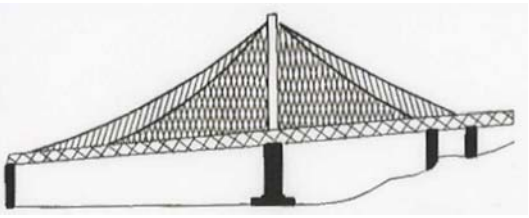
ENGINEERS REPORT

LOCATION
Carver Court Subdivision
Upper Mannix Road
Town of East Greenbush
State of New York

PREPARED FOR
CLDZ LLC
494 Western Turnpike
Altamont, NY 12009

Date Prepared
September 15, 2021



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1.0 PROJECT DESCRIPTION

Carver Court Subdivision is a 91+/- acre cluster subdivision located in the Town of East Greenbush, Rensselaer County. The property has frontage on Upper Mannix Road and Thompson Hill Road. The parcel is located within the R-B Zone and is owned by CLDZ Development LLC.

It is proposed to develop the parcel as cluster subdivision with smaller lots, larger open space and the same allowable density as a traditional subdivision. This allows for the minimized land disturbance on the parcel. A traditional subdivision has been demonstrated to show that there can be 110 residential building lots developed on the parcel under the current zoning requirements. It is proposed to develop 110 residential units which will consist of estate building lots, cottage building lots and duplex town homes. Through utilizing the cluster development provision it is possible to leave 42.61 Acres or 47% of the parcel as open space.

The proposed lots will be developed on 6,048 L.F. of new town roadways. All primary access will be off of Upper Mannix Road with emergency access provided to Thompson Hill Road. Additional connection points have been stubbed for connections to the parcels to the north and west of the development.

Water service to the parcel will be accessed off of Thompson Hill Road. A series 8" and 12" PVC water mains will be looped through the parcel and loop to the new water main in Tech Valley Drive.

Sanitary sewer service will be provided to the residences via a gravity sewer main within the roadways which will discharge the effluent into the suction lift pump station near Mannix Road. The pump station will pump the effluent to the existing gravity sewer on Thompson Hill Road.

There are approximately 9.2 Acres of USACOE Jurisdictional Wetlands on the subject parcel. The proposed development will disturb approximately 0.20 Acres of wetlands for the necessary road crossings. An individual permit application with the USACOE and Joint Permit Application have been applied for. USACOE wetlands do not have any required buffer areas; however, the Town of East Greenbush limits development within 50' of their boundaries.

1.5 Subsurface Conditions

1. Soils

According to the "Soil Survey of Rensselaer County", Soils found within the area of analysis are as follows:

Soil Type	Abbreviation	Description	Soil Group
Alden	An	Silt Loa,	C/D
Bernarston	Be	Gravelly Silt Loam	C/D
Madalin	Mb	Silt Loam	C/D
Natchaug	Nt	muck	A/D
Raynham	Ra	Silt Loam	C/D

Five test pits were performed at each of the storm water management locations. All of the test pits were consistent with little variability and can be summarized as follows:

0 – 8" – Loamy Br. Topsoil
8"-42" – Silty gravel with shale bedrock
42" – Ripable shale bedrock
50" – Refusal
No Groundwater
No Mottling

Due to the depth to bedrock and wetlands, the lower hydrologic group was utilized for each of the soils with dual soil groups for both pre-development and post-development conditions.

2.0 DRAINAGE

For the drainage analysis of this project refer to the project SWPPP dated May 26, 2021 and last revised July 28, 2021.

3.0 SEWER ANALYSIS

It is proposed to construct a gravity sewer system to serve the proposed subdivision. The gravity sewers will convey flows from the individual residences to the proposed pump station located near the southerly portion of the parcel. The gravity sewer will be comprised of 8" PVC SDR-26 pipes and 4' diameter concrete manholes. The minimum pipe slope will be 0.50% with a maximum run of 400'.

The following is the anticipated sewer loading from the proposed development:

Townhouses – 60 Units x 3 Bedrooms/Unit = 180 Bedrooms
Cottages – 36 Units x 3 Bedrooms/Unit – 108 Bedrooms
Estate Houses – 14 Units x 4 Bedrooms/Unit = 56 Bedrooms
Total Number of Bedrooms = 344 Bedrooms

Average Daily Flow
344 Bedrooms x 110 GPD/Br = 37,840 GPD

Average GPM
37,840 GPD/24 Hours/60 Minutes = 26.28 GPM

Peak GPM (4.0 PF)
26.28 GPM x 4.0 = 105.11 GPM

An 8" PVC pipe at 0.5% slope can convey 415 GPM exceeding the peak flow rate calculated for this development.

The gravity sewer will discharge into a Gorman Rupp suction lift pump station. The pump station will have an auto start battery negating the need for a backup generator. A 10'x16 fiberglass enclosure will house the unit. The pumps will be T3A pumps with 15 HP Motors. The pump station will pump the effluent through a 6" DR11 force main to the gravity sewer on Thompson Hill Road. The pump station will pump at a rate of 105 GPM equal to the peak calculated flow rate.

The wet well for the pump station will be an 8' diameter concrete wet well. The filling time for the wet well has been calculated at 20 minutes between the pump off and pump on. The fill time has been calculated based upon the average daily flow of 37,840 GPM. A 24 hour emergency overflow alarm will be provided.

Pump station calculations and details can be found in Appendix B.

4.0 WATER

A 30" ductile iron pipe water main runs along the east side of Thompson Hill Road. It is proposed to tap into this main with 30"x12" tapping sleeve to provide potable water service to the proposed development. A hydrant flow test performed by this office produced the following data along Thompson Hill Road:

- Static Pressure – 33 PSI
- Flow Rate – 1,110 GPM
- Residual Pressure – 31 PSI

Additionally, it is proposed to loop the water main through the parcel to the existing water main at the terminus of Tech Valley Drive just south of Mannix Road. A hydrant flow test performed by this office produced the following data along Tech Valley Drive:

- Static Pressure – 65 PSI
- Flow Rate – 1,080 GPM
- Residual Pressure – 44 PSI

The majority of the parcel will be serviced by a new 12" PVC SDR-9 water main. A 12" water main is required to achieve the necessary hydraulics to provide pressure at the northeasterly portion of the parcel. The water mains from the emergency access road the cul-de-sac on Road 2 and from Road 2 to Tech Valley Way will be 8" PVC SDR-9 water mains. The remainder of the new water mains will be 12" in diameter.

The following is the anticipated water usage rates for the proposed development:

Townhouses – 60 Units x 3 Bedrooms/Unit = 180 Bedrooms
Cottages – 36 Units x 3 Bedrooms/Unit – 108 Bedrooms
Estate Houses – 14 Units x 4 Bedrooms/Unit = 56 Bedrooms
Total Number of Bedrooms = 344 Bedrooms

Average Daily Flow
344 Bedrooms x 110 GPD/Br = 37,840 GPD

Average GPM
37,840 GPD/24 Hours/60 Minutes = 26.28 GPM

Peak GPM (4.0 PF)
26.28 GPM x 4.0 = 105.11 GPM

A water model using the EPA NET 2.2 Software has been prepared for the proposed development. The model has provided the following results for the proposed water system:

Max Flow Condition – 1105 GPM at highest point in system
10 States Standards Requirements = 20 psi minimum within the system at ground level
Proposed network = 24.91 psi minimum

It is proposed to turn over the water distribution system with easements to the Town of East Greenbush upon completion. EPANET calculations can be found Appendix A of this document.

5.0 EROSION CONTROL

For the drainage analysis of this project refer to the project SWPPP dated May 26, 2021 and last revised July 28, 2021.

6.0 WETLANDS

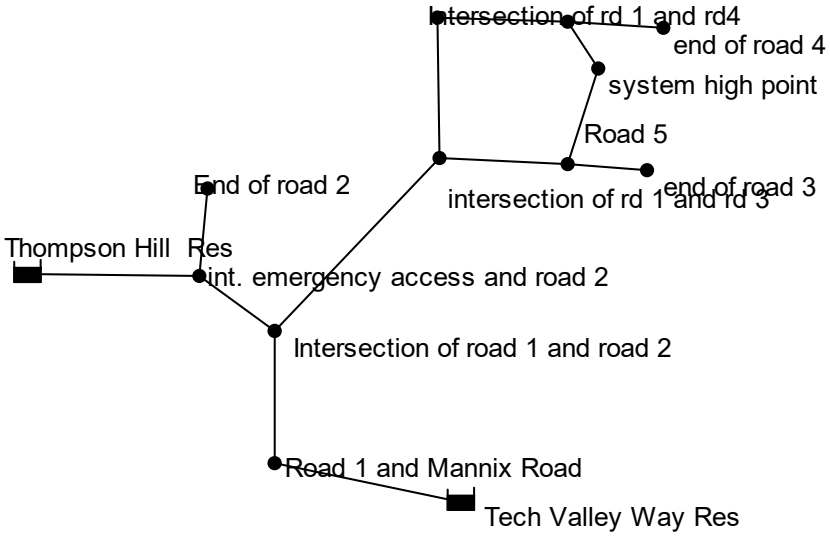
The site has been reviewed for the presence of USACOE Jurisdictional Wetlands and NYSDEC freshwater wetlands. No NYSDEC freshwater wetlands are present on the parcel. However, the parcel has over 9 acres of USACOE jurisdictional wetlands. It is proposed to impact approximately 0.20 Acres of the USACOE wetlands. A PCN for the wetland impacts has been submitted to the USACOE. A copy of this PCN can be found in Appendix C.

7.0 TRAFFIC

A traffic study has been prepared by VHB and is included in Appendix D of this report.

APPENDIX A

EPANET CALCULATIONS


Intersection of rd 1 and rd4
end of road 4
system high point
Road 5
End of road 2
intersection of rd 1 and rd 3
end of road 3
Thompson Hill Res
int. emergency access and road 2
Intersection of road 1 and road 2
Road 1 and Mannix Road
Tech Valley Way Res

```
******************************************************************
*                          E P A N E T                           *
*                  Hydraulic and Water Quality                   *
*                  Analysis for Pipe Networks                    *
*                        Version 2.2                             *
******************************************************************
```

Input File: water model.net

Link - Node Table:

Link ID	Start Node	End Node	Length ft	Diameter in
1	1	2	1165	12
2	2	3	300	8
3	2	4	640	12
4	4	5	940	8
5	5	6	445	8
6	4	7	1630	12
7	7	8	300	12
8	8	9	280	8
9	7	10	750	12
10	10	11	300	12
11	11	12	210	12
13	11	13	242	12
14	13	8	500	12

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
2	0.00	500.28	50.39	0.00	
3	0.00	500.28	49.52	0.00	
4	0.00	500.14	53.79	0.00	
5	0.00	498.69	60.09	0.00	
7	0.00	500.14	39.06	0.00	
8	0.00	500.14	31.26	0.00	
9	0.00	500.14	32.13	0.00	
10	0.00	500.14	32.99	0.00	
11	0.00	500.14	29.53	0.00	
12	0.00	500.14	31.26	0.00	
13	5.00	500.14	28.01	0.00	
1	-309.12	500.54	0.00	0.00	Reservoir
6	304.12	498.00	0.00	0.00	Reservoir

Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
1	309.12	0.88	0.22	Open
2	0.00	0.00	0.00	Open
3	309.12	0.88	0.22	Open
4	304.12	1.94	1.55	Open
5	304.12	1.94	1.55	Open
6	5.00	0.01	0.00	Open
7	2.86	0.01	0.00	Open
8	0.00	0.00	0.00	Open
9	2.14	0.01	0.00	Open
10	2.14	0.01	0.00	Open
11	0.00	0.00	0.00	Open
13	2.14	0.01	0.00	Open
14	-2.86	0.01	0.00	Open

```
*********************************************************************
*                            E P A N E T                            *
*                     Hydraulic and Water Quality                   *
*                     Analysis for Pipe Networks                    *
*                           Version 2.2                             *
*********************************************************************
```

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5	5	6	445	8
6	4	7	1630	12
7	7	8	300	12
8	8	9	280	8
9	7	10	750	12
10	10	11	300	12
11	11	12	210	12
13	11	13	242	12
14	13	8	500	12

Node Results:

Node ID	Demand GPM	Head ft	Pressure psi	Quality	
2	0.00	498.48	49.60	0.00	
3	0.00	498.48	48.74	0.00	
4	0.00	497.35	52.58	0.00	
5	0.00	497.79	59.70	0.00	
7	0.00	493.50	36.18	0.00	
8	0.00	493.31	28.30	0.00	
9	0.00	493.31	29.17	0.00	
10	0.00	493.00	29.90	0.00	
11	1105.00	492.80	26.34	0.00	
12	0.00	492.80	28.08	0.00	
13	5.00	492.99	24.91	0.00	
1	-949.99	500.54	0.00	0.00	Reservoir
6	-160.01	498.00	0.00	0.00	Reservoir

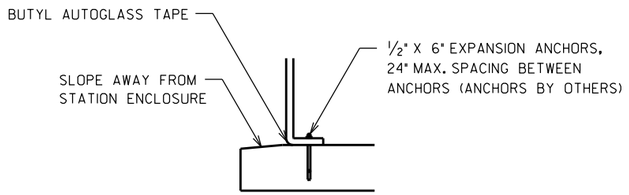
Link Results:

Link ID	Flow GPM	Velocity fps	Unit Headloss ft/Kft	Status
1	949.99	2.69	1.77	Open
2	0.00	0.00	0.00	Open
3	949.99	2.69	1.77	Open
4	-160.01	1.02	0.47	Open
5	-160.01	1.02	0.47	Open
6	1110.00	3.15	2.36	Open
7	546.66	1.55	0.64	Open
8	0.00	0.00	0.00	Open
9	563.34	1.60	0.67	Open
10	563.34	1.60	0.67	Open
11	0.00	0.00	0.00	Open
13	-541.66	1.54	0.81	Open
14	-546.66	1.55	0.64	Open

APPENDIX B

PUMP STATION CALCULATIONS AND DETAILS

REVISIONS				
SYM.	DATE	RECORD	DR.	CK.
A	3-27-17	ENCLOSURE WAS 8' X 16'. REVISED TO NEW STYLE ENCLOSURE. UPDATED BATTERY SIZE AND DRIVE MODULE. REVISED DIMS ACCORDINGLY.	BW	WC



MOUNTING DETAIL

SCALE: NONE

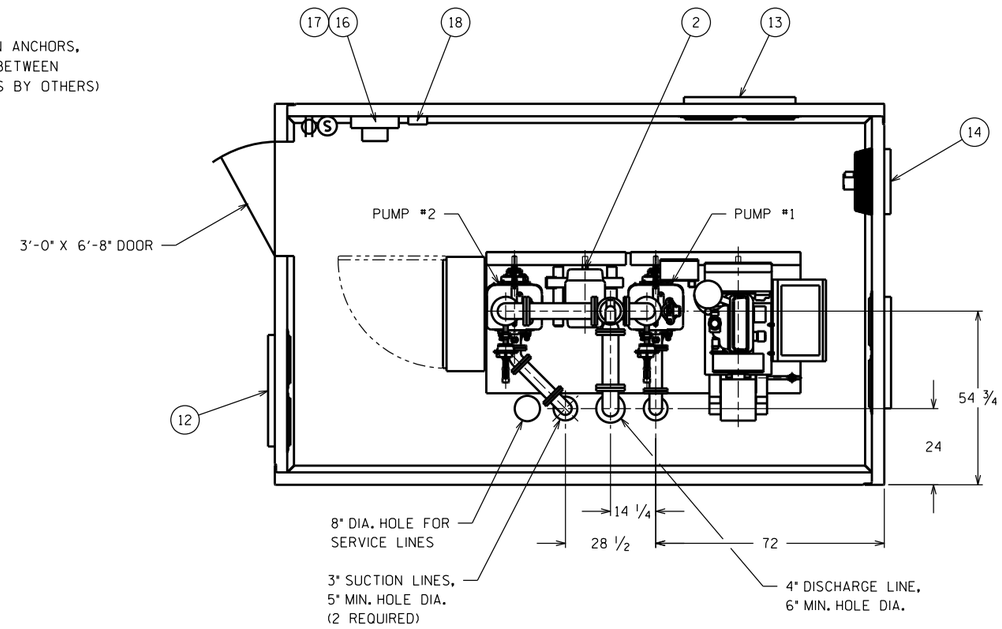
NOTE:

CONCRETE PAD TO BE LEVEL AND FLAT, WITH BROOM FINISH IN ENCLOSURE MOUNTING FLANGE AREA.

SEAL ALL OPENINGS THRU CONCRETE PAD INTO STATION ENCLOSURE GAS TIGHT.

GAS TIGHT FLOOR DRAIN RECOMMENDED FOR PUMP MAINTENANCE.

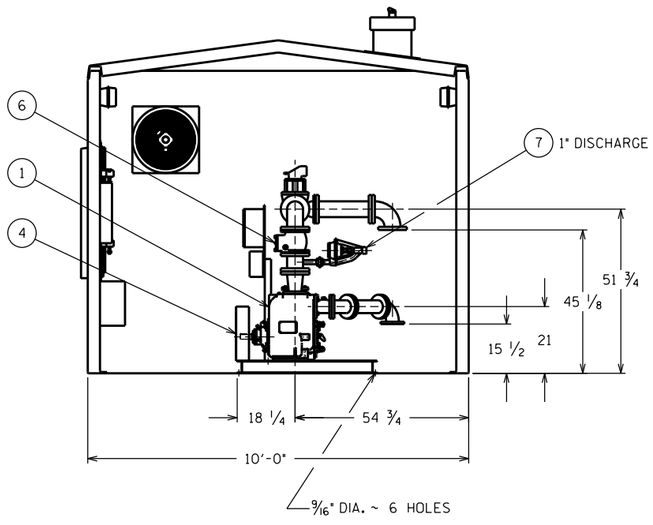
CONTROL PANEL ATTACHED TO BASE FOR SHIPPING ONLY, FASTENERS TO BE REMOVED AFTER INSTALLATION. PANEL TO BE ANCHORED TO CONCRETE PAD.

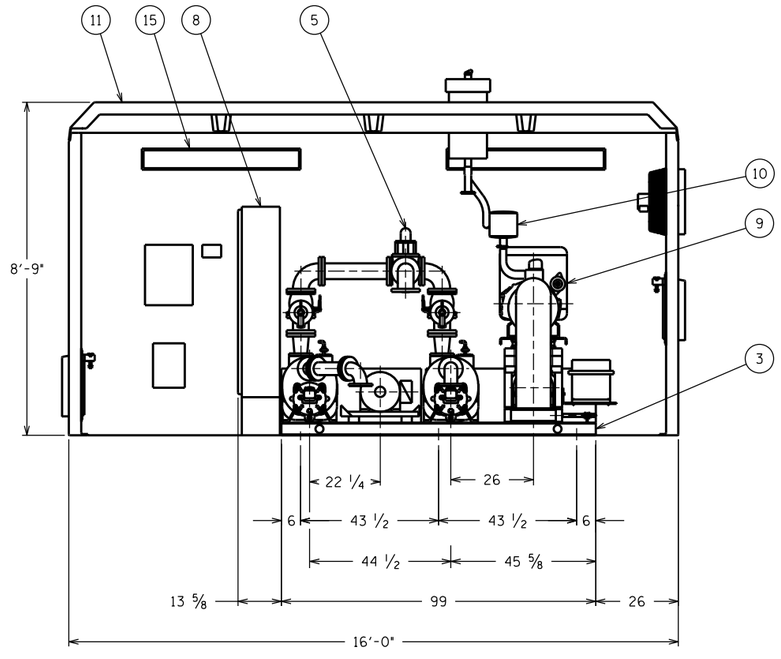


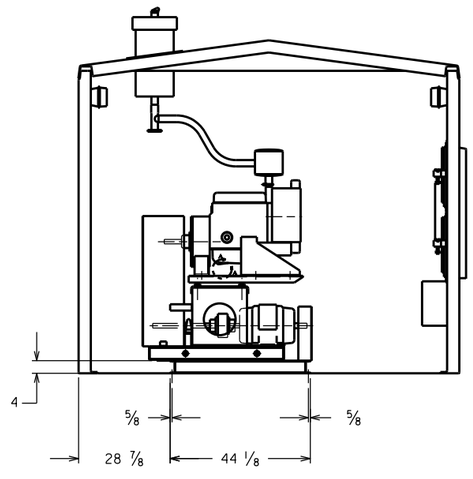
ITEM	DESCRIPTION	MATERIAL & SIZE
1	PUMP	CAST IRON T3-B
2	MOTOR	CAST IRON
3	PUMP & MOTOR BASE ASSY	STEEL
4	BELT GUARD ASSY	STEEL
5	DISCHARGE PLUG VALVE	CAST IRON 4" 3-WAY
6	DISCHARGE CHECK VALVE	CAST IRON 4"
7	AIR RELEASE VALVE	CAST IRON 1" (SHIPPED LOOSE)
8	CONTROL PANEL	STAINLESS STEEL
9	ENGINE	LIQUID COOLED
10	EXHAUST SILENCER	STAINLESS STEEL
11	STATION ENCLOSURE	FIBERGLASS 10' X 16'
12	INTAKE VENT ASSY	ALUMINUM (4 SHUTTERS)
13	EXHAUST VENT ASSY	ALUMINUM (4 SHUTTERS)
14	EXHAUST FAN ASSY	1850 CFM
15	FLUORESCENT LIGHT FIXTURE	64 WATT FIXTURE
16	LOAD CENTER	STEEL 16 POSITION
17	TRANSFORMER	5 KVA
18	FAN THERMOSTAT	40-100°

Ⓢ LIGHT SWITCH

⏀ 120V, 15 AMP DUPLEX GFI RECEPTACLE







STANDBY PUMP UNIT
RIGHT HAND DRIVE UNIT
T3-B, 3" X 4" X 4"
WITH 10' X 16' FIBERGLASS
ENCLOSURE

46186084.S01.DGN

WL-5501

GORMAN-RUPP	THE GORMAN-RUPP CO. MANSFIELD, OHIO ST. THOMAS, ONTARIO			
NAME	BASE MOUNTED DUPLEX WITH SIMPLEX STANDBY, T3-B PUMPS			
DRN. WC	CHK. BM	APP. BM	DATE 3-19-03	
D	46186-084			SERIAL NO.

SIEWERT EQUIPMENT
A Division Of CUMMINS-WAGNER
100% Employee Owned

Date: 9/13/2021
By: will S
Engineer:
Job Name: Carver Court

NPSH/RePrime Calculations

Gorman Rupp Company Inc.

1) Total Dynamic Suction Lift

A) Static Suction Lift		360.92 -	346.00		14.92	**Ft.**
B) Suction Pipe Diameter					3.00	
1) Total Straight Pipe			16	Ft.		
2) No. of 3x3	Elbows	Ft. =	20	Ft.		
3) No. of (2) 45°	Elbows	Ft. =	0	Ft.		
4) No. of 3x4 increaser	Elbows	Ft. =	10	Ft.		
Total Equiv. Straight Pipe =			**46**	**Ft.**		
GPM= 170	Ft. Loss/100' x	x		(C= 120	)= 4.36	**Ft.**
		Total Dynamic Suction Lift =			**19.28**	**Ft.**

2) N.P.S.H. @ 170 **GPM**

A) Total Atmospheric Pressure @ Sea Level		33.90	Ft.
B) Deductions:			
1) Total Dynamic Suction Lift	19.28	Ft.	
2) N.P.S.H. Required by Pump	5.00	Ft.	
3) Altitude Correction	1.00	Ft.	
4) Safety Factor	2.00	Ft.	
5) Vapor Pressure	1.00	Ft.	
N.P.S.H. Required =	28.28	Ft.	28.28 Ft.

N.P.S.H. Excess @ 170 **GPM=** 5.62 **Ft. (with 3 Ft. Safety Factor)**

3) Pump

170	GPM @	91.00	TDH at	1950	rpm
T 3S	Model				
8.75"	Imp. Diameter				
12.92	Priming Lift Required (in ft)	360.92 -	348.00		
25	Priming Lift Capability at	1950	rpm		
15	H.P. Required (Non O/L)				

4) Wet Well Data

Suction Center Line (in ft)	360.92
Grade	359.00
Invert (lowest in)	351.00
High Water Alarm	350.00
Lag Pump On	349.00
Lead Pump On	348.00
Pumps Off	346.00
Bottom Wet Well	344.00

5) Force

5.348	Size of F.M.
2250	Equivalent Length of F.M.
417	High Point F.M.
417	Discharge E.L. F.M.
56.08	Static Discharge Head in F.M.
4	Size Pump Station Piping
100	Equivalent Length P.S. Piping

Notes: **6" DR11 pipe for forcemain**

HYDRAULIC ANALYSIS (CALCULATING TDH)

GORMAN-RUPP PUMPS

CALCULATING TDH

What is TDH?

In the simplest of terms, given a flow requirement (amount of liquid to move over a time period) and the location (point of discharge) to move that liquid to, a hydraulic analysis will be required to calculate the pressure required. Typically, to perform this we need to know a few basic site conditions including; the flow (GPM or l/s) the elevation of the liquid level in the sump or wet well, the elevation at the point of discharge along with details making up the piping network. Unless, completely downhill, to which the liquid will flow by gravity and no pump may be needed at all, there will be an amount of work that will be needed to move liquid to the point of discharge. This calculation is called a total dynamic head (TDH) calculation. A TDH calculation is comprised of two elements, static head and friction head.

$$TDH = \underbrace{Static_{suction} + Friction_{suction}}_{\text{Suction side of pump}} + \underbrace{Static_{discharge} + Friction_{discharge}}_{\text{Discharge side of pump}}$$

Recapping Friction head (also referred to as friction loss), there are (5) factors that affect friction:

1. **Size of the piping**
2. **Type of piping**
3. **Valves and fitting**
4. **Length of piping**
5. **Rate of flow**

Recalling the discussion of static head, the total static head (level in the wet well to the free point of discharge) is required for calculating the TDH. Depending on the type of installation desired, (above the liquid - aka: self-priming, dry pit- aka: standard centrifugal, or wet pit – aka: submersible), the individual portions of the static are handled differently.

CALCULATING TDH

Methods of Calculating TDH

Why do we need TDH? A pump can operate effectively only within the system for which it is applied. Undersize the pump and the intended flow will be less resulting in excessive run times or the pump may not be able to deliver any flow at all. Oversize the pump and it may short cycle delivering an excessive amount of flow while wasting energy.

There are two most common methods of calculating TDH. These are the Darcy-Weisbach/Colebrook equation and the Hazen-Williams formula. Either will give you the result intended. The Darcy-Wiesbach method is a very accurate method but requires extensive mathematical calculations. The more common method is the use of the Hazen-Williams formula that is empirically tested, implying it is field tested to give us very accurate answers without extensive mathematical equations. This formula works very well on any calculations utilizing water like liquids or fuels.

$$h_f = \left(f\frac{L}{D}\right)\frac{V^2}{2g} \quad \text{or} \quad h_f = K\frac{V^2}{2g}$$

$$\text{where } K = f\frac{L}{D}$$

Darcy-Weisbach/Colebrook Equation

hf = Friction Loss (ft. of liquid)

L = Equivalent length of pipe (ft.)

D = Internal diameter of pipe (in.)

V = Velocity in pipe (ft./sec)

g = gravitational constant (32.174 ft./sec²)

f = Friction factor

K = resistance coefficient (Derived using Reynolds number and a Moody Diagram)

CALCULATING TDH

Hazen-Williams Formula

$$h_f = 0.002083\ L \left(\frac{100}{C}\right)^{1.85} x \frac{GPM^{1.85}}{d^{4.8655}}$$

hf = Friction Loss (ft. of liquid)

L = Equivalent length of pipe (ft.)

C = Coefficient of friction factor

Q = Capacity of flow (GPM)

d = Internal diameter of pipe (in.)

S.G. = Specific Gravity of liquid pumped (1.0 for water)

It should be noted that the friction factors “f” or “C”, from the other two methods, are not interchangeable and are not related to each other.

Five Steps to Success

Keys to a successful hydraulic analysis is to break the process down into simple steps. This can be done in five basic steps.

Step 1. Sketch out the system as close as possible

Step 2. Divide the suction from the discharge (Not required for submersibles)

Step 3. Calculate static head(s)

Step 4. Calculate Friction head(s)

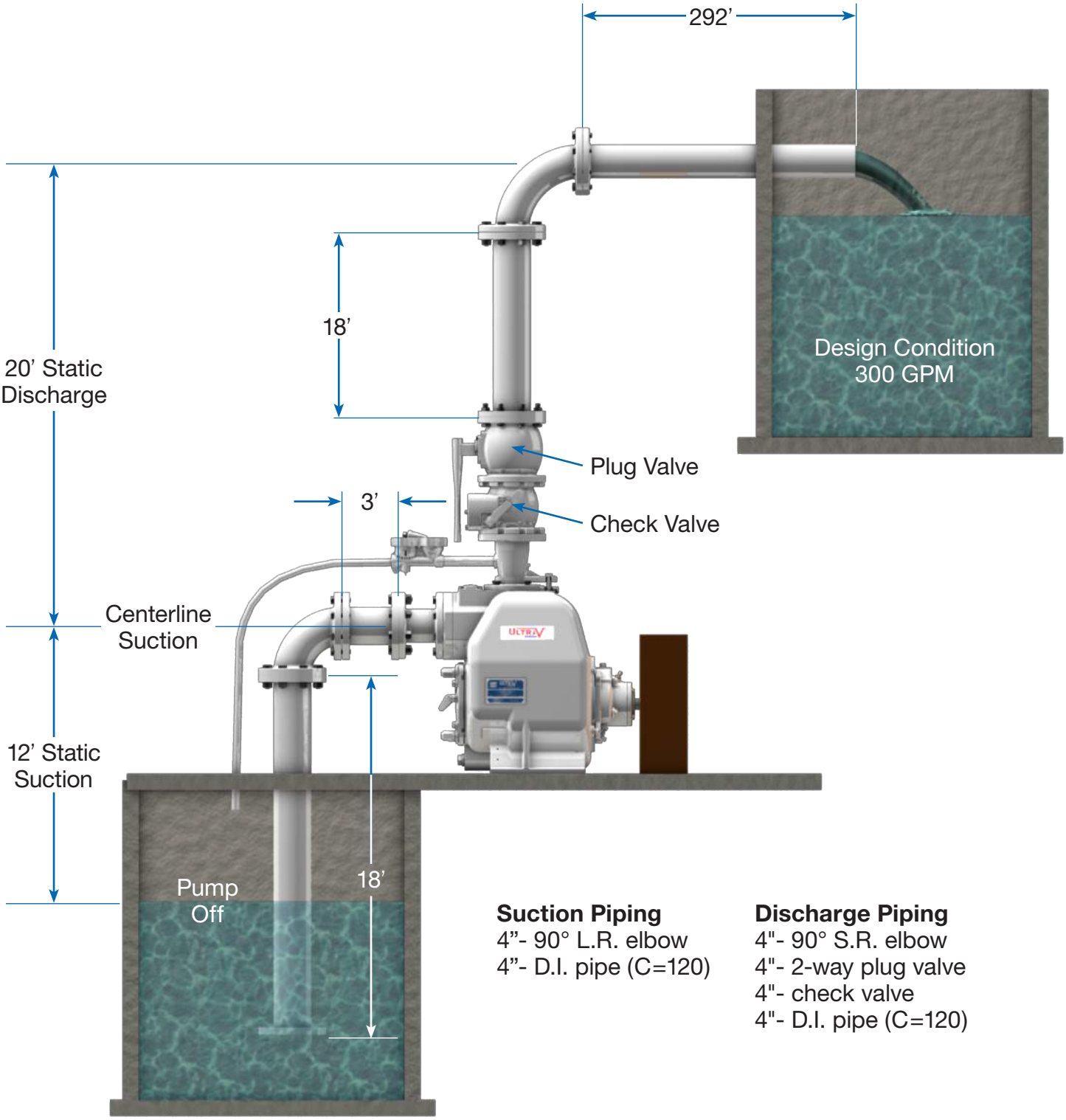
Step 5. Add all components to each other (Solution should be in Feet)

Refer to reference section for fitting friction loss tables, and piping loss details.

CALCULATING TDH

Example #1 – Self-Priming Application

Use in conjunction with tables found on pages 121-123 (Reference Section)



Suction Piping
4”- 90° L.R. elbow
4”- D.I. pipe (C=120)

Discharge Piping
4"- 90° S.R. elbow
4"- 2-way plug valve
4"- check valve
4"- D.I. pipe (C=120)

CALCULATING TDH

TDH CALCULATION WORKSHEET

Project: _____ System: _____
Company: _____ By: _____
Contact: _____ Phone: _____
Phone: _____ Fax: _____
Fax: _____ E-mail: _____
E-mail: _____ Page: _____ Date: _____

Suction Side (Enter system data pertaining to only suction side of pump)

A	Enter Static Suction (Centerline of pump inlet to off level)	= _____	ft.
B	Enter Suction Side Friction (Pipe and Fittings)		
	Capacity to be pumped _____ GPM		
	Total length of ____ in. ____ Pipe	= _____	ft.
	____ 45° elbow(s) ____ in. @____ ft. (Equiv. Pipe)	= _____	ft.
	____ 90°___elbow(s) ____ in. @____ ft. (Equiv. Pipe)	= _____	ft.
	Total actual pipe & equivalent length	= _____	ft.
	____ ft. loss/100 ft. x _____ x _____	= _____	ft.
C	**Total Dynamic Suction Lift** (TDSL) (A + B)	= _____	ft.

Discharge Side (Enter system data pertaining to only the discharge side of pump)

D	Enter Static Discharge (Centerline of pump inlet to point of discharge)	= _____	ft.
E	Enter Discharge Side Friction (Pipe and Fittings)		
	Capacity to be pumped _____ GPM		
	Total length of ____ in. ____ Pipe	= _____	ft.
	____ 45° elbow(s) ____ in. @____ ft. (Equiv. Pipe)	= _____	ft.
	____ 90° ___elbow(s) ____ in. @____ ft. (Equiv. Pipe)	= _____	ft.
	_____ valve ____ in. ____ ft. (Equiv. Pipe)	= _____	ft.
	_____ valve ____ in. ____ ft. (Equiv. Pipe)	= _____	ft.
	Total actual pipe & equivalent length	= _____	ft.
	____ ft. loss/100 ft. x _____ x _____	= _____	ft.
F	**Total Dynamic Discharge Head** (TDDH) (D + E)	= _____	ft.
G	**Total Dynamic Head (TDH) (C + F)**	= _____	ft.

SYSTEM HYDRAULICS (System Head Curve)

GORMAN-RUPP PUMPS

SYSTEM HYDRAULICS

System Head

Unless a portable pump, the majority of pumps typically are installed and operated in a fixed piping system. We now have a better understanding of the components which make up how a given pump will perform. These factors are static head and friction head (also referred to as losses). In a given system, static head typically only changes minimally. On the other hand, the friction contribution is variable. This factor is directly dependent on the capacity or flow that is put through the piping network or system. As we increase flow, friction increases. However, it is not a linear increase. That is to say, if we add 20% more flow or capacity, the head or pressure does not increase by the same percentage. The condition of the piping system will affect the operation of a pump. As piping ages and/or if clogging or blockages occur, this will adversely affect the operation of a pump.

To find out the amount of increase in pressure, we need to develop or establish a system curve. This curve will show the parameters that a particular system will allow a specific pump to perform within. Basically, we perform a TDH calculation for a sufficient number of flow rates to establish a series of points, which when connected, will develop a system curve, which a pump is expected to operate within. The table below is an example of the data derived from running such a series of calculations. Refer to the previous section in this material if there are questions on calculating TDH.

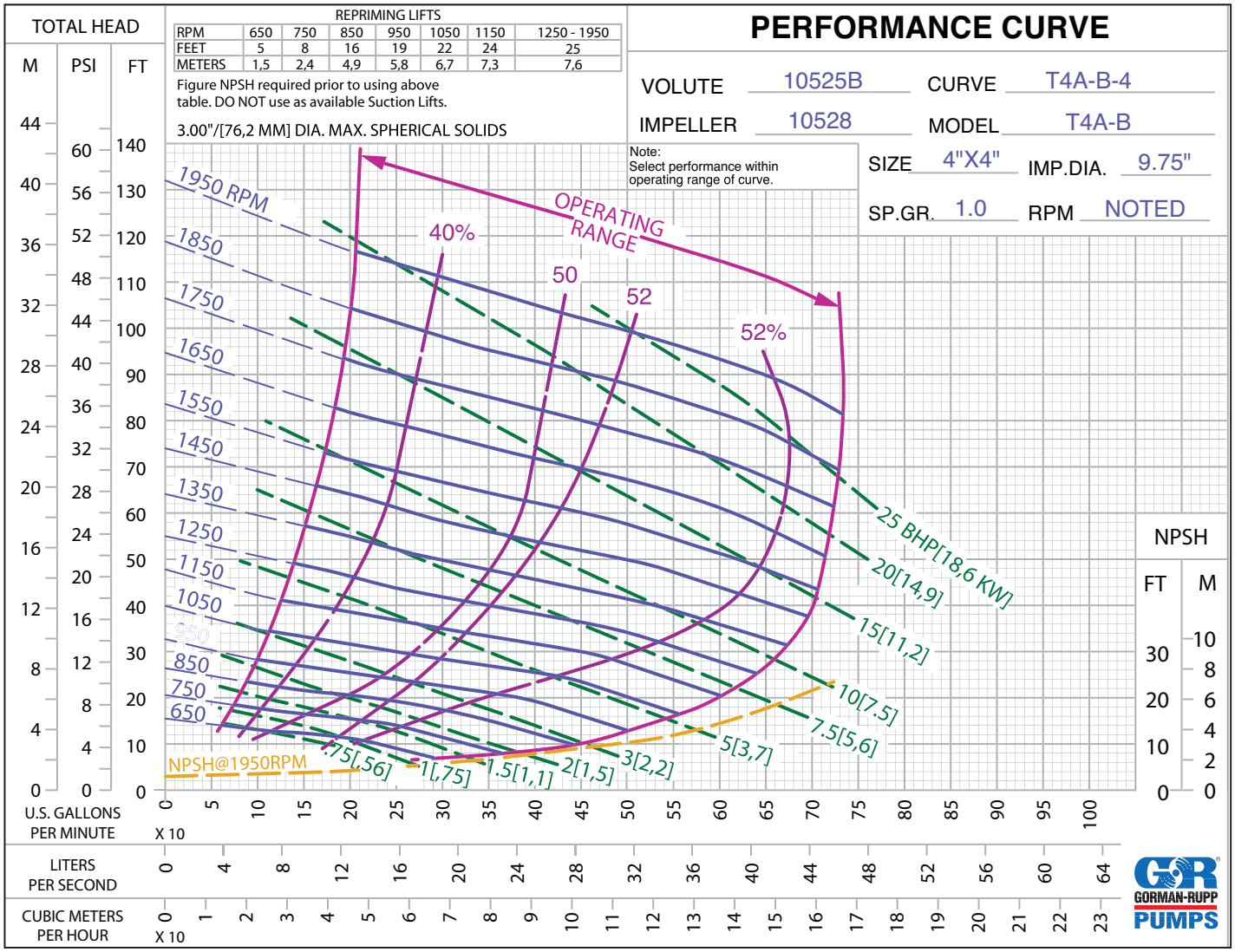
Flow (GPM)	Total Equivalent Pipe	Friction loss/100 ft.	Friction Head	Adjusted for C=120 (x 0.71)	Total Static Head (ft.)	TDH (ft.)
0	391	0	0	0	32	**32**
100	391	1.23	5	3	32	**35**
200	391	4.40	17	12	32	**44**
300	391	9.30	36	26	32	**58**
400	391	15.96	62	44	32	**76**
500	391	24.00	94	67	32	**99**
600	391	33.70	132	94	32	**126**

SYSTEM HYDRAULICS

Once the calculations are completed these are then transposed over to a proposed pump performance curve. In addition to seeing how flow affects pressure, we can also see a wealth of additional information including; horsepower, efficiency and speed (RPM) adjustments.

Plot the system curve points (flow vs TDH) from the table on the previous page. Once plotted connect the points to establish the system curve for the system described. Can you answer the following?

1. Is it wise to operate this pump @ 100 GPM?
2. What is the maximum performance possible with this pump?
3. Is it possible to get to 600 GPM, why or why not?
4. With this information, is it possible to check the operating the condition of the pump?



Changing System Head Characteristics

A centrifugal pump has a fixed and predictable performance curve within a given hydraulic system. The point where the pump will operate on the curve is dependent upon the characteristics of the system.

When considering to alter the performance of a pump, application engineers used a variety of tools and rules to make these adjustments to predict the new performance. At the heart of these is a series of rules called the “Affinity Laws”. For a further understanding of these laws, refer to the reference section at the back of this booklet. In its simplest of form, there are only two ways to alter the performance of a centrifugal pump. These two methods are to change the impeller size, (also referred to as trim) or to change the speed (RPM) that the pump impeller is turning.

As for the piping system, there are a variety of things which can affect the characteristics of the system. In a new system these include the physical location & elevation and type along with size of piping valves and fittings. In an existing system, the system curve will be affected by improper operation of valves, additional pumps added into the same system, clogs and obstructions, or breaks and ruptures.

To illustrate an example of these, let’s assume we are investigating a new system that we are considering a variety of piping options. What will be the effects? Refer to the chart below and the preceding performance curve. (The flow rate desired is 300 GPM.)

System Curve	Speed (RPM)	Horsepower	Pump Efficiency
A (C=120)	1475	15	46%
B (C=140)	1380	7 ½	47%
C (C=120)	1200	7 ½	50%
D (C=140)	1160	7 ½	50%

SYSTEM HYDRAULICS

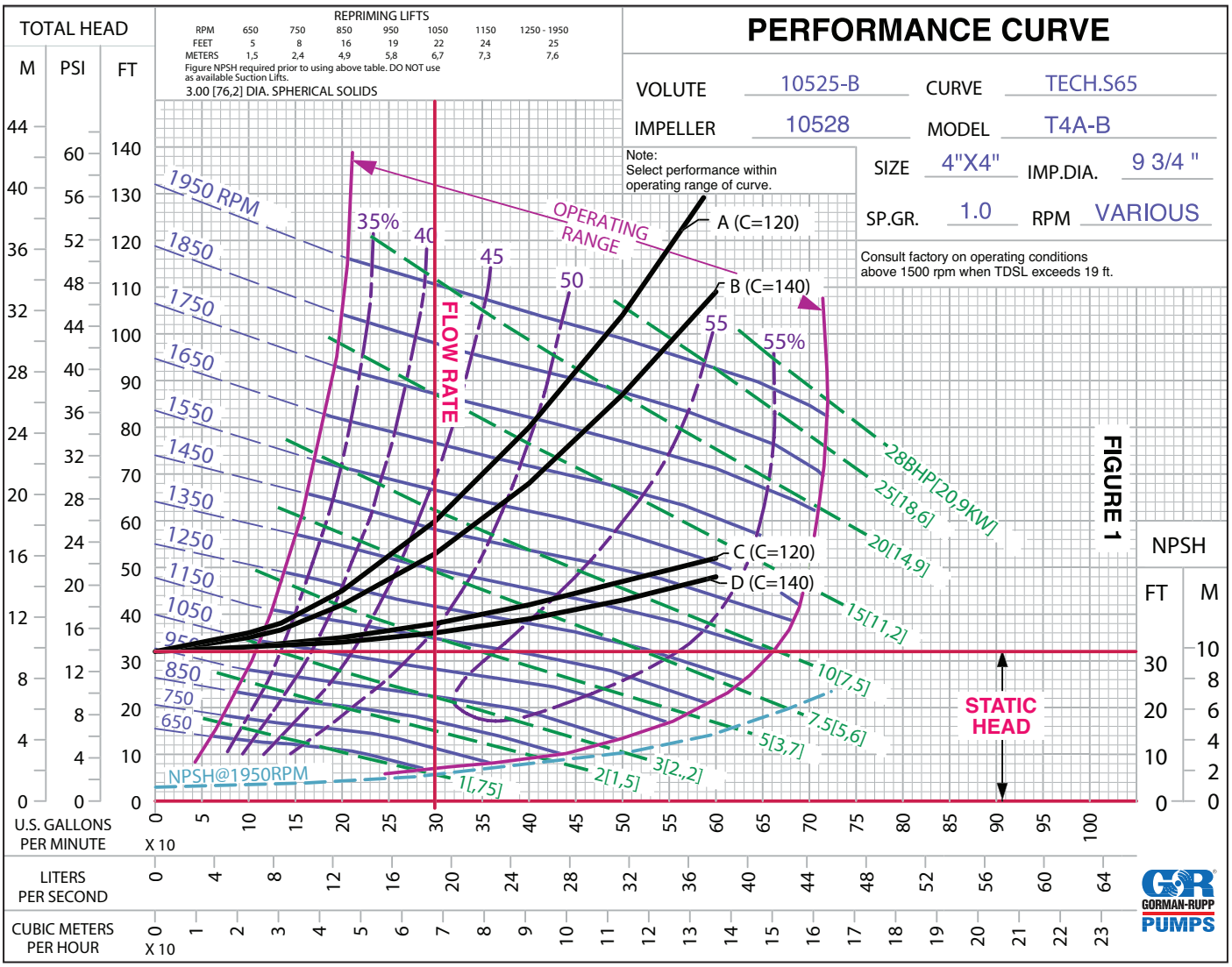
The details illustrated in the system curves indicated below are as follows:

A. New 4 in. diameter ductile iron piping (C=120)

B. New 4 in. diameter polyvinylchloride (PVC) piping (C=140)

C. New 6 in. diameter ductile iron piping (C=120)

D. New 6 in. diameter polyvinylchloride (PVC) piping (C=140)



SYSTEM HYDRAULICS

Once this process is completed and the design is in place, making field changes or alterations can dramatically impact the installation at start up. Refer to figure 2, our system was designed for curve “A” operation, ductile iron 4 inch piping. The equipment was sized and built utilizing a 15 Hp motor(s). The contractor submitted a cost savings change to use 6” PVC piping. The customer accepted the change. The equipment arrived and was installed. But when the equipment was started it didn’t perform as intended. Let’s see if we can predict what happened.

The pump over performed, delivering nearly 550 GPM and increase of 240 gallons. More is better, right? Maybe not, what is the impact on run cycles, and horsepower, power consumption and other hydraulic considerations such as net positive suction head (NPSH). When reviewing existing systems for upgrade considerations, it is always a good practice to work from accurate field validation techniques including accurate gauge readings and draw-down tests.

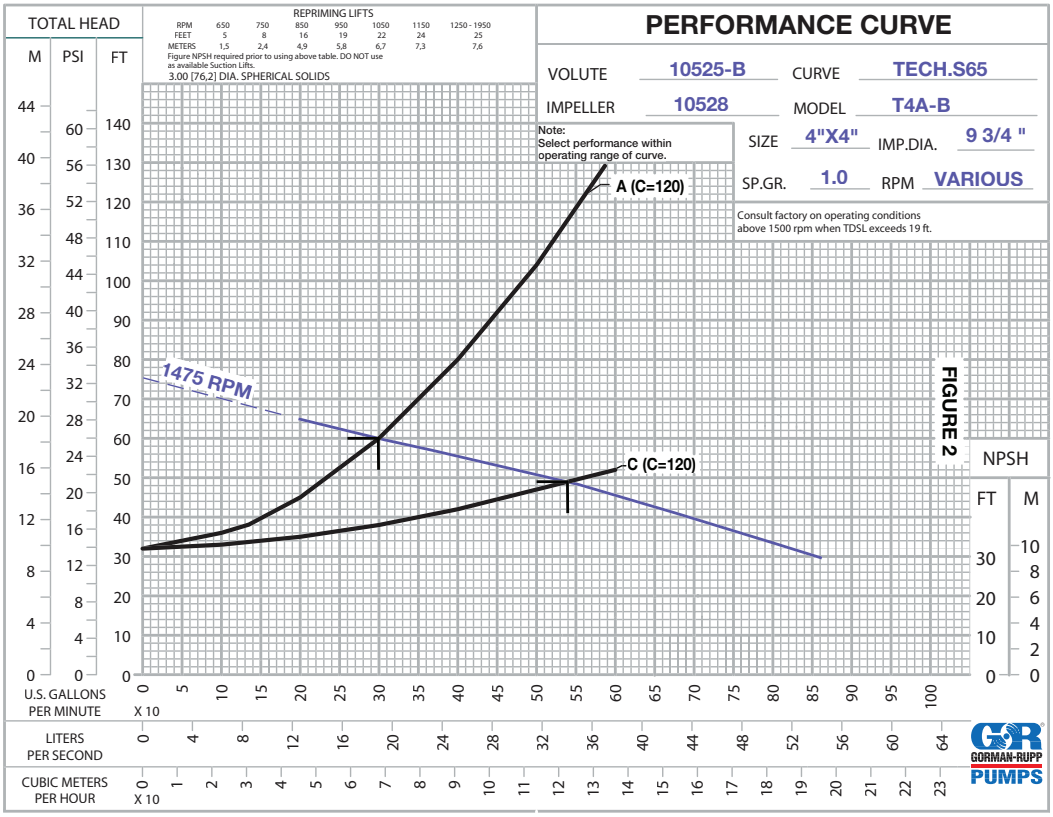


FIGURE 2

Flow Velocities

The velocity of a liquid flowing through the piping system needs to be reviewed. Too much velocity can create noisy operations and may shorten life of valves and piping with excessive wear when pumping liquids that have some abrasives. Too little velocity is also not good either. If pumping clean liquids there is minimal concern. However, if pumping liquids with entrained solids, it is important to have sufficient velocity to scour or keep any solids from settling out. A good rule of thumb is to keep the velocities above 2.0-2.5 ft./sec. Remember, pumps typically cycle on and off. During idle periods, solids will settle out and become deposited at the bottom of piping. A velocity of 3.5 feet per second is required to re-suspend solids. If solids do not re-suspend, narrowing of piping will occur adversely affecting the system causing the pumps to reduce in performance.

An interesting note is that entrained air can also have a similar effect as solids. Low velocities may prohibit the ability to push air pockets through the network. This is why many piping networks have air release valves installed at highpoints in the piping or force mains to allow the air to escape. Should these become inoperative, negative impacts can occur.

NOTES

Gorman-Rupp Pumps
P.O. Box 1217
Mansfield, OH 44901, USA
419-755-1011
www.GRpumps.com

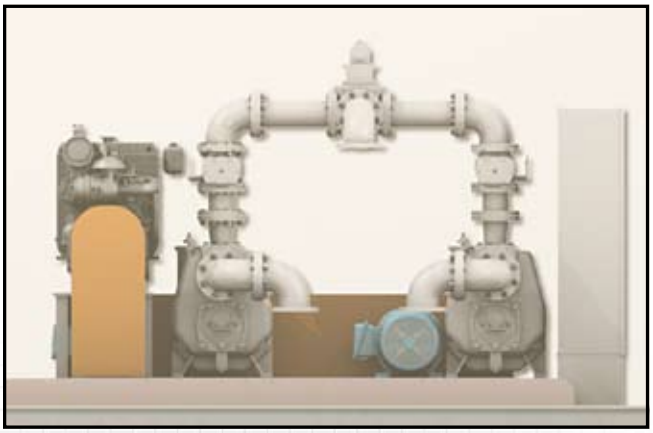
TM-09 REV02/15

SEWAGE PUMPING STATIONS

AUTO-START

Gorman-Rupp's Auto-Start pump stations are pre-engineered units available with Super T Series®, Ultra V Series® and VS pumps with an extensive selection of motors, controls, piping and accessories. Gorman-Rupp has many standard designs for new installations, or custom designs can be provided for existing installations with minimum hookup time.

Auto-Start pump stations are available with 2", 3", 4", 6", 8" or 10" pumps, depending on pump model. For consistently heavy flows, a third or fourth pump may be added. Flows are available to 3400 GPM on single pump operation. For high head/low flow, we offer standard staged designs.



The Gorman-Rupp **Base Mounted Auto-Start** station uses a liquid level control which automatically converts to 12 volt DC and drives the pump with a standby engine providing normal pumping service during power failures. When power resumes, AC motor operation is automatically restored. It meets all standby requirements and uses a variety of fuels.

The Auto-Start unit is a space-saving, modular combination of pump, electric motor and engine, all coupled to the same drive, eliminating the need for an expensive engine/generator set.

MODULAR ENCLOSURES AVAILABLE FOR YOUR STATION

THE GORMAN-RUPP COMPANY, MANSFIELD DIVISION | P.O. Box 1217, Mansfield, Ohio 44901-1217, USA • Tel: 419-755-1011 • Fax: 419-755-1208 • E-mail: grsales@gormanrupp.com
GORMAN-RUPP INTERNATIONAL | P.O. Box 1217, Mansfield, Ohio 44901-1217, USA • Tel: 419-755-1011 • Fax: 419-755-1266 • E-mail: intsales@gormanrupp.com
GORMAN-RUPP OF CANADA, LTD. | 70 Burwell Road, St. Thomas, Ontario N5P 3R7, Canada • Tel: 519-631-2870 • Fax: 519-631-4624 • E-mail: grcanada@grcanada.com

GRpumps.com

ISO 9001:2000 REGISTERED COMPANY
MANSFIELD DIVISION

AV-05005-63_0908

GORMAN-RUPP PUMPS Mansfield Division

ReliaSource® Auto-Start Lift Stations

The Gorman-Rupp base mounted auto-start lift station uses a 12V DC level control that drives the pump with a standby engine providing normal pumping service during power failures. When power resumes, electric motor operation is automatically restored. Meets all standby requirements and uses a variety of fuels. Gorman-Rupp base mounted pump stations are pre-engineered units with an extensive selection of pumps, motors, controls, piping and accessories. Gorman-Rupp has many standard designs for new installations, or we can custom design for existing installations with minimum hook-up time. Base mounted pump stations are available with 2", 3", 4", 6", 8" or 10" T Series or Super T Series pumps to match system requirements. For consistently heavy flows, a third or fourth pump may be added. Flows shown are for single pump operation. For high head/low flow, we offer standard staged designs.

Specifications

Size	**3" (80 mm), 4" (100 mm), 6" (150 mm), 8" (200 mm), 10" (250 mm)**
Min Capacity	**50 GPM (3 lps)**
Max Capacity	**3400 GPM (215 lps)**
Min Head	**10' (3 m)**
Max Head	**320' (98 m)**
Max Solids	**3" (76 mm)**
Max Temperature	**160 F(71 C)**
Motor - Voltage	**200 V 3P, 230 V 3P, 460 V 3P**
Motor - Cycles	**60 Hz**
Horsepower	**3 HP - 150 HP**

Features

Single Source Responsibility

Gorman-Rupp designs, engineers and manufactures the entire pumping system to ensure that the system meets your requirements and performs reliably year after year. If there is a problem with the system you only have to make one call. Gorman-Rupp is responsible for the entire system, from pumps and controls to the lights and fans in our enclosures.

Super T Series Pumps

Gorman-Rupp self-priming centrifugal solids-handling Super T Series pumps are specifically designed for sewage and industrial wastewater handling applications. The heavy-duty construction and easy-to-service design have made Gorman-Rupp T Series pumps the standard of the industry.

Controls

The Gorman-Rupp team of electrical, mechanical and hydraulic engineers work closely throughout the development of each pumping system to ensure that the entire hydro-electrical system works in harmony to meet your system requirements - accurately and reliably. All Gorman-Rupp controls are manufactured of the highest quality components and are available U.L. and C.S.A. listed (not standard).

Specifications are subject to change. Please contact your Gorman-Rupp Distributor for more details.

The Gorman-Rupp Company
Mansfield Division
P.O. Box 1217
Mansfield, Ohio 144901-1217, USA
Tel: 419-755-1011
Fax: 419-755-1251
E-mail: grsales@gormanrupp.com

The Gorman-Rupp International Company
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Mansfield, Ohio 44901-1217, USA
Tel: 419-755-1011
Fax: 419-755-1266
E-mail: intsales@gormanrupp.com

Gorman-Rupp of Canada, Ltd.
70 Burwell Road
St. Thomas, Ontario, N5P 3R7,
Canada
Tel: 519-631-2870
Fax: 519-631-4624
E-mail: grcanada@grcanada.com

GRpumps.com

APPENDIX C

PRE CONSTRUCTION NOTIFICATION

PRECONSTRUCTION NOTIFICATION

for

CLDZ LLC

MANNIX ROAD
TOWN OF EAST GREENBUSH
STATE OF NEW YORK
PREPARED BY:

Ingalls & Associates, LLP
2603 Guilderland Avenue
Schenectady, NY 12306
Phone: (518) 393-7725
Fax: (518) 393-2324

June 24, 2021

APPLICANT:
CLDZ LLC
494 Western Turnpike
Altamont, NY 12009

June 24, 2021

2603 Guilderland Avenue
Schenectady
New York 12306

t.518.393.7725
f.518.393.2324

info@ingallsllp.com
www.ingallsllp.com

U.S. Army Engineer District, NY
Upstate Regulatory Field Office
1 Buffington Street
Watervliet, NY 12189-4000

Attn: Ms. Amy Gitchell

Re: Pre-Construction Notification – NWP #29
CLDZ LLC
Mannix Road & Thompson Hill Road
Greenbush N.Y.

Dear Ms. Gitchell:

The following information is being submitted in support of a Pre-Construction Notification (PCN) for the discharge of fill material into Waters of the U.S., including wetlands, as associated with the construction of a residential subdivision at the above noted location. This notification is for the authorization to use NWP #29 (Residential Developments) as described in Federal Register/Vol. 86, No. 1, January 13, 2021, for discharges of dredged or fill material into non-tidal waters of the United States. Wetland areas on the proposed site are designated as Wetland 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', and 'I' as shown on the enclosed, "Wetland Impact Plan" prepared by Ingalls & Associates, LLP, and dated May 5, 2021. As described in the attached PCN report, there will be a total of 0.205 +/- acres of permanent wetland impacts associated with the purpose of subdivision development and related road construction. The impacts have been minimized as best as practicable and limited to only minor unavoidable wetland impacts. The PCN Joint Permit Application is in Appendix A for your review and use.

A request for a NYSDEC Article 15, Title 5, "401 Water Quality Certification" is not necessary, as the project does not exceed the maximum disturbance of 0.25 acres, General Conditions required for NWP #51 Blanket Water Quality Certification, as issued on March 15, 2021. It is also noted that there are no State regulated wetlands within the project limits.

Thank you in advance for your review of this permit application. If you have any questions or require additional information, please contact me at nakins@ingallsllp.com or (518) 393-7725.

Sincerely,
Ingalls & Associates, LLP

Nicholas Akins

Nicholas Akins
Environmental Specialist

TABLE OF CONTENTS

LIST OF APPENDICIES

APPLICANT/OWNER INFORMATION

Applicant
CLDZ LLC
494 Western Turnpike
Altamont, NY 12009
(518)-355-6034

Agent:
Ingalls & Associates, LLP
2603 Guilderland Avenue
Schenectady, NY 12306
Contact: Nicholas Akins
(518)-393-7725, ext. 111

Owners
CLDZ LLC
494 Western Turnpike,
Altamont, NY 12009

EGV Realty, Inc.
22 1ST ST PO BOX 208
TROY NY 12181-0208

I. PROJECT LOCATION

North Side of Mannix Road
East Side of Thompson Hill Road
(Reference Attached Site Location Map, Appendix B)

II. PROJECT INFORMATION

General Description

The subject site consists of several parcels with tax ID #'s 145.00-1-21, 155.00-5-2, 155.00-5-3 and 155.00-5-4, totaling 91 acres. The proposed CLZD, LLC project will consist of constructing a subdivision and associated roadway with utilities throughout the site.

The project site consists of mainly vacant forested land with associated wetlands. According to the USGS soil data, there are 11 different soil deposits. The two primary soils are Bernardston-Nassau complex, rolling and Bernardston-Nassau complex, undulating. The project area topography can be generally described as gently rolling with surface water flowing southerly and off site at Mannix Road.

Existing Conditions

Project Location

Multiple maps (NYSDEC, USFWS, USGS, and SHPO) detailing the existing conditions of the property are attached as Appendix B, including a Site Location Map based on the Rensselear U.S. Geological Survey (USGS) Quad map. A Wetland Impact Plan of the subject site delineating the location of wetlands within the site and proposed impacts, is included within Appendix E.

Approximate Center Point of Site	Latitude	N 42°38'07.4"
	Longitude	W 73°41'36.2"

Site Information

a. Land Use History – The proposed project area is historically vacant forested land.

b. Supplemental Mapping – Several materials are included to further identify the site:

(Appendix B):

i. Site Location Map based on the USGS Quad Map
ii. NYSDEC Environmental Resources Map
iii. U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Map
iv. USFWS Information, Planning, and Conservation System Map
v. Natural Resources Conservation Service (NRCS) Soil Survey Map generated from the Rensselear County Soil Survey
vi. New York State Office of Parks Recreation and Historic Preservation (OPRHP) Map & "Letter of Effect Finding"

(Appendix C):

i. A Wetland Photo Log is included

(Appendix D):

i. USACE Wetland Determination Data forms
ii. The Wetland Trust Inc. Credit Availability Letter

(Appendix E):

i. "Wetland Impact Plan", with proposed wetland disturbance by Ingalls & Associates, LLP, May 12, 2021.

c. Potential Habitat – The USFWS Information, Planning, and Conservation System (IPAC) and the NYSDEC Environmental Resource Mapper were consulted to evaluate potential for threatened or endangered (T&E) species (Appendix B). Please refer to Section VI of this document for additional detail.

d. Isolated or Non-Jurisdictional Determinations – There are no isolated or non-jurisdictional wetlands located on the project site.

e. Vegetative Cover Types – Vegetation within the project area can be classified as hardwood forest vegetation with a mix of other typical northeastern wetland vegetation.

A total of nine (9) wetlands (Wetland 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', and 'I'), were delineated by ***Ingalls*** onsite. For locations of all wetlands onsite, refer to the attached "Wetland Impact Plan" in Appendix E.

Typical wetland vegetation species include, northern highbush blueberry (*Vaccinium corymbosum*) green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*) sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), Virginia creeper (*Parthenocissus quinquefolia*) and tussock sedge (*Carex stricta*). For all the wetland vegetation found onsite, refer to the wetland data sheets in Appendix D.

Hydric soil indicators were identified as a depleted matrix in all wetlands. Observed hydrology was recorded as surface water, water-stained leaves, and hydrogen sulfide odor.

III. PROPOSED IMPACTS

The proposed road development and subdivision requires impacts to wetland 'A', 'B','D', and "I' as listed in the table below. The project will also include the clearing of 40± acres of forested upland. Impacts are associated with the construction of the proposed roadway. The impact areas can be found on the attached "Wetland Impact Plan" (Appendix E). Impacts to wetlands subject to the jurisdiction of the United States Army Corps of Engineers can be summarized as follows:

Permanent Wetland Impact Summary-NWP #29

Construction Activity	***Wetland Impact***
Impact Area Wetland 'A' (Road development)	1,263 sqft (0.029 ± acres)
Impact Area Wetland 'B' (Road development)	174 sqft (0.004 ± acres)
Impact Area Wetland 'D' (Road development)	5,445 sqft(0.125 ± acres)
Impact Area Wetland 'I' (Road development)	2,047 sqft (0.047 ± acres)
Total permanent Proposed Wetland Impacts	**(0.205± acres)**

IV. AVOIDANCE, MINIMIZATION & MITIGATION

Avoidance

Road development and subdivision designs have been developed to be within upland areas and avoid wetland impacts when possible.

Minimization

The proposed road development and subdivision wetland impacts have been minimized to the maximum extent possible. Wetland 'A', 'B', 'D', and 'I' impacts are necessary to access the property and to allow for fire access per the Fire Code. The road alignment has been designed in accordance with the local and state guidelines and was chosen to cross the wetlands at the narrowest point feasible.

Mitigation

As proposed the project will impact more than 0.10 acres of regulated waters of the U.S. and in accordance with current regulations will require compensatory mitigation. Wetland credits are planned to be purchased to cover the mitigation needed for this project as summarized below.

Wetland Mitigation Summary				
	Vegetative Community (Acres)			
Mitigation Type	**Forested**	**Scrub/Shrub**	**Emergent**	**Total**
Impacts	0.205	0	0	0.205 +/- acres
(Creation: Impacts)	(3:1)	(1.5:1)	(1:1)	0.615 acres

V. WETLAND IMPACT PLAN

Refer to Appendix E for illustration of the proposed wetland disturbance.

VI. THREATENED OR ENDANGERED SPECIES

The NYSDEC and the USFWS Environmental Conservation Online System (ECOS) websites were reviewed to determine the likelihood of state or federally listed T&E species or critical habitat areas existing within the project parcel. The NYSDEC Environmental Resource Mapper (ERM) website was reviewed for the potential of State-Regulated Freshwater Wetlands, Rare Plants, Rare Animals, and/or Significant Natural Communities on-site. According to the NYSDEC website, the proposed project area is not within an orange-shaded area; indicating that the site's geographic location does not make it likely habitat for NYS listed rare plants, rare animals, and/or significant natural communities.

The US Fish and Wildlife Service's Information, Planning, and Conservation System (IPaC) Map identified threatened or endangered species as having the potential of inhabiting the proposed project site. The IPaC Map listed the Northern Long-Eared Bat (*Myotis septentrionalis*) as an endangered species possibly found on the site.

VII. CULTURAL OR HISTORIC RESOURCES

Based on the New York State OPRHP website, the site does fall within an archeologically sensitive area. The proposed project was submitted to the OPRHP Cultural Resource Information System (CRIS) for review. ***Ingalls*** has received a "Letter of No Effect" from OPRHP dated June 2, 2021 as official correspondence for the project area.

A copy of the map taken from the OPRHP website and the "Letter of No Effect" from SHPO are attached within Appendix B.

APPENDIX A

JOINT PERMIT APPLICATION

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation ☑ Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☐ 401 Water Quality Certification
- ☑ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Coastal Erosion Management
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Incidental Take of Endangered / Threatened Species

>US Army Corps of Engineers ☐ Check here to confirm you sent this form to USACE.

Check all permits that apply: ☑ Section 404 Clean Water Act ☐ Section 10 Rivers and Harbors Act

Is the project Federally funded? ☐ Yes ☑ No

If yes, name of Federal Agency:

General Permit Type(s), if known: 29

Preconstruction Notification: ☑ Yes ☐ No

>NYS Office of General Services ☐ Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

- ☐ State Owned Lands Under Water
- ☐ Utility Easement (pipelines, conduits, cables, etc.)
- ☐ Docks, Moorings or Platforms

>NYS Department of State ☐ Check here to confirm you sent this form to NYSDOS.

Check if this applies: ☐ Coastal Consistency Concurrence

2. **Name of Applicant**

CLDZ LLC

Taxpayer ID (if applicant is NOT an individual)

Mailing Address: 494 Western Tpk

Post Office / City: Altamont

State: NY

Zip: 12009

Telephone:

Email: nlaraway@carvercompanies.com

Applicant Must be (check all that apply): ☑ Owner ☐ Operator ☐ Lessee

3. **Name of Property Owner (if different than Applicant)**

Mailing Address

Post Office / City

State

Zip

Telephone

Email

For Agency Use Only	Agency Application Number:

4. **Name of Contact / Agent**

Nicholas Akins

Mailing Address: 2603 Guilderland Ave.

Post Office / City: Schenectady

State: NY

Zip: 12306

Telephone: 518-393-7725 ex.111

Email: nakins@ingallsllp.com

5. **Project / Facility Name**

Mannix Road Subdivision -Town of East Greenbush

Property Tax Map Section / Block / Lot Number:

Project Street Address, if applicable

Post Office / City: Rensselaer

State: NY

Zip: 12144

Provide directions and distances to roads, intersections, bridges and bodies of water

☑ Town ☐ Village ☐ City

Rensselaer

County: Albany

Stream/Waterbody Name: N/A

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: 42° 38' 03.9"

Longitude: 73° 41' 40.3"

6. **Project Description:** Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

The proposed CLZD, LLC project will consist of constructing a subdivision and associated roadways with utilities throughout the site.

b. Description of current site conditions:

The project site consists of mainly vacant forested land with associated wetlands. According to the USGS soil data, there are 11 different soil deposits. The two primary soils are Bernardston Nassau complex, rolling and Bernardston-Nassau complex, undulating. The project area topography can be generally described as gently rolling with with surface water flowing southerly and off site at Mannix Road.

c. Proposed site changes:

The proposed road development and subdivision requires impacts to wetland 'A', 'B','D', and "I'. Impacts are associated with the construction of the proposed roadway. This will total 0.205 acres of impact.

d. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

Roadway crossing of wetlands-See enclosed Wetland Impact Map

e. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

There will be no appreciable excavation within the wetlands. Fill and a culvert will be placed for the proposed roadway.

f. Is tree cutting or clearing proposed? ☑ Yes If Yes, explain below. ☐ No

Timing of the proposed cutting or clearing (month/year):

Number of trees to be cut:

Acreage of trees to be cleared: 40

g. Work methods and type of equipment to be used:
Construction equipment (front end loader, excavator, bulldozer, dump truck, etc.) to construct subdivision and roadway.

h. Describe the planned sequence of activities:
Install all erosion and sediment control methods required. Establish construction access/driveway and stabilized entrance, clear trees, construct roadway. Complete soil stabilzation and remove all sediment and erosion controls

i. Pollution control methods and other actions proposed to mitigate environmental impacts:
Use of erosion and sediment control and soil stabilization on the project site per the NYS Standards and Specifications of Erosion and Sediment Control. 2016 (Blue Book).

j. Erosion and silt control methods that will be used to prevent water quality impacts:
Erosion and sediment control methods will be installed prior to construction of the stabilized entrance and associated site construction activities. Silt fence will be established around the down gradient perimeter of all proposed soil areas of disturbance.

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:
Impacts are being minimized by crossing the wetlands at their narrowest point.

l. Proposed use: ☑ Private ☐ Public ☐ Commercial

m. Proposed Start Date: August 2021 Estimated Completion Date: August 2023

n. Has work begun on project? ☐ Yes If Yes, explain below. ☑ No

o. Will project occupy Federal, State, or Municipal Land? ☐ Yes If Yes, explain below. ☑ No

p. List any previous DEC, USACE, OGS or DOS Permit / Application numbers for activities at this location:
None

q. Will this project require additional Federal, State, or Local authorizations, including zoning changes?
☐ Yes If Yes, list below. ☑ No

7. **Signatures.**

Applicant and Owner (If different) must sign the application.
Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant Date: 6/24/21

Applicant Must be (check all that apply): [X] Owner [ ] Operator [ ] Lessee

Printed Name: Carver Laraway Title: Member

Signature of Owner (if different than Applicant) Date:

Printed Name: Title:

Signature of Contact / Agent Date: 06/24/21

Printed Name: Nicholas Akins Title: Agent

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number:

(Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name: Title:

Signature: Date:

APPENDIX B

EXISTING CONDITIONS MAPS

i. Site Location Map
– based on the U.S. Geological Survey Quad Map

ii. NYSDEC Environmental Resources Map

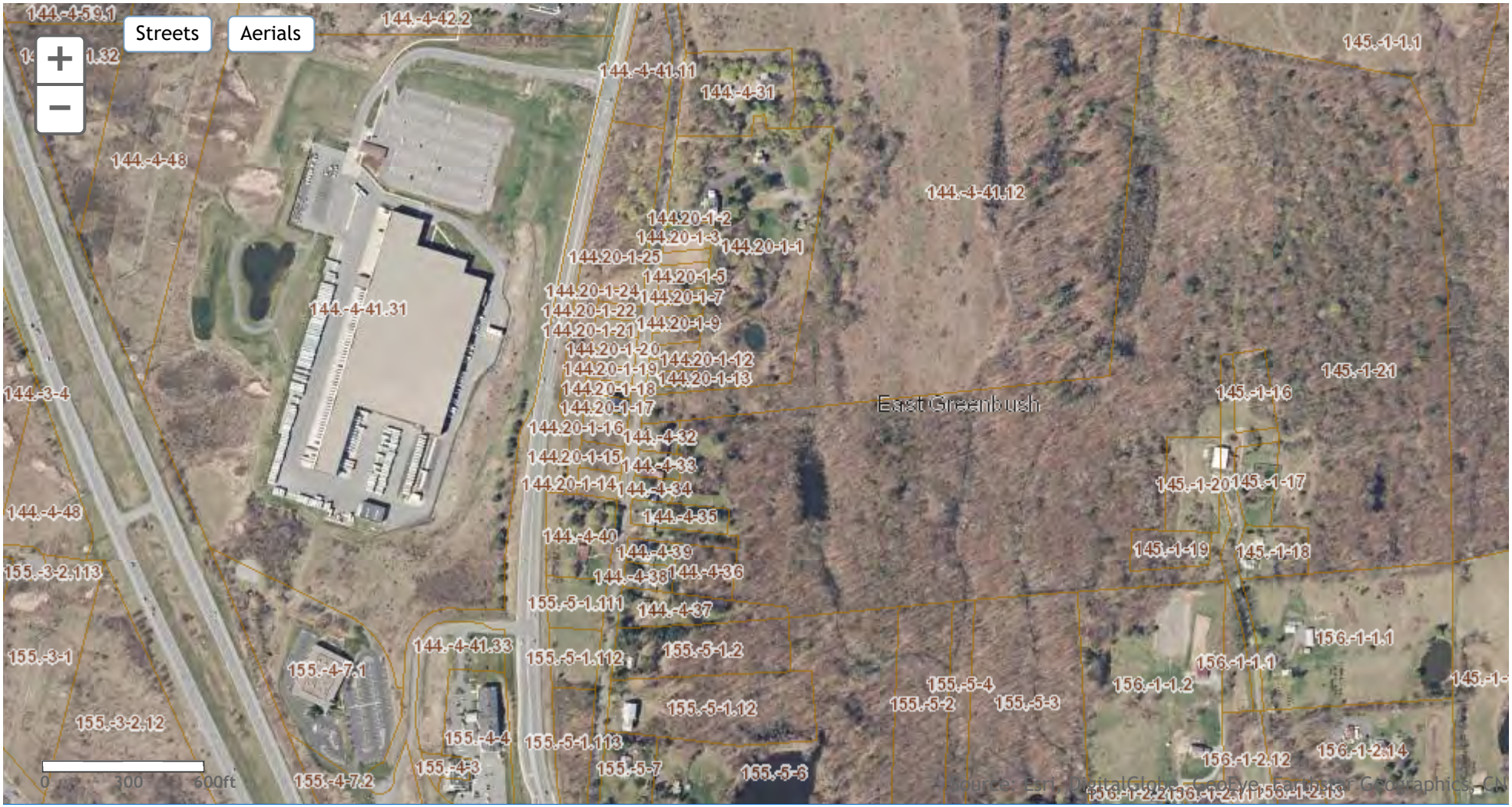
iii. U.S. Fish and Wildlife Service National Wetlands Inventory Map

iv. USFWS Information, Planning, and Conservation System List

v. Natural Resources Conservation Service Soil Survey Map
– generated from the Rensselaer County Soil Survey

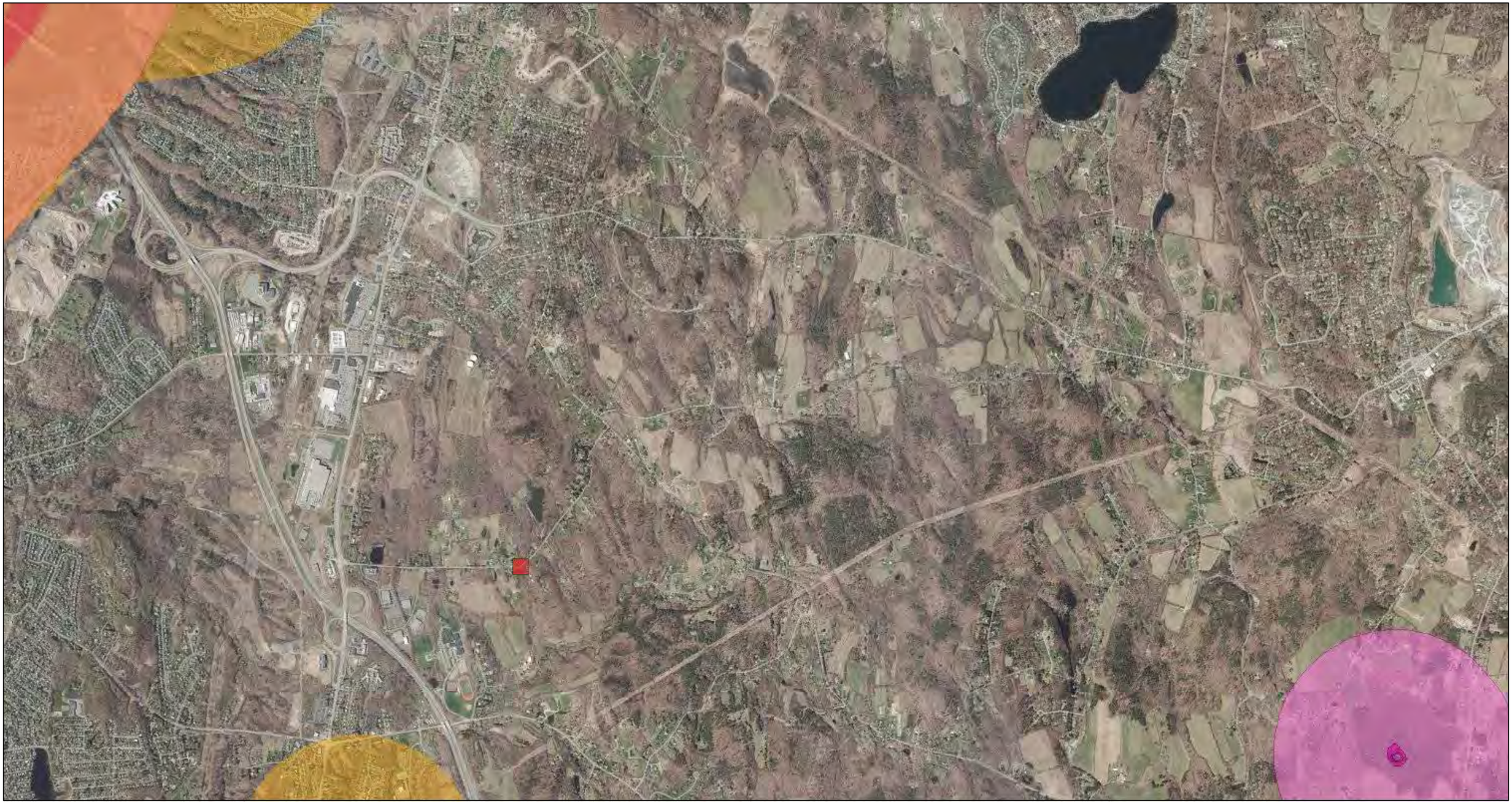
vi. New York State Office of Parks Recreation and Historic Preservation Map & "Letter of No Effect Finding"

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION



Initial Extent | Zoom In | Zoom Out | Show Overview Map

Environmental Resource Mapper



July 12, 2019

1:36,112

0 0.45 0.9 1.8 mi

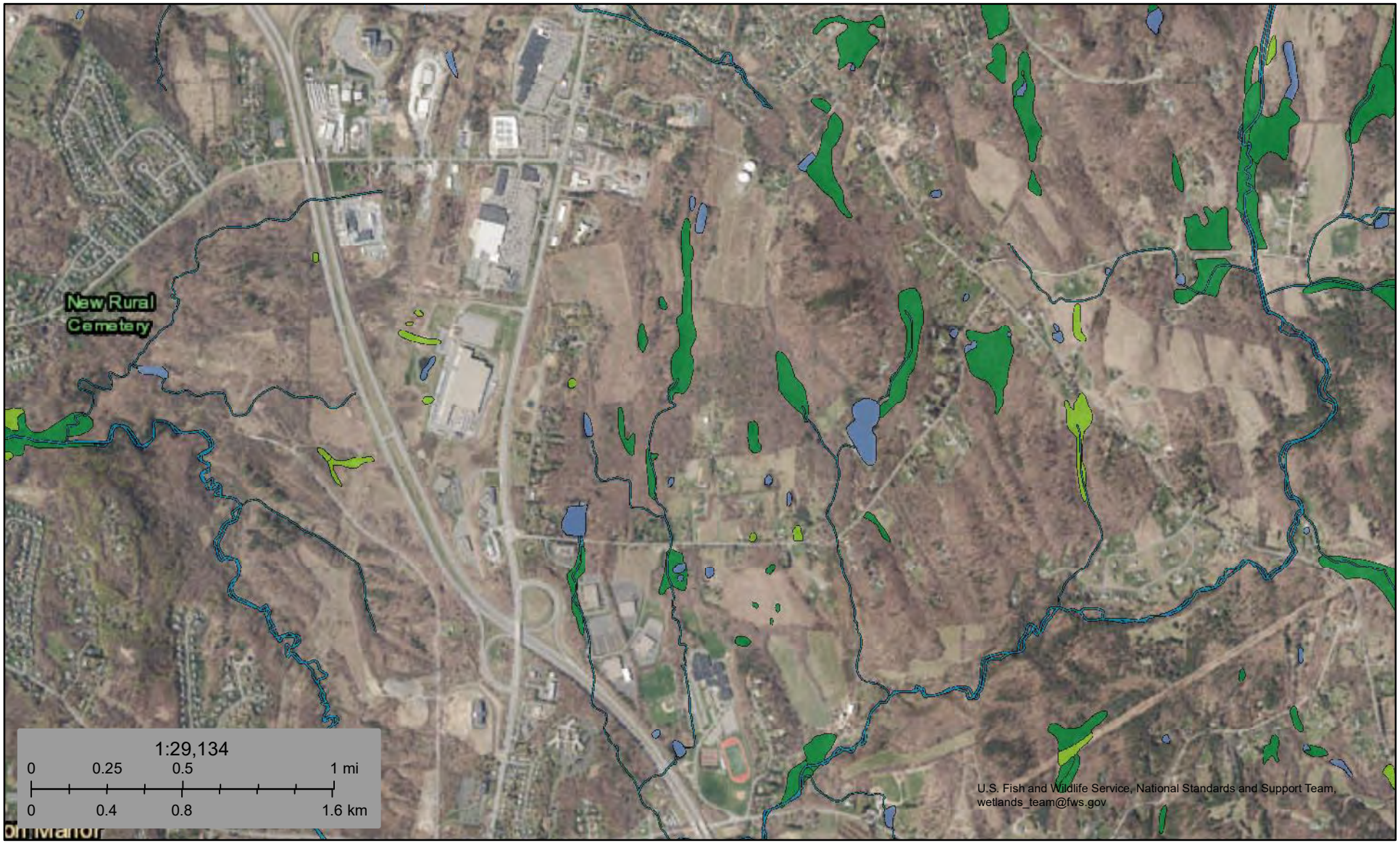
0 0.5 1 2 km

NYS ITS GIS Program Office
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

NYS Department of Environmental Conservation
Not a legal document

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



July 12, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

June 02, 2021

Nicholas Akins
Environmental Specialist
Ingalls & Associates
2603 Guilderland Ave
Schenctady, NY 12306

Re: USACE
19_083 CLZD LLC Subdivision Project
Town of East Greenbush, Rensselaer County, NY
21PR03295

Dear Nicholas Akins:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO 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 National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

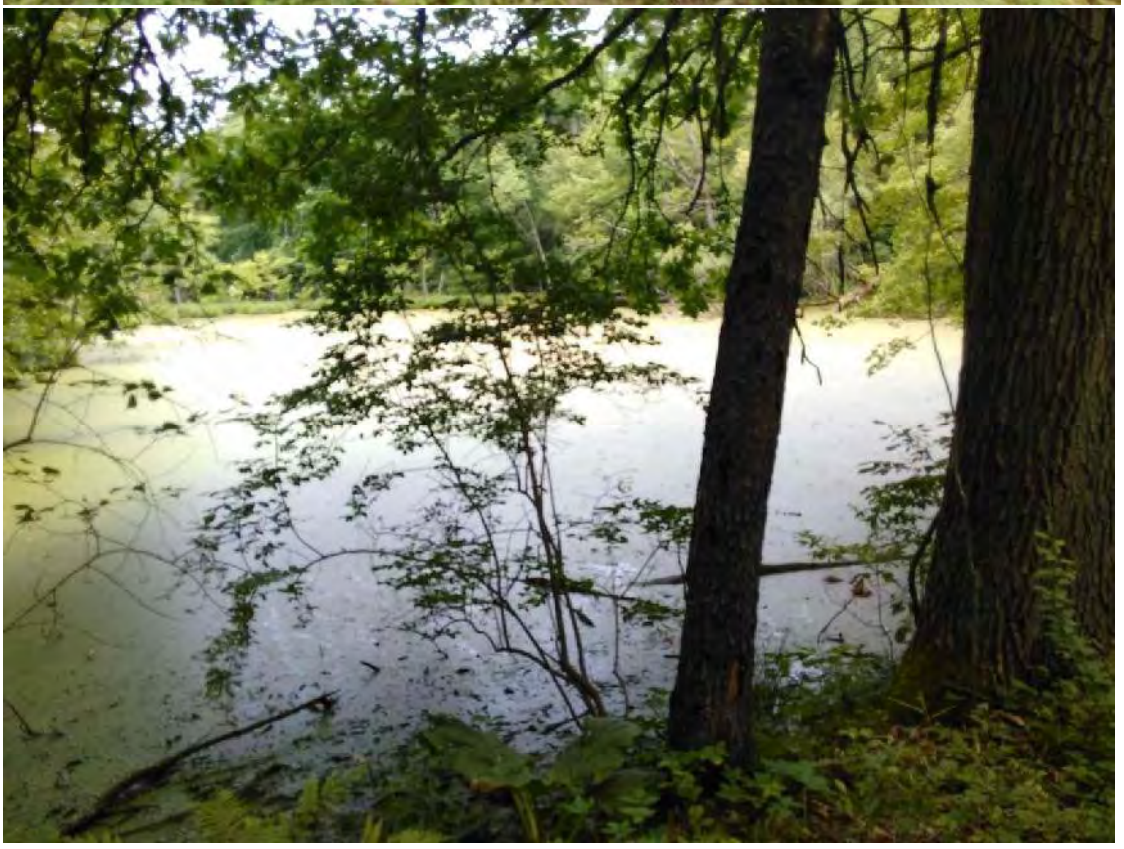
Sincerely,

R. Daniel Mackay

Deputy State Historic Preservation Officer
Division for Historic Preservation

APPENDIX C

WETLAND PHOTOGRAPHS




A-20


A/9


A/P

APPENDIX D

WETLAND DETERMINATION DATA FORMS
&
THE WETLAND TRUST INC. CREDIT AVAILABILITY LETTER

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/16/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 7

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'3.32" Long: - 73°41'50.54" Datum: NAD 87

Soil Map Unit Name: NWI classification: Forested

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland G

Remarks: (Explain alternative procedures here or in a separate report.)
Stream channel is located within Wetland G. Six feet wide by 2 foot deep. Stone and sand substrate.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 3"
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel. Stream flows southerly.

VEGETATION – Use scientific names of plants. Sampling Point: 7

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Ilex verticillata*	10	No	FACW
4. *Acer rubrum*	10	No	FACW
5. *Carpinus caroliniana*	10	No	FAC
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Symplocarpus foetidus*	40	Yes	OBL
3. *Impatiens capensis*	15	Yes	FACW
4. *Alisma subcordatum*	10	No	OBL
5. *Carex stricta*	15	Yes	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	110	x 2 =	220
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		375 (B)

Prevalence Index = B/A = 1.83

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Muck	
2-12	10YR 6/1	75	10YR 6/6	25	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland D.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 3/16/2020

Applicant/Owner: Nick Carver State: NY Sampling Point: 9

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'3.32" Long: - 73°41'50.54" Datum: NAD 87

Soil Map Unit Name: NWI classification: Forested

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland J

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland Jin the mddle of is located along the easterly most edge of the review athe parcels and is connected to Stream 1. Wetland J flows southerly and easterly entering Stream 1 in Ifinger locations. into Stream 1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	X Water-Stained Leaves (B9)	
High Water Table (A2)	Aquatic Fauna (B13)	
X Saturation (A3)	Marl Deposits (B15)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	
Drift Deposits (B3)	Presence of Reduced Iron (C4)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	
Iron Deposits (B5)	Thin Muck Surface (C7)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	
Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

Surface Soil Cracks (B6)
X Drainage Patterns (B10)
Moss Trim Lines (B16)
Dry-Season Water Table (C2)
Crayfish Burrows (C8)
Saturation Visible on Aerial Imagery (C9)
Stunted or Stressed Plants (D1)
Geomorphic Position (D2)
Shallow Aquitard (D3)
X Microtopographic Relief (D4)
FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No	Depth (inches):	3"
Water Table Present?	Yes No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X No	Depth (inches):	0"

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel. Stream flows southerly.

VEGETATION – Use scientific names of plants. Sampling Point: 9

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2. *Acer rubrum*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Carex stricta*	20	Yes	OBL
3. *Impatiens capensis*	15	Yes	FACW
4. *sphagnum*	15	Yes	UL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	95	x 2 =	190
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	145 (A)		300 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation Id was conducted using winter plant id techniques and early growth ID.

SOIL Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Muck	
3-12	10YR 5/1	75	10YR 4/6	25	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland I

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 3/16/2020

Applicant/Owner: Nick Carver State: NY Sampling Point: 8

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'3.32" Long: - 73°41'50.54" Datum: NAD 87

Soil Map Unit Name: NWI classification: Forested

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland I

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland I is located along the easterly most edge of the review area. Wetland I flows southerly into Stream 1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No	Depth (inches):	3"
Water Table Present?	Yes No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No X	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel. Stream flows southerly.

VEGETATION – Use scientific names of plants.

Sampling Point: 8

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Ilex verticillata*	10	No	FACW
4. *Acer rubrum*	10	No	FACW
5.			
6.			
7.			
	70	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Symplocarpus foetidus*	40	Yes	OBL
3. *Impatiens capensis*	15	Yes	FACW
4. *Carex stricta*	15	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	110	x 2 =	220
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	175 (A)		305 (B)

Prevalence Index = B/A = 1.74

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation Id was conducted using winter plant id techniques and early growth ID.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Muck	
3-12	10YR 5/1	75	10YR 4/6	25	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland I

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/16/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 6

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°37'53.48" Long: -73°41'42.36" Datum: NAD 87

Soil Map Unit Name: NWI classification: Forested

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland F

Remarks: (Explain alternative procedures here or in a separate report.)
Stream channel is located within Wetland F. Four feet wide by 1 foot deep. Stone and sand substrate.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No	Depth (inches):	2"
Water Table Present?	Yes No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No X	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel. Stream cooridor flows southerly.

VEGETATION – Use scientific names of plants. Sampling Point: 6

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Quercus bicolor*	10	Yes	FACW
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4.			
5.			
6.			
7.			
	40	=Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Ilex verticillata*	10	No	FACW
4. *Acer rubrum*	10	No	FACW
5.			
6.			
7.			
	70	=Total Cover	

Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Symplocarpus foetidus*	40	Yes	OBL
3. *Impatiens capensis*	15	Yes	FACW
4. *Alisma subcordatum*	10	No	OBL
5. *Carex stricta*	15	Yes	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	

Woody Vine Stratum (Plot size:)			
1. *Parthenocissus quinquefolia*	15	Yes	FACU
2. *Toxicodendron radicans*	10	Yes	FAC
3.			
4.			
	25	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	120	x 2 =	240
FAC species	30	x 3 =	90
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	230 (A)		455 (B)

Prevalence Index = B/A = 1.98

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Muck	Oraganic present
4-12	10YR 3/2	60	10YR 5/6	30	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland D.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/16/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 5

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'01.9" Long: -73°41'35.5" Datum: NAD 87

Soil Map Unit Name: NWI classification: Forested

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland E

Remarks: (Explain alternative procedures here or in a separate report.)
Stream channel is located within Wetland E. Three feet wide by 2 foot deet. Stone and sand substrate.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 3"
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel. Stream cooridor flows southerly.

VEGETATION – Use scientific names of plants. Sampling Point: 5

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Quercus bicolor*	10	Yes	FACW
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Carpinus caroliniana*	10	No	FAC
4. *Acer rubrum*	10	No	FACW
5. *Ilex verticillata*	10	No	FACW
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Symplocarpus foetidus*	40	Yes	OBL
3. *Impatiens capensis*	10	No	FACW
4. *Alisma subcordatum*	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Parthenocissus quinquefolia*	15	Yes	FACU
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	120	x 2 =	240
FAC species	30	x 3 =	90
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	215 (A)		440 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Muck	Oraganic present
3-12	10YR 5/1	80	10YR 5/6	20	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- X 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** X

Remarks:

Soils are consistant throughout Wetland D.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/16/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 4

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'8.04" Long: - 73°41'38.79" Datum: NAD 87

Soil Map Unit Name: NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	Flagged as Wetland D

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland D is a small pocket wetland with linear wetland features which disapatethrough sheetwater flow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland D is a depressional wetland between two topographic mounds.

VEGETATION – Use scientific names of plants.

Sampling Point: 4

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Carpinus caroliniana*	10	No	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Impatiens capensis*	10	Yes	FACW
3. *Persicaria amphibia*	15	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	70	x 2 =	140
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		245 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Muck	Oraganic present
2-12	10YR 3/2	75	10YR 5/4	20	C	M	Mucky Sand	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- X 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland D

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/15/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 3

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'5.12" Long: -73°41'21.22" Datum: NAD 87

Soil Map Unit Name: NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland C

Remarks: (Explain alternative procedures here or in a separate report.)
Depressional wetland area with no outlet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	8"
Water Table Present?	Yes	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
standing water present.

VEGETATION – Use scientific names of plants. Sampling Point: 3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Symplocarpus foetidus*	30	Yes	OBL
3. *Impatiens capensis*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	80	x 2 =	160
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		250 (B)

Prevalence Index = B/A = 1.92

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Muck	Oraganic present
2-12	10YR 6/2	75	10YR 5/6	25	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils are consistant throughout Wetland A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/15/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 2

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'1.91" Long: -73°41'20.17 Datum: NAD 87

Soil Map Unit Name: NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland B

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland B is a depressional wetland with no visable inflow or outflow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Surface Water (A1)	X Water-Stained Leaves (B9)	
High Water Table (A2)	Aquatic Fauna (B13)	
X Saturation (A3)	Marl Deposits (B15)	
Water Marks (B1)	X Hydrogen Sulfide Odor (C1)	
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	
Drift Deposits (B3)	Presence of Reduced Iron (C4)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	
Iron Deposits (B5)	Thin Muck Surface (C7)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	
Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland B is a drepressional area. Wetland is within 50 feet of Wetland C. No surface connection is visable.

VEGETATION – Use scientific names of plants. Sampling Point: 2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Acer rubrum*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Impatiens capensis*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		190 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Muck	Oraganic present
2-12	10YR 6/1	80	10YR 5/6	20	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- X 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** X

Remarks:

Soils are consistant throughout Wetland B

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/15/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 1

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°38'01.9" Long: -73°41'35.5" Datum: NAD 87

Soil Map Unit Name: NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as Wetland A

Remarks: (Explain alternative procedures here or in a separate report.)
Stream channel is located within Wetland A. Two feet wide by 1 foot deet. Stone substrate.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	3"
Water Table Present?	Yes X	No	Depth (inches):	0"
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology is present along the edges of the wetland flowing toward the stream channel.

VEGETATION – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Quercus bicolor*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Vaccinium corymbosum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Carpinus caroliniana*	10	No	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size:)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Symplocarpus foetidus*	30	Yes	OBL
3. *Impatiens capensis*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	90	x 2 =	180
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	155 (A)		320 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Muck	Oraganic present
2-12	10YR 6/1	80	10YR 5/6	20	C	M	Sandy	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- X 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** X

Remarks:

Soils are consistant throughout Wetland A

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Mannix Road City/County: East Greenbush, Rennsaeler Sampling Date: 7/15/2019

Applicant/Owner: Nick Carver State: NY Sampling Point: 8

Investigator(s): Mark Kiburz Section, Township, Range:

Landform (hillside, terrace, etc.): rolling plains Local relief (concave, convex, none): concave Slope (%): <4%

Subregion (LRR or MLRA): LRR R Lat: 42°37'58.47" Long: -73°41'20.17 Datum: NAD 87

Soil Map Unit Name: NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology - significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology - naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes x	No	**within a Wetland?**	**Yes** x **No**
Wetland Hydrology Present?	Yes x	No	If yes, optional Wetland Site ID:	Flagged as H

Remarks: (Explain alternative procedures here or in a separate report.)
Flags H locate a stream connection between Wetland G and Wetland F.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No	Depth (inches):	2
Water Table Present?	Yes No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No X	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Substrate is stone and sand

VEGETATION – Use scientific names of plants.

Sampling Point: 8

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

N 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
No vegetation was present in stream.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils were not sampled due to cobble bed.

Nicholas Akins

From: Nicholas Akins
Sent: Friday, June 11, 2021 3:30 PM
To: 'James Curatolo'
Subject: RE: Follow up to Phone call

Hi Jim,

Thank you, I'm glad we will have coverage. We will work with what we can get. I look forward to hearing when the bank is online.

Thank you,
Nicholas

Nicholas Akins | Ingalls & Associates, LLP
2603 Guilderland Avenue | Schenectady | New York | 12306
| o | 518.393.7725 ext. 111 | f | 518.393.2324
| e | nakins@ingallsllp.com

From: James Curatolo <jc@thewetlandtrust.org>
Sent: Friday, June 11, 2021 2:57 PM
To: Nicholas Akins <nakins@Ingallsllp.com>
Subject: Re: Follow up to Phone call

Hi Nicholas,

The site is actually in our Mid-Hudson Service Area in our Hudson Bank. That service area will come on line actually very shortly. It is so new we have yet to finalize the credit price. That will also happen soon. The price will higher than the ILF credits we have in western NY ILF Program where costs are much lower. So that is the good/bad news:) Good we will have credits, bad higher price.

Best if we circle back in a week or two so I can determine a much more hopefully definitive time line. You can also call me any time.

Jim

> On Jun 11, 2021, at 2:12 PM, Nicholas Akins <nakins@Ingallsllp.com> wrote:
>
> Hi Jim,
>
> This is Nicholas, our project location is the forested area behind 47 Mannix Rd, Rensselaer, NY 12144.
> We will have

0.205 acres of impact to wetlands. This is the latest from Adam Labatore at the Core for the ratios:

"To determine the appropriated and required number of in-lieu fee credits for the impacts, we need to know what the cover type of the wetlands that will be impacted. Please provide this information and, if needed, revise the mitigation plan to correspond with the following ratio of in-lieu fee credits to impacts: Forested Wetland Impacts 3:1; Scrub-shrub Wetland Impacts 1.5:1; Emergent Wetland Impacts 1:1. If the number of credits to be purchased would be changed due to this reckoning, please provide a new Letter of Credit Availability from TWT"

We will need 0.615 acres as all our impacts are forested wetlands. Let me know how you think we should proceed.

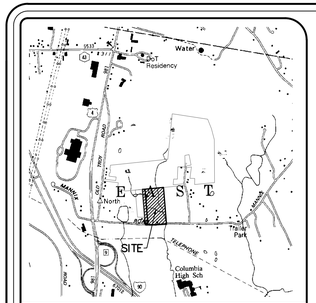
Thank you,
Nicholas

Nicholas Akins | Ingalls & Associates, LLP
2603 Guilderland Avenue | Schenectady | New York | 12306
| o | 518.393.7725 ext. 111 | f | 518.393.2324
| e | nakins@ingallsllp.com

Jim Curatolo
Executive Director
The Wetland Trust
4729 State Route 414
Burdett, NY 14818
607-765-4780 (cell)
jc@thewetlandtrust.org
website: thewetlandtrust.org

APPENDIX E

WETLAND IMPACT MAP



SITE LOCATION MAP

SCALE: 1" = 2000'

LEGEND

- IRON ROD FOUND
- POWER/UTILITY POLE
- IRON PIPE FOUND
- HYDRANT
- WATER VALVE
- WETLAND FLAG
- CATV BOX
- TEL BOX
- PROPERTY LINE
- 500 EXISTING CONTOUR
- OVERHEAD UTILITY LINE
- EASEMENT
- WETLAND AREA
- WETLAND IMPACT AREA

WATERS OF THE UNITED STATES

WETLAND TABLE:

WETLAND A AREA:	2.04± ACRES
WETLAND B AREA:	1.50± ACRES
WETLAND C AREA:	0.05± ACRES
WETLAND D AREA:	1.51± ACRES
WETLAND E AREA:	3.74± ACRES
WETLAND F AREA:	0.23± ACRES
WETLAND G AREA:	0.28± ACRES
WETLAND H AREA:	0.05± ACRES
WETLAND I AREA:	0.34± ACRES

IMPACTS TO WATERS OF THE UNITED STATES

WETLAND A IMPACT AREA:	0.029± ACRES
WETLAND B IMPACT AREA:	0.004± ACRES
WETLAND C IMPACT AREA:	NONE
WETLAND D IMPACT AREA:	0.125± ACRES
WETLAND E IMPACT AREA:	NONE
WETLAND F IMPACT AREA:	NONE
WETLAND G IMPACT AREA:	NONE
WETLAND H IMPACT AREA:	NONE
WETLAND I IMPACT AREA:	0.047± ACRES

IMPACT TOTAL: 0.205± ACRES

DEED REFERENCE:

1) SUBJECT PROPERTY CONVEYED BY JAMES J. GILLESPIE, LAMBERT L. GINSBERG, IRWIN M. STROSBERG, EDWARD L. BOOKSTEIN, EUGENE M. KARP AND RICHARD A. KOHN TO EGV REALTY, INC. BY DEED DATED AUGUST 4, 1993 AND RECORDED IN THE RENSSELAER COUNTY CLERK'S OFFICE ON AUGUST 23, 1993 IN LIBER 1697 OF DEEDS AT PAGE 133.

MAP REFERENCE:

1) MAP ENTITLED "CARVER COURT, AS PREPARED BY BREWER ENGINEERING ASSOCIATES, P.C. ON DECEMBER 12, 2009.

NOTES:

1) SURVEYED PARCELS: TOWN OF EAST GREENBUSH – TAX MAP 145, BLOCK 1, PARCEL 21 & TAX MAP 155.00 BLOCK 5 PARCEL 4.

2) SURVEY PREPARED BY INGALLS AND ASSOCIATES, LLP FROM A JULY 2019 FIELD SURVEY. WETLANDS AREA SURVEY PREPARED BY INGALLS AND ASSOCIATES, LLP FROM A JULY 2019 FIELD DELINEATION.

3) NORTH IS REFERENCED TO NAD 83 NEW YORK STATE PLANES, EAST ZONE. FIELD DATUM ELEVATION IS REFERENCED TO NAVD 1988.

4) SUBJECT TO THE RIGHT OF THE PUBLIC TO THAT PORTION OF LANDS LYING WITHIN THE RIGHT OF WAY FOR UPPER MANNIX ROAD AND THOMPSON HILL ROAD.

5) SUBJECT TO A NON–EXCLUSIVE INGRESS AND EGRESS EASEMENT AS RECITED IN LIBER 4472 AT PAGE 77 WITH REFERENCE TO SMITH LANE FOR THE THE BENEFIT OF PROPERTY KNOWN AS 42 THOMPSON HILL ROAD.

6) SUBJECT TO AN EASEMENT GRANTED TO NEW YORK TELEPHONE COMPANY FOR ELECTRIC AND COMMUNICATION FACILITIES AS RECITED IN LIBER 890 AT PAGE 445.

7) SUBJECT TO A 50 FT WIDE RIGHT OF WAY AS RECITED IN LIBER 1174 OF DEEDS AT PAGE 522.

8) SUBJECT TO ALL OTHER RIGHTS, EASEMENTS, COVENANTS OR RESTRICTION; RECORDED OR UNRECORDED.

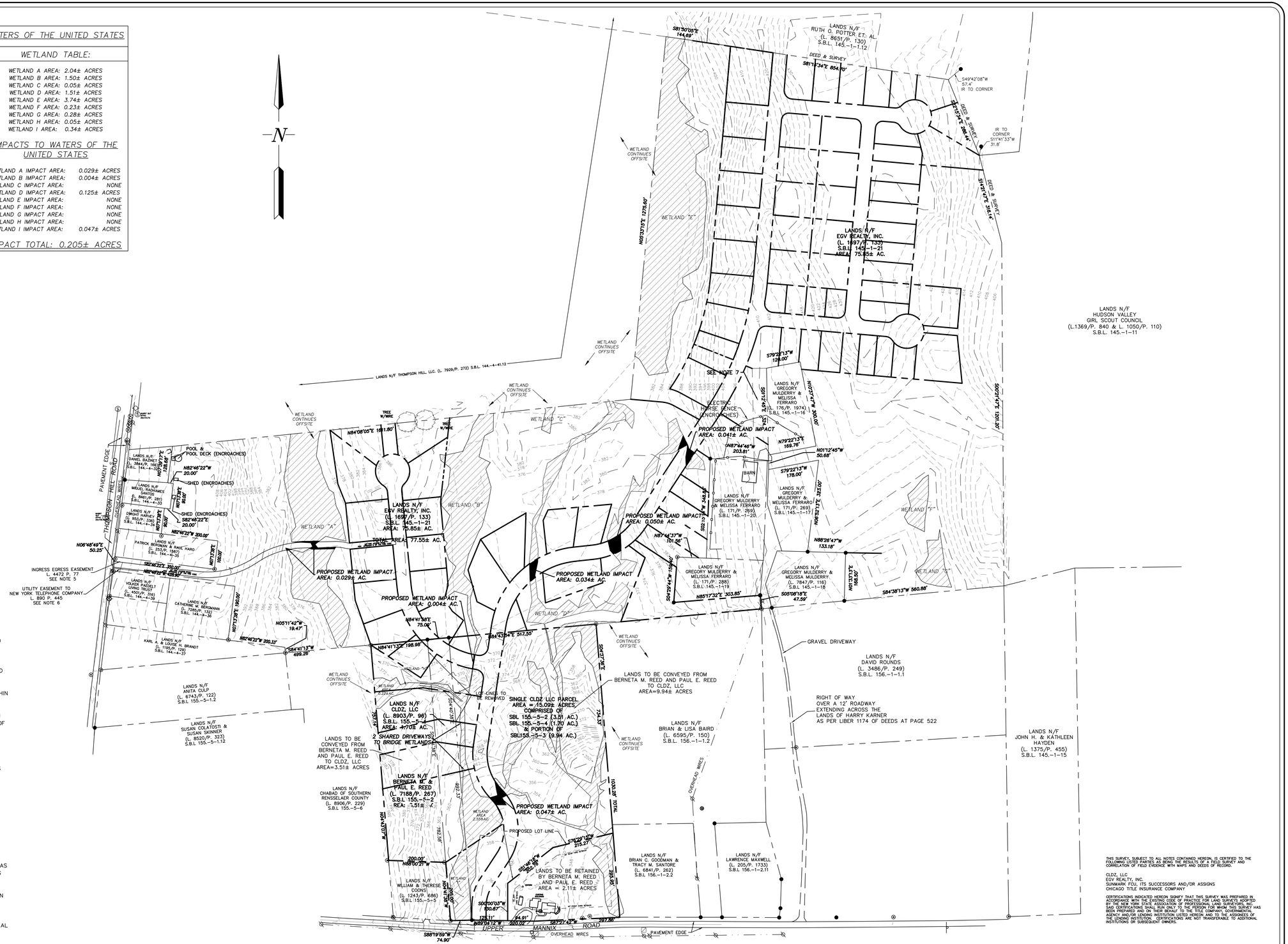
9) SUBJECT TO ANY STATEMENT OF FACT CONTAINED IN COMMITMENT OF TITLE INSURANCE NO. CT19–42011 AS PREPARED BY JEM COMPANY, INC. FOR CHICAGO TITLE INSURANCE COMPANY AND HAVING AN EFFECTIVE DATE OF MAY 2, 2019.

10) UNDERGROUND UTILITIES IF SHOWN HEREON ARE BASED ON VISIBLE PHYSICAL EVIDENCE. THEY SHOULD BE CONSIDERED SCHEMATIC ONLY AND ARE SHOWN TO DEPICT GENERAL UTILITY LOCATIONS AND CONNECTIONS RATHER THAN EXACT UNDERGROUND LOCATIONS. INGALLS & ASSOCIATES, LLP MAKES NO CERTIFICATION AS TO THE ACCURACY OF THE UNDERGROUND UTILITY LOCATIONS AND OTHER UTILITIES MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

11) SURVEY IS PREPARED IN ACCORDANCE WITH THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS CODE OF PRACTICE FOR LAND SURVEYS AS ADOPTED IN OCTOBER OF 1966 AND LAST REVISED ON JULY 18, 1997.

12) NO WETLAND SURVEY SHALL BE DEEMED FINAL WITHOUT A JURISDICTIONAL DETERMINATION FROM THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE) AND/OR THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC).

13) ENCROACHMENTS ARE PRESENT ON SUBJECT PARCEL AND ARE AS SHOWN AS FIELD LOCATED.



GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

1 inch = 150 ft.

NO.	DATE:	REVISIONS	BY:

STATE OF NEW YORK JOHN J. POST JR. 050643 LICENSED LAND SURVEYOR

JOHN J. POST, JR., PLS
N.Y.S. LIC. NO. 050643

ingalls & associates, LLP
engineering, environmental, surveying
2603 GUILDERLAND AVENUE
SCHENECTADY, N.Y. 12306
PHONE: (518) 393-7725
FAX: (518) 393-2324

WETLAND IMPACT PLAN

LANDS N/F EGV REALTY, INC.

MANNIX ROAD & THOMPSON HILL ROAD

TOWN OF EAST GREENBUSH
COUNTY OF RENSSELAER STATE OF NEW YORK

DATE: MAY 5 12, 2021 | CHECKED BY: JJP | JOB NO. 19–083 | SCALE: 1" = 150'

DRAWN BY: VCD | CADD: 19–083 EX REED ADDED | SHEET 1 OF 1

THIS SURVEY, SUBJECT TO ALL NOTES CONTAINED HEREON, IS CERTIFIED TO THE FOLLOWING LISTED PARTIES AS BEING THE RESULTS OF A FIELD SURVEY AND CORRELATION OF FIELD EVIDENCE WITH MAPS AND DEEDS OF RECORD.

CLDZ, LLC
EGV REALTY, INC.
SUNMARK FCU, ITS SUCCESSORS AND/OR ASSIGNS
CHICAGO TITLE INSURANCE COMPANY

CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, INC. AND THAT IT CONFORMS TO THE STANDARDS OF CARE AND PRACTICE ESTABLISHED, AND HAS BEEN PREPARED AND ON THEIR BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND/OR LENDING INSTITUTION LISTED HEREON AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

APPENDIX D

TRAFFIC STUDY

April 20, 2021

Ref: 20604.00

Mr. Nick Laraway
c/o Brett Steenburgh, PE, PLLC
Brett L. Steenburgh PE PLLC
2832 Rosendale Road
Niskayuna, NY 12309

Re: Traffic Impact Evaluation, Carver Court Cluster Subdivision, Upper Mannix Road, Town of East Greenbush, NY

Dear Mr. Laraway,

VHB has conducted a traffic impact and access study to assess the potential traffic impacts associated with the proposed Carver Court Residential Development project located on the north side of Upper Mannix Road, east of US Route 4 in the Town of East Greenbush. The proposed project includes the construction of 110 single family homes. The proposed development plan is illustrated on the Cluster Subdivision plan, prepared by Brett Steenburgh, PE PLLC, and is included in Attachment A. The project is anticipated to be fully constructed in 2026.

This letter includes an evaluation of the peak hour trip generation anticipated with the proposed project, an assessment of the available sight distances along the project frontage for access into the site, and a qualitative evaluation of the traffic on the surrounding roadway network. As detailed herein, the proposed project is expected to have a minor impact on local traffic operations.

Site Location and Proposed Development

The approximate 90-acre project site, as shown in the site location map on the following page, is located on the north side of Upper Mannix Road, east of US Route 4, in the Town of East Greenbush. The development plan includes the construction of 110 single family homes. Access to the site is proposed via a single full-access road intersecting Upper Mannix Road. A 20-foot fire access road is proposed on the western side of the site to intersect with Thompson Hill Road. This driveway will only be used for emergency access into the site.

Engineers | Scientists | Planners | Designers

100 Great Oaks Boulevard
Suite 118
Albany, New York 12203
P 518.389.3600
F 518.452.0324

Existing Conditions

Study Area Roadway

Upper Mannix Road is an urban local roadway providing east/west travel between US Route 4 and Best Road in the Town of East Greenbush. Near the project site, Upper Mannix Road is a two-lane roadway with one 10-foot travel lane in each direction and no shoulders. The posted speed limit on Upper Mannix Road is 30-mph. In the westbound direction, just west of the site, there is a warning sign stating "Hill Blocks View" with a 20-mph speed placard, warning drivers of the upcoming vertical curve. Towards the crest of the hill, just east of Tech Valley Drive, there is an Intersection Warning Sign with a 20-mph posted speed limit in the westbound direction. Upper Mannix Road is posted with a 5-ton weight restriction and for no trucks at the east end of the roadway adjacent to Best Road. There are no sidewalks provided on Upper Mannix Road, so pedestrians and bicyclists share the road with motor vehicles. Traffic volume data collected in February 2021 shows that near the project site, Upper Mannix Road serves approximately 870 vehicles per day (vpd). Land uses in the project vicinity are primarily residential; however, just west of the site is the East Greenbush Technology Park which includes a hotel and numerous office building.

Traffic Volumes

Automatic traffic recorder (ATR) data was collected on Upper Mannix Road near the project site on Thursday February 4, 2021 to identify existing traffic volume conditions along the project frontage. The 2021 existing traffic volume data is summarized below in Table 1 and included in Attachment B.

Table 1 Existing Traffic Volume Summary

	Weekday Daily	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
Location	Volume [a]	Vol [b]	K Factor [c]	Dir. Dist.	Volume	K Factor	Dir. Dist.
Upper Mannix Road	873	80	9.2%	66% WB	103	11.8%	66% EB

Source Automatic traffic recorder data collected in February 2021.
a Daily traffic expressed in vehicles per day.
b Peak hour volumes expressed in vehicles per hour.
c Percent of daily traffic, which occurs during the peak hour.

As shown in Table 1, Upper Mannix Road currently carries approximately 870 vehicles per day, with 9.2% of the daily traffic occurring during the weekday morning peak hour and 11.8% occurring during the weekday evening peak hour. Upper Mannix Road traffic is heavier in the westbound direction during the weekday morning peak hour and heavier in the east bound direction during the weekday evening peak hour. Based on a review of the ATR data, the weekday morning peak hour occurs from 7:00 to 8:00 AM and the evening peak hour occurs from 4:00 to 5:00 PM.

It is noted that the February 2021 counts may be lower due to impacts to travel as a result of COVID.

Transit and Pedestrian Accommodations

Transit service in the region is provided by the Capital District Transportation Authority (CDTA). There are no bus routes or stops in the project vicinity. The nearest bus stop, (CDTA Route 214) is located approximately 1-mile northwest of the project site at the Walmart Supercenter in the Rensselaer County Plaza on US Route 4. Route 214 runs seven days a week with the weekday route running from approximately 6:00 AM to midnight and on Saturday from approximately 7:30 AM to midnight and on Sundays and major holidays from 9:00 AM to 7:30 PM.

As noted, there are no sidewalks or shoulders along the project frontage on Upper Mannix Road; therefore, pedestrians and bicyclists share the road with motor vehicles.

Site Generated Traffic Volumes

To estimate the site-generated traffic, the Institute of Transportation Engineers' (ITE) publication *Trip Generation, 10th Edition*[1] was utilized. The number of vehicle trips generated by the proposed project was estimated based on ITE land use code (LUC) 210 – Single Family Detached Housing. A summary of the trip generation for the proposed 110 homes for the AM and PM peak hours is provided in Table 2.

Table 2 Trip Generation Summary

Weekday Time Period	Movement	Vehicle Trips [a]
Morning	Enter	21
Peak Hour	Exit	62
	Total	83
Evening	Enter	70
Peak Hour	Exit	41
	Total	111

a Trip generation estimate based on ITE LUC 210 (Single Family Detached Housing) for 110 units

As shown in the projections outlined above, the proposed project is expected to generate 83 new vehicle trips (21 entering and 62 exiting) during the AM peak hour and 111 new vehicle trips (70 entering and 41 exiting) during the PM peak hour. The magnitude of site generated trips is less than the New York State Department of Transportation (NYSDOT) and ITE trip threshold of generating 100 vehicle trips on any off-site intersection approach indicating a need to complete a detailed traffic evaluation. These industry thresholds were developed as a tool to identify locations where the magnitude of traffic generated has the potential to impact operations at off-site intersections and screen out locations that do not meet the threshold and are unlikely to require mitigation. Based on the guidelines, this evaluation focused on a qualitative assessment of the site traffic on the adjacent roadway network as a detailed analysis of off-site intersections is not warranted.

Based on a review of existing travel patterns and area destinations, it is expected that approximately 35% of the site-generated traffic will travel to and from the east on Upper Mannix Road and 65% will travel to and from the west on Upper Mannix Road toward US Route 4. This distribution of traffic will result in an increase of 29 vehicle trips (22 eastbound and 7 westbound) traveling to and from the east and 54 vehicle trips (14 eastbound and 40 westbound) traveling to and from the west on Upper Mannix Road during the AM peak hour. During the PM peak hour, this distribution of traffic will result in an increase of 39 vehicle trips (14 eastbound and 24 westbound) traveling to and from the east and 73 vehicle trips (46 eastbound and 27 westbound) traveling to and from the west on Upper Mannix Road. This distribution of traffic results in a maximum directional increase in traffic of 40 vehicle trips during the AM peak hour and 46

1 Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, Washington D.C., September 2017.

vehicle trips during the PM peak hour resulting in a maximum increase of less than one vehicle per minute during the peak periods. The low magnitude of traffic generated by the site will be accommodated for by the existing roadway network and does not result in the need for off-site mitigation.

Thompson Hill Road is a local street that connects between Upper Mannix Road and US Route 4 just east of US Route 4 along Upper Mannix Road. Historically there have been concerns expressed by the Town and residents on Thompson Hill Road regarding traffic on Upper Mannix Road using Thompson Hill Road as a cut through route when travelling to and from US Route 4. Prior to the installation of a roundabout the US Route 4/Upper Mannix Road intersection operated with stop sign control on the Upper Mannix Road approach to US Route 4 with long vehicle delays on Upper Mannix Road. This may have resulted in Thompson Hill Road being an attractive route for drivers leaving Upper Mannix Road to travel north on US Route 4. Installation of the roundabout has resulted in significant improvements to the operation of this intersection and delays on the Upper Mannix Road westbound approach have decreased substantially reducing the attractiveness and need for a cut through route.

Traffic volume projections and capacity evaluations for 2024 contained in the NYSDOT Final Design Report (US Route 4 & Mannix Road Intersection Improvement Project PIN 1757.99, September 2012), show that vehicles travelling on the westbound Upper Mannix Road approach to US Route 4 will experience an average of 14 seconds of delay during the AM peak hour and 32 seconds during the PM peak hour indicating short periods of delays to turn left or right onto US Route 4 or through to continue on Upper Mannix Road. The short periods of delay experienced at this intersection with a roundabout in place does not support the use of Thompson Hill Road as a cut through route.

The 2012 Final Design Report included an evaluation of the roundabout at the US Route 4/Upper Mannix Road intersection for a 20-year future condition. A review of the volumes and analysis indicates the following:

- Volume projections between the 2010 existing condition and 2034 future 20-year condition included increases in volumes on Upper Mannix Road of 240% equating to the addition of 705 vehicles during the AM peak hour and 635 vehicles during the PM peak hour.
- The operational analysis indicated overall LOS B/C conditions with average vehicle delays of 16.8 seconds during the AM peak hour and 29.8 seconds during the PM peak hour in the 2034 future 20-year condition.
- The traffic volumes associated with the construction of the 110- single family units are accounted for in the volume projects included in the 20-year future condition analysis of the roundabout and no further evaluation is needed.

Sight Distance

Sight distance analysis, in conformance with guidelines of the American Association of State Highway and Transportation Officials (AASHTO)[2] was performed at the proposed site access intersection on Upper

2 A Policy on the Geometric Design of Highways and Streets, 7th Edition, American Association of State Highway and Transportation Officials, 2018

Mannix Road. Both stopping sight distance (SSD) for traffic approaching the site and intersection sight distance (ISD) were measured. The posted speed limit on Upper Mannix Road is 30-mph. The recorded 85th percentile travel speed is 44-mph in the eastbound direction and 48-mph in the westbound direction. Based on the recorded speeds, the measured sight distances were compared to a 45-mph eastbound operating speed and a 50-mph westbound operating speed on Upper Mannix Road.

SSD is the distance along the roadway for a vehicle approaching an intersection from either direction to perceive, react and come to a complete stop before colliding with an object in the road, in this case a vehicle exiting from the site or a vehicle waiting on Upper Mannix Road to turn into the site. Table 3 summarizes the stopping sight distance evaluation.

Table 3 Stopping Sight Distance

Location	Traveling	Guideline (feet) [a]	Measured (feet) [b]
Site Access Road on Upper Mannix Rd	EB	400 [c]	535+
	WB	425	500+

a Based on standards established in A Policy on the Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2018 for 45-mph eastbound and 50-mph westbound operating speeds.
b Based on field measurements taken by VHB.
c Guideline adjusted for a 6% downgrade approaching the site access in the eastbound direction.

As shown in Table 3, the available stopping sight distances eastbound and westbound on Upper Mannix Road satisfy the AASHTO guidelines for the two operating speeds.

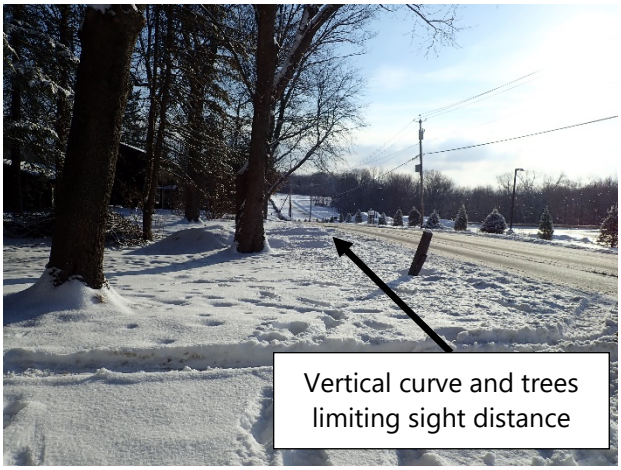
ISD is based on the time required for perception, reaction, and completion of the desired turning maneuver in to or out of the site access. Calculation of the ISD includes the time to (1) turn and clear the intersection without conflicting with approaching vehicles; and (2) upon turning, to accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. Table 4 summarizes the intersection sight distance evaluation.

Table 4 Intersection Sight Distance

	Field Measurement		AASHTO Guideline (feet) [b]		
Location	View	Distance (feet) [a]	Left-turn Out	Right-turn Out	Left-turn In
Site Access Road	Looking Left	275	555	480	Na
	Looking Right	535	500	Na	Na
	Looking Straight	500+	Na	Na	405

a Based on field measurements taken by VHB. The measurements shown assume clearing of the vegetation along the project frontage a minimum of 14.5 feet back from the travel way.
b Based on standards established in A Policy on the Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2018 for 45-mph eastbound and 50-mph westbound operating speeds.
Na Not applicable

Table 4 shows that the sight distance looking straight for a vehicle turning left into the site and looking right to turn left out of the site satisfy the AASHTO recommended guidelines. The sight distance looking left for a vehicle to turn left or right out of the site is less than the AASHTO guidelines for the 50-mph westbound operating speed. The sight distance looking left is limited by a vertical curve in the roadway paired with a tree line on the parcel directly east of the project site, as shown in Photograph 1. Photograph 2 shows the clear line of sight looking right from the site access road.



Photograph 1: Looking left (D_L) from proposed site access

Photograph 2: Looking right (D_R) from proposed site access

The proposed site access is placed within the limited site frontage along Upper Mannix Road. To maximize the sight lines the following is recommended:

- Relocate the site driveway approximately 60-feet west of the currently proposed location to increase the sight lines looking to the east. It is noted that shifting the driveway further west will result in wetland impacts. At the relocated placement, the sight line looking left would increase to approximately 335 feet and the sight line looking right would decrease to approximately 475-feet. A review of Figure 2C-101 in the NYS Supplement to the Manual of Uniform Traffic Control Devices (MUTCD)[3], the sight distances at this driveway would be less than desirable, but not critically limited. Although this driveway shift would result in sight lines that are less than desirable in both directions, it also provides a balance and maximizes the visibility in both directions. Sight lines that are not critically limited do not require mitigation such as the installation of an intersection warning sign; however, if desired by the Town, the applicant is willing to install intersection warning signs along either or both approaches to the site access.

3 New York State Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways (2009 Edition), NYSDOT, Effective March 16, 2011

- Coordinate with the Town to remove vegetation within the right-of way within the sight triangle looking to the left from the site access proposed on Upper Mannix Road.
- Coordinate with the adjacent landowner to determine the feasibility of clearing any additional vegetation outside of the public right-of-way that could improve the sight lines.
- Vegetation along the project frontage should be cleared and maintained a minimum of 14.5 feet back from the travel way.
- Any site signing and landscaping be placed 14.5 back from the roadway or be of a height not to restrict the sight lines.

Conclusions

VHB has conducted a traffic impact evaluation for the proposed Carver Court Residential Development project located on Upper Mannix Road in the Town of East Greenbush. The proposed project will include the construction of 110 single family homes to be fully constructed by 2026. Access to the site is proposed via a single full access roadway intersecting with Upper Mannix Road. A 20-foot fire access road is also proposed on the western side of the site to intersect with Thompson Hill Road. This access will be gated and only used for emergency access. The following is noted in summary of the completed evaluation:

- The proposed project is expected to generate 83 new vehicle trips (21 entering and 62 exiting) during the AM peak hour and 111 new vehicle trips (70 entering and 41 exiting) during the PM peak hour.
- It is expected that 35% of the site-generated traffic will travel to and from the east and 65% will travel to and from the west. The distribution of traffic will result in an increase of 29 vehicle trips traveling to and from east of the site and 54 vehicle trips traveling to and from west of the site during the AM peak hour. During the PM peak hour, the distribution results in an increase of 38 vehicle trips traveling to and from east of the site and 73 vehicle trips traveling to and from west of the site. This magnitude of traffic distributed onto the adjacent roadway network is less than the NYSDOT and ITE vehicle trip thresholds of the generation of 100 vehicle trips on a single intersection approach to identify a need for detailed analysis indicating that the increase in traffic associated with the project will be accommodated for on the existing roadway network and no off-site mitigation is recommended.
- Site generated trips are generally not anticipated to use Thompson Hill Road due to its proximity to the US Route 4/Upper Mannix Road roundabout which operates with good levels of service and vehicle delays of approximately 30 seconds or less during peak travel periods on the westbound Upper Mannix Road intersection approach.
- The roundabout analysis included in the NYSDOT Final Design Report for the *US Route 4 & Mannix Road Intersection Improvement Project* (PIN 1757.99) for the 2034, 20-year future condition, illustrates overall level of service B/C conditions with overall average vehicle delays of less than 30 seconds indicating good future operations will be maintained at this intersection. The 2034 analysis included growth on Upper Mannix Road of 705 vehicles during the AM peak hour

and 635 vehicle during the PM peak hour accounting for the traffic from the proposed development.

- The available stopping sight distances eastbound and westbound on Upper Mannix Road satisfy the AASHTO guidelines for a 45-mph operating speed eastbound and a 50-mph operating speed westbound at the site access road.
- To maximize the sight lines from the proposed site access roadway it is recommended that the site driveway be shifted approximately 60 feet to the west along the project frontage. In addition the applicant should work with the Town and the adjacent neighbor to the east to clear vegetation to the extent possible within the sight triangle.
- To maximize the sight lines in both directions, it is recommended that vegetation along the project frontage be cleared and maintained a minimum of 14.5 feet back from the travel way. It is further recommended that any site signing and landscaping be placed 14.5 back from the roadway or be of a height not to restrict the sight lines.

As detailed herein, the traffic generated by the proposed Carver Court Residential Development will be accommodated for by the existing roadway network. The mitigation for the site is limited to the sight distance recommendations.

If you have any questions on the above evaluaiton, please call.

Sincerely,

VHB Engineering, Surveying and Landscape Architecture, P.C.

Wendy C. Holsberger, PE, PTOE
Transportation Director
wholsberger@vhb.com

Alanna M. Moran
Senior Traffic Designer
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Attachments

Attachments

A. Cluster Subdivision

B. Traffic Volume Data

Attachment A – Cluster Subdivision

SITE ZONING

EXISTING ZONING:
ZONE: COMMERCIAL RESIDENTIAL BUFFER R-B
MINIMUM LOT SIZE: 21,780 S.F.
MINIMUM FRONTAGE: 100 FT
MAXIMUM COVERAGE: 10%
MINIMUM FRONT YARD: 25 FT
MINIMUM SIDE YARD: 10 FT
MINIMUM REAR YARD: 30 FT
MAXIMUM BUILD OUT CONVENTIONAL YIELDS 110 LOTS

PROPOSED CLUSTER SUBDIVISION
MINIMUM LOT SIZE: 7,000 S.F.
MINIMUM FRONTAGE: 50 FT
MAXIMUM COVERAGE: 30%
MINIMUM FRONT YARD: 20 FT
MINIMUM SIDE YARD: 0 - 8 FT
MINIMUM REAR YARD: 20 FT

SITE STATISTICS
CLUSTER SUBDIVISION

SBL 145-1-21, 155-5-4, 155-5-4, 155-5-2 & 155-5-3 (PORTION)
AREA = 90.95± AC.
USE: CLUSTER SUBDIVISION - 110 BUILDING LOTS
TOTAL OPEN SPACE AREA = 42.61 AC. (47% TOTAL AREA)
COMPRISED OF THE FOLLOWING:
-33.66 AC. OPEN SPACE (UPLAND)
-8.95 AC. OPEN SPACE (WETLAND)
LINEAL FOOTAGE OF TOWN ROAD = 6,048 L.F.
TOTAL ROW AREA = 6.9 AC.
STORMWATER MANAGEMENT LOTS = 5.47 AC.
EXISTING DEEDED ROW = 0.37 AC.
PROPOSED BUILDING LOTS = 24.37 AC.
TOTAL WETLAND IMPACTS = 0.193± AC.

LEGEND

(T-#) TOWNHOME BUILDING LOT
TOTAL 60 LOTS

(C-#) COTTAGE HOME BUILDING LOT
TOTAL 36 LOTS

(E-#) ESTATE HOME BUILDING LOT
TOTAL 14 LOTS

SITE LOCATION MAP

NOTE: 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, CONTACT ALL MEMBERS OF THE U.F.P.O. TO LOCATE ALL UNDERGROUND UTILITIES. 1-800-962-7962

NO.	DATE	REVISIONS	BY

BRETT L. STEENBURGH P.E.
N.Y.S. LIC. NO. 072548

APPLICANT:
CLDZ LLC
494 WESTERN TURNPIKE
ALTAMONT, NY 12009

BRETT L. STEENBURGH, P.E. PLLC
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ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY
A complete professional engineering firm with a personal touch.

CLUSTER SUBDIVISION
CLDZ, LLC
CARVER COURT
TOWN OF EAST GREENBUSH
COUNTY OF RENSSELAER STATE OF NEW YORK

DRAWN BY:	CHKD BY:	SCALE: 1" = 100'
RLS	JSB NO.	SHEET 1 OF 1

DATE: JULY 23, 2020

Attachment B – Traffic Volume Data

Tri-State Traffic Data Inc

184 Baker Rd
Coatesville, PA 19320

Road Name: MANNIX RD
Segment: 1020' E OF TECH VALLEY RD
Ctr#: JR64

GPS: 42.630694, -73.695430

Start	2/1/2021		2/2/2021		2/3/2021		2/4/2021		2/5/2021		Weekday Average		2/6/2021		2/7/2021	
Time	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	*	*	*	*	0	1	0	0	0	0	*	*	*	*
01:00	*	*	*	*	*	*	0	0	0	0	0	0	*	*	*	*
02:00	*	*	*	*	*	*	0	0	1	**3**	0	2	*	*	*	*
03:00	*	*	*	*	*	*	0	0	1	0	0	0	*	*	*	*
04:00	*	*	*	*	*	*	1	0	3	3	2	2	*	*	*	*
05:00	*	*	*	*	*	*	3	1	**6**	1	4	1	*	*	*	*
06:00	*	*	*	*	*	*	34	13	*	*	34	13	*	*	*	*
07:00	*	*	*	*	*	*	**53**	27	*	*	**53**	27	*	*	*	*
08:00	*	*	*	*	*	*	30	19	*	*	30	19	*	*	*	*
09:00	*	*	*	*	*	*	36	20	*	*	36	20	*	*	*	*
10:00	*	*	*	*	*	*	23	**33**	*	*	23	**33**	*	*	*	*
11:00	*	*	*	*	*	*	31	18	*	*	31	18	*	*	*	*
12:00 PM	*	*	*	*	*	*	23	37	*	*	23	37	*	*	*	*
01:00	*	*	*	*	*	*	22	26	*	*	22	26	*	*	*	*
02:00	*	*	*	*	*	*	25	34	*	*	25	34	*	*	*	*
03:00	*	*	*	*	*	*	31	54	*	*	31	54	*	*	*	*
04:00	*	*	*	*	*	*	**35**	**68**	*	*	**35**	**68**	*	*	*	*
05:00	*	*	*	*	*	*	25	49	*	*	25	49	*	*	*	*
06:00	*	*	*	*	*	*	11	25	*	*	11	25	*	*	*	*
07:00	*	*	*	*	**5**	**16**	8	15	*	*	6	16	*	*	*	*
08:00	*	*	*	*	4	7	4	14	*	*	4	10	*	*	*	*
09:00	*	*	*	*	3	6	2	6	*	*	2	6	*	*	*	*
10:00	*	*	*	*	3	4	7	7	*	*	5	6	*	*	*	*
11:00	*	*	*	*	2	0	1	1	*	*	2	0	*	*	*	*
Total	0	0	0	0	17	33	405	468	11	7	404	466	0	0	0	0
Day	0		0		50		873		18		870		0		0	
AM Peak	-	-	-	-	-	-	07:00	10:00	05:00	02:00	07:00	10:00	-	-	-	-
Vol.	-	-	-	-	-	-	53	33	6	3	53	33	-	-	-	-
PM Peak	-	-	-	-	19:00	19:00	16:00	16:00	-	-	16:00	16:00	-	-	-	-
Vol.	-	-	-	-	5	16	35	68	-	-	35	68	-	-	-	-

Comb. Total	0	0	50	873	18	870	0	0

ADT ADT 871 AADT 871