND FENCE POSTS
INSTALL ORANGE SAFETY FENCE (SEE EC-1)
REMOVE EXISTING CHAIN LINK FENCE AND FENCE POSTS
BEGIN EXISTING CONCRETE CURB REMOVAL
SAWCUT LINE
CUT AND CAP 18" EXISTING STORM LINE
REMOVE +/- 135' OF EXISTING GUARDRAIL
REMOVE BITUMINOUS PAVEMENT
REMOVE EXISTING CONCRETE CURB
REMOVE EXISTING REFUSE ENCLOSURE AND ALL COMPONENTS, GATE, CMU WALLS
PHASE TWO DEMOLITION (SEE PHASING PLAN)
PHASE ONE DEMOLITION (SEE PHASING PLAN)
REMOVE LIGHT POLE AND POLE BASE
REMOVE EXISTING CHAIN LINK FENCE AND FENCE POSTS
SAWCUT LINE
REMOVE EXISTING BIT CONCRETE WALK
REMOVE EXISTING SIGN AND SIGN POST
REMOVE EXISTING EMERGENCY BLUE LIGHT PHONE AND ALL COMPONENTS
INSTALL CONSTRUCTION ENTRANCE (SEE EC-1)
REMOVE EXISTING SIGN AND SIGN POST
REMOVE EXISTING TREE AND TREE STUMP
REMOVE EXISTING BIT CONCRETE WALK
SAWCUT LINE
REMOVE EXISTING TREE AND TREE STUMP
REMOVE EXISTING TREE AND TREE STUMP
EXISTING TEL BOX TO REMAIN AND BE PROTECTED DURING CONSTRUCTION / DEMOLITION
EXISTING TREE AND TREE STUMP TO REMAIN AND BE PROTECTED (SEE EC-1)
REMOVE EXISTING PAVED AREA
REMOVE EXISTING PAVED AREA
INSTALL CONSTRUCTION ENTRANCE (SEE EC-1)
REMOVE EXISTING CHAIN LINK FENCE AND FENCE POSTS
EXISTING PAVED AREA TO REMAIN
WEINBERG PAVILION
WEINBERG PAVILION
BREWERS LANE
2 Story Wood Frame
2 Story Wood Frame
2 Story Wood Frame
Building
Grass Area
Bituminous Concrete Walk
Concrete Walk
Bituminous Concrete Parking
One Way Sign
Chain Link Fence
Gate
Sign
Flag Pole
Unknown Abandoned Underground Pipe
Area Under Construction
Turnstile
Harrison Street
Hooker Avenue
Fence
Triple
Pine
Oak
Maple
Locust
Hickory
Spruce
Cherry
Ash
Elm
Birch
Poplar
Hemlock
Willow
Walnut
Beech
Cedar
Dogwood
Sycamore
Chestnut
Juniper
Magnolia
Redwood
Cypress
Alyssa A. Bowers Book 2084 Page 368 44 Ziegler Avenue Parcel ID 134689-6161-N-685525
Dennis J. & Katherine B. Leary Book 1474 Page 449 38 Ziegler Avenue Parcel ID 134689-6161-11-681509
Anthony & Linda Raguer Book 10008 Page 9299 36 Ziegler Avenue Parcel ID 134689-6161-11-680505
Linda M. Gerard Book 1827 Page 488 30 Ziegler Avenue Parcel ID 134689-6161-11-679498
Vincent Scorzo Book 1714 Page 378 20 Ziegler Avenue Parcel ID 134689-6161-04-677480
James C. & Jill E. Rogers Book 2021 Page 1430 28 Ziegler Avenue Parcel ID 134689-6161-04-673483
Luigi & Sonia Di Pietro Book 2022 Page 1420 24 Ziegler Avenue Parcel ID 134689-6161-04-673439
Christopher Gilbert Book 22 Page 10 Parcel ID 134689-6161-04-673472
Steven R. Dimick Book 2021 Page 1 20 Ziegler Avenue Parcel ID 134689-6161-04-669288
Richard Nolan Book 2021 Page 10 18 Ziegler Avenue Parcel ID 134689-6161-04-667464
Katherine M. & Robert K. Hill Book 3078 Page 40 42 Ziegler Avenue Parcel ID 134689-6161-11-685515
Christopher M. & Jessica L. Gerard Book 1827 Page 488 Parcel ID 134689-6161-11-679498
Christopher Gilbert Book 22 Page 10 Parcel ID 134689-6161-04-673472
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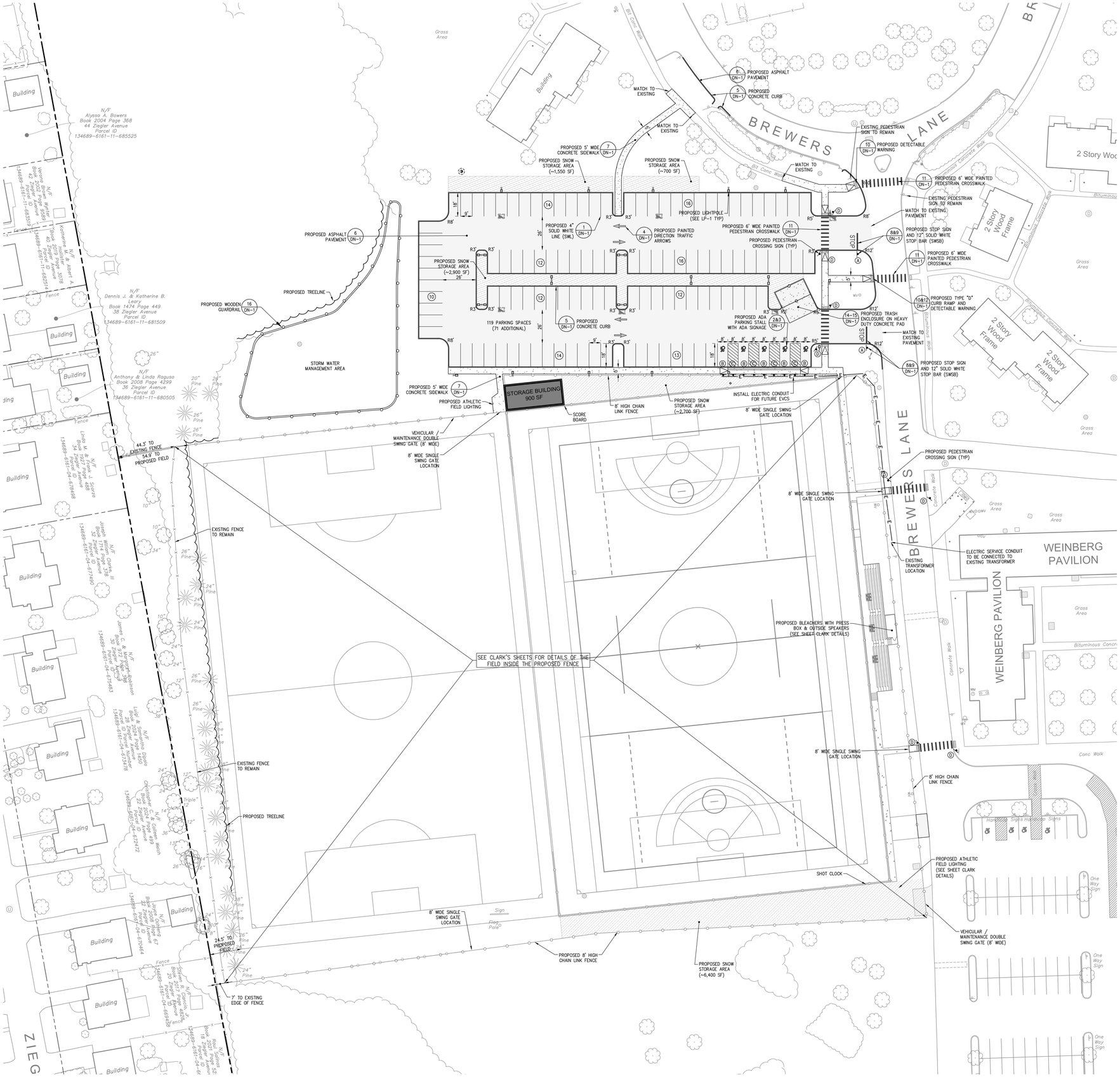
SMH-096 Rim=171.00 Invin=164.4 Invin=164.3(NE)
15" CMP Invin=162.5
12" CMP Invin=162.5
18" CMP Invin=162.5
12" CMP Invin=162.5
Invin=162.2
Invin=162.2
Invin=162.2


ZIEGLER AVENUE
BREWERS LANE
HOOKER AVENUE
VASSAR LAKE
PRENTISS BASEBALL FIELD
PRENTISS SPORTS COMPLEX
WEINBERG FIELD
GORDON FIELD
TAYLOR FIELD
Wood Hall
Main
Lathrop
Rockefeller
Noyes
Jewett
Strong
Josselyn
Cushing
Gifford
Wimpfheimer
Fitch
Ferry
Davison
Blodgett
Raymond
Kenyon
Williams
Gray
Haight
Sanders
Lounsbery
Ely
Cochran
Crandall
Glory Wood Hall
Wood Hall
Wood Hall




## TOWN OF POUGHKEEPSIE SITE PLAN NOTES

1. IT IS THE RESPONSIBILITY OF THE OWNER/APPLICANT TO SUBMIT TO THE PLANNING BOARD PROOF THAT THE CONDITIONS OF APPROVAL HAVE BEEN COMPLETED, AND THE SIGNATURE OF THE PLANNING BOARD CHAIRMAN SHALL BE WITHHELD PENDING RECEIPT OF A WRITTEN MEMORANDA FROM THE PLANNING BOARD'S CONSULTING PLANNER VERIFYING THAT THE CONDITIONS OF APPROVAL HAVE BEEN COMPLETED.
2. PRIOR TO COMMENCEMENT OF ANY SITE WORK THE APPLICANT'S CONTRACTOR AND CONSULTING ENGINEER SHALL MEET WITH THE BUILDING DEPARTMENT, THE TOWN ENGINEER, AND THE PLANNING DEPARTMENT TO DISCUSS THE PHASING OF THE SITE WORK AND THE CONSTRUCTION WORK, THE PLACEMENT OF EROSION CONTROL MEASURES, REQUIREMENTS FOR CERTIFICATION FROM THE APPLICANT'S PROFESSIONALS, IMPLEMENTATION OF REQUIRED MITIGATION, APPROVAL OF FIELD CHANGES, AND PERIODIC FIELD INSPECTIONS BY THE BUILDING DEPARTMENT, THE TOWN ENGINEER, AND THE PLANNING DEPARTMENT.
3. AT THE COMPLETION OF CONSTRUCTION, AND PRIOR TO ISSUANCE OF A TEMPORARY OR A PERMANENT CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE, THE APPLICANT SHALL PROVIDE TO THE PLANNING DEPARTMENT, THE TOWN ENGINEER, AND THE BUILDING INSPECTOR A CERTIFICATION IN THE FORM REQUIRED BY THE TOWN, PREPARED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER, A NYS LICENSED LAND SURVEYOR AND OTHER NEW YORK STATE LICENSED PROFESSIONALS AS THE CASE MAY BE, THAT ALL SITE WORK HAS BEEN CARRIED OUT AND COMPLETED IN COMPLIANCE WITH THE APPROVED PLANS FOR THE PROJECT. ADDITIONALLY, THE APPLICANT SHALL PROVIDE TO THE PLANNING DEPARTMENT, THE TOWN ENGINEER, AND THE BUILDING INSPECTOR AN "AS BUILT" SURVEY OF THE COMPLETED SITE WORK INCLUDING ASSOCIATED STORM WATER MANAGEMENT FACILITIES AND ANY EASEMENTS.
4. IN THE EVENT THE APPLICANT SEEKS A TEMPORARY OR FINAL CERTIFICATE OF OCCUPANCY FOR ANY BUILDING OR USE PRIOR TO THE COMPLETION OF CONSTRUCTION OF ALL ELEMENTS SHOWN ON THE APPROVED PROJECT, THE APPLICANT SHALL PROPOSE AND OBTAIN DEPARTMENT OF PLANNING AND ENGINEERING DEPARTMENT APPROVAL OF A PHASED IMPLEMENTATION PLAN. THE PHASED IMPLEMENTATION PLAN SHALL ADDRESS BUILDINGS, ACCESS, UTILITIES, PARKING, LANDSCAPING, LIGHTING, PEDESTRIAN AMENITIES, PUBLIC SAFETY AND SEPARATION FROM CONTINUING CONSTRUCTION ACTIVITIES AND ANY OTHER ELEMENTS OR ISSUES AS DEEMED APPROPRIATE BY THE TOWN. THE APPLICANT SHALL PROVIDE THE PREVIOUSLY REFERENCED ENGINEER'S CERTIFICATION AND "AS BUILT" SURVEY UPON COMPLETION OF ALL CONSTRUCTION.

## GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH TOWN OF POUGHKEEPSIE REQUIREMENTS AND SPECIFICATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO OTHER PLANS AND DETAIL SHEETS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN DRAWINGS AND THE SPECIFICATIONS SHALL BE CONFIRMED WITH THE LOCAL CONSTRUCTION MANAGER PRIOR TO BIDDING.
4. REFER TO THE DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
5. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE SITE ENGINEER, AND THE APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
6. THE CONTRACTOR SHALL RESTORE ANY OF THE FOLLOWING IF THEY ARE NOTED TO REMAIN: UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE TOWN OF POUGHKEEPSIE.
7. TRAFFIC CONTROL MEASURES MAY BE UTILIZED IN ACCORDANCE WITH TOWN OF POUGHKEEPSIE AND NYSDOT.
8. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH TOWN OF POUGHKEEPSIE SPECIFICATIONS.
9. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS AND PLANT SPECIFICATIONS TO THE SITE ENGINEER AND OWNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW. APPROVED SHOP DRAWINGS WILL BE PROVIDED BY THE ENGINEER AND COPIED TO THE TOWN OF POUGHKEEPSIE.
10. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC MEN AS REQUIRED OR ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE TOWN AND GOVERNING AUTHORITIES IS GRANTED.
11. THE PROJECT DRAWINGS ARE GENERALLY DIAGRAMMATIC IN INDICATING THE PRESENCE OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND FIELD SURVEY AND IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR OF THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND SERVICES. WHEN THE UTILITIES ARE TO BE LEFT IN PLACE, THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATION AND BACKFILLING OPERATIONS.
12. PRIOR TO DEMOLITION OR CONSTRUCTION THE CONTRACTOR SHALL CONTACT UDIGNY" AT 1-800-962-7962 AT LEAST 72 HOURS BEFORE COMMENCEMENT OF WORK TO VERIFY ALL UTILITY LOCATIONS. CONTRACTOR SHALL NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS.
13. IF ANY UNCHARTED OR INCORRECTLY CHARTED EXISTING PIPING OR OTHER UTILITY IS UNCOVERED DURING EXCAVATION, THE CONTRACTOR SHALL CONSULT THE SITE ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK.
14. STORAGE OF FLAMMABLE AND HAZARDOUS MATERIALS SHALL BE IN COMPLIANCE WITH THE NYS FIRE AND BUILDING CODE.
15. CONTRACTOR TO PROVIDE SITE ENGINEER WITH SUBMITTALS. ONCE APPROVED, COPIES WILL BE SUPPLIED TO TOWN ENGINEER AND APPROPRIATE TOWN DEPARTMENTS.
16. PER TOWN OF POUGHKEEPSIE CODE CHAPTER 139-4(I), "NOISE",THE APPLICANT WILL ONLY PERFORM CONSTRUCTION ACTIVITIES BETWEEN THE HOURS OF 7:00AM AND 8:00PM MONDAY THROUGH FRIDAY AND 10:00AM AND 6:00PM ON SATURDAY'S. NO WORK WILL BE PERFORMED ON SITE ON SUNDAY OR LEGAL HOLIDAYS.

## SIGN LEGEND

| NO. | LEGEND | QTY. | NO. | LEGEND | QTY. |
|---|---|---|---|---|---|
| A | STOP R1-1 | 2 | B | RESERVED PARKING | 5 |
| D | W11-2 W16-7PL | 8 | C | NO PARKING ANYTIME | 6 |

NOTE: SIGNAGE TO BE CONSISTENT WITH TOWN/STATE AND MUTCD STANDARDS

## ZONING SUMMARY TABLE

| | | |
|---|---|---|
| TAX MAP IDENTIFICATION | 134689-6161-04-740465-0000 | |
| PARCEL SIZE | 57 ACRES (PROJECT AREA=7.38 ACRES) | |
| ZONING DISTRICT | IN (INSTITUTIONAL) | |
| PROPOSED USE | ATHLETIC FIELDS | |
| ITEM | REQUIRED | PROPOSED |
| MINIMUM LOT AREA | 3 ACRES | PROJECT AREA (7.38 ACRES) |
| MINIMUM LOT FRONTAGE (FT) | 200 FT | > 200' |
| MINIMUM LOT WIDTH (FT) | 200 FT | > 200' |
| MINIMUM LOT DEPTH (FT) | 400 FT | > 400' |
| MINIMUM FRONT YARD (FT) | 50 FT | > 50' |
| MINIMUM SIDE YARD (FT) | 50 FT | 300.6' |
| MINIMUM REAR YARD (FT) | 50 FT | > 50' |
| MAXIMUM LOT COVERAGE (%) | 25% | 0.32%* |
| MAXIMUM IMPERVIOUS SURFACE (%) | 75% | 15.50%* |
| MAXIMUM HEIGHT (FT) | 60 FT/ 6 STORIES | > 60 FEET / 1 STORY |

1. UNLESS APPROVED BY THE PLANNING BOARD, PARKING SHALL BE LOCATED TO THE SIDE OR REAR OF THE PRINCIPAL STRUCTURES.

* LOT COVERAGE AND IMPERVIOUS COVERAGE CALCULATIONS BASED ON PROJECT WORK AREA OF 7.38 ACRES

PARKING SPACES EXISTING=48 (REMOVED PER DEMOLITION PLAN)
PROPOSED 9'X18' SPACES= 119 TOTAL SPACES

## LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- BUILDING SETBACK LINE
- PROPOSED ASPHALT SURFACE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE CURB
- PROPOSED EDGE OF BITUMINOUS CONCRETE
- PROPOSED FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED YARD DRAIN
- PROPOSED LIGHT
- PROPOSED SIGN
- PROPOSED SNOW STORAGE AREA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CASTELLA ENGINEERING, LLC
306 PHEBUS LANE
DELHI, N.Y. 13753-1282


| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | SP22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

SITE PLAN

Drawing No.
SP-1
SHEET 5 OF 28

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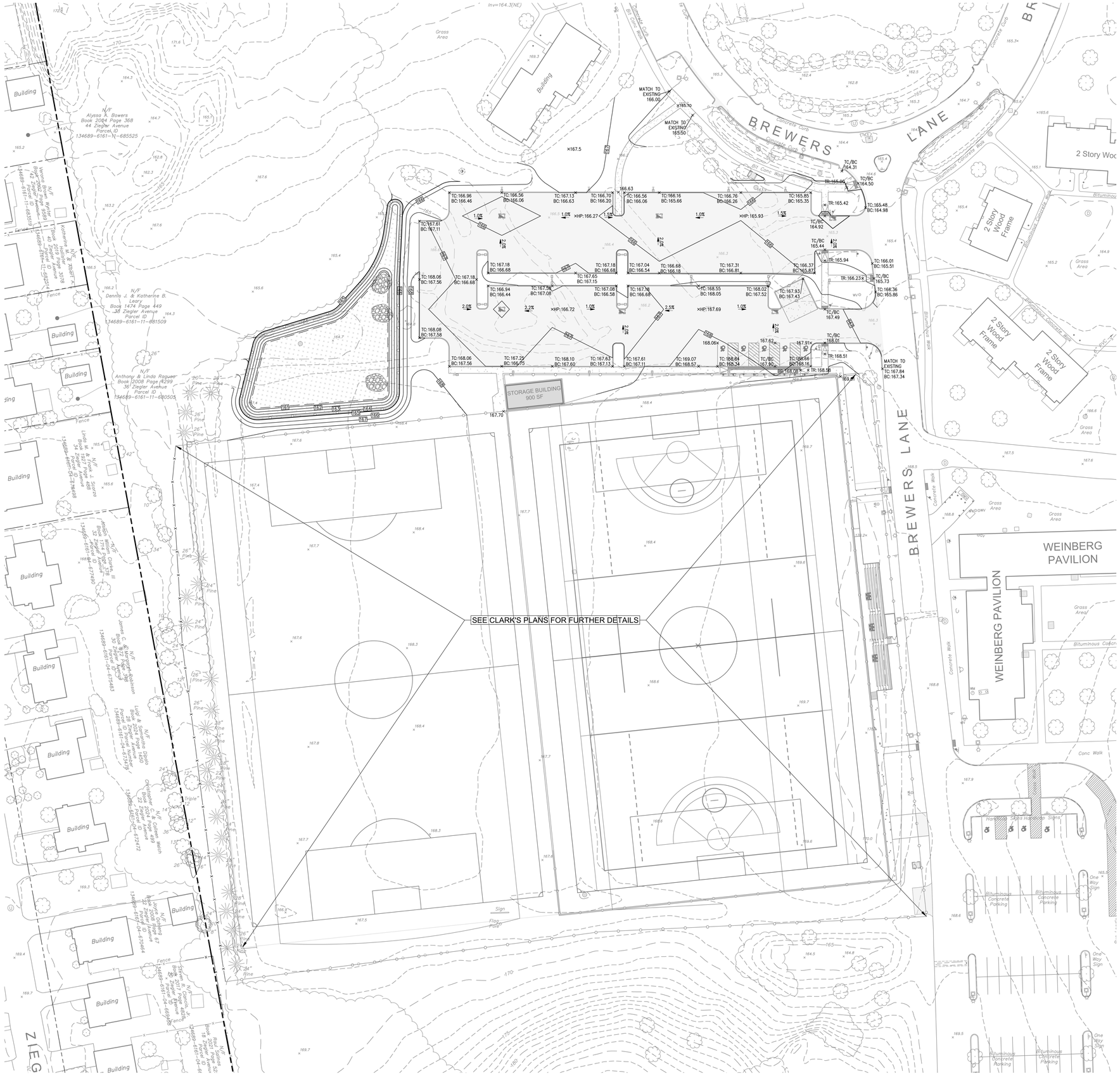


## GRADING AND DRAINAGE NOTES

1. ANY DEMOLISHED OR CLEARED MATERIALS MUST BE REMOVED AND DISPOSED OF OFF SITE. ANY BURNING ON SITE SHALL BE SUBJECT TO LOCAL ORDINANCES. THESE INCLUDE ANY OBJECTS NOTED ON THE PLANS, INCLUDING BUT NOT LIMITED TO, TREES, STUMPS, FENCES, WALLS, ETC.
2. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN THE RIGHT-OF-WAY PRIOR TO EXCAVATION. ALL UTILITIES MUST BE LOCATED AND MARKED OUT PRIOR TO THE START OF ANY SITE GRADING.
3. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND INSPECTED.
4. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION

## COMPACTION AND BACKFILL NOTES

UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE SITE ENGINEER, ALL SITE SUBGRADE AND BACKFILL FOR ALL STRUCTURES INCLUDING, BUT NOT LIMITED TO, PARKING LOT SUBGRADE, ROAD SUBGRADE, CONCRETE PADS AND SIDEWALKS, WATER LINES AND STRUCTURES, SEWER LINES AND STRUCTURES, STORM LINES AND STRUCTURES, TRASH PADS/ENCLOSURES, AND SITE ELECTRICAL AND CONDUIT, SHALL BE COMPACTED IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD FOR CONSTRUCTION AND MATERIALS, DATED JANUARY 1, 2022 AND ALL ADDENDA THERETO.

## LEGEND

| | |
|---|---|
| | PROPERTY LINE |
| 160 | EXISTING MAJOR CONTOUR |
| 162 | EXISTING MINOR CONTOUR |
| ×163.25 | EXISTING SPOT GRADE |
| ×163.25 | PROPOSED SPOT GRADE |
| 160 | PROPOSED MAJOR CONTOUR LINE |
| 162 | PROPOSED MINOR CONTOUR LINE |
| | PROPOSED YARD DRAIN |
| | PROPOSED INLINE DRAIN |
| | EXISTING YARD DRAIN |
| | EXISTING CURB CATCH BASIN |
| | EXISTING CURBLESS CATCH BASIN |
| | PROPOSED CATCH BASIN |
| | EXISTING STORM MANHOLE |
| | PROPOSED STORM MANHOLE |

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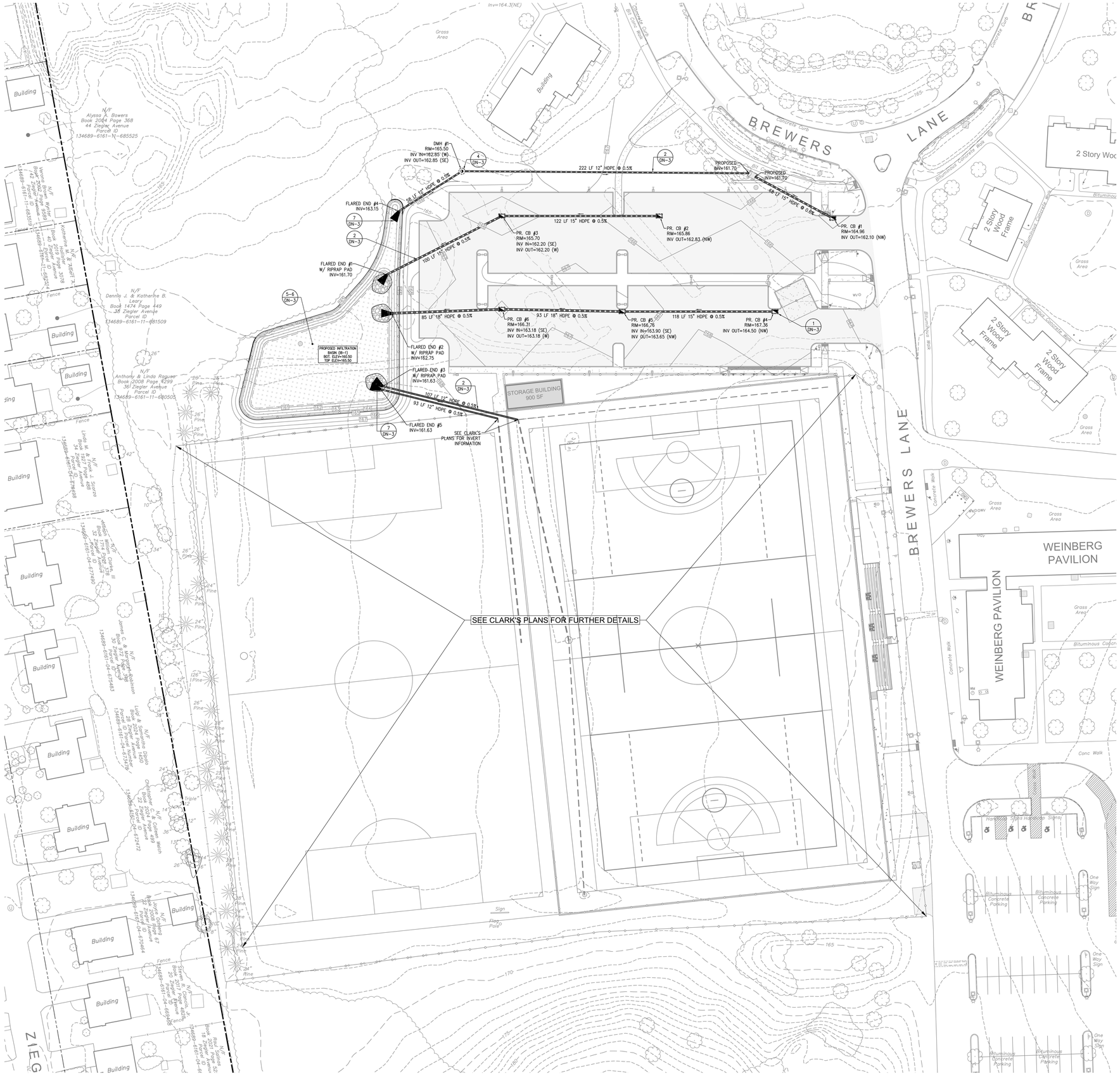
GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

SITE GRADING PLAN

Drawing No.
SG-1

SHEET 6 OF 28

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4. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION

## COMPACTION AND BACKFILL NOTES

UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE SITE ENGINEER, ALL SITE SUBGRADE AND BACKFILL FOR ALL STRUCTURES INCLUDING, BUT NOT LIMITED TO, PARKING LOT SUBGRADE, ROAD SUBGRADE, CONCRETE PADS AND SIDEWALKS, WATER LINES AND STRUCTURES, SEWER LINES AND STRUCTURES, STORM LINES AND STRUCTURES, TRASH PADS/ENCLOSURES, AND SITE ELECTRICAL AND CONDUIT, SHALL BE COMPACTED IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD FOR CONSTRUCTION AND MATERIALS, DATED JANUARY 1, 2022 AND ALL ADDENDA THERETO.

## LEGEND

| | |
|---|---|
| | PROPERTY LINE |
| 160 | EXISTING MAJOR CONTOUR |
| 162 | EXISTING MINOR CONTOUR |
| ×163.25 | EXISTING SPOT GRADE |
| ×163.25 | PROPOSED SPOT GRADE |
| 160 | PROPOSED MAJOR CONTOUR LINE |
| 162 | PROPOSED MINOR CONTOUR LINE |
| | PROPOSED STORM LINE |
| | EXISTING STORM LINE |
| | PROPOSED YARD DRAIN |
| | PROPOSED INLINE DRAIN |
| | EXISTING YARD DRAIN |
| | EXISTING CURB CATCH BASIN |
| | EXISTING CURBLESS CATCH BASIN |
| | PROPOSED CATCH BASIN |
| | EXISTING STORM MANHOLE |
| | PROPOSED STORM MANHOLE |


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| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | SD22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

# VASSAR COLLEGE TURF FIELD

334 HOOKER AVE
TOWN OF POUGHKEEPSIE

# SITE DRAINAGE PLAN

Drawing No.

**SD-1**

SHEET 7 OF 28

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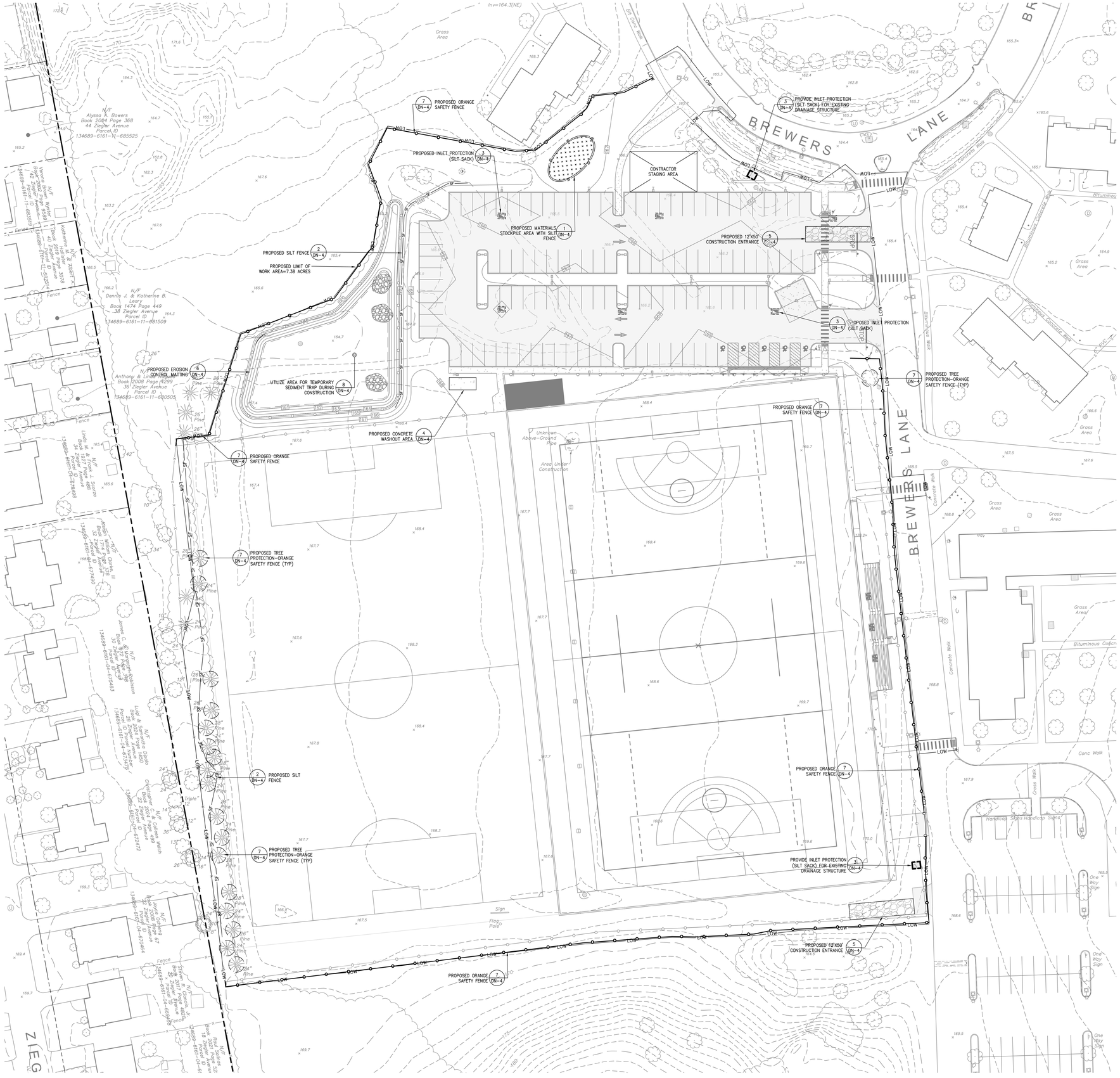


## EROSION AND SEDIMENT CONTROL NOTES:

1. NOTIFY 811 AT LEAST FORTY-EIGHT (48) HOURS, EXCLUDING THE DAY OF THE NOTIFICATION, BEFORE ANY GROUND DISTURBANCE HAS COMMENCED AND HAVE THE UNDERGROUND UTILITIES MARKED OUT. WAIT FOR THE AFFECTED UTILITY OPERATORS TO RESPOND, AND THEN CONFIRM THE UTILITIES HAVE BEEN ACCURATELY LOCATED. RESPECT THE IDENTIFIED LOCATIONS AND DIG ACCORDINGLY, TAKING PRECAUTIONS, ESPECIALLY WITHIN THE KNOWN TOLERANCE ZONE. IN THE EVENT MARK OUTS CANNOT BE MAINTAINED AND/OR GROUND DISTURBANCE CONTINUES LONGER THAN TEN (10) DAYS, NOTIFY 811 AND REQUEST A REMARK.
2. THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND/OR STORMWATER POLLUTION PREVENTION PLAN ("SWPPP"), IF APPLICABLE, SHALL NOT BE CONSTRUED TO PROHIBIT THE STATE OF NEW YORK FROM EXERCISING ANY AUTHORITY PURSUANT TO THE ENVIRONMENTAL CONSERVATION LAW, COMMON LAW, OR FEDERAL LAW. ADDITIONALLY, NEW YORK STATE SHALL NOT BE PROHIBITED FROM TAKING ANY MEASURES, WHETHER CIVIL OR CRIMINAL, TO PREVENT VIOLATIONS OF THE LAWS OF THE STATE OF NEW YORK, OR PROTECT THE PUBLIC HEALTH AND SAFETY AND/OR THE ENVIRONMENT.
3. AUTHORIZED REPRESENTATIVES FROM ANY REGULATORY AGENCIES HAVING JURISDICTION MAY ENTER AND INSPECT, AT REASONABLE TIMES, UPON PRESENTATION OF VALID CREDENTIALS TO ENSURE COMPLIANCE WITH SECTION 402 OF THE CLEAN WATER ACT AND ARTICLE 17 OF THE ENVIRONMENTAL CONSERVATION LAW.
4. EROSION AND SEDIMENT CONTROL PRACTICES AND POLLUTION PREVENTION MEASURES, COLLECTIVELY KNOWN AS BEST MANAGEMENT PRACTICES ("BMPS"), SHALL BE INSTALLED PRIOR TO ANY GROUND DISTURBANCE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN(S), SWPPP, IF APPLICABLE, AND THE LATEST EDITION OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
5. ACTIVE DISTURBANCE SHALL BE LIMITED TO A FIVE (5) ACRE MAXIMUM AT ANY TIME, UNLESS AUTHORIZATION FOR A LARGER DISTURBANCE BY THE TOWN OF POUGHKEEPSIE (MS4 OPERATOR) IS GRANTED.
6. CLEARING, GRUBBING, AND/OR STRIPPING OF TOPSOIL SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. THE AFOREMENTIONED SCOPE OF WORK MAY NOT COMMENCE IN ANY STAGE OF THE CONSTRUCTION SEQUENCE UNTIL THE BMPS SPECIFIED HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, STORMWATER POLLUTION PREVENTION PLAN ("SWPPP"), IF APPLICABLE, AND/OR THE LATEST EDITION OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
7. ALL GROUND DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE PROVIDED ON THE EROSION AND SEDIMENT CONTROL PLAN. DEVIATION FROM THAT CONSTRUCTION SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL STORMWATER MANAGEMENT OFFICER AND/OR THE NYSDEC PRIOR TO IMPLEMENTATION.
8. INSPECTION AND MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE THE INTEGRITY AND EFFECTIVENESS OF INSTALLED BMPS. A TRAINED CONTRACTOR, AT A MINIMUM HAVING CURRENT CREDENTIALS FOR THE NYSDEC 4-HOUR EROSION AND SEDIMENT CONTROL TRAINING, SHALL INSPECT BMPS WITHIN THE ACTIVE WORK AREA DAILY AND AFTER EVERY STORMWATER EVENT, THAT GENERATES RUNOFF. A SIMILARLY QUALIFIED INSPECTOR SHALL INSPECT BMPS AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS. IN THE EVENT DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR SHALL BEGIN IMPLEMENTING THE NECESSARY CORRECTIVE ACTIONS WITHIN ONE (1) BUSINESS DAY AND COMPLETE CORRECTIVE ACTIONS IN A REASONABLE TIMEFRAME.
9. DUST CONTROL SHALL BE IMPLEMENTED DURING PERIODS OF DRY WEATHER TO PREVENT AIRBORNE MIGRATION OF SOIL PARTICLES. APPROPRIATE DUST CONTROL MAY UTILIZE VEGETATIVE COVER, MULCH, OR SPRINKLING WITH WATER.
10. RE-STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE AFTER CONSTRUCTION IS COMPLETED, INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN FOURTEEN (14) DAYS. WAITING UNTIL ALL DISTURBED AREAS ARE READY FOR STABILIZATION IS UNACCEPTABLE.
11. TEMPORARY STABILIZATION VIA SEEDING SHALL OCCUR IN ACCORDANCE WITH THE TEMPORARY SEEDING SCHEDULE, GENERALLY SOWN IN SPRING, MARCH THROUGH MAY, AND/OR FALL, SEPTEMBER THROUGH OCTOBER, APPLICATION INTO NOVEMBER IS PERMISSIBLE SHOULD RYE BE UTILIZED. DURING SUMMER MONTHS, JUNE THROUGH AUGUST, AND WINTER MONTHS, DECEMBER THROUGH FEBRUARY, WHEN SEEDING IS FOUND TO BE IMPRACTICABLE, MULCHING ONLY SHALL BE IMPLEMENTED. PERMANENT STABILIZATION VIA SEEDING MAY BE UNDERTAKEN DURING THE SUMMER MONTHS IF PLANS PROVIDE FOR ADEQUATE WATERING. MULCH THE AREA WITH STRAW AT A RATE OF TWO (2) TONS PER ACRE, APPROXIMATELY NINETY (90) LBS. PER 1000 SQ. FT. OR TWO (2) BALES. MULCH ANCHORING WILL BE REQUIRED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE OF CONCERN.
12. PRIOR TO TEMPORARY STABILIZATION, THE AREA SHALL BE ROUGH GRADED AND CONSTRUCTED SLOPES PHYSICALLY STABLE. LARGE DEBRIS AND ROCKS SHALL BE REMOVED.
13. PERMANENT STABILIZATION VIA SEEDING SHALL BE IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE, GENERALLY SOWN FROM MARCH THROUGH MAY OR SEPTEMBER THROUGH OCTOBER, NOVEMBER IF RYE IS UTILIZED. DURING SUMMER MONTHS, JUNE THROUGH AUGUST, AND WINTER MONTHS, DECEMBER THROUGH FEBRUARY, WHEN SEEDING IS FOUND TO BE IMPRACTICABLE, MULCHING ONLY SHALL BE IMPLEMENTED. PERMANENT STABILIZATION VIA SEEDING MAY BE UNDERTAKEN DURING THE SUMMER MONTHS IF PLANS PROVIDE FOR ADEQUATE WATERING. MULCH THE AREA WITH STRAW AT A RATE OF TWO (2) TONS PER ACRE, APPROXIMATELY NINETY (90) LBS. PER 1000 SQ. FT. OR TWO (2) BALES. MULCH ANCHORING WILL BE REQUIRED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE OF CONCERN.
14. PRIOR TO PERMANENT STABILIZATION, ROUGH GRADE OF CONSTRUCTED SLOPES SHALL BE SCARIFIED AND LOOSENED TO A MINIMUM DEPTH OF FOUR (4) INCHES WITH MECHANICAL RAKES PRIOR TO PLACING TOPSOIL. TOPSOIL SHALL BE SPREAD TO A LOOSELY COMPACTED UNIFORM MINIMUM THICKNESS OF FOUR (4) INCHES. TOPSOIL SURFACE SHALL BE FINELY GRADED AND LOOSENED BY MECHANICAL RAKES, AS NEEDED, TO ENSURE SEED ACCEPTANCE AND SEED TO SOIL CONTACT. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, SATURATED, OR ON FROZEN SLOPES OR OVER ICE, SNOW, OR STANDING WATER PUDDLES.
15. THE INTEGRITY AND EFFECTIVENESS OF TEMPORARY BMPS SHALL BE MAINTAINED AND NOT REMOVED UNTIL ALL GROUND DISTURBANCE TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED, E.G. EIGHTY (80) PERCENT UNIFORM DENSITY OF PERMANENT VEGETATION OR A PERMANENT APPLICATION OF AN ALTERNATIVE GROUNDCOVER IN ACCORDANCE WITH THE APPROVED SITE PLAN.
16. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT MIGRATION, THE LOCAL STORMWATER MANAGEMENT OFFICER, THEIR INSPECTOR, AND/OR THE NYSDEC SHALL BE NOTIFIED AND APPROPRIATE BMPS SHALL BE IDENTIFIED AND INSTALLED.
17. ADDITIONAL BMPS MAY BE REQUIRED BY THE LOCAL STORMWATER MANAGEMENT OFFICER, THEIR INSPECTOR, AND/OR THE NYSDEC DEPENDENT UPON FIELD CONDITIONS. ANY ADDITIONAL BMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

## OPERATION AND MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES

1. SILTATION FENCE
   ALL SILTATION FENCES SHALL BE INSPECTED ONCE EVERY SEVEN DAYS. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN

   SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY EXCEED A HEIGHT OF ONE FOOT.
2. STABILIZED CONSTRUCTION ENTRANCE
   THE ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL AGGREGATE. ALL SEDIMENT SPILLED, DROPPED, OR WASHED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

   WHEN NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERCOURSES.
3. CONCRETE WASHOUT
   ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE SHOULD BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.

   ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF SITE.

   DISPOSE OF THE HARDENED MATERIAL OFF-SITE IN A CONSTRUCTION/DEMOLITION LANDFILL. ON-SITE DISPOSAL MAY BE ALLOWED IF THIS HAS BEEN APPROVED AND ACCEPTED AS PART OF THE PROJECTS SWPPP. IN THAT CASE, THE MATERIAL SHOULD BE RECYCLED AS SPECIFIED, OR BURIED AND COVERED WITH A MINIMUM OF 2 FEET OF CLEAN COMPACTED EARTHFILL THAT IS PERMANENTLY STABILIZED TO PREVENT EROSION.

   THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

   INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.

## LEGEND

- PROPERTY LINE
- SF — PROPOSED SILT FENCE
- LOW — PROPOSED LIMIT OF WORK
- PROPOSED INLET PROTECTION (SILT SACKS)
- PROPOSED CONCRETE WASHOUT AREA
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED TREE PROTECTION
- PROPOSED MATERIALS STOCKPILE AREA WITH SILT FENCE
- PROPOSED ORANGE SAFETY FENCE


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| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

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| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | EC22292801.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

# EROSION & SEDIMENTATION CONTROL PLAN

Drawing No.
EC-1
SHEET 8 OF 28

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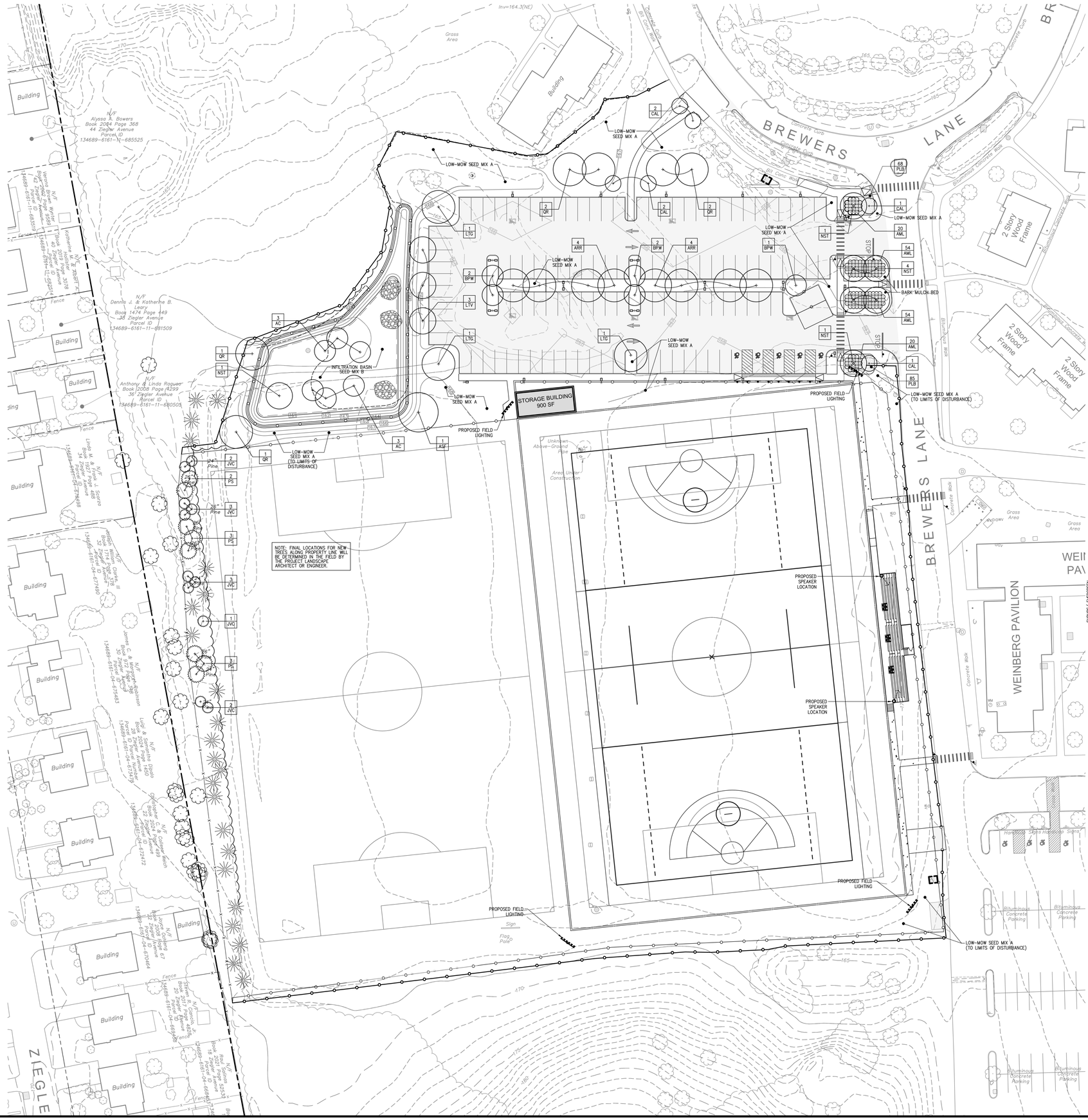


## LANDSCAPE NOTES:

1. THE LANDSCAPE PLAN AND RELATED DETAILS ARE FOR LANDSCAPING INFORMATION ONLY. PLEASE REFER TO THE SITE, GRADING & EROSION CONTROL PLANS FOR ALL OTHER INFORMATION.
2. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANTS, TREES, AND SHRUBS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY OWNER OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. PLANT MATERIAL REPLACEMENTS SHALL BE GUARANTEED FOR ONE FULL YEAR FROM DATE OF REPLACEMENT. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE CULTIVATING, SPRAYING, WEEDING, WATERING, TIGHTENING GUYS, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL THE END OF THE ONE YEAR GUARANTEE PERIOD.
3. THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY.
4. ALL SHRUB MASSINGS SHALL BE MULCHED TO A DEPTH OF 4" WITH SHREDDED HARDWOOD BARK MULCH.
5. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY ENGINEER. STAKING THE LOCATION OF ALL TREES AND SHRUBS SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT. STAKING OF THE INSTALLED TREE MUST BE COMPLETED THE SAME DAY AS IT IS INSTALLED. ALL TREES SHALL BE STAKED OR GUYED PER DETAIL. SEE THIS SHEET FOR PLANTING DETAILS.
6. COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. SEE SITE LAYOUT, GRADING AND UTILITY DRAWINGS FOR STORM, SANITARY AND WATER LINES. SEE LIGHTING PLAN FOR ELECTRICAL AND LIGHTING LAYOUT AND DETAILS. UTILITY LOCATIONS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE.
7. LANDSCAPE PLANTING PITS MUST BE FREE DRAINING. PAVEMENT, COMPACTED SUBGRADE, AND BLASTED ROCK SHALL BE REMOVED FROM WITHIN TRAFFIC ISLANDS TO BE LANDSCAPED TO A DEPTH OF 2' OR TO A GREATER DEPTH IF REQUIRED BY PLANTING DETAILS OR SPECIFICATIONS. REPLACE SOIL WITHIN ISLANDS WITH MODERATELY COMPACTED LOAM OR SANDY LOAM FREE FROM STONES AND RUBBISH 1" OR GREATER IN DIAMETER AND ANY OTHER MATERIAL HARMFUL TO PLANT GROWTH AND DEVELOPMENT. PLANTING INSTALLATION WITHIN ISLANDS SHALL BE AS DETAILED AND CONTAIN PLANTING MIX AS SPECIFIED.
8. TIME OF PLANTING: NEW PLANT MATERIALS SHALL BE INSTALLED BETWEEN APRIL 1 AND JUNE 1, OR AFTER SEPTEMBER 15TH AND NO LATER THAN OCTOBER 31ST.
9. PLANTING SOIL MIXTURE FOR TREES AND SHRUBS:
   - 1 PART PEAT MOSS
   - 3 PARTS TOPSOIL
   - FERTILIZER/LIME (APPLY AS RECOMMENDED BY SOIL ANALYSIS)
   - MYCORRHIZA INOCULANT – "TRANSPLANT 1-STEP" AS MANUFACTURED BY ROOTS, INC. OR APPROVED EQUAL. USE PER MANUFACTURER'S RECOMMENDATIONS FOR TREES AND SHRUBS.
10. TOPSOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 6" IN LAWN AREAS. CONTRACTOR SHALL SUBMIT TOPSOIL TO A CERTIFIED TESTING LABORATORY TO DETERMINE pH, FERTILITY, ORGANIC CONTENT AND MECHANICAL COMPOSITION. THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS FROM REGIONAL EXTENSION OFFICE OF USDA TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. CONTRACTOR SHALL INCORPORATE AMENDMENTS FOR GOOD PLANT GROWTH AND PROPER SOIL ACIDITY RECOMMENDED FROM THE TOPSOIL TEST.
11. LAWN SEEDING MIXTURE (LOW-MOW) – SEED MIX A:
    SEED LAWN AND/OR LOW-MOW DESIGNATED AREAS WITH A SEED BLEND AS NOTED BELOW (OR AN EQUIVALENT APPROVED BY LANDSCAPE ARCHITECT):

    15% KENTUCKY BLUEGRASS (POA PRATENSIS – SINGLE VARIETY)
    15% PERENNIAL RYEGRASS (LOLIUM PERENNE)
    30% CREEPING RED FESCUE (FESTUCA RUBRA)
    25% CHEWINGS FESCUE (FESCTUCA RUBRA "JAMESTOWN II")
    15% HARD FESCUE (FESTUCA OVNA "RELIANT II")

    SEEDING RATE: Min. 5 LBS PER 1,000 S.F. (ADD 10% TO QUANTITY IF HYDROSEEDED).

    SEEDING DATES: AUGUST 15 – OCTOBER 1 AND APRIL 15 – JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
12. INFILTRATION BASIN – SEED MIX B:
    SEED INFILTRATION BASIN BOTTOM AND SIDE SLOPE AREAS WITH THE FOLLOWING (OR EQUIVALENT APPROVED BY LANDSCAPE ARCHITECT):

    PENNINGTON "TRI FESCUE" (A BLEND OF 3 TALL FESCUE VARIETIES).

    SEEDING RATE: 8–10 LBS PER 1,000 S.F. (ADD 10% TO QUANTITY IF HYDROSEEDED).

    SEEDING DATES: AUGUST 15 – OCTOBER 1 AND APRIL 15 – JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
13. ALL SLOPES GREATER THAN 3:1 RECEIVING A GRASS SEEDING MIXTURE SHALL BE COVERED WITH AN EROSION CONTROL BLANKET.
14. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE SEEDED WITH THE LAWN SEEDING MIXTURE.
15. TREE PROTECTION: PRIOR TO THE START OF CONSTRUCTION OR EXCAVATION, TREES TO BE RETAINED SHALL BE PROTECTED BY SILT FENCE, SNOW FENCE, CONSTRUCTION FENCE, OR EQUAL, WHICH WILL BE PLACED AT THE DRIP LINE OR SEVERAL FEET BEYOND. HOWEVER, THE FENCING SHALL NOT CROSS PUBLIC SIDEWALKS. NO STORAGE OR STOCKPILING OF CONSTRUCTION MATERIALS, DEBRIS OR EQUIPMENT SHALL OCCUR WITHIN THE FENCED AREA."

## PLANT LIST:

| | CODE | QTY. | BOTANICAL NAME | COMMON NAME | ROOT | INSTALLED SIZE | MATURE SIZE (WxH) | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| DECIDUOUS TREES | ARR | 8 | ACER RUBRUM 'RED SUNSET' | RED SUNSET RED MAPLE | B&B | 2.5–3" cal. | 40' ht. | Upright oval crown |
| | AC | 6 | AMELANCHIER CANDENSIS | SHADBLOW | B&B | 7–8' ht. | 25' ht. | Clump Form |
| | ASF | 1 | ACER SACCHARUM 'FLAX HILL' | FLAX HILL MAJESTY SUGAR MAPLE | B&B | 2.5–3" cal. | 50' | Ovate crown |
| | BPW | 5 | BETULA POPULIFOLIA 'WHITESPIRE' | WHITESPIRE GRAY BIRCH | B&B | 8–10' ht. | 16x20–40' | Clump Form |
| | CAL | 6 | CORNUS ALTERNIFOLIA | ALTERNATE–LEAF (PAGODA) DOGWOOD | B&B | 6–8' ht. | 20–25' ht. | White |
| | LTG | 3 | LIRIODENDRON TULIPIFERA 'GLEN GOLD' | GLEN GOLD TULIP TREE | B&B | 2.5–3" cal. | 25x40–60' | |
| | LTV | 3 | LIRODENDRON TULIP. 'LITTLE VOLUNTEER' | LITTLE VOLUNTEER TULIP TREE | B&B | 2.5–3" cal. | 20x35' ht. | |
| | NST | 7 | NYSSA SYLVATICA 'TUPELO TOWER' | TUPELO TOWER BLACK GUM | B&B | 2–2.5" cal. | 20'x40' ht. | |
| | QR | 6 | QUERCUS RUBRA | NORTHERN RED OAK | B&B | 2.5–3" cal. | 75' ht. | |
| EVERGREEN TREES | JVC | 11 | JUNIPERUS VIRGINIANA 'CANAERT' | CANAERT EASTERN RED CEDAR | B&B | 6' min. ht. | 20–35' ht. | 8–15' WIDE; PYRAMIDAL |
| | PS | 8 | PINUS STROBUS | EASTERN WHITE PINE | B&B | 8–10' ht. | 50–80' ht. | |
| SHRUBS / EVERGREEN GRASSES | AML | 148 | ARONIA MELANOCARPA 'SMNAMPEM' | LOW SCAPE SNOWFIRE ARONIA | CONT. | #5 | 3–3'hx3–4 | 30" o.c.; Red–Or Fall |
| | PLB | 153 | PENNISETUM ALOPECUROIDES 'L.B.' | LITTLE BUNNY DWARF FOUNTAIN GRASS | CONT. | #3 PINT | 12–18" | Plant 24" O.C. |

NOTE: SEE SHEET DN-2 FOR PLANTING INSTALLATION DETAILS.


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**Land Resource Consultants Engineering & Surveying, LLC Loureiro NY, P.C.**
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(845) 243-2880
160 West Street, Suite E
Cromwell, CT 06416
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STATE OF NEW YORK — ROBERT E. MORRISON — LICENSED PROFESSIONAL ENGINEER — 074156

CLARK COMPANIES
208 PHOEBE LANE, P.O. BOX 427, PHONE: (607)746-2122 — 13753, DELHI, N.Y. 13753-1282
CATELLA ENGINEERING, LLC
PROFESSIONAL ENGINEERS
DELHI, N.Y.


| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | LL22292801.dwg |
| Project No. | 22–2928 |
| Date | 12/19/2025 |
| Scale | 1"=30' |

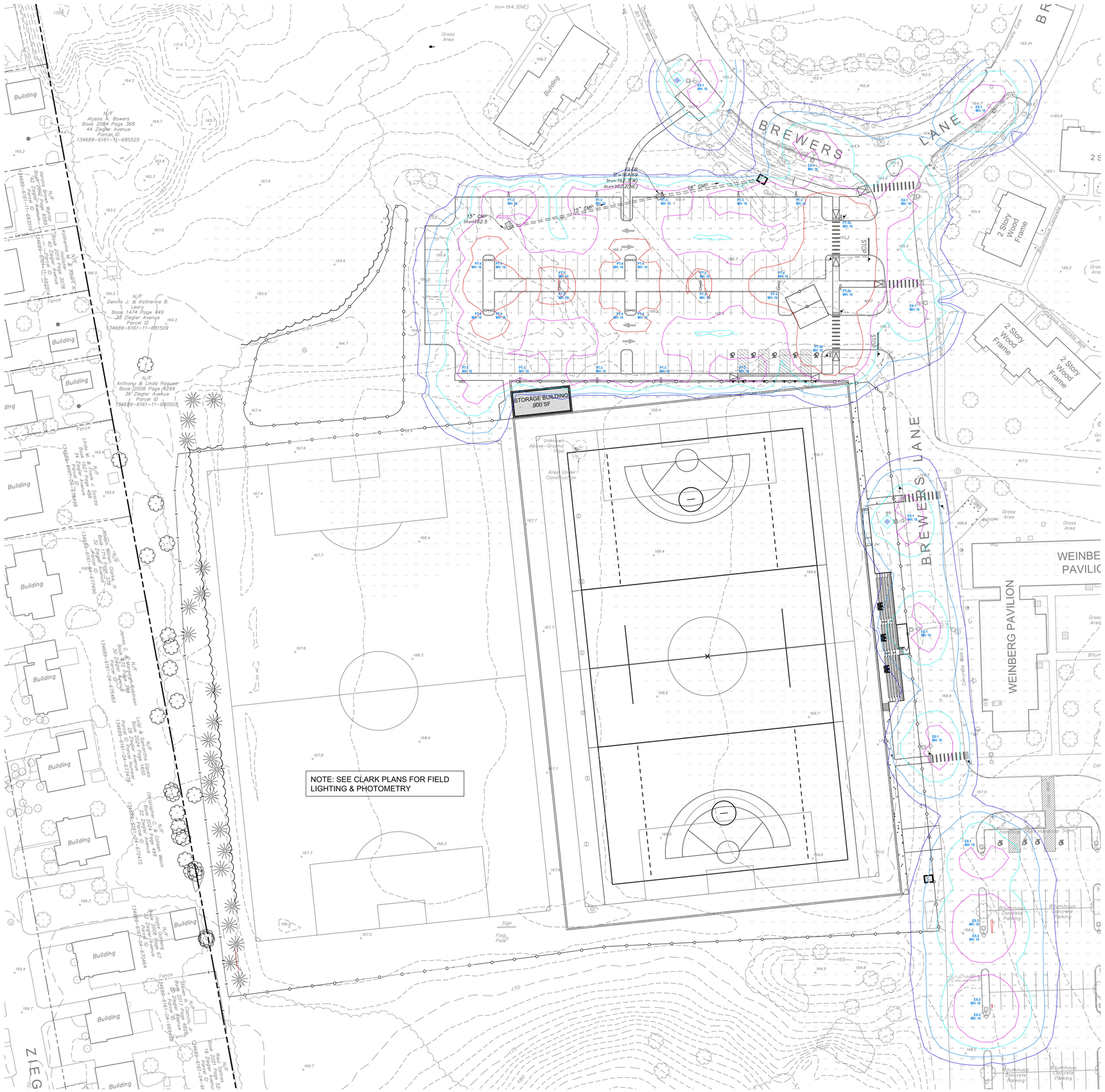
GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

LANDSCAPE PLAN

Drawing No.
LL-1
SHEET 9 OF 28

X:\JOBS\Jobs 2022\22-2928-VC-Turf Field\SWG\LL22292801.dwg 1/23/2026 12:26 PM Chuff


BREWERS LANE
STORAGE BUILDING 900 SF
NOTE: SEE CLARK PLANS FOR FIELD LIGHTING & PHOTOMETRY
WEINBERG PAVILION
2 Story Wood Frame
Bituminous Concrete Parking
Unknown Above-Ground Area
Area Under Construction
Grass Area
Building
Fence
Concrete Walk
Bituminous Concrete Path
Flag Pole
Sign
STOP
N/F Alyssa A. Bowers Book 2084 Page 368 44 Ziegler Avenue Parcel ID 134689-6161-N-685525
N/F Dennis J. & Katherine B. Leary Book 1474 Page 449 38 Ziegler Avenue Parcel ID 134689-6161-11-681509
N/F Anthony & Linda Raguer Book 2008 Page 4299 36 Ziegler Avenue Parcel ID 134689-6161-11-680505
N/F Jason Welch Book 2008 Page 4299 32 Ziegler Avenue Parcel ID 134689-6161-04-672972
N/F Christopher C. & Jennifer Book 2008 Page 4299 12 Ziegler Avenue Parcel ID 134689-6161-04-679464
N/F Jason C. & Mary Pope Book 2008 Page 4299 8 Ziegler Avenue Parcel ID 134689-6161-04-675483
N/F Jason C. & Mary Pope Book 2008 Page 4299 4 Ziegler Avenue Parcel ID 134689-6161-04-669488
N/F Vassar College Book 2024 Page 4450 Parcel ID 134689-6161-04-675479
N/F Vassar Brown Book 2008 Page 4299 42 Ziegler Avenue Parcel ID 134689-6161-11-683519
N/F Katherine Holister Book 2008 Page 4299 40 Ziegler Avenue Parcel ID 134689-6161-11-682514
N/F Joseph William Clarke III Book 2008 Page 4299 28 Ziegler Avenue Parcel ID 134689-6161-11-677490
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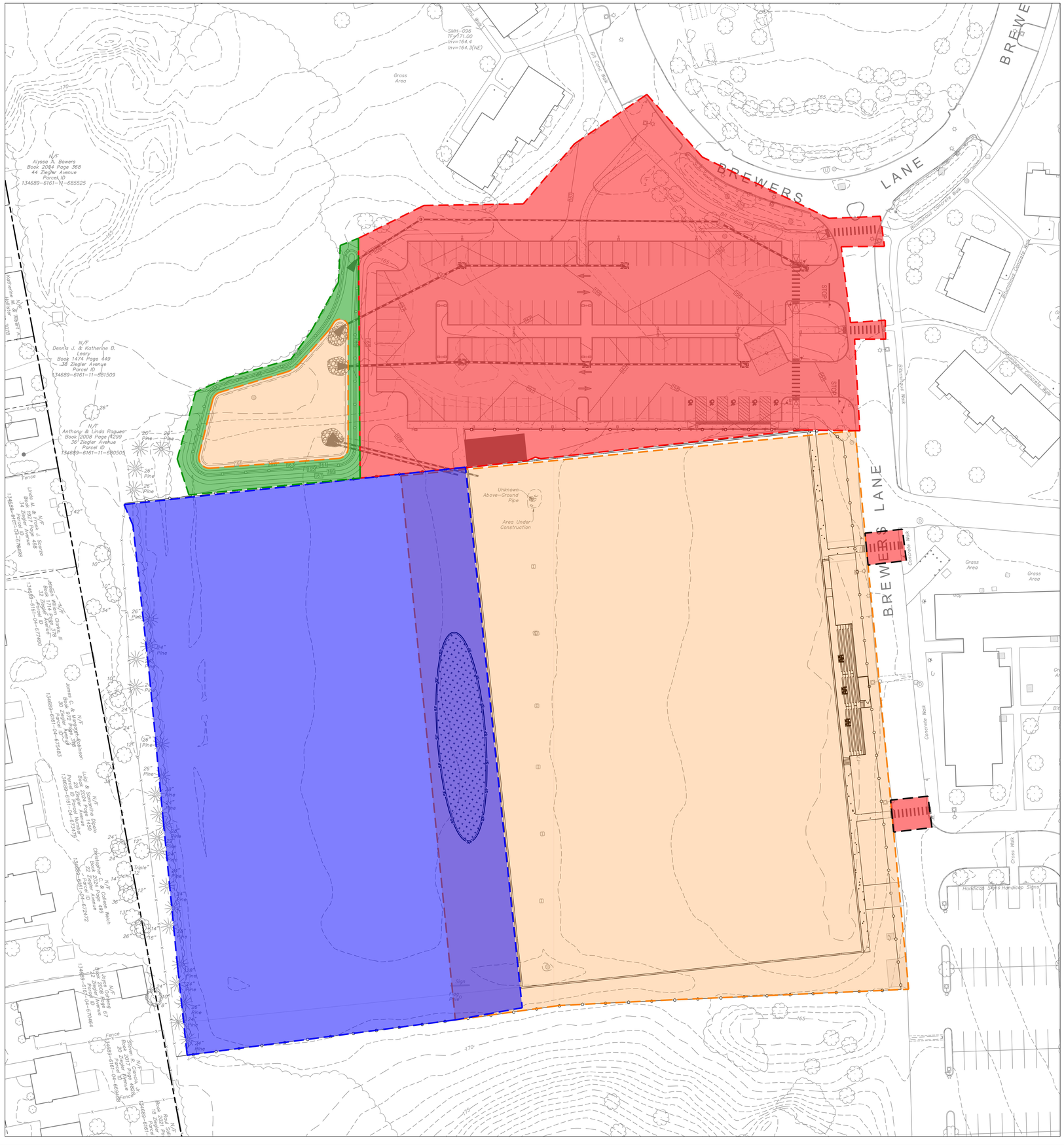
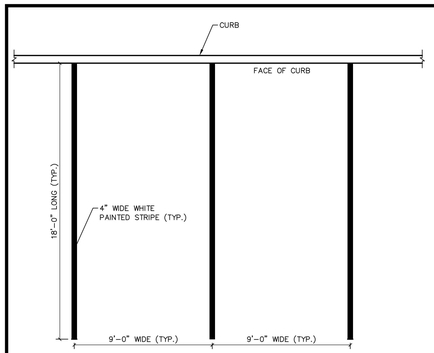
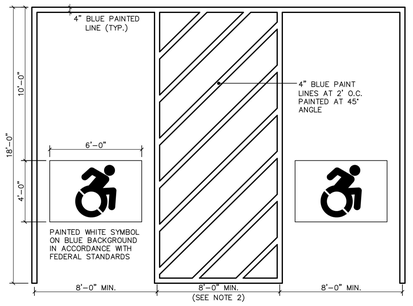
N/F Vassar College Book 2024 Page 4450 Parcel ID 134689-6161-11-677490
ZIEGLER AVENUE
Inv=164.3(NE)
Inv=164.6
Inv=162.3(W)
Inv=162.2(NE)
15" CMP Inv=162.5
18" CMP
Top of Bank
Bottom of Bank
Edge of Pavement
Bituminous Concrete Path
Concrete Curb
Concrete Walk
Bituminous Concrete Path
Bituminous Concrete Parking
Bituminous Concrete Parking
Bituminous Concrete Parking


BREWERS LANE
BREWERS LANE
Grass Area
Bit Conc Walk
Concrete Walk
Bituminous Concrete Walk
Unknown Above-Ground Pipe
Area Under Construction
Grass Area
Grass Area
Concrete Walk
Cross Walk
Handicap Signs
Handicap Signs
Sign
Fence
Fence
Fence

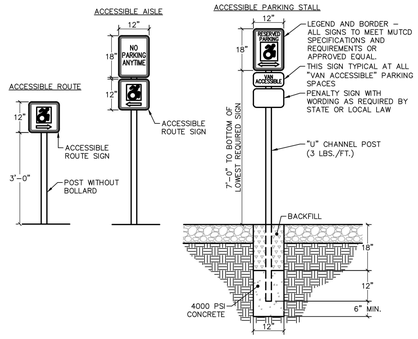



1 PARKING SPACE STRIPE DETAIL
SCALE: 1/4" = 1'-0"

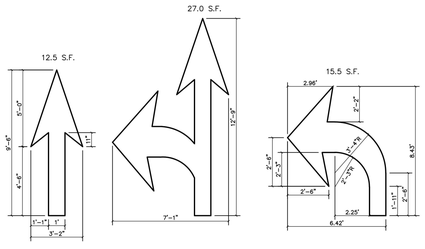



NOTES:
1. SEE SITE PLAN FOR ACCESSIBLE SPACE LOCATION AND DIMENSIONS.
2. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.

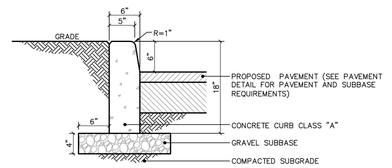
2 TYPICAL ACCESSIBLE PARKING SPACE DETAIL
SCALE: 1/4"=1'-0"




3 ACCESSIBLE PARKING & ACCESS SIGNS
SCALE: 1/2" = 1'-0"

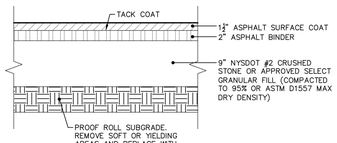



4 PAVEMENT ARROW DETAIL
SCALE: 1/4"=1'-0"

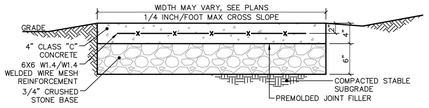



NOTES:
1. COMPACT NATIVE MATERIAL PRIOR TO INSTALLATION OF STONE SUBBASE. SEE NOTE SHEET SG-1 FOR COMPACTION REQUIREMENTS.

5 ON-SITE CONCRETE CURB DETAIL
SCALE: 1" = 1'-0"

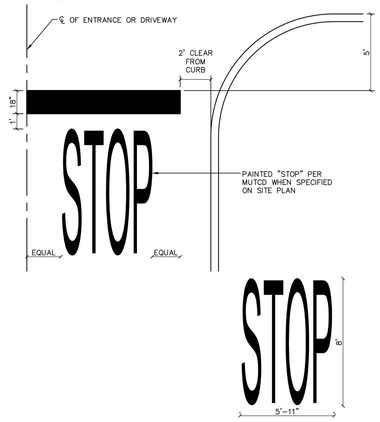



6 STANDARD ASPHALT PAVING DETAIL
SCALE: 1" = 1'-0"

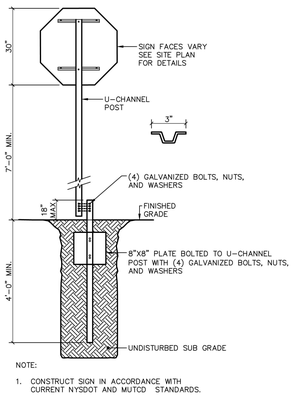



NOTES:
1. COMPACT NATIVE MATERIAL PRIOR TO INSTALLATION OF STONE SUBBASE.

7 SIDEWALK DETAIL
SCALE: 1" = 1'-0"

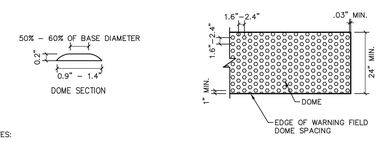



8 STOP BAR DETAIL
SCALE: 1/4"=1'-0"




NOTE:
1. CONSTRUCT SIGN IN ACCORDANCE WITH CURRENT NYSDOT AND MUTCD STANDARDS.

9 STOP SIGN DETAIL
SCALE: 1/2" = 1'-0"



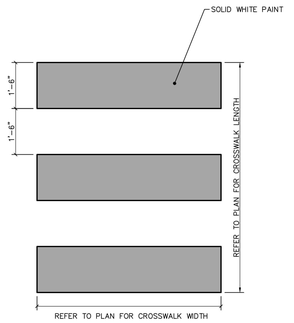

NOTES:
1. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE, THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING UNIT (THE DOMES AND THE ENTIRE 24" LEVEL SURFACE) IS FOR ILLUSTRATION ONLY.
2. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 24" IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
3. THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP LANDING OR CURB RAMP AND THE STREET.
4. WHERE DOMES ARE ARRAYED RADIALLY THEY MAY DIFFER IN DOME DIAMETER AND CENTER-TO- CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET.
5. THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
6. DETECTABLE WARNING SHALL BE LOCATED SO THAT THE EDGE OR CORNER OF THE WARNING FIELD NEAREST TO THE ROADWAY IS 5" TO 9" FROM THE FRONT OF THE CURB OR THE ROADWAY EDGE (12" WHERE TRAVERSABLE CURB IS USED). INSTALL THE DETECTABLE WARNING FIELD BEHIND THE FLUSH CURB.
7. THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 6'-0" MINIMUM AND 15'-0" MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL.

DETECTABLE WARNING TILE SPECS

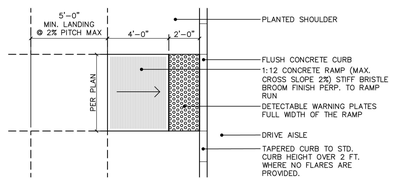
"DURALAST" CAST IRON WARNING TILES AS FABRICATED BY EAST JORDAN IRON WORKS, 800-626-4653; NATURAL FINISH (NO POWDER COATING)

NOTE: UNIT SIZE FOR RECTANGULAR APPLICATIONS IS 24"x24" AND FOR RADIAL APPLICATIONS IS 18"x24"

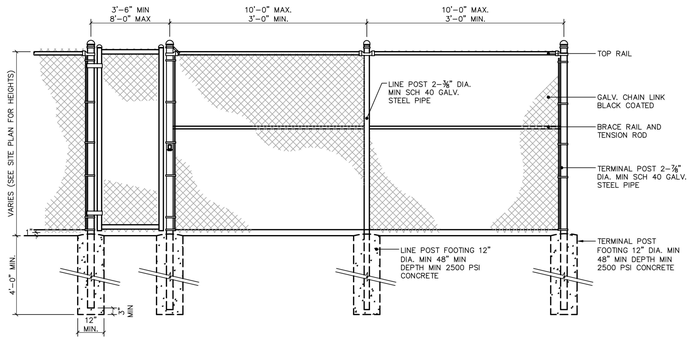
10 DETECTABLE WARNING DETAIL
SCALE: 1/2" = 1'-0"



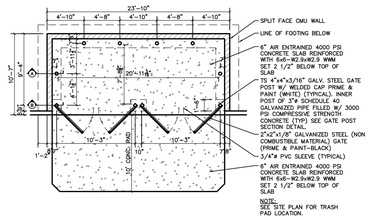

11 CROSSWALK STRIPING DETAIL
SCALE: 1/2" = 1'-0"



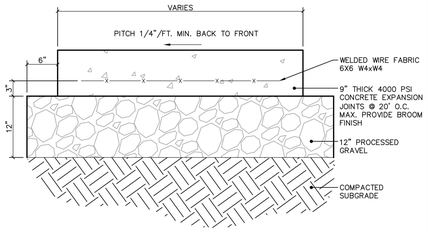

12 CONCRETE CURB RAMP TYPES D
SCALE: 1/4"=1'-0"



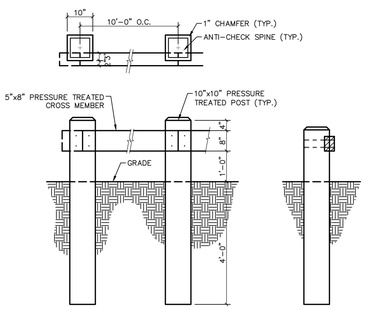

13 CHAIN LINK FENCE DETAIL
SCALE: 1/2" = 1'-0"




14 TRASH ENCLOSURE DETAIL
SCALE: 1/8" = 1'-0"




15 CONCRETE DUMPSTER PAD DETAIL
SCALE: 1" = 1'-0"




16 WOODEN GUIDERAIL DETAIL
SCALE: 1/2" = 1'-0"


Vassar College
124 Raymond Avenue
Poughkeepsie, NY
12604

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CAPELLA ENGINEERING, LLC
1 WALKER WAY
DELMAR, N.Y. 12054-1282


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VASSAR COLLEGE
TURF FIELD
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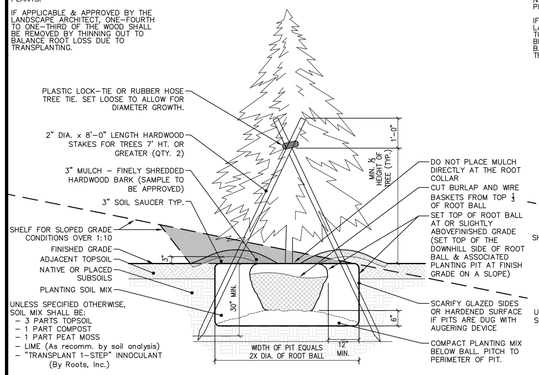
Drawing No.
DN-1
SHEET 12 OF 28

X:\JOBS\Jobs 2022\22-2928-VC-Turf Field\DWG\DN22292801.dwg 1/22/2026 2:25 PM SCurran

NOTE:

PRUNE TREES IN ACCORDANCE WITH APPROVED HORTICULTURAL STANDARDS (ANLA) IN ORDER TO PRESERVE THE NATURAL FORM OF THE SPECIFIC PLANTS.

IF APPLICABLE & APPROVED BY THE LANDSCAPE ARCHITECT, ONE-FOURTH TO ONE-THIRD OF THE WOOD SHALL BE REMOVED BY THINNING OUT TO BALANCE ROOT LOSS DUE TO TRANSPLANTING.

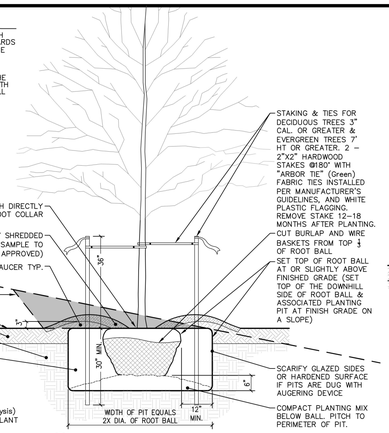



2 CONIFER TREE PLANTING DETAIL
SCALE: 1/2" = 1'-0"

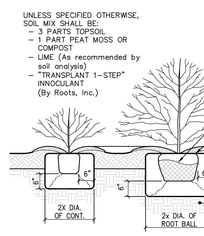
NOTE:

PRUNE TREES IN ACCORDANCE WITH APPROVED HORTICULTURAL STANDARDS (ANLA) IN ORDER TO PRESERVE THE NATURAL FORM OF THE SPECIFIC PLANTS.

IF APPLICABLE & APPROVED BY THE LANDSCAPE ARCHITECT, ONE-FOURTH TO ONE-THIRD OF THE WOOD SHALL BE REMOVED BY THINNING OUT TO BALANCE ROOT LOSS DUE TO TRANSPLANTING.




1 TREE PLANTING DETAIL
SCALE: 1/2" = 1'-0"




3 SHRUB PLANTING DETAIL
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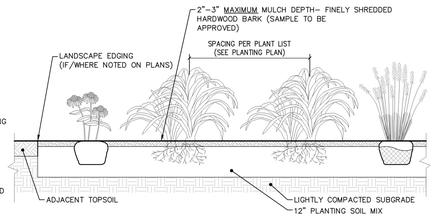
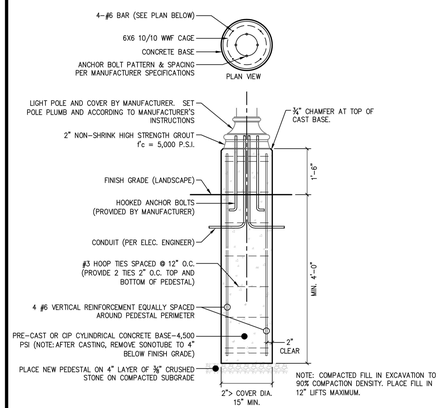



SECTION THROUGH PERENNIAL BED

PERENNIAL NOTES:
1. BULB/CORM PERENNIALS TO BE PLANTED IN FALL. POTTED PERENNIALS MAY BE PLANTED APRIL 15 TO OCTOBER 1.
2. ROTOTILL FERTILIZER AND LIME INTO SOIL PRIOR TO PLANTING AND IN ACCORDANCE TO SOIL ANALYSIS RECOMMENDATIONS.
3. DO NOT OVER COMPACT PLANTING BED. WATER THOROUGHLY AFTER PLANTING BULBS.
4. ADJUST PLANTING DEPTH AS RECOMMENDED BY BULB SUPPLIER.
5. PROVIDE DRAINAGE AS REQUIRED (PERF' PIPE 4" ADS) WHEN SUBGRADE IS CLASSIFIED AS A HEAVY SOIL OR EXCESSIVELY COMPACTED.

UNLESS SPECIFIED OTHERWISE, PERENNIAL BED SOIL MIX SHALL BE:
- 3 PARTS TOPSOIL
- 1 PART MANURE (WEED FREE)
- 1 PART PEAT MOSS OR COMPOST
- LIME (As recommended by soil analysis)
- "MILORGANITE" AT 5 LBS. PER 100 SF.

4 ANNUAL/PERENNIAL AND GROUND COVER BEDS DETAIL
SCALE: 1/2" = 1'-0"




4 CONC. LIGHT POLE BASE-ROUND
SCALE: 1/2" = 1'-0"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DELHI NY 13753
FAX:(607)746-3107
P.O. BOX 427,
306 PHEOBE LANE,
PHONE:(607)746-2727


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VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

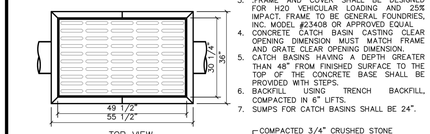
DETAILS

Drawing No.
DN-2
SHEET 13 OF 28

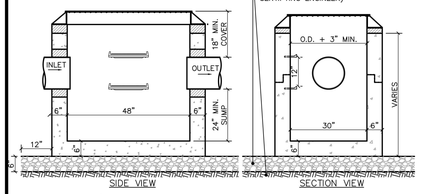
X:\JOBS\Jobs 2022\22-2928-VC- Turf Field\DWG\DN22292802.dwg 1/22/2026 2:25 PM SCurran

NOTES:

1. PRECAST CONCRETE CATCH BASIN SECTIONS AS MANUFACTURED BY FORT MILLER OR APPROVED EQUAL.
2. CATCH BASIN SHALL BE PRECAST CONCRETE. DESIGNED FOR H20 VEHICULAR LOADING AND 25% IMPACT.
3. FRAME AND COVER SHALL BE DESIGNED FOR H20 VEHICULAR LOADING AND 25% IMPACT. FRAME TO BE GENERAL FOUNDRIES, INC. MODEL #2340B OR APPROVED EQUAL.
4. CONCRETE CATCH BASIN CASTING CLEAR OPENING DIMENSION MUST MATCH FRAME AND GRATE CLEAR OPENING DIMENSION.
5. CATCH BASINS HAVING A DEPTH GREATER THAN 48" FROM FINISHED SURFACE TO THE TOP OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
6. BACKFILL USING TRENCH BACKFILL, COMPACTED IN 6" LIFTS.
7. SUMPS FOR CATCH BASINS SHALL BE 24".




TOP VIEW

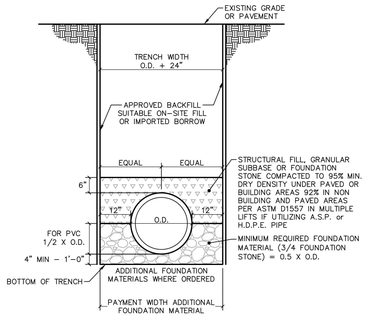



SIDE VIEW

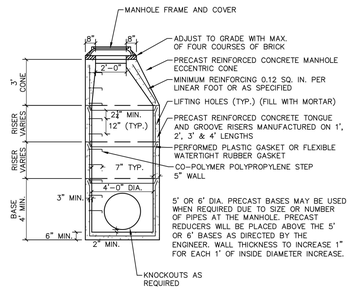



SECTION VIEW

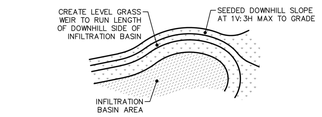
1 CURB LESS TYPE CATCH BASIN DETAIL
SCALE: 1/2" = 1'-0"



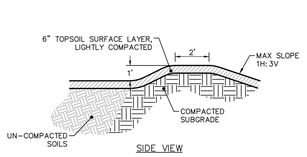

2 TYPICAL STORM SEWER TRENCH SECTION
SCALE: 1/2" = 1'-0"




4 STORM DRAINAGE MANHOLE DETAIL
SCALE: 1/4" = 1'-0"

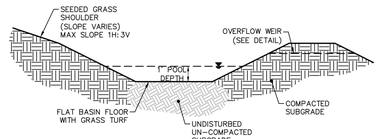



ISOMETRIC SECTION VIEW




SIDE VIEW

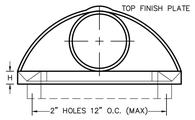
5 INFILTRATION BASIN / SEDIMENT OVERFLOW DETAIL
SCALE: 1/4"=1'-0"




6 INFILTRATION BASIN DETAIL
SCALE: 1/4"=1'-0"




LONGITUDINAL SECTION




ELEVATION

7 FLARED END SECTION DETAIL
SCALE: N.T.S.


Vassar College
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12604

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PHONE: (607)746-2727
200 PEPSI DELI LANE


| NO. | DATE | DESCRIPTION |
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| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | DN22292803.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | AS NOTED |

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

STORMWATER DETAILS

Drawing No.
DN-3
SHEET 14 OF 28

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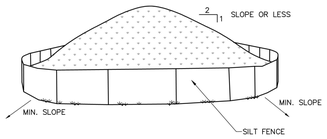
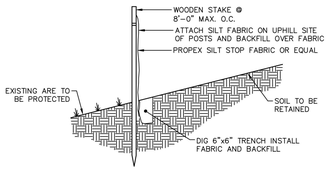


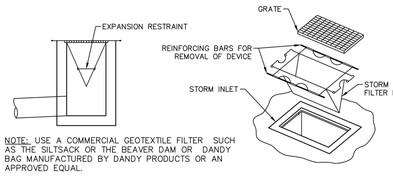

NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.
5. HAYBALES OR SILT SOCKS TO BE USED WHERE STOCKPILES ARE LOCATED ON PAVED AREAS.

## 1 MATERIALS STOCKPILE DETAIL
SCALE: N.T.S.



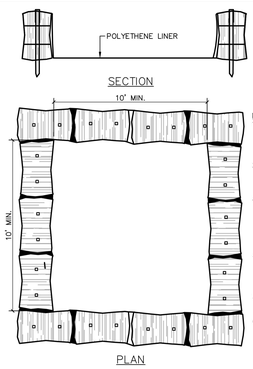

NOTE: FOR SLOPES > 5:1; PERPENDICULAR WINGS PLACED EVERY 100'
FOR SLOPES > 3:1 TO 5:1; PERPENDICULAR WINGS PLACED EVERY 75'
FOR SLOPES > 2:1 TO 3:1; PERPENDICULAR WINGS PLACED EVERY 50'

## 2 SILT FENCE DETAIL
SCALE: N.T.S.



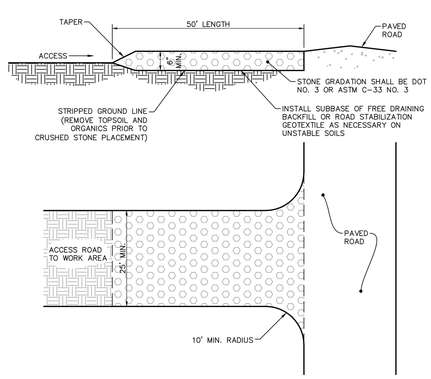

NOTE: USE A COMMERCIAL GEOTEXTILE FILTER SUCH AS THE SILTSACK OR THE BEAVER DAM OR DANDY BAG MANUFACTURED BY DANDY PRODUCTS OR AN APPROVED EQUAL.

## 3 SILT SACK DETAIL
SCALE: N.T.S.

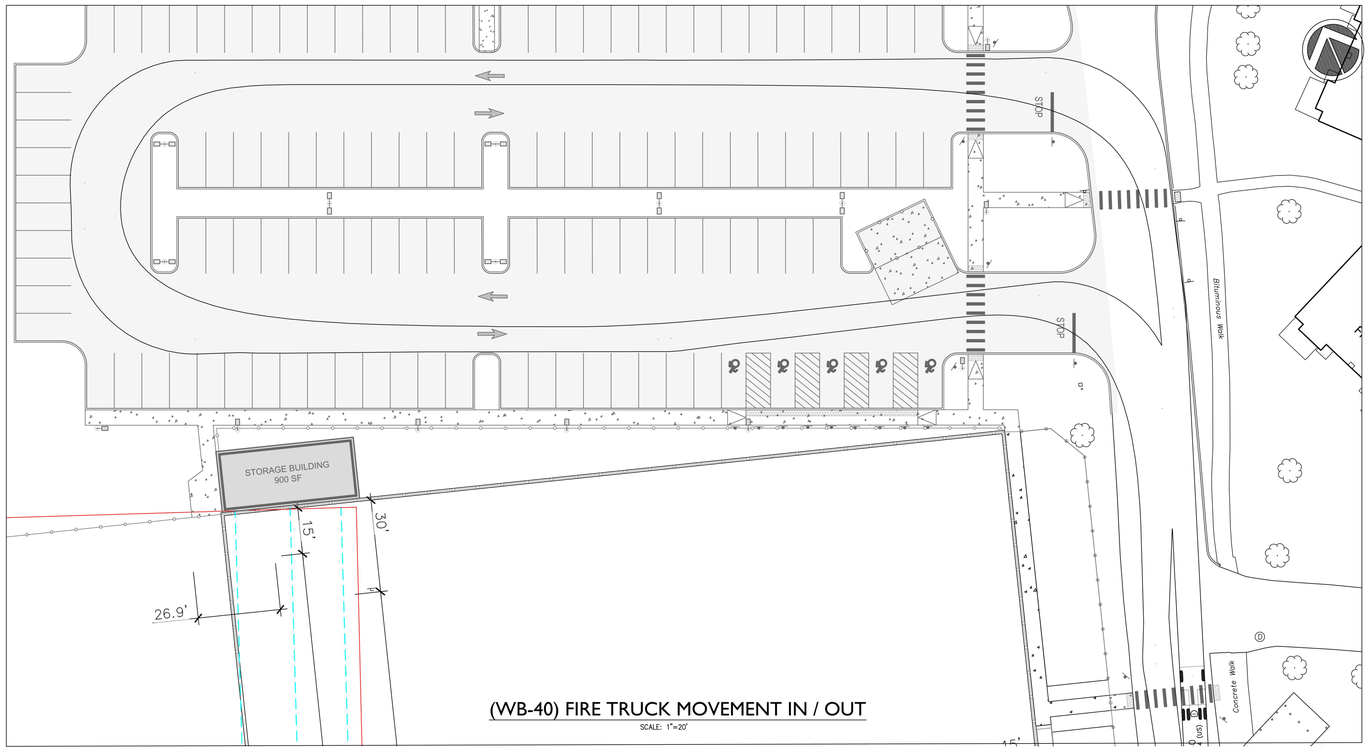



NOTES:
1. CONCRETE WASHOUT SIGN TO BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
2. REMOVE HARDENED CONCRETE WHEN WITHIN 4" FROM TOP OF STRUCTURE.
3. CONSTRUCT NEW FACILITIES ONCE CURRENT FACILITIES ARE TWO-THIRDS FULL. IF CONCRETE HAS NOT HARDENED CONSTRUCT NEW FACILITIES ONCE CURRENT FACILITY IS TWO-THIRDS FULL.
4. LINERS, HAYBALES, ET.C SHALL BE INSPECTED FOR DAMAGE. ANY DAMAGE SHALL BE REPAIRED PROMPTLY.
5. SEPARATE FACILITIES TO BE USED FOR VEHICLE WASHING IF NEEDED.
6. NO CONCRETE IS TO BE WASHOUT OUT ON THE GROUND IN ANY LOCATION.

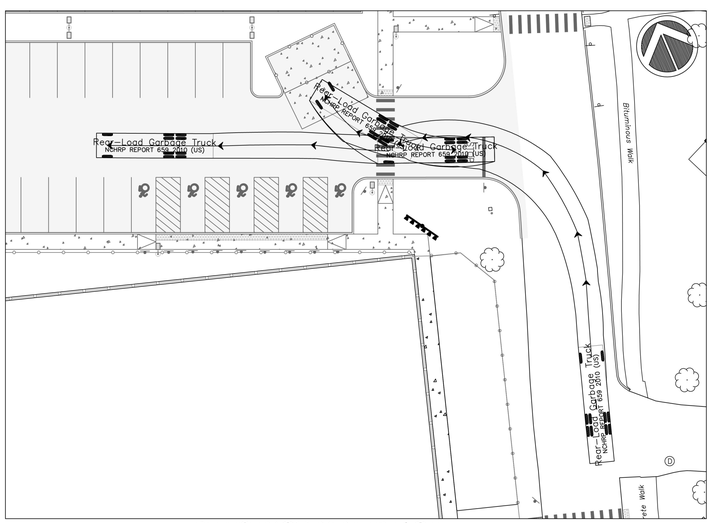
## 4 ABOVE GROUND TEMPORARY CONCRETE WASHOUT DETAIL
SCALE: 1/4"=1'-0"



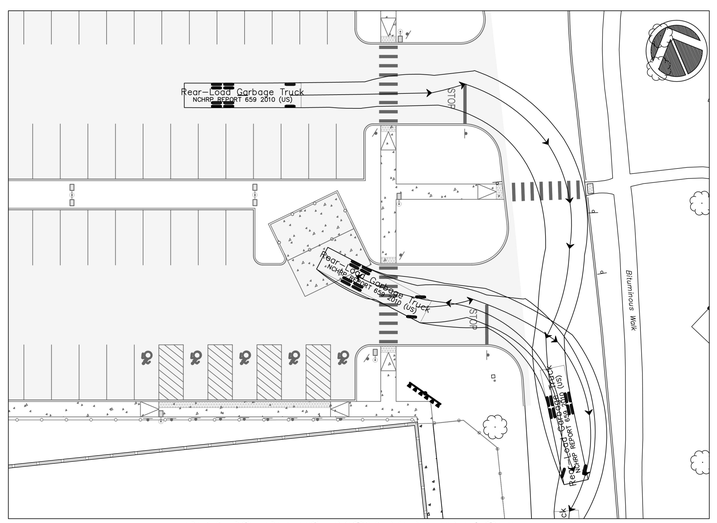

## 5 CONSTRUCTION ENTRANCE DETAIL
SCALE: 1/16" = 1'-0"




## (WB-40) FIRE TRUCK MOVEMENT IN / OUT
SCALE: 1"=20'

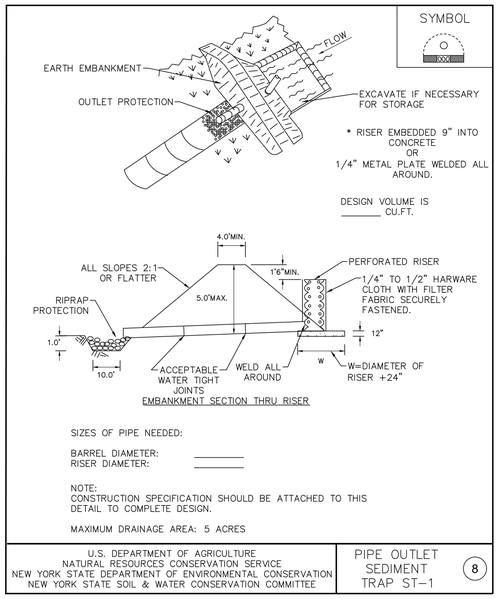



## REFUSE MOVEMENT IN / OUT
SCALE: 1"=20'




## REVERSE REFUSE MOVEMENT IN / OUT
SCALE: 1"=20'

SYMBOL




EMBANKMENT SECTION THRU RISER

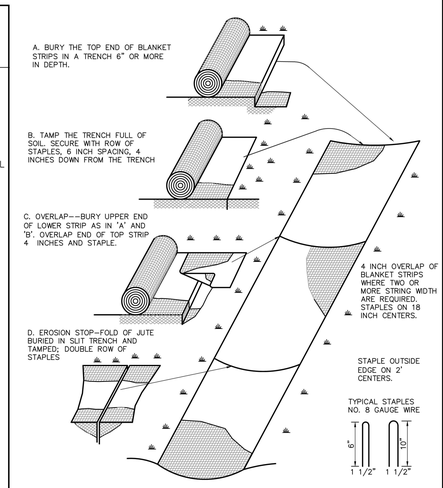
SIZES OF PIPE NEEDED:

BARREL DIAMETER: _____
RISER DIAMETER: _____

NOTE:
CONSTRUCTION SPECIFICATION SHOULD BE ATTACHED TO THIS DETAIL TO COMPLETE DESIGN.

MAXIMUM DRAINAGE AREA: 5 ACRES

| | |
|---|---|
| U.S. DEPARTMENT OF AGRICULTURE<br>NATURAL RESOURCES CONSERVATION SERVICE<br>NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION<br>NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE | PIPE OUTLET SEDIMENT TRAP ST-1 (8) |

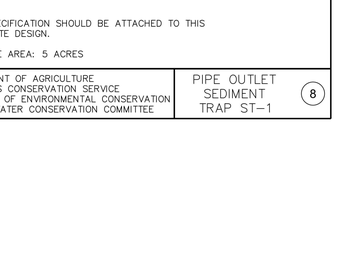



NOTES:

1. BLANKET IS TO BE INSTALLED ON ANY FINISHED SLOPES THAT ARE 4:1 OR GREATER.
2. 4:1 SLOPES OR STEEPER WHERE INDICATED ON THE CONTRACT DRAWINGS:

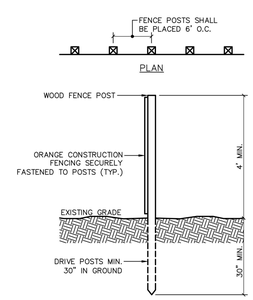
EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN SC 150 OR SHALL BE A GREEN, WOOD FIBER MAT CONSTRUCTED FROM 100% ASPEN CURLED FIBERS WITH A GREEN PHOTO-DEGRADABLE NETTING APPLIED TO ONE SIDE. EROSION CONTROL BLANKET TO BE AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, ARLINGTON, TX, "QUICK GRASS" OR APPROVED EQUAL.

## 6 EROSION CONTROL BLANKET DETAIL
SCALE: N.T.S.




SU-30 UTILIZED FOR ALL GARBAGE TRUCK MOVEMENTS

WB-40 UTILIZED FOR ALL FIRE TRUCK MOVEMENTS




SECTIONAL ELEVATION

ORANGE FENCE TO UTILIZED AS TREE PROTECTION SHALL BE EXTENDED TO TREE DRIPEDGE.

## 7 ORANGE CONSTRUCTION FENCE DETAIL
SCALE: 1/2" = 1'-0"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12604

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|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS |
| Drawn | LRC |
| Checked | KFC |
| Approved | REM |
| CAD File | DN22292804.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | AS NOTED |

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVE
TOWN OF POUGHKEEPSIE

EROSION CONTROL DETAILS / VEHICLE TURNING PLAN

Drawing No.
DN-4
SHEET 15 OF 28

X:\JOBS\Jobs 2021\22-2928-VC-Turf Field\DWG\DN22292804.dwg 1/23/2026 2:25 PM Sharon

LIMITS OF EXISTING UNDER-DRAINED FIELD: 1/AF-D-1

4" HDPE PERF PIPE @ 0.5% SLOPE

EXISTING STORM MH
RIM = 166.35
6" INV IN (N) = 164.35
6" INV IN (S) = 164.35
10" INV OUT (E) = 164.35

197 LF 10" DIA SOLID HDPE @ 0.5% SLOPE

LIMITS OF EXISTING UNDER-DRAINED FIELD: 1 / AF-D-1

EXISTING STORM MH
6" BELOW GRADE
RIM = 166.35
6" INV IN (S) = 163.05
10" INV IN (W) = 163.05
12" INV OUT (E) = 163.05

EXISTING STORM MH
RIM = 168.45
12" INV IN (W) = 161.60
12" INV OUT (NE) = 161.60

290 LF 12" DIA SOLID HDPE @ 0.5% SLOPE

197 LF 6" DIA SOLID HDPE @ 0.5% SLOPE

LIMITS OF EXISTING UNDER-DRAINED FIELD: 3/AF-D-1

HDPE J- DRAINS 18' O.C.

EXISTING 6" INV IN = 164.05

SOCCER AND LACROSSE FIELDS

BREWERS LANE

Parcel ID 134689-6161-11-681509

N/F Anthony & Linda Ragueo Book 2008 Page 4299 36 Ziegler Avenue Parcel ID 134689-6161-11-680505

N/F Luigi & Samantha Dipolo 2024 Page 1450

N/F Christopher C. & Colleen Welch Book 2024 Page 499

N/F Joyce Ochieng

N/F Steven R. Cianciolo, Jr. Book 2017 Page 4828 20 Ziegler Avenue Parcel ID 134689-6161-04-669938

N/F Raul Book 2021 18 Zie 134689-616

N/F Vassar College

Chain Link Fence

Gate

Concrete Curb

Bituminous Concrete Parking

Bit Conc Walk

Bituminous Concrete Walk

Townhouse Apartment Fiber Optic & Tel Routed Through 4" Conduit System

Storm MH TF=168.11 Inv=160.7(S) Inv=160.3(NE)

18" HDPE

Concrete Walk

Backflow Prevention Device

Grass Area

3" Water Meter for Irrigation System

Turnstile

Bituminous Concrete Parking

One Way Sign

Bus Loading Area

CLCB TF=168.9

CLCB TF=164.8 Inv=160.6(N) Inv=160.6(S)

CLCB TF=165.0 Inv=161.2(N) Inv=161.2(S)

CLCB TF=167.03 Inv=164.8

Storm MH TF=168.45 Inv=161.6(W) Inv=161.6(N)

Storm TF=16 Inv=160.0( Inv=159.9 Inv=159.5 Inv=159.4( Conc Walk

Sign

Flag Pole

Gate

Chain Link Fence

Inv=167.05


Vassar College

124 Raymond Avenue
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12604

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REVISIONS

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| Design/Calcs | BLS w/LRC |
| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Fields.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=20' |

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD
EXISTING DRAINAGE

Drawing No.
AF - 1

SHEET 16 OF 28

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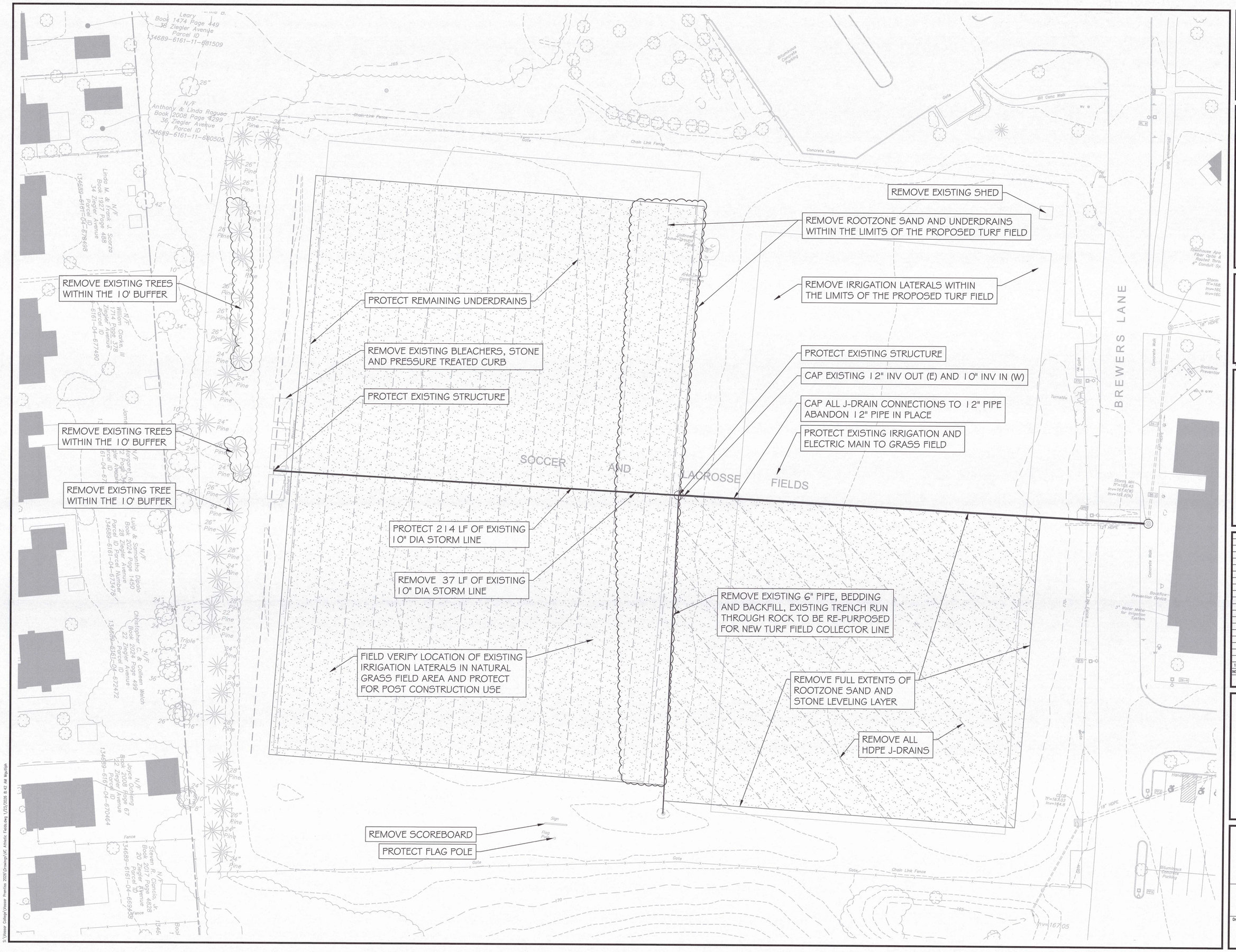


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| Approved | JC |
| CAD File | VC Athletic Fields.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=20' |

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD
DEMO AND REMOVALS

Drawing No.
AF - 2

SHEET 17 OF 28

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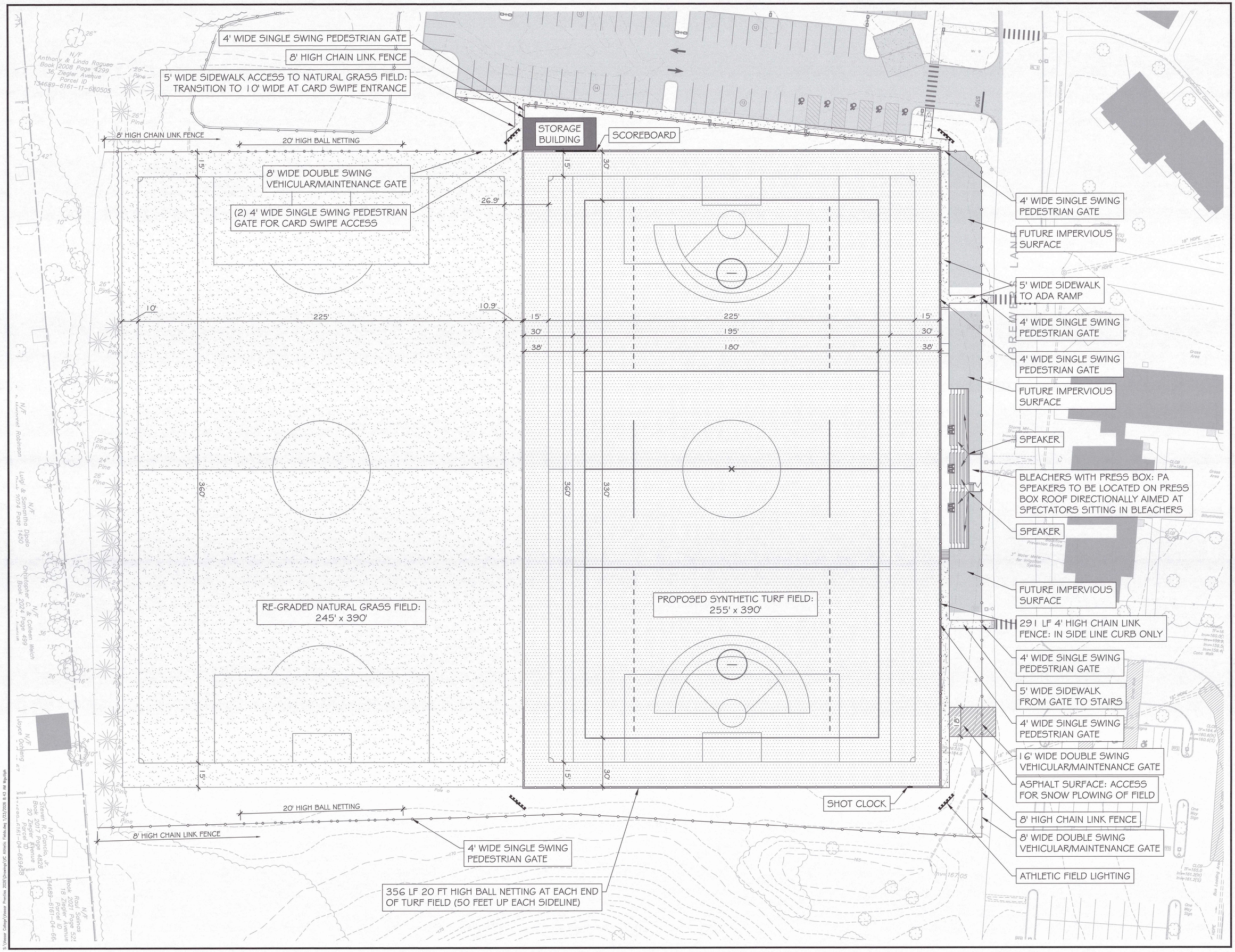



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| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Fields.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=20' |

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD
LAYOUT AND MATERIALS

Drawing No.
AF - 3

SHEE 18 OF 28

12" FES INV = 161.71

PROPOSED INFILTRATION BASIN (IB-1)
BOT. ELEV=160.50 ±
TOP ELEV=162.50 ±

100 LF 12" DIA SOLID HDPE @ 0.5% SLOPE
OUTLET TO INFILTRATION BASIN

LIMITS OF 15'
END LINE BUFFER

167.70

FF = 168

168.93

84 LF 12" DIA SOLID HDPE @ 0.5% SLOPE
OUTLET TO INFILTRATION BASIN

INV = 162.13

241 LF 6" DIA PERF HDPE @ 0.75% SLOPE

6" INV = 167.25

169.61

NEW STORM MH
RIM JUST BELOW TURF
RIM = 167.61
6" INV IN (E) = 165.44
12" INV IN (S) = 162.18
12" INV OUT (W) 162.18

174 LF 12" DIA PERF HDPE
UNDERDRAIN @ 0.6% SLOPE

174 LF 12" DIA PERF HDPE @ 0.5% SLOPE
IN A 20' WIDE TRENCH

LIMITS OF 10'
SIDE LINE BUFFER

EXISTING STORM MH
RIM = 166.35
6" INV IN (N) = 164.35
6" INV IN (S) = 164.35
10" INV OUT (E) = 164.35

NEW STORM MH: BURY RIM
RIM = 167.20
6" INV IN (S) = 163.24
10" INV IN (W) = 163.24
12" INV OUT (N) = 163.05

EXISTING STORM MH
RIM = 166.35
8" INV IN (S) = 163.05
12" INV OUT (N) = 163.05

CENTERLINE

1.0% SLOPE

1.0% SLOPE

214 LF 6" DIA PERF HDPE UNDERDRAIN @ 1.19%

REPLACE EXISTING 6" SOLID PIPE WITH PERFORATED:
197 LF 8" PERF HDPE PIPE @ 0.5% SLOPE WITH
NEW PIPE BEDDING AND DRAINAGE STONE BACKFILL

0.75% SLOPE

FLAT PIPE
20' O.C.

SUPPLEMENT EXISTING UNDER-DRAIN
SYSTEM TO LIMITS OF RE-GRADED
ATHLETIC FIELD: 4" PERF HDPE PIPES:
INVERTS TIE INTO EXISTING DRAINAGE

8" PERF HDPE INV IN = 164.05

6" ELBOW: INV = 165.78
TRANSITION FROM
FRENCH DRAIN TO GRASS
FIELD UNDERDRAIN

6" END CAP:
INV = 166.46

FRENCH DRAIN: 136 LF 6" PERF
HDPE PIPE @ 0.5% SLOPE

LIMITS OF 15'
END LINE BUFFER

FUTURE IMPERVIOUS
SURFACE: 169.87
1% CROSS SLOPE TO
FIELD EDGE

SITE PLAN COMPLETION:
LAWN AREA BLENDS TO
EXISTING GRADES

FUTURE IMPERVIOUS
SURFACE: 169.87
1% CROSS SLOPE TO
FIELD EDGE

MATCH
EXISTING
168.70

169.66

FUTURE IMPERVIOUS
SURFACE: 169.87
1% CROSS SLOPE TO
FIELD EDGE

SITE PLAN COMPLETION:
LAWN AREA BLENDS TO
EXISTING GRADES

169.87

CENTERLINE

169.61

SITE PLAN COMPLETION:
LAWN AREA BLENDS TO
EXISTING GRADES

FUTURE IMPERVIOUS
SURFACE: 169.87
1% CROSS SLOPE TO
FIELD EDGE

MATCH
EXISTING
168.34

169.66

MATCH
EXISTING
167.92

169.66

169.61

Vassar College

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12604

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ITHACA, NY 14851
FAX:(607)756-3610
CATELLA ENGINEERING, LLC
P.O. BOX 451
ITHACA, NY 13793-1282

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS w/LRC |
| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Fields.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=20' |

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

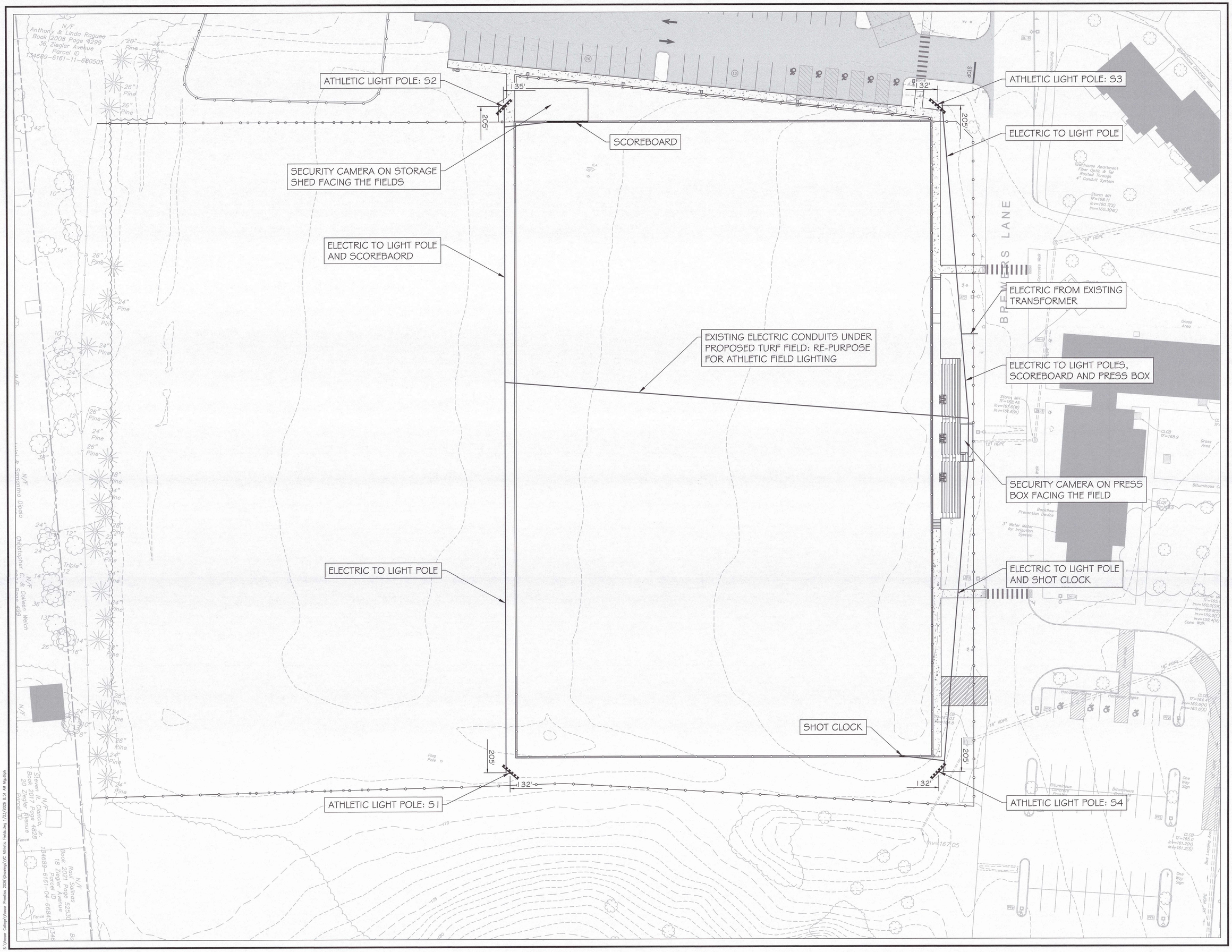
VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD
GRADING AND
DRAINAGE

Drawing No.
AF - 4

SHEET 19 OF 28

S:\Vassar College\Vassar Premises 2025\Drawings\VC Athletic Fields.dwg 1/23/2026 9:09 AM Mquilph

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| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | 1"=20' |

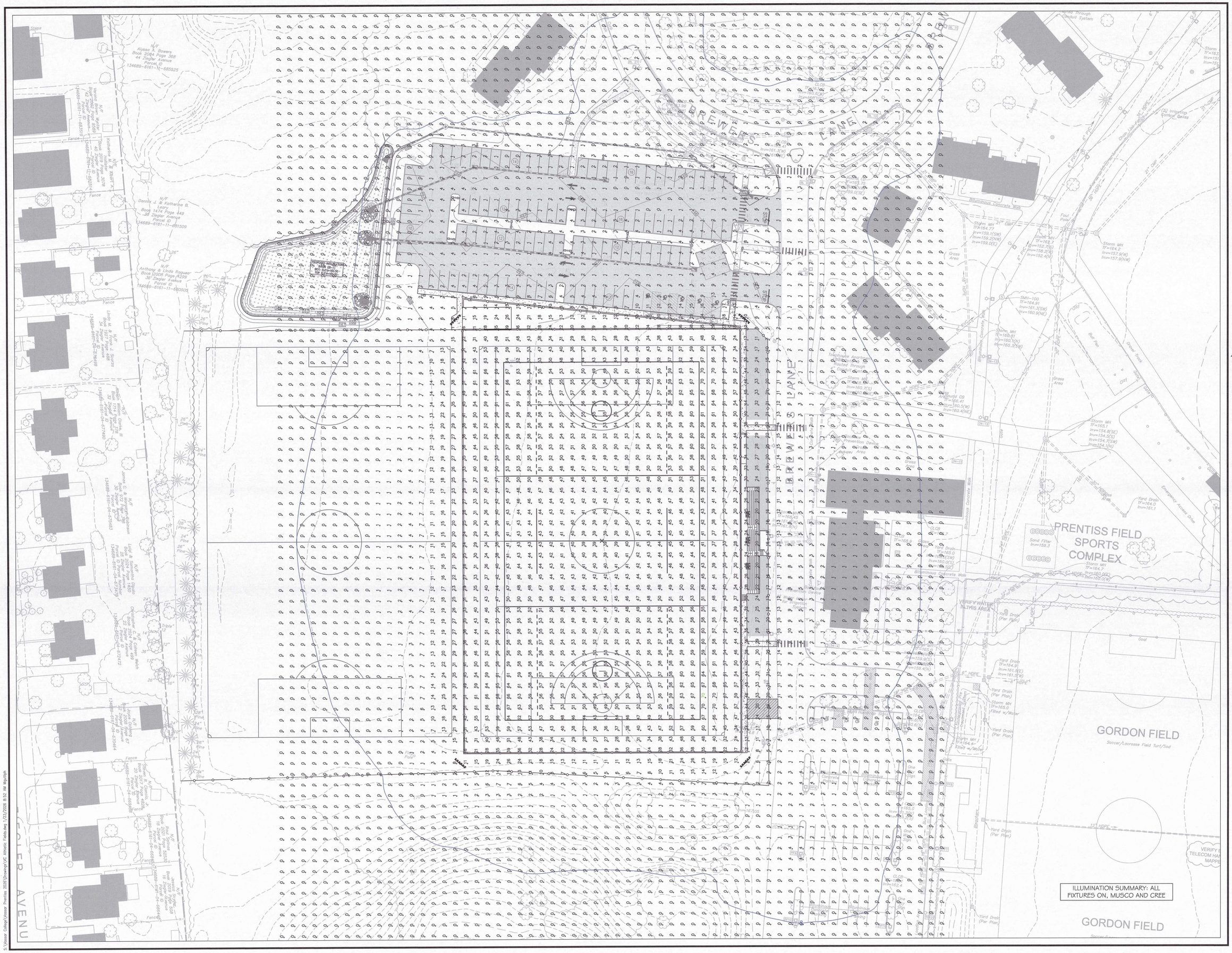
GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

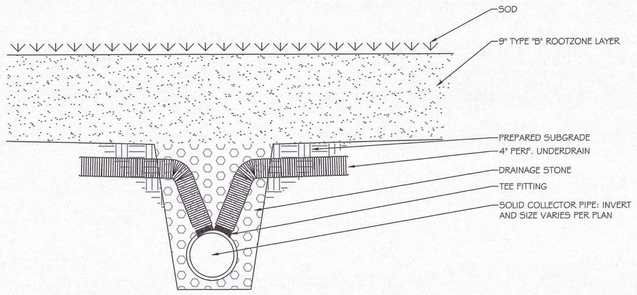
VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD UTILITIES

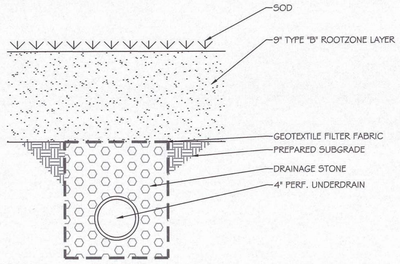
Drawing No.
AF - 5

SHEET 20 OF 28

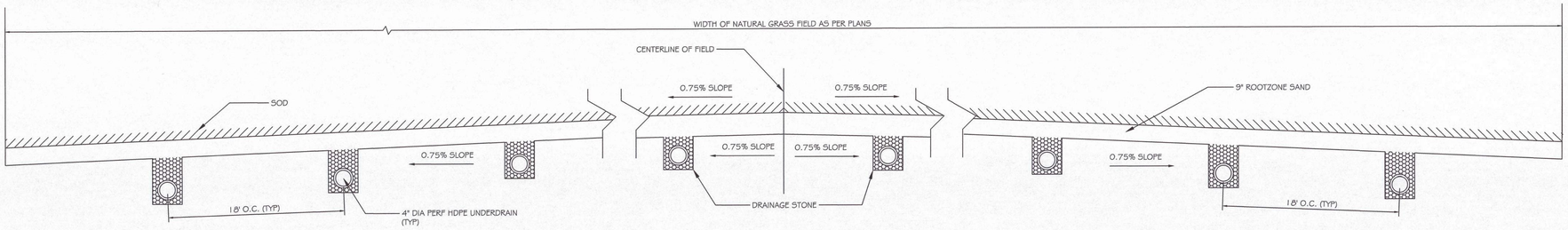

PROPOSED BALANCING POND
BOTTOM ELEV=160.50
TOP ELEV=162.50
PROPOSED 6' CHAIN LINK FENCE
PROPOSED 10' WIDE ACCESS ROAD
PROPOSED 10' WIDE ACCESS ROAD
PRENTISS FIELD SPORTS COMPLEX
GORDON FIELD
Soccer/Lacrosse Field Turf/Sod
GORDON FIELD
ILLUMINATION SUMMARY: ALL FIXTURES ON, MUSCO AND CREE
Alyssa K. Bowers Book 2024 Page 368 44 Ziegler Avenue Parcel ID 134689-6161-14-685525
Katherine M. & Robert K. Book 2019 Page 378 40 Ziegler Avenue Parcel ID 134689-6161-11-682519
Dennis J. & Katherine B. Leary Book 1474 Page 449 38 Ziegler Avenue Parcel ID 134689-6161-11-681509
Anthony & Linda Ragusa Book 2008 Page 4599 36 Ziegler Avenue Parcel ID 134689-6161-11-680505
Linda M. & Frank J. Sorro Book 1974 Page 489 34 Ziegler Avenue Parcel ID 134689-6161-11-679498
James C. & Margaret Robinson Book 2019 Page 378 30 Ziegler Avenue Parcel ID 134689-6161-04-677483
Luigi & Simontha Deiulio Book 2019 Page 308 28 Ziegler Avenue Parcel ID 134689-6161-04-674479
Deborah Scott Book 2004 Page 499 25 Ziegler Avenue Parcel ID 134689-6161-04-674472
Coleen Welch
Jason Coberg Book 2020 Page 47 22 Ziegler Avenue Parcel ID 134689-6161-04-670464
Steven R. Connin Jr. Book 2020 Page 47 20 Ziegler Avenue Parcel ID 134689-6161-04-669456
Paul Salmon Sabik Book 2020 Page 47 16 Ziegler Avenue Parcel ID 134689-6161-04-668442
Jessica V. Sypitkowski Book 2019 Page 308 12 Ziegler Avenue Parcel ID 134689-6161-04-667429
ZIEGLER AVENUE
Steps
Fence
Pine
Flag Pole
Storm MH TF=164.77 Inv=159.1(SW) Inv=159.2(NW) Inv=159.0(E)
Storm MH TF=163.7 Inv=152.2(S) Inv=158.2(W) Inv=152.4(N)
Storm MH TF=164.2 Inv=157.9(W) Inv=157.9(NW)
SMH-100 TF=164.91 Inv=161.3(SW) Inv=160.9(NE)
Storm MH TF=165.1 Inv=154.8(SE) Inv=154.5(S) Inv=154.7(SW) Inv=154.1(N)
Storm MH TF=164.7 Inv=160.6(S) Inv=160.0(W)
Storm MH TF=165.0 Filled w/Water
Yard Drain TF=164.0 Inv=161.1
Sand Filter Inv=159.3
Yard Drain (Per Plan)
Storm MH TF=164.9 Inv=161.5(E) Inv=161.5(W)
Storm MH TF=165.0 Filled w/Water
Storm MH TF=164.9 Inv=160.3(N) Inv=160.3(S)
Storm MH TF=164.9 Inv=160.3(W) Inv=160.4(NE)
Storm MH TF=164.9 Inv=160.3(W)
Yard Drain TF=165.0 Inv=161.9(W) Inv=161.9(E




EXISTING CONDITIONS:
COLLECTOR LINE

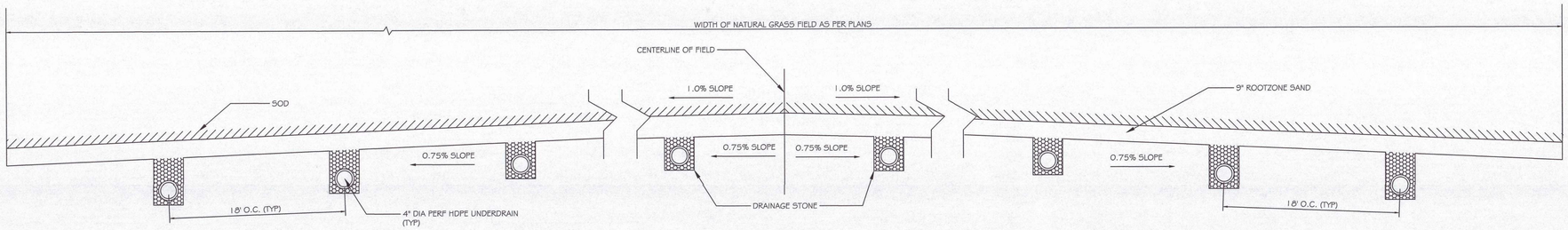



EXISTING CONDITIONS:
UNDER-DRAIN



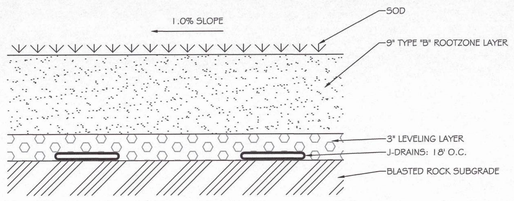

EXISTING CONDITIONS:
SECTION THRU FIELD

1 EXISTING UNDER-DRAINED FIELD: FULL FIELD
NOT TO SCALE

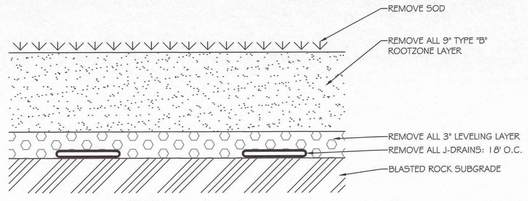



SUPPLEMENT AS NECESSARY IN KIND
UNDER-DRAINS AS DETAILED IN 1 / AF-D-1

2 RE-GRADE NATURAL GRASS FIELD: RE-GRADE FINISH GRADE TO 1.0% SLOPE
NOT TO SCALE




EXISTING CONDITIONS




DEMO

3 EXISTING UNDER-DRAINED FIELD: HALF FIELD CONSTRUCTED OVER ROCK
NOT TO SCALE

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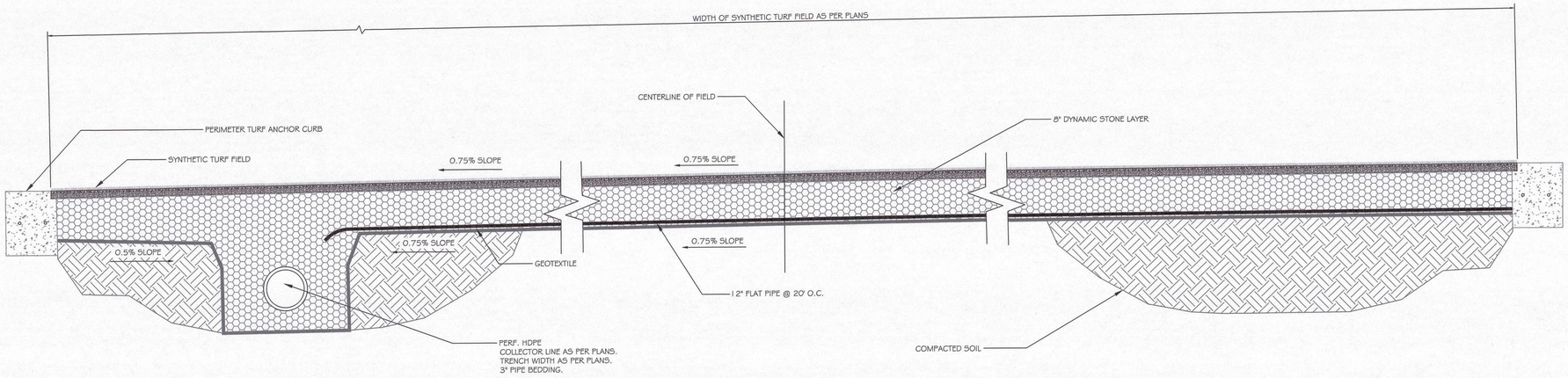
| Approved | JC |
| CAD File | VC Athletic Details.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | NOT TO SCALE |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

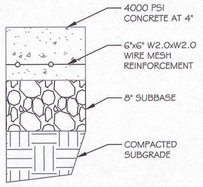
VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
NATURAL GRASS FIELD

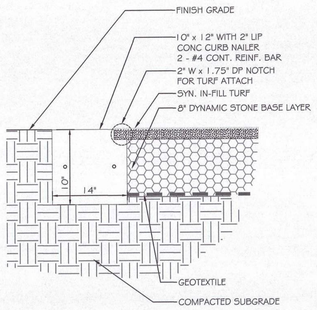
Drawing No.
AF - D - 1



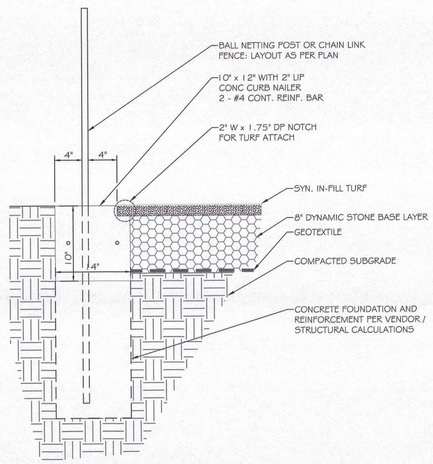

1 TRANSVERSE SECTION THROUGH SYNTHETIC TURF FIELD
NOT TO SCALE




2 TYPICAL CONCRETE SECTION
NOT TO SCALE



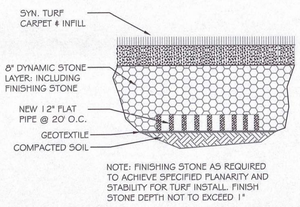

w/out CHAIN LINK
FENCE OR NETTING



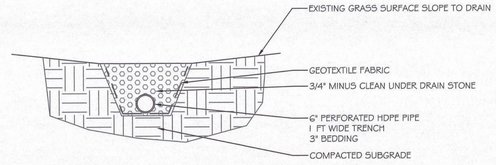

w/ CHAIN LINK
FENCE OR NETTING

NOTE: DYNAMIC STONE IS AN INDUSTRY TERM FOR A BLENDED QUARRY STONE THAT PROVIDES STABILITY UNDER THE SYNTHETIC TURF SURFACE WHILE ALLOWING WATER TO PASS THROUGH (VERTICAL DRAINAGE). TYPICALLY THERE IS A VOID RATIO OF APPROXIMATELY 40% WHICH PROVIDES STORMWATER QUANTITY ATTENUATION BENEATH THE FIELD SURFACE. A TYPICAL GRADATION OF THE DYNAMIC STONE BASE IS AS FOLLOWS:

| % PASSING | |
|---|---|
| SIEVES | BASE STONE |
| 1" OR 25 MM | 100 |
| ¾" OR 19 MM | 80 - 100 |
| ½" OR 12.5 MM | 60 - 80 |
| ⅜" OR 9.5 MM | 30 - 50 |
| US #4 OR 4.75 MM | 20 - 40 |
| US #8 OR 2.36 MM | 10 - 30 |
| US #16 OR 1.18 MM | 7 - 25 |
| US #40 OR 425 MM | 5 - 17 |
| US #200 OR 75 MM | 0 - 2 |



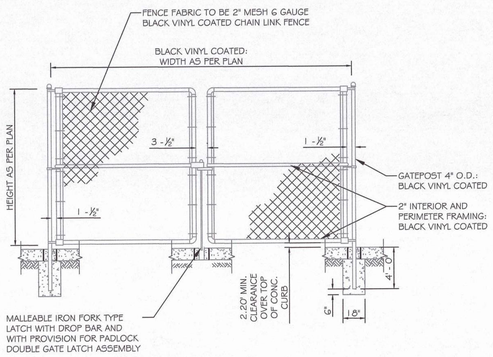

NOTE: FINISHING STONE AS REQUIRED TO ACHIEVE SPECIFIED PLANARITY AND STABILITY FOR TURF INSTALL. FINISH STONE DEPTH NOT TO EXCEED 1"



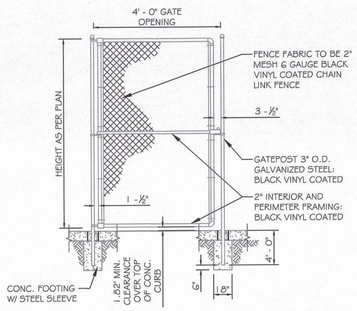

3 PERIMETER TURF ANCHOR CURB
NOT TO SCALE

4 SYNTHETIC TURF AND FLAT DRAIN
NOT TO SCALE

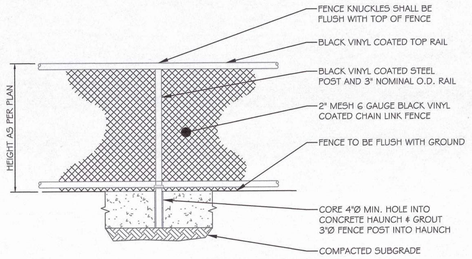
5 FRENCH DRAIN
NOT TO SCALE



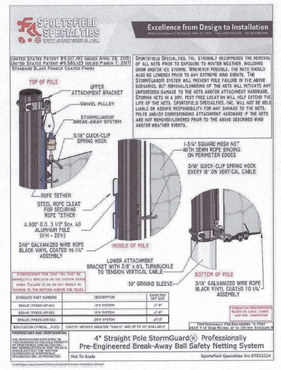

6 CHAIN-LINK FENCE DOUBLE GATE
NOT TO SCALE




7 CHAIN-LINK FENCE SINGLE GATE
NOT TO SCALE




9 CHAIN-LINK FENCE
NOT TO SCALE




10 BALL NETTING
NOT TO SCALE

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| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

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| Project No. | 22-2928 |
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| Scale | NOT TO SCALE |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
SYNTHETIC TURF FIELD

Drawing No.
AF - D - 2
SHEET 23 OF 28

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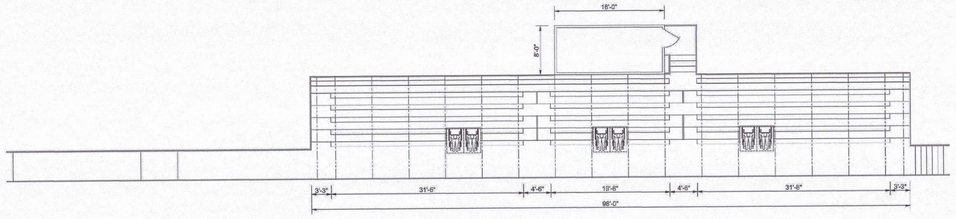
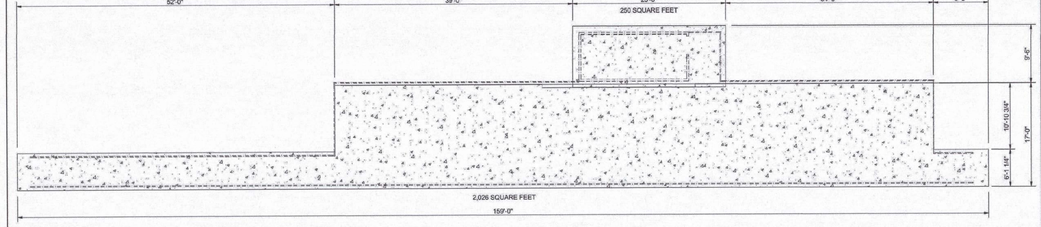


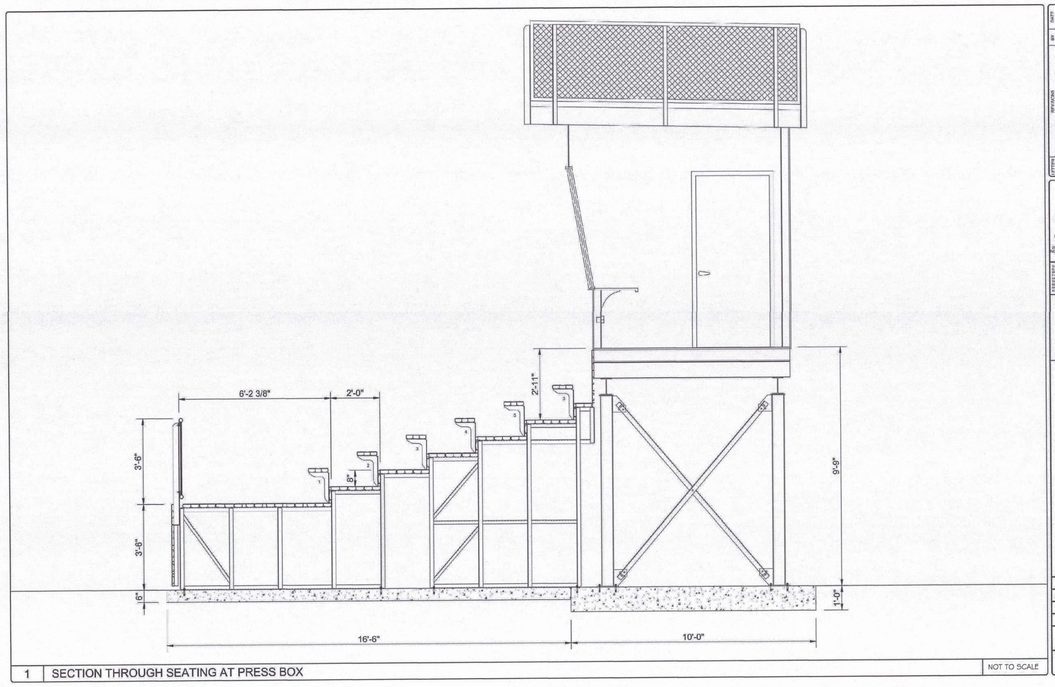

**SEATING MANIFEST**

| | |
|---|---|
| Bench Seating: | 301 |
| Wheelchair Seating: | 8 |
| Companion Seating: | 4 |
| Total: | 313 |

1 SEATING PLAN — NOT TO SCALE




1 FOUNDATION PLAN — NOT TO SCALE

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2081 FRANKLIN BLVD. P.O. BOX 150
NORTH COLLINS, NEW YORK 14111-0150
PHONE: (716) 337-0515
FAX: (716) 337-0515

VASSAR COLLEGE
POUGHKEEPSIE, NEW YORK

UNDERSTRUCTURE

| | |
|---|---|
| AS NOTED | REVISIONS DATE |
| DRAWN BY: JW | CHECKED BY: |
| DATE: 12-10-25 | REVISIONS: |

PROJECT NUMBER: 25Q244

SHEET NUMBER: 1

SHEET NUMBER: 1A


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30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
BLEACHERS

Drawing No.
AF - D - 3

SHEET 24 OF 28

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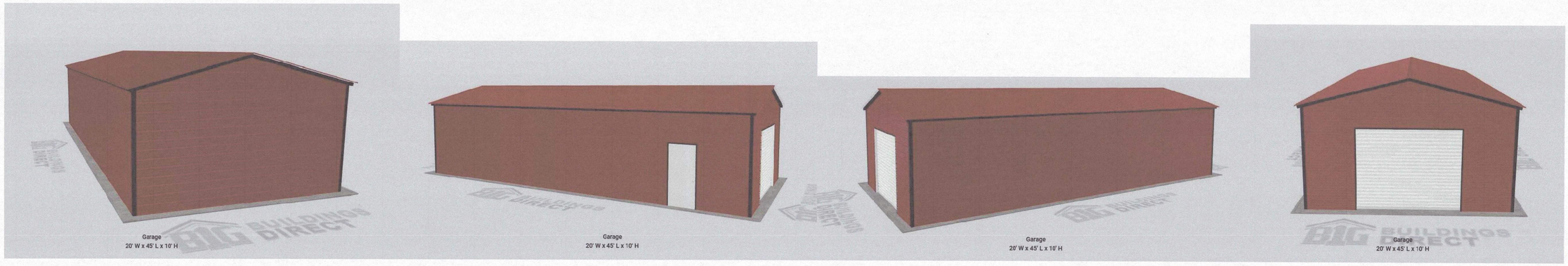
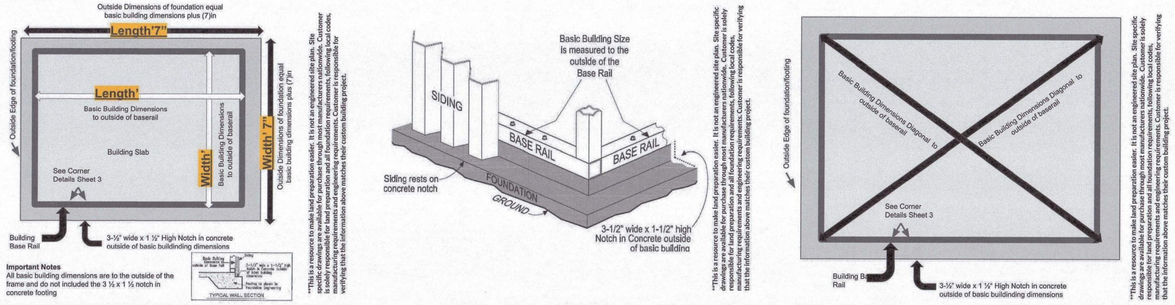
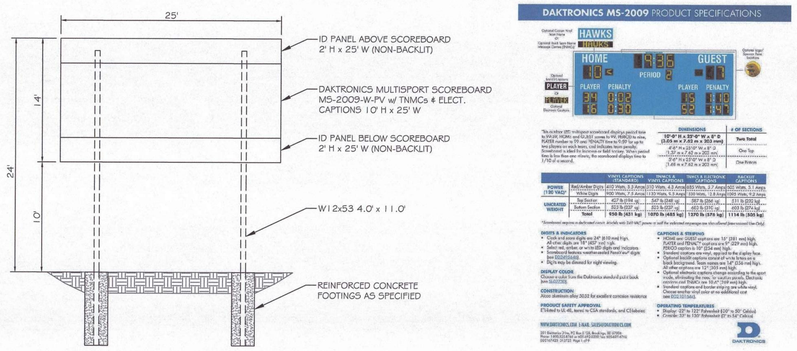



1 STORAGE BUILDING RENDERINGS
NOT TO SCALE




2 STORAGE BUILDING GENERIC CONCRETE FOUNDATION DETAILS
NOT TO SCALE




3 SCOREBOARD
NOT TO SCALE

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12604

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P.O. Box 421
Poughkeepsie, NY 12603-0421

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS w/LRC |
| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Details.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | NOT TO SCALE |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
STORAGE BUILDING

Drawing No.
AF - D - 4
SHEET 25 OF 28

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## Vassar College Soccer Fields
Poughkeepsie,NY

**LIGHTING SYSTEM**

**Structure/Fixture Summary**

| Structure ID | Structure Height | Fixt. Attachment Ht. | Fixture Qty | Fixture Type | Load | Circuit |
|---|---|---|---|---|---|---|
| EX-1-1-EX-1-9 | 16' | 16' | 1 | CREE EDGE 354 Les | 0.10 kW | C |
| EX-2-1-EX-2-2 | 16' | 16' | 2 | CREE EDGE 354 Les | 0.20 kW | C |
| PT-1-3 | 16' | 16' | 1 | CREE EDGE 354 Les | 0.10 kW | C |
| PT-2-1-PT-2-4 | 16' | 16' | 2 | CREE EDGE 354 Les | 0.20 kW | C |
| PT-3-1-PT-3-9 | 16' | 16' | 1 | CREE EDGE 4MBL les | 0.10 kW | C |
| PT-3b-1<br>PT-3b-2<br>PT-3b-3 | 16' | 16' | 1 | CREE EDGE 4 /Les | 0.10 kW | C |
| PT-4-1-PT-4-3 | 16' | 16' | 2 | CREE EDGE 4M Les | 0.20 kW | C |
| 51-52 | 90' | 90' | 14 | TLC-LED-900 | 12.32 kW | A |
| 53-54 | 90' | 90' | 1 | TLC-LED-900 | 0.88 kW | B |
| | | 90' | 14 | TLC-LED-900 | 12.32 kW | A |
| 35 | | | 98 | | 99.68 kW | |

**Circuit Summary**

| Circuit | Description | Load | Fixture Qty |
|---|---|---|---|
| A | Turf Field | 49.28 kW | 56 |
| B | Security | 1.76 kW | 2 |
| C | Ore | 4.04 kW | 40 |

**Fixture Type Summary**

| Fixture Type | Circuit | Source | Wattage | Lumens | L90 | L80 | L70 | Quantity |
|---|---|---|---|---|---|---|---|---|
| CREE EDGE 3M.les | C | Sixty Cree XP-G2 LEDs | 101W | 3,291 | -- | -- | -- | 22 |
| CREE EDGE 4.les | C | 3 sections of 2 x 10 XP-G2 LEDs 60 total | 101W | 10,483 | -- | -- | -- | 3 |
| CREE EDGE 4M.les | C | 3 sections of 2 x 10 XP-G2 LEDs 60 total | 101W | 3,472 | -- | -- | -- | 6 |
| CREE EDGE 4MBL.les | C | XP-G2 LEDs | 101W | 2,613 | -- | -- | -- | 9 |
| TLC-LED-500 | A | LED 5700K - 75 CRI | 880W | 104,000 | >150,000 | >130,000 | >120,000 | 56 |
| TLC-LED-900 | B | LED 5700K - 75 CRI | 880W | 104,000 | >120,000 | >120,000 | >120,000 | 2 |

**Single Fixture Amperage Draw Chart**

| Driver Specifications (.90 min power factor) | Line Amperage Per Fixture (max draw) | | | | | | |
|---|---|---|---|---|---|---|---|
| Input | 208 (60) | 220 (60) | 240 (60) | 277 (60) | 347 (60) | 380 (60) | 480 (60) |
| Single Phase Voltage | | | | | | | |
| TLC-LED-500 | 5.2 | 4.9 | 4.5 | 3.9 | 3.1 | 2.9 | 2.3 |

**Light Level Summary**

**Calculation Grid Summary**

| Grid Name | Calculation Metric | Illumination Ave | | | | | Circuits | Fixture Qty |
|---|---|---|---|---|---|---|---|---|
| | | Ave | Min | Max | Max/Min | Ave/Min | | |
| Blanket Grid - All Lights | Horizontal | 10.90 | 0 | 70 | -- | -- | A,B,C | 98 |
| Blanket Grid - Cree Lights | Horizontal | 0.27 | 0 | 9 | -- | -- | C | 40 |
| Blanket Grid - Musco Lights | Horizontal | 10.64 | 0 | 70 | -- | -- | A,B | 58 |
| Field Spill @ 3ft. | Horizontal Illuminance | 0.0055 | 0.00 | 0.03 | -- | -- | A | 56 |
| Field Spill @ 5ft. | Max Candela Metric | 919.8422 | 0.00 | 995.43 | -- | -- | A | 56 |
| Field Spill @ 5ft. | Max Vertical Illuminance Metric | 0.0083 | 0.00 | 0.04 | -- | -- | A | 56 |
| Lacrosse | Horizontal Illuminance | 53.33 | 39 | 65 | 1.65 | 1.31 | A | 56 |
| Pickle Grid | Horizontal Illuminance | 41.61 | 41 | 43 | 1.04 | 1.02 | A | 56 |
| Security | Horizontal | 4.38 | 4 | 5 | 1.25 | 1.10 | B | 2 |
| Soccer | Horizontal Illuminance | 50.81 | 34 | 64 | 1.86 | 1.48 | A | 56 |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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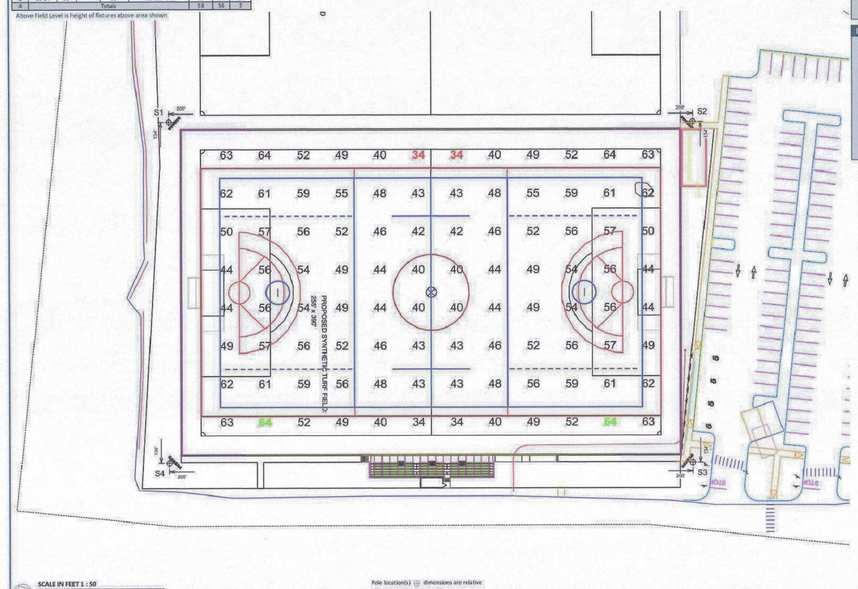
PROJECT SUMMARY

1 MUSCO LIGHTING PROJECT SUMMARY
NOT TO SCALE

**Equipment List For Areas Shown**

| Structure QTY | Structure ID | Structure SIZE | Structure GRADE ELEVATION | Structure ABOVE FIELD LEVEL | Fixtures FIXTURE TYPE | Fixtures QTY/POLE | Fixtures FIELD SIDE | Fixtures OTHER SIDES |
|---|---|---|---|---|---|---|---|---|
| 2 | 51-52 | 90' | - | 90' | TLC-LED-900 | 14 | 14 | 0 |
| 2 | 53-54 | 90' | - | 90' | TLC-LED-900 | 15 | 14 | 1 |
| 4 | Totals | | | | | 58 | 56 | 2 |

Above Field Level is height of fixtures above area shown




**Vassar College Soccer Fields**
Poughkeepsie,NY

**Grid Summary**

| | |
|---|---|
| Name: | Soccer |
| Size: | 360' x 225' |
| Spacing: | 30.0' x 30.0' |
| Height: | 1.0' above grade |

**Illumination Summary**

MAINTAINED HORIZONTAL FOOTCANDLES

| | Entire Grid |
|---|---|
| Guaranteed Average: | 50 |
| Scan Average: | 50.81 |
| Maximum: | 64 |
| Minimum: | 34 |
| Avg/Min: | 1.48 |
| Guaranteed Max/Min: | 2 |
| Max/Min: | 1.86 |
| UG (adjacent pts): | 1.27 |
| CU: | 0.76 |
| No. of Points: | 96 |
| **FIXTURE INFORMATION** | |
| Applied Circuits: | A |
| No. of Fixtures: | 56 |
| Total Load: | 49.28 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 50
0' 50' 100'

Pole location(s) ⊡ dimensions are relative to 0,0 reference point(s) ⊠

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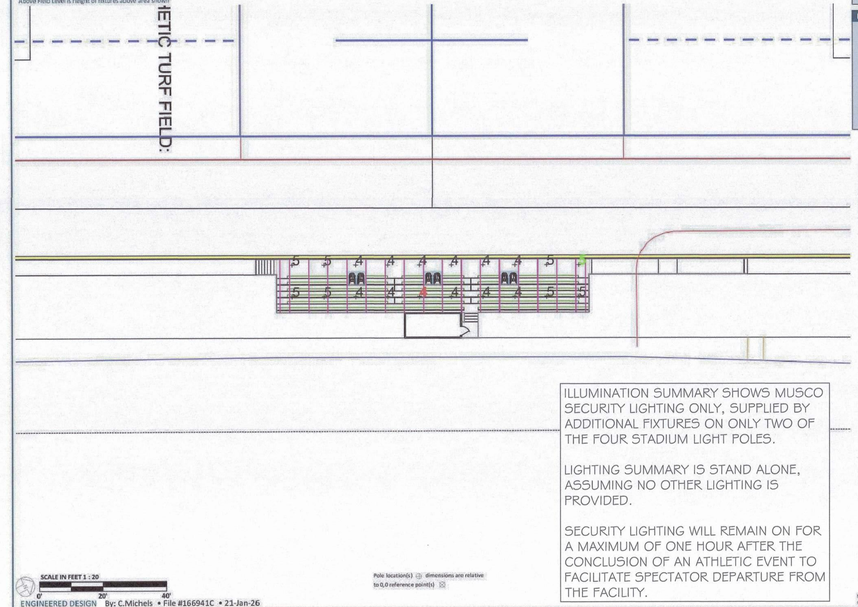
ILLUMINATION SUMMARY

2 MUSCO LIGHTING SOCCER FIELD ILLUMINATION
NOT TO SCALE

**Equipment List For Areas Shown**

| Structure QTY | Structure ID | Structure SIZE | Structure GRADE ELEVATION | Structure ABOVE FIELD LEVEL | Fixtures FIXTURE TYPE | Fixtures QTY/POLE | Fixtures FIELD SIDE | Fixtures OTHER SIDES |
|---|---|---|---|---|---|---|---|---|
| 2 | 53-54 | 90' | - | 90' | TLC-LED-900 | 15 | 1 | 14 |
| 2 | | | | | | 15 | 1 | 14 |
| 4 | Totals | | | | | 30 | 2 | 28 |

Above Field Level is height of fixtures above area shown




**Vassar College Soccer Fields**
Poughkeepsie,NY

**Grid Summary**

| | |
|---|---|
| Name: | Security |
| Spacing: | 10.0' x 10.0' |
| Height: | 1.0' above grade |

**Illumination Summary**

MAINTAINED HORIZONTAL FOOTCANDLES

| | Entire Grid |
|---|---|
| Scan Average: | 4.38 |
| Maximum: | 5 |
| Minimum: | 4 |
| Avg/Min: | 1.10 |
| Max/Min: | 1.25 |
| UG (adjacent pts): | 1.10 |
| CU: | 0.04 |
| No. of Points: | 20 |
| **FIXTURE INFORMATION** | |
| Applied Circuits: | B |
| No. of Fixtures: | 2 |
| Total Load: | 1.76 kW |

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

ILLUMINATION SUMMARY SHOWS MUSCO SECURITY LIGHTING ONLY, SUPPLIED BY ADDITIONAL FIXTURES ON ONLY TWO OF THE FOUR STADIUM LIGHT POLES.

LIGHTING SUMMARY IS STAND ALONE, ASSUMING NO OTHER LIGHTING IS PROVIDED.

SECURITY LIGHTING WILL REMAIN ON FOR A MAXIMUM OF ONE HOUR AFTER THE CONCLUSION OF AN ATHLETIC EVENT TO FACILITATE SPECTATOR DEPARTURE FROM THE FACILITY.

SCALE IN FEET 1 : 20
0' 20' 40'

Pole location(s) ⊡ dimensions are relative to 0,0 reference point(s) ⊠

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ILLUMINATION SUMMARY

3 MUSCO LIGHTING LACROSSE FIELD ILLUMINATION
NOT TO SCALE

4 MUSCO LIGHTING BLEACHER AND PARKING LOT ILLUMINATION
NOT TO SCALE

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CATELLA ENGINEERING, LLC
P.O. Box 421
Hyde Park, NY 12538-0421

| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS w/LRC |
| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Details.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | NOT TO SCALE |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
MUSCO LIGHTING
LIGHT LEVELS

Drawing No.
AF - D - 5
SHEET 26 OF 28

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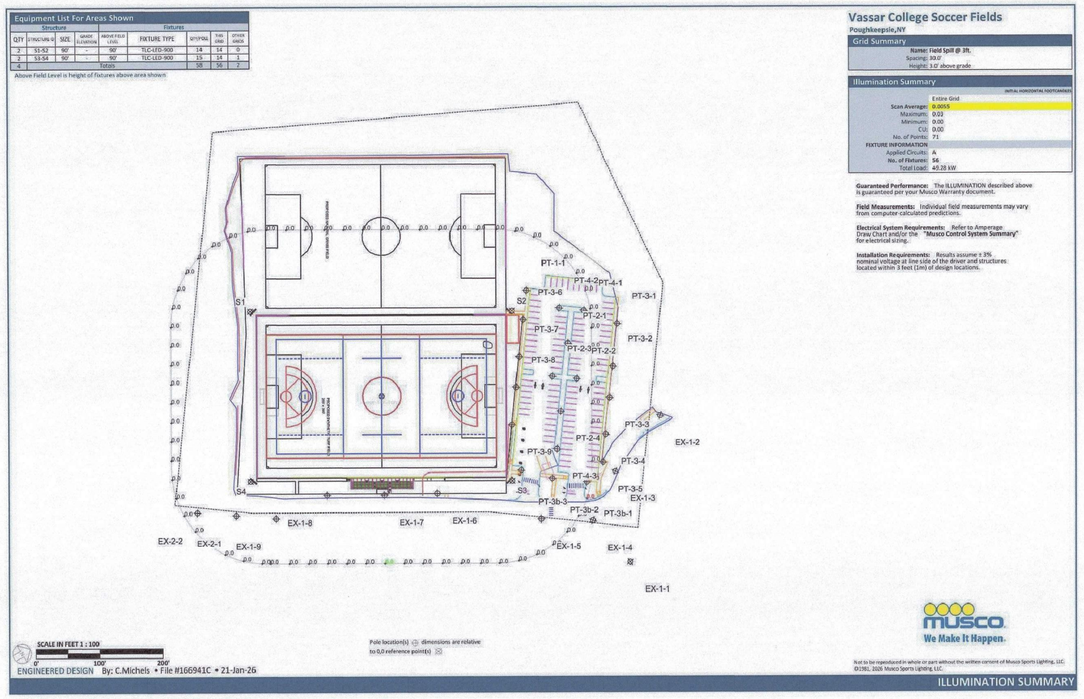
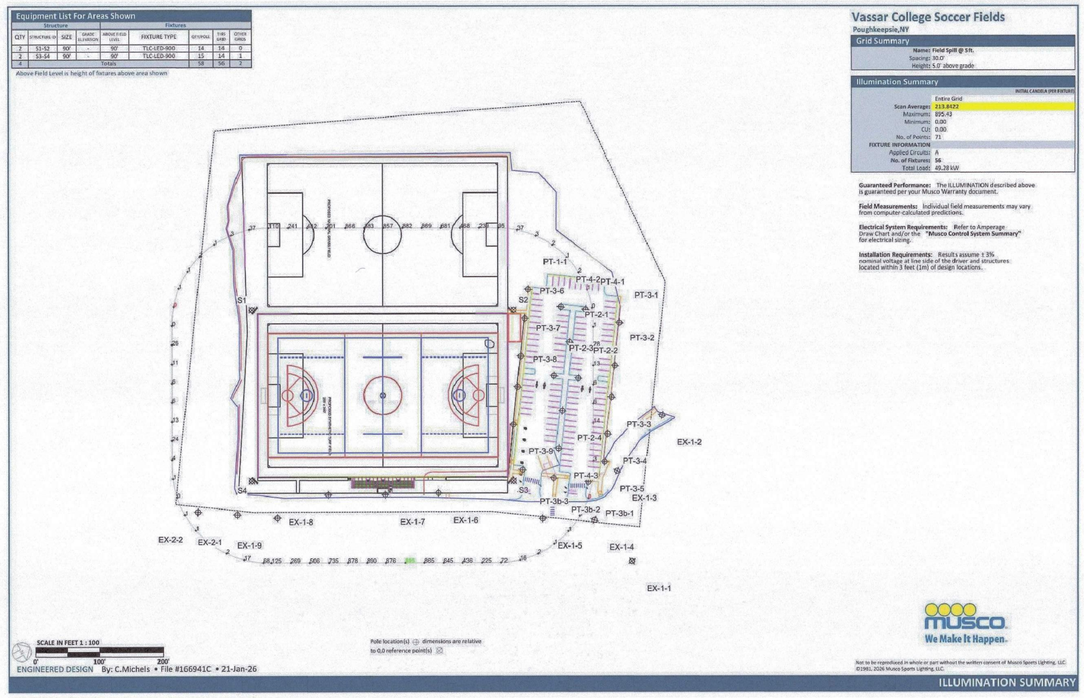
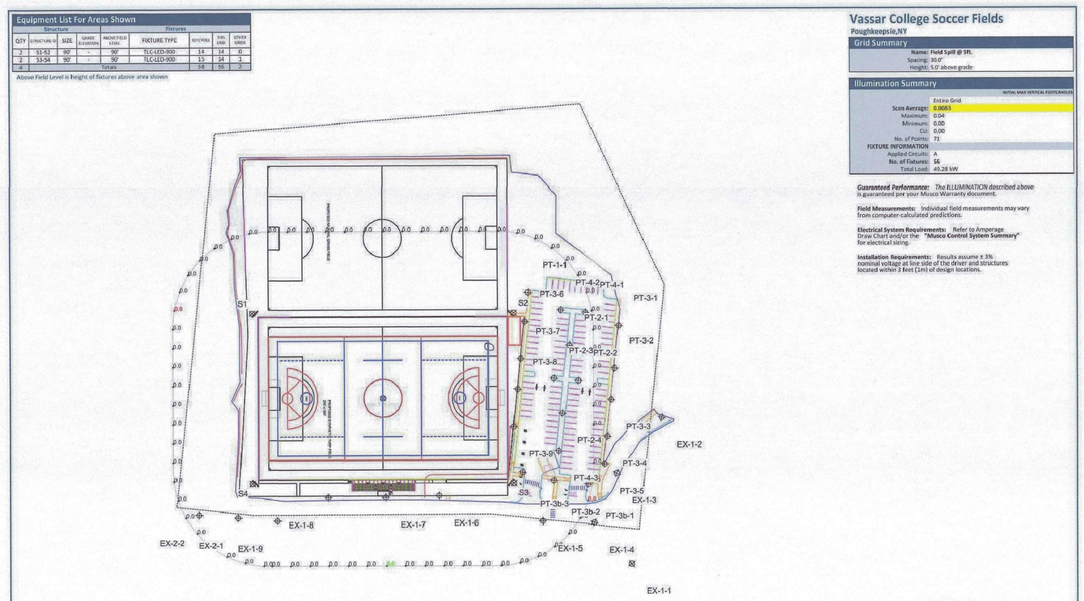


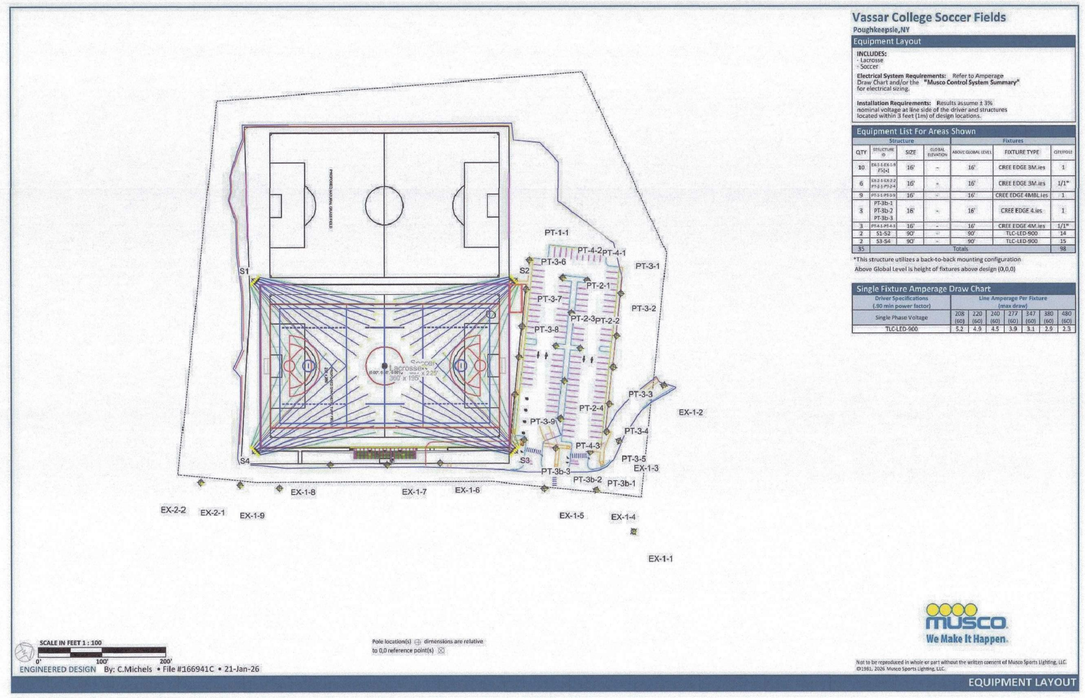

1 MUSCO LIGHTING FIELD SPILL AT THREE FEET: HORIZONTAL FOOTCANDLES
NOT TO SCALE




2 MUSCO LIGHTING FIELD SPILL AT FIVE FEET: CANDELA (PER FIXTURE)
NOT TO SCALE




3 MUSCO LIGHTING FIELD SPILL AT FIVE FEET: MAX VERTICAL FOOTCANDLES
NOT TO SCALE




4 MUSCO LIGHTING EQUIPMENT LAYOUT
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E. SYRACUSE, NY 13057-1421


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GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
MUSCO LIGHTING
FIELD SPILL

Drawing No.
AF - D - 6
SHEET 27 OF 28

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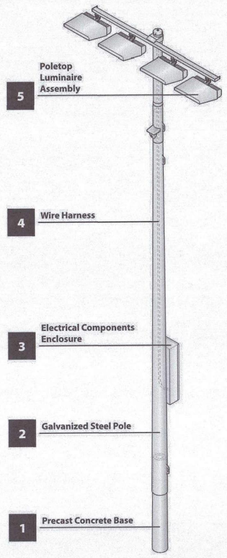
## Datasheet: Light-Structure System™

**TLC for LED®**

# 5 Easy Pieces™

**Complete System from Foundation to Poletop**

- Factory wired, aimed, and tested
- Fast, trouble-free installation
- Comprehensive corrosion package
- Integrated lightning ground




| MUSCO LIGHTING NOTES | |
|---|---|
| POLE HEIGHT | 90 FEET |
| LIGHT LEVELS | 50 FC WITH DIMMING CAPABILITIES FOR PRACTICES |
| COMPLIANCE | DESIGN WILL BE DARK SKY APPROVED |

TLC for LED is a trademark of Musco Corporation. ©2015, 2023 Musco Sports Lighting, LLC. U.S. and Foreign patent(s) issued and pending. M-3301-en04-2

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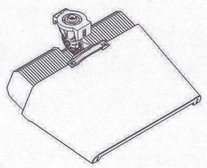
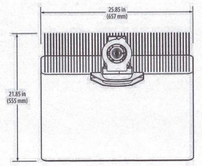
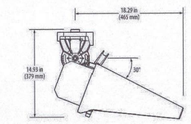
## Datasheet: TLC-LED-900 Luminaire and Driver






### Luminaire Data

| | |
|---|---|
| Weight (luminaire) | 40 lb (18 kg) |
| UL listing number | E338094 |
| UL listed for USA/Canada | UL1598<br>CSA-C22.2 No.250.0 |
| CE Declaration | LVD, EMC, RoHS |
| Ingress protection (luminaire) | IP66 |
| Impact rating | IK07 |
| Material and finish | Aluminum,<br>powder-coat painted |
| Wind speed rating (aiming only) | 150 mi/h (67 m/s) |
| UL, IEC ambient temperature rating (luminaire) | 50°C (122°F) |

### Photometric Characteristics

| | |
|---|---|
| Projected lumen maintenance per IES TM-21-11 | |
| L90 (20k) | >120,000 h |
| L80 (20k) | >120,000 h |
| L70 (20k) | >120,000 h |
| Lumens[1] | 104,000 |
| CIE correlated color temperature | 5700 K |
| Color rendering index (CRI) | 75 typ, 70 min |
| LED binning tolerance | 5-step MacAdam Ellipse |

Footnotes:

1) Value represents most common optical variation. Incorporates appropriate dirt depreciation factor for life of luminaire.

U.S. and foreign patent(s) issued and pending. ©2018, 2024 Musco Sports Lighting, LLC. • TLC-LED-900 5700 K 75 CRI Typ • M-2628-en04-10

musco www.musco.com · lighting@musco.com



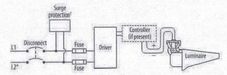
## Datasheet: TLC-LED-900 Luminaire and Driver

### Driver Data

**Electrical Data**

| | |
|---|---|
| Rated wattage[1] | |
| Per driver | 880 W |
| Per luminaire | 880 W |
| Number of luminaires per driver | 1 |
| Starting (inrush) current | <40 A, 256 µs |
| Fuse rating | 15 A |
| UL, IEC ambient temperature rating (electrical components enclosure) | 50°C (122°F) |
| Ingress protection (electrical components enclosure) | IP54 |
| Efficiency | 95% |
| Dimming mode | optional |
| Range, energy consumption | 21 – 100% |
| Range, light output | 26 – 100% |
| Flicker | <2% |
| Total harmonic distortion (THD) at full output | <20% |

Typical Wiring




* If L2 is neutral then not switched or fused.
† Not present if indoor installation.

| | 200 Vac 50/60 Hz | 208 Vac 60 Hz | 220 Vac 50/60 Hz | 230 Vac 50 Hz | 240 Vac 50/60 Hz | 277 Vac 60 Hz | 347 Vac 60 Hz | 380 Vac 50/60 Hz | 400 Vac 50 Hz | 415 Vac 50 Hz | 480 Vac 60 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Max operating current per luminaire[2] | 5.43 A | 5.22 A | 4.93 A | 4.72 A | 4.52 A | 3.92 A | 3.13 A | 2.86 A | 2.72 A | 2.62 A | 2.26 A |

Footnotes:

1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment..

2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information..

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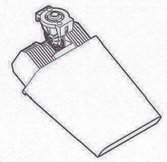
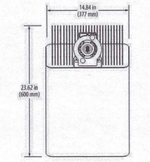
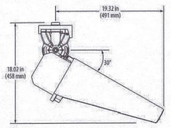
## Datasheet: TLC-LED-550 Luminaire and Driver






### Luminaire Data

| | |
|---|---|
| Weight (luminaire) | 25 lb (11 kg) |
| UL listing number | E338094 |
| UL listed for USA/Canada | UL1598<br>CSA-C22.2 No.250.0 |
| CE Declaration | LVD, EMC, RoHS |
| Ingress protection (luminaire) | IP66 |
| Impact rating | IK07 |
| Material and finish | Aluminum,<br>powder-coat painted |
| Wind speed rating (aiming only) | 150 mi/h (67 m/s) |
| UL, IEC ambient temperature rating (luminaire) | 50°C (122°F) |

### Photometric Characteristics

| | |
|---|---|
| Projected lumen maintenance per IES TM-21-11 | |
| L90 (20k) | > 20,000 h |
| L80 (20k) | > 20,000 h |
| L70 (20k) | > 20,000 h |
| Lumens[1] | 67,000 |
| CIE correlated color temperature | 5700 K |
| Color rendering index (CRI) | 75 typ, 70 min |
| LED binning tolerance | 5-step MacAdam Ellipse |

Footnotes:

1) Value represents most common optical variation. Incorporates appropriate dirt depreciation factor for life of luminaire.

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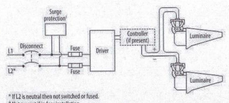
## Datasheet: TLC-LED-550 Luminaire and Driver

### Driver Data

**Electrical Data**

| | |
|---|---|
| Rated wattage[1] | |
| Per driver | 1080 W |
| Per luminaire | 540 W |
| Number of luminaires per driver | 1 - 2 |
| Starting (inrush) current | <40 A, 256 µs |
| Fuse rating | 15 A |
| UL, IEC ambient temperature rating (electrical components enclosure) | 50°C (122°F) |
| Ingress protection (electrical components enclosure) | IP54 |
| Efficiency | 95% |
| Dimming mode | optional |
| Range, energy consumption | 15 - 100% |
| Range, light output | 20 - 100% |
| Flicker | <2% |
| Total harmonic distortion (THD) at full output | <20% |

Typical Wiring




* If L2 is neutral then not switched or fused.
† Not present if indoor installation.

| | 209 Vac 50/60 Hz | 208 Vac 60 Hz | 220 Vac 50/60 Hz | 230 Vac 50 Hz | 240 Vac 50/60 Hz | 277 Vac 60 Hz | 347 Vac 60 Hz | 380 Vac 50/60 Hz | 400 Vac 50 Hz | 415 Vac 50 Hz | 480 Vac 60 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Max operating current per luminaire[2] | 3.32 A | 3.19 A | 3.02 A | 2.89 A | 2.88 A | 2.40 A | 1.92 A | 1.75 A | 1.66 A | 1.60 A | 1.39 A |

Footnotes:

1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment..

2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.

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1 MUSCO LIGHT POLE
NOT TO SCALE

2 MUSCO LIGHT FIXTURE
NOT TO SCALE

3 MUSCO LIGHT FIXTURE
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4 MUSCO LIGHT FIXTURE
NOT TO SCALE

5 MUSCO LIGHT FIXTURE
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| NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 01/26/26 | REVISED PER TOWN COMMENTS |

REVISIONS

| | |
|---|---|
| Design/Calcs | BLS w/LRC |
| Drawn | MG |
| Checked | TC |
| Approved | JC |
| CAD File | VC Athletic Details.dwg |
| Project No. | 22-2928 |
| Date | 12/19/2025 |
| Scale | NOT TO SCALE |

GRAPHIC SCALE
30 15 0 30
SCALE IN FEET

VASSAR COLLEGE
TURF FIELD
334 HOOKER AVENUE
TOWN OF POUGHKEEPSIE

ATHLETIC FIELD DETAILS
MUSCO LIGHTING
DETAILS

Drawing No.
AF - D - 7
SHEET 28 OF 28

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