

Jeffery Schmitt, Planning Board Chair  
Michael Harris, Vice Chairperson  
Teresa Bakner, Board Attorney  
Dale Warner, Town Planner  
Melissa Deffer, Clerk



Elizabeth Novak, Board Member  
Joshua Houghton, Board Member  
Michael Santulli, Board Member  
Matthew Hoffman, Board Member  
Michael Walpole, Board Member

**Town of Duanesburg  
Planning Board Agenda  
July 21<sup>st</sup>, 2022**

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Town of Duanesburg is inviting you to a scheduled Zoom meeting.

Topic: Town of Duanesburg's Planning Board Zoom Meeting

Time: This is a recurring meeting Meet anytime

**Join Zoom Meeting**

<https://us02web.zoom.us/j/87039078096>

**Meeting ID:** 870 3907 8096

**Passcode:** 109029

**Dial in by Phone:** 1-646-558-8656

**Meeting ID:** 870 3907 8096

**Passcode:** 109029

**INTRODUCTION BY CHAIRPERSON JEFFERY SCHMITT:**

**OPEN FORUM:** One presentation per individual **MAXIMUM 4 minutes** on items not on the agenda.

**PUBLIC HEARINGS:**

None

**NEW BUSINESS:**

**#22-09 Dunnsville Rod and Gun Club:** SBL#68.00-1-14, (C-1) located at 3081 Western Turnpike is seeking a Lot line Adjustment under Local Law #2 of 2017 of the Town of Duanesburg Subdivision Ordinance.

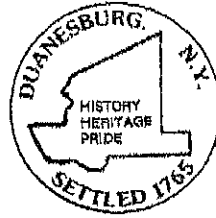
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**#21-11 Breitenstein, Carl:** SBL# 66.00-4-2.31, (R-1) located on the south side of Route 7 just west of the Duanesburg Fire Department and is seeking a major subdivision under section 13.5.2 of the Town of Duanesburg Subdivision Ordinance.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**#22-12 Clark, Todd:** SBL#32.00-1.6.11, (R-2) located at 167 Mill Point Rd is seeking a Special Use Permit for a two-family dwelling under section 3.5.60; section 8.4(8) of the Town of Duanesburg Zoning Ordinance.

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Joshua Houghton, Board Member  
Michael Santulli, Board Member  
Matthew Hoffman, Board Member  
Michael Walpole, Board Member

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OLD BUSINESS:**

**#22-01 Valley Mobile Home Court, LLC:** SBL#55.00-4-11.6, (C-2) located at 6204 Duanesburg Rd is seeking a Special Use Permit for 11 storage units under section 12.4(33) and a Minor Subdivision under section 3.4 of the Town of Duanesburg Zoning Ordinance.  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**#22-10 Kagas, Spiro:** SBL# 53.00-1-29.21, (C-1) located at 9938 Western Turnpike is seeking an amendment to add an additional bay to the Ultimate Wishy Wash under section 14.6.2.5 of the Town of Duanesburg Zoning Ordinance. Also, seeking a site plan approval for accessory parking under section 5.2.2 of the Town of Duanesburg Zoning Ordinance.  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**#21-21 Serth, Joseph:** SBL# 35.05-1-19.2, (R-1) located at 216-218 Batter St is seeking a Special Use Permit for use for an event venue under Local Law #1 2021 of the Town of Duanesburg Zoning Ordinance.  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**#22-11 Primax Properties, LLC c/o Bohler:** SBL# 55.00-4-11.6, (C-2) located at Rt 7 are seeking a Special Use Permit under section 12.4(28) of the Town of Duanesburg Zoning Ordinance.  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SKETCH PLAN REVIEW:**

**#22-13 Bennett, Trent:** SBL# 66.00-3-4.1, (R-2) located at 1052 Gage is seeking a Minor Subdivision under section 3.4 of the Town of Duanesburg Subdivision Ordinance.  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Matthew Hoffman, Board Member  
Michael Walpole, Board Member

**#22-14 DeForest/Mayo:** SBL#53.00-1-10.11, (R-2) located at 876 McGuire School Rd is seeking a Lot Line Adjustment under Local Law #2 of 2017 of the Town of Duanesburg Subdivision Ordinance.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Other:**  
None

**Minute Approval:**

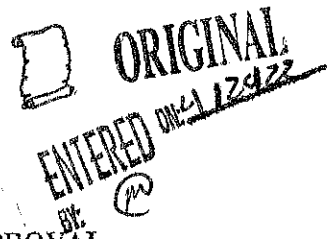
**June 16<sup>th</sup>, 2022, PLANNING BOARD MEETING MINUTES:**

Approved: Yes \_\_\_\_\_ No: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

**ADJOURNMENT**

**AGENDA ITEMS MAY BE ADDED, DELETED, OR ORDER CHANGED WITHOUT NOTICE**

 ORIGINAL  
ENTERED 01-4-12 922

TOWN OF DUANESBURG

APPLICATION FOR SITE/ SKETCH DEVELOPMENT PLAN APPROVAL

Preliminary  Date: \_\_\_\_\_ Final  Date: \_\_\_\_\_  
(Check appropriate box)

Name of proposed development Duanesville Rd + Gun

**Applicant:**

Name Duanesville Red & Gun Club  
Address 3081 Western Turnpike  
Duanesburg NY 12056  
Telephone \_\_\_\_\_

**Plans Prepared by:**

Name Ferguson & Foss  
Address Sohnstown NY  
Telephone 518-762-0997

**Owner (if different):**

(if more than one owner, provide information for each)

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

Ownership intentions, i.e., purchase options

purchase portion + add to existing parcel

Location of site

3081 Western Tpk

Section PT/O 68.00 - Block 1 Lot 13  
68.00 1 14

Current zoning classification C-1

State and federal permits needed (list type and appropriate department)

Proposed use(s) of site

merge with 68.00 - 1 - 14

Total site area (square feet or acres) 1/4 Acre

Anticipated construction time none

Will development be phased? none



Current land use of site (agricultural, commercial, underdeveloped, etc.)

Access Rd. to club

Current condition of site (buildings, brush, etc.)

Brush & gravel Roadway

Character of surrounding lands (suburban, agricultural, wetlands, etc.)

Estimated cost of proposed improvement \$

Anticipated increase in number of residents, shoppers, employees, etc. (as applicable)

none

Describe proposed use, including primary and secondary uses; ground floor area; height; and number of stories for each building:

- for residential buildings include number of dwelling units by size (efficiency, one-bedroom, two-bedroom, three or more bedrooms) and number of parking spaces to be provided.
  - For non-residential buildings, include total floor area sales area; number of automobile and truck parking spaces;
  - Other proposed structures.
- (Use separate sheet if needed)

Add portion to Gun Club property

VARIANCE APPLICATION  
TOWN OF DUANESBURG  
ZONING BOARD OF APPEALS

Revised 03/5/15

Date: 5-5-2022 Zoning District R-2

Type of Variance

Use Variance  Area Variance

SBL# 68,00-1-14

Phone #: \_\_\_\_\_

Applicant's Name: Dunnsville Rod & Gun Club

Applicant's Address: 3081 Western Turnpike  
Duanesburg NY 12056

RECEIVED  
MAY 09 2022

Property Owner Name(if different): \_\_\_\_\_

Property Address (if different): \_\_\_\_\_



ORIGINAL

Property Owner's Signature (officer) Richard Peterson

(Signature of owner indicates they have reviewed the proposal and give their permission)

Proposal: (Brief description of request)

Front yard reduction for flag lot

A copy of this notarized application and the accompanying information must be submitted to the Planning and Zoning Department for approval before being placed on the ZBA agenda. Twelve (15) copies of this application must be reviewed and filed at least 10 days prior to the next ZBA meeting.

**REQUIRED INFORMATION:**

- Copy of the property deed
- Location map showing the location of the property with
  - A) Name of applicant and SBL#
  - B) North arrow; Street and if applicable the lake shore
  - C) Adjoining property owners names with location of wells and septic systems within 100ft of the adjoining property boundaries
- Property map to scale
  - A) Name of applicant and SBL#
  - B) North arrow; Location of any structures currently on the property with dimensions of the structures and distances to the property boundaries
  - C) Location of proposed structure, dimensions and intended use; Distances from the proposed structure to the property boundaries
  - D) Location of well and septic system; Any easements or right of ways and any other geographic or environmental characteristics of the property which may have a bearing on the Board's decision

I certify that all the information submitted is true and accurate to the best of my knowledge.

Richard Peterson  
Applicant

5-6-22  
Date

Rebekah Lynn Dingli

State of New York, county of Schenectady sworn this 6<sup>th</sup> day of May 2022, Notary Public

**REBEKAH LYN DINGLI**  
Notary Public - State of New York  
No. 01D16294781  
Qualified in Schoharie County  
My Commission Expires December 21, 2024

\*\*\*\*\* (For Office use only) \*\*\*\*\*

Reviewed by \_\_\_\_\_ Date \_\_\_\_\_

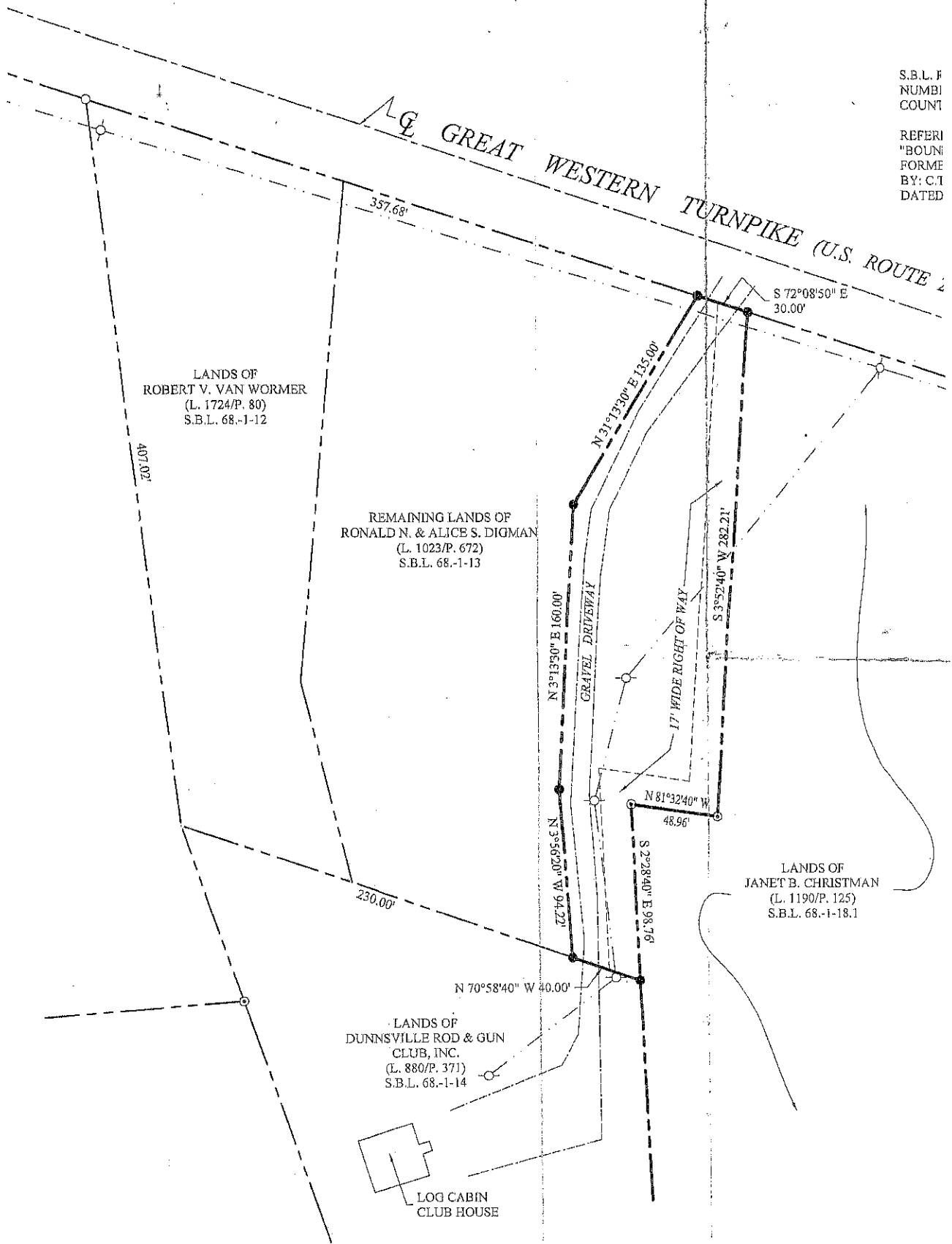
Fee \_\_\_\_\_ Date \_\_\_\_\_ Check# \_\_\_\_\_ Rec'd By \_\_\_\_\_

Hearing Date \_\_\_\_\_ Approved: YES NO Approval Date \_\_\_\_\_

Conditions of approval: A permit must be obtained within 6 months of approval of this application and all other aspects of the Zoning Ordinance must be followed or the approval becomes null and void.

Other Conditions include:

Authorized Signature John W. Sage Date 6-21-22  
(ZBA Chairperson)

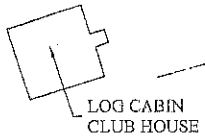


LANDS OF  
 ROBERT V. VAN WORMER  
 (L. 1724/P. 80)  
 S.B.L. 68.-1-12

REMAINING LANDS OF  
 RONALD N. & ALICE S. DIGMAN  
 (L. 1023/P. 672)  
 S.B.L. 68.-1-13

LANDS OF  
 JANET B. CHRISTMAN  
 (L. 1190/P. 125)  
 S.B.L. 68.-1-18.1

LANDS OF  
 DUNNSVILLE ROD & GUN  
 CLUB, INC.  
 (L. 880/P. 371)  
 S.B.L. 68.-1-14



S.B.L. F  
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 BY: C.I  
 DATED

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RECEIVED  
AUG 03 2021

**TOWN OF DUANESBURG**

**APPLICATION FOR SITE/ SKETCH DEVELOPMENT PLAN APPROVAL**

**ORIGINAL**

Preliminary  Date: \_\_\_\_\_ Final  Date: \_\_\_\_\_  
(Check appropriate box)

Name of proposed development JCB Acres

**Applicant:**

Name Carl Breitenstein  
Address 6253 Western Turnpike  
Delanson NY 12053  
Telephone 518 265 4805

**Plans Prepared by:**

Name Lance Manus  
Address 143 Albert Rd  
Delanson NY 12053  
Telephone 518 875 6765

**Owner (if different):**

(if more than one owner, provide information for each)

Name Estate of James Breitenstein  
Address 6167 Western Turnpike  
Delanson NY 12053  
Telephone 518 875 8808

**Ownership intentions, i.e., purchase options**

Subdivide and market to developer/builder

**Location of site**

South Side Route 7, West of Duaneburg Fire Dept

Section 66.00 Block 4 Lot 2, 31

Current zoning classification ~~E-2 DW~~ R-1

**State and federal permits needed (list type and appropriate department)**

DOT Curb Cut to Rt 7

**Proposed use(s) of site**

Residential Development

Total site area (square feet or acres) ~~27.0~~ 27.62 acres

Anticipated construction time unknown

Will development be phased? yes

Over →

NOTICE OF DETERMINATION  
of the Town of Duaneburg

Date of Determination 9/10/21

Application of Carl Breitenstein under section  
135 of the (Village of Delanson/ Town of Duaneburg)  
Zoning Ordinance.

Applicant Carl Breitenstein  
Address 6253 Western Trk  
Delanson, NY 12053

Phone 518-265-4805 Zoning District R-1 SBL# 66-00-4-2.31

Description of  
Project: subdivide lot into eleven lots by means of  
cluster development

Determination:

cluster development

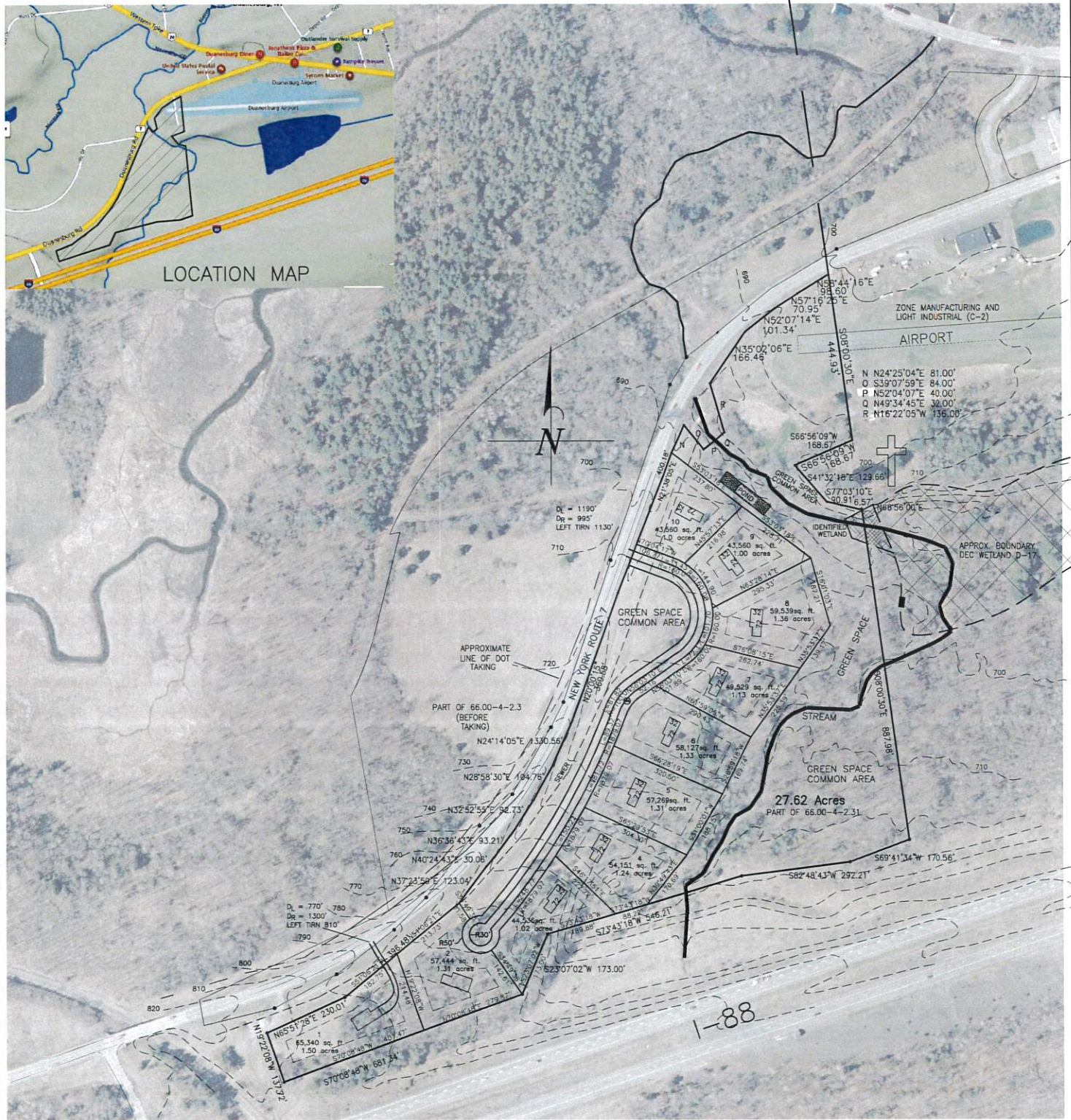
Reason supporting determination:

Town of Duaneburg zoning Ordinance adopted 4/11/15  
Section 135.2

Action: Refer to Planning Board for the purpose of Major Subdivision

Code Enforcement Officer: [Signature]





LOCATION MAP

MAP REFERENCES

1. MAP ENTITLED: LANDS OF JAMES C. BREITENSTEIN  
MINOR SUBDIVISION PLAT  
THIS MAP SUPERCEDES, REVISES AND CORRECTS A MAP DATED 8-1-96 REVISED 8-1-97, 8-6-97 FILED  
IN SCHENECTADY COUNTY CLERKS OFFICE  
AND A MAP DATED 8-1-96 LAST REVISED 7-21-98  
9-30-97 DOC.970048 MAP BK3 AT PG780
2. A SURVEY MAP PREPARED BY  
RUDOLPH D. SNYDER, L.S.43753  
DATED DECEMBER 14, 1977  
LAST REVISED APRIL 10, 1980  
FOR JAMES C. BREITENSTEIN

ZONING DISTRICT HIGHER DENSITY RESIDENTIAL (R-1)  
MINIMUM LOT SIZES

- 1) MINIMUM LAND AREA 43,560 SF
- 2) MINIMUM LOT WIDTH 175 FEET
- 3) MINIMUM LOT DEPTH 200 FEET
- 4) MAXIMUM LOT COVERAGE 30%

CONCEPT PLAN FOR CLUSTER DEVELOPMENT  
11 LOTS, MINIMUM LOT SIZE REQUIRED 1/2 ACRE  
MINIMUM LOT SIZE PROVIDED 1 ACRE  
MINIMUM SIDE, FRONT AND REAR YARD 40 FEET  
NO MINIMUM WIDTH OR DEPTH

DATE: APRIL 1, 2022  
REVISED: JUNE 15, 2022

SURVEYOR

SCALE: 1"=200'  
SHEET  
2 OF 2



L M Associates  
Consulting Engineers

P.O. Box 111 Duaneburg, N.Y. 12056  
(518) 875-6785

LANDS OF  
JAMES C. BREITENSTEIN  
TOWN OF DUANEBURG  
COUNTY OF SCHENECTADY, STATE OF NEW YORK  
TAX MAP # 66.00-4-2.3

TITLE  
TEN  
LOT  
CLUSTER  
SUBDIVISION



\*\*\*\*\*FOR OFFICE USE ONLY\*\*\*\*\*

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JUL 05 2022

CHECKLIST OF REQUIRED INFORMATION:

- Title of drawing.
- Tax Map ID #
- Zoning district
- Current Original Deed
- NYS Survey (L.S. & P.E.)
- North Arrow, scale (1"=100'),
- Boundaries of the property plotted and labeled to scale.
- School District/Fire District
- Green area/ landscaping
- Existing watercourses, wetlands, etc.
- Contour Lines (increments of 10ft.)
- Easements & Right of ways
- Abutting Properties Wells/ Sewer Systems within 100ft.
- Well/ Water system

- Septic system: Soil investigation completed?
- Sewer System: Which district?
- Basic SWPPP (1≥)
- Full Storm Water Control Plan (More than an acre)
- Other (Building Set Backs)
- Storm Water Control Plan
- Short or long EAF [www.dec.ny.gov/eafmapper/](http://www.dec.ny.gov/eafmapper/)
- Street pattern: Traffic study needed?
- All property Mergers **REQUIRE** both owners Signatures on the Application

Additional Requirements for Special Use Application:

- New or existing building
- Business Plan, Hours of operation, & number of employees, floor plan, uses, lighting plan/ landscaping/signage
- Parking, Handicap Spaces, & lighting plan

setbacks  
80'  
80'  
80'  
80'  
Front  
Side  
Corner  
Rear

Date 7/5/22

Application type:  Major Subdv  Minor Subdv  Special Use Permit  Site/ Sketch Plan Review  LotLine Adjust  
Proposal: In law Detached Apartment

Section R.4.(B) of Zoning Ordinance.

Present Owner: Todd Clark (AS APPEARS ON DEED!!)  
Address: 167 Mill Point rd Delanson Zip code: 12053  
Phone # (required) 518-788-6328

Applicants Name (if different): \_\_\_\_\_ Phone# (required) \_\_\_\_\_  
Location of Property (if different from owners) \_\_\_\_\_  
Tax Map # 32.00-1-6-11 Zoning District R.2

Signature of Owner (S) if different from Applicant (AS APPEARS ON DEED!)

**LANDS CONVEYED TO (REQUIRED FOR MERGERS)**

Signature of receiving Property Owner [Signature] (AS APPEARS ON DEED!!)

I CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT. The Applicant hereby certifies that he/she is the owner of the above property or has duly authorized, in writing, by the owner of record to make this application. Further, by signing this application, the owner gives permission for a representative (s) of the Town of Duaneburg to walk the property for the purposes of conducting a site review.

[Signature] Date 7/5/22  
Signature of Owner(S) and/or Applicant(S)

**ALL APPLICATION FEES ARE NON-REFUNDABLE!**

(For office use only)

Application fee paid: \_\_\_\_\_ Check# \_\_\_\_\_ Reviewed By \_\_\_\_\_ Date \_\_\_\_\_

Approved  Disapproved  Refer to Code Enforcement Section \_\_\_\_\_ of \_\_\_\_\_ Ordinance

Planning Commission Comments: \_\_\_\_\_

\_\_\_\_\_  
Planning Chairperson

\_\_\_\_\_  
Date

\_\_\_\_\_  
Code Enforcement

\_\_\_\_\_  
Date



Agricultural Data Statement

Date: \_\_\_\_\_

RECEIVED  
JUL 05 2022

Instructions: Per § 305-a of the New York State Agriculture and Markets Law, any application for a special use permit, site plan approval, use variance or a subdivision approval requiring municipal review and approval would occur on property within a New York State Certified Agricultural District containing a farm operation or property with boundaries within 500 feet of a farm operation located in an Agricultural District shall include an Agricultural Data Statement.

Applicant	Owner if Different from Applicant
Name: _____ Address: _____ _____	Name: _____ _____ _____

- Type of Application: Special Use Permit; Site Plan Approval; Use Variance; Area Variance; Subdivision Approval (circle one or more)
- Description of proposed project:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Location of project: Address: 167 Mill Point rd Debnson  
Tax Map Number (TMP) \_\_\_\_\_
- Is this parcel within an Agricultural District? YES  NO  (Check with your local assessor if you do not know.)
- If YES, Agricultural District Number \_\_\_\_\_
- Is this parcel actively farmed? YES  NO
- List all farm operations within 500 feet of your parcel. Attach additional sheet if necessary.

NAME: <u>#24 SMITH</u> ADDRESS: _____ _____	NAME: _____ ADDRESS: _____ _____
Is this parcel actively farmed? YES <input type="checkbox"/> NO <input type="checkbox"/>	Is this parcel actively farmed? YES <input type="checkbox"/> NO <input type="checkbox"/>
NAME: _____ ADDRESS: _____ _____	NAME: _____ ADDRESS: _____ _____
Is this parcel actively farmed? YES <input type="checkbox"/> NO <input type="checkbox"/>	Is this parcel actively farmed? YES <input type="checkbox"/> NO <input type="checkbox"/>

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Signature of Owner (if other than applicant)

Reviewed by: \_\_\_\_\_

Dale R. Warner  
Dale R. Warner

\_\_\_\_\_  
Date

6/23/22

Revised 4/4/17

**FARM NOTE**

Prospective residents should be aware that farm operations may generate dust, odor, smoke, noise, vibration and other conditions that may be objectionable to nearby properties. Local governments shall not unreasonably restrict or regulate farm operations within State Certified Agricultural Districts unless it can be shown that the public health or safety is threatened.

NOTE TO REFERRAL AGENCY: County Planning Board review is required. A copy of the Agricultural Data Statement must be submitted along with the referral to the County Planning Department.

NOTICE OF DETERMINATION  
of the Town of Duanesburg

RECEIVED  
JUL 07 2022

Date of Determination 7/7/22

Application of Todd Clark under section  
8.4 (5) of the (Village of Delanson/ Town of Duanesburg)  
Zoning Ordinance.

Applicant Todd Clark  
Address 167 Mill Point Rd.  
Delanson, NY 12053

Phone 518-788-6328 Zoning District R-2 SBL# 32.00-1-6.11

Description of  
Project: Two-Family Dwelling

Determination:  
special use permit required

Reason supporting determination:  
Town of Duanesburg zoning ordinance adopted 6/11/15  
section 8.4(A) Two Family Dwelling Section 3.5.60

Action: Refer to Planning Board for the purpose of Special Use Permit

Code Enforcement Officer: DeLuca

#1; New house to property line  
 $\approx 150$  ft

#2; Main house to new house  
 $\approx 110$  ft

#3; Garage to new house  
 $\approx 80$  ft

#4; Well to Septic  
 $\approx 120$  ft

#5; New house to white line on  
Bramans Owners Rd  
 $\approx 180$  ft

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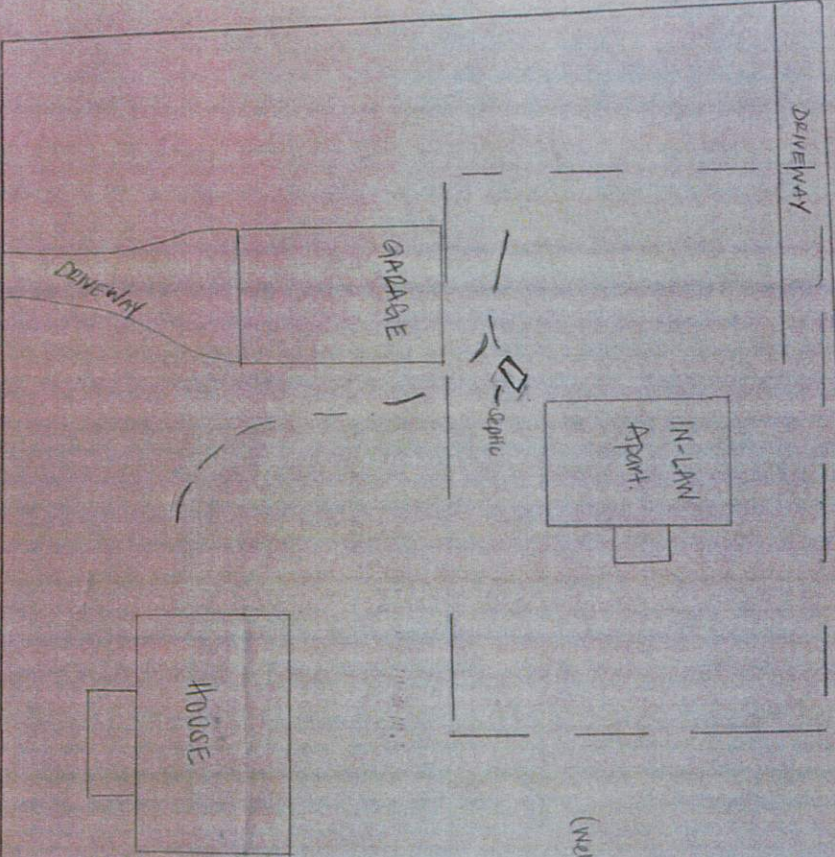
New House (1512 sq ft)  
- 36 x 42 -



PROPERTY LINE



ORIGINAL



○ well  
(WELL TO SEPTIC = 120 FT)

MILL POINT ROAD

DRIVEWAY

GARAGE

EXPLAN

HOUSE

IN-LAWN  
APART.

GARAGE

DRIVEWAY



32.00-1-6.11







Albany Office

100 Great Oaks Boulevard | Suite 114 | Albany, New York 12203  
P: 518.382.1774

July 14, 2022

Dale Warner, Town Planner  
Town of Duanesburg  
5853 Western Turnpike  
Duanesburg, NY 12056

**Re: Valley Mobile Home Court, LLC Project Review  
Subdivision, Site Plan and Special Use Permit  
Our Project No. 22438**

Dear Mr. Warner:

On July 7, 2022, PRIME AE received the Response Letter dated 7/7/2022, Revised Long Form Environmental Assessment Form (FEAF) revised 7/7/2022, Revised Site Layout Plans dated 7/7/2022, Subdivision Plan dated 7/7/2022 prepared by Empire Engineering, PLLC, and Stormwater Pollution Prevention Plan (SWPPP) dated 7/7/2022. This project, located at 6204 Duanesburg Road (tax map 055.00-4-11.151) on 106.2 +/- acres, proposes to subdivide the land into three (3) parcels and then construct 10 self-storage unit structures and 2 acres of impervious gravel storage area with associated driveway and stormwater management system. The minor subdivision portion of the project will create separate parcels for the existing barn and single-family dwelling from the proposed self-storage project parcel. Based on a review of the documents we provide the following comments (items in **bold** still need to be addressed):

#### Site Plan Drawing Set

1. An Existing Conditions sheet has been added to the Drawing Set. The sheet shows the lot's existing contours, existing vegetation, watercourses, wetlands, flood plains, and bodies of water, structures, and all abutting lot landowner names and tax ID numbers, addressing our previous comment.
2. The location of the water bodies present at the location are now shown on the Existing Conditions Plan, satisfying our prior comment.
3. The Legend on Sheet C101 of the Site Plan now shows boxes of proposed asphalt, gravel, and grass with different shading; **however, no proposed grass areas appear to be shown on the Site Plan. The Applicant should indicate where grass areas are proposed on the Site Plan, if applicable.**
4. The owner and tax number for the parcel to the east of 55-4-11.5 (vacant land) are now shown on the Site Plan, addressing our previous comment.
5. The areas of disturbance for Phases 1A, 1B, and 1C have been added to the Site Plan and the lines indicating the boundaries between proposed phases have been darkened, satisfying our previous comment.
6. The lumens of each light and illumination level contours have been added to the Lighting Plan, as well as a note requiring that all lighting be installed such that light spillage is prevented, satisfying our previous comment.
7. Sufficient notes have been added to the Landscaping Plan to show that the plantings will provide adequate screening from the neighboring homes, addressing our previous comment.
8. Spot elevations for the proposed swale to the west of the proposed storage units have been added to the grading plan, showing that the swale will go the entire length of the storage area and protect the



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[www.primeeng.com](http://www.primeeng.com)

- storage unit area from runoff from the nearby slope at the edge of the property. **The Applicant should note on the drawing that the arrows shown are flow/slope arrows and that each storage unit should have a base slab reveal above the adjacent driveway to prevent stormwater infiltration.**
9. Empire Engineering's comment response letter indicates the proposed slope of the grassed area adjacent to the property line with the gas station, **but does not address the grade break on the property line north of the existing septic system within the gas station property. The proposed 802' contour intersects with the existing 805' contour at one point along the property line, indicating a 3' vertical drop at this location (more to the east of this intersection of proposed and existing contours). The Applicant should address how this grade break will be permanently stabilized on the plans.**
  10. Grading of Phases 1A, then 1B, and then 1C as opposed to grading all areas of the site at once will leave a large pit in the middle of the site. **The Applicant should indicate the proposed timing of stormwater management area construction and the proposed methods for stabilizing the edges of the graded areas to prevent landslides on the grading plan.**
  11. Empire Engineering has indicated in the response letter that no designated parking spaces are proposed for the site and that the driveway is wide enough to provide direct access to each storage unit without interfering with two-way traffic, satisfying our previous comment.
  12. Traffic flow arrows have been added to the Site Plan, addressing our comment; **however, the Applicant should label these arrows and the stormwater flow arrows on the plans to distinguish between the two types of arrows.**
  13. Empire Engineering has indicated in the comment response letter that the Applicant has applied for a NYSDOT Driveway Permit, satisfying our previous comment.
  14. The extents of the proposed gravel area and the extents of the outdoor storage area have now be indicated on the plans, addressing our previous comment.
  15. Empire Engineering has indicated in the comment response letter that the containers for solid waste disposal will be stored inside a unit to prevent public access, satisfying our previous comment.
  16. Empire Engineering has indicated in the comment response letter that the details of the sign will be provided prior to sign permit application, satisfying our previous comment.
  17. Empire Engineering has indicated in the comment response letter that emergency vehicle access throughout the site will be provided, that fire hydrants will not be provided, and that the buildings will meet the NYS Building Code, satisfying our previous comment.
  18. Empire Engineering has indicated in the comment response letter that the employees on site will be there for exterior maintenance only and as such sanitary facilities will not be needed, satisfying our previous comment.

#### Subdivision Plan

1. The Subdivision Plan has been revised to identify the owners and tax numbers of most parcels surrounding the project location; however, Empire Engineering has indicated in their comment response letter that Lot 1 is owned by another entity. **Therefore, the Applicant should provide the name of the owner and the full tax number of this property as well.**
2. Empire Engineering has satisfactorily clarified the boundaries and total area of the existing site, satisfying our previous comment.
3. The lakes, ponds, streams and wetlands present on the proposed project site are now shown on the Subdivision Plan and the existing lagoon has been labeled; **however, the Applicant should also provide a leader indicating that the hatched areas represent wetlands.**





### Revised FEAF

1. Empire Engineering has stated in the comment response letter that only subdivided lots 2 and 3 are a part of this project and therefore the total project area of 103.8 was not revised, satisfying our previous comment.
2. Empire Engineering has stated in the comment response letter that 10 units are proposed and that the project documents have been revised to show this amount, addressing our previous comment.
3. The total acreage to be physically disturbed was revised to 26.9 acres, addressing our previous comment.
4. The response to question C.4.d was revised to show Shafer Park, Esperance Park, Schilling Park, Bozenkill Park, Orsini Park, Juracka Park, Pansy Park, Memorial Park, Hillhurst Park, and Poutre Park serving the project area, addressing our previous comment.
5. Empire Engineering explained that only subdivided lots 2 and 3 are a part of this project and therefore the previously listed area of the project was correct, satisfying our previous comment.
6. The Applicant stated that the subdivision is a Mixed-Use Commercial Site Plan and 2-Lot Subdivision in response to our previous comment (lot 1 not a part of this project). **The Applicant should revise this answer to a Mixed Use Commercial and Residential 2-Lot Subdivision.** The responses to D.1.d.iii and D.1.d.iv were not revised because lot 1, the 3 acre lot, is not a part of this project area.
7. The responses to the questions in subsection D.2.e were revised satisfactorily, addressing our previous comment.
8. The answers to question E.1.b were revised in response to our previous comment; **however, it appears that the acreage after project completion only includes the areas within proposed lot 3. The Applicant should revise this column to include the area within proposed lot 2 as well and should revise each total to 103.8 acres to match the response to Question D.1.b.a.**
9. Empire Engineering indicated in their comment response letter that the answer to E.2.h.iv was filled in by the DEC mapping program, satisfying our previous comment.
10. The Applicant stated in question E.3.h that the project site is within five miles of US Route 20, a scenic byway, to address our previous comment; **however, they stated that it is more than one mile from the site as opposed to less than one mile. The Applicant should revise their answer.**

### SWPPP

1. The Applicant should revise the total parcel area listed in Section 1.1 to 103.8 acres to match other project documents.
2. The Applicant updated the anticipated construction start date to September 2022, addressing our previous comment.
3. The Applicant updated the project disturbance to 26.9 acres to match other project documents, addressing our previous comment.
4. The Applicant added the test pit logs to the Grading Plan to address our previous comment; **however, the Applicant should also show the locations of each test pit on the Grading Plan or the Existing Conditions Plan.**
5. The Applicant revised 1.5.h in accordance with our previous comment.
6. The Applicant revised the wording of Section 1.7 in accordance with our previous comment.
7. The Applicant revised the wording of Section 1.8 in accordance with our previous comment.
8. The Applicant added information to Section 2.6 indicating the conditions that must be met for the site to be in "Winter Shutdown", addressing our previous comment.



9. The Applicant revised “devises” to “devices” in bullet point 2.51.c, addressing our previous comment.
10. The Applicant revised “catch basin” to “outlet control structure” in bullet point 2.51.f, addressing our previous comment.
11. The Applicant revised “pavement” to “roads” in bullet point 2.7.a, addressing our previous comment.
12. The Applicant revised “catch basins” to “structures” in bullet point 2.7.b, addressing our previous comment.
13. The Applicant revised “tolls” to “tools” in the third sentence of section 4.1, addressing our previous comment.
14. The peak flow rates for the 10-Year and 100-Year storms were updated to reflect the revised disturbance areas and now match the values calculated in the HydroCAD calculations, addressing our previous comment.
15. A hydrograph storage plot was added to Appendix H, addressing our previous comment.
16. The response to question number four in the Notice of Intent (Appendix A) was revised to 93.5 acres, addressing our previous comment.
17. The response to question number seven in the Notice of Intent (Appendix A) was revised to “yes”, addressing our previous comment.
18. The Applicant revised the planned start date in the Notice of Intent (Appendix A) and Section 1.1 of the SWPPP to address our previous comment; **however, the Applicant needs to also revise D.1.e.ii in the FEAF to match the date listed in the Notice of Intent and SWPPP report text.**
19. The Applicant revised the planned end date in the Notice of Intent to match the date listed in the FEAF, addressing our previous comment.
20. The Applicant revised the responses to questions 15 and 16 in the Notice of Intent to “yes” and “NYS (part of NYS Route 7 right-of-way)”, addressing our previous comment.
21. The Applicant revised the value listed in the Notice of Intent to 14.4 acres to match the revised Dry Swale Worksheets in Appendix I, addressing our previous comment.
22. The Site Information section of Appendix E of the SWPPP still states that 11 storage units will be constructed but the plans and the FEAF only show 10. **The Applicant should revise this value to 10 to match other project documents.**
23. The Site Information section of Appendix E of the SWPPP still states that the project area will be about 20.2 acres. **The Applicant should revise this value to 26.9 acres to match other project documents.**
24. The Applicant re-labeled SC207 on the site plan in Appendix H to SC206 to match HydroCAD calculations, addressing our previous comment.
25. The total area calculated in Appendix I (Water Quality Worksheets) is now the same as the area used for the HydroCAD calculations in Appendices G and H (24.2 acres) and the responses to the runoff reduction and water quality volume questions in the Notice of Intent have been revised to match this new disturbance area, addressing our previous comment.
26. Empire Engineering has indicated in the comment response letter that the difference in acreage between the total area disturbed and the areas used for the hydraulic calculations is the total area of the stockpile area, which will be temporary. **The Applicant should show silt fence around the entire stockpile area to prevent the migration of soil laden runoff to areas outside the project site (the stockpile is at a higher elevation than the areas to the north, which are currently not shielded by silt fence on the proposed sediment and erosion control plan).**
27. The Applicant added an aerial map to Appendix D to address our previous comment, **but should mark the location of the project site on this map.**

28. Empire Engineering explained the general phasing, erosion and sediment control procedures, and grading in the comment response letter and has added references to plan sheets in the Site Information and Best Management Sections of the SWPPP report to address our comment. **The Applicant should add references to the Grading Plan and Erosion and Sediment Control Plan to the Implementation Schedule and Phasing subsections of the SWPPP.**

If you have any questions, please feel free to contact me.

Sincerely,  
**KB Group of NY, Inc. dba PRIME AE Group of NY**



Douglas P. Cole, PE  
Senior Director of Engineering

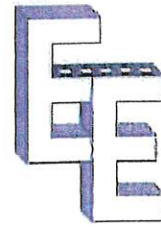
cc: Jeffrey Schmitt, Planning Board Chairman  
Teresa Bakner, WOH  
Chris Longo, P.E., Empire Engineering







# EMPIRE ENGINEERING, PLLC



July 7, 2022

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Town of Duanesburg  
Planning Board  
5853 Western Turnpike  
Duanesburg, NY 12056  
Attn: Dale Warner, Town Planner  
[dale@duanesburg.net](mailto:dale@duanesburg.net)

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RE: Response to TDE Project Review

Dear Dale,

Empire Engineering, PLLC is in receipt of the Site Plan Review letter from Prime AE Group of NY, dated June 15, 2022, regarding the 6204 Duanesburg Road Subdivision Plan, Prime AE Project No. 22438. Please find below a response to these comments including any clarification or additional narrative.

## Site Plan Drawing Set

1. The drawing set does not include an Existing Conditions sheet. We request a sheet showing the lot's existing conditions prior to the proposed action including existing contours, existing vegetation, watercourses, wetlands, flood plains, and bodies of water, structures, and all abutting lot landowner names and tax ID numbers.  
**An Existing Conditions Plan Sheet is now included in the set.**
2. In the FEEAF Part I Question E.2.h. the Applicant indicates there are lakes or ponds, and wetlands present on the proposed project site, however these have not been identified on the Site Plan. The Applicant should provide the location of the water bodies present at the location.  
**The existing condition plan sheet now shows the existing conditions of a 'farm lagoon' pond which has since been filled. Also, all wetlands on-site are now shown, as delineated by Labella Associates in April 2022.**
3. The Legend on Sheet C101 of the Site Plan shows boxes of proposed asphalt, gravel, and grass however there is no difference in the identification of those areas (the shading appears to be missing). The Applicant should revise the legend so that the proposed areas of asphalt, gravel, and grass are easily identifiable from one another and are properly shaded on the plan.  
**The legend has been updated to darken the hatching for clarity.**
4. The Site Plan does not identify the owner and tax number of all parcels surrounding the project location. The Applicant should identify the owner and tax number for the parcel to the east of 55-4-11.5 (vacant land), which appears to be parcel 55.00-4-11.16 from our check of SIMS.  
**The plan set has been revised.**

5. The Site plan does not provide the areas of disturbance for Phases 1A, 1B, and 1C, however, the areas are labeled for the four (4) future phases. The Applicant should add this information to the Site Plan and should also make the lines indicating the boundaries between proposed phases darker.

**The acreage totals for the Phase 1 areas have been added. The A, B & C indicators are intended to identify which building is to be constructed first in sequence for the phasing of the stormwater pond systems. Also, the phasing lines have been darkened.**

6. The proposed project will have wall mounted lighting located on the sides and ends of the self-storage structures at an approximate height of 9 to 10 feet with shielded cut offs. The lighting plan does not show the foot candle numbers to demonstrate that there is no light spillage off site.

**The illumination level contour for the wall pack lighting has been added to the Lighting Plan.**

7. Sheet C103 identifies the Applicant's proposed landscaping plan which includes evergreens with a minimum height of 8 to 10 feet at planting and shrub plantings at 2 to 3 feet in height at the time of planting. The Applicant should provide details that the plantings will provide adequate screening from the neighboring homes.

**The two main areas of concentration for buffering are the East (Phase 2) and the North (Phase 4). Both locations have existing forested and/or brush buffer. The proposed plantings are intended to provide an infill to the existing hedgerows. The plantings to the east have been adjusted slightly to fill the gaps in the tree line. The plantings within Phase 4 can also certainly be revisited when that Phase is proposed for impervious development.**

8. The proposed slope west of storage unit numbers 5, 7, and 9 will shed runoff towards the storage unit area. The Applicant should verify that water will not pond in front of the units and that units are designed to prevent infiltration of runoff (i.e. base slab reveal above adjacent driveway and slope driveway  $\frac{1}{4}$ " per foot down away from each storage unit). The Applicant should provide storage shed and driveway grading details.

**Additional spot elevations have been added along the western edge of pavement. A swale is intended at the toe of the slope to catch the western runoff and the pavement. Additional flow arrows have also been added to the Grading Plan for clarity.**

9. There appear to be some grade breaks (typically indicating a vertical structure) at the limit of disturbance to the west of the proposed storage units (near the shared property line with the existing gas station). Will retaining walls be constructed? If so, the Applicant should provide details for the retaining walls.

**The slope proposed near the common property line with the gas station is intended to be a 3H:1V grassed slope beginning 5' off the property boundary.**

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10. The Site Plan shows that the project will have five (5) phases (or seven (7), if Phases 1A, 1B and 1C are counted individually). The Applicant should verify that the full site grading and stormwater management practices will be completed in the phases shown and if build out of building structures will be completed in future phases. If not, does the Applicant plan to provide intermediate grading plans to show transitions from one phase to the next?  
**The project is intended to be graded within the entire limits of disturbance. The impervious area is only proposed within Phases 1A, 1B and 1C at this time. Future Phases (2-4) will be graded, revegetated and receive impervious cover at a later date.**
11. The Site Plan does not identify parking locations or handicap accommodations. Details including the location, number of parking spaces, dimensions, and handicap accessible parking spots should be added to the plan. If more than five (5) parking spots are proposed, the Applicant should provide details on how they will provide sufficient screening per the Town of Duanesburg Zoning Ordinance Section 13.2.4.  
**There are no designated parking spaces proposed for the site. All vehicle access is provided with direct access to each unit. The drive aisles are 30' wide providing enough accommodation for a vehicle to be parked alongside a unit and still provide two way traffic.**
12. The Site Plan does not identify the flow of traffic within the site. The Applicant should provide details on the Site Plan for the flow of traffic entering, parking, and exiting the site.  
**Flow of traffic directional arrows have been added to the plan.**
13. The width of the driveway entrance to the proposed site is identified to be 28' in width, meeting the minimum turning radius for emergency vehicles. The Applicant should provide a copy of the NYSDOT driveway permit.  
**The NYSDOT Driveway Permit has been applied for and final correspondence will be forwarded upon receipt.**
14. The Site Plan does not indicate the limit of the proposed gravel area, which may be related to comment #3 above regarding the Legend. The Applicant should identify on the plans the dimensions of the gravel area for the current proposed Phase I. The Applicant should also provide where within the gravel area the outdoor storage is proposed and provide the dimensions and details for that storage area.  
**The shading and proposed gravel areas have been clarified. The outdoor storage area has been dimensioned and a darker shade provided where proposed gravel is intended.**
15. In the FEAF Part I Question D.2.r.ii, the Applicant stated that there will be separate recycling containers for solid waste disposal which will be disposed for by a hired waste hauler. The location and size of these containers have not been identified on the plan. We ask the Applicant to provide additional details on the site plan indicating the number, location, and dimensions of containers, and screening.  
**The containers for solid waste disposal will be stored within one of the units not for rent. It is the intent to keep all refuse containers away from public access so as to not invite unwanted garbage collection from tenants.**



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16. The Site Plan identifies the location for proposed signage, however the details of the sign and the distance of the sign to the lot line and proposed driveway have not been provided. The Applicant should provide details of the sign including the location, size, and design and construction materials. Furthermore, a sign permit will need to be obtained prior to the erection of the proposed sign.

**Details of the sign will be provided prior to application for a sign permit.**

17. How does the Applicant plan to address item 13 in section 14.6.1.4 of the Town of Duanesburg Zoning Ordinance relating to the location of fire and other emergency zones, including the location of fire hydrants?

**The site plan incorporates emergency vehicle access through and between all buildings. The property is not serviced by municipal water and fire hydrant access is not possible. The buildings will meet NYS Building Code for separation distances and maximum open floor area.**

18. In the project description, the Applicant states that the business will typically have 0-1 employees onsite only on occasion. The Applicant should provide details of the nature of the employees' duties so it may be determined if sanitary facilities are necessary.

**The only employees on site will be exterior maintenance staff only at the site to perform landscaping maintenance type activities. There will be no office or stationed staff on-site and therefore sanitary facilities are not warranted.**

19. The NYSDOT Details Sheet shows the sight distances from the proposed entrance for each turning direction. In review of the NYSDOT required sight distances indicated in Appendix 5C of the Highway Design Manual, these sight distances appear to be adequate.

**No response required.**

### **Subdivision Plan**

1. The Subdivision Plan does not identify the owner and tax number of all parcels surrounding the project location. The Applicant should identify the owner and tax number for the parcel to the east of 55-4-11.5 (vacant land), which appears to be parcel 55.00-4-11.16 from our check of SIMS.

**The Subdivision Plan Sheet has been revised.**

2. The existing area stated on the plan is 103.76 +/- acres; however, the combined acreage of lots 1, 2, and 3 identified on the plan come to a total acreage of 106.2 acres. We ask that the Applicant provide an explanation for the difference in total acreage.

**The Lot naming convention on the Subdivision Plat was left as Lots 1, 2 and 3. However this is a proposed 2-Lot Subdivision creating lots 2 and 3 only. Lot 1 was part of a previously filed subdivision in 2021. The total area of the subject property is on 103.76 Acres.**

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3. The subdivision plan does not identify the lakes, ponds, streams and wetlands present on the proposed project site. The Applicant should provide the location of the water bodies present at the location.

**The Subdivision Plan Sheet has been revised.**

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#### Revised FEAF

1. The FEAF states in Question D.1.b.a that the total acreage of the proposed project lot is 103.8 acres, however this only includes the area of proposed lots 2 and 3. The total acreage of the site before the proposed subdivision and proposed special use permit is 106.2 acres. The Applicant should revise the answer to this question to reflect the current total acreage and to use the 106.2 acre value to calculate all answers requiring total acreage throughout the FEAF.

**As explained above, this project is for the two-lot subdivision creating Lots 2 and 3 and the Site Plan only. Lot 1 is not owned or controlled by the applicant.**

2. The Applicant states in the Brief Description of Proposed Action that the project includes the construction of ten self-storage structures and 2 acres of outdoor storage. This does not match what is stated in the Special Use Permit Application where the proposed project is said to consist of eleven storage unit structures. The Applicant should clarify the proposed structure count.

**The intent is for 10-units, the project documents have ben updated to reflect this.**

3. The total acreage to be physically disturbed stated in the Project Narrative dated 1/6/2022 does not match the Applicant's answer to question D.1.b.b. The Applicant should verify if the total acreage to be physically disturbed is 29.4 acres as stated in the Narrative, 30.7 acres as stated in the FEAF or 20.2 acres as stated in the SWPPP.

**The total acreage of disturbance has been updated to reflect 26.9 Acres across all project documents.**

4. The Applicant stated in question C.4.d that no parks serve the project site. Within 10 miles of the site there are more than nine parks, including: Shafer Park, Esperance Park, Schilling Park, Bozenkill Park, Orsini Park, Juracka Park, Pansy Park, Memorial Park, Hillhurst Park, and Poutre Park. The Applicant should revise their answer.

**The answer to question C.4.d has been revised.**

5. The Applicant should revise the responses to question D.1.b.a and question D.1.b.c to 106.2 acres, the sum of the area of the three proposed lots shown on the Subdivision Plan.

**See response to EAF comment #1 above.**



6. The Applicant stated that the subdivision is a commercial 2-Lot Subdivision in response to question D.1.d.i of the FEAF. The Applicant should revise this answer to a Mixed Use 3-Lot Subdivision with commercial and residential uses. The Applicant should also revise the answer to D.1.d.iii to 3 and the minimum proposed lot size in question D.1.d.iv to 3 Ac.

**The answer to question D.1.d.i has been revised.**

7. The Applicant stated in question D.2.e.iii. that stormwater runoff will not flow to adjacent properties. The Full Environmental Assessment Form instructions on the DEC website indicate that this question be answered "yes" if the flows are conveyed off-site regardless of whether they are treated first. In review of the grading plan, some of the treated flows will go into the roadside swale next to Duanesburg Road in the NYSDOT right-of-way and the remainder of the treated flows will flow overland off the property to a stream that is a tributary of Normans Kill Creek. The Applicant should revise their answer.

**The answer to question D.2.e.iii has been revised.**

8. In the Land use or Cover type Table in Question E.1.b. the Acreage After Project Completion is only 74.6 acres, where the total current acreage is 103.6 acres. The Applicant should identify the difference in acreage and revise the total current acreage to 106.2 acres, which is the sum of the three proposed subdivided lots on the Subdivision Plan.

**The answer to question E.1.b has been revised to total the full project area of 103.6 Acres.**

9. The Applicant should verify the answer to Question E.2.h.iv. The waterbody named 863-686, Classification C is shown as a stream on the DEC Environmental Resource Mapper, not a lake or pond.

**The answer to question E.2.h.iv was auto populated by the EAF mapper website.**

10. The Applicant stated in question E.3.h that the project site is not within five miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource. NYSDOT's Scenic Byways map shows that US Route 20 is considered a scenic byway beyond the interstate 88 overpass in Duanesburg, less than one mile from the project site. The Applicant should revise their answer.

**The answer to question E.3.h has been revised.**

#### **SWPPP**

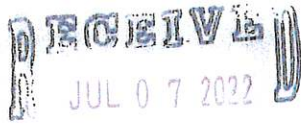
1. The Applicant should update the anticipated construction start date on page one, as the date has passed.

**The start date listed on the proposed modification application has been updated to September 2022.**

2. Section 1.1 states that "The project site area is approximately 20.2 acres." The applicant should verify and state if this is the proposed construction disturbance and confirm the figure agrees with disturbance figures in the Narrative and FEAF.

**The acreage listed in the project description has been updated to reflect the full project area of 26.9 Acres.**

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3. Section 1.3 of the SWPPP states that "all test pit logs and infiltration results are indicated on the site plan", but the site plan does not have this information. The Applicant should provide the test pit logs (soil testing results and locations) in accordance with GP-0-20-001, subpart III.B (Required SWPPP Contents).  
**Test pits were performed on June 29, 2022 and the log is now included on the Grading Plan.**
4. The Applicant should revise bullet point 1.5.h to say "after completing construction of stormwater management system, all structures and drainage lines shall be cleaned of all silt and sediment".  
**Note 1.5.h has been revised.**
5. Section 1.7: change "Cultural" to "Culturally".  
**Note 1.7 has been revised.**
6. Section 1.8 states that "forested areas are not being affected as part of the project"; however, based upon the project plans, some forest will be cut down to facilitate construction of the stormwater management area in the northeast corner of the project site. Please revise this section and note that the DEC and Army Corps of Engineers may require the removal of these trees to occur between October and March, the time in which Northern Long-Eared Bats nest in caves instead of trees.  
**Note 1.8 has been revised.**
7. Section 2.6: Add the conditions that must be met for the site to be in "winter shutdown".  
**Note 2.6 has been revised.**
8. The Applicant should revise "devises" to "devices" in bullet point 2.51.c.  
**Note 2.51.c has been revised.**
9. The Applicant should revise "catch basin" to "outlet control structure" in bullet point 2.51.f.  
**Note 2.51.f has been revised.**
10. The Applicant should revise "pavement" to "roads" in bullet point 2.7.a  
**Note 2.7.a has been revised.**
11. The Applicant should revise "catch basins" to "structures" in bullet point 2.7.b.  
**Note 2.7.b has been revised.**
12. The Applicant should revise "tolls" to "tools" in the third sentence of section 4.1.  
**Note 4.1 has been revised.**

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13. Section 4.1 states that the 100-Year Storm peak flow rates for the two analysis areas are 72.23 cubic feet per second and 55.55 cubic feet per second. These values are different than the values used in the HydroCAD calculations (73.88 cubic feet per second and 50.41 cubic feet per second). Revise these values to match or indicate why the numbers used in the HydroCAD calculations are different.  
**The pre-development peak flow rates have been updated to reflect the analysis area in both the HydroCAD and the table in section 4.1.**
14. Section 4.2 states that a hydrograph storage plot is provided in Appendix H, but no hydrograph storage plot is in that Appendix. Provide the hydrograph storage plot to confirm that 24-hour extended detention of the one-year storm is being provided.  
**The hydrograph plot for the 1-year Storm event is now included.**
15. The response to question number four in the Notice of Intent (Appendix A) states that the Total Site Area is 106.22 acres. The Applicant should revise this value to 93.5 acres, which is the size of the proposed lot after the remaining acreage is subdivided into separate lots, as indicated on the Proposed Site Layout Plan.  
**The NOI has been revised.**
16. The response to question number seven in the Notice of Intent (Appendix A) states that this is not a phased project. This answer is different than the response to question D.1.e.ii of the FEAFF, which states that the project will be performed in five phases. The Applicant should revise this answer in the Notice of Intent to match the answer in the FEAFF.  
**The NOI has been revised to indicate that the project is intended to be phased.**
17. The Applicant should revise the planned start date of disturbance activities listed in the Notice of Intent (question 8) to a date later in the summer. Once a revised date is selected, the Applicant should also revise the anticipated construction start date in Section 1.1 of the Notice of Intent and the answer to the Anticipated commencement date of phase 1 in D.1.e.ii of the FEAFF to match the revised date in the Notice of Intent.  
**The NOI has been revised to agree with all other project documents.**
18. The planned end date of the disturbance activities listed in the Notice of Intent (question 8) is 12/31/2023. This is different than the Anticipated completion date of final phase listed in D.1.e.ii of the FEAFF (June 2028). The Applicant should revise one of these dates so that the completion date is the same in both documents.  
**The anticipated end date has been correlated between all project documents.**
19. Question 15 of the Notice of Intent states that site runoff does not enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc.). The Proposed Drainage Map in Appendix H shows the flows from subcatchment 205 going down the slope at the southern edge of the property and into the roadside swale. The Applicant should revise this answer to "yes" and revise the answer to question 16 to New York State (part of the NYS Route 7 right-of-way).  
**The NOI has been revised.**

20. The Total Contributing Impervious Acres for Swale listed in the RR Techniques (Volume Reduction) section of the Notice of Intent (page 12) is 13.2 acres. This is different than the dry swale impervious acres sum from the Dry Swale Worksheets in Appendix I, which is 18.26 acres. The Applicant should revise the value listed in the Notice of Intent to 18.26 acres or provide justification for why a different value has been used.

**The answer to the contributing area question of the NOI has been revised to 14.4 Acres.**

21. The Site Information section of Appendix E of the SWPPP states that 11 storage units will be constructed but the plans and the FEOF only show 10. The Applicant should clarify the proposed storage units count and ensure that the number shown in the SWPPP is the same as the number shown on the plans, FEOF, and the Special Use Permit Application.

**The SWPPP project description has been revised to indicate 10 units.**

22. The Site Information section of Appendix E of the SWPPP states that the project area will be about 20.2 acres. This is different than the acreage to be physically disturbed listed in Section D.1.b of the FEOF. The Applicant should clarify the project area acreage.

**The SWPPP project description has been revised to indicate 26.9 Acres of disturbance.**

23. The Applicant should re-label SC207 on site plan in Appendix H to SC206 to match HydroCAD calculations.

**The subcatchment label has been revised.**

24. The total area (28.99 acres) calculated in Appendix I (Water Quality Worksheets) is different than the area shown on the Existing Drainage Map and the Proposed Drainage Map, and the area used for the HydroCAD calculations in Appendices G and H (28.29 acres). The Applicant should justify this difference or revise the areas used in Appendix I or Appendices G and H. If the area used in the Water Quality Worksheets is revised, the responses to Notice of Intent question number 28, 30, 32, 33a, and 34 should also be revised.

**The area labels have all been updated to indicate the current proposed limits of disturbance. The difference between the total acreage of disturbance and the HydroCAD & Green Infrastructure is the additional disturbed area heading to the topsoil stockpile. This area is to be returned to greenspace and therefore not included in the runoff calculations.**

25. The Applicant should provide a general location map for the project site in accordance with the requirements of GP-0-20-001, subpart III.B (Required SWPPP Contents).

**A general location map is not included in Appendix D.**

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26. The Applicant should fully describe each proposed phase of construction, including grading, erosion and sediment control, and temporary stormwater management measures, in the SWPPP.

**The overall construction is to occur in one initial main phase consisting of the pad area and Phase 1 impervious areas. The erosion controls will be installed on the downslope side of any active phase and grading will be in accordance with the single grading plan.**

In addition to these responses please find the enclosures referenced. If there are any questions or comments, please feel free to contact me.

Sincerely,



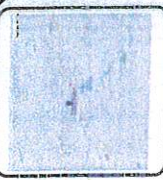
Christopher Longo, PE  
Owner/Civil Engineer

Encl: Subdivision Plat Rev 7-7-22  
Site Plan Set (8 Sheets) Rev 7-7-22  
SWPPP Rev 7-7-22  
Full FEAF Rev 7-7-22

Cc: Douglas P. Cole, PE, Prime AE  
Jeffrey Schmitt, Planning Board Chairman  
Theresa Bakner, WHO  
Eric Dolan, Superior Housing/Valley Mobile Home Court, LLC

COPY





SITE LOCATION MAP  
SCALE: N.T.S.

No.	Revision Description	Date

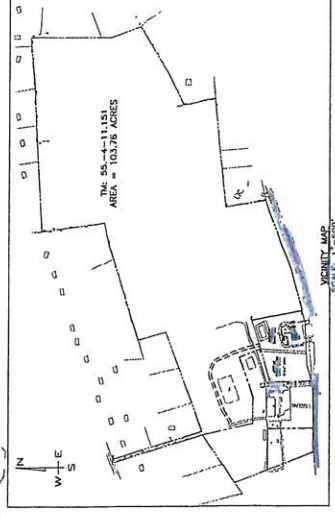
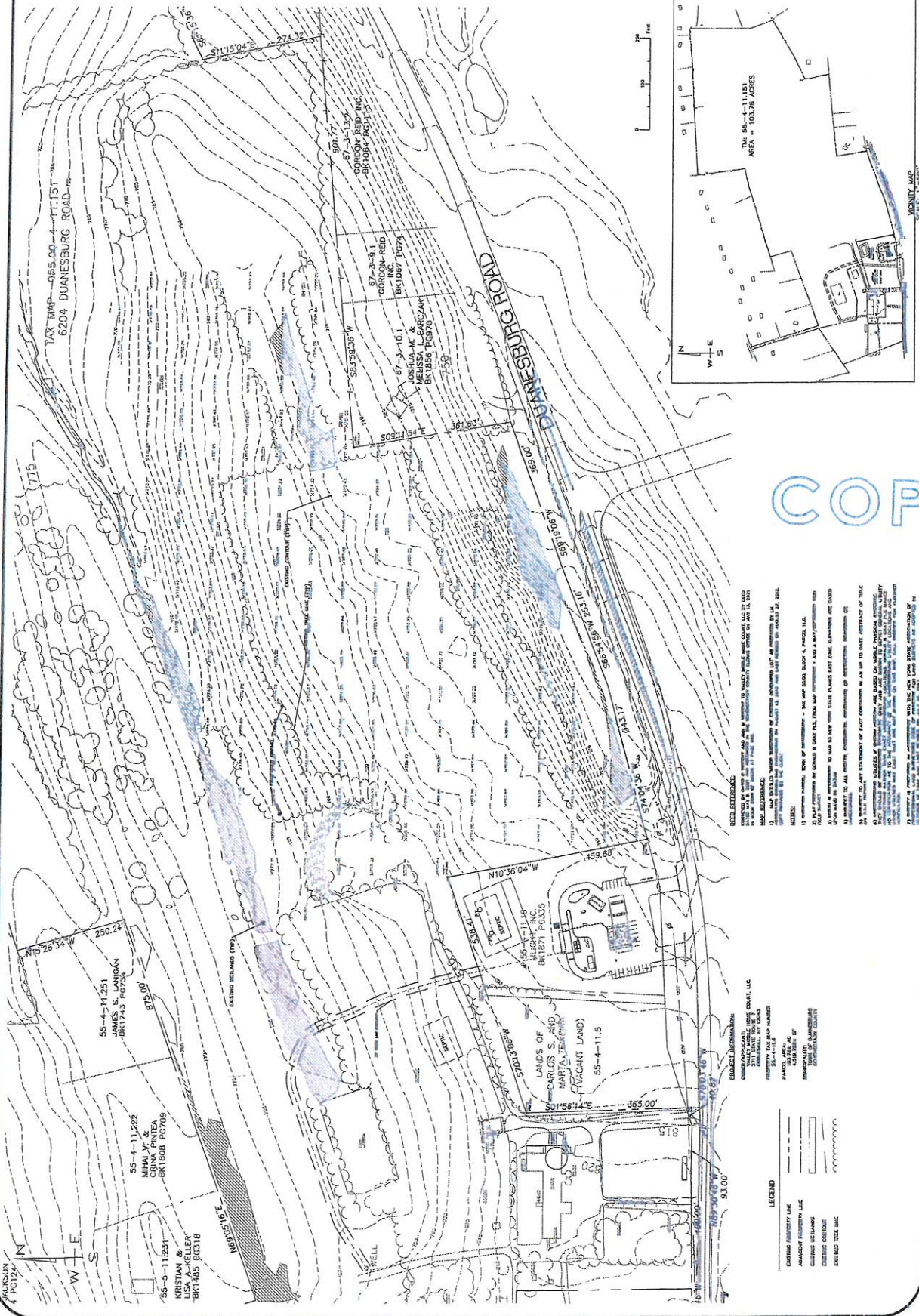
**PRIOR TO ANY LAND ACQUISITION**  
 REQUIREMENTS: THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES.

**IT IS A VIOLATION OF SECTION 100 OF THE ENVIRONMENTAL CONSERVATION LAW** FOR ANY PERSON TO ALTER, REMOVE, DESTROY, OR COVER UP ANY EVIDENCE OF A VIOLATION OF SECTION 100 UNLESS HE HAS OBTAINED A WRITING FROM THE STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.

EMPIRE ENGINEERING, PLLC  
 1000 DUANESBURG ROAD  
 SUITE 200  
 ALBANY, NY 12242  
 TEL: (518) 869-1177  
 FAX: (518) 869-1178  
 WWW.EMPIREENGINEERING.NET

DRIVE DRIVE DRY  
 SELF-STORAGE  
 DUANESBURG ROAD  
 DUANESBURG, NY

EXISTING CONDITION MAP	
Date	7/7/2022
Scale	1"=100'
Sheet	21018
Project	V001
Drawn by	1 OF 8



COPY

**NOTES:**

- 1) ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
- 2) ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
- 3) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 5) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 6) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 7) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 8) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 9) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 10) ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.

**LEGEND:**

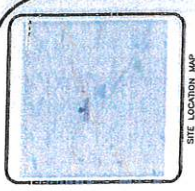
- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING
- EXISTING DRIVE
- EXISTING SIDEWALK
- EXISTING CURB
- EXISTING DRIVE

JACKSON  
 4 PGT24  
 55-4-11,251  
 JAMES S. LANGRAN  
 BK1743 PG73A  
 55-4-11,222  
 CHINA PATEA  
 BK1808 PG709  
 55-4-11,531  
 KRISTIAN A.  
 LISA A. KELLER  
 BK1465 PG318

LANDS OF  
 CARLOS S. AND  
 MARIA L. (MRS.)  
 (VACANT LAND)  
 55-4-11.5

CONTRACT INFORMATION:  
 CONTRACTOR: [Name]  
 PROJECT NO: [Number]  
 DATE: [Date]





SITE LOCATION MAP  
SCALE: N.T.S.

NO.	REVISION DESCRIPTION	DATE
1	Revised per PDC comments	7/1/22
2	Revised per PDC comments	7/1/22
3	Revised per PDC comments	7/1/22
4	Revised per PDC comments	7/1/22

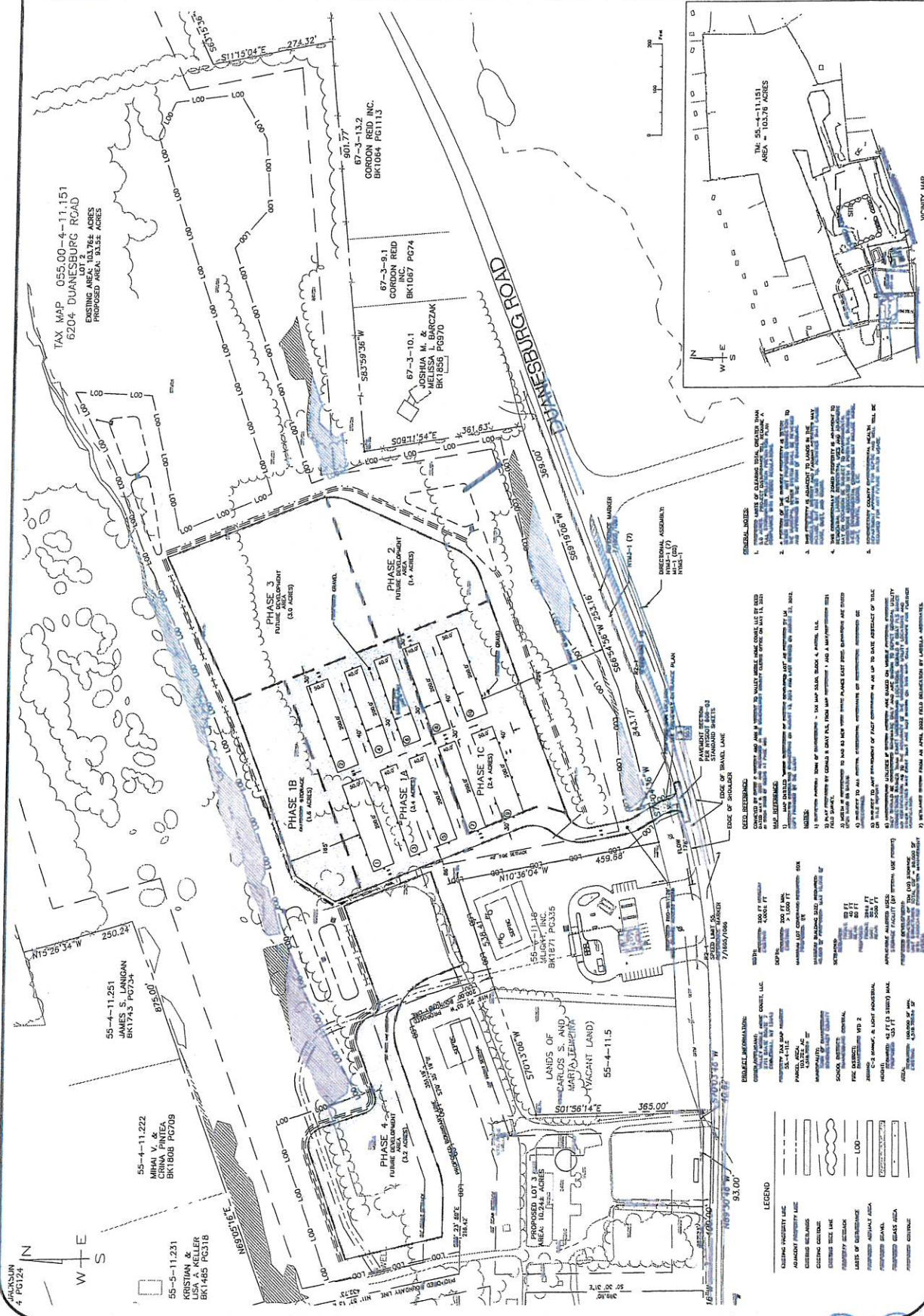
PLEASE TO ANY PARTY  
REQUIRE THE CONSTRUCTION  
OF THIS PLAN AND OBTAIN A  
PERMIT FROM THE  
APPLICABLE AGENCIES.

IF AS A VIOLATOR OF SECTION  
1607 OF THE ENVIRONMENTAL  
CONSERVATION LAW, YOU  
KNOW OR SHOULD KNOW THAT  
YOUR UNLAWFUL ACTS ARE CAUSING  
OR MAY CAUSE DAMAGE TO  
THE ENVIRONMENT, YOU MAY BE  
PENALIZED UP TO \$5,000 PER  
VIOLATION AND \$500 PER DAY  
OF CONTINUING VIOLATION.

EMPURE ENGINEERING, INC.  
1100 MANHATTAN AVENUE  
SUITE 200  
DUNESBORO, NY  
PH: 516-251-1100  
EMAIL: CEM@EMPURE.COM

PROJECT  
PINE GROVE DAIRY  
SELF-STORAGE  
DUNESBORO ROAD  
DUNESBORO, NY

SITE LAYOUT PLAN  
DATE  
1/6/2022  
SCALE  
1"=100'  
SHEET NO.  
C102  
OF  
2 OF 8



TAX MAP 055.00-4-11.151  
6204 DUNESBORO ROAD  
EXISTING AREA: 103.76 ACRES  
PROPOSED AREA: 31.53 ACRES

GORDON RED INC.  
67-3-13.2  
BK1084 PG113

GORDON RED  
INC.  
67-3-9.1  
BK1087 PG74

67-3-10.1  
MELISSA M. BARCZAK  
BK1856 PG870

PHASE 3  
FUTURE DEVELOPMENT  
(3.0 ACRES)

PHASE 2  
FUTURE DEVELOPMENT  
(1.4 ACRES)

PHASE 1B  
FUTURE DEVELOPMENT  
(8.6 ACRES)

PHASE 1A  
FUTURE DEVELOPMENT  
(6.4 ACRES)

PHASE 1C  
FUTURE DEVELOPMENT  
(6.4 ACRES)

PHASE 4  
FUTURE DEVELOPMENT  
(3.2 ACRES)

55-4-11.251  
JAMES S. LANIGAN  
BK1745 PG724

55-4-11.222  
MIHAI V. &  
CRINA FINTEA  
BK1808 PG709

55-5-11.231  
KRISTIAN &  
LISA A. KELLER  
BK1465 PG318

LANDS OF  
CARLOS S. AND  
MARIQUINETA  
5013308 W  
5013314 E

55-4-11.5  
VACANT LAND

- ORIGINAL NOTES:**
1. EXISTING LOTS OF CLEARED BROWN CIRCLE SHOWN WITHIN 1 (7) ARE TO BE MAINTAINED AS SUCH.
  2. A PORTION OF THE EXISTING INFRASTRUCTURE & UTILITIES ARE TO BE MAINTAINED AS SUCH.
  3. ALL UTILITIES TO BE MAINTAINED AS SUCH.
  4. THE EXISTING UTILITIES ARE TO BE MAINTAINED AS SUCH.
  5. THE EXISTING UTILITIES ARE TO BE MAINTAINED AS SUCH.

- DEED REFERENCES:**
1. DEED OF PHASE 1 DEVELOPMENT TO WALTER W. WALKER, INC. DATED 08/11/2011.
  2. DEED OF PHASE 2 DEVELOPMENT TO WALTER W. WALKER, INC. DATED 08/11/2011.
  3. DEED OF PHASE 3 DEVELOPMENT TO WALTER W. WALKER, INC. DATED 08/11/2011.
  4. DEED OF PHASE 4 DEVELOPMENT TO WALTER W. WALKER, INC. DATED 08/11/2011.
  5. DEED OF PHASE 5 DEVELOPMENT TO WALTER W. WALKER, INC. DATED 08/11/2011.

- EMPHASIS INFORMATION:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.

- LEGEND:**
- EXISTING PROPERTY LINE
  - PROPOSED PROPERTY LINE
  - EXISTING CONCRETE
  - PROPOSED CONCRETE
  - EXISTING SIDE WALK
  - PROPOSED SIDE WALK
  - EXISTING DRIVEWAY
  - PROPOSED DRIVEWAY
  - EXISTING DRIVE
  - PROPOSED DRIVE
  - EXISTING DRIVEWAY
  - PROPOSED DRIVEWAY
  - EXISTING DRIVEWAY
  - PROPOSED DRIVEWAY
  - EXISTING DRIVEWAY
  - PROPOSED DRIVEWAY

- NOTES:**
1. ALL DIMENSIONS ARE IN FEET AND INCHES.
  2. ALL DIMENSIONS ARE IN FEET AND INCHES.
  3. ALL DIMENSIONS ARE IN FEET AND INCHES.
  4. ALL DIMENSIONS ARE IN FEET AND INCHES.
  5. ALL DIMENSIONS ARE IN FEET AND INCHES.

COPY

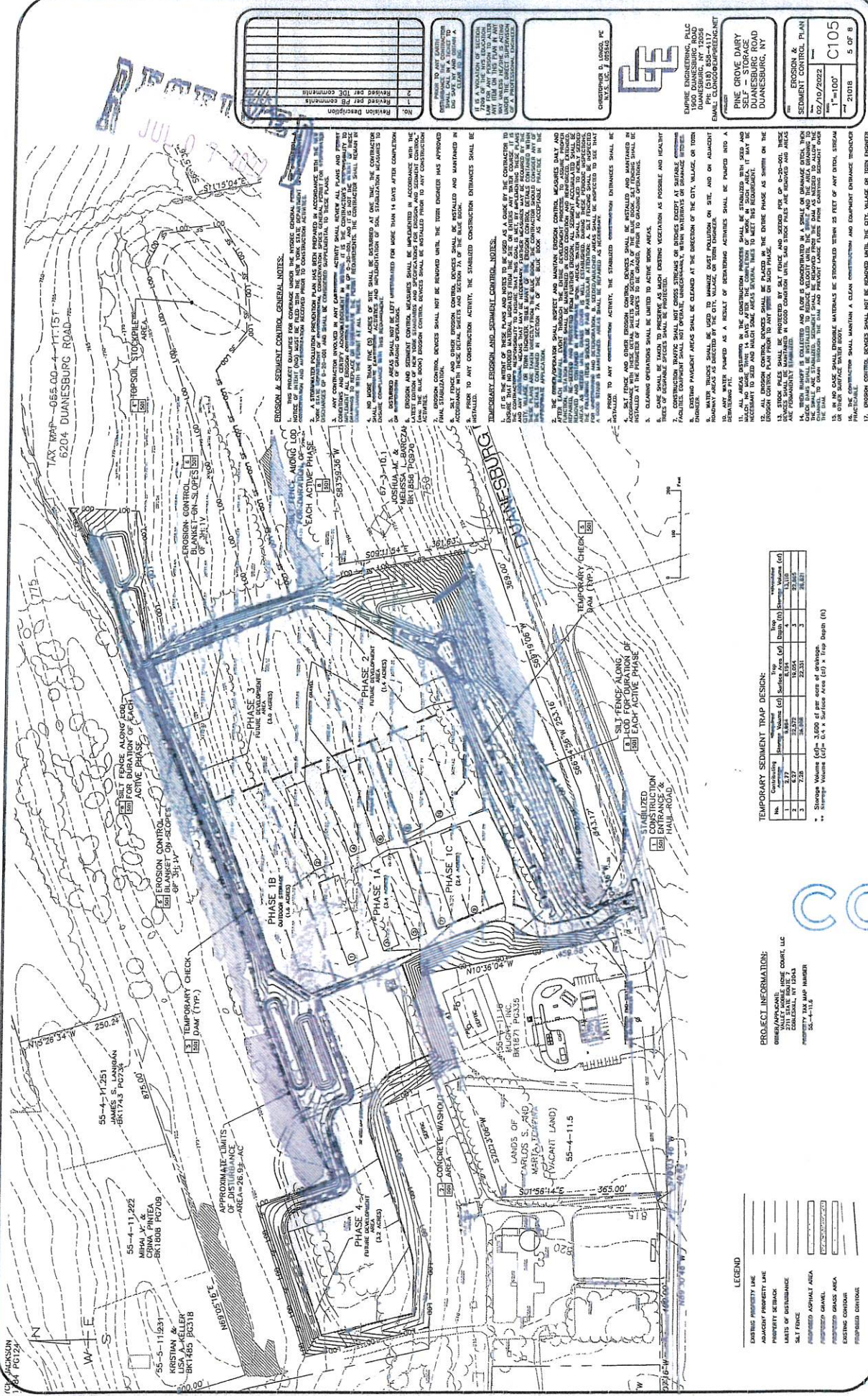












**EROSION & SEDIMENT CONTROL GENERAL NOTES:**

1. THE PROJECT CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM THE LOCAL, STATE AND FEDERAL AGENCIES PRIOR TO CONSTRUCTION ACTIVITIES.
2. A STABILIZATION/VEGETATION PREVENTION PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYS DECISION TREE. THE CONTRACTOR SHALL MAINTAIN THIS PLAN THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. NO MORE THAN FIVE (5) FEET OF SITE SHALL BE EXPOSED AT ONE TIME. THE CONTRACTOR SHALL MAINTAIN THE EXPOSED AREA WITH EROSION CONTROL MEASURES.
5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYS DECISION TREE THROUGHOUT THE CONSTRUCTION PERIOD.
6. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
7. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
8. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
9. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
10. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

11. ALL AREAS DESTROYED IN THE CONSTRUCTION PHASES SHALL BE STABILIZED WITH SEED AND MULCH AND REVEGETATED WITH PERMANENT VEGETATION. IT MAY BE NECESSARY TO SEED AND MULCH SLOPES, SLOTTED TUBES TO MEET THIS REQUIREMENT.
12. ALL EROSION CONTROL DEVICES SHALL BE PLACED IN THE DRAINAGE PHASE AS SHOWN ON THE PLAN.
13. SLOTTED TUBES SHALL BE PLACED IN THE DRAINAGE PHASE AS SHOWN ON THE PLAN.
14. SLOTTED TUBES SHALL BE PLACED IN THE DRAINAGE PHASE AS SHOWN ON THE PLAN.
15. SLOTTED TUBES SHALL BE PLACED IN THE DRAINAGE PHASE AS SHOWN ON THE PLAN.
16. SLOTTED TUBES SHALL BE PLACED IN THE DRAINAGE PHASE AS SHOWN ON THE PLAN.
17. EROSION CONTROL DEVICES SHALL NOT BE REMOVED UNTIL THE CITY, WILSON OR TOWN ENGINEER HAS APPROVED THIS SUBMISSION.

**TEMPORARY SEDIMENT TRAP DESIGN:**

No.	Capacity	Volume	Area	Length	Depth
1	2,17	4,34	1,111	3	1.11
2	2,17	4,34	1,111	3	1.11
3	2,17	4,34	1,111	3	1.11

\*\* Sloops Volume (10' x 10' x 10' = 1000 cu ft) per acre of slope depth (10')

**PROJECT INFORMATION:**

OWNER/APPLICANT:  
 CARLOS S. AND MARIA TERESA  
 2711 STATE ROUTE 124  
 COLLESVILLE, NY 12543  
 PROJECT NO.: 2023-118

**LEGEND**

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPERTY SETBACK
- LIMITS OF DISTURBANCE
- SILT FENCE
- PROPOSED ASPHALT AREA
- PROPOSED GRAVEL
- EXISTING CONTOUR
- PROPOSED CONTOUR

COPY

NO.	REVISION/DESCRIPTION
1	ISSUED FOR PERMITS
2	REVISED PER COMMENTS

DATE: 02/10/2022  
 SCALE: 1"=100'  
 SHEET: C105 OF 8

EROSION & SEDIMENT CONTROL PLAN

PIKE GROVE DARY  
 1000 DUANEBSBURG ROAD  
 DUANEBSBURG, NY

ENGINEER: J. L. LONIGAN, P.E.  
 LICENSE NO. 125250





NO.	REVISION DESCRIPTION	DATE
1	REVISED PER THE COMMENTS	7/27
2	REVISED PER THE COMMENTS	7/27

PREPARED BY: [Signature]  
 CHECKED BY: [Signature]  
 DATE: 07/27/2022

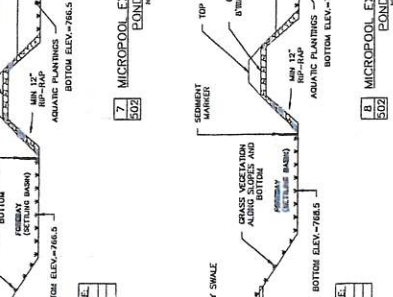
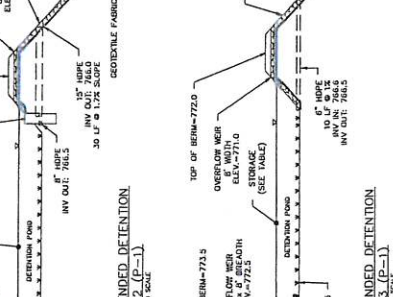
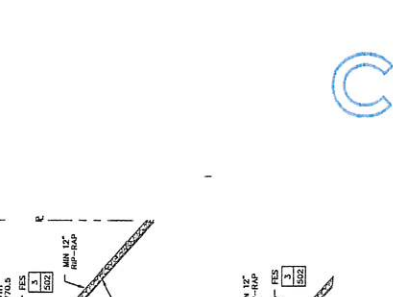
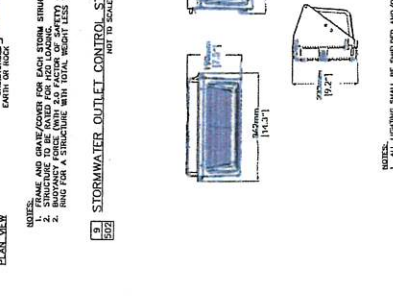
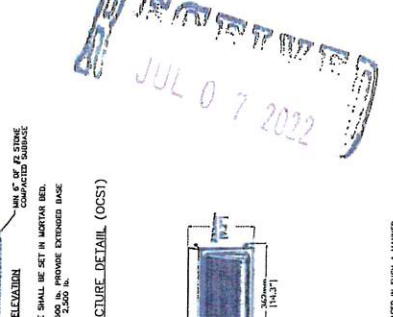
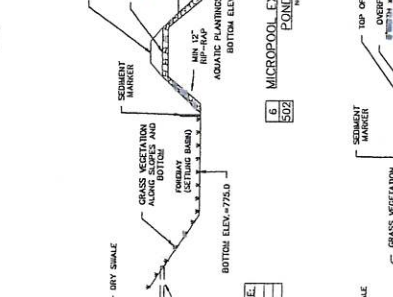
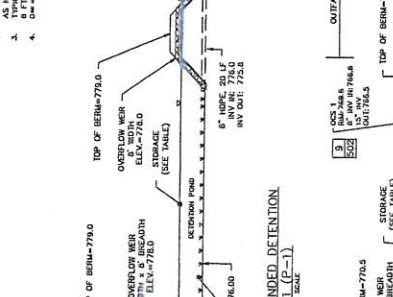
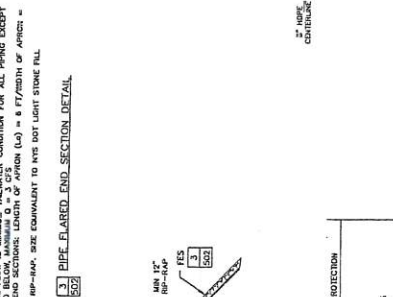
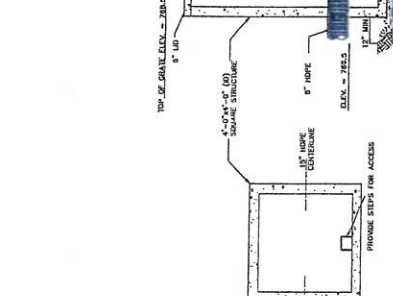
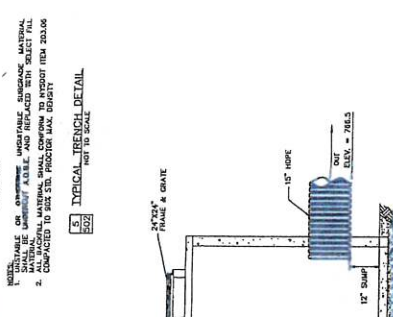
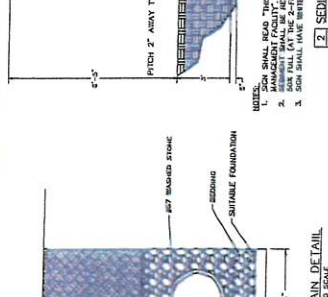
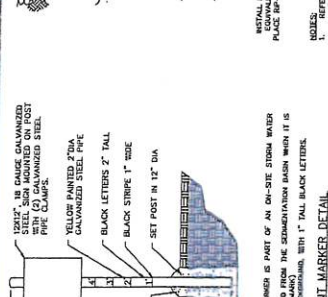
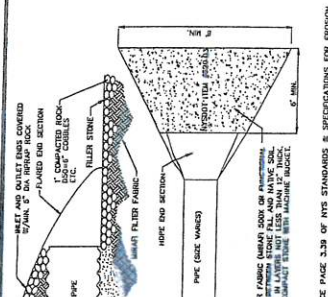
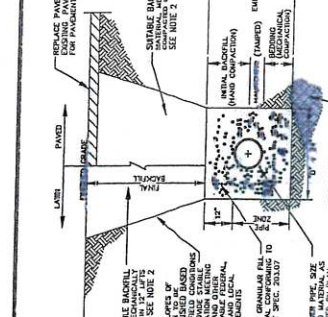
**EMER ENGINEERING, PLLC**  
 1900 DUANESBURG ROAD  
 SUITE 200  
 PINE GROVE, NY 11773  
 PHONE: (815) 838-1177  
 EMAIL: CL@EMERENGINEERING.NET

**PINE GROVE DAIRY**  
 DUANESBURG ROAD  
 DUANESBURG, NY

PROJECT: [Blank]  
 DRAWING NO.: C502  
 DATE: 07/27/2022  
 SHEET NO.: 21 OF 8  
 TOTAL SHEETS: 8

COPY

JUL 07 2022



NOTES:  
 1. ALL LIGHTING SHALL BE SWIRLED AND/OR PLACED IN SUCH A MANNER THAT IT DOES NOT ILLUMINATE THE SURFACE OF THE POND.  
 2. FIXTURES SHALL BE INSTALLED PERMANENTLY FROM THE DRAINING FACE.

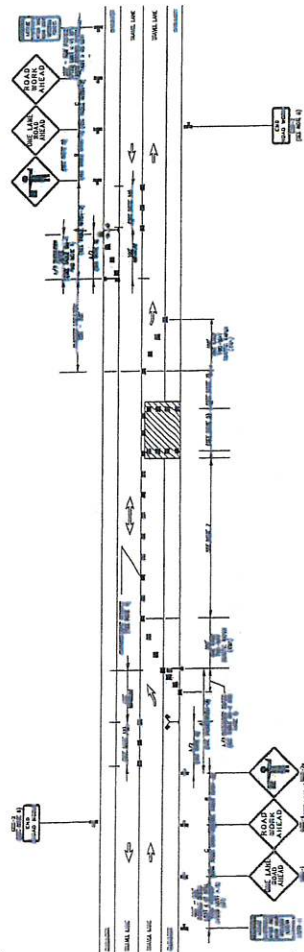
NOTES:  
 1. FRAME AND GRADE/COVER FOR EACH STORM STRUCTURE SHALL BE SET IN MORTAR BED.  
 2. INSTANTANEOUS FORCE WITH 2.0 FACTOR OF SAFETY = 2,000 LB. PROVIDE EXTENDED BASE AND FOR A STRUCTURE WITH TOTAL HEIGHT LESS THAN 2,000 LB.

NOTES:  
 1. REFER TO PAGE 2.3.3 OF NYS STANDARDS & SPECIFICATIONS FOR EROSION CONTROL FOR MORE INFORMATION.  
 2. DISTANCE FROM TO MINIMUM TALKER CONDITION FOR ALL PIPING EXCEPT PLACE RP-HAP OR RP-HAP, SIZE EQUIVALENT TO NYS DOT LIGHT STONE FILL.  
 3. TYPICAL END SECTIONS LENGTH OF APPROX (L/A) = 8 FT/WIDTH OF APRON.  
 4. 1/2" x 4" RP-HAP, SIZE EQUIVALENT TO NYS DOT LIGHT STONE FILL.

NOTES:  
 1. THE ENTIRE MICROPOOL EXTENDED DETENTION POND AREA SHALL BE DEEP BROWED TO LOOSEN AND INADEQUATE BROWN. IN ANY AREAS WHERE BROWN SILTY SAND SUBSTRATE MATERIAL IS ENCOUNTERED, THE MATERIAL SHOULD BE REMOVED FROM THE BROWN AREA AND REPLACED WITH SUITABLE GRANULAR FILL.  
 2. THE BROWN AREA SHALL BE DEEP BROWED TO LOOSEN AND INADEQUATE BROWN. IN ANY AREAS WHERE BROWN SILTY SAND SUBSTRATE MATERIAL IS ENCOUNTERED, THE MATERIAL SHOULD BE REMOVED FROM THE BROWN AREA AND REPLACED WITH SUITABLE GRANULAR FILL.  
 3. SEDIMENT MARKER SHALL BE A MINIMUM 2" DIAMETER 40 PVC PIPE BURIED A MIN 4 FT AND 2 FT ABOVE PERMANENT POOL ELEVATION. A SOLID MARK SHALL BE PLACED AT A POINT 2 FT ABOVE THE FOREBAY BOTTOM.

NOTES:  
 1. THE ENTIRE MICROPOOL EXTENDED DETENTION POND AREA SHALL BE DEEP BROWED TO LOOSEN AND INADEQUATE BROWN. IN ANY AREAS WHERE BROWN SILTY SAND SUBSTRATE MATERIAL IS ENCOUNTERED, THE MATERIAL SHOULD BE REMOVED FROM THE BROWN AREA AND REPLACED WITH SUITABLE GRANULAR FILL.  
 2. THE BROWN AREA SHALL BE DEEP BROWED TO LOOSEN AND INADEQUATE BROWN. IN ANY AREAS WHERE BROWN SILTY SAND SUBSTRATE MATERIAL IS ENCOUNTERED, THE MATERIAL SHOULD BE REMOVED FROM THE BROWN AREA AND REPLACED WITH SUITABLE GRANULAR FILL.  
 3. SEDIMENT MARKER SHALL BE A MINIMUM 2" DIAMETER 40 PVC PIPE BURIED A MIN 4 FT AND 2 FT ABOVE PERMANENT POOL ELEVATION. A SOLID MARK SHALL BE PLACED AT A POINT 2 FT ABOVE THE FOREBAY BOTTOM.

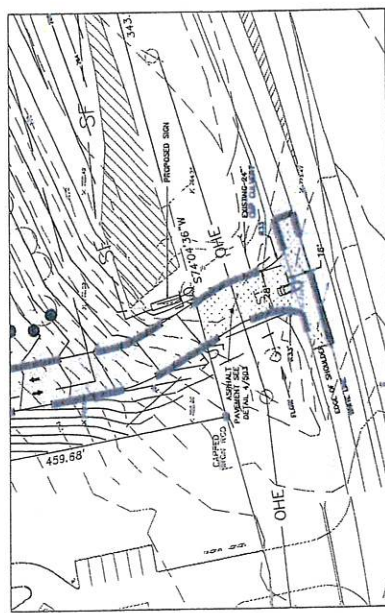




- NOTES:**
1. WHEN PAVED SHOULDERS HAVING A WIDTH OF 6' OR MORE ARE CLOSED, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE INTERMEDIATE OR SHORT STATIONARY FLAGGING OPERATION.
  2. WHEN A SIDE ROAD OR DRIVEWAY INTERSECTS THE HIGHWAY WITHIN A WORK ZONE, TRAFFIC CONTROL AREA, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES AND/OR FLAGGERS SHALL BE PLACED AS NEAR AS FEASIBLE. ADDITIONAL FLAGGERS SHALL BE LOCATED AT ALL INTERSECTIONS AND CHANNELIZED UNIDIRECTIONAL TRAFFIC LOCATED WITHIN THE ACTIVE WORK SPACE.
  3. NO WORK ACTIVITY, EQUIPMENT, OR STORAGE OF VEHICLES, OR MATERIAL SHALL OCCUR WITHIN THE BUFFER SPACE AT ANY TIME.
  4. CHANNELIZING DEVICE SPACING (CENTER TO CENTER) SHALL NOT EXCEED 40' IN THE ACTIVE WORK SPACE.
  5. TRANSVERSE DEVICES SHALL BE REQUIRED (AS PER THE STANDARD SPECIFICATIONS) WHEN A PAVED SHOULDER HAVING A WIDTH OF 6' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 100 FEET.
  6. THE END ROAD WORK SIGN (W20-2) SHALL BE PLACED A MINIMUM OF 500' PAST THE END OF THE WORK SPACE.
  7. CHANNELIZING DEVICES SHALL BE REQUIRED TO BE PLACED AT THE BEGINNING AND END OF THE WORK SPACE TO LOCATE THE WORK ZONE.
  8. THE FLAGGER SHALL BE LOCATED IN THE SHOULDER, AT THE BEGINNING AND END OF THE WORK SPACE, AT THE POINTS WHERE THE FLAGGERS ARE PLACED.
  9. FLAGGER SIGN (W20-4) AND END LANE SIGN (W20-1) SHALL BE PLACED AT THE BEGINNING AND END OF THE WORK SPACE.
  10. FLAGGER AND END LANE SIGN SHALL BE ATTACHED TO LEGS, A SIGNATURE SHALL BE ON THE REVERSE.
  11. ALL FLAGGER SIGN LEGS 2' (600) VERTICAL SPACING SHALL BE MAINTAINED.
  12. CHANNELIZING DEVICES SHALL BE PLACED AT THE BEGINNING AND END OF THE WORK SPACE.

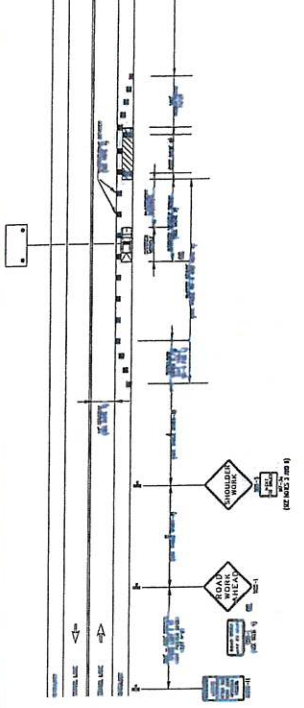
**FLAGGING OPERATION**  
**SHORT OR INTERMEDIATE TERM STATIONARY**  
**LANE CLOSURE ON 2-WAY ROADWAY**

1. SHORT OR INTERMEDIATE TERM STATIONARY LANE CLOSURE ON 2-WAY ROADWAY



**3 ORBWAY ENTRANCE PLAN**

SHORT DISTANCE	PROPOSED ENTRANCE	TO THE RIGHT	TO THE LEFT
14'-15'	14'-15'	14'-15'	14'-15'
47' EYE AND CONTACT HEIGHT	47'	47'	47'
15' EYE AND CONTACT HEIGHT	15'	15'	15'



- NOTES:**
1. WHEN THE MINIMUM LANE WIDTH OF 12' CANNOT BE MAINTAINED DUE TO A SHOULDER CLOSURE, USE THE DETAIL FOR SHORT OR INTERMEDIATE TERM STATIONARY FLAGGING OPERATION.
  2. NO WORK ACTIVITY, EQUIPMENT, OR STORAGE OF VEHICLES, OR MATERIAL SHOULD OCCUR WITHIN A BUFFER SPACE.
  3. FLAGGER SIGN (W20-4) SHALL BE PLACED AT THE BEGINNING AND END OF THE WORK SPACE.
  4. THE ROAD WORK SIGN (W20-1) MAY BE USED INSTEAD OF THE ROAD WORK AHEAD SIGN (W20-1) IF WORK IS TO BE PERFORMED WITHIN THE BUFFER SPACE.
  5. FOR BARBER VEHICLE USE REQUIREMENTS SEE TABLE NY-1-A AND NY-1-A ON THE STANDARD SHEET TITLED "WORK ZONE TRAFFIC CONTROL LEGENDS AND NOTES".
  6. CHANNELIZING DEVICES SHALL BE REQUIRED (AS PER THE STANDARD SPECIFICATIONS) WHEN A PAVED SHOULDER HAVING A WIDTH OF 6' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 100 FEET.
  7. TRANSVERSE DEVICES SHALL BE REQUIRED (AS PER THE STANDARD SPECIFICATIONS) WHEN A PAVED SHOULDER HAVING A WIDTH OF 6' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 100 FEET.
  8. CHANNELIZING DEVICES SHALL BE REQUIRED (AS PER THE STANDARD SPECIFICATIONS) WHEN A PAVED SHOULDER HAVING A WIDTH OF 6' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 100 FEET.

**LANE/SHOULDER CLOSER**  
**SHORT OR INTERMEDIATE TERM**  
**STATIONARY LANE CLOSURE ON 2-LANE**  
**ROADWAY**

1. SHORT OR INTERMEDIATE TERM STATIONARY LANE CLOSURE ON 2-LANE ROADWAY

**TABLE NY10-3**  
**ADVANCE WARNING SIGN SPACING**

ROAD TYPE	100 MPH	85 MPH	70 MPH	55 MPH	40 MPH
Interstate	1100	700	500	350	250
Expressway	700	450	300	200	150
Arterial	400	250	150	100	75
Collector	200	125	75	50	35
Local	100	60	35	25	15

**TABLE NY10-4**  
**WORK ZONE TRAFFIC CONTROL LEGEND**

ITEM	DESCRIPTION
1	Channelizing device (flexible posts)
2	Channelizing device (wood posts)
3	Channelizing device (concrete posts)
4	Channelizing device (steel posts)
5	Channelizing device (plastic posts)
6	Channelizing device (rubber posts)
7	Channelizing device (bamboo posts)
8	Channelizing device (cottonwood posts)
9	Channelizing device (willow posts)
10	Channelizing device (sagebrush posts)
11	Channelizing device (brush posts)
12	Channelizing device (straw posts)
13	Channelizing device (hay posts)
14	Channelizing device (grass posts)
15	Channelizing device (weed posts)
16	Channelizing device (moss posts)
17	Channelizing device (lichen posts)
18	Channelizing device (algae posts)
19	Channelizing device (fungi posts)
20	Channelizing device (bacteria posts)
21	Channelizing device (virus posts)
22	Channelizing device (parasite posts)
23	Channelizing device (invertebrate posts)
24	Channelizing device (vertebrate posts)
25	Channelizing device (plant posts)
26	Channelizing device (animal posts)
27	Channelizing device (mineral posts)
28	Channelizing device (organic posts)
29	Channelizing device (inorganic posts)
30	Channelizing device (synthetic posts)
31	Channelizing device (natural posts)
32	Channelizing device (artificial posts)
33	Channelizing device (biodegradable posts)
34	Channelizing device (non-biodegradable posts)
35	Channelizing device (recyclable posts)
36	Channelizing device (non-recyclable posts)
37	Channelizing device (renewable posts)
38	Channelizing device (non-renewable posts)
39	Channelizing device (sustainable posts)
40	Channelizing device (non-sustainable posts)
41	Channelizing device (ethical posts)
42	Channelizing device (non-ethical posts)
43	Channelizing device (legal posts)
44	Channelizing device (illegal posts)
45	Channelizing device (moral posts)
46	Channelizing device (immoral posts)
47	Channelizing device (just posts)
48	Channelizing device (unjust posts)
49	Channelizing device (fair posts)
50	Channelizing device (unfair posts)
51	Channelizing device (honest posts)
52	Channelizing device (dishonest posts)
53	Channelizing device (kind posts)
54	Channelizing device (unkind posts)
55	Channelizing device (compassionate posts)
56	Channelizing device (uncompassionate posts)
57	Channelizing device (respectful posts)
58	Channelizing device (disrespectful posts)
59	Channelizing device (polite posts)
60	Channelizing device (impolite posts)
61	Channelizing device (courteous posts)
62	Channelizing device (uncourteous posts)
63	Channelizing device (friendly posts)
64	Channelizing device (unfriendly posts)
65	Channelizing device (helpful posts)
66	Channelizing device (unhelpful posts)
67	Channelizing device (generous posts)
68	Channelizing device (ungenerous posts)
69	Channelizing device (gracious posts)
70	Channelizing device (ungracious posts)
71	Channelizing device (glad posts)
72	Channelizing device (unpleasant posts)
73	Channelizing device (pleased posts)
74	Channelizing device (dissatisfied posts)
75	Channelizing device (satisfied posts)
76	Channelizing device (dissatisfied posts)
77	Channelizing device (satisfied posts)
78	Channelizing device (dissatisfied posts)
79	Channelizing device (satisfied posts)
80	Channelizing device (dissatisfied posts)
81	Channelizing device (satisfied posts)
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83	Channelizing device (satisfied posts)
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86	Channelizing device (dissatisfied posts)
87	Channelizing device (satisfied posts)
88	Channelizing device (dissatisfied posts)
89	Channelizing device (satisfied posts)
90	Channelizing device (dissatisfied posts)
91	Channelizing device (satisfied posts)
92	Channelizing device (dissatisfied posts)
93	Channelizing device (satisfied posts)
94	Channelizing device (dissatisfied posts)
95	Channelizing device (satisfied posts)
96	Channelizing device (dissatisfied posts)
97	Channelizing device (satisfied posts)
98	Channelizing device (dissatisfied posts)
99	Channelizing device (satisfied posts)
100	Channelizing device (dissatisfied posts)

**TABLE NY10-5**  
**WORK ZONE TRAFFIC CONTROL LEGEND**

ITEM	DESCRIPTION
1	Channelizing device (flexible posts)
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17	Channelizing device (lichen posts)
18	Channelizing device (algae posts)
19	Channelizing device (fungi posts)
20	Channelizing device (bacteria posts)
21	Channelizing device (virus posts)
22	Channelizing device (parasite posts)
23	Channelizing device (invertebrate posts)
24	Channelizing device (vertebrate posts)
25	Channelizing device (plant posts)
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27	Channelizing device (mineral posts)
28	Channelizing device (organic posts)
29	Channelizing device (inorganic posts)
30	Channelizing device (synthetic posts)
31	Channelizing device (natural posts)
32	Channelizing device (artificial posts)
33	Channelizing device (biodegradable posts)
34	Channelizing device (non-biodegradable posts)
35	Channelizing device (recyclable posts)
36	Channelizing device (non-recyclable posts)
37	Channelizing device (renewable posts)
38	Channelizing device (non-renewable posts)
39	Channelizing device (sustainable posts)
40	Channelizing device (non-sustainable posts)
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42	Channelizing device (non-ethical posts)
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50	Channelizing device (unfair posts)
51	Channelizing device (honest posts)
52	Channelizing device (dishonest posts)
53	Channelizing device (kind posts)
54	Channelizing device (unkind posts)
55	Channelizing device (compassionate posts)
56	Channelizing device (uncompassionate posts)
57	Channelizing device (respectful posts)
58	Channelizing device (disrespectful posts)
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60	Channelizing device (impolite posts)
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70	Channelizing device (ungracious posts)
71	Channelizing device (glad posts)
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94	Channelizing device (dissatisfied posts)
95	Channelizing device (satisfied posts)
96	Channelizing device (dissatisfied posts)
97	Channelizing device (satisfied posts)
98	Channelizing device (dissatisfied posts)
99	Channelizing device (satisfied posts)
100	Channelizing device (dissatisfied posts)

**4 NYSDOT R-O-W ASPHALT PAVEMENT DETAIL**



**3 ORBWAY ENTRANCE PLAN**



**SHORT DISTANCE**  
**PROPOSED ENTRANCE**

TO THE RIGHT	TO THE LEFT
14'-15'	14'-15'
47' EYE AND CONTACT HEIGHT	47'
15' EYE AND CONTACT HEIGHT	15'

Doc: 4/3/23  
 Revised: 4/3/23  
 No. 1  
 Revision Description: 1. REVISED FOR COMMENTS

DATE: 4/3/23  
 TIME: 10:00 AM  
 BY: J. L. GARDNER  
 FOR: C. J. GARDNER

IF IT IS NECESSARY TO OBTAIN PERMISSION TO MAKE ANY CHANGES TO THIS PLAN, THE USER SHALL CONTACT THE PROJECT MANAGER AT THE OFFICE OF THE PROJECT MANAGER.

CHRISTOPHER D. LUGO, P.E.  
 N.Y.S. E.C. 11000000000000000000

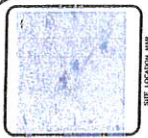
EMPIRE ENGINEERING, PLLC  
 1000 ROUTE 92  
 SUITE 200  
 DUNESBURG, NY 12826  
 PHONE: 518-339-1111  
 FAX: 518-339-1112  
 WWW: WWW.EMPIREENGINEERING.COM

PROJECT: PINE GROVE DAIRY SELF-STORAGE ROAD DUNESBURG, NY

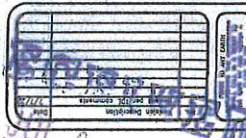
NYSDOT DETAILS: 02/19/2022  
 N.T.S.  
 21018  
 8 OF 8

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SHEET LOCATION MAP  
SCALE: N.T.S.



DATE: 07/20/22  
PROJECT: [illegible]

Geist R Gray  
Landscape Architect  
1000 N. [illegible]  
[illegible] NY 12520  
PHONE: [illegible]  
FAX: [illegible]

LAURENCE ENGINEERING, LLC  
1000 N. [illegible]  
[illegible] NY 12520  
PHONE: [illegible]  
FAX: [illegible]

DATE: 07/20/22  
SCALE: 1"=100'  
SHEET: V101  
OF: 2008



1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF UNLESS OTHERWISE NOTED.

2. ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.

3. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

4. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

5. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

6. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

7. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

8. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

9. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

10. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

11. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

12. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

13. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

14. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

15. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

16. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

17. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

18. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

19. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

20. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF UNLESS OTHERWISE NOTED.

2. ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.

3. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

4. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

5. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

6. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

7. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

8. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

9. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

10. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

11. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

12. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

13. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

14. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

15. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

16. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE DRIVE UNLESS OTHERWISE NOTED.

17. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE SIDEWALK UNLESS OTHERWISE NOTED.

18. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE CURB UNLESS OTHERWISE NOTED.

19. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE WALL UNLESS OTHERWISE NOTED.

20. ALL DIMENSIONS ARE TO BE TAKEN FROM THE EXTERIOR FACE OF THE FENCE UNLESS OTHERWISE NOTED.

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**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 1 is accurate and complete.

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

Name of Action or Project: Pine Grove Dairy - Self Storage		
Project Location (describe, and attach a general location map): 6204 Duanesburg Road, Town of Duanesburg		
Brief Description of Proposed Action (include purpose or need):  The proposed action is the construction of self-storage unit structures and impervious gravel storage area with associated driveway and stormwater management system. The initial phase of the project includes the construction of ten (10) self-storage structures and 2.0 acres of outdoor storage. The total project includes approximately 18 acres of impervious with future phase developments yet to be determined. Future phases could incorporate a combination of self-storage buildings and outdoor storage. The project also includes a minor subdivision of the existing barn and single family dwelling from the proposed self-storage project.		
Name of Applicant/Sponsor: Valley Mobile Home Court, LLC	Telephone: 518-234-8614	E-Mail: superiorhousingllc@gmail.com
Address: 2711 State Route 7		
City/PO: Cobleskill,	State: NY	Zip Code: 12043
Project Contact (if not same as sponsor; give name and title/role): Christopher Longo, PE c/o Empire Engineering, PLLC	Telephone: 518-858-4117	E-Mail: clongo@empireeng.net
Address: 1900 Duanesburg Road		
City/PO: Duanesburg	State: NY	Zip Code: 12056
Property Owner (if not same as sponsor): Same as applicant	Telephone:	E-Mail:
Address:		
City/PO:	State:	Zip Code:

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**B. Government Approvals**

<b>B. Government Approvals, Funding, or Sponsorship.</b> ("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 Counsel, Town Board, <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No or Village Board of Trustees		
b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Town of Duanesburg, Planning Board - Special Use Permit	January 7, 2022
c. City, Town or Village Zoning Board of Appeals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
d. Other local agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
e. County agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sch County - Referral (239m)	
f. Regional agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
g. State agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NYSDEC Div of Water, Bureau of Water - SWPPP, NYSDOT - HWP, NYS OPRHP - Effect Finding	
h. Federal agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	USACOE	
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**C. Planning and Zoning**

<b>C.1. Planning and zoning actions.</b>
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? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span> • <b>If Yes</b> , complete sections C, F and G. • <b>If No</b> , proceed to question C.2 and complete all remaining sections and questions in Part 1
<b>C.2. Adopted land use plans.</b>
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? <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span> If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>
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?) <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span> If Yes, identify the plan(s): NYS Heritage Areas: Mohawk Valley Heritage Corridor _____ _____ _____
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? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span> If Yes, identify the plan(s): _____ _____ _____

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**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?  
Manufacturing and Light Industrial (C-2)

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? Duanesburg Central School District

b. What police or other public protection forces serve the project site?  
New York State Police, Schenectady County Sheriffs

c. Which fire protection and emergency medical services serve the project site?  
Duanesburg Vollarunteer Fire District 2

d. What parks serve the project site?  
Shafer Park, Esperance Park, Schilling Park, Bozenkill Park, Orsini Park, Juracka Park, Pansy Park, Memorial Park, Hillhurst Park, and Poutre Park

**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)? Commercial - Self Storage Units

b. a. Total acreage of the site of the proposed action? \_\_\_\_\_ 103.8 acres  
 b. Total acreage to be physically disturbed? \_\_\_\_\_ 26.9 acres  
 c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? \_\_\_\_\_ 103.8 acres

c. Is the proposed action an expansion of an existing project or use?  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)  
Mixed Use Commercial Site Plan and 2-Lot Subdivision  
 ii. Is a cluster/conservation layout proposed?  Yes  No  
 iii. Number of lots proposed? 2  
 iv. Minimum and maximum proposed lot sizes? Minimum 11 Ac Maximum 93 Ac

e. Will the proposed action be constructed in multiple phases?  Yes  No  
 i. If No, anticipated period of construction: \_\_\_\_\_ months  
 ii. If Yes:  
 • Total number of phases anticipated 5  
 • Anticipated commencement date of phase 1 (including demolition) June month 2022 year  
 • Anticipated completion date of final phase June month 2028 year  
 • Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: \_\_\_\_\_  
Phases are sequenced to minimize impact of construction vehicles and to allow for stormwater control to be in place prior to start of subsequent phases.

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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)?  Yes  No  
 If Yes,  
 i. Total number of structures 10  
 ii. Dimensions (in feet) of largest proposed structure: 15 height; 50 width; and 200 length  
 iii. Approximate extent of building space to be heated or cooled: 0 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: Stormwater Management  
 ii. If a water impoundment, the principal source of the water:  Ground water  Surface water streams  Other specify: On-site runoff from parking lots and buildings  
 iii. If other than water, identify the type of impounded/contained liquids and their source.  
N/A  
 iv. Approximate size of the proposed impoundment. Volume: .4 million gallons; surface area: .6 acres  
 v. Dimensions of the proposed dam or impounding structure: N/A height; N/A length  
 vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):  
N/A

**D.2. Project Operations**

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

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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

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- 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: \_\_\_\_\_

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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 project create in relation to total size of project parcel?

\_\_\_\_\_ Square feet or 18 acres (impervious surface)

\_\_\_\_\_ Square feet or 103.8 acres (parcel size)

ii. Describe types of new point sources. Buildings, driveways and outdoor storage

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)?

Stormwater will be directed to on-site stormwater management ponds. After treatment runoff will be discharged to the NYSDOT roadside conveyance system.

- If to surface waters, identify receiving water bodies or wetlands: Tributary to the Normans Kill

- 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)

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

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

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<sub>2</sub>)
- \_\_\_\_\_ Tons/year (short tons) of Nitrous Oxide (N<sub>2</sub>O)
- \_\_\_\_\_ Tons/year (short tons) of Perfluorocarbons (PFCs)
- \_\_\_\_\_ Tons/year (short tons) of Sulfur Hexafluoride (SF<sub>6</sub>)
- \_\_\_\_\_ Tons/year (short tons) of Carbon Dioxide equivalent of Hydrofluorocarbons (HFCs)
- \_\_\_\_\_ Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

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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 1/2 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: \_\_\_\_\_  
15kWh
- ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):  
via grid/ local utility
- 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: \_\_\_\_\_ 6:00 am - 6:00 pm \_\_\_\_\_
- Saturday: \_\_\_\_\_ 6:30 am - 4:00 pm \_\_\_\_\_
- Sunday: \_\_\_\_\_
- Holidays: \_\_\_\_\_

ii. During Operations:

- Monday - Friday: \_\_\_\_\_ 24 hrs \_\_\_\_\_
- Saturday: \_\_\_\_\_ 24 hrs \_\_\_\_\_
- Sunday: \_\_\_\_\_ 24 hrs \_\_\_\_\_
- Holidays: \_\_\_\_\_ 24 hrs \_\_\_\_\_



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m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both?  Yes  No  
 If yes:  
 i. Provide details including sources, time of day and duration:  
 \_\_\_\_\_  
 \_\_\_\_\_

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:  
 Wall mounted fixtures located on the sides and ends of proposed self-storage structures. Mounting height approximately 9-10' with shielded cut-offs.  
 \_\_\_\_\_

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen?  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: \_\_\_\_\_ 6 tons per \_\_\_\_\_ month (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: Separate recycling containers for solid waste disposal  
 \_\_\_\_\_  
 • Operation: \_\_\_\_\_  
 \_\_\_\_\_  
 iii. Proposed disposal methods/facilities for solid waste generated on-site:  
 • Construction: Hired waste hauler  
 \_\_\_\_\_  
 • Operation: \_\_\_\_\_  
 \_\_\_\_\_

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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): \_\_\_\_\_

ii. If mix of uses, generally describe: \_\_\_\_\_

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	1.8	16.2	+14.4
• Forested	39.6	36.7	-2.9
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	47.1	35.6	-11.5
• Agricultural (includes active orchards, field, greenhouse etc.)	15.1	5.2	-9.9
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			



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

i. If Yes: explain: \_\_\_\_\_

d. Are there any facilities serving children, the elderly, people 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: \_\_\_\_\_  
\_\_\_\_\_

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): \_\_\_\_\_  
\_\_\_\_\_

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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? \_\_\_\_\_ > 20 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:	Burdett-Scriba, BvB	33.8 %
	Burdett-Scriba, BvC	38.5 %
	Nunda channery, NuD	18.0 %

d. What is the average depth to the water table on the project site? Average: \_\_\_\_\_ > 20 feet

e. Drainage status of project site soils:  Well Drained: \_\_\_\_\_ % of site  
 Moderately Well Drained: 13 % of site  
 Poorly Drained 87 % of site

f. Approximate proportion of proposed action site with slopes:  0-10%: 51 % of site  
 10-15%: 36 % of site  
 15% or greater: 13 % 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 \_\_\_\_\_ Classification \_\_\_\_\_
- Lakes or Ponds: Name 863-686 Classification C
- Wetlands: Name Federal Waters, Federal Waters, 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 \_\_\_\_\_

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m. Identify the predominant wildlife species that occupy or use the project site:

Cottontail Rabbit \_\_\_\_\_  
Whitetailed Deer \_\_\_\_\_

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

If Yes:

i. Species and listing (endangered or threatened): \_\_\_\_\_

Northern Long-eared Bat

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: SCHE001

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 \*See attached No Effect letter from OPRHP

ii. Name: Christman Bird & Wildlife Sanctuary, Delanson Historic District, George W. Farmhouse

iii. Brief description of attributes on which listing is based: Conservation Area, Architecture, Architecture/Engineering

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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?  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): Archaeological Sites

ii. Basis for identification: Phase 1A/1B Cultural Resource Survey

---

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

If Yes:

i. Identify resource: US Route 20

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

iii. Distance between project and resource: >1 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.

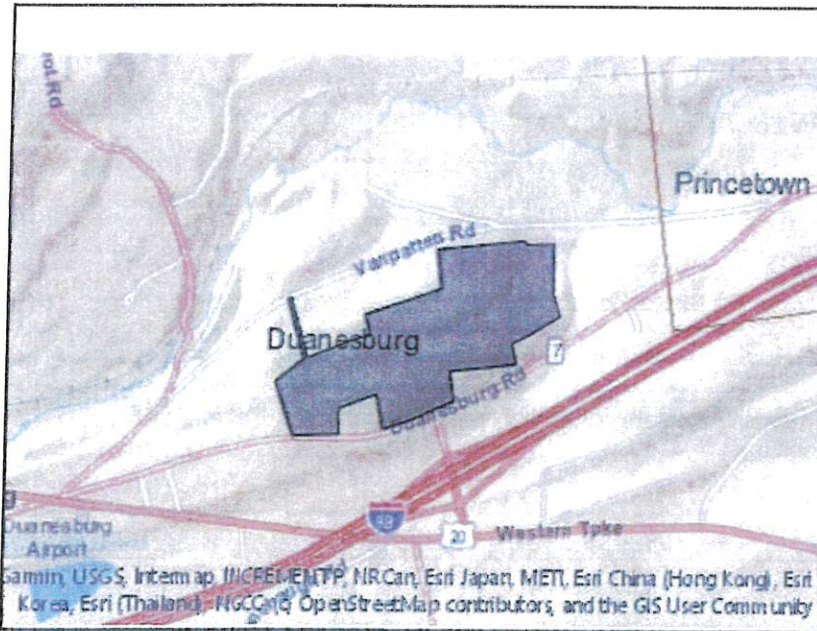
Applicant/Sponsor Name Eric Dolen c/o Valley Mobile Home Court, LLC Date Rev 7/7/22

Signature  Christopher Longo Title Project Engineer

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**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 in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas: Mohawk Valley Heritage Corridor
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
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Lake/Pond Name]	863-686
E.2.h.iv [Surface Water Features - Lake/Pond 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]	No

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E.2.k. [500 Year Floodplain]	No
E.2.i. [Aquifers]	Yes
E.2.i. [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]	Northern Long-eared Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	SCHE001
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]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

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# Stormwater Pollution Prevention Plan

For  
 Pine Grove Dairy Self Storage  
 At  
 6204 Duanesburg Road  
 Duanesburg, NY 12056

Prepared For:  
**Valley Mobile Home Court, LLC**  
 2711 State Route 7  
 Cobleskill, NY 12043



Prepared By:  
**Empire Engineering, PLLC**  
 1900 Duanesburg Road  
 Duanesburg, NY 12056

March 3, 2022  
 Revised: July 7, 2022

## Appendices

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- Notice of Intent
- Appendix B
- OPRHP Correspondence
- Appendix C
- T&E Correspondence
- Appendix D
- Maps & Figures
- Appendix E
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- Appendix F
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## 1.0 Site Information & Evaluation

### 1.1 Project/Site Information

The subject project is the commercial development on 106.2 acres of a parcel including the construction of ten (10) Storage Unit structures on a portion of the parcel which currently exists as vacant with areas of grass & brushland. The subject site is located at 6204 Duanesburg Road in the Town of Duanesburg, NY. The project site area is approximately 26.9± acres. The property is identified by Tax Map # 55.00-4-11.6

Anticipated Construction Start Date: September 2022

Anticipated Completion Date: June 2028

### 1.2 Contact Information

#### Owner/Operator:

Valley Mobile Home Court, LLC  
 2711 State Route 7  
 Cobleskill, NY 12043  
 Contact: Eric Dolen (518) 376-1291

#### Engineer:

Empire Engineering, PLLC  
 1900 Duanesburg Road  
 Duanesburg, NY 12056  
 Contact: Christopher Longo, PE

#### Contractor:

Owner/Operator

### 1.3 Drainage Patterns & Topography

The site is vacant land predominantly a cultivated field, existing runoff is directed to the North and South with a central ridge running East to West down the middle of the subject site. The topography of the site can be generally described as flat to slightly sloped.

Soils on the site are silt loam as identified by the USDA Natural Resource Conservation Service web soil survey and an on-site soils investigation. The on-site soils investigation confirmed the soils to be silt loam over fragipan. Infiltration tests were performed in the intermediate layer indicating permeability at a rate of 5 minutes per inch. All test pit logs and infiltration results are indicated on the site plan.

Mapped Soils (Per USDA NRCS Mapping)				
Symbol	Soil Name	Soil Description	Percentage of Site	Hydrologic Soil Group
BvB	Burdett-Scriba	Channery silt loam, 3-8% slope	33.8%	C/D
BvC	Burdett-Scriba	Channery silt loam, 8-15% slope	38.5%	D
IIA	Illion	Silt Loam,	7.5%	C/D

		0-3% slope		
NuD	Nunda	Channely silt loam, 15-25% slope	18.0%	C/D
NVF	Nunda	Soil, very steep	2.2%	C/D

#### 1.3 Area Water Sources and Pollution

The primary sources of pollution from an active construction site are erosion, siltation, debris transport, accidental spills or leakage of oils from equipment.

#### 1.4 Implementation Schedule

The construction sequence outlined below should be followed or amended as necessary to minimize the susceptibility of the site to erosion and sediment transport during construction. Proper construction of the following Erosion & Sediment Controls are detailed on Sheet CS01-E & SC Detail.

- Establish perimeter protections and stabilized construction entrances within work area.
- Construct temporary sediment traps in the location of permanent stormwater controls.
- Once all erosion and sediment control measures are constructed and functional, disturbance may begin within that subject area.
- Rough grade the project area, establish any swales and/or temporary check dams to divert runoff to storage areas.
- Stabilize cut/fill slopes and stabilize internal roadway areas with subbase course as necessary.
- If the project is occurring in multiple phases repeat steps a-d in any new drainage area.
- Upon completion of grading, final seeding and full vegetative cover shall be established.
- After completing construction of stormwater management system, all structures and drainage lines shall be cleaned of all silt and sediment.
- Once final stabilization is achieved remove all temporary erosion and sediment control measures including silt fence, storm structure protections and temporary sediment basin components.

#### 1.5 Notice of Intent

The owner shall submit a Notice of Intent (NOI) to the New York State Department of Environmental Conservation and obtain authorization of construction activities before commencing work. A copy of this NOI is included within Appendix A.

#### 1.7 Historic Preservation

The Office of Parks, Recreation & Historic Preservation database was reviewed for potential historic or culturally significant data at or near the project site. The database revealed that the site is moderately sensitive for prehistoric resources, due to its location near several water sources and its proximity to two previously recorded

prehistoric sites. The area is also considered highly sensitive for historic resources due to its location near a historic roadway and its proximity to five previously identified historic structures, four of which are currently listed on the National Register of Historic Places. Based upon the negative results of the Phase I A/B survey, the proposed development will have no adverse impact to any historic properties in the vicinity. Consultation has been initiated and final correspondence with the OPRHP has been included within Appendix B.

#### 1.8 Endangered Species

The NYSDEC Environmental Resource Mapper was reviewed for potential records of state or federally listed threatened or endangered species. The site is at the fringe of an area designated as a "significant natural community" for the Northern Long Eared Bat endangered species. Some forest will be cut down to facilitate construction of the stormwater management area in the northeast project site. This project is not expected to have any potential impact to this endangered species as cutting of any forested areas will only be conducted between November 1<sup>st</sup> and March 31<sup>st</sup>. The database results are included within Appendix C.

#### 1.9 Maps & Figures

Additional Maps indicating the site are included within Appendix D such as:

General Location Map

USDA Soils Map

#### 2.0 Best Management Practices

##### 2.1 Objectives

The primary objective of the Stormwater Pollution Prevention Plan is protecting adjacent areas from erosion and sediment transport and ensuring the quality of discharge water is acceptable. This is done by minimizing disturbed areas, protecting natural features and soil, phasing construction, stabilizing soils, and protecting storm inlets.

##### 2.2 Phasing

Construction of the subject site is intended to be conducted in multiple phases per Site Plan Sheet C101. Within the phase, attention should be paid to the required sequencing to ensure minimal sediment transport.

##### 2.3 Good Housekeeping

The owner/operator shall implement the following for the duration of construction:

- All stored materials shall be in a neat, orderly manner and under cover.
- Products shall be kept in original containers with a legible original manufacturer's label.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Original labels and material safety data sheets (MSDS) shall be procured and used for each material.

- Whenever possible, the entire product shall be used up before disposing of a container.
- If surplus product must be disposed of, manufacturers or local/state/federal recommended methods for proper disposal shall be followed.
- Manufacturer's recommendations for proper use and disposal shall be followed.
- The job site superintendent shall be responsible for daily inspections to ensure proper use and disposal of materials.

#### 2.4 Spill Prevention Controls

The following spill prevention controls shall be implemented for the duration of construction:

- The job site superintendent shall be the spill prevention and cleanup coordinator. He/she shall designate the individuals who will receive spill prevention and cleanup training. These individuals shall each become responsible for a phase of prevention and cleanup. The names of these personnel shall be posted in the material storage area and in the office trailer onsite.
- Manufacturer's recommended methods for spill cleanup shall be clearly posted and site personnel shall be trained regarding these procedures as well as the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup shall be kept in the material storage area onsite in spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.).
- All spills shall be cleaned up immediately after discovery.
- The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with the hazardous substances.
- Spills of toxic or hazardous materials shall be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 302 list and oil) shall be immediately reported to:
  - EPA National Response Center, telephone 1-800-424-8802
  - N.Y.S.D.E.C. 24-hour Spill Hotline, telephone 1-800-457-7362

#### 2.5 Temporary Erosion & Sediment Controls

Temporary stormwater control measures shall be installed prior to active construction within each tributary area. Such temporary controls include but are not limited to:

##### 2.5.1 Silt Fencing

- Silt fencing.
- Stabilized construction entrances.
- Inlet protection devices shall be installed around all storm basins within active disturbance areas or areas not yet finally stabilized.
- Dust shall be controlled with water on site and adjacent roadways.
- Designate a protected area to stockpile topsoil or other material stripped during excavation.

- Other temporary erosion and sediment control devices including outlet control structure as necessary.
- Any refuse storage onsite shall be only in designated areas where runoff will not directly discharge through.
- See Sheet CS01 - E&SC Detail for further detail on installation and implementation of control practices

##### 2.5.2 Mulching

- Once no longer active, disturbed areas shall be mulched to prevent sediment transport. Areas that are at or near finish grade shall be finally stabilized.
- Stockpiles of soil materials shall be stabilized with geotextile or seeding and be surrounded by silt fencing or berms.
- No area shall be left un-stabilized more than 14 days after completion of construction activities within that area.
- Erosion control devices should be cleaned and repaired as necessary.
- Litter and construction debris shall be collected daily by the contractor, and properly disposed of.

##### 2.5.3 Winter Shutdowns

All winter shutdown activities should be performed before frozen conditions are present completed within 14 days following the end of construction for the season. Winter shutdown activities should be completed prior to snowfall whenever possible.

The site may be considered within 'winter shutdown' if the following conditions are met.

- All disturbed areas are temporarily stabilized using:
  - Seed all proposed vegetated areas to ensure germination.
  - Stabilize all areas of bare soil (not including road, parking and staging areas) with a dormant seed mix and straw mulch crimped into the soil.
  - Use of erosion control blankets
  - Temporary seed and mulch stockpiles of soil materials should be covered with mulch.
  - Or some combination of the two, depending on the slope and the size.
- Sediment basins shall be cleaned of silt and debris.

Access road(s) shall be kept clear of snow and snow shall not be stockpiled in a location which inhibits runoff to sediment basin areas.

During winter shutdown, the site inspection frequency may be reduced to once per 30 calendar days.

##### 2.5.4 Final Stabilization

Prior to the site being operational the following measures shall be implemented:

- All disturbed areas other than structures or roads shall receive final seeding and vegetative growth.
- Structures shall be cleaned of silt for proper pump.



- c. Ponds and swales shall be finally shaped in accordance with the sizing details and shall be vegetated accordingly.
- d. Maintenance of ponds, swales and vegetative areas shall continue into operation of the site.
- e. All disturbed areas which will be vegetated shall be de-compacted, aerated and 6" of topsoil applied prior to vegetating. Additional soil restoration may be required for heavy trafficked areas. Additional restoration shall be conducted in accordance with the NYSDEC Stormwater Design Manual Table 5.3.
- f. Upon achieving greater than 80% vegetative growth on the disturbed site, temporary erosion and sediment controls may be removed.

**3.2 Ownership & Maintenance**

The proposed stormwater management facilities indicated on the site are intended to be privately owned and maintained. The owner/operator shall adhere to the Ownership and Maintenance Manual within Appendix E. In accordance with the Notice of Termination requirements, a deed covenant shall be filed identifying the long-term maintenance responsibility of the Owner to ensure long term operation and maintenance of the post-construction stormwater management facilities.

**3.3 Inspections & Remedialing**

**3.3.1 Inspection Requirements**

- a. The owner/operator shall perform routine inspections and either correct or direct the contractor to correct deficiencies as they arise in a timely manner. The contractor shall familiarize themselves with this document and its required components prior to commencing work. Each day that the contractor is performing work on-site there shall be a "trained individual" who is responsible for implementation of the SWPPP components.
- b. The owner shall have a qualified inspector conduct a site inspection at least one per seven calendar days while disturbance activities are on-going. The inspector shall at a minimum, inspect erosion & sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.
- c. The qualified inspector shall prepare an inspection report in accordance with the General Permit and distribute to the owner and appropriate contractor within 24 hours.

**3.2 Certifications**

The SWPPP preparer, owner and contractor shall sign the applicable certification forms included within Appendix F.

**3.1 Documentation Requirements**

The owner or operator shall maintain a copy of the current General Permit, NOI, NOI Acknowledgment Letter, SWPPP, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved final stabilization and the NOI has been submitted to the Department. The documents must be maintained 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.

**4.0 Hydrologic Analysis**

**4.1 Existing Runoff Condition**

The existing site drainage characteristics include existing runoff that is directed to the North and South with a central ridge running East to West down the middle of the subject site. Stormwater runoff from the site was analyzed utilizing software applying the TR-55 hydrologic analysis method. The channel protection volume was determined utilizing the peak discharge from the TR-55 method and the Hydrologic Analysis tools in Appendix B of the New York State Stormwater Management Design Manual. A summary of these peak flow rates is included below as well as the full drainage map & analysis within Appendix G.

Channel Protection Volume (acre-feet)	
	1-Year (Cpv)
Analysis Point A	0.648
Analysis Point B	0.487
<b>Total</b>	<b>1.135</b>

Peak Flow Rates (CFS)		
	10-Year Storm (Qp)	100-Year Storm (Qf)
Analysis Point A	26.37	59.31
Analysis Point B	19.66	44.24
<b>Total</b>	<b>46.03</b>	<b>103.55</b>

**4.2 Proposed Drainage Condition**

The proposed site drainage characteristics were analyzed in relation to the existing baseline to determine required storage volumes for the site. Changes in impervious cover, sub-catchment area and times of concentration were all considered in conducting the analysis. A summary of these peak flow rates is included below as well as the full drainage map & analysis within Appendix H.

Channel Protection Volume (acre-feet)		
	EX 1-Year Storm (Cpv)	PR 1-Year Storm (Cpv)
Analysis Point A	0.648	0.600
Analysis Point B	0.487	0.841
<b>Total</b>	<b>1.135</b>	<b>1.441</b>

In addition to the channel protection volume indicated above, the proposed conditions provide 24-hour extended detention of the 1-year, 24-hour storm event in accordance with the NYS DEC General Permit 0-20-001 Section I.C.2.a.ii. This is indicated on the hydrograph storage plot provided in Appendix H.

Peak Flow Rates (CFS)				
	EX 10-Year Storm (Qp)	PR 10-Year Storm (Qp)	EX 100-Year Storm (Qf)	PR 100-Year Storm (Qf)
Analysis Point A	26.37	2.63	59.31	22.78
Analysis Point B	19.66	19.22	44.24	28.10
<b>Total</b>	<b>46.03</b>	<b>15.85</b>	<b>103.55</b>	<b>60.38</b>

**5.0 Green Infrastructure & Quality Controls**

**5.1 Selecting Post-Construction Practices**

Post-construction stormwater management practices were carefully selected considering the matrices provided by the NYS DEC Stormwater Management Design Manual. Screening factors included 1. Land Use 2. Physical Feasibility 3. Watershed/Regional Factors 4. Stormwater Management Capability 5. Community & Environmental Factors.

Part of the consideration in selecting stormwater practices was the runoff reduction capacity of the practice. In accordance with the NYSDEC General Permit and Stormwater Design Manual each site must meet the minimum runoff reduction requirement through a combination of Green Infrastructure Practices and SMP's with runoff reduction capacity.

As part of the post construction practice selection, green infrastructure techniques were considered and either applied or not utilized. Appendix I includes a table of the planning and practice selection process in accordance with the NYSDEC Stormwater Design Manual Sections 5.2 & 5.3. Many of the planning techniques are intrinsically apparent within the development of the Concept Site Plan. The following Green Infrastructure practices suggested by NYSDEC in Section 5.3 of the SWMDM have not been applied:

- Conservation of Natural Areas – Not a large enough area for conservation
- Disconnection of Rooftops – All rooftops treated by other runoff reduction means
- Stream Daylighting – No streams available to daylight
- Rein Gardens – All impervious treated by other runoff reduction means
- Green Roofs – All rooftops treated by other runoff reduction means
- Stormwater Planters – All rooftops treated by other runoff reduction means
- Rein Barrels – All rooftops treated by other runoff reduction means
- Porous Pavement – All impervious treated by other runoff reduction means

**5.2 Water Quality**

Practices selected for treatment of water quality include:

- Dry Swale (O-1)
- Micropond Extended Detention Pond (P-1)

All water quality practices have been designed to treat the calculated water quality volume as well as safely convey the 10-year storm event. Worksheets showing sizing criteria and calculations for each practice are included within Appendix I.

5.3 Water Quantity

Stormwater controls for water quantity include:

    Micropool Extended Detention Pond (P-1)

Water quantity practices have been designed to attenuate flows from both the Overbank Flood (10-year) and the Extreme Flood (100-year) storm events. The proposed stormwater detention areas do not meet the requirements for consideration as a "dam" as prescribed by NYSDEC. It can be assumed that in the unlikely event for a failure or misoperation losses would be limited to the owner's property. Pond storage elevation and sizing information is included in the post development drainage calculations within Appendix H.

6.0 Conclusion

The subject activity is listed within Appendix B Table 2 of the NYSDEC General Permit 0-20-001 for stormwater discharges from construction activities. This project type requires preparation of a SWPPP that includes Erosion & Sediment Control measures as well as post-construction stormwater management practices. This Stormwater Pollution Prevention Plan has been developed in accordance with the NYSDEC General Permit 0-20-001 as well as the 2015 NYS DEC Stormwater Design Manual. It is anticipated that the drainage from the subject property will have any adverse affect on adjacent downstream properties.

Empire Engineering, PLLC

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7/7/22, 11:01 AM NYSDEC eBusiness Portal System - NOI for coverage under Stormwater General Permit for Construction Activity, Revision 1

7/7/22, 11:01 AM NYSDEC eBusiness Portal System - NOI for coverage under Stormwater General Permit for Construction Activity, Revision 1

# NOI for coverage under Stormwater General Permit for Construction Activity

version 1.35

(Submission #: HPF-FWEY-X98RV, version 1)

## Details

Originally Started By CHRISTOPHER LONGO  
Alternate Identifier Pine Grove Dairy Self-Storage  
Submission ID HPF-FWEY-X98RV  
Submission Reason New  
Status Draft

## Form Input

### Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)  
Valley Mobile Home Court, LLC  
Owner/Operator Contact Person Last Name (NOT CONSULTANT)  
Dolen  
Owner/Operator Contact Person First Name  
Eric  
Owner/Operator Mailing Address  
2711 State Route 7  
City  
Cobleskill  
State  
NY

Zip  
12043  
Phone  
518-296-8377  
Email  
superiorhousingllc@gmail.com  
Federal Tax ID  
14-1816286

### Project Location

Project/Site Name  
Pine Grove Dairy Self-Storage  
Street Address (Not P.O. Box)  
6204 Duaneburg Road  
Side of Street  
North  
City/Town/Village (THAT ISSUES BUILDING PERMIT)  
Duaneburg  
State  
NY  
Zip  
12066  
DEC Region  
4  
County  
SCHENECTADY  
Name of Nearest Cross Street  
Duaneburg Road On-ramp to I-88 & Western Tpke  
Distance to Nearest Cross Street (Feet)  
115  
Project in Relation to Cross Street  
North  
Tax Map Numbers Section-Block-Parcel  
55.00-4-11.6



**Tax Map Numbers**  
NONE PROVIDED

**1. Coordinates**

Provide the Geographic Coordinates for the project site. The two methods are:  
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.  
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates  
42.7822389,-74.13155379998999

**Project Details**

**2. What is the nature of this project?**  
New Construction

**3. Select the predominant land use for both pre and post development conditions.**

**Pre-Development Existing Landuse**  
Pasture/Open Land

**Post-Development Future Land Use**  
Commercial

**3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.**  
NONE PROVIDED

**4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future Impervious area (acreage) within the disturbed area.**

\*\*\* ROUND TO THE NEAREST TENTH OF AN ACRE. \*\*\*

**Total Site Area (acres)**  
93.5

**Total Area to be Disturbed (acres)**  
28.9

**Existing Impervious Area to be Disturbed (acres)**  
0

**Future Impervious Area Within Disturbed Area (acres)**  
18.41

**5. Do you plan to disturb more than 5 acres of soil at any one time?**  
No

**6. Indicate the percentage (%) of each Hydrologic Soil Group (HSG) at the site.**

**A (%)**  
0

**B (%)**  
0

**C (%)**  
0

**D (%)**  
100

**7. Is this a phased project?**  
Yes

**8. Enter the planned start and end dates of the disturbance activities.**

**Start Date**  
9/1/2022

**End Date**  
08/30/2028

**9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.**  
Unidentified Tributary to Normans Kill

**9a. Type of waterbody identified in question 9?**  
Stream/Creek On Site

**Other Waterbody Type Off Site Description**  
NONE PROVIDED

**9b. If "wetland" was selected in 9A, how was the wetland identified?**  
NONE PROVIDED

**10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-D-20-001?**  
No

<https://form-prod.dec.ny.gov/ppp/#/submit/conservation/2022/75-011a-022c-bb89-9194402b304/11>

3/16

<https://form-prod.dec.ny.gov/ppp/#/submit/conservation/2022/75-011a-022c-bb89-9194402b304/11>

4/16

**11. Is this project located in one of the Watersheds identified in Appendix C of GP-D-20-001?**  
No

**12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?**  
No

If No, skip question 13.

**13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?**  
NONE PROVIDED

If Yes, what is the acreage to be disturbed?  
NONE PROVIDED

**14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?**  
No

**15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?**  
Yes

**16. What is the name of the municipality/entity that owns the separate storm sewer system?**  
NYS (part of NYS Route 7 right-of-way)

**17. Does any runoff from the site enter a sewer classified as a Combined Sewer?**  
No

**18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?**  
No

**19. Is this property owned by a state authority, state agency, federal government or local government?**  
No

**20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)**  
No

**Required SWPPP Components**

**21. 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

**22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?**  
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

**23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?**  
Yes

**24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:**  
Professional Engineer (P.E.)

**SWPPP Preparer**  
Empire Engineering, PLLC

**Contact Name (Last, Space, First)**  
Longo, Christopher

**Mailing Address**  
1900 Duaneburg Road

**City**  
Duaneburg

**State**  
NY

**Zip**  
12058

**Phone**  
518-280-1371

**Email**  
clongo@empireeng.net

**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) Scan the signed form
- 4) Upload the scanned document

Please upload the SWPPP Preparer Certification  
 SWPPP Preparer Certification Form - Signed.pdf - 02/14/2022 01:07 PM

Comment  
 NONE PROVIDED

**Erosion & Sediment Control Criteria**

25. Has a construction sequence schedule for the planned management practices been prepared?  
 Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

**Temporary Structural**  
 Stabilized Construction Entrance  
 Silt Fence  
 Check Dams  
 Sediment Traps

**Biotechnical**  
 None

**Vegetative Measures**  
 Mulching  
 Seeding

**Permanent Structural**  
 None

**Other**  
 NONE PROVIDED

**Post-Construction Criteria**

\* IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. 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  
 Locating Development in Less Sensitive Areas  
 Roadway Reduction

27a. 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 (2010 version).

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).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)  
 1.311

**29. Post-construction SMP Identification**

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)  
 0.319

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?  
 No

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (A1) / 12, A1=(s) (A1c)] (acre-feet)  
 0.253

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?  
 Yes

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

**33. SMPs**

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs Identified in question #33 and Standard SMPs with RRv Capacity Identified in question #29.  
 (acre-feet)  
 1.326

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).  
 1.645

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?  
 Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)  
 1.135

CPv Provided (acre-feet)  
 1.441

36a. The need to provide channel protection has been waived because:  
 NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)  
 46.03

Post-Development (CFS)  
 15.85

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)  
 103.55

Post-Development (CFS)  
 60.38

37a. The need to meet the Qp and Qf criteria has been waived because:  
 NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?  
 Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance Land Owner

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.  
 Site is a Hydrologic Soil Grade D with little to no infiltration capacity. Sand media dry swale filters are used for all impervious areas.

**Post-Construction SMP Identification**

**Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs**

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**RR Techniques (Area Reduction)**

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)  
 NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)  
 NONE PROVIDED



Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)  
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)  
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)  
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)  
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)  
NONE PROVIDED

#### RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)  
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)  
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)  
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)  
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)  
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)  
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)  
NONE PROVIDED

#### Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)  
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)  
NONE PROVIDED

<https://inform-prod.dec.ny.gov/epi/submissionwizard/cd82875-911a-492b-bb89-u194402bc304/11>

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NYSDEC eBusiness Portal System - NOI for coverage under Stormwater General Permit for Construction Activity, Revision 1

Total Contributing Impervious Acres for Pocket Wetland (W-4)  
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)  
NONE PROVIDED

#### Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic  
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault  
NONE PROVIDED

Total Contributing Impervious Area for Media Filter  
NONE PROVIDED

"Other" Alternative SMP?  
NONE PROVIDED

Total Contributing Impervious Area for "Other"  
NONE PROVIDED

Provide the name and manufacturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP  
NONE PROVIDED

Name of Alternative SMP  
NONE PROVIDED

#### Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.  
None

If SPDES Multi-Sector GP, then give permit ID  
NONE PROVIDED

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Total Contributing Impervious Acres for Dry Well (I-3)  
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)  
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)  
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)  
14.4

#### Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)  
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)  
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)  
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)  
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)  
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)  
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)  
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)  
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)  
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)  
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)  
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)  
NONE PROVIDED

<https://inform-prod.dec.ny.gov/epi/submissionwizard/cd82875-911a-492b-bb89-u194402bc304/11>

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7/7/22, 11:01 AM

NYSDEC eBusiness Portal System - NOI for coverage under Stormwater General Permit for Construction Activity, Revision 1

If Other, then identify  
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?  
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth  
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.  
NYR111118

#### MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?  
No

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?  
NONE PROVIDED

MS4 SWPPP Acceptance Form Download  
Download form from the link below. Complete, sign, and upload.  
[MS4 SWPPP Acceptance Form](#)

MS4 Acceptance Form Upload  
NONE PROVIDED  
Comment  
NONE PROVIDED

#### Owner/Operator Certification

Owner/Operator Certification Form Download  
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.  
[Owner/Operator Certification Form \(PDF 45KB\)](#)

Upload Owner/Operator Certification Form  
[SWPPP Owner Certification Form - Signed.pdf - 03/02/2022 12:14 PM](#)  
Comment  
NONE PROVIDED

<https://inform-prod.dec.ny.gov/epi/submissionwizard/cd82875-911a-492b-bb89-u194402bc304/11>

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## Attachments

Date	Attachment Name	Context	User
3/2/2022 12:14 PM	SWPPP Owner Certification Form - Signed.pdf	Attachment	CHRISTOPHER LONGO
2/14/2022 1:07 PM	SWPPP Preparer Certification Form - Signed.pdf	Attachment	CHRISTOPHER LONGO

Appendix B

SWPPP Certification

Empire Engineering, PLLC

<https://inform-prod.dec.ny.gov/app/web/submitform?cardId=822875-6111-492b-bb81-1194602b030411>

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KATHY HOCHUL  
Governor

ERIK KILLESBID  
Commissioner

Appendix C

R&amp;E Correspondence

January 07, 2022

Christopher Longo  
Owner, P.E.  
Empire Engineering, PLLC  
1800 Duaneburg Road  
Duaneburg, NY 12058

Re: DEC  
Pine Grove Dairy - Self-Storage  
Town of Duaneburg, Schenectady County, NY  
22PR00095

Dear Christopher Longo:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP) as part of your SEQRA process. These comments are those of OPRHP 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. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

OPRHP has reviewed the Phase IA/IB Archaeological Survey Report entitled "Phase IA/IB Cultural Resources Survey, Pine Grove Dairy Development Project, Town of Duaneburg, Schenectady County New York" prepared by Birchwood Archaeological Services, Inc. (June 2021; 22SR00012). No archaeological sites were identified by the survey. Therefore, it is the opinion of the OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If you have any questions, I can be reached at [jessica.schreyer@parks.ny.gov](mailto:jessica.schreyer@parks.ny.gov).

Sincerely,

Jessica Schreyer  
Scientist Archaeology



February 14, 2022

Christopher Longo  
 Empire Engineering, PLLC  
 1900 Duaneburg Road  
 Duaneburg, NY 12056

Re: Pine Grove Dairy - Self-Storage  
 County: Schenectady Town/City: Duaneburg

Dear Christopher Longo:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at the project site.

Within five miles of the project site are three documented winter hibernacula of Northern long-eared bat (*Myotis septentrionalis*, state and federally listed as Threatened). The bats may travel five miles or more from documented locations. The main impact of concern for bats is the removal of potential roost trees. For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 4 Office, Division of Environmental Permits, at dep.r4@dec.ny.gov.

For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

For information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the Permits staff at the NYSDEC Region 4 Office as described above.

Sincerely,



Heidi Krahl  
 Environmental Review Specialist  
 New York Natural Heritage Program

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Empire Engineering, PLLC

Untitled Map



No Author  
 This map and information provided are for informational purposes only. The user assumes all risks and responsibilities for accuracy where this map is subject to updates or errors. The data cannot be used for any purpose not intended.

Custom Soil Resource Report  
 Soil Map



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### Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in ACI	Percent of ACI
BvB	Burdett-Scriba channery silt loams, 3 to 8 percent slopes	12.2	33.8%
BvC	Burdett-Scriba channery silt loams, 3 to 16 percent slopes	13.3	36.5%
IA	Illion silt loam, 0 to 3 percent slopes	2.7	7.5%
NuD	Nunda channery silt loam, 15 to 25 percent slopes	6.5	18.0%
NvF	Nunda soils, very steep	0.6	2.2%
<b>Totals for Area of Interest:</b>		<b>36.2</b>	<b>100.0%</b>

Custom Soil Resource Report

#### MAP LEGEND

**Area of Interest (AOI)**

- Area of Interest (AOI)
- AOI
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**

- Stream
- Ditch
- Clay Spill
- Closed Depression
- Contour
- Gravel Spot
- Leach
- Low Flow
- Mud or Swamp
- Nonstream Water
- Rock Outcrop
- State Road
- State Spur
- State Road
- State Spur
- State Spur

#### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:50,000.

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

Extrapolation of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping the accuracy of soil data decisions. The maps do not show the actual 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: National Resource Conservation Service Web Soil Survey (NRCS) Geographic 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 preserved area, such as the Albers equal-area conic projection, would be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Schenectady County, New York  
 Survey Area Date: Version 10, Jun 11, 2019

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

Date(s) aerial imagery was photographed: Oct 7, 2013—Nov 6, 2016

The photographs or other base map on which the soil lines were compiled and digitized probably differ from the background imagery displayed on these maps. As a result, some minor differences in map boundaries may be evident.

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### Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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Custom Soil Resource Report

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

### Schenectady County, New York

#### BvB—Burdett-Scriba channery silt loams, 3 to 8 percent slopes

##### Map Unit Setting

National map unit symbol: bds3  
 Elevation: 200 to 1,600 feet  
 Mean annual precipitation: 38 to 44 inches  
 Mean annual air temperature: 45 to 48 degrees F  
 Frost-free period: 110 to 170 days  
 Farmland classification: Prime farmland if drained

##### Map Unit Composition

Burdett and similar soils: 50 percent  
 Scriba and similar soils: 30 percent  
 Minor components: 20 percent  
 Estimates are based on observations, descriptions, and transects of the mapunit.

##### Description of Burdett

###### Setting

Landform: Drumfild ridges, hills, till plains  
 Landform position (two-dimensional): Footslope, summit  
 Landform position (three-dimensional): Basin slope  
 Down-slope shape: Concave  
 Across-slope shape: Linear  
 Parent material: A thin silt mantle overlying till that is strongly influenced by shale

###### Typical profile

H1 - 0 to 9 inches: channery silt loam  
 H2 - 9 to 18 inches: channery silt loam  
 H3 - 18 to 44 inches: very gravelly silty clay loam  
 H4 - 44 to 60 inches: very gravelly silty clay loam

###### Properties and qualities

Slope: 3 to 8 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 low to moderately high (0.06 to 0.20 in/hr)  
 Depth to water table: About 6 to 18 inches  
 Frequency of flooding: None  
 Frequency of ponding: None  
 Calcium carbonate, maximum content: 10 percent  
 Available water capacity: Moderate (about 7.3 inches)

###### Interpretive groups

Land capability classification (irrigated): None specified  
 Land capability classification (nonirrigated): 3w  
 Hydrologic Soil Group: C/D  
 Ecological site: F101XY013NY - Moist Till  
 Hydric soil rating: No

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Description of Soriba

**Setting**  
*Landform:* Till plains, drumlins  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Loamy till dominated by sandstone, with lesser amounts of limestone and shale

**Typical profile**  
*H1 - 0 to 7 inches:* channery silt loam  
*H2 - 7 to 15 inches:* channery silt loam  
*Bx - 15 to 43 inches:* very gravelly loam  
*C - 43 to 80 inches:* very gravelly loam

**Properties and qualities**  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 12 to 18 inches to fragipan  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 8 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water capacity:* Very low (about 1.8 inches)

**Interpretive groups**  
*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

Minor Components

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

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

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

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

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*Hydric soil rating:* No

Description of Soriba

**Setting**  
*Landform:* Drumlins, till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Loamy till dominated by sandstone, with lesser amounts of limestone and shale

**Typical profile**  
*H1 - 0 to 7 inches:* channery silt loam  
*H2 - 7 to 15 inches:* channery silt loam  
*Bx - 15 to 43 inches:* very gravelly loam  
*C - 43 to 80 inches:* very gravelly loam

**Properties and qualities**  
*Slope:* 8 to 16 percent  
*Depth to restrictive feature:* 12 to 18 inches to fragipan  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 8 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water capacity:* Very low (about 1.8 inches)

**Interpretive groups**  
*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3a  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

Minor Components

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

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

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

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

**Darien**  
*Percent of map unit:* 5 percent

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BvC—Burdett-Soriba channery silt loams, 8 to 15 percent slopes

**Map Unit Setting**  
*National map unit symbol:* b33k  
*Elevation:* 250 to 1,600 feet  
*Mean annual precipitation:* 38 to 44 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 110 to 170 days  
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**  
*Burdett and similar soils:* 46 percent  
*Soriba and similar soils:* 30 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Burdett

**Setting**  
*Landform:* Hills, till plains, drumlinoid ridges  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* A thin silt mantle overlying till that is strongly influenced by shale

**Typical profile**  
*H1 - 0 to 9 inches:* channery silt loam  
*H2 - 9 to 16 inches:* channery silt loam  
*H3 - 16 to 44 inches:* very gravelly silty clay loam  
*H4 - 44 to 80 inches:* very gravelly silty clay loam

**Properties and qualities**  
*Slope:* 8 to 15 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 low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Available water capacity:* Moderate (about 7.3 inches)

**Interpretive groups**  
*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3a  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F101XY013NY - Moist Till

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*Hydric soil rating:* No

IIA—Iilon silt loam, 0 to 3 percent slopes

**Map Unit Setting**  
*National map unit symbol:* b44t  
*Elevation:* 600 to 1,300 feet  
*Mean annual precipitation:* 38 to 44 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 110 to 170 days  
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**  
*Iilon and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Iilon

**Setting**  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Loamy till derived from calcareous dark shale

**Typical profile**  
*Ap - 0 to 9 inches:* silt loam  
*E - 9 to 14 inches:* silty clay loam  
*2B - 14 to 39 inches:* channery silty clay loam  
*3C - 39 to 80 inches:* gravelly silt loam

**Properties and qualities**  
*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 10 percent  
*Available water capacity:* Moderate (about 8.5 inches)

**Interpretive groups**  
*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F101XY014NY - Wet Till Depression

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Hydric soil rating: Yes

**Minor Components**

**Darlan**

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

**Scriba**

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

**Madalin**

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

**Fonda**

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

**Varick**

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

**NuD—Nunda channery silt loam, 15 to 25 percent slopes**

**Map Unit Setting**

National map unit symbol: bdd3  
Elevation: 400 to 1,500 feet  
Mean annual precipitation: 38 to 44 inches  
Mean annual air temperature: 45 to 48 degrees F  
Frost-free period: 110 to 170 days  
Farmland classification: Not prime farmland

**Map Unit Composition**

Nunda and similar soils: 75 percent  
Minor components: 25 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

**Description of Nunda**

**Setting**

Landform: Drumlinoid ridges, hills, till plains  
Landform position (two-dimensional): Summit  
Landform position (three-dimensional): Side slope  
Down-slope shape: Concave  
Across-slope shape: Convex  
Parent material: A silty mantle over loamy till derived from calcareous shale and siltstone

**Typical profile**

H1 - 0 to 7 inches: channery silt loam  
H2 - 7 to 25 inches: channery silt loam  
H3 - 25 to 42 inches: gravelly silty clay loam  
H4 - 42 to 80 inches: gravelly loam

**Properties and qualities**

Slope: 15 to 25 percent  
Depth to restrictive feature: More than 80 inches  
Drainage class: Moderately well drained  
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.05 to 0.20 in/hr)  
Depth to water table: About 15 to 24 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Calcium carbonate, maximum content: 10 percent  
Available water capacity: Moderate (about 7.8 inches)

**Interpretive groups**

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 4e  
Hydrologic Soil Group: C/D  
Ecological site: F101XY013NY - Moist Till  
Hydric soil rating: No

**Minor Components**

**Arnot**

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

**Burdett**

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

**Lansing**

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

**Manlius**

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

**Mohawk**

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

**NVF—Nunda soils, very steep**

**Map Unit Setting**

National map unit symbol: bdsT  
Elevation: 400 to 1,800 feet

Mean annual precipitation: 38 to 44 inches  
Mean annual air temperature: 45 to 48 degrees F  
Frost-free period: 110 to 170 days  
Farmland classification: Not prime farmland

**Map Unit Composition**

Nunda and similar soils: 75 percent  
Minor components: 25 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

**Description of Nunda**

**Setting**

Landform: Drumlinoid ridges, hills, till plains  
Landform position (two-dimensional): Summit  
Landform position (three-dimensional): Side slope  
Down-slope shape: Concave  
Across-slope shape: Convex  
Parent material: A silty mantle over loamy till derived from calcareous shale and siltstone

**Typical profile**

H1 - 0 to 7 inches: channery silt loam  
H2 - 7 to 25 inches: channery silt loam  
H3 - 25 to 42 inches: gravelly silty clay loam  
H4 - 42 to 80 inches: gravelly loam

**Properties and qualities**

Slope: 25 to 45 percent  
Depth to restrictive feature: More than 80 inches  
Drainage class: Moderately well drained  
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.05 to 0.20 in/hr)  
Depth to water table: About 15 to 24 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Calcium carbonate, maximum content: 10 percent  
Available water capacity: Moderate (about 7.8 inches)

**Interpretive groups**

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 7e  
Hydrologic Soil Group: C/D  
Ecological site: F101XY013NY - Moist Till  
Hydric soil rating: No

**Minor Components**

**Rock outcrop**

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

**Lansing**

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

**Manlius**

Percent of map unit: 5 percent

Hydric soil rating: No

**Nassau**

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

**Burdett**

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



# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	
Longitude	74.117 degrees West
Latitude	42.765 degrees North
Elevation	0 feet
Date/Time	Wed, 09 Feb 2022 08:52:39 -0500

Appendix E

O & M Manual

### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min	1hr	2hr	3hr	6hr	12hr	24hr	48hr	1day	2day	4day	7day	10day			
1yr	0.26	0.40	0.49	0.65	0.81	1.01	1yr	0.70	0.96	1.16	1.43	1.77	2.18	2.48	1yr	1.93	2.38	2.77	3.35	3.85	1yr
2yr	0.32	0.50	0.62	0.82	1.03	1.27	2yr	0.89	1.14	1.45	1.75	2.10	2.51	2.82	2yr	2.22	2.71	3.17	3.77	4.31	2yr
5yr	0.39	0.60	0.75	1.01	1.29	1.60	5yr	1.11	1.41	1.82	2.19	2.60	3.06	3.49	5yr	2.71	3.35	3.89	4.52	5.13	5yr
10yr	0.43	0.68	0.86	1.17	1.53	1.91	10yr	1.32	1.66	2.18	2.61	3.07	3.56	4.09	10yr	3.15	3.94	4.56	5.19	5.86	10yr
25yr	0.52	0.82	1.05	1.45	1.92	2.41	25yr	1.66	2.05	2.74	3.28	3.80	4.36	5.07	25yr	3.86	4.87	5.61	6.23	6.99	25yr
50yr	0.58	0.94	1.20	1.69	2.28	2.98	50yr	1.97	2.41	3.28	3.88	4.48	5.08	5.96	50yr	4.50	5.73	6.58	7.16	7.98	50yr
100yr	0.68	1.09	1.41	1.99	2.72	3.43	100yr	2.34	2.83	3.90	4.59	5.26	5.93	7.01	100yr	5.25	6.74	7.71	8.23	9.13	100yr
200yr	0.77	1.26	1.63	2.34	3.24	4.09	200yr	2.79	3.32	4.65	5.44	6.20	6.92	8.25	200yr	6.13	7.93	9.06	9.46	10.44	200yr
500yr	0.93	1.54	2.00	2.91	4.08	5.17	500yr	3.52	4.12	5.86	6.81	7.69	8.50	10.25	500yr	7.52	9.85	11.21	11.39	12.48	500yr

### Lower Confidence Limits

	5min	10min	15min	30min	60min	120min	1hr	2hr	3hr	6hr	12hr	24hr	48hr	1day	2day	4day	7day	10day			
1yr	0.21	0.32	0.39	0.53	0.65	0.86	1yr	0.56	0.84	0.92	1.27	1.53	1.98	2.23	1yr	1.76	2.14	2.55	3.08	3.45	1yr
2yr	0.31	0.48	0.59	0.80	0.98	1.13	2yr	0.85	1.10	1.27	1.65	2.04	2.40	2.73	2yr	2.13	2.63	3.05	3.65	4.19	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.33	5yr	1.01	1.30	1.50	1.93	2.45	2.87	3.18	5yr	2.54	3.06	3.55	4.20	4.77	5yr
10yr	0.39	0.59	0.74	1.03	1.33	1.40	10yr	1.15	1.47	1.69	2.17	2.71	3.22	3.58	10yr	2.85	3.45	3.98	4.65	5.26	10yr
25yr	0.44	0.67	0.83	1.19	1.57	1.76	25yr	1.35	1.72	2.00	2.53	3.13	3.76	4.20	25yr	3.33	4.04	4.60	5.32	5.97	25yr
50yr	0.48	0.74	0.92	1.32	1.78	1.99	50yr	1.53	1.95	2.25	2.85	3.48	4.23	4.75	50yr	3.74	4.56	5.13	5.90	6.58	50yr
100yr	0.54	0.81	1.01	1.46	2.01	2.25	100yr	1.73	2.20	2.56	3.21	3.86	4.77	5.37	100yr	4.22	5.16	5.75	6.53	7.27	100yr
200yr	0.59	0.89	1.12	1.62	2.26	2.55	200yr	1.95	2.49	2.90	3.62	4.29	5.38	6.08	200yr	4.76	5.84	6.43	7.24	8.02	200yr
500yr	0.67	1.00	1.29	1.87	2.66	3.00	500yr	2.30	2.94	3.43	4.25	4.94	6.34	7.16	500yr	5.61	6.89	7.49	8.32	9.16	500yr

### Upper Confidence Limits

	5min	10min	15min	30min	60min	120min	1hr	2hr	3hr	6hr	12hr	24hr	48hr	1day	2day	4day	7day	10day			
1yr	0.28	0.44	0.53	0.72	0.88	1.05	1yr	0.76	1.04	1.30	1.52	1.98	2.37	2.68	1yr	2.10	2.58	2.98	3.58	4.10	1yr
2yr	0.34	0.52	0.64	0.87	1.07	1.21	2yr	0.92	1.18	1.37	1.76	2.27	2.63	2.94	2yr	2.33	2.82	3.32	3.91	4.48	2yr
5yr	0.43	0.65	0.80	1.10	1.40	1.47	5yr	1.21	1.53	1.75	2.23	2.79	3.28	3.81	5yr	2.90	3.67	4.27	4.88	5.53	5yr
10yr	0.51	0.78	0.96	1.35	1.74	1.91	10yr	1.50	1.87	2.12	2.66	3.30	3.92	4.64	10yr	3.47	4.46	5.21	5.80	6.52	10yr
25yr	0.65	0.99	1.23	1.76	2.32	2.68	25yr	2.00	2.42	2.76	3.39	4.14	4.97	6.05	25yr	4.40	5.82	6.79	7.29	8.11	25yr
50yr	0.79	1.20	1.49	2.14	2.88	3.02	50yr	2.49	2.96	3.34	4.08	4.91	5.97	7.39	50yr	5.28	7.11	8.31	8.66	9.57	50yr
100yr	0.96	1.45	1.82	2.63	3.61	3.69	100yr	3.11	3.61	4.05	4.93	5.83	7.16	9.03	100yr	6.34	8.68	10.19	10.30	11.31	100yr
200yr	1.17	1.76	2.23	3.23	4.50	4.51	200yr	3.88	4.41	4.92	5.88	6.93	8.59	11.05	200yr	7.60	10.02	12.49	12.26	13.36	200yr
500yr	1.53	2.28	2.94	4.27	6.07	5.88	500yr	5.24	5.75	6.36	7.49	8.74	10.93	14.41	500yr	9.67	13.85	16.36	15.45	16.67	500yr



Empire Engineering, PLLC

# Operation & Maintenance Manual

For  
**Pine Grove Dairy Self Storage**  
 Stormwater Management Facilities  
 At  
 6204 Duanesburg Road  
 Duanesburg, NY 12056

### Project Description

The subject project is the commercial development on 103.76 acres of a parcel including the construction of eleven (11) Storage Unit structures on a portion of the parcel which currently exists as vacant with areas of grass & brushland. The subject site is located at 6204 Duanesburg Road in the Town of Duanesburg, NY. The project site area is approximately 20.2± acres. The property is identified by Tax Map # 55.00-4-11.6

### Engineer of Record

Empire Engineering, PLLC  
 1900 Duanesburg Road  
 Duanesburg, NY 12056  
 Contact: Christopher Longo, PE  
 Phone: (518) 858-4117

### Construction Phase

#### Submittals

The shop drawing design plans for all structures shall be reviewed by a NYS Licensed Professional Engineer. Specification sheets for all pipe materials and particle analyses for all aggregate to be used on site shall also be approved by the Engineer. Shop drawing and/or submittal approvals will be distributed to the owner and the contractor. No unit shall be constructed without having the Engineer's approval.

#### Inspections

The Engineer shall inspect and document the installation of any structure, pipe, controlled fill and stormwater management feature. Inspections shall include documentation of the subsurface conditions and/or the soil profile including material thickness. It is the owner's responsibility to contact the engineer to witness construction. Failure to do so may result in the facility not being certified. Additional lab or field geotechnical tests may be specified by the inspecting Engineer to verify conformance with the plans. Such test would be at the owner's expense.

#### Site Certification

The Inspecting Engineer shall issue a daily work report to the owner for each occurrence that construction is witnessed. The Engineer shall issue a letter of approval certifying stormwater components which they have witnessed and found to be in conformance with the plans, shop drawings, and any supplemental documents. If any modifications are made to the plans or stormwater facilities the Engineer shall document such in their certification.

### Operation & Maintenance

#### Record Keeping

The owner/operation shall keep and maintain all Plans, SWPPP documents, inspection reports, and certifications generated during design and construction. These plans and reports shall be readily accessible for use by any interested party.

#### Inspection

The owner should check the condition of all devices after each rainfall event for the first 30 days. Issues should be identified such as blockages or obstructions within the inlet or outlet. The owner should also inspect for accumulating sediment and conditions of slopes and embankments.

A comprehensive inspection should be completed at the end of construction in accordance with the enclosed inspection form. During operation, the owner should continue to routinely inspect all stormwater devices weekly during the rainy season. Each device should be thoroughly inspected annually. A frequency of cleaning should be determined based on the inspection findings.

#### Maintenance

The owner shall maintain all stormwater devices in perpetuity. Routine maintenance should be scheduled at least annually and should address any issues identified during inspection. The enclosed maintenance checklists should be utilized for each device.

#### Emergency Action Plan

In the event of an emergency condition resulting from extreme weather or a structural failure, the owner shall be contacted immediately. The local Town officials and emergency response authorities should be contacted if there is immediate danger. If the failure does not pose an immediate threat to the health or welfare of the subject adjacent properties, the engineer of record should be contacted to determine potential remedies.

**Stormwater/Wetland Pond Construction Inspection Checklist**

Project:  
 Location:  
 Site Status:  
 Date:  
 Time:  
 Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>Pre-Construction/Materials and Equipment</b>		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>2. Subgrade Preparation</b>		
Area beneath embankment stripped of all vegetation, topsoil, and organic matter		
<b>3. Pipe Spillway Installation</b>		
Method of installation detailed on plans		
<b>A. Bed preparation</b>		
Installation trench excavated with specified side slopes		
Stable, uniform, dry subgrade of relatively impervious material (if subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
<b>B. Pipe placement</b>		
Metal / plastic pipe		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under "haunches" of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>3. Pipe Spillway Installation</b>		
Concrete pipe		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
<b>C. Backfilling</b>		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		



CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>4. Riser / Outlet Structure Installation</b>		
Riser located within embankment		
<b>A. Metal riser</b>		
Riser base excavated or formed on stable subgrade to design dimensions		
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
<b>B. Pre-cast concrete structure</b>		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or gasket joint where structure connects to pipe spillway		
<b>C. Poured concrete structure</b>		
Footing excavated or formed on stable subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for "honeycomb" prior to backfilling; purge if necessary		

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CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>5. Embankment Construction</b>		
Fill material		
Compaction		
<b>Embankment</b>		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
<b>6. Impounded Area Construction</b>		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outlet protection		
Forebay(s)		
Pond benches		
<b>7. Earth Emergency Spillway Construction</b>		
Spillway located in out or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel constructed to design grades and elevations		

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CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>8. Outlet Protection</b>		
<b>A. End section</b>		
Securely in place and properly backfilled		
<b>B. Endwall</b>		
Footing excavated or formed on stable subgrade, to design dimensions and reinforcing steel set, if specified		
Endwall formed to design dimensions with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; purge if necessary		
<b>C. Riprap apron / channel</b>		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly placed at the thickness specified		
<b>9. Vegetative Stabilization</b>		
Approved seed mixture or sod		
Proper surface preparation and required soil amendments		
Excelsior mat or other stabilization, as per plan		

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CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>10. Miscellaneous</b>		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
<b>11. Stormwater Wetlands</b>		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place Reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		

Comments:

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Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
<b>1. Embankment and emergency spillway (Annual, After Major Storms)</b>		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failures		
9. Vertical/horizontal alignment of top of dam "As-Built"		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
<b>2. Riser and principal spillway (Annual)</b>		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack		
a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance		
a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation inside riser		
5. Concrete/masonry condition riser and barrels		
a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve		
a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve		
a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
<b>3. Permanent Pool (Wet Ponds) (monthly)</b>		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
<b>4. Sediment Forebays</b>		
1. Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
<b>5. Dry Pond Areas</b>		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
<b>6. Condition of Outfalls (Annual, After Major Storms)</b>		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
<b>7. Other (Monthly)</b>		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3. Aesthetics		
a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
<b>8. Wetland Vegetation (Annual)</b>		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

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Actions to be Taken:

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**Open Channel Operation, Maintenance, and Management Inspection Checklist**

Project:  
Location:  
Site Status:  
  
Date:  
  
Time:  
  
Inspector:

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>1. Debris Cleanout (Monthly)</b>		
Contributing areas clean of debris		
<b>2. Check Dams or Energy Dissipators (Annual, After Major Storms)</b>		
No evidence of flow going around structures		
No evidence of erosion at downstream toe		
Soil permeability		
Groundwater / bedrock		
<b>3. Vegetation (Monthly)</b>		
Mowing done when needed		
Minimum mowing depth not exceeded		
No evidence of erosion		
Fertilized per specification		
<b>4. Dewatering (Monthly)</b>		
Dewaterers between storms		

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>5. Sediment deposition (Annual)</b>		
Clean of sediment		
<b>6. Outlet/Overflow Spillway (Annual)</b>		
Good condition, no need for repairs		
No evidence of erosion		

Comments:

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Actions to be Taken:

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## SWPPP Preparer Certification Form

SPDES General Permit for Stormwater  
 Discharges From Construction Activity  
 (GP-0-20-001)

**Project Site Information**

Project/Site Name

Pine Grove Dairy - Self-Storage

**Owner/Operator Information**

Owner/Operator (Company Name/Private Owner/Municipality Name)

Superior Housing, LLC

**Certification Statement - SWPPP Preparer**

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher

D

Longo

First name

MI

Last Name

  
 Signature

2/10/22

Date

Empire Engineering, PLLC

Revised: January 2020

## Owner/Operator Certification Form

SPDES General Permit For Stormwater  
 Discharges From Construction  
 Activity (GP-0-20-001)

Appendix B

Existing Drainage Map & Analysis

Project/Site Name: Pine Grove Dairy - Slope Flattening

eNOI Submission Number: HPF-FWEY-X98RV

eNOI Submitted by:  Owner/Operator  SWPPP Preparer  Other

**Certification Statement - Owner/Operator**

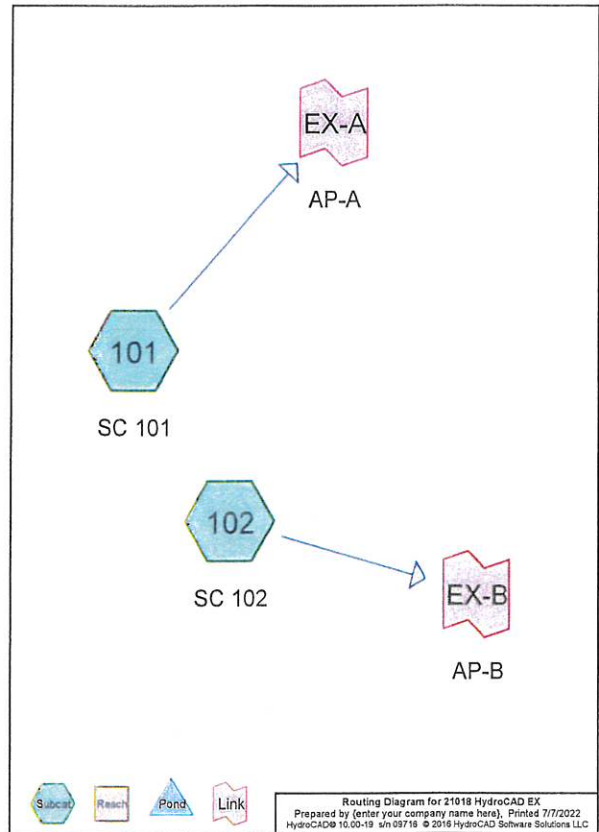
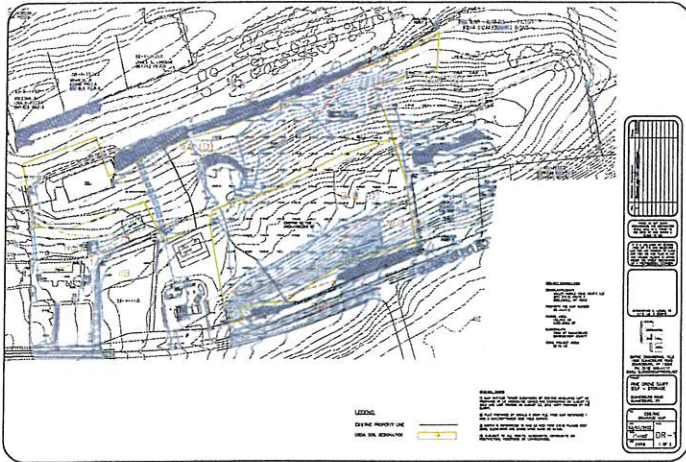
I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Eric Dolan  
 Owner/Operator First Name M.I. Last Name

  
 Signature

2-15-2022  
 Date

Empire Engineering, PLLC



**21018 HydroCAD EX**

Prepared by (enter your company name here)  
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Page 2

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
15.338	80	>75% Grass cover, Good, HSG D (101, 102)
1.844	77	Brush, Fair, HSG D (102)
7.013	79	Woods, Fair, HSG D (101)
24.195	79	TOTAL AREA

**21018 HydroCAD EX**

Prepared by (enter your company name here)  
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Page 3

**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
24.195	HSG D	101, 102
0.000	Other	
24.195		TOTAL AREA



Summary for Subcatchment 101: SC 101

Runoff = 9.67 cfs @ 12.11 hrs, Volume= 0.648 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
143,580	79	Woods, Fair, HSG D
187,805	80	>75% Grass cover, Good, HSG D
108,300	80	>75% Grass cover, Good, HSG D
161,890	79	Woods, Fair, HSG D
601,575	79	Weighted Average
601,575		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0800	0.12		Sheet Flow, Sheet Flow Woods: Light underbrush n= 0.400 P2= 2.50"
0.8	250	0.1100	5.34		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
2.7	1,840	0.0180	10.23	122.80	Channel Flow, Channel Flow Area= 12.0 sf Perim= 10.0' n= 1.20' n= 0.022 Earth, clean & straight
17.5	1,990				Total

Summary for Subcatchment 102: SC 102

Runoff = 7.20 cfs @ 12.12 hrs, Volume= 0.487 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
372,030	80	>75% Grass cover, Good, HSG D
80,333	77	Brush, Fair, HSG D
452,363	79	Weighted Average
452,363		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.1000	0.13		Sheet Flow, Sheet Flow Woods: Light underbrush n= 0.400 P2= 2.50"
1.7	455	0.0800	4.56		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
3.3	647	0.0400	3.22		Shallow Concentrated Flow, Shallow Flow Unpaved Kv= 16.1 fps
17.8	1,202				Total

Summary for Subcatchment 101: SC 101

Runoff = 26.37 cfs @ 12.10 hrs, Volume= 1.693 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
143,580	79	Woods, Fair, HSG D
187,805	80	>75% Grass cover, Good, HSG D
108,300	80	>75% Grass cover, Good, HSG D
161,890	79	Woods, Fair, HSG D
601,575	79	Weighted Average
601,575		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0800	0.12		Sheet Flow, Sheet Flow Woods: Light underbrush n= 0.400 P2= 2.50"
0.8	250	0.1100	5.34		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
2.7	1,840	0.0180	10.23	122.80	Channel Flow, Channel Flow Area= 12.0 sf Perim= 10.0' n= 1.20' n= 0.022 Earth, clean & straight
17.5	1,990				Total

Summary for Subcatchment 102: SC 102

Runoff = 19.86 cfs @ 12.11 hrs, Volume= 1.273 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
372,030	80	>75% Grass cover, Good, HSG D
80,333	77	Brush, Fair, HSG D
452,363	79	Weighted Average
452,363		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.1000	0.13		Sheet Flow, Sheet Flow Woods: Light underbrush n= 0.400 P2= 2.50"
1.7	455	0.0800	4.56		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
3.3	647	0.0400	3.22		Shallow Concentrated Flow, Shallow Flow Unpaved Kv= 16.1 fps
17.8	1,202				Total

Summary for Link EX-A: AP-A

Inflow Area = 13.810 ac, 0.00% Impervious, Inflow Depth > 0.56" for 1-Yr event  
 Inflow = 9.67 cfs @ 12.11 hrs, Volume= 0.648 af  
 Primary = 9.67 cfs @ 12.11 hrs, Volume= 0.648 af, Atten= 0%, Lag= 0.0 min  
 Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link EX-B: AP-B

Inflow Area = 10.385 ac, 0.00% Impervious, Inflow Depth > 0.56" for 1-Yr event  
 Inflow = 7.20 cfs @ 12.12 hrs, Volume= 0.487 af  
 Primary = 7.20 cfs @ 12.12 hrs, Volume= 0.487 af, Atten= 0%, Lag= 0.0 min  
 Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link EX-A: AP-A

Inflow Area = 13.810 ac, 0.00% Impervious, Inflow Depth > 1.47" for 10-Yr event  
 Inflow = 26.37 cfs @ 12.10 hrs, Volume= 1.693 af  
 Primary = 26.37 cfs @ 12.10 hrs, Volume= 1.693 af, Atten= 0%, Lag= 0.0 min  
 Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link EX-B: AP-B

Inflow Area = 10.385 ac, 0.00% Impervious, Inflow Depth > 1.47" for 10-Yr event  
 Inflow = 19.86 cfs @ 12.11 hrs, Volume= 1.273 af  
 Primary = 19.86 cfs @ 12.11 hrs, Volume= 1.273 af, Atten= 0%, Lag= 0.0 min  
 Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 101: SC 101

Runoff = 59.31 cfs @ 12.10 hrs, Volume= 3.852 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
143,580	79	Woods, Fair, HSG D
187,805	80	>75% Grass cover, Good, HSG D
108,300	80	>75% Grass cover, Good, HSG D
161,890	79	Woods, Fair, HSG D
601,575	79	Weighted Average
601,575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0800	0.12		Sheet Flow, Sheet Flow
0.8	250	0.1100	5.34		Woods: Light underbrush n= 0.400 P2= 2.50" Shallow Concentrated Flow, Shallow Conc Flow
2.7	1,640	0.0180	10.23	122.80	Unpaved Kv= 16.1 fps Channel Flow, Channel Flow
					Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.022 Earth, clean & straight

17.5 1,990 Total

Summary for Subcatchment 102: SC 102

Runoff = 44.24 cfs @ 12.10 hrs, Volume= 2.897 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
372,030	80	>75% Grass cover, Good, HSG D
80,333	77	Brush, Fair, HSG D
452,363	79	Weighted Average
452,363		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.1000	0.13		Sheet Flow, Sheet Flow
1.7	455	0.0800	4.55		Woods: Light underbrush n= 0.400 P2= 2.50" Shallow Concentrated Flow, Shallow Conc Flow
3.3	647	0.0400	3.22		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, Shallow Flow
					Unpaved Kv= 16.1 fps

17.8 1,202 Total

Summary for Link EX-A: AP-A

Inflow Area = 13.810 ac, 0.00% Impervious, Inflow Depth > 3.35" for 100-Yr event  
 Inflow = 59.31 cfs @ 12.10 hrs, Volume= 3.852 af  
 Primary = 59.31 cfs @ 12.10 hrs, Volume= 3.852 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

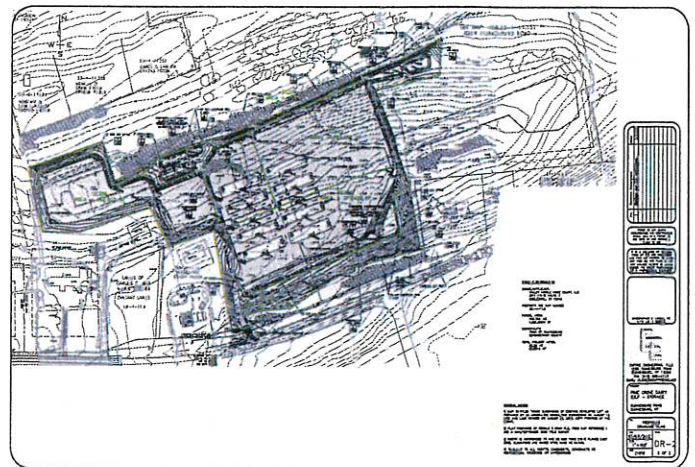
Summary for Link EX-B: AP-B

Inflow Area = 10.385 ac, 0.00% Impervious, Inflow Depth > 3.35" for 100-Yr event  
 Inflow = 44.24 cfs @ 12.10 hrs, Volume= 2.897 af  
 Primary = 44.24 cfs @ 12.10 hrs, Volume= 2.897 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

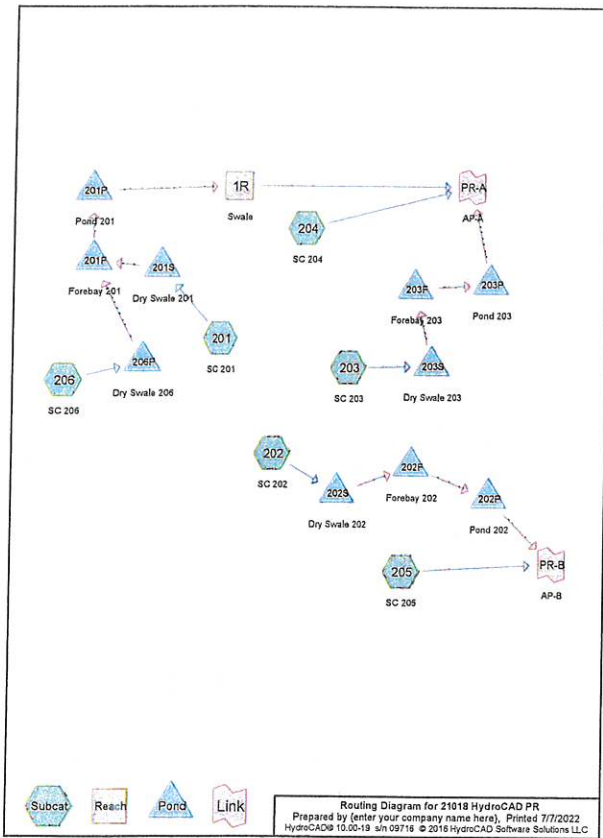
Appendix H

Proposed Drainage Map & Analysis



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.652	80	>75% Grass cover, Good, HSG D (201, 202, 203, 204, 205, 206)
14.542	98	Paved parking, HSG D (201, 202, 203, 205, 206)
24.194	91	TOTAL AREA



Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
24.194	HSG D	201, 202, 203, 204, 205, 206
0.000	Other	
24.194		TOTAL AREA

Summary for Subcatchment 201: SC 201

Runoff = 5.78 cfs @ 12.04 hrs, Volume= 0.351 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
43,925	80	>75% Grass cover, Good, HSG D
87,220	98	Paved parking, HSG D
131,145	92	Weighted Average
43,925		33.49% Pervious Area
87,220		66.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.50"
1.6	220	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
12.7	320				Total

Summary for Subcatchment 202: SC 202

Runoff = 15.73 cfs @ 11.97 hrs, Volume= 0.786 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
195,100	98	Paved parking, HSG D
15,755	80	>75% Grass cover, Good, HSG D
68,580	80	>75% Grass cover, Good, HSG D
277,435	93	Weighted Average
82,335		29.68% Pervious Area
195,100		70.32% Impervious Area

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

Summary for Subcatchment 203: SC 203

Runoff = 16.05 cfs @ 11.97 hrs, Volume= 0.802 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
Type II 24-hr 1-Yr Rainfall=2.18"



Area (sf)	CN	Description
207,260	98	Paved parking, HSG D
75,825	80	>75% Grass cover, Good, HSG D
283,085	93	Weighted Average
75,825		26.79% Pervious Area
207,260		73.21% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	200		0.56		Direct Entry, Direct Entry

**Summary for Subcatchment 204: SC 204**

Runoff = 1.02 cfs @ 12.05 hrs, Volume= 0.062 af, Depth= 0.69"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
48,035	80	>75% Grass cover, Good, HSG D
48,035		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0600	0.26		Sheet Flow, Sheet Flow Grass: Short n=0.150 P2= 2.50"
5.6	770	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kvw 16.1 fps
12.0	870				Total

**Summary for Subcatchment 206: SC 206**

Runoff = 2.15 cfs @ 12.10 hrs, Volume= 0.152 af, Depth= 0.72"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
96,340	80	>75% Grass cover, Good, HSG D
6,270	98	Paved parking, HSG D
7,700	80	>75% Grass cover, Good, HSG D
110,370	81	Weighted Average
104,100		84.32% Pervious Area
6,270		5.68% Impervious Area



**Summary for Pond 201F: Forebay 201**

Inflow Area = 7,690 ac, 67.11% Impervious, Inflow Depth > 0.64" for 1-Yr event  
 Inflow = 1.72 cfs @ 12.27 hrs, Volume= 0.343 af  
 Outflow = 0.29 cfs @ 14.49 hrs, Volume= 0.121 af, Atten= 83%, Lag= 133.0 min  
 Primary = 0.29 cfs @ 14.49 hrs, Volume= 0.121 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 778.11' @ 14.49 hrs Surf.Area= 4,887 sf Storage= 10,153 cf

Plug-Flow detention time= 371.6 min calculated for 0.121 af (35% of inflow)  
 Center-of-Mass det. time= 234.8 min ( 1,101.1 - 856.4 )

Volume	Invert	Avall. Storage	Storage Description
#1	775.00'	35,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
775.00	2,000	0	0
777.00	3,500	5,500	5,500
779.00	6,000	9,500	15,000
781.00	7,000	13,000	28,000
782.00	8,000	7,000	35,500

Device	Routing	Invert	Outlet Devices
#1	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.89 2.89 2.89 2.89 2.89 2.89 2.64 2.65 2.65 2.66 2.66 2.66 2.70 2.74
#2	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.68 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.28 cfs @ 14.49 hrs HW=778.11' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 0.28 cfs @ 0.32 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=775.00' (Free Discharge)  
 2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass: Short n=0.150 P2= 2.50"
5.5	755	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kvw 16.1 fps
16.6	855				Total

**Summary for Subcatchment 206: SC 206**

Runoff = 11.03 cfs @ 11.97 hrs, Volume= 0.546 af, Depth= 1.40"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1-Yr Rainfall=2.18"

Area (sf)	CN	Description
17,950	80	>75% Grass cover, Good, HSG D
137,590	98	Paved parking, HSG D
49,280	80	>75% Grass cover, Good, HSG D
203,820	92	Weighted Average
65,230		32.49% Pervious Area
137,590		67.51% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Direct entry

**Summary for Reach 1R: Swale**

Inflow Area = 7,690 ac, 67.11% Impervious, Inflow Depth > 0.18" for 1-Yr event  
 Inflow = 0.29 cfs @ 15.64 hrs, Volume= 0.117 af  
 Outflow = 0.20 cfs @ 18.20 hrs, Volume= 0.116 af, Atten= 1%, Lag= 33.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 1.14 fps, Min. Travel Time= 18.6 min  
 Avg. Velocity= 0.81 fps, Avg. Travel Time= 26.2 min

Peak Storage= 225 cf @ 15.89 hrs  
 Average Depth at Peak Storage= 0.04'  
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 51.10 cfs

4.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight  
 Side Slope Z-value= 3.0' Top Width= 10.00'  
 Length= 1,275.0' Slope= 0.0196 %  
 Inlet Invert= 775.00', Outlet Invert= 750.00'

**Summary for Pond 201P: Pond 201**

Inflow Area = 7,690 ac, 67.11% Impervious, Inflow Depth > 0.19" for 1-Yr event  
 Inflow = 0.29 cfs @ 14.49 hrs, Volume= 0.121 af  
 Outflow = 0.20 cfs @ 15.64 hrs, Volume= 0.117 af, Atten= 30%, Lag= 89.2 min  
 Primary = 0.20 cfs @ 15.64 hrs, Volume= 0.117 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 776.32' @ 15.64 hrs Surf.Area= 2,652 sf Storage= 783 cf  
 Plug-Flow detention time= 77.7 min calculated for 0.117 af (97% of inflow)  
 Center-of-Mass det. time= 62.5 min ( 1,163.6 - 1,101.1 )

Volume	Invert	Avall. Storage	Storage Description
#1	776.00'	26,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
776.00	2,200	0	0
778.00	5,000	7,200	7,200
780.00	7,500	12,600	19,700
781.00	10,000	8,750	28,450

Device	Routing	Invert	Outlet Devices
#1	Primary	778.00'	8.0' Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet/Outlet Invert= 778.00'/775.60' S= 0.0100 % Co= 0.500 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf 8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.89 2.89 2.89 2.89 2.89 2.89 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.68 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.68 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.20 cfs @ 15.64 hrs HW=776.32' (Free Discharge)  
 1=Culvert (Inlet Controls 0.20 cfs @ 1.53 fps)  
 2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=776.00' (Free Discharge)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Summary for Pond 201S: Dry Swale 201

Inflow Area = 3.011 ac, 66.51% Impervious, Inflow Depth = 1.40" for 1-Yr event  
 Inflow = 5.78 cfs @ 12.04 hrs, Volume = 0.351 af  
 Outflow = 1.72 cfs @ 12.27 hrs, Volume = 0.343 af, Atten= 70%, Lag= 13.7 min  
 Primary = 1.89 cfs @ 12.27 hrs, Volume = 0.343 af  
 Secondary = 0.03 cfs @ 12.27 hrs, Volume = 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 782.02' @ 12.27 hrs Surf.Area= 6,585 sf Storage= 5,394 cf

Plug-Flow detention time= 84.5 min calculated for 0.342 af (97% of inflow)  
 Center-of-Mass det. time= 80.5 min ( 866.4 - 815.5 )

Volume	Invert	Avail. Storage	Storage Description
#1	780.00'	4,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,400 of Overall x 40.0% Voids
#2	780.50'	15,200 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 20,780 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
780.00	1,200	0	0
784.00	4,500	11,400	11,400

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
780.50	1,200	0	0
782.50	4,500	5,700	5,700
784.50	6,000	10,500	16,200

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	5.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 780.50' / 780.50' S= 0.0000 ' C= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.68 cfs @ 12.27 hrs HW=782.02' (Free Discharge)  
 1=Culvert (Inlet Controls 1.68 cfs @ 4.28 fps)

Secondary OutFlow Max=0.03 cfs @ 12.27 hrs HW=782.02' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 0.03 cfs @ 0.15 fps)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 202F: Forebay 202

Inflow Area = 6.369 ac, 70.32% Impervious, Inflow Depth = 1.48" for 1-Yr event  
 Inflow = 14.29 cfs @ 12.00 hrs, Volume = 0.768 af  
 Outflow = 13.28 cfs @ 12.04 hrs, Volume = 0.708 af, Atten= 7%, Lag= 2.4 min  
 Primary = 11.40 cfs @ 12.04 hrs, Volume = 0.690 af  
 Secondary = 1.87 cfs @ 12.04 hrs, Volume = 0.016 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 770.71' @ 12.04 hrs Surf.Area= 3,157 sf Storage= 6,744 cf

Plug-Flow detention time= 83.3 min calculated for 0.708 af (90% of inflow)  
 Center-of-Mass det. time= 31.8 min ( 837.5 - 805.7 )

Volume	Invert	Avail. Storage	Storage Description
#1	766.50'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
766.50	100	0	0
768.50	1,500	1,800	1,800
770.50	3,000	4,500	6,300
772.50	4,500	7,500	10,800
773.50	5,500	9,000	15,800
774.00	6,000	2,575	21,475

Device	Routing	Invert	Outlet Devices
#1	Primary	769.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.66 2.68 2.64 2.64 2.64 2.65 2.65 2.68 2.68 2.68 2.70 2.74
#2	Secondary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.68 2.68 2.68 2.70 2.74

Primary OutFlow Max=11.31 cfs @ 12.04 hrs HW=770.70' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 11.31 cfs @ 1.18 fps)

Secondary OutFlow Max=1.78 cfs @ 12.04 hrs HW=770.70' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 1.78 cfs @ 1.09 fps)

Summary for Pond 202P: Pond 202

Inflow Area = 6.369 ac, 70.32% Impervious, Inflow Depth = 1.33" for 1-Yr event  
 Inflow = 13.28 cfs @ 12.04 hrs, Volume = 0.708 af  
 Outflow = 4.17 cfs @ 12.30 hrs, Volume = 0.838 af, Atten= 63%, Lag= 15.1 min  
 Primary = 4.17 cfs @ 12.30 hrs, Volume = 0.838 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume = 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 768.70' @ 12.30 hrs Surf.Area= 8,852 sf Storage= 12,330 cf

Plug-Flow detention time= 96.8 min calculated for 0.888 af (97% of inflow)  
 Center-of-Mass det. time= 81.7 min ( 819.2 - 837.5 )

Volume	Invert	Avail. Storage	Storage Description
#1	768.50'	54,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
768.50	4,500	0	0
768.50	6,500	11,000	11,000
770.50	8,000	14,500	25,500
772.50	10,000	18,000	43,500
773.50	12,000	11,000	54,500

Device	Routing	Invert	Outlet Devices
#1	Device 2	768.80'	8.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 768.80' / 768.50' S= 0.1000 ' C= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Primary	768.50'	15.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 768.50' / 768.00' S= 0.0167 ' C= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	768.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.800 Limited to weir flow at low heads
#4	Primary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.68 2.68 2.68 2.70 2.74
#5	Secondary	771.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.68 2.68 2.68 2.70 2.74

Primary OutFlow Max=4.13 cfs @ 12.30 hrs HW=768.70' (Free Discharge)

2=Culvert (Passes 4.13 cfs of 5.86 cfs potential flow)  
 1=Culvert (Inlet Controls 1.76 cfs @ 5.05 fps)  
 3=Orifice/Grate (Weir Controls 2.36 cfs @ 1.47 fps)  
 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=768.50' (Free Discharge)  
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 202S: Dry Swale 202

Inflow Area = 6.369 ac, 70.32% Impervious, Inflow Depth = 1.48" for 1-Yr event  
 Inflow = 15.73 cfs @ 11.97 hrs, Volume = 0.788 af  
 Outflow = 14.29 cfs @ 12.00 hrs, Volume = 0.768 af, Atten= 9%, Lag= 2.2 min  
 Primary = 2.57 cfs @ 12.00 hrs, Volume = 0.605 af  
 Secondary = 11.71 cfs @ 12.00 hrs, Volume = 0.277 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 773.72' @ 12.00 hrs Surf.Area= 6,267 sf Storage= 2,705 cf

Plug-Flow detention time= 2.1 min calculated for 0.784 af (100% of inflow)  
 Center-of-Mass det. time= 2.1 min ( 805.7 - 803.6 )

Volume	Invert	Avail. Storage	Storage Description
#1	772.50'	11,520 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 28,800 of Overall x 40.0% Voids
#2	776.50'	32,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 43,920 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
772.50	4,800	0	0
776.50	9,600	28,800	28,800

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
776.50	2,400	0	0
778.50	9,000	11,400	11,400
780.50	12,000	21,000	32,400

Device	Routing	Invert	Outlet Devices
#1	Primary	770.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 770.50' / 770.40' S= 0.0100 ' C= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	772.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	774.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00  
 2.50 3.00 3.50  
 Coef. (English) 2.54 2.61 2.61 2.61 2.60 2.68 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.57 cfs @ 12.00 hrs HW=773.71' (Free Discharge)  
 1=Culvert (Inlet Controls 2.57 cfs @ 6.54 fps)

Secondary OutFlow Max=11.57 cfs @ 12.00 hrs HW=773.71' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 11.57 cfs @ 1.19 fps)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 203F: Forebay 203

Inflow Area = 6,499 ac, 73.21% Impervious, Inflow Depth > 1.48" for 1-Yr event  
 Inflow = 6.97 cfs @ 12.08 hrs, Volume= 0.900 af  
 Outflow = 1.50 cfs @ 13.89 hrs, Volume= 0.432 af, Atten=79%, Lag= 96.8 min  
 Primary = 1.50 cfs @ 13.89 hrs, Volume= 0.432 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 772.83' @ 13.89 hrs Surf.Area= 6,183 sf Storage= 17,981 cf

Plug-Flow detention time= 270.9 min calculated for 0.431 af (54% of Inflow)  
 Center-of-Mass det. time= 146.1 min (1,001.2 - 855.1)

Volume	Invert	Avail. Storage	Storage Description
#1	768.50'	40,825 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
768.50	2,000	0	0
770.50	4,000	6,000	6,000
772.50	6,000	10,000	16,000
774.50	7,000	13,000	20,000
776.00	8,500	11,825	40,825

Device	Routing	Invert	Outlet Devices
#1	Primary	772.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.88 2.88 2.88 2.68 2.64 2.64 2.84 2.69 2.65 2.68 2.68 2.70 2.74
#2	Secondary	773.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.88 2.88 2.88 2.68 2.64 2.64 2.84 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.84 cfs @ 15.12 hrs HW=788.11' (Free Discharge)  
 1=Culvert (Inlet Controls 0.84 cfs @ 4.27 fps)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=786.50' (Free Discharge)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 203S: Dry Swale 203

Inflow Area = 6,499 ac, 73.21% Impervious, Inflow Depth = 1.48" for 1-Yr event  
 Inflow = 16.95 cfs @ 11.97 hrs, Volume= 0.802 af  
 Outflow = 8.97 cfs @ 12.08 hrs, Volume= 0.800 af, Atten= 97%, Lag= 6.8 min  
 Primary = 2.33 cfs @ 12.08 hrs, Volume= 0.694 af  
 Secondary = 4.64 cfs @ 12.08 hrs, Volume= 0.107 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 777.18' @ 12.08 hrs Surf.Area= 14,020 sf Storage= 12,001 cf

Plug-Flow detention time= 52.5 min calculated for 0.800 af (100% of Inflow)  
 Center-of-Mass det. time= 51.5 min ( 855.1 - 803.6)

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	20,100 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 50,400 of Overall x 40.0% Voids
#2	778.50'	58,800 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 78,960 of Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
774.50	8,400	0	0
778.50	18,800	50,400	50,400

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
778.50	8,400	0	0
780.50	16,800	25,200	25,200
782.50	16,800	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	774.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 774.50' / 774.40' S= 0.0100 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	778.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.64 2.61 2.61 2.60 2.68 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	778.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50

Primary OutFlow Max=1.49 cfs @ 13.89 hrs HW=772.83' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 1.49 cfs @ 0.57 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=768.50' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 203P: Pond 203

Inflow Area = 6,499 ac, 73.21% Impervious, Inflow Depth > 0.80" for 1-Yr event  
 Inflow = 1.50 cfs @ 13.89 hrs, Volume= 0.432 af  
 Outflow = 0.84 cfs @ 15.12 hrs, Volume= 0.422 af, Atten= 44%, Lag= 85.5 min  
 Primary = 0.84 cfs @ 15.12 hrs, Volume= 0.422 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 768.11' @ 15.12 hrs Surf.Area= 3,614 sf Storage= 4,530 cf

Plug-Flow detention time= 78.6 min calculated for 0.422 af (98% of Inflow)  
 Center-of-Mass det. time= 64.9 min ( 1,068.1 - 1,001.2)

Volume	Invert	Avail. Storage	Storage Description
#1	768.50'	39,000 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
768.50	2,000	0	0
768.50	4,000	6,000	6,000
770.50	6,000	10,000	16,000
772.50	8,000	14,000	30,000
773.50	10,000	9,000	39,000

Device	Routing	Invert	Outlet Devices
#1	Primary	768.60'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 768.60' / 768.50' S= 0.0100 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	771.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.88 2.88 2.88 2.68 2.64 2.64 2.84 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Secondary	772.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.88 2.88 2.88 2.68 2.64 2.64 2.84 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Coef. (English) 2.54 2.61 2.61 2.60 2.68 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.32 cfs @ 12.08 hrs HW=777.17' (Free Discharge)  
 1=Culvert (Inlet Controls 2.32 cfs @ 5.91 fps)

Secondary OutFlow Max=4.53 cfs @ 12.08 hrs HW=777.17' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 4.53 cfs @ 0.85 fps)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 206P: Dry Swale 206

Inflow Area = 4,679 ac, 87.51% Impervious, Inflow Depth = 1.40" for 1-Yr event  
 Inflow = 11.03 cfs @ 11.97 hrs, Volume= 0.546 af  
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 779.35' @ 24.40 hrs Surf.Area= 24,567 sf Storage= 23,765 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	15,120 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 37,800 of Overall x 40.0% Voids
#2	778.50'	58,800 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 78,920 of Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
774.50	6,300	0	0
778.50	12,800	37,800	37,800

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
778.50	8,400	0	0
780.50	16,800	25,200	25,200
782.50	16,800	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 780.50' / 780.50' S= 0.0000 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.68 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir



Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00  
 2.50 3.00 3.50  
 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary Outflow Max=0.00 cfs @ 5.00 hrs HW=774.50' (Free Discharge)  
 1=Culvert (Controls 0.00 cfs)

Secondary Outflow Max=0.00 cfs @ 5.00 hrs HW=774.50' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link PR-A: AP-A

Inflow Area = 15.261 ac, 64.87% Impervious, Inflow Depth > 0.47' for 1-Yr event  
 Inflow = 1.03 cfs @ 15.71 hrs, Volume= 0.600 af  
 Primary = 1.03 cfs @ 15.71 hrs, Volume= 0.600 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Summary for Link PR-B: AP-B

Inflow Area = 8.303 ac, 51.93% Impervious, Inflow Depth > 1.13' for 1-Yr event  
 Inflow = 5.30 cfs @ 12.27 hrs, Volume= 0.841 af  
 Primary = 5.30 cfs @ 12.27 hrs, Volume= 0.841 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 201: SC 201

Runoff = 10.81 cfs @ 12.04 hrs, Volume= 0.676 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
43,925	80	>75% Grass cover, Good, HSG D
87,220	98	Paved parking, HSG D
131,145	82	Weighted Average
43,925		33.49% Pervious Area
87,220		66.51% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass: Short n=0.150 P2= 2.50"
1.6	220	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
12.7	320	Total			

Summary for Subcatchment 202: SC 202

Runoff = 28.61 cfs @ 11.96 hrs, Volume= 1.479 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
195,100	98	Paved parking, HSG D
15,755	80	>75% Grass cover, Good, HSG D
66,580	80	>75% Grass cover, Good, HSG D
277,435	93	Weighted Average
82,335		29.68% Pervious Area
195,100		70.32% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Direct Entry

Summary for Subcatchment 203: SC 203

Runoff = 28.19 cfs @ 11.96 hrs, Volume= 1.510 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
207,260	98	Paved parking, HSG D
75,825	80	>75% Grass cover, Good, HSG D
283,085	93	Weighted Average
75,825		26.79% Pervious Area
207,260		73.21% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	200		0.55		Direct Entry, Direct Entry

Summary for Subcatchment 204: SC 204

Area (sf)	CN	Description
207,260	98	Paved parking, HSG D
75,825	80	>75% Grass cover, Good, HSG D
283,085	93	Weighted Average
75,825		26.79% Pervious Area
207,260		73.21% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	200		0.55		Direct Entry, Direct Entry

Summary for Subcatchment 204: SC 204

Runoff = 2.64 cfs @ 12.04 hrs, Volume= 0.155 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
48,035	80	>75% Grass cover, Good, HSG D
48,035		100.00% Pervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0800	0.28		Sheet Flow, Sheet Flow Grass: Short n=0.150 P2= 2.50"
5.6	770	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
12.0	870	Total			

Summary for Subcatchment 205: SC 205

Runoff = 5.44 cfs @ 12.09 hrs, Volume= 0.371 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
96,340	80	>75% Grass cover, Good, HSG D
6,270	98	Paved parking, HSG D
7,790	80	>75% Grass cover, Good, HSG D
110,370	81	Weighted Average
104,100		94.32% Pervious Area
6,270		5.68% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass: Short n=0.150 P2= 2.50"
5.5	765	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
16.6	865	Total			

Summary for Subcatchment 206: SC 206

Runoff = 20.50 cfs @ 11.86 hrs, Volume= 1.050 af, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=3.56"

Area (sf)	CN	Description
17,950	80	>75% Grass cover, Good, HSG D
137,590	98	Paved parking, HSG D
46,220	80	>75% Grass cover, Good, HSG D
203,820	92	Weighted Average
66,230		32.49% Pervious Area
137,590		67.51% Impervious Area

To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Direct entry

Summary for Reach 1R: Swale

Inflow Area = 7.690 ac, 67.11% Impervious, Inflow Depth > 0.75' for 10-Yr event  
 Inflow = 0.89 cfs @ 14.21 hrs, Volume= 0.483 af  
 Outflow = 0.89 cfs @ 14.52 hrs, Volume= 0.479 af, Atten= 0%, Lag= 18.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 1.99 fps, Min. Travel Time= 10.7 min  
 Avg. Velocity= 1.30 fps, Avg. Travel Time= 16.3 min

Peak Storage= 571 cf @ 14.34 hrs  
 Average Depth at Peak Storage= 0.10'  
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 51.10 cfs

4.00' x 1.00' deep channel, n=0.022 Earth, clean & straight  
 Side Slope Z-value= 3.0' Top Width= 10.00'  
 Length= 1,275.0' Slope= 0.0196'  
 Inlet Invert= 775.00', Outlet Invert= 750.00'



**Summary for Pond 201F: Forebay 201**

Inflow Area = 7,690 ac, 67.11% Impervious, Inflow Depth > 1.12" for 10-Yr event  
 Inflow = 6.13 cfs @ 12.17 hrs, Volume= 0.716 af  
 Outflow = 2.21 cfs @ 12.62 hrs, Volume= 0.492 af, Atten=64%, Lag= 27.1 min  
 Primary = 2.21 cfs @ 12.62 hrs, Volume= 0.492 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 778.42' @ 12.62 hrs Surf.Area= 5,272 sf Storage= 11,716 cf

Plug-Flow detention time= 237.4 min calculated for 0.491 af (69% of inflow)  
 Center-of-Mass det. time= 102.1 min ( 984.3 - 882.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	775.00'	35,500 cf	Custom Stage Data (Prismatic) Listed below (Recalo)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
775.00	2,900	0	0
777.00	3,500	5,500	5,500
779.00	6,000	9,500	15,000
781.00	7,000	13,000	28,000
782.00	8,000	7,500	35,500

Device	Routing	Invert	Outlet Devices
#1	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.19 cfs @ 12.62 hrs HW=778.42' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 2.19 cfs @ 0.66 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=775.00' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

**Summary for Pond 201S: Dry Swale 201**

Inflow Area = 3,011 ac, 66.51% Impervious, Inflow Depth > 2.69" for 10-Yr event  
 Inflow = 10.81 cfs @ 12.04 hrs, Volume= 0.676 af  
 Outflow = 6.13 cfs @ 12.17 hrs, Volume= 0.667 af, Atten= 43%, Lag= 7.8 min  
 Primary = 2.04 cfs @ 12.17 hrs, Volume= 0.551 af  
 Secondary = 4.08 cfs @ 12.17 hrs, Volume= 0.116 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 782.62' @ 12.17 hrs Surf.Area= 7,953 sf Storage= 8,642 cf

Plug-Flow detention time= 50.1 min calculated for 0.667 af (99% of inflow)  
 Center-of-Mass det. time= 42.2 min ( 839.5 - 797.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	780.00'	4,560 cf	Custom Stage Data (Prismatic) Listed below (Recalo) 11,400 cf Overall x 40.0% Voids
#2	780.50'	16,200 cf	Custom Stage Data (Prismatic) Listed below (Recalo) 20,760 cf Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
780.00	1,200	0	0
784.00	4,500	11,400	11,400

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
780.50	1,200	0	0
782.50	4,500	5,700	5,700
784.50	6,000	10,500	16,200

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 780.50' / 780.50' S= 0.0000 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

**Summary for Pond 201P: Pond 201**

Inflow Area = 7,690 ac, 67.11% Impervious, Inflow Depth > 0.77" for 10-Yr event  
 Inflow = 2.21 cfs @ 12.62 hrs, Volume= 0.492 af  
 Outflow = 0.89 cfs @ 14.21 hrs, Volume= 0.483 af, Atten= 60%, Lag= 95.5 min  
 Primary = 0.89 cfs @ 14.21 hrs, Volume= 0.483 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 777.67' @ 14.21 hrs Surf.Area= 4,543 sf Storage= 5,644 cf

Plug-Flow detention time= 79.7 min calculated for 0.483 af (98% of inflow)  
 Center-of-Mass det. time= 66.6 min ( 1,050.8 - 984.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	776.00'	28,450 cf	Custom Stage Data (Prismatic) Listed below (Recalo)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
776.00	2,200	0	0
778.00	5,000	7,200	7,200
780.00	7,500	12,500	19,700
781.00	10,000	8,750	28,450

Device	Routing	Invert	Outlet Devices
#1	Primary	776.00'	6.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 776.00' / 775.80' S= 0.0100 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.89 cfs @ 14.21 hrs HW=777.67' (Free Discharge)  
 1=Culvert (Inlet Controls 0.89 cfs @ 4.54 fps)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=776.00' (Free Discharge)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Primary OutFlow Max=2.04 cfs @ 12.17 hrs HW=782.61' (Free Discharge)  
 1=Culvert (Inlet Controls 2.04 cfs @ 5.19 fps)

Secondary OutFlow Max=3.99 cfs @ 12.17 hrs HW=782.61' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 3.99 cfs @ 0.82 fps)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

**Summary for Pond 202F: Forebay 202**

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth > 2.79" for 10-Yr event  
 Inflow = 27.74 cfs @ 11.99 hrs, Volume= 1.479 af  
 Outflow = 26.58 cfs @ 12.01 hrs, Volume= 1,400 af, Atten= 4%, Lag= 1.3 min  
 Primary = 16.91 cfs @ 12.01 hrs, Volume= 1,268 af  
 Secondary = 9.67 cfs @ 12.01 hrs, Volume= 0,132 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 771.09' @ 12.01 hrs Surf.Area= 3,441 sf Storage= 7,993 cf

Plug-Flow detention time= 55.8 min calculated for 1.397 af (94% of inflow)  
 Center-of-Mass det. time= 25.1 min ( 814.0 - 788.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	766.50'	21,475 cf	Custom Stage Data (Prismatic) Listed below (Recalo)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
766.50	100	0	0
768.50	1,500	1,600	1,600
770.50	3,000	4,500	6,100
772.50	4,500	7,500	13,600
773.50	5,500	5,000	18,600
774.00	6,000	2,875	21,475

Device	Routing	Invert	Outlet Devices
#1	Primary	769.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Secondary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=16.84 cfs @ 12.01 hrs HW=771.07' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 16.84 cfs @ 1.32 fps)

Secondary OutFlow Max=9.23 cfs @ 12.01 hrs HW=771.07' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 9.23 cfs @ 2.02 fps)

Summary for Pond 202P: Pond 202

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth = 2.64" for 10-Yr event  
 Inflow = 29.58 cfs @ 12.01 hrs, Volume = 1,400 af  
 Outflow = 8.08 cfs @ 12.22 hrs, Volume = 1,381 af, Atten=70%, Lag=12.6 min  
 Primary = 8.08 cfs @ 12.22 hrs, Volume = 1,381 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume = 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 770.12' @ 12.22 hrs Surf.Area= 7,718 sf Storage= 22,541 cf

Plug-Flow detention time= 72.8 min calculated for 1,378 af (98% of inflow)  
 Center-of-Mass det. time= 65.0 min ( 878.9 - 814.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	766.50'	64,500 cf	Custom Stage Data (Prismatic) Listed below (Recast)
Elevation (feet)	Surf.Area (sq-ft)	Ino.Store (cubic-feet)	Cum.Store (cubic-feet)
766.50	4,500	0	0
768.50	6,500	11,000	11,000
770.50	8,000	14,500	25,500
772.50	10,000	18,000	43,500
773.50	12,000	11,000	54,500

Device	Routing	Invert	Outlet Devices
#1	Device 2	766.50'	8.0" Round Culvert L= 1.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 766.50' / 766.50' S= 0.1000 /' Cc= 0.800 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.36 sf
#2	Primary	768.50'	15.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 766.50' / 766.00' S= 0.0167 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	768.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.800 Limited to wait flow at low heads
#4	Primary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.64 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#5	Secondary	771.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.64 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=5.07 cfs @ 12.22 hrs HW=770.12' (Free Discharge)  
 1=Culvert (Inlet Controls 8.07 cfs @ 6.37 fps)  
 2=Culvert (Passes < 2.37 cfs potential flow)  
 3=Orifice/Grate (Passes < 24.43 cfs potential flow)  
 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=766.50' (Free Discharge)  
 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 202S: Dry Swale 202

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth > 2.79" for 10-Yr event  
 Inflow = 28.81 cfs @ 11.99 hrs, Volume = 1,479 af  
 Outflow = 27.74 cfs @ 11.99 hrs, Volume = 1,479 af, Atten=3%, Lag=1.6 min  
 Primary = 2.81 cfs @ 11.99 hrs, Volume = 0.354 af  
 Secondary = 24.94 cfs @ 11.99 hrs, Volume = 0.625 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 774.28' @ 11.99 hrs Surf.Area= 6,937 af Storage= 4,181 cf

Plug-Flow detention time= 2.1 min calculated for 1,476 af (100% of inflow)  
 Center-of-Mass det. time= 2.1 min ( 788.9 - 786.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	772.50'	11,520 cf	Custom Stage Data (Prismatic) Listed below (Recast) 28,800 of Overall x 40.0% Voids
#2	778.50'	32,400 cf	Custom Stage Data (Prismatic) Listed below (Recast) 43,920 of Total Available Storage
Elevation (feet)	Surf.Area (sq-ft)	Ino.Store (cubic-feet)	Cum.Store (cubic-feet)
772.50	4,800	0	0
778.50	9,600	28,800	28,800
Elevation (feet)	Surf.Area (sq-ft)	Ino.Store (cubic-feet)	Cum.Store (cubic-feet)
776.50	2,400	0	0
778.50	9,000	11,400	11,400
780.50	12,000	21,000	32,400

Device	Routing	Invert	Outlet Devices
#1	Primary	770.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 770.50' / 770.40' S= 0.0100 /' Cc= 0.800 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	772.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.81 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	774.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00  
 2.50 3.00 3.50  
 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.80 cfs @ 11.99 hrs HW=774.28' (Free Discharge)  
 1=Culvert (Inlet Controls 2.80 cfs @ 7.12 fps)

Secondary OutFlow Max=24.26 cfs @ 11.99 hrs HW=774.28' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 21.84 cfs @ 1.53 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 2.72 cfs @ 1.31 fps)

Summary for Pond 203F: Forebay 203

Inflow Area = 6,499 ac, 73.21% Impervious, Inflow Depth > 2.78" for 10-Yr event  
 Inflow = 21.33 cfs @ 12.04 hrs, Volume = 1,508 af  
 Outflow = 10.14 cfs @ 12.21 hrs, Volume = 1,139 af, Atten=52%, Lag=10.4 min  
 Primary = 9.66 cfs @ 12.21 hrs, Volume = 1,138 af  
 Secondary = 0.49 cfs @ 12.21 hrs, Volume = 0.004 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 773.58' @ 12.21 hrs Surf.Area= 6,541 af Storage= 22,788 cf

Plug-Flow detention time= 167.6 min calculated for 1,139 af (76% of inflow)  
 Center-of-Mass det. time= 74.8 min ( 802.2 - 827.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	768.50'	40,825 cf	Custom Stage Data (Prismatic) Listed below (Recast)
Elevation (feet)	Surf.Area (sq-ft)	Ino.Store (cubic-feet)	Cum.Store (cubic-feet)
768.50	2,000	0	0
770.50	4,000	6,000	6,000
772.50	6,000	10,000	16,000
774.50	7,000	13,000	29,000
776.50	8,500	11,525	40,825

Device	Routing	Invert	Outlet Devices
#1	Primary	772.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.64 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Secondary	773.50'	8.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=9.56 cfs @ 12.21 hrs HW=773.58' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 8.66 cfs @ 1.11 fps)

Secondary OutFlow Max=0.40 cfs @ 12.21 hrs HW=773.58' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 0.40 cfs @ 0.67 fps)

Summary for Pond 203P: Pond 203

Inflow Area = 6,499 ac, 73.21% Impervious, Inflow Depth > 2.10" for 10-Yr event  
 Inflow = 10.14 cfs @ 12.21 hrs, Volume = 1,139 af  
 Outflow = 1.49 cfs @ 14.64 hrs, Volume = 1,129 af, Atten=85%, Lag=145.8 min  
 Primary = 1.49 cfs @ 14.64 hrs, Volume = 1,129 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume = 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 770.83' @ 14.64 hrs Surf.Area= 6,334 af Storage= 18,057 cf

Plug-Flow detention time= 190.6 min calculated for 1,129 af (99% of inflow)  
 Center-of-Mass det. time= 144.3 min ( 1,045.6 - 902.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	766.50'	38,000 cf	Custom Stage Data (Prismatic) Listed below (Recast)
Elevation (feet)	Surf.Area (sq-ft)	Ino.Store (cubic-feet)	Cum.Store (cubic-feet)
766.50	2,000	0	0
768.50	4,000	6,000	6,000
770.50	6,000	10,000	16,000
772.50	8,000	14,000	30,000
773.50	10,000	9,000	39,000

Device	Routing	Invert	Outlet Devices
#1	Primary	766.50'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 766.50' / 766.50' S= 0.0100 /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	771.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.64 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Secondary	772.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74



Primary OutFlow Max=1.49 cfs @ 14.64 hrs HW=770.83' (Free Discharge)  
 1=Culvert (Inlet Controls 1.49 cfs @ 7.53 fps)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)  
 Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=786.50' (Free Discharge)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 203S: Dry Swale 203

Inflow Area = 5,499 ac, 73.21% Impervious, Inflow Depth > 2.79" for 10-Yr event  
 Inflow = 29.18 cfs @ 11.86 hrs, Volume= 1,610 af  
 Outflow = 21.33 cfs @ 12.04 hrs, Volume= 1,609 af, Atten=27%, Lag= 4.4 min  
 Primary = 2.72 cfs @ 12.03 hrs, Volume= 1,045 af  
 Secondary = 18.61 cfs @ 12.04 hrs, Volume= 0,492 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 778.98' @ 12.03 hrs Surf.Area= 16,913 sf Storage= 17,367 cf

Plug-Flow detention time= 41.6 min calculated for 1,508 af (100% of Inflow)  
 Center-of-Mass det. time= 40.7 min ( 827.5 - 786.8 )

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	20,160 cf	Custom Stage Data (Prismatic) Listed below (Recolo)
			50,400 cf Overall x 40.0% Void
#2	778.50'	58,800 cf	Custom Stage Data (Prismatic) Listed below (Recolo)
			78,960 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cu-ft)	Cum. Store (cu-ft)
774.50	6,400	0	0
778.50	16,900	50,400	50,400
778.50	8,400	0	0
780.50	16,900	25,200	25,200
782.50	16,900	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	774.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, K= 0.900 Inlet / Outlet Invert= 774.50' / 774.40' S= 0.0100' / Ce= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf 8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Secondary	778.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50
#3	Secondary	778.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50

Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
2.50	3.00	3.50								
Coef. (English)	2.54	2.61	2.61	2.60	2.66	2.70	2.77	2.89	2.88	
	2.85	3.07	3.20	3.32						

Primary OutFlow Max=0.09 cfs @ 24.09 hrs HW=780.76' (Free Discharge)  
 1=Culvert (Barrel Controls 0.09 cfs @ 1.21 fps)  
 Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=774.50' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link PR-A: AP-A

Inflow Area = 15,291 ac, 64.87% Impervious, Inflow Depth > 1.38" for 10-Yr event  
 Inflow = 2.63 cfs @ 12.05 hrs, Volume= 1,763 af  
 Primary = 2.63 cfs @ 12.05 hrs, Volume= 1,763 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Summary for Link PR-B: AP-B

Inflow Area = 8,903 ac, 51.93% Impervious, Inflow Depth > 2.36" for 10-Yr event  
 Inflow = 13.22 cfs @ 12.11 hrs, Volume= 1,752 af  
 Primary = 13.22 cfs @ 12.11 hrs, Volume= 1,752 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Coef. (English)	2.54	2.61	2.61	2.60	2.66	2.70	2.77	2.89	2.88
	2.85	3.07	3.20	3.32					

Primary OutFlow Max=2.71 cfs @ 12.03 hrs HW=778.05' (Free Discharge)  
 1=Culvert (Inlet Controls 2.71 cfs @ 6.91 fps)  
 Secondary OutFlow Max=18.05 cfs @ 12.04 hrs HW=778.06' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 17.78 cfs @ 1.43 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 0.27 cfs @ 0.60 fps)

Summary for Pond 205P: Dry Swale 206

Inflow Area = 4,679 ac, 67.61% Impervious, Inflow Depth > 2.69" for 10-Yr event  
 Inflow = 20.50 cfs @ 11.85 hrs, Volume= 1,050 af  
 Outflow = 0.09 cfs @ 24.09 hrs, Volume= 0.049 af, Atten= 100%, Lag= 727.4 min  
 Primary = 0.09 cfs @ 24.09 hrs, Volume= 0.049 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 780.76' @ 24.09 hrs Surf.Area= 29,400 sf Storage= 44,740 cf

Plug-Flow detention time= 880.4 min calculated for 0.049 af (5% of Inflow)  
 Center-of-Mass det. time= 671.5 min ( 1,462.7 - 791.2 )

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	15,120 cf	Custom Stage Data (Prismatic) Listed below (Recolo)
			37,800 cf Overall x 40.0% Void
#2	778.50'	58,800 cf	Custom Stage Data (Prismatic) Listed below (Recolo)
			73,920 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cu-ft)	Cum. Store (cu-ft)
774.50	6,300	0	0
778.50	12,600	37,800	37,800
778.50	8,400	0	0
780.50	16,900	25,200	25,200
782.50	16,900	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, K= 0.900 Inlet / Outlet Invert= 780.50' / 780.50' S= 0.0000' / Ce= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf 8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir

Summary for Subcatchment 201: SC 201

Runoff = 19.37 cfs @ 12.04 hrs, Volume= 1,247 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sq ft)	CN	Description			
43,925	80	>75% Grass cover, Good, HSG D			
87,220	98	Paved parking, HSG D			
131,145	92	Weighted Average			
43,925	33.48%	Pervious Area			
87,220	66.51%	Impervious Area			
To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass; Short n= 0.150 P2= 2.50"
1.8	220	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved K <sub>v</sub> = 16.1 fps
12.7	320	Total			

Summary for Subcatchment 202: SC 202

Runoff = 50.38 cfs @ 11.96 hrs, Volume= 2,689 af, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sq ft)	CN	Description			
195,100	98	Paved parking, HSG D			
15,758	80	>75% Grass cover, Good, HSG D			
59,580	80	>75% Grass cover, Good, HSG D			
277,435	93	Weighted Average			
82,335	28.68%	Pervious Area			
195,100	70.32%	Impervious Area			
To (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Direct Entry

Summary for Subcatchment 203: SC 203

Runoff = 51.41 cfs @ 11.96 hrs, Volume= 2,744 af, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
207,260	98	Paved parking, HSG D
75,825	80	>75% Grass cover, Good, HSG D
283,085	93	Weighted Average
75,825		26.79% Pervious Area
207,260		73.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	200		0.55		Direct Entry, Direct Entry

**Summary for Subcatchment 204: SC 204**

Runoff = 5.76 cfs @ 12.04 hrs, Volume= 0.342 af, Depth= 3.72"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
48,035	80	>75% Grass cover, Good, HSG D
48,035		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0800	0.26		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.50"
5.6	770	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
12.0	870				Total

**Summary for Subcatchment 205: SC 205**

Runoff = 11.75 cfs @ 12.09 hrs, Volume= 0.807 af, Depth= 3.82"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
96,340	80	>75% Grass cover, Good, HSG D
6,270	98	Paved parking, HSG D
7,760	80	>75% Grass cover, Good, HSG D
110,370	81	Weighted Average
104,100		94.32% Pervious Area
6,270		5.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0200	0.15		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 2.50"
5.5	755	0.0200	2.28		Shallow Concentrated Flow, Shallow Conc Flow Unpaved Kv= 16.1 fps
16.6	855				Total

**Summary for Subcatchment 206: SC 206**

Runoff = 36.58 cfs @ 11.96 hrs, Volume= 1.937 af, Depth= 4.97"  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100-Yr Rainfall=5.93"

Area (sf)	CN	Description
17,950	80	>75% Grass cover, Good, HSG D
137,590	98	Paved parking, HSG D
48,280	80	>75% Grass cover, Good, HSG D
203,820	92	Weighted Average
66,230		32.49% Pervious Area
137,590		67.51% Impervious Area

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

**Summary for Reach 1R: Swale**

Inflow Area = 7.690 ac, 67.11% Impervious, Inflow Depth > 2.83" for 100-Yr event  
 Inflow = 6.52 cfs @ 12.56 hrs, Volume= 1.814 af  
 Outflow = 6.26 cfs @ 12.74 hrs, Volume= 1.803 af, Atten= 4%, Lag= 10.6 min  
 Routing by Stor-Ind+Trans method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 3.91 fps, Min. Travel Time= 5.4 min  
 Avg. Velocity= 2.16 fps, Avg. Travel Time= 9.8 min

Peak Storage= 2.047 cf @ 12.65 hrs  
 Average Depth at Peak Storage= 0.32"  
 Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 51.10 cfs  
 4.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight  
 Side Slope Z-value= 3.0' Top Width= 10.00'  
 Length= 1,275.0' Slope= 0.0196'  
 Inlet Invert= 775.00', Outlet Invert= 750.00'



**Summary for Pond 201F: Forebay 201**

Inflow Area = 7.690 ac, 67.11% Impervious, Inflow Depth > 3.24" for 100-Yr event  
 Inflow = 14.61 cfs @ 12.13 hrs, Volume= 2.078 af  
 Outflow = 11.63 cfs @ 12.25 hrs, Volume= 1.846 af, Atten= 20%, Lag= 7.2 min  
 Primary = 10.53 cfs @ 12.25 hrs, Volume= 1.832 af  
 Secondary = 1.10 cfs @ 12.25 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 779.15' @ 12.25 hrs Surf.Area= 6,073 sf Storage= 15,884 cf

Plug-Flow detention time= 122.5 min calculated for 1.842 af (89% of inflow)  
 Center-of-Mass det. time= 52.2 min (1,009.3 - 957.1)

Volume	Invert	Avail. Storage	Storage Description
#1	775.00'	35,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
775.00	2,000	0	0
777.00	3,500	5,500	5,500
779.00	6,000	9,500	15,000
781.00	7,000	13,000	28,000
782.00	8,000	7,500	35,500

Device	Routing	Invert	Outlet Devices
#1	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.88 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.88 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=10.50 cfs @ 12.25 hrs HW=779.14' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 10.50 cfs @ 1.15 fps)

Secondary OutFlow Max=1.07 cfs @ 12.25 hrs HW=779.14' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 1.07 cfs @ 0.93 fps)

**Summary for Pond 201P: Pond 201**

Inflow Area = 7.690 ac, 67.11% Impervious, Inflow Depth > 2.88" for 100-Yr event  
 Inflow = 11.63 cfs @ 12.25 hrs, Volume= 1.846 af  
 Outflow = 6.52 cfs @ 12.56 hrs, Volume= 1.814 af, Atten= 44%, Lag= 18.7 min  
 Primary = 6.52 cfs @ 12.56 hrs, Volume= 1.814 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 778.73' @ 12.56 hrs Surf.Area= 5,909 sf Storage= 11,167 cf  
 Plug-Flow detention time= 81.5 min calculated for 1.810 af (98% of inflow)  
 Center-of-Mass det. time= 69.4 min (1,078.7 - 1,009.3)

Volume	Invert	Avail. Storage	Storage Description
#1	776.00'	28,450 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
776.00	2,200	0	0
778.00	5,000	7,200	7,200
780.00	7,500	12,500	19,700
781.00	10,000	8,750	28,450

Device	Routing	Invert	Outlet Devices
#1	Primary	776.00'	6.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 776.00' / 778.80' S= 0.0100' /' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	778.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.88 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Secondary	779.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.88 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=6.49 cfs @ 12.56 hrs HW=778.72' (Free Discharge)  
 1=Culvert (Inlet Controls 1.17 cfs @ 5.98 fps)  
 2=Broad-Crested Rectangular Weir (Weir Controls 5.32 cfs @ 0.92 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=776.00' (Free Discharge)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 201S: Dry Swale 201

Inflow Area = 3,611 ac, 66.51% Impervious, Inflow Depth > 4.97" for 100-Yr event  
 Inflow = 19.37 cfs @ 12.04 hrs, Volume= 1,247 af  
 Outflow = 14.20 cfs @ 12.13 hrs, Volume= 1,239 af, Atten= 27%, Lag= 6.5 min  
 Primary = 2.35 cfs @ 12.13 hrs, Volume= 0.847 af  
 Secondary = 11.85 cfs @ 12.13 hrs, Volume= 0.391 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 783.23' @ 12.13 hrs Surf.Area= 8,915 sf Storage= 12,467 cf

Plug-Flow detention time= 37.8 min calculated for 1,236 af (99% of inflow)  
 Center-of-Mass det. time= 33.5 min (817.0 - 783.5)

Volume	Invert	Avail. Storage	Storage Description
#1	780.00'	4,650 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 11,400 of Overall x 40.0% Voids
#2	780.50'	16,200 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			20,760 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
780.00	1,200	0	0
784.00	4,500	11,400	11,400

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
780.50	1,200	0	0
782.50	4,500	5,700	5,700
784.50	6,000	10,500	16,200

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	8.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, K <sub>e</sub> = 0.900 Inlet / Outlet Invert= 780.50' / 780.50' S= 0.0000 /' C <sub>o</sub> = 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf 8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Summary for Pond 202P: Pond 202

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth = 4.92" for 100-Yr event  
 Inflow = 48.28 cfs @ 12.00 hrs, Volume= 2,810 af  
 Outflow = 26.65 cfs @ 12.11 hrs, Volume= 2,590 af, Atten= 45%, Lag= 6.8 min  
 Primary = 23.03 cfs @ 12.11 hrs, Volume= 2,551 af  
 Secondary = 3.52 cfs @ 12.11 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 771.82' @ 12.11 hrs Surf.Area= 9,319 sf Storage= 38,921 cf

Plug-Flow detention time= 61.4 min calculated for 2,585 af (99% of inflow)  
 Center-of-Mass det. time= 57.0 min (851.7 - 784.8)

Volume	Invert	Avail. Storage	Storage Description
#1	766.50'	54,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
766.50	4,500	0	0
768.50	8,500	11,000	11,000
770.50	8,000	14,500	25,500
772.50	10,000	18,000	43,500
773.50	12,000	11,000	54,500

Device	Routing	Invert	Outlet Devices
#1	Device 2	766.50'	8.0" Round Culvert L= 1.0' CPP, projecting, no headwall, K <sub>e</sub> = 0.900 Inlet / Outlet Invert= 766.50' / 766.50' S= 0.1000 /' C <sub>o</sub> = 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf 15.0" Round Culvert L= 30.0' CPP, projecting, no headwall, K <sub>e</sub> = 0.900 Inlet / Outlet Invert= 766.50' / 766.00' S= 0.0187 /' C <sub>o</sub> = 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf 24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	766.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Device 2	768.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Primary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#5	Secondary	771.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.35 cfs @ 12.13 hrs HW=783.22' (Free Discharge)  
 1=Culvert (Inlet Controls 2.35 cfs @ 5.97 fps)

Secondary OutFlow Max=11.88 cfs @ 12.13 hrs HW=783.22' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 11.88 cfs @ 1.20 fps)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 202F: Forebay 202

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth > 5.07" for 100-Yr event  
 Inflow = 49.71 cfs @ 11.98 hrs, Volume= 2,889 af  
 Outflow = 48.28 cfs @ 12.00 hrs, Volume= 2,810 af, Atten= 3%, Lag= 1.1 min  
 Primary = 24.95 cfs @ 12.00 hrs, Volume= 2,802 af  
 Secondary = 23.33 cfs @ 12.00 hrs, Volume= 0.497 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 771.56' @ 12.00 hrs Surf.Area= 3,793 af Storage= 9,892 cf

Plug-Flow detention time= 37.0 min calculated for 2,609 af (97% of inflow)  
 Center-of-Mass det. time= 18.2 min (794.8 - 776.6)

Volume	Invert	Avail. Storage	Storage Description
#1	766.50'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
766.50	100	0	0
768.50	1,500	1,800	1,800
770.50	3,000	4,500	6,100
772.50	4,500	7,500	13,900
773.50	5,500	5,000	18,900
774.00	6,000	2,875	21,475

Device	Routing	Invert	Outlet Devices
#1	Primary	766.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Secondary	770.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=24.93 cfs @ 12.00 hrs HW=771.56' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 24.93 cfs @ 1.52 fps)

Secondary OutFlow Max=23.29 cfs @ 12.00 hrs HW=771.56' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 23.29 cfs @ 2.75 fps)

Primary OutFlow Max=22.59 cfs @ 12.11 hrs HW=771.79' (Free Discharge)  
 2=Culvert (Inlet Controls 10.08 cfs @ 8.21 fps)  
 1=Culvert (Passes < 2.92 cfs potential flow)  
 3=Orifice/Grate (Passes < 34.93 cfs potential flow)  
 4=Broad-Crested Rectangular Weir (Weir Controls 12.52 cfs @ 1.21 fps)

Secondary OutFlow Max=3.13 cfs @ 12.11 hrs HW=771.79' (Free Discharge)  
 5=Broad-Crested Rectangular Weir (Weir Controls 3.13 cfs @ 1.34 fps)

Summary for Pond 202S: Dry Swale 202

Inflow Area = 6,369 ac, 70.32% Impervious, Inflow Depth > 5.07" for 100-Yr event  
 Inflow = 50.38 cfs @ 11.96 hrs, Volume= 2,889 af  
 Outflow = 49.71 cfs @ 11.98 hrs, Volume= 2,889 af, Atten= 1%, Lag= 1.1 min  
 Primary = 3.00 cfs @ 11.98 hrs, Volume= 1.381 af  
 Secondary = 46.72 cfs @ 11.98 hrs, Volume= 1.308 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 774.78' @ 11.98 hrs Surf.Area= 7,530 sf Storage= 5,610 cf

Plug-Flow detention time= 2.1 min calculated for 2,689 af (100% of inflow)  
 Center-of-Mass det. time= 2.0 min (776.6 - 774.6)

Volume	Invert	Avail. Storage	Storage Description
#1	772.50'	11,520 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 28,800 of Overall x 40.0% Voids
#2	776.50'	32,400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			43,920 cf Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
772.50	4,800	0	0
776.50	9,600	28,800	28,800

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
776.50	2,400	0	0
778.50	5,000	11,400	11,400
780.50	12,000	21,000	32,400

Device	Routing	Invert	Outlet Devices
#1	Primary	770.50'	8.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, K <sub>e</sub> = 0.900 Inlet / Outlet Invert= 770.50' / 770.40' S= 0.0100 /' C <sub>o</sub> = 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf 8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Secondary	772.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	774.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir



Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00  
 2.50 3.00 3.50  
 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.98 cfs @ 11.88 hrs HW=774.74' (Free Discharge)  
 1=Culvert (Inlet Controls 2.98 cfs @ 7.59 fps)

Secondary OutFlow Max=44.96 cfs @ 11.88 hrs HW=774.74' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 31.71 cfs @ 1.77 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 13.25 cfs @ 2.24 fps)

**Summary for Pond 203F: Forebay 203**

Inflow Area = 6.499 ac, 73.21% Impervious, Inflow Depth > 5.06" for 100-Yr event  
 Inflow = 48.12 cfs @ 12.00 hrs, Volume= 2,742 af  
 Outflow = 42.25 cfs @ 12.05 hrs, Volume= 2,374 af, Atten= 8%, Lag= 2.6 min  
 Primary = 22.78 cfs @ 12.05 hrs, Volume= 2,033 af  
 Secondary = 19.47 cfs @ 12.05 hrs, Volume= 0,341 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 774.44' @ 12.05 hrs Surf.Area= 6,969 sf Storage= 28,560 of

Plug-Flow detention time= 118.0 min calculated for 2,374 af (97% of Inflow)  
 Center-of-Mass det. time= 51.0 min (859.5 - 808.5)

Volume	Invert	Avail. Storage	Storage Description
#1	768.50'	40,625 of	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
768.50	2,000	0	0
770.50	4,000	6,000	6,000
772.50	6,000	12,000	16,000
774.50	7,000	13,000	29,000
775.00	8,500	11,625	40,625

Device	Routing	Invert	Outlet Devices
#1	Primary	772.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.70 2.74
#2	Secondary	773.50'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.70 2.74

Primary OutFlow Max=22.66 cfs @ 12.05 hrs HW=774.43' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 22.66 cfs @ 1.47 fps)

Secondary OutFlow Max=19.27 cfs @ 12.05 hrs HW=774.43' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 19.27 cfs @ 2.59 fps)

**Summary for Pond 203P: Pond 203**

Inflow Area = 6.499 ac, 73.21% impervious, Inflow Depth > 4.38" for 100-Yr event  
 Inflow = 42.25 cfs @ 12.05 hrs, Volume= 2,374 af  
 Outflow = 20.07 cfs @ 12.21 hrs, Volume= 2,363 af, Atten= 62%, Lag= 10.0 min  
 Primary = 15.47 cfs @ 12.21 hrs, Volume= 2,299 af  
 Secondary = 4.50 cfs @ 12.21 hrs, Volume= 0,964 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 772.37' @ 12.21 hrs Surf.Area= 7,874 sf Storage= 28,998 of

Plug-Flow detention time= 111.8 min calculated for 2,358 af (99% of Inflow)  
 Center-of-Mass det. time= 108.5 min (988.0 - 859.5)

Volume	Invert	Avail. Storage	Storage Description
#1	768.50'	39,000 of	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
768.50	2,000	0	0
768.50	4,000	6,000	6,000
770.50	6,000	10,000	16,000
772.50	8,000	14,000	30,000
773.50	10,000	9,000	39,000

Device	Routing	Invert	Outlet Devices
#1	Primary	768.60'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 768.60' / 766.50' S= 0.0100 /' Co= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Primary	771.00'	9.0' long x 8.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.66 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.70 2.74
#3	Secondary	772.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.89 2.88 2.66 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.70 2.74

Primary OutFlow Max=15.22 cfs @ 12.21 hrs HW=772.36' (Free Discharge)  
 1=Culvert (Inlet Controls 1.75 cfs @ 9.92 fps)  
 2=Broad-Crested Rectangular Weir (Weir Controls 13.47 cfs @ 1.24 fps)

Secondary OutFlow Max=4.30 cfs @ 12.21 hrs HW=772.36' (Free Discharge)  
 3=Broad-Crested Rectangular Weir (Weir Controls 4.30 cfs @ 1.50 fps)

**Summary for Pond 203S: Dry Swale 203**

Inflow Area = 6.499 ac, 73.21% Impervious, Inflow Depth > 5.07" for 100-Yr event  
 Inflow = 51.41 cfs @ 11.96 hrs, Volume= 2,744 af  
 Outflow = 46.12 cfs @ 12.00 hrs, Volume= 2,742 af, Atten= 10%, Lag= 2.4 min  
 Primary = 2.97 cfs @ 12.00 hrs, Volume= 1,570 af  
 Secondary = 43.15 cfs @ 12.00 hrs, Volume= 1,173 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 778.70' @ 12.00 hrs Surf.Area= 26,060 sf Storage= 21,968 of

Plug-Flow detention time= 34.2 min calculated for 2,736 af (100% of Inflow)  
 Center-of-Mass det. time= 33.9 min (808.5 - 774.6)

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	20,160 of	Custom Stage Data (Prismatic) Listed below (Recalc) 60,400 of Overall x 40.0% Voids
#2	778.50'	58,800 of	Custom Stage Data (Prismatic) Listed below (Recalc) 78,960 of Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
774.50	8,400	0	0
778.50	16,800	50,400	50,400
Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
778.50	8,400	0	0
780.50	16,800	25,200	25,200
782.50	16,800	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	774.50'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 774.50' / 774.40' S= 0.0100 /' Co= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	775.50'	4.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	778.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.97 cfs @ 12.00 hrs HW=778.70' (Free Discharge)  
 1=Culvert (Inlet Controls 2.97 cfs @ 7.55 fps)

Secondary OutFlow Max=42.78 cfs @ 12.00 hrs HW=778.70' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 30.83 cfs @ 1.74 fps)  
 3=Broad-Crested Rectangular Weir (Weir Controls 12.15 cfs @ 2.18 fps)

**Summary for Pond 206P: Dry Swale 206**

Inflow Area = 4.679 ac, 67.51% Impervious, Inflow Depth > 4.97" for 100-Yr event  
 Inflow = 38.58 cfs @ 11.96 hrs, Volume= 0,839 af  
 Outflow = 0.77 cfs @ 15.37 hrs, Volume= 0,839 af, Atten= 98%, Lag= 204.7 min  
 Primary = 0.77 cfs @ 15.37 hrs, Volume= 0,839 af  
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0,000 af

Routing by Stor-Ind method, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs  
 Peak Elev= 781.81' @ 15.37 hrs Surf.Area= 29,400 sf Storage= 62,261 of

Plug-Flow detention time= 507.6 min calculated for 0,837 af (43% of Inflow)  
 Center-of-Mass det. time= 386.4 min (1,164.0 - 777.6)

Volume	Invert	Avail. Storage	Storage Description
#1	774.50'	15,120 of	Custom Stage Data (Prismatic) Listed below (Recalc) 37,800 of Overall x 40.0% Voids
#2	778.50'	58,800 of	Custom Stage Data (Prismatic) Listed below (Recalc) 73,920 of Total Available Storage

Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
774.50	6,300	0	0
778.50	12,600	37,800	37,800
Elevation (feet)	Surf. Area (sq-ft)	Inco. Store (cubic-feet)	Cum. Store (cubic-feet)
778.50	8,400	0	0
780.50	16,800	25,200	25,200
782.50	16,800	33,600	58,800

Device	Routing	Invert	Outlet Devices
#1	Primary	780.50'	6.0" Round Culvert L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 780.50' / 780.60' S= 0.0080 /' Co= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	782.00'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 0.40 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Secondary	783.50'	8.0' long x 2.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00  
 2.50 3.00 3.50  
 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88  
 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.77 cfs @ 15.37 hrs HW=781.81' (Free Discharge)  
 1=Culvert (Inlet Controls 0.77 cfs @ 3.91 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=774.51' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link PR-A: AP-A

Inflow Area = 15.291 ac, 64.87% Impervious, Inflow Depth > 3.54" for 100-Yr event  
 Inflow = 22.28 cfs @ 12.21 hrs, Volume= 4.507 af  
 Primary = 22.28 cfs @ 12.21 hrs, Volume= 4.507 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Summary for Link PR-B: AP-B

Inflow Area = 8.903 ac, 51.93% Impervious, Inflow Depth > 4.58" for 100-Yr event  
 Inflow = 38.10 cfs @ 12.11 hrs, Volume= 3.397 af  
 Primary = 38.10 cfs @ 12.11 hrs, Volume= 3.397 af, Atten= 0%, Lag= 0.0 min

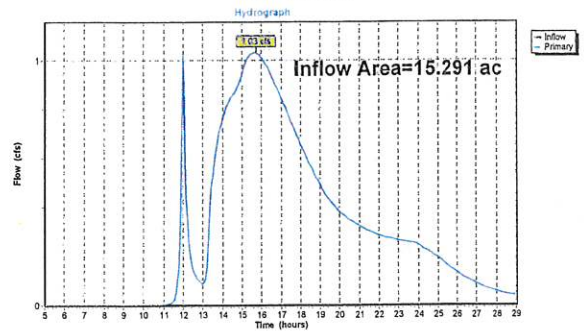
Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Summary for Link PR-A: AP-A

Inflow Area = 15.291 ac, 64.87% Impervious, Inflow Depth > 0.47" for 1-Yr event  
 Inflow = 1.03 cfs @ 15.71 hrs, Volume= 0.600 af  
 Primary = 1.03 cfs @ 15.71 hrs, Volume= 0.600 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-29.00 hrs, dt= 0.05 hrs

Link PR-A: AP-A



Hydrograph for Link PR-A: AP-A

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
5.00	0.00	0.00	0.00	7.85	0.00	0.00	0.00
5.05	0.00	0.00	0.00	7.70	0.00	0.00	0.00
5.10	0.00	0.00	0.00	7.75	0.00	0.00	0.00
5.15	0.00	0.00	0.00	7.80	0.00	0.00	0.00
5.20	0.00	0.00	0.00	7.85	0.00	0.00	0.00
5.25	0.00	0.00	0.00	7.90	0.00	0.00	0.00
5.30	0.00	0.00	0.00	7.95	0.00	0.00	0.00
5.35	0.00	0.00	0.00	8.00	0.00	0.00	0.00
5.40	0.00	0.00	0.00	8.05	0.00	0.00	0.00
5.45	0.00	0.00	0.00	8.10	0.00	0.00	0.00
5.50	0.00	0.00	0.00	8.15	0.00	0.00	0.00
5.55	0.00	0.00	0.00	8.20	0.00	0.00	0.00
5.60	0.00	0.00	0.00	8.25	0.00	0.00	0.00
5.65	0.00	0.00	0.00	8.30	0.00	0.00	0.00
5.70	0.00	0.00	0.00	8.35	0.00	0.00	0.00
5.75	0.00	0.00	0.00	8.40	0.00	0.00	0.00
5.80	0.00	0.00	0.00	8.45	0.00	0.00	0.00
5.85	0.00	0.00	0.00	8.50	0.00	0.00	0.00
5.90	0.00	0.00	0.00	8.55	0.00	0.00	0.00
5.95	0.00	0.00	0.00	8.60	0.00	0.00	0.00
6.00	0.00	0.00	0.00	8.65	0.00	0.00	0.00
6.05	0.00	0.00	0.00	8.70	0.00	0.00	0.00
6.10	0.00	0.00	0.00	8.75	0.00	0.00	0.00
6.15	0.00	0.00	0.00	8.80	0.00	0.00	0.00
6.20	0.00	0.00	0.00	8.85	0.00	0.00	0.00
6.25	0.00	0.00	0.00	8.90	0.00	0.00	0.00
6.30	0.00	0.00	0.00	8.95	0.00	0.00	0.00
6.35	0.00	0.00	0.00	9.00	0.00	0.00	0.00
6.40	0.00	0.00	0.00	9.05	0.00	0.00	0.00
6.45	0.00	0.00	0.00	9.10	0.00	0.00	0.00
6.50	0.00	0.00	0.00	9.15	0.00	0.00	0.00
6.55	0.00	0.00	0.00	9.20	0.00	0.00	0.00
6.60	0.00	0.00	0.00	9.25	0.00	0.00	0.00
6.65	0.00	0.00	0.00	9.30	0.00	0.00	0.00
6.70	0.00	0.00	0.00	9.35	0.00	0.00	0.00
6.75	0.00	0.00	0.00	9.40	0.00	0.00	0.00
6.80	0.00	0.00	0.00	9.45	0.00	0.00	0.00
6.85	0.00	0.00	0.00	9.50	0.00	0.00	0.00
6.90	0.00	0.00	0.00	9.55	0.00	0.00	0.00
6.95	0.00	0.00	0.00	9.60	0.00	0.00	0.00
7.00	0.00	0.00	0.00	9.65	0.00	0.00	0.00
7.05	0.00	0.00	0.00	9.70	0.00	0.00	0.00
7.10	0.00	0.00	0.00	9.75	0.00	0.00	0.00
7.15	0.00	0.00	0.00	9.80	0.00	0.00	0.00
7.20	0.00	0.00	0.00	9.85	0.00	0.00	0.00
7.25	0.00	0.00	0.00	9.90	0.00	0.00	0.00
7.30	0.00	0.00	0.00	9.95	0.00	0.00	0.00
7.35	0.00	0.00	0.00	10.00	0.00	0.00	0.00
7.40	0.00	0.00	0.00	10.05	0.00	0.00	0.00
7.45	0.00	0.00	0.00	10.10	0.00	0.00	0.00
7.50	0.00	0.00	0.00	10.15	0.00	0.00	0.00
7.55	0.00	0.00	0.00	10.20	0.00	0.00	0.00
7.60	0.00	0.00	0.00	10.25	0.00	0.00	0.00

Hydrograph for Link PR-A: AP-A (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
10.30	0.00	0.00	0.00	12.95	0.09	0.00	0.09
10.35	0.00	0.00	0.00	13.00	0.09	0.00	0.09
10.40	0.00	0.00	0.00	13.05	0.09	0.00	0.09
10.45	0.00	0.00	0.00	13.10	0.09	0.00	0.09
10.50	0.00	0.00	0.00	13.15	0.09	0.00	0.09
10.55	0.00	0.00	0.00	13.20	0.12	0.00	0.12
10.60	0.10	0.00	0.00	13.25	0.16	0.00	0.16
10.65	0.00	0.00	0.00	13.30	0.23	0.00	0.23
10.70	0.00	0.00	0.00	13.35	0.30	0.00	0.30
10.75	0.00	0.00	0.00	13.40	0.38	0.00	0.38
10.80	0.00	0.00	0.00	13.45	0.44	0.00	0.44
10.85	0.00	0.00	0.00	13.50	0.49	0.00	0.49
10.90	0.10	0.00	0.00	13.55	0.53	0.00	0.53
10.95	0.00	0.00	0.00	13.60	0.57	0.00	0.57
11.00	0.00	0.00	0.00	13.65	0.60	0.00	0.60
11.05	0.00	0.00	0.00	13.70	0.63	0.00	0.63
11.10	0.00	0.00	0.00	13.75	0.65	0.00	0.65
11.15	0.00	0.00	0.00	13.80	0.68	0.00	0.68
11.20	0.00	0.00	0.00	13.85	0.70	0.00	0.70
11.25	0.00	0.00	0.00	13.90	0.72	0.00	0.72
11.30	0.01	0.00	0.01	13.95	0.73	0.00	0.73
11.35	0.01	0.00	0.01	14.00	0.75	0.00	0.75
11.40	0.01	0.00	0.01	14.05	0.76	0.00	0.76
11.45	0.01	0.00	0.01	14.10	0.78	0.00	0.78
11.50	0.01	0.00	0.01	14.15	0.79	0.00	0.79
11.55	0.02	0.00	0.02	14.20	0.80	0.00	0.80
11.60	0.02	0.00	0.02	14.25	0.81	0.00	0.81
11.65	0.03	0.00	0.03	14.30	0.82	0.00	0.82
11.70	0.06	0.00	0.06	14.35	0.83	0.00	0.83
11.75	0.10	0.00	0.10	14.40	0.84	0.00	0.84
11.80	0.16	0.00	0.16	14.45	0.85	0.00	0.85
11.85	0.25	0.00	0.25	14.50	0.85	0.00	0.85
11.90	0.40	0.00	0.40	14.55	0.86	0.00	0.86
11.95	0.64	0.00	0.64	14.60	0.87	0.00	0.87
12.00	0.90	0.00	0.90	14.65	0.87	0.00	0.87
12.05	1.02	0.00	1.02	14.70	0.88	0.00	0.88
12.10	0.90	0.00	0.90	14.75	0.88	0.00	0.88
12.15	0.68	0.00	0.68	14.80	0.89	0.00	0.89
12.20	0.48	0.00	0.48	14.85	0.90	0.00	0.90
12.25	0.34	0.00	0.34	14.90	0.91	0.00	0.91
12.30	0.27	0.00	0.27	14.95	0.92	0.00	0.92
12.35	0.23	0.00	0.23	15.00	0.93	0.00	0.93
12.40	0.20	0.00	0.20	15.05	0.95	0.00	0.95
12.45	0.18	0.00	0.18	15.10	0.95	0.00	0.95
12.50	0.16	0.00	0.16	15.15	0.97	0.00	0.97
12.55	0.15	0.00	0.15	15.20	0.98	0.00	0.98
12.60	0.13	0.00	0.13	15.25	0.99	0.00	0.99
12.65	0.12	0.00	0.12	15.30	1.00	0.00	1.00
12.70	0.11	0.00	0.11	15.35	1.01	0.00	1.01
12.75	0.11	0.00	0.11	15.40	1.02	0.00	1.02
12.80	0.10	0.00	0.10	15.45	1.02	0.00	1.02
12.85	0.10	0.00	0.10	15.50	1.03	0.00	1.03
12.90	0.10	0.00	0.10	15.55	1.03	0.00	1.03

Hydrograph for Link PR-A: AP-A (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
18.60	1.03	0.00	1.03	18.25	0.83	0.00	0.83
18.65	1.03	0.00	1.03	18.30	0.62	0.00	0.62
18.70	1.03	0.00	1.03	18.35	0.61	0.00	0.61
18.75	1.03	0.00	1.03	18.40	0.60	0.00	0.60
18.80	1.03	0.00	1.03	18.45	0.59	0.00	0.59
18.85	1.03	0.00	1.03	18.50	0.58	0.00	0.58
18.90	1.03	0.00	1.03	18.55	0.58	0.00	0.58
18.95	1.02	0.00	1.02	18.60	0.57	0.00	0.57
19.00	1.02	0.00	1.02	18.65	0.56	0.00	0.56
19.05	1.01	0.00	1.01	18.70	0.55	0.00	0.55
19.10	1.01	0.00	1.01	18.75	0.54	0.00	0.54
19.15	1.00	0.00	1.00	18.80	0.53	0.00	0.53
19.20	1.00	0.00	1.00	18.85	0.53	0.00	0.53
19.25	0.99	0.00	0.99	18.90	0.52	0.00	0.52
19.30	0.98	0.00	0.98	18.95	0.51	0.00	0.51
19.35	0.98	0.00	0.98	19.00	0.50	0.00	0.50
19.40	0.97	0.00	0.97	19.05	0.50	0.00	0.50
19.45	0.96	0.00	0.96	19.10	0.49	0.00	0.49
19.50	0.95	0.00	0.95	19.15	0.48	0.00	0.48
19.55	0.94	0.00	0.94	19.20	0.47	0.00	0.47
19.60	0.94	0.00	0.94	19.25	0.47	0.00	0.47
19.65	0.93	0.00	0.93	19.30	0.46	0.00	0.46
19.70	0.92	0.00	0.92	19.35	0.45	0.00	0.45
19.75	0.91	0.00	0.91	19.40	0.45	0.00	0.45
19.80	0.90	0.00	0.90	19.45	0.44	0.00	0.44
19.85	0.89	0.00	0.89	19.50	0.43	0.00	0.43
19.90	0.88	0.00	0.88	19.55	0.43	0.00	0.43
19.95	0.87	0.00	0.87	19.60	0.42	0.00	0.42
20.00	0.86	0.00	0.86	19.65	0.42	0.00	0.42
20.05	0.85	0.00	0.85	19.70	0.41	0.00	0.41
20.10	0.84	0.00	0.84	19.75	0.41	0.00	0.41
20.15	0.83	0.00	0.83	19.80	0.40	0.00	0.40
20.20	0.82	0.00	0.82	19.85	0.40	0.00	0.40
20.25	0.81	0.00	0.81	19.90	0.40	0.00	0.40
20.30	0.81	0.00	0.81	19.95	0.39	0.00	0.39
20.35	0.80	0.00	0.80	20.00	0.39	0.00	0.39
20.40	0.79	0.00	0.79	20.05	0.38	0.00	0.38
20.45	0.78	0.00	0.78	20.10	0.38	0.00	0.38
20.50	0.77	0.00	0.77	20.15	0.38	0.00	0.38
20.55	0.76	0.00	0.76	20.20	0.37	0.00	0.37
20.60	0.75	0.00	0.75	20.25	0.37	0.00	0.37
20.65	0.74	0.00	0.74	20.30	0.37	0.00	0.37
20.70	0.73	0.00	0.73	20.35	0.36	0.00	0.36
20.75	0.72	0.00	0.72	20.40	0.36	0.00	0.36
20.80	0.71	0.00	0.71	20.45	0.35	0.00	0.35
20.85	0.70	0.00	0.70	20.50	0.35	0.00	0.35
20.90	0.69	0.00	0.69	20.55	0.35	0.00	0.35
20.95	0.68	0.00	0.68	20.60	0.35	0.00	0.35
21.00	0.67	0.00	0.67	20.65	0.35	0.00	0.35
21.05	0.66	0.00	0.66	20.70	0.34	0.00	0.34
21.10	0.65	0.00	0.65	20.75	0.34	0.00	0.34
21.15	0.65	0.00	0.65	20.80	0.34	0.00	0.34
21.20	0.64	0.00	0.64	20.85	0.33	0.00	0.33

Hydrograph for Link PR-A: AP-A (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
20.90	0.33	0.00	0.33	23.55	0.26	0.00	0.26
20.95	0.33	0.00	0.33	23.60	0.26	0.00	0.26
21.00	0.33	0.00	0.33	23.65	0.26	0.00	0.26
21.05	0.33	0.00	0.33	23.70	0.26	0.00	0.26
21.10	0.32	0.00	0.32	23.75	0.26	0.00	0.26
21.15	0.32	0.00	0.32	23.80	0.26	0.00	0.26
21.20	0.32	0.00	0.32	23.85	0.26	0.00	0.26
21.25	0.32	0.00	0.32	23.90	0.26	0.00	0.26
21.30	0.31	0.00	0.31	23.95	0.25	0.00	0.25
21.35	0.31	0.00	0.31	24.00	0.25	0.00	0.25
21.40	0.31	0.00	0.31	24.05	0.25	0.00	0.25
21.45	0.31	0.00	0.31	24.10	0.25	0.00	0.25
21.50	0.31	0.00	0.31	24.15	0.24	0.00	0.24
21.55	0.30	0.00	0.30	24.20	0.24	0.00	0.24
21.60	0.30	0.00	0.30	24.25	0.24	0.00	0.24
21.65	0.30	0.00	0.30	24.30	0.23	0.00	0.23
21.70	0.30	0.00	0.30	24.35	0.23	0.00	0.23
21.75	0.30	0.00	0.30	24.40	0.23	0.00	0.23
21.80	0.30	0.00	0.30	24.45	0.23	0.00	0.23
21.85	0.29	0.00	0.29	24.50	0.23	0.00	0.23
21.90	0.29	0.00	0.29	24.55	0.22	0.00	0.22
21.95	0.29	0.00	0.29	24.60	0.22	0.00	0.22
22.00	0.29	0.00	0.29	24.65	0.22	0.00	0.22
22.05	0.29	0.00	0.29	24.70	0.22	0.00	0.22
22.10	0.29	0.00	0.29	24.75	0.21	0.00	0.21
22.15	0.29	0.00	0.29	24.80	0.21	0.00	0.21
22.20	0.28	0.00	0.28	24.85	0.21	0.00	0.21
22.25	0.28	0.00	0.28	24.90	0.21	0.00	0.21
22.30	0.28	0.00	0.28	24.95	0.20	0.00	0.20
22.35	0.28	0.00	0.28	25.00	0.20	0.00	0.20
22.40	0.28	0.00	0.28	25.05	0.20	0.00	0.20
22.45	0.28	0.00	0.28	25.10	0.19	0.00	0.19
22.50	0.28	0.00	0.28	25.15	0.19	0.00	0.19
22.55	0.28	0.00	0.28	25.20	0.19	0.00	0.19
22.60	0.28	0.00	0.28	25.25	0.18	0.00	0.18
22.65	0.27	0.00	0.27	25.30	0.18	0.00	0.18
22.70	0.27	0.00	0.27	25.35	0.18	0.00	0.18
22.75	0.27	0.00	0.27	25.40	0.18	0.00	0.18
22.80	0.27	0.00	0.27	25.45	0.17	0.00	0.17
22.85	0.27	0.00	0.27	25.50	0.17	0.00	0.17
22.90	0.27	0.00	0.27	25.55	0.17	0.00	0.17
22.95	0.27	0.00	0.27	25.60	0.16	0.00	0.16
23.00	0.27	0.00	0.27	25.65	0.16	0.00	0.16
23.05	0.27	0.00	0.27	25.70	0.16	0.00	0.16
23.10	0.27	0.00	0.27	25.75	0.15	0.00	0.15
23.15	0.26	0.00	0.26	25.80	0.15	0.00	0.15
23.20	0.26	0.00	0.26	25.85	0.15	0.00	0.15
23.25	0.26	0.00	0.26	25.90	0.14	0.00	0.14
23.30	0.26	0.00	0.26	25.95	0.14	0.00	0.14
23.35	0.26	0.00	0.26	26.00	0.14	0.00	0.14
23.40	0.26	0.00	0.26	26.05	0.14	0.00	0.14
23.45	0.26	0.00	0.26	26.10	0.13	0.00	0.13
23.50	0.26	0.00	0.26	26.15	0.13	0.00	0.13

Hydrograph for Link PR-A: AP-A (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
26.20	0.13	0.00	0.13	28.85	0.04	0.00	0.04
26.25	0.12	0.00	0.12	28.90	0.04	0.00	0.04
26.30	0.12	0.00	0.12	28.95	0.04	0.00	0.04
26.35	0.12	0.00	0.12	29.00	0.04	0.00	0.04
26.40	0.12	0.00	0.12				
26.45	0.12	0.00	0.12				
26.50	0.11	0.00	0.11				
26.55	0.11	0.00	0.11				
26.60	0.11	0.00	0.11				
26.65	0.11	0.00	0.11				
26.70	0.10	0.00	0.10				
26.75	0.10	0.00	0.10				
26.80	0.10	0.00	0.10				
26.85	0.10	0.00	0.10				
26.90	0.10	0.00	0.10				
26.95	0.09	0.00	0.09				
27.00	0.09	0.00	0.09				
27.05	0.09	0.00	0.09				
27.10	0.09	0.00	0.09				
27.15	0.09	0.00	0.09				
27.20	0.08	0.00	0.08				
27.25	0.08	0.00	0.08				
27.30	0.08	0.00	0.08				
27.35	0.08	0.00	0.08				
27.40	0.08	0.00	0.08				
27.45	0.08	0.00	0.08				
27.50	0.07	0.00	0.07				
27.55	0.07	0.00	0.07				
27.60	0.07	0.00	0.07				
27.65	0.07	0.00	0.07				
27.70	0.07	0.00	0.07				
27.75	0.07	0.00	0.07				
27.80	0.06	0.00	0.06				
27.85	0.06	0.00	0.06				
27.90	0.06	0.00	0.06				
27.95	0.06	0.00	0.06				
28.00	0.06	0.00	0.06				
28.05	0.06	0.00	0.06				
28.10	0.06	0.00	0.06				
28.15	0.06	0.00	0.06				
28.20	0.05	0.00	0.05				
28.25	0.05	0.00	0.05				
28.30	0.05	0.00	0.05				
28.35	0.05	0.00	0.05				
28.40	0.05	0.00	0.05				
28.45	0.05	0.00	0.05				
28.50	0.05	0.00	0.05				
28.55	0.05	0.00	0.05				
28.60	0.05	0.00	0.05				
28.65	0.05	0.00	0.05				
28.70	0.05	0.00	0.05				
28.75	0.05	0.00	0.05				



Hydrograph for Link PR-B: AP-B

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
5.00	0.00	0.00	0.00	7.75	0.00	0.00	0.00
5.05	0.00	0.00	0.00	7.70	0.00	0.00	0.00
5.10	0.00	0.00	0.00	7.75	0.00	0.00	0.00
5.15	0.00	0.00	0.00	7.80	0.00	0.00	0.00
5.20	0.00	0.00	0.00	7.85	0.00	0.00	0.00
5.25	0.00	0.00	0.00	7.90	0.00	0.00	0.00
5.30	0.00	0.00	0.00	7.95	0.00	0.00	0.00
5.35	0.00	0.00	0.00	8.00	0.00	0.00	0.00
5.40	0.00	0.00	0.00	8.05	0.00	0.00	0.00
5.45	0.00	0.00	0.00	8.10	0.00	0.00	0.00
5.50	0.00	0.00	0.00	8.15	0.00	0.00	0.00
5.55	0.00	0.00	0.00	8.20	0.00	0.00	0.00
5.60	0.00	0.00	0.00	8.25	0.00	0.00	0.00
5.65	0.00	0.00	0.00	8.30	0.00	0.00	0.00
5.70	0.00	0.00	0.00	8.35	0.00	0.00	0.00
5.75	0.00	0.00	0.00	8.40	0.00	0.00	0.00
5.80	0.00	0.00	0.00	8.45	0.00	0.00	0.00
5.85	0.00	0.00	0.00	8.50	0.00	0.00	0.00
5.90	0.00	0.00	0.00	8.55	0.00	0.00	0.00
5.95	0.00	0.00	0.00	8.60	0.00	0.00	0.00
6.00	0.00	0.00	0.00	8.65	0.00	0.00	0.00
6.05	0.00	0.00	0.00	8.70	0.00	0.00	0.00
6.10	0.00	0.00	0.00	8.75	0.00	0.00	0.00
6.15	0.00	0.00	0.00	8.80	0.00	0.00	0.00
6.20	0.00	0.00	0.00	8.85	0.00	0.00	0.00
6.25	0.00	0.00	0.00	8.90	0.00	0.00	0.00
6.30	0.00	0.00	0.00	8.95	0.00	0.00	0.00
6.35	0.00	0.00	0.00	9.00	0.00	0.00	0.00
6.40	0.00	0.00	0.00	9.05	0.00	0.00	0.00
6.45	0.00	0.00	0.00	9.10	0.00	0.00	0.00
6.50	0.00	0.00	0.00	9.15	0.00	0.00	0.00
6.55	0.00	0.00	0.00	9.20	0.00	0.00	0.00
6.60	0.00	0.00	0.00	9.25	0.00	0.00	0.00
6.65	0.00	0.00	0.00	9.30	0.00	0.00	0.00
6.70	0.00	0.00	0.00	9.35	0.00	0.00	0.00
6.75	0.00	0.00	0.00	9.40	0.00	0.00	0.00
6.80	0.00	0.00	0.00	9.45	0.00	0.00	0.00
6.85	0.00	0.00	0.00	9.50	0.00	0.00	0.00
6.90	0.00	0.00	0.00	9.55	0.00	0.00	0.00
6.95	0.00	0.00	0.00	9.60	0.00	0.00	0.00
7.00	0.00	0.00	0.00	9.65	0.00	0.00	0.00
7.05	0.00	0.00	0.00	9.70	0.00	0.00	0.00
7.10	0.00	0.00	0.00	9.75	0.00	0.00	0.00
7.15	0.00	0.00	0.00	9.80	0.00	0.00	0.00
7.20	0.00	0.00	0.00	9.85	0.00	0.00	0.00
7.25	0.00	0.00	0.00	9.90	0.00	0.00	0.00
7.30	0.00	0.00	0.00	9.95	0.00	0.00	0.00
7.35	0.00	0.00	0.00	10.00	0.00	0.00	0.00
7.40	0.00	0.00	0.00	10.05	0.00	0.00	0.00
7.45	0.00	0.00	0.00	10.10	0.00	0.00	0.00
7.50	0.00	0.00	0.00	10.15	0.00	0.00	0.00
7.55	0.00	0.00	0.00	10.20	0.00	0.00	0.00
7.60	0.00	0.00	0.00	10.25	0.00	0.00	0.00

Hydrograph for Link PR-B: AP-B (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
10.30	0.00	0.00	0.00	12.95	1.87	0.00	1.87
10.35	0.00	0.00	0.00	13.00	1.85	0.00	1.85
10.40	0.00	0.00	0.00	13.05	1.83	0.00	1.83
10.45	0.00	0.00	0.00	13.10	1.81	0.00	1.81
10.50	0.00	0.00	0.00	13.15	1.79	0.00	1.79
10.55	0.00	0.00	0.00	13.20	1.78	0.00	1.78
10.60	0.00	0.00	0.00	13.25	1.76	0.00	1.76
10.65	0.00	0.00	0.00	13.30	1.74	0.00	1.74
10.70	0.00	0.00	0.00	13.35	1.72	0.00	1.72
10.75	0.00	0.00	0.00	13.40	1.70	0.00	1.70
10.80	0.00	0.00	0.00	13.45	1.69	0.00	1.69
10.85	0.00	0.00	0.00	13.50	1.67	0.00	1.67
10.90	0.00	0.00	0.00	13.55	1.65	0.00	1.65
10.95	0.00	0.00	0.00	13.60	1.63	0.00	1.63
11.00	0.00	0.00	0.00	13.65	1.61	0.00	1.61
11.05	0.00	0.00	0.00	13.70	1.59	0.00	1.59
11.10	0.01	0.00	0.01	13.75	1.57	0.00	1.57
11.15	0.01	0.00	0.01	13.80	1.56	0.00	1.56
11.20	0.01	0.00	0.01	13.85	1.54	0.00	1.54
11.25	0.02	0.00	0.02	13.90	1.52	0.00	1.52
11.30	0.02	0.00	0.02	13.95	1.50	0.00	1.50
11.35	0.02	0.00	0.02	14.00	1.48	0.00	1.48
11.40	0.03	0.00	0.03	14.05	1.46	0.00	1.46
11.45	0.03	0.00	0.03	14.10	1.44	0.00	1.44
11.50	0.04	0.00	0.04	14.15	1.42	0.00	1.42
11.55	0.05	0.00	0.05	14.20	1.40	0.00	1.40
11.60	0.05	0.00	0.05	14.25	1.38	0.00	1.38
11.65	0.07	0.00	0.07	14.30	1.36	0.00	1.36
11.70	0.11	0.00	0.11	14.35	1.35	0.00	1.35
11.75	0.20	0.00	0.20	14.40	1.33	0.00	1.33
11.80	0.38	0.00	0.38	14.45	1.31	0.00	1.31
11.85	0.65	0.00	0.65	14.50	1.29	0.00	1.29
11.90	1.14	0.00	1.14	14.55	1.27	0.00	1.27
11.95	1.82	0.00	1.82	14.60	1.25	0.00	1.25
12.00	2.59	0.00	2.59	14.65	1.24	0.00	1.24
12.05	3.30	0.00	3.30	14.70	1.22	0.00	1.22
12.10	3.68	0.00	3.68	14.75	1.20	0.00	1.20
12.15	3.64	0.00	3.64	14.80	1.18	0.00	1.18
12.20	4.65	0.00	4.65	14.85	1.18	0.00	1.18
12.25	5.28	0.00	5.28	14.90	1.15	0.00	1.15
12.30	5.15	0.00	5.15	14.95	1.13	0.00	1.13
12.35	4.71	0.00	4.71	15.00	1.11	0.00	1.11
12.40	4.19	0.00	4.19	15.05	1.09	0.00	1.09
12.45	3.72	0.00	3.72	15.10	1.07	0.00	1.07
12.50	3.27	0.00	3.27	15.15	1.05	0.00	1.05
12.55	2.90	0.00	2.90	15.20	1.04	0.00	1.04
12.60	2.62	0.00	2.62	15.25	1.02	0.00	1.02
12.65	2.37	0.00	2.37	15.30	1.00	0.00	1.00
12.70	2.15	0.00	2.15	15.35	0.98	0.00	0.98
12.75	2.03	0.00	2.03	15.40	0.96	0.00	0.96
12.80	1.94	0.00	1.94	15.45	0.95	0.00	0.95
12.85	1.91	0.00	1.91	15.50	0.93	0.00	0.93
12.90	1.89	0.00	1.89	15.55	0.91	0.00	0.91

Hydrograph for Link PR-B: AP-B (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
16.60	0.89	0.00	0.89	18.25	0.36	0.00	0.36
16.65	0.87	0.00	0.87	18.30	0.35	0.00	0.35
16.70	0.88	0.00	0.88	18.35	0.34	0.00	0.35
16.75	0.84	0.00	0.84	18.40	0.34	0.00	0.34
16.80	0.82	0.00	0.82	18.45	0.34	0.00	0.34
16.85	0.81	0.00	0.81	18.50	0.34	0.00	0.34
16.90	0.79	0.00	0.79	18.55	0.33	0.00	0.33
16.95	0.77	0.00	0.77	18.60	0.33	0.00	0.33
17.00	0.75	0.00	0.75	18.65	0.33	0.00	0.33
17.05	0.73	0.00	0.73	18.70	0.32	0.00	0.32
17.10	0.72	0.00	0.72	18.75	0.32	0.00	0.32
17.15	0.70	0.00	0.70	18.80	0.32	0.00	0.32
17.20	0.68	0.00	0.68	18.85	0.32	0.00	0.32
17.25	0.66	0.00	0.66	18.90	0.31	0.00	0.31
17.30	0.65	0.00	0.65	18.95	0.30	0.00	0.30
17.35	0.63	0.00	0.63	19.00	0.31	0.00	0.31
17.40	0.62	0.00	0.62	19.05	0.30	0.00	0.30
17.45	0.60	0.00	0.60	19.10	0.30	0.00	0.30
17.50	0.59	0.00	0.59	19.15	0.30	0.00	0.30
17.55	0.58	0.00	0.58	19.20	0.30	0.00	0.30
17.60	0.50	0.00	0.50	19.25	0.30	0.00	0.30
17.65	0.55	0.00	0.55	19.30	0.29	0.00	0.29
17.70	0.54	0.00	0.54	19.35	0.29	0.00	0.29
17.75	0.53	0.00	0.53	19.40	0.29	0.00	0.29
17.80	0.52	0.00	0.52	19.45	0.29	0.00	0.29
17.85	0.51	0.00	0.51	19.50	0.28	0.00	0.28
17.90	0.50	0.00	0.50	19.55	0.28	0.00	0.28
17.95	0.49	0.00	0.49	19.60	0.28	0.00	0.28
18.00	0.48	0.00	0.48	19.65	0.28	0.00	0.28
18.05	0.47	0.00	0.47	19.70	0.28	0.00	0.28
18.10	0.46	0.00	0.46	19.75	0.27	0.00	0.27
18.15	0.45	0.00	0.45	19.80	0.27	0.00	0.27
18.20	0.45	0.00	0.45	19.85	0.27	0.00	0.27
18.25	0.44	0.00	0.44	19.90	0.27	0.00	0.27
18.30	0.43	0.00	0.43	19.95	0.26	0.00	0.26
18.35	0.43	0.00	0.43	20.00	0.26	0.00	0.26
18.40	0.43	0.00	0.43	20.05	0.26	0.00	0.26
18.45	0.42	0.00	0.42	20.10	0.26	0.00	0.26
18.50	0.42	0.00	0.42	20.15	0.26	0.00	0.26
18.55	0.41	0.00	0.41	20.20	0.25	0.00	0.25
18.60	0.41</						

Hydrograph for Link PR-B: AP-B (continued)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
26.20	0.05	0.00	0.05	28.85	0.02	0.00	0.02
26.25	0.05	0.00	0.05	28.90	0.02	0.00	0.02
26.30	0.04	0.00	0.04	28.95	0.02	0.00	0.02
26.35	0.04	0.00	0.04	29.00	0.02	0.00	0.02
26.40	0.04	0.00	0.04				
26.45	0.04	0.00	0.04				
26.50	0.04	0.00	0.04				
26.55	0.04	0.00	0.04				
26.60	0.04	0.00	0.04				
26.65	0.04	0.00	0.04				
26.70	0.04	0.00	0.04				
26.75	0.03	0.00	0.03				
26.80	0.03	0.00	0.03				
26.85	0.03	0.00	0.03				
26.90	0.03	0.00	0.03				
26.95	0.03	0.00	0.03				
27.00	0.03	0.00	0.03				
27.05	0.03	0.00	0.03				
27.10	0.03	0.00	0.03				
27.15	0.03	0.00	0.03				
27.20	0.03	0.00	0.03				
27.25	0.03	0.00	0.03				
27.30	0.03	0.00	0.03				
27.35	0.03	0.00	0.03				
27.40	0.03	0.00	0.03				
27.45	0.03	0.00	0.03				
27.50	0.03	0.00	0.03				
27.55	0.03	0.00	0.03				
27.60	0.03	0.00	0.03				
27.65	0.03	0.00	0.03				
27.70	0.03	0.00	0.03				
27.75	0.02	0.00	0.02				
27.80	0.02	0.00	0.02				
27.85	0.02	0.00	0.02				
27.90	0.02	0.00	0.02				
27.95	0.02	0.00	0.02				
28.00	0.02	0.00	0.02				
28.05	0.02	0.00	0.02				
28.10	0.02	0.00	0.02				
28.15	0.02	0.00	0.02				
28.20	0.02	0.00	0.02				
28.25	0.02	0.00	0.02				
28.30	0.02	0.00	0.02				
28.35	0.02	0.00	0.02				
28.40	0.02	0.00	0.02				
28.45	0.02	0.00	0.02				
28.50	0.02	0.00	0.02				
28.55	0.02	0.00	0.02				
28.60	0.02	0.00	0.02				
28.65	0.02	0.00	0.02				
28.70	0.02	0.00	0.02				
28.75	0.02	0.00	0.02				
28.80	0.02	0.00	0.02				

Empire Engineering, PLLC

Version 1.8 Total Water Quality Volume Calculation  
 Last Updated: 11/09/2015 WQV(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQV is equal to post-development 1 year runoff volume)?  No

Design Point: 1	P= 1.10 inch		Manually enter P, Total Area and Impervious Cover:			
Breakdown of Subcatchments						
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQV (ft <sup>3</sup> )	Description
1	3.01	2.00	66%	0.65	7,788	Dry Swale
2	6.37	4.48	70%	0.68	17,372	Dry Swale
3	6.90	4.76	73%	0.71	18,404	Dry Swale
4	1.10	0.00	0%	0.05	230	No Impervious
5	2.53	0.15	6%	0.10	1,044	Vegetated Swale
6	4.68	3.16	68%	0.66	12,290	Dry Swale
7						
8						
9						
10						
Subtotal (1-10)	24.19	14.55	60%	0.59	57,118	Subtotal 1
Total	24.19	14.55	60%	0.59	57,118	Initial WQV

Identify Runoff Reduction Techniques by Area			
Technique	Total Contributing Area (Acres)	Contributing Impervious Area (Acres)	Notes
Conservation of Natural Areas	0.00	0.00	minimum 20,000 sf
Riparian Buffers	0.00	0.00	maximum contributing length 75 feet to 150 feet
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	Up to 100 sf directly connected impervious area may be subtracted per tree
Total	0.00	0.00	

Recalculate WQV after application of Area Reduction Techniques					
	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Runoff Coefficient Rv	WQV (ft <sup>3</sup> )
<<Initial WQV>>	24.19	14.55	60%	0.59	57,118
Subtract Area	0.00	0.00			
WQV adjusted after Area Reductions	24.19	14.55	60%	0.59	57,118
Disconnection of Rooftops		0.00			
Adjusted WQV after Area Reduction and Rooftop Disconnect	24.19	14.55	60%	0.59	57,118
WQV reduced by Area Reduction techniques					0

Runoff Reduction Volume and Treated Volumes					
Runoff Reduction Techniques/Standard SMPs	Total Contributing Area (acres)	Total Contributing Impervious Area (acres)	WQV Reduced (RRv) (cf)	WQV Treated (cf)	
Conservation of Natural Areas	RR-1	0.00	0.00		
Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
Tree Planting/Tree Pit	RR-3	0.00	0.00		
Disconnection of Rooftop Runoff	RR-4		0.00		
Vegetated Swale	RR-5	2.53	0.15	0	
Rain Garden	RR-6	0.00	0.00	0	
Stormwater Planter	RR-7	0.00	0.00	0	
Rain Barrel/Cistern	RR-8	0.00	0.00	0	
Porous Pavement	RR-9	0.00	0.00	0	
Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Infiltration Trench	I-1	0.00	0.00	0	0
Infiltration Basin	I-2	0.00	0.00	0	0
Dry Well	I-3	0.00	0.00	0	0
Underground Infiltration System	I-4				
Bioretention & Infiltration Bioretention	F-5	0.00	0.00	0	0
Dry swale	O-1	20.56	14.40	13905	0
Micropool Extended Detention (P-1)	P-1	1.11	0.00		57744.000
Wet Pond (P-2)	P-2				
Wet Extended Detention (P-3)	P-3				
Multiple Pond system (P-4)	P-4				
Pocket Pond (P-5)	P-5				
Surface Sand filter (F-1)	F-1				
Underground Sand filter (F-2)	F-2				
Perimeter Sand Filter (F-3)	F-3				
Organic Filter (F-4)	F-4				
Shallow Wetland (W-1)	W-1				
Extended Detention Wetland (W-2)	W-2				
Pond/Wetland System (W-3)	W-3				
Pocket Wetland (W-4)	W-4				
Wet Swale (O-2)	O-2				
Totals by Area Reduction	→	0.00	0.00	0	
Totals by Volume Reduction	→	2.53	0.15	0	
Totals by Standard SMP w/RRV	→	20.56	14.40	13905	0
Totals by Standard SMP	→	1.11	0.00		57744
Totals (Area + Volume + all SMPs)	→	24.20	14.55	13,905	57,744



Minimum RRv

Enter the site Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	24.19	20%
Total Area	24.19	

Calculate the Minimum RRv	
S =	0.20
Impervious =	14.55 acre
Precipitation	1.1 in
Rv	0.95
Minimum RRv	11.039 ft <sup>3</sup>
	0.25 af

Dry Swale Worksheet

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Precipitation (in)	Description
1	3.01	2.00	0.66	0.65	7788.35	1.10	Dry Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	66%	0.65	7,788	<<WQv after adjusting for Disconnected Rooftops	
Pretreatment Provided		Pretreatment Technique					
Pretreatment (10% of WQv)		779		ft <sup>3</sup>		Check Dam	
Calculate Available Storage Capacity							
Bottom Width	4	ft	Design with a bottom width no greater than eight feet to avoid potential gullyng and channel braiding, but no less than two feet				
Side Slope (X:1)	3	Okay	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope				
Longitudinal Slope	1%	Okay	Maximum longitudinal slope shall be 4%				
Flow Depth	1.5	ft	Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Top Width	13	ft					
Area	12.75	sf					
Minimum Length	550	ft					
Actual Length	640	ft					
End Point Depth check	1.30	Okay	A maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Storage Capacity	8,939	ft <sup>3</sup>					
Soil Group (HSG)		D					
Runoff Reduction							
Is the Dry Swale contributing flow to another practice?							
RRv		1,788	ft <sup>3</sup>	Runoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv			
Volume Treated		0	ft <sup>3</sup>	This is the difference between the WQv calculated and the runoff reduction achieved in the swale			
Volume Directed		6,001	ft <sup>3</sup>	This volume is directed another practice			

Dry Swale Worksheet

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Precipitation (in)	Description
2	6.37	4.48	0.70	0.68	17371.55	1.10	Dry Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	70%	0.68	17,372	<<WQv after adjusting for Disconnected Rooftops	
Pretreatment Provided		Pretreatment Technique					
Pretreatment (10% of WQv)		1,737		ft <sup>3</sup>		Check Dam	
Calculate Available Storage Capacity							
Bottom Width	8	ft	Design with a bottom width no greater than eight feet to avoid potential gullyng and channel braiding, but no less than two feet				
Side Slope (X:1)	3	Okay	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope				
Longitudinal Slope	1%	Okay	Maximum longitudinal slope shall be 4%				
Flow Depth	1.5	ft	Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Top Width	17	ft					
Area	18.75	sf					
Minimum Length	834	ft					
Actual Length	1100	ft					
End Point Depth check	1.50	Okay	A maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Storage Capacity	22,362	ft <sup>3</sup>					
Soil Group (HSG)		D					
Runoff Reduction							
Is the Dry Swale contributing flow to another practice?							
RRv		4,472	ft <sup>3</sup>	Runoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv			
Volume Treated		0	ft <sup>3</sup>	This is the difference between the WQv calculated and the runoff reduction achieved in the swale			
Volume Directed		12,899	ft <sup>3</sup>	This volume is directed another practice			

Dry Swale Worksheet

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Precipitation (in)	Description
3	6.50	4.76	0.73	0.71	18403.74	1.10	Dry Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	73%	0.71	18,404	<<WQv after adjusting for Disconnected Rooftops	
Pretreatment Provided		Pretreatment Technique					
Pretreatment (10% of WQv)		1,840		ft <sup>3</sup>		Check Dam	
Calculate Available Storage Capacity							
Bottom Width	8	ft	Design with a bottom width no greater than eight feet to avoid potential gullyng and channel braiding, but no less than two feet				
Side Slope (X:1)	3	Okay	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope				
Longitudinal Slope	1%	Okay	Maximum longitudinal slope shall be 4%				
Flow Depth	1.5	ft	Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Top Width	17	ft					
Area	18.75	sf					
Minimum Length	883	ft					
Actual Length	930	ft					
End Point Depth check	1.50	Okay	A maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Storage Capacity	19,278	ft <sup>3</sup>					
Soil Group (HSG)		D					
Runoff Reduction							
Is the Dry Swale contributing flow to another practice?							
RRv		3,856	ft <sup>3</sup>	Runoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv			
Volume Treated		0	ft <sup>3</sup>	This is the difference between the WQv calculated and the runoff reduction achieved in the swale			
Volume Directed		14,548	ft <sup>3</sup>	This volume is directed another practice			
Volume V		Okay	Check to be sure that channel is long enough to store WQv				



Dry Swale Worksheet

Appendix J

Project Plan sheets

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Precipitation (in)	Description
5	4.68	3.16	0.68	0.66	12290.45	1.10	Dry Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	68%	0.66	12,290	<<WQv after adjusting for Disconnected Rooftops	
Pretreatment Provided				Pretreatment Technique			
Pretreatment (10% of WQv)				1,229	ft <sup>3</sup>	Check Dam	
Calculate Available Storage Capacity							
Bottom Width	8	ft	Design with a bottom width no greater than eight feet to avoid potential gully and channel braiding, but no less than two feet				
Side Slope (X:1)	3	Okay	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope				
Longitudinal Slope	1%	Okay	Maximum longitudinal slope shall be 4%				
Flow Depth	1.5	ft	Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Top Width	17	ft					
Area	18.75	sf					
Minimum Length	590	ft					
Actual Length	945	ft					
End Point Depth check	1.50	Okay	A maximum depth of 18" at the end point of the channel (for storage of the WQv)				
Storage Capacity	18,948	ft <sup>3</sup>					
Soil Group (HSG)	D						
Runoff Reduction							
Is the Dry Swale contributing flow to another practice?	Yes	Select Practice	Other/Standard SMP				
Rv	3,790	ft <sup>3</sup>	Runoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv				
Volume Treated	0	ft <sup>3</sup>	This is the difference between the WQv calculated and the runoff reduction achieved in the swale				
Volume Directed	8,501	ft <sup>3</sup>	This volume is directed another practice				
Volume V	Okay	Check to be sure that channel is long enough to store WQv					

Empire Engineering, PLLC

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(See Site Plan Set)







**CHECKLIST OF REQUIRED INFORMATION:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Title of drawing.  | <input checked="" type="checkbox"/> Septic system: Soil investigation completed?  |
| <input checked="" type="checkbox"/> Tax Map ID #   | <input checked="" type="checkbox"/> Sewer System: Which district?   |
| <input checked="" type="checkbox"/> Zoning district  | <input type="checkbox"/> Basic SWPPP (1≥)   |
| <input checked="" type="checkbox"/> Current Original Deed                                    | <input type="checkbox"/> Full Storm Water Control Plan (More than an acre)  |
| <input checked="" type="checkbox"/> NYS Survey (L.S. & P.E.)                                 | <input checked="" type="checkbox"/> Other (Building Set Backs)  |
| <input checked="" type="checkbox"/> North Arrow, scale (1"=100'),                            | <input type="checkbox"/> Storm Water Control Plan   |
| <input checked="" type="checkbox"/> Boundaries of the property plotted and labeled to scale. | <input checked="" type="checkbox"/> Short or long EAF <a href="http://www.dec.ny.gov/eafmapper/">www.dec.ny.gov/eafmapper/</a>                                |
| <input checked="" type="checkbox"/> School District/Fire District                            | <input type="checkbox"/> Street pattern: Traffic study needed?  |
| <input checked="" type="checkbox"/> Green area/ landscaping                                  | <input type="checkbox"/> All property Mergers <b>REQUIRE</b> both owners Signatures on the Application  |
| <input checked="" type="checkbox"/> Existing watercourses, wetlands, etc.                    | <b><u>Additional Requirements for Special Use Application:</u></b>  |
| <input checked="" type="checkbox"/> Contour Lines (increments of 10ft.)                      | <input checked="" type="checkbox"/> New or existing building  |
| <input checked="" type="checkbox"/> Easements & Right of ways                                | <input checked="" type="checkbox"/> <b>Business Plan, Hours of operation, &amp; number of employees, floor plan, uses, lighting plan/ landscaping/signage</b> |
| <input checked="" type="checkbox"/> Abutting Properties Wells/ Sewer Systems within 100ft.   | <b>Parking, Handicap Spaces, &amp; lighting plan</b>  |
| <input checked="" type="checkbox"/> Well/ Water system                                       |   |

Date 1/6/22  
**Application type:**  Major Subdv  Minor Subdv  Special Use Permit  Site/ Sketch Plan Review  LotLine Adjust  
 Proposal: Construction of eleven (11) storage unit structures

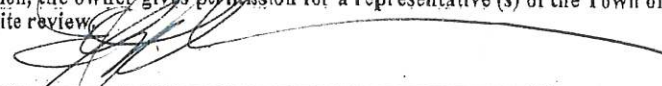
Section \_\_\_\_\_ of \_\_\_\_\_ Ordinance.

Present Owner: Valley Mobile Home Court, LLC (AS APPEARS ON DEED!!)  
 Address: 2711 State Route 7 Cobleskill, NY Zip code: 12043  
 Phone # (required) 518-234-8614

Applicants Name (if different): Same as Above Phone# (required) Same as above  
 Location of Property (if different from owners) 6204 Duanesburg Road  
 Tax Map # 55-4-11.6 Zoning District C-2

Signature of Owner (S) if different from Applicant (AS APPEARS ON DEED!)  
 LANDS CONVEYED TO (REQUIRED FOR MERGERS) N/A  
 Signature of receiving Property Owner \_\_\_\_\_ (AS APPEARS ON DEED!!)

I CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT. The Applicant hereby certifies that he/she is the owner of the above property or has duly authorized, in writing, by the owner of record to make this application. Further, by signing this application, the owner gives permission for a representative (s) of the Town of Duanesburg to walk the property for the purposes of conducting a site review.

 Date 1-7-22  
 Signature of Owner(S) and/or Applicant(S)

**ALL APPLICATION FEES ARE NON-REFUNDABLE!**

.....  
 (For office use only)  
 Application fee paid: \_\_\_\_\_ Check# \_\_\_\_\_ Reviewed By \_\_\_\_\_ Date \_\_\_\_\_

Approved  Disapproved  Refer to Code Enforcement Section \_\_\_\_\_ of \_\_\_\_\_ Ordinance

Planning Commission Comments: \_\_\_\_\_

\_\_\_\_\_  
 Planning Chairperson Date Code Enforcement Date

Instructions: Per § 305-a of the New York State Agriculture and Markets Law, any application for a special use permit, site plan approval, use variance or a subdivision approval requiring municipal review and approval would occur on property within a New York State Certified Agricultural District containing a farm operation or property with boundaries within 500 feet of a farm operation located in an Agricultural District shall include an Agricultural Data Statement.

Applicant	Owner if Different from Applicant
Name: <u>Valley Mobile Home Court, LLC</u>	Name: _____
Address: <u>2711 State Route 7</u> <u>Cobleskill, NY 12034</u>	_____ _____

- Type of Application: Special Use Permit, Site Plan Approval, Use Variance; Area Variance; Subdivision Approval (circle one or more)
- Description of proposed project:  
Construction of eleven (11) storage unit structures
- Location of project: Address: 6204 Duanesburg Road  
Tax Map Number (TMP) 55.-4-11.6
- Is this parcel within an Agricultural District? YES NO (Check with your local assessor if you do not know.)
- If YES, Agricultural District Number \_\_\_\_\_
- Is this parcel actively farmed? YES NO
- List all farm operations within 500 feet of your parcel. Attach additional sheet if necessary.

NAME: <u>Daniel Sells</u>	NAME: <u>Edward Putnam</u>
ADDRESS: <u>5709 Duanesburg Road</u> <u>Duanesburg, NY 12056</u>	ADDRESS: <u>242 Duane Lake Road</u> <u>Duanesburg, NY 12056</u>
Is this parcel actively farmed? YES <u>NO</u>	Is this parcel actively farmed? YES <u>NO</u>
NAME: _____	NAME: _____
ADDRESS: _____	ADDRESS: _____
Is this parcel actively farmed? YES <u>NO</u>	Is this parcel actively farmed? YES <u>NO</u>

Signature of Applicant

Signature of Owner (if other than applicant)

Reviewed by: \_\_\_\_\_

Dale R. Warner

Date

Revised 4/4/17

FARM NOTE

Prospective residents should be aware that farm operations may generate dust, odor, smoke, noise, vibration and other conditions that may be objectionable to nearby properties. Local governments shall not unreasonably restrict or regulate farm operations within State Certified Agricultural Districts unless it can be shown that the public health or safety is threatened.

NOTE TO REFERRAL AGENCY: County Planning Board review is required. A copy of the Agricultural Data Statement must be submitted along with the referral to the County Planning Department.

**CHECKLIST OF REQUIRED INFORMATION:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Title of drawing.  | <input checked="" type="checkbox"/> Septic system: Soil Investigation completed?  |
| <input checked="" type="checkbox"/> Tax Map ID #   | <input checked="" type="checkbox"/> Sewer System: Which district?   |
| <input checked="" type="checkbox"/> Zoning district  | <input type="checkbox"/> Basic SWPPP (1±)   |
| <input checked="" type="checkbox"/> Current Original Deed                                    | <input type="checkbox"/> Full Storm Water Control Plan (More than an acre)  |
| <input checked="" type="checkbox"/> NYS Survey (L.S. & P.E.)                                 | <input checked="" type="checkbox"/> Other (Building Set Backs)  |
| <input checked="" type="checkbox"/> North Arrow, scale (1"=100')                             | <input type="checkbox"/> Storm Water Control Plan   |
| <input checked="" type="checkbox"/> Boundaries of the property plotted and labeled to scale. | <input checked="" type="checkbox"/> Short or long EAF <a href="http://www.dec.ny.gov/eafmapper/">www.dec.ny.gov/eafmapper/</a>                                |
| <input checked="" type="checkbox"/> School District/Fire District                            | <input type="checkbox"/> Street pattern: Traffic study needed?  |
| <input checked="" type="checkbox"/> Green area/ landscaping                                  | <input type="checkbox"/> All property Mergers <b>REQUIRE</b> both owners Signatures on the Application  |
| <input checked="" type="checkbox"/> Existing watercourses, wetlands, etc.                    | <b>Additional Requirements for Special Use Application:</b>   |
| <input checked="" type="checkbox"/> Contour Lines (increments of 10ft.)                      | <input checked="" type="checkbox"/> New or existing building  |
| <input checked="" type="checkbox"/> Easements & Right of ways                                | <input checked="" type="checkbox"/> <b>Business Plan, Hours of operation, &amp; number of employees, floor plan, uses, lighting plan/ landscaping/signage</b> |
| <input checked="" type="checkbox"/> Abutting Properties Wells/ Sewer Systems within 100ft.   | <b>Parking, Handicap Spaces, &amp; lighting plan</b>  |
| <input checked="" type="checkbox"/> Well/ Water system                                       |   |

Date 2/28/22

**Application type:**  Major Subdv  Minor Subdv  Special Use Permit  Site/ Sketch Plan Review  LotLine Adjust  
 Proposal: 2-Lot minor subdivision

Section \_\_\_\_\_ of \_\_\_\_\_ Ordinance.

Present Owner: Valley Mobile Home Court, LLC **(AS APPEARS ON DEED!)**  
 Address: 2711 State Route 7 Cobleskill, NY Zip code: 12043  
 Phone # (required) 518-234-8614

Applicants Name (if different): Same as Above Phone# (required) Same as above  
 Location of Property (if different from owners) 6204 Duanesburg Road  
 Tax Map # 55.-4-11.6 Zoning District C-2

Signature of Owner (S) if different from Applicant **(AS APPEARS ON DEED!)**  
**LANDS CONVEYED TO (REQUIRED FOR MERGERS)** N/A  
 Signature of receiving Property Owner \_\_\_\_\_ **(AS APPEARS ON DEED!)**

I CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT. The Applicant hereby certifies that he/she is the owner of the above property or has duly authorized, in writing, by the owner of record to make this application. Further, by signing this application, the owner gives permission for a representative (s) of the Town of Duanesburg to walk the property for the purposes of conducting a site review.

[Signature] Date 3/1/22  
 Signature of Owner(S) and/or Applicant(S)

**ALL APPLICATION FEES ARE NON-REFUNDABLE!**

\*\*\*\*\*  
 Application fee paid: \_\_\_\_\_ Check# \_\_\_\_\_ (For office use only)  
 Reviewed By \_\_\_\_\_ Date \_\_\_\_\_

Approved  Disapproved  Refer to Code Enforcement Section \_\_\_\_\_ of \_\_\_\_\_ Ordinance

Planning Commission Comments: \_\_\_\_\_

\_\_\_\_\_  
 Planning Chairperson Date Code Enforcement Date



Instructions: Per § 305-a of the New York State Agriculture and Markets Law, any application for a special use permit, site plan approval, use variance or a subdivision approval requiring municipal review and approval would occur on property within a New York State Certified Agricultural District containing a farm operation or property with boundaries within 500 feet of a farm operation located in an Agricultural District shall include an Agricultural Data Statement.

Applicant	Owner if Different from Applicant
Name: <u>Valley Mobile Home Court, LLC</u>	Name: _____
Address: <u>2711 State Route 7</u> <u>Cobleskill, NY 12034</u>	_____

1. Type of Application: Special Use Permit; Site Plan Approval; Use Variance; Area Variance; ~~Subdivision Approval~~ (circle one or more)
2. Description of proposed project:  
2-Lot Minor Subdivision
3. Location of project; Address: 6204 Duanesburg Road  
Tax Map Number (TMP) 55.-4-11.6
4. Is this parcel within an Agricultural District? YES  NO (Check with your local assessor if you do not know.)
5. If YES, Agricultural District Number \_\_\_\_\_
6. Is this parcel actively farmed?  YES NO
7. List all farm operations within 500 feet of your parcel. Attach additional sheet if necessary.

NAME: <u>Daniel Sells</u>	NAME: <u>Edward Putnam</u>
ADDRESS: <u>5709 Duanesburg Road</u> <u>Duanesburg, NY 12056</u>	ADDRESS: <u>242 Duane Lake Road</u> <u>Duanesburg, NY 12056</u>
Is this parcel actively farmed? YES <input checked="" type="radio"/> NO	Is this parcel actively farmed? YES <input checked="" type="radio"/> NO
NAME: _____	NAME: _____
ADDRESS: _____	ADDRESS: _____
Is this parcel actively farmed? YES NO	Is this parcel actively farmed? YES NO

  
Signature of Applicant

\_\_\_\_\_  
Signature of Owner (if other than applicant)

Reviewed by: Dale R. Warner Date \_\_\_\_\_

Revised 4/4/17

FARM NOTE

Prospective residents should be aware that farm operations may generate dust, odor, smoke, noise, vibration and other conditions that may be objectionable to nearby properties. Local governments shall not unreasonably restrict or regulate farm operations within State Certified Agricultural Districts unless it can be shown that the public health or safety is threatened.

NOTE TO REFERRAL AGENCY: County Planning Board review is required. A copy of the Agricultural Data Statement must be submitted along with the referral to the County Planning Department.

**NOTICE OF DETERMINATION**  
**of the Town of Duanesburg**

Date of Determination Jan 10, 2022

Application of Valley Mobile Home Court, LLC under section  
12.4 (33) of the (Village of Delanson/ Town of Duanesburg)  
Zoning Ordinance.

Eric Dolan - owner

Applicant Valley Mobile Home (Chris Lajoie) Engineering  
Address 2711 St Rt. 7 E  
Catskill, NY 12043

Phone \_\_\_\_\_ Zoning District C-2 SBL# 35.00-4-11.6

Description of (5@19,000 + 6@8,000)  
Project: 11 storage units, gravel driveway, stormwater management system

Determination:

use is permitted however need subdivision as it is not an  
accessory use

Reason supporting determination:

Town of Duanesburg zoning ordinance adopted 6/11/15 Section  
3.5.2; section 5.2.2

Action: Refer to Planning Board for the purpose of subdivision + special use

Code Enforcement Officer: Dale Warner

#06-22

NOTICE OF DETERMINATION  
of the Town of Duanesburg

Date of Determination 3/4/22

Application of Valley Mobile Home Court, LLC under section 3.4 of the (Village of Delanson/ Town of Duanesburg)  
sub division Ordinance.

Applicant Valley Mobile Home Court LLC  
Address 2211 St Rt 7  
Cablekill, NY 12043

Phone 58-234-8614 Zoning District C-2 SBL# 55.00-4-11.6

Description of Project: Divide an existing 103.76 Acre parcel into two portions Lot #2 93.5 Acres Lot #3 10.24 Acre portion (Lot #1 previous subdivision)  
Determination: Minor subdivision

Reason supporting determination:

Town of Duanesburg Subdivision Ordinance adopted 3/9/95  
Articles 2, 15, 32, 3.4 section Town of Duanesburg  
Zoning Ordinance adopted 6/11/15 Section 12.5, 12.6

Action: Refer to Planning for the purpose of subdivision

Code Enforcement Officer: De Wain





Department of  
Transportation

KATHY HOCHUL  
Governor

MARIE THERESE DOMINGUEZ  
Commissioner

PATRICK S. BARNES, P.E.  
Regional Director

RECEIVED

JUN 06 2022

TOWN OF DUANESBURG  
TOWN CLERK

May 27, 2022

Ms. Melissa Deffer  
Building, Planning and Zoning Clerk  
Town of Duanesburg  
Duanesburg, NY 12056

**Re: SEQR: 2022.1-6.006  
Notification of Request for Lead Agency Status  
6204 Duanesburg Rd: Proposed Self Storage Facility: Pine Grove Dairy  
Town of Duanesburg, Schenectady County**

Dear Ms. Defferi:

The New York State Department of Transportation has reviewed the SEQR documentation for a proposed self-storage facility at 6204 Duanesburg Rd in the Town of Duanesburg, per the correspondence dated May 4, 2022 and offers the following:

1. The NYSDOT acknowledges the Town of Milton will be designated as the Lead Agency for this environmental review. NYSDOT believes we are an involved agency under SEQR.
2. A NYSDOT Highway Work Permit (PERM 33-COM) will be required for the commercial driveway access on Duanesburg Rd. (State Route 7).
3. A PERM 32 NYSDOT permit application will be required for any utility work in the NYSDOT right-of-way. Please submit documentation the Town will take ownership of any proposed utilities in NYSDOT right-of-way.

If you have any questions pertaining to the Highway Work Permit process or requirements, please contact Ken Davis, Regional Permit Engineer, at [Kenneth.Davis@dot.ny.gov](mailto:Kenneth.Davis@dot.ny.gov) or (518) 457-5691 or contact Matt Haggerty at [Matt.Haggerty@dot.ny.gov](mailto:Matt.Haggerty@dot.ny.gov) or (518) 729-4790.

Sincerely,

Robert E. Rice Jr, P.E.  
Regional Program and Planning Manager

# Valley Mobile Home Court, LLC

P.O. Box 130 Howes Cave, NY 12092

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## Storage Facility Business Plan

I, Eric Dolen, Managing Member of Valley Mobile Home Court, am proposing to build a storage facility to be located at 6204 Duanesburg Road Duanesburg in the Town of Duanesburg. Our intention is to create a facility similar to our current storage facility located at 2054 Western Turnpike Duanesburg NY.

Our intention is to erect 10 storage buildings. Each building is to have 24-hour / 7 days a week accessibility to all our customers. In addition, we will establish a gravel parking area for outside storage for vehicles like RVs and boats.

The area lighting will consist of wall pack unit lights with cover and mounted motion sensor secured to the building, aimed downward to ensure that area will not be over lighted.

Traffic circulation will provide a private roadway to the facility. The entrance to be located near the Valero Service Station.

Esthetically, the current landscaping consists of woods surrounding the future facility. We will be adding landscaping per our print.

The main office for our storage facility buildings is located at 2711 State Rt 7 Cobleskill, NY, and we can be reached at: (518) 296-8377. Office hours are: Monday through Friday from 8:00am until 4:30 pm. The business answering machine lists an answering service phone number in the event of an emergency for after hours.

If you have any questions in regards to this matter, please feel free to contact our office at (518) 296-8377.

Respectfully,

Eric J. Dolen  
Managing Member, Valley Mobile Home Court, LLC

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Phone (518) 296-8377

*superiorstorage.rental@gmail.com*

Fax (518) 296-8384





















# OFFICE OF THE SCHENECTADY COUNTY CLERK



620 STATE STREET  
SCHENECTADY, NY 12305-2114  
PHONE (518) 388-4220  
FAX (518) 388-4224

Cara M. Ackerley  
County Clerk

Instrument Number - 202162153  
Recorded On 12/9/2021 At 2:44:47 PM  
\* Instrument Type - DEED  
\* Book/Page - DEED/2073/387  
\* Total Pages - 3  
Invoice Number - 1108874      User ID: KAF  
\* Document Number - 2021-5793  
\* Grantor - VALLEY MOBILE HOME COURT LLC  
  
\* Grantee - VALLEY MOBILE HOME COURT LLC

\*RETURN DOCUMENT TO:  
MURDOCK ABSTRACT CORPORATION

<u>* FEES</u>	
NY LAND SUR	\$4.75
NY E & A FEES	\$116.00
NY LAND COMP SUR	\$14.25
CO GENERAL REVENUE	\$40.00
CO LAND SUR	\$0.25
CO E & A FEES	\$9.00
CO LAND COMP SUR	\$0.75
TOTAL PAID	\$185.00

TRANSFER TAX  
Real Estate Transfer Tax Num - 1915  
Transfer Tax Amount - \$ 0.00

I hereby CONFIRM that this document is  
Recorded in the Schenectady County Clerk's Office  
in Schenectady, New York

Cara M. Ackerley  
Schenectady County Clerk

THIS IS AN ENDORSEMENT PAGE

## Do Not Detach

THIS PAGE IS NOW PART OF THIS LEGAL DOCUMENT

\* - Information denoted by an asterisk may change during the verification process and may not be reflected on this page.

INSTRUMENT NUMBER - 202162153



## **WARRANTY DEED**

### **THIS INDENTURE**

Made the 16 day of November, 2021

Between **VALLEY MOBILE HOME COURT, L.L.C., a limited liability company with an office at 2711 State Route 7, Cobleskill, New York 12043**, party of the first part, and

**VALLEY MOBILE HOME COURT, L.L.C., a limited liability company with an office at 2711 State Route 7, Cobleskill, New York 12043**, party of the second part,

**WITNESSETH** that the party of the first part, in consideration of -----ONE----- DOLLAR (\$1.00) lawful money of the United States, and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part it's heirs and assigns forever, all

**ALL THAT TRACT OR PARCEL OF LAND** situate in the Town of Duanesburg, County of Schenectady and State of New York, being Lot 2 on a map entitled "Pine Grove Dairy" prepared by Gerald R. Gray, Licensed Land Surveyor, dated August 30, 2021, revised October 6, 2021, and filed in the Schenectady County Clerk's Office on October 21, 2021 as Instrument Number: 202152803.

**BEING A PORTION OF THE SAME PREMISES** conveyed to Valley Mobile Home Court, L.L.C. by Warranty Deed from David C. Vincent and Ann M. Vincent, dated the 6<sup>th</sup> day of May, 2021, and recorded in the Schenectady County Clerk's Office, on the 13<sup>th</sup> day of May, 2021 in Book 2058 of Deeds at Page 665, Instrument No. 202121945.

*This conveyance is made with the unanimous consent of the Members of the party of the first part herein and does not constitute all, or substantially all of the assets of the said party of the first part.*

*This conveyance is made subject to any and all covenants, conditions, restrictions and easements of record contained in the chain of title and affecting said premises.*

*Together* with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

*To have* and to hold the premises herein granted unto the party of the second part, it's heirs and assigns forever.

*And* said party of the first part covenants as follows:

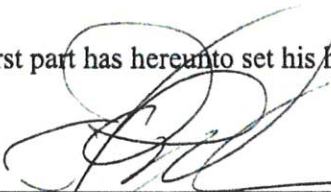
*First*, That the party of the second part shall quietly enjoy the said premises;

**Second**, That said party of the first part will forever Warrant the title to said premises.

**Third**, That in compliance with Section 13 of the Lien Law, the grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

**In Witness Whereof**, the party of the first part has hereunto set his hand and seal the day and year first above written.

**In Presence of**

  
\_\_\_\_\_  
**ERIC J. DOLEN, Managing Member**  
**VALLEY MOBILE HOME COURT, L.L.C.**

**ACKNOWLEDGEMENT**

**STATE OF NEW YORK**                    )  
**COUNTY OF SCHENECTADY**        )ss.:

On the 16<sup>th</sup> day of November, in the year 2021 before me, the undersigned, personally appeared **ERIC J. DOLEN**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

  
\_\_\_\_\_  
**NOTARY PUBLIC**

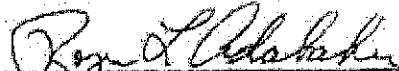
Record and Return to:


Shalini Natesan  
Notary Public, State of New York  
No. 02NA63139-0  
Qualified in Albany County  
Commission Expires 10-27-2022



IN WITNESS WHEREOF, the parties have signed their names below.


BOOK 1449 PAGE 0186

  
\_\_\_\_\_  
Roger L. Adabahr

  
\_\_\_\_\_  
Carl H. Adabahr

STATE OF NEW YORK  
COUNTY OF SCHENECTADY  
CITY OF SCHENECTADY

On this 28 day of ~~January~~ <sup>February</sup>, Nineteen Hundred and Ninety-Five me, the subscriber, personally appeared Roger L. Adabahr and Carl H. Adabahr to me personally known and known to me to be the same persons described in and who executed the within instrument, and they duly and severally acknowledged to me that they executed the same.

  
\_\_\_\_\_  
Notary Public in the State of New York,  
my commission expires Aug 31, 1995

**Phase IA/IB Cultural Resources Survey  
Pine Grove Dairy Development Project,  
Town of Duaneburg, Schenectady County New York**

prepared for

**Empire Engineering, PLLC  
1900 Duaneburg Road  
Duaneburg, NY 12056**

prepared by

**David Moyer and Douglas Idleman**

**Birchwood Archaeological Services, Inc.  
131 Marion Avenue  
Gilbertsville, NY 13776  
[www.birchwoodarchaeology.com](http://www.birchwoodarchaeology.com)**

June 2021

## **Management Summary**

Phase IA/IB Cultural Resources Survey, Pine Grove Dairy Development Project,  
Town of Duanesburg, Schenectady County New York

### **SHPO Project Review Number:**

**Involved State and Federal Agencies:** DEC

**Phase of Survey:** IA/IB

### **Location Information**

Location: north side of NYS Route 7  
Minor Civil Division: Town of Duanesburg  
County: Schenectady

### **Survey Area (Metric & English)**

Length: 1,450 ft approx (441.9 m)  
Width: 1,000 ft approx (304.8 m)  
Depth: >5 ft (1.5 m)  
Number of Acres Surveyed: 20.25  
Number of Square Meters & Feet Excavated:  
Percentage of the Site Excavated:

**USGS 7.5 Minute Quadrangle Map:** Duanesburg

### **Archaeological Survey Overview**

Number & Interval of Shovel Tests: 401 STPs (40 cm round) in 15 m (49.2 ft) intervals

Number & Size of Units:  
Width of Plowed Strips:  
Surface Survey Transect Interval:

### **Results of Archaeological Survey**

Number & name of prehistoric sites identified: 0  
Number & name of historic sites identified: 0  
Number & name of sites recommended for Phase II/Avoidance: 0

### **Results of Architectural Survey**

Number of buildings/structures/cemeteries within project area: 0  
Number of buildings/structures/cemeteries adjacent to project area: 3  
Number of previously determined NR listed or eligible buildings/structures/cemeteries/districts: 0  
Number of identified eligible buildings/structures/cemeteries/districts: 0

Report Author(s): David Moyer and Douglas Idleman

Date of Report: June 2021



## Executive Summary

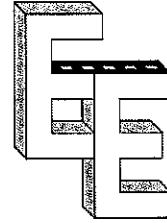
A Phase IA/IB cultural resources survey has been completed for the proposed Pine Grove Dairy Development Project, located on the north side of NYS Route 7 in the Town of Duaneburg, Schenectady County, New York (Figures 1 and 2; Photos 1-49). The current Phase IA/IB survey was conducted in advance of a currently undetermined development project. The Area of Potential Effect (APE) for this project is approximately 20.25 acres. While the design of the project has not been completed, it is assumed that the depth of the ground disturbance may exceed five feet (1.5 m) in all areas of proposed construction.

A Phase IA review indicated that the project area is moderately sensitive for prehistoric resources, due to its location near several water sources and its proximity to two previously recorded prehistoric sites. The area is also considered highly sensitive for historic resources due to its location near a historic roadway and its proximity to five previously identified historic structures, four of which are currently listed on the National Register of Historic Places.

All of the proposed APE was surveyed using the subsurface testing. A total of 401 STPs were excavated at 15 m (49.2 ft) intervals to form a grid over the entire area of proposed construction. Of these 401 STPs, four (1.0%) recovered historic or modern cultural material including fragments of porcelain bathroom tile, brick, clear bottle glass and asphalt. No precontact artifacts or features were encountered and no archaeological sites were identified as part of the subsurface testing.

Based upon the negative results of the Phase IA/IB survey, it appears that the proposed development will have no adverse impact to any historic properties in the vicinity. No additional archaeological investigations appear warranted and we, recommend that the project be allowed to proceed. These recommendations are subject to the review and concurrence of the New York State Office of Parks, Recreation, and Historic Preservation.

# EMPIRE ENGINEERING, PLLC



January 6, 2022

Town of Duanesburg  
Planning Board  
5853 Western Turnpike  
Duanesburg, NY 12056

Attn: Dale Warner, Planner

## Project Narrative

The subject project identified as **Pine Grove Dairy Self-Storage** is located along **Duanesburg Road** in the Town of Duanesburg. The applicant is Valley Mobile Home Court, LLC of Cobleskill, the owner and occupant of the site. The owner's address is 2711 State Route 7, Cobleskill, NY 12043. The owner's contact is Eric Dolen, (518) 234-8614.

## Project Description & Purpose

The proposed project is the construction of eleven (11) storage unit structures with associated storm water management system. The site includes approximately 14.4 Acres of buildings, driveway and gravel storage and 29.4 Acres of total disturbance. The project will also incorporate an associated driveway, power utilities and stormwater drainage area. There are (11) proposed buildings, five (5) units at 10,000 sf of gross floor area each, and six (6) units of 8,000 sf each. Units will be 1-story, approximately 12-15 ft total height. The proposed structures are intended for self-storage use and will not require any sanitary sewer or water supply fixtures. The subject property is zoned Manufacturing (C-2), and Light Industrial. The total parcel is approximately 103.76± Acres. There is an existing barn structure with attached accessory silos and a single-family dwelling on the remainder of the property outside of the proposed project site.

This business typically has 0-1 employees on-site only on occasion. Hours of operation are typically open 24 hours a day, 7 days a week to allow customers access as needed.

## Neighborhood Character

The proposed project is not anticipated to have an impact on the adjoining properties any greater than the various existing uses and developments. This area of Town is interspersed with various commercial facilities located on parcels similar to this site and with similar proximity to adjoining residential uses. Access to the proposed facility will be directly off of NYS Route 7 in a highly visible location with no impact to residential neighborhoods. The owner also operates another self-storage facility within the Town of Duanesburg to the South along Route 20. This facility has been maintained well and occupancy has been essentially maxed out.

Empire Engineering, PLLC

1900 Duanesburg Road  
Duanesburg, NY 12056

PH: (518) 858-4117

E: CLongo@EmpireEng.net

The new structures will not have any effect on the town communication, infrastructure or emergency systems due to its close proximity to the State Highway. This project will produce minimal noise, will be in keeping with the visual aesthetics, and will meet all Town codes regarding drainage and runoff. The proposed buildings are outside of the required side yard and front yard setback. The project is not anticipated to produce an increase in water usage, or an increase in solid waste generated at the site. There is no bulk storage of solvents or chemical proposed.

### **Stormwater**

The project includes the commercial development involving ground disturbance of greater than one acre of land. A Full Stormwater Pollution Prevention Plan (SWPPP) which incorporates post-construction controls will be required and authorization obtained from NYSDEC for the proposed development project. The proposed stormwater design will meet all requirements outlined in the 2015 NYS Stormwater Design Manual and be in compliance with the NYS DEC General Permit 0-20-001.

There has been prior disturbance on the subject site authorized under a previously filed Notice of Intent for construction disturbance associated with a slope flattening operation. This activity incorporated Erosion and Sediment Control practices with no new permanent impervious areas.

### **Traffic**

The subject use has a relatively low traffic intensity and the project is not anticipated to produce a significant increase in traffic along State Route 7. From the ITE Trip Generation Manual 10<sup>th</sup> Edition it is anticipated that the use will generate approximately 10 trips during the AM peak hour and 17 trips during the PM peak hour. The Average Annual Daily Traffic (AADT) for this section of NYS Route 7 was 4,670 in 2019. Based on the limited number of generated trips and the relative trips contributing to the existing AADT, additional traffic assessment or review is not warranted. The existing gravel driveway access for the site off of NYS Route 7 will be improved in accordance with NYSDOT standards and a permit for the improvements will be required.

### **Archeological**

The Office of Parks, Recreation & Historic Preservation database was reviewed for potential Historic or Cultural significant data at or near the project site. The database revealed that the site is near an "archeologically sensitive bubble". The specific project area is outside of the bubble however due to the close proximity, a Phase 1A/1B Cultural Resource Survey was conducted. The study revealed no archeological significant finds within the project site. The executive summary of this report is attached to the Short Environmental Assessment Form.

### **Signage**

A pole mounted sign is proposed to identify the facility to be located along the entrance at Route 7. The pole mounted sign will comply with Town code for setback, height, size and illumination.



**Instructions for Completing Part 1**

DUANESBURG

**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 1 is accurate and complete.

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

Name of Action or Project: Pine Grove Dairy - Self Storage		
Project Location (describe, and attach a general location map): 6204 Duanesburg Road, Town of Duanesburg		
Brief Description of Proposed Action (include purpose or need):  The proposed action is the construction of self-storage unit structures and impervious gravel storage area with associated driveway and stormwater management system. The initial phase of the project includes the construction of ten (10) self-storage structures and 2.0 acres of outdoor storage. The total project includes approximately 18 acres of impervious with future phase developments yet to be determined. Future phases could incorporate a combination of self-storage buildings and outdoor storage. The project also includes a minor subdivision of the existing barn and single family dwelling from the proposed self-storage project.		
Name of Applicant/Sponsor: Valley Mobile Home Court, LLC		Telephone: 518-234-8614
		E-Mail: superiorhousingllc@gmail.com
Address: 2711 State Route 7		
City/PO: Cobleskill,	State: NY	Zip Code: 12043
Project Contact (if not same as sponsor; give name and title/role): Christopher Longo, PE c/o Empire Engineering, PLLC		Telephone: 518-858-4117
		E-Mail: clongo@empireeng.net
Address: 1900 Duanesburg Road		
City/PO: Duanesburg	State: NY	Zip Code: 12056
Property Owner (if not same as sponsor): Same as applicant		Telephone:
		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 Counsel, Town Board, <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No or Village Board of Trustees		
b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Town of Duanesburg, Planning Board - Special Use Permit	January 7, 2022
c. City, Town or Village Zoning Board of Appeals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
d. Other local agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
e. County agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sch County - Referral (239m)	
f. Regional agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
g. State agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NYSDEC Div of Water, Bureau of Water -SWPPP, NYSDOT - HWP, NYS OPRHP - Effect Finding	
h. Federal agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	USACOE	
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 I

**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):

NYS Heritage Areas: Mohawk Valley Heritage Corridor

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?  
Manufacturing and Light Industrial (C-2)

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? Duanesburg Central School District

b. What police or other public protection forces serve the project site?  
New York State Police, Schenectady County Sheriff's

c. Which fire protection and emergency medical services serve the project site?  
Duanesburg Volunteer Fire District 2

d. What parks serve the project site?  
None

**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)? Commercial - Self Storage Units

b. a. Total acreage of the site of the proposed action? \_\_\_\_\_ 103.8 acres  
 b. Total acreage to be physically disturbed? \_\_\_\_\_ 30.7 acres  
 c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? \_\_\_\_\_ 103.8 acres

c. Is the proposed action an expansion of an existing project or use?  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)  
Commercial 2-Lot Subdivision  
 ii. Is a cluster/conservation layout proposed?  Yes  No  
 iii. Number of lots proposed? 2  
 iv. Minimum and maximum proposed lot sizes? Minimum 11 Ac Maximum 93 Ac

e. Will the proposed action be constructed in multiple phases?  Yes  No  
 i. If No, anticipated period of construction: \_\_\_\_\_ months  
 ii. If Yes:  
 • Total number of phases anticipated \_\_\_\_\_ 5  
 • Anticipated commencement date of phase 1 (including demolition) \_\_\_\_\_ June month 2022 year  
 • Anticipated completion date of final phase \_\_\_\_\_ June month 2028 year  
 • Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: \_\_\_\_\_  
Phases are sequenced to minimize impact of construction vehicles and to allow for stormwater control to be in place prior to start of subsequent phases.



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

If Yes, show numbers of units proposed.

	<u>One Family</u>	<u>Two Family</u>	<u>Three Family</u>	<u>Multiple Family (four or more)</u>
Initial Phase	_____	_____	_____	_____
At completion	_____	_____	_____	_____
of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)?  Yes  No

If Yes,

- i. Total number of structures 10  
ii. Dimensions (in feet) of largest proposed structure: 15 height; 50 width; and 200 length  
iii. Approximate extent of building space to be heated or cooled: 0 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: Stormwater Management  
ii. If a water impoundment, the principal source of the water:  Ground water  Surface water streams  Other specify: On-site runoff from parking lots and buildings  
iii. If other than water, identify the type of impounded/contained liquids and their source.  
N/A  
iv. Approximate size of the proposed impoundment. Volume: .4 million gallons; surface area: .6 acres  
v. Dimensions of the proposed dam or impounding structure: N/A height; N/A length  
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):  
N/A

## D.2. Project Operations

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

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



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- 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 project create in relation to total size of project parcel?

\_\_\_\_\_ Square feet or \_\_\_\_\_<sup>18</sup> acres (impervious surface)

\_\_\_\_\_ Square feet or \_\_\_\_\_<sup>103.8</sup> acres (parcel size)

ii. Describe types of new point sources. Buildings, driveways and outdoor storage

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)?

Stormwater will be directed to on-site stormwater management ponds.

- If to surface waters, identify receiving water bodies or wetlands: \_\_\_\_\_

- 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)

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

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

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<sub>2</sub>)
- \_\_\_\_\_ Tons/year (short tons) of Nitrous Oxide (N<sub>2</sub>O)
- \_\_\_\_\_ Tons/year (short tons) of Perfluorocarbons (PFCs)
- \_\_\_\_\_ Tons/year (short tons) of Sulfur Hexafluoride (SF<sub>6</sub>)
- \_\_\_\_\_ Tons/year (short tons) of Carbon Dioxide equivalent of Hydrofluorocarbons (HFCs)
- \_\_\_\_\_ Tons/year (short tons) of Hazardous Air Pollutants (HAPs)



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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 1/2 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: \_\_\_\_\_  
15kWh

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

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: 6:00 am - 6:00 pm
- Saturday: 6:30 am - 4:00 pm
- Sunday: \_\_\_\_\_
- Holidays: \_\_\_\_\_

ii. During Operations:

- Monday - Friday: 24 hrs
- Saturday: 24 hrs
- Sunday: 24 hrs
- Holidays: 24 hrs

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m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both?  Yes  No

If yes:

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

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:

Wall mounted fixtures located on the sides and ends of proposed self-storage structures. Mounting height approximately 9-10' with shielded cut-offs.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen?  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: \_\_\_\_\_ 6 tons per \_\_\_\_\_ month (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: Separate recycling containers for solid waste disposal
- Operation: \_\_\_\_\_

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

- Construction: Hired waste hauler
- Operation: \_\_\_\_\_



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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): \_\_\_\_\_

ii. If mix of uses, generally describe: \_\_\_\_\_

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	1.8	19.8	+18.0
• Forested	39.6	36.7	-2.9
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	47.1	12.9	-34.2
• Agricultural (includes active orchards, field, greenhouse etc.)	15.1	5.2	-9.9
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			



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

i. If Yes: explain: \_\_\_\_\_

d. Are there any facilities serving children, the elderly, people 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: \_\_\_\_\_  
\_\_\_\_\_

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? \_\_\_\_\_ > 20 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:

Burdett-Scriba, BvB	33.8 %
Burdett-Scriba, BvC	38.5 %
Nunda channery, NuD	18.0 %

d. What is the average depth to the water table on the project site? Average: \_\_\_\_\_ > 20 feet

e. Drainage status of project site soils:  Well Drained: \_\_\_\_\_ % of site  
 Moderately Well Drained: 13 % of site  
 Poorly Drained: 87 % of site

f. Approximate proportion of proposed action site with slopes:  0-10%: 51 % of site  
 10-15%: 36 % of site  
 15% or greater: 13 % 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 \_\_\_\_\_ Classification \_\_\_\_\_
- Lakes or Ponds: Name 863-686 Classification C
- Wetlands: Name Federal Waters, Federal Waters, 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

mi. Identify the predominant wildlife species that occupy or use the project site:

Cottontail Rabbit

Whitetailed Deer

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

If Yes:

i. Species and listing (endangered or threatened):

Northern Long-eared Bat

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: SCHE001

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:

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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 \*See attached No Effect letter from OPRHP

ii. Name: Christman Bird & Wildlife Sanctuary, Delanson Historic District, George W. Farmhouse

iii. Brief description of attributes on which listing is based:  
Conservation Area, Architecture, Architecture/Engineering

---

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?  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): Archaeological Sites

ii. Basis for identification: Phase 1A/1B Cultural Resource Survey

---

h. Is the project site within five 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.

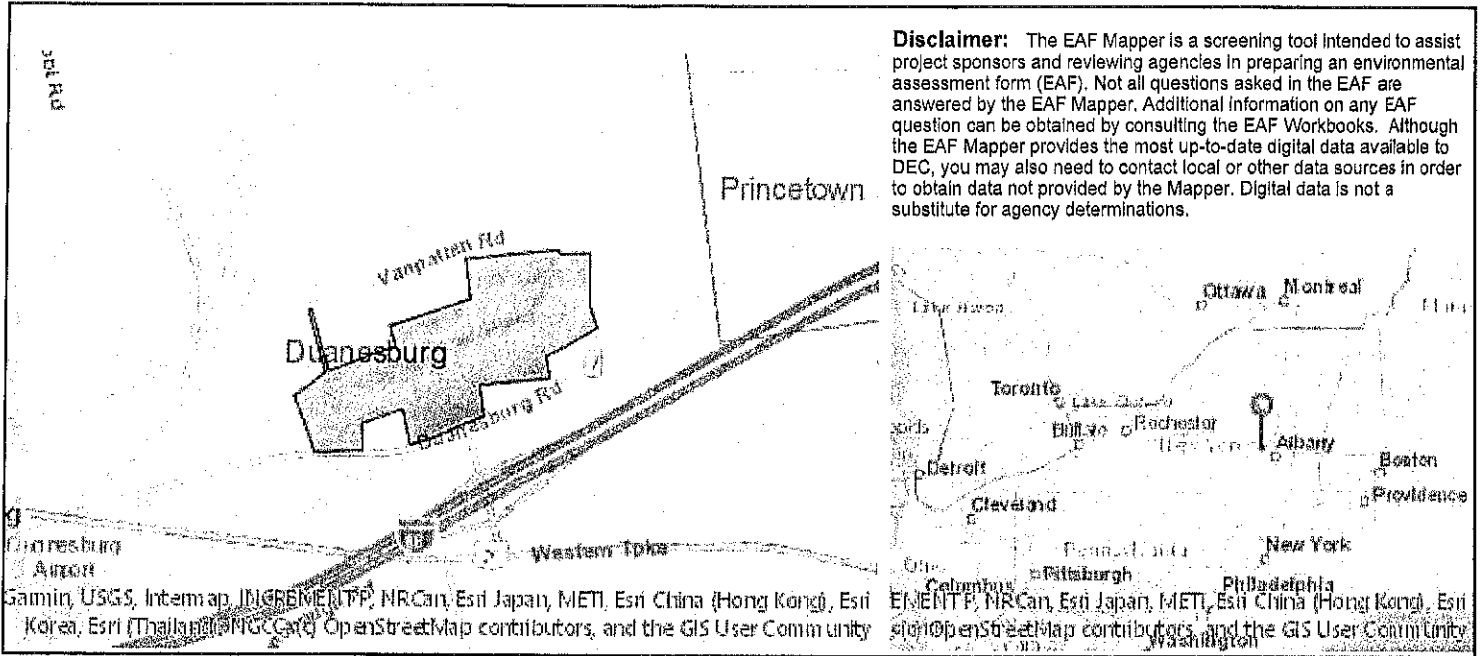
Applicant/Sponsor Name Eric Dolen c/o Valley Mobile Home Court, LLC Date 3/3/22 Rev 3/22/2022

Signature  Christopher Longo Title Project Engineer

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B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas: Mohawk Valley Heritage Corridor
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
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Lake/Pond Name]	863-686
E.2.h.iv [Surface Water Features - Lake/Pond 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]	No


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E.2.i. [Aquifers]	Yes
E.2.i. [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]	Northern Long-eared Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	SCHE001
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]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

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**Parks, Recreation,  
and Historic Preservation**

KATHY HOCHUL  
Governor

ERIK KULLESEID  
Commissioner

January 07, 2022

Christopher Longo  
Owner, P.E.  
Empire Engineering, PLLC  
1900 Duanesburg Road  
Duanesburg, NY 12056

Re: DEC  
Pine Grove Dairy - Self-Storage  
Town of Duanesburg, Schenectady County, NY  
22PR00095

Dear Christopher Longo:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP) as part of your SEQRA process. These comments are those of OPRHP 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. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

OPRHP has reviewed the Phase IA/IB Archaeological Survey Report entitled "Phase IA/IB Cultural Resources Survey, Pine Grove Dairy Development Project, Town of Duanesburg, Schenectady County New York" prepared by Birchwood Archaeological Services, Inc. (June 2021; 22SR00012). No archaeological sites were identified by the survey. Therefore, it is the opinion of the OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If you have any questions, I can be reached at [Jessica.Schreyer@parks.ny.gov](mailto:Jessica.Schreyer@parks.ny.gov).

Sincerely,

Jessica Schreyer  
Scientist Archaeology

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