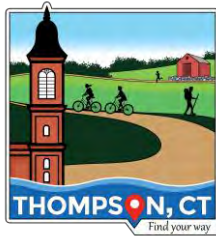


INLAND WETLANDS COMMISSION
TUESDAY, November 9, 2021
ZOOM Meeting

- A) Call to Order & Roll Call
- B) Appointment of Alternates

Agenda Item C.a.

Action on Minutes of Previous Meeting
Minutes of September 14, 2021 and
Site Walk Minutes of November 6, 2021



TOWN OF THOMPSON Inland Wetlands Commission

Town of Thompson, Inland Wetlands Commission

Via ZOOM Online Meeting Portal

MEETING MINUTES - September 14, 2021 7:00 PM

A) Call to Order by Chairman George O'Neil at 7:03 PM.

Present: George O'Neil (Chair), H. Charles Obert (Vice Chair), Diane Chapin (Treasurer), Fran Morano (Commissioner), Marla Butts (Wetlands Agent), Amy St. Onge (First Selectman), members of the public, and Dan Malo (Recording Secretary)

B) Appointment of Alternates – n/a

C) Minutes of Previous Meeting, August 10, 2021 were ACCEPTED with modification, concerning typos: IWA21018 should refer to '59 Wrightson Drive'; Chairman O'Neil's name was misspelled.

D) Citizens Comments on Agenda Items

Peter Nalewajk, regarding **Notice of Violation VIOL21023** and the action that the Commission is taking or can take to address the violation. Chairman O'Neil stated that the item will be discussed during the meeting and a course of action will be considered after more information is presented.

E) Applications

a) Old Applications

1. **WAA21021**, Jodie Arpin, 0 New Rd. (Assessor's map 154, block 3, lot 2G), construction of a driveway and footing drain in the upland review area for a new single-family home, stamped received 8/9/21. Marla Butts monitored the area and observed no vernal pools in an area where one had been hypothesized. She had a concern about the proximity of the proposed driveway to a neighboring driveway and runoff which may result; after receiving modified plans from J&D Civil Engineers, she approved the application as the Agent. Notice of this approval will be published on the 9/24/21, with the appeal period ending on 10/8/21.

b) New Applications

1. **WAA21022**, Andrew & Kathleen Ells, 28 Breaults Landing Rd. (Assessor's map 141, block 17, lot 197), replacement of retaining walls and the construction of new retaining wall in the upland review area for Quaddick Reservoir, stamped received 8/16/21. Marla Butts commented that the old wooden retaining wall located by the dock at the southwest portion of the property is staying in place. No work is to be done in the water. Prior to work, the property boundaries need to be staked by a Licensed Surveyor and maintained throughout the project. No modification of the wooden retaining wall is authorized. Marla recommended that a survey should occur before the drawdown of the Reservoir. With these conditions, she approved the application as the Agent. Notice of this approval will be published on the 9/24/21, with the appeal period ending on 10/8/21.

2. **DEC21024**, Blair & Karen Cole, 172 County Home Rd (Assessor's map 107, block 36, lots 16 & 16B, timber harvest, received by Town Clerk 8/26/21. Blair Cole spoke to his application, hoping to improve the health of the forest stand and understory. Invasives have already been removed and typical corduroy roads will be used at two stream crossings. Commissioner Morano made a motion approve this use as a right. Commissioner Chapin seconded and the motion carried unanimously.
3. **WAA21025**, RT193, LLC, 49 Thompson Rd (Assessor's map 87, block 53, lot 8), to construct an event barn with associated parking and drainage, stamped received by Town Clerk 8/26/21, stamped received by Wetlands Office 8/30/21. Marla Butts is in the process of reviewing the plans submitted from J&D Civil Engineers. Janet Blanchette of J&D described the project, which involves the construction of an open-air event barn, a driveway off of an existing driveway, and parking area with over-flow gravel parking. The project is on hold until 2022. No vote is required at this time.
4. **DEC21026**, Amanda & Christopher White, 246 Ravenelle Rd. (Assessor's map 44, block 105, lot 31B), request ruling of use permitted as of right for a chicken coop, pole barn and swimming pool, stamped received 8/30/21. Work to be done within the upland review area. Because of the site's proximity to wetlands, a declaratory ruling is required by the Commission. A Variance will also be required through Zoning Board of Appeals, related to the farm animals intended to use the proposed structures within required setbacks. Chairman O'Neil asked there was any danger to the wetlands with this proposal; Charles Obert asked similarly, regarding grading and digging. Marla Butts suggested that the wetlands have protection because of the topography of the site. Commissioner Morano had procedural questions. A motion to approve by Commissioner Obert was seconded by Commissioner Morano. The Commission determined by unanimous vote that the use is allowed as a right for maintenance and enjoyment of the home.
5. **SUB21027**, Inn Acquisition Associates, LLC, 286 Thompson Hill Rd (Assessor's map 102, block 40, lot 2), 2 lot subdivision for conceptual approval, stamped received 9/7/ 21. Janet Blanchette of J&D Civil Engineers described a conceptual plan to subdivide the property for the construction of a single-family home. Driveway access is proposed off of an existing driveway which runs through wetlands. Chairman O'Neil had questions about site grading. Marla Butts stated that beyond minor grading for septic, there will be no other incursions into the wetlands. Commissioner Obert mentioned that most of the wetlands are located on the other side of the existing driveway. Marla discussed procedural steps and that no work is authorized with conceptual approval. Commissioner Chapin made a motion to approve the conceptual subdivision. Commissioner Obert seconded and the motion carried unanimously.
6. **IWA21028**, Wojciech Sudyka, 1574 Riverside Dr. (Assessor's map 55, block 65, lot 14), fill 3,500 sq. ft. of wetlands and 100-foot upland review area for construction of a commercial building and associated parking, stamped received 9/7/21, statutorily received 9/14/21. The applicant intends to construct a commercial building with garage bays built upon a slab. A soil scientist has delineated the site. Commissioner Obert asked if this property was located at the state line, which was confirmed by the presentation. Commissioner Morano asked that since this property was located at the state line, if any other notifications might be required. Marla stated that notifications to the abutting Massachusetts town would be necessary. She suggested that Commissioners may benefit from a sitewalk. No vote was made.

7. **DEC21029**, Town of Thompson, 35 Marshall St. (Assessor's map 169, block 92, lot 13), request for ruling on erection of 6 to 8 sculptures in 100- foot upland review area for the French River, stamped received 9/9/21. Charles Obert mentioned that the sculptures were to be constructed from 'nip' bottles that were collected during a recent community cleanup. Chairman O'Neil asked who the actual applicant for the project was. The project is the effort of the Town Planner and a community artist, with preliminary site drawings from J&D Civil Engineers, which were funded by a grant. Commissioner Chapin asked if the sculptures could break away and become debris in a flood. Marla believed that the structures should be designed parallel with possible flow. A motion was made by Commissioner Obert to approve (1) sculpture as a prototype for the Commission; the motion was seconded by Commissioner Morano. Commission voted 2-2, resulting in a tie. Commissioner Morano rescinded her second of the motion. After discussion, the Commission concurred that the application should be presented again with information regarding hydrology and mechanics, and be initially focused on the installation of (1) sculpture instead of the entire set. Matter tabled.

c) Applications Received After Agenda was Published – none

F) Permit Extensions / Changes – None

G) Violations & Pending Enforcement Actions

- a) **Notice of Violation VIOL21019**, LIS Properties, L.L.C., 715 Riverside Dr. (Assessor's map 63, block 58, Lot 23), unauthorized structures diverting watercourse, flooding Thatcher Rd. & Riverside Dr., issued 7/7/21, request remove or response by 7/13/21. Structures are removed but there are still concerns about the stream channel. Marla Butts noted that the Department of Transportation will be cleaning a nearby drainage system. She will correspond with the property owner about restoring the channel. Matter tabled.
- b) **Notice of Violation VIOL21023**, Jamie Piette, 0 & 73 Center Street (Assessor's map 16, block X, lots H & 2), unauthorized construction of retaining wall and associated backfill in or near Little Pond, issued 8/24/21, instructed to cease further work, by 9/8/21, submit A-2 survey and attend the Commission meeting. Joe Patterson offered to follow the Commission's guidance and stated that he performed work prior to approval out of safety concern due to the site's proximity to the public boat launch. Mr. Patterson said he is soliciting a surveyor to determine if the wall is thoroughly on the property or if it exceeds the property boundaries. Marla Butts stated also that the wall should be rated structurally stable per an engineer. Members were in consensus that more information was needed at this time. Mr. Patterson was instructed to contact the office when he has secured the services of a surveyor to conduct an A-2 survey. Matter tabled.

H) Other Business

Temporary appointment of Dan Malo, Thompson Conservation Agent, to act as Wetlands Agent for enforcement actions over the next several months during the absence of Marla Butts. Marla presented documentation from Darcy Winther of DEEP, demonstrating that Mr. Malo had completed DEEP's Inland Wetlands Training Program and has performed similar work for another municipality. Marla is still available for technical questions via email, but anticipates inquiries to go to First Selectman Amy St. Onge and delegated between Mr. Malo, the Zoning Officer, and the Building Official. Commissioners welcomed Dan and offered support and guidance. Commissioner Morano made a motion to Appoint Dan Malo as Temporary Wetlands Agent during Marla's absence and Commissioner Obert

seconded; the motion carried unanimously.

I) Reports

a) Budget & Expenditures – Diane Chapin reported that the Commission had \$22,534.28 available and had encumbered \$90.00 during the past month for advertising.

b) Wetlands Agent Report – Marla Butts updated the Commission on previous matters: No change in the status of Court Appeal on Application **IWA15029**, River Junction Estates, LLC (Case # AC 42644), the **MS4 2019-2020 Annual Report** or **records disposal**.

Complaint 20-14, Philip Leblanc, 295 Linehouse Rd, pond cleaning during drought and side casting spoils onto neighboring property – A letter will be sent to Mr. & Mrs. Leblanc advising them to do no more earth moving or construction work either in the pond or within 100 feet of the pond without first obtaining approval from the Commission.

Complaint 20-19, Bruce & Christina Bonin, 67 Mountain Hill Rd – letter sent advising them to seek approval from the Commission for any future work in or within 100 feet of the water now ponded on the property. Complaint file closed.

Complaint 21-11, 1208 Riverside Drive, Susan Eklund – A photo of a trailer was provided to the Building Office, with course of action pending results of Building Office investigation.

Approval WAA20040, Laura Hauser, 31 Center St – On 8/21/21, an email was received from the Little Pond Improvement Association about concrete blocks in the Pond being moved. Marla exchanged emails with Ms. Hauser and visited the site on 8/26/21. While some submerged blocks were moved to facilitate safe swimming, Ms. Hauser assured that when any modifications to the shore are planned, she will apply for the necessary permits.

Owen Adam Road – On 8/26/21, Marla & Commissioner Morano walked the entire length of Owen Adam Road from Long Branch Brook to the rear of the Woodward's property on Wilsonville Road. The road bed was fairly clear of debris and woody vegetation. It was evident no vehicles have passed this way in a long time. There was no evidence of any overtopping of the road with water but the deadwood swamp and marshes existing on both sides of the road were obviously impacted by beaver activities. Any modification or upgrading of the road could significantly impact these areas and require approval by the Inland Wetlands Commission. Prior to any modifications of the roadbed, there would need to be an evaluation of the ecological value of the area to determine what impact use of the road would cause. This information will be passed along to the Board of Selectmen.

J) Correspondence – None

K) Signing of Mylars – None

L) Comments by Commissioners – None

M) After completion of the agenda items, Commissioner Chapin made a motion to adjourn the meeting. The motion was seconded by Commissioner Morano and carried unanimously at 9:16 PM.

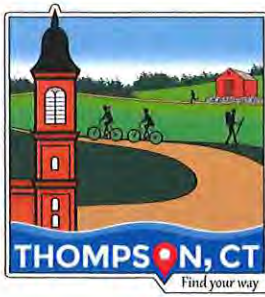
Respectfully submitted, Dan Malo, Recording Secretary



To see/hear the entire meeting via ZOOM, click here to copy and paste into your search bar:

<https://us02web.zoom.us/rec/share/7Uw1H3yqkZRs4Er-watj5VXtMSgo9rv1tl1HrqLwzOt9C28FdSEu4k36FSM5VX0w.KJTECopJG16GO6zC>

Access Passcode: D9\$uU6Mx



TOWN OF THOMPSON

Inland Wetlands
Commission

815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255
Phone: 860-923-1853, Ext. 1
E-MAIL: wetlands@thompsonct.org
www.thompsonct.org

RECEIVED
TOWN OF THOMPSON, CT.
2021 NOV - 8 P 12:22
Geetha
TOWN CLERK

Town of Thompson, Inland Wetlands Commission SITEWALK MINUTES – November 6th, 2021 9:00 AM

Chairman George O'Neil announced the start of the sitewalk at 9:10 AM.

Present: George O'Neil (Chair), H. Charles Obert (Vice Chair), Diane Chapin (Treasurer), Fran Morano (Commissioner), and Dan Malo (Recording Secretary)

On November 6th, 2021, the Inland Wetlands Commission held a sitewalk at the property of Wojciech Sudyka, 1574 Riverside Dr. (Assessor's map 55, block 65, lot 14) to familiarize Commissioners with the site, pending review of application **IWA21028**, which proposes to fill 3,500 sq. ft. of wetlands and 100-foot upland review area for construction of a commercial building, associated parking, and stormwater management facilities.

Commissioners met in the parking lot of the property and walked south towards the proposed building site, crossing a small stream where a catch basin/inlet is proposed. The Commissioners continued east towards test pits at a proposed stormwater basin, and followed along wetlands flags observed on the property, which were depicted on the site plan dated September 3, 2021. The Commissioners walked the area of the proposed structure and continued west towards Perry Pond, through the wetlands along the southern property line. Finding a trail, the Commissioners continued north towards the parking area. A partially obstructed outfall flowing east into the stream was discovered by the trail near wetlands delineation D17 by Chairman O'Neil.

The Commissioners continued the sitewalk along the stone and mortar dam and observed a flow of water on the Massachusetts side of the property which enters into a pipe by the dam and continues southeast through the Thompson property. The route on depicted the plans assumes the pipe outfall to be at the stream. The Commission traced the route through the parking lot, but was unable to locate the outfall.

After completion of the sitewalk, Chairman O'Neil disbanded the Commission at 9:59 AM.

Respectfully submitted, Dan Malo, Recording Secretary

DM

Agenda Item D.
Citizens Comments on Agenda Items

Agenda Item E.a) 1. Old Applications

WAA21025, RT193, LLC, 49 Thompson Rd (Assessor's map 87, block 53, lot 8), to construct an event barn with associated parking and drainage, stamped received by Town Clerk 8/26/21, stamped received by Wetlands Office 8/30/21, under review.

Agenda Item E.a) 2. Old Applications

SUB21027, Inn Acquisition Associates, LLC, 286
Thompson Hill Rd (Assessor's map 102, block 40, lot 2),
2 lot subdivision for conceptual approval, stamped
received 9/7/ 21

Agenda Item E.a) 3. Old Applications

IWA21028, Wojciech Sudyka, 1574 Riverside Dr. (Assessor's map 55, block 65, lot 14), fill 3,500 sq. ft. of wetlands and 100-foot upland review area for construction of commercial building and associated parking, stamped received 9/7/21, statutorily received 9/14/21, Mr. Sudyka granted a 30-day processing extension via email on 10/4/21.

[Reply](#)[Forward](#)[Delete](#)**Re: Application IWA21028 Sudyka Request for 30 day extension pursuant to section 8-7d of The Connecticut General Statutes****Date:** 10/06/2021 (09:40:01 AM CST)**From:** wetlands@thompsonct.org**To:** Wojciech Sudyka**Cc:** Daniel Blanchette, George O'Neil, IWC Chair, Tyra Penn-Gesek, Planning Director, Cynthia Dunne, ZEO Text (2 KB)

Dear Mr. Sudyka, Thank you for granting the Inland Wetlands Commission a 30 day extension of time to continue the processing of your Inland Wetlands Permit application. The meeting for October 25th is not in the Inland Wetlands Commission's control. I suggest you contact Zoning Enforcement Officer Cynthia Dunne regarding that meeting. - Marla

Quoting Wojciech Sudyka <jjswojciech@yahoo.com>:

[Hide Quoted Text]

What needs to be done needs to be done. That being said, is the meeting that was scheduled for (I believe) the 25th going to be moved as well?

Thank you, Wojciech

On Monday, October 4, 2021, 02:51:06 PM EDT, wetlands@thompsonct.org <wetlands@thompsonct.org> wrote:

Dear Mr. Sudyka,

Pursuant to section 8-7d of the Connecticut General Statutes this is a request that you grant the Thompson Inland Wetlands Commission a 30-day extension of time for the initial processing of your inland wetlands application (Application # IWA21028) that was statutorily received by the Commission at its September 14, 2021 meeting. This request is being made to address conditions beyond the Commission's control. The granting of such extension would be appreciated. I have spoken to you engineer Daniel Blanchette regarding this request and if you have concerns regarding this request I suggest you talk with him.

Thank you for your time and attention. I await your reply. - Marla Butts, Thompson Wetlands Agent

--

Marla Butts
Thompson Wetlands Agent
860-923-1852, Ext. 1
wetlands@thompsonct.org

| | Virus-free. www.avast.com |

--

Marla Butts
Thompson Wetlands Agent
860-923-1852, Ext. 1
wetlands@thompsonct.org

SITE DEVELOPMENT PLANS FOR A PROPOSED COMMERCIAL GARAGE

1574 RIVERSIDE DRIVE (ROUTE 12)
THOMPSON, CONNECTICUT

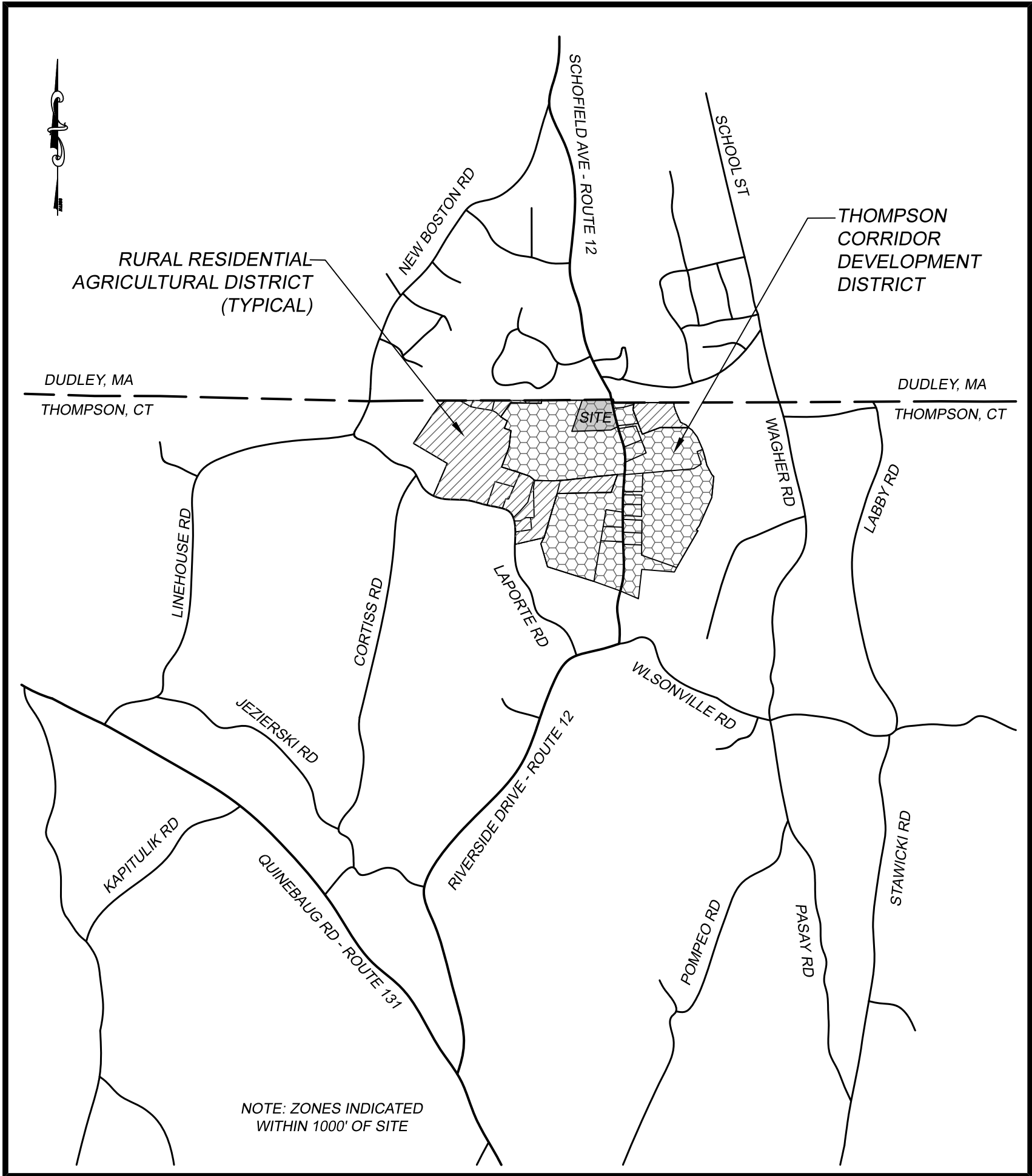
SEPTEMBER 3, 2021

PREPARED FOR:

JJS UNIVERSAL CONSTRUCTION CO.
C/O WOJCIECH SUDYKA
63 AIRPORT ROAD
DUDLEY, MA 01571

INDEX OF DRAWINGS

- 1 COVER
- 2 LAYOUT AND UTILITIES
- 3 GRADING AND EROSION CONTROL
- 4 SEPTIC SYSTEM PLAN
- 5 GENERAL CONSTRUCTION DETAILS
- 6 DRAINAGE AND EROSION CONTROL DETAILS



LOCATION MAP

1" = 2000'

ZONE: THOMPSON CORRIDOR DEVELOPMENT DISTRICT
USE: LIGHT MANUFACTURING

ITEM	REQUIRED	EXISTING	PROPOSED
FRONTAGE	100'	502.40'	502.40'
LOT COVERAGE	<75%	2%	8%
FRONT SETBACK	20'	63.35'	120'
SIDE SETBACK	25'	0'	49'
REAR SETBACK	25'	221.92'	350'
LOT SIZE	40,000 SF	324,522 SF	324,522 SF

DIRECTIONS TO SITE FROM TOWN HALL:

HEAD NORTH ON ROUTE 12. SITE IS ON
THE LEFT JUST BEFORE MA BORDER

J & D CIVIL
ENGINEERS, LLC

401 RAVENELLE ROAD
THOMPSON, CT 06255

JDCIVILENGINEERS.COM

860-923-2920

SPECIAL PERMIT APPROVAL BY THE THOMPSON
PLANNING AND ZONING COMMISSION

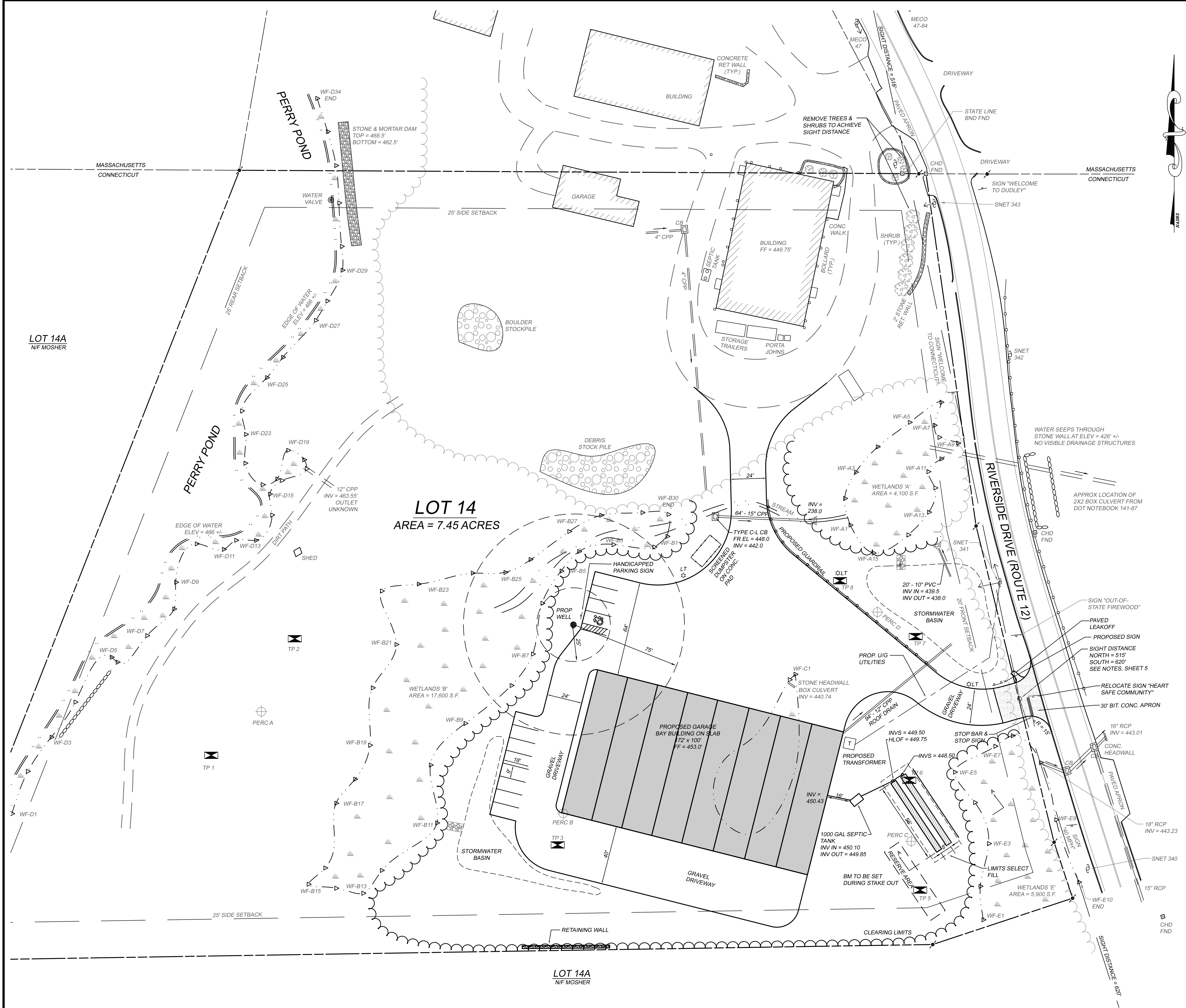
PERMIT APPROVAL BY THE THOMPSON
INLAND WETLAND COMMISSION

CHAIRMAN

DATE

CHAIRMAN

DATE



SURVEY NOTES:

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THE SURVEY TYPE IS TOPOGRAPHIC, PERFORMED ON JANUARY 18, 2021, AND IS INTENDED TO BE USED FOR THE DESIGN OF A SITE DEVELOPMENT PLAN.

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

2. TEST PIT AND PERC TEST LOCATIONS HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND J & D CIVIL ENGINEERS DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT.

3. REFERENCE PLAN: PROPERTY BOUNDARY SURVEY, SHOWING LAND OF THE CRAVER POINT REALTY TRUST, PREPARED BY MICHAEL C. HEALEY, L.S. SCALE 1" = 40'. PREPARED ON NOVEMBER 17, 1997.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12/07/2021 LICENSE NUMBER 12107

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE © 2021 J&D CIVIL ENGINEERS, LLC

FLOOD NOTES

PORTIONS OF THE PROPERTY ARE WITHIN 100 YEAR FLOOD ZONE PER FEMA FIRM MAP 090117-0020B, DATED NOVEMBER 1, 1984.

ZONE A ELEVATION = 468' +/-

WETLAND NOTES

ALL WETLAND SOILS SHOWN WERE DELINEATED IN NOVEMBER 2020 BY SCOTT P. RABIDEAU, PWS, OF NATURAL RESOURCES SERVICES INC.

PROPERTY OWNER: SUDYKA WOJIECH

REFERENCE DEED: THOMPSON LAND RECORDS VOL. 791 PG. 266

ASSESSORS REFERENCE: MAP 55 BLOCK 65 LOT 14

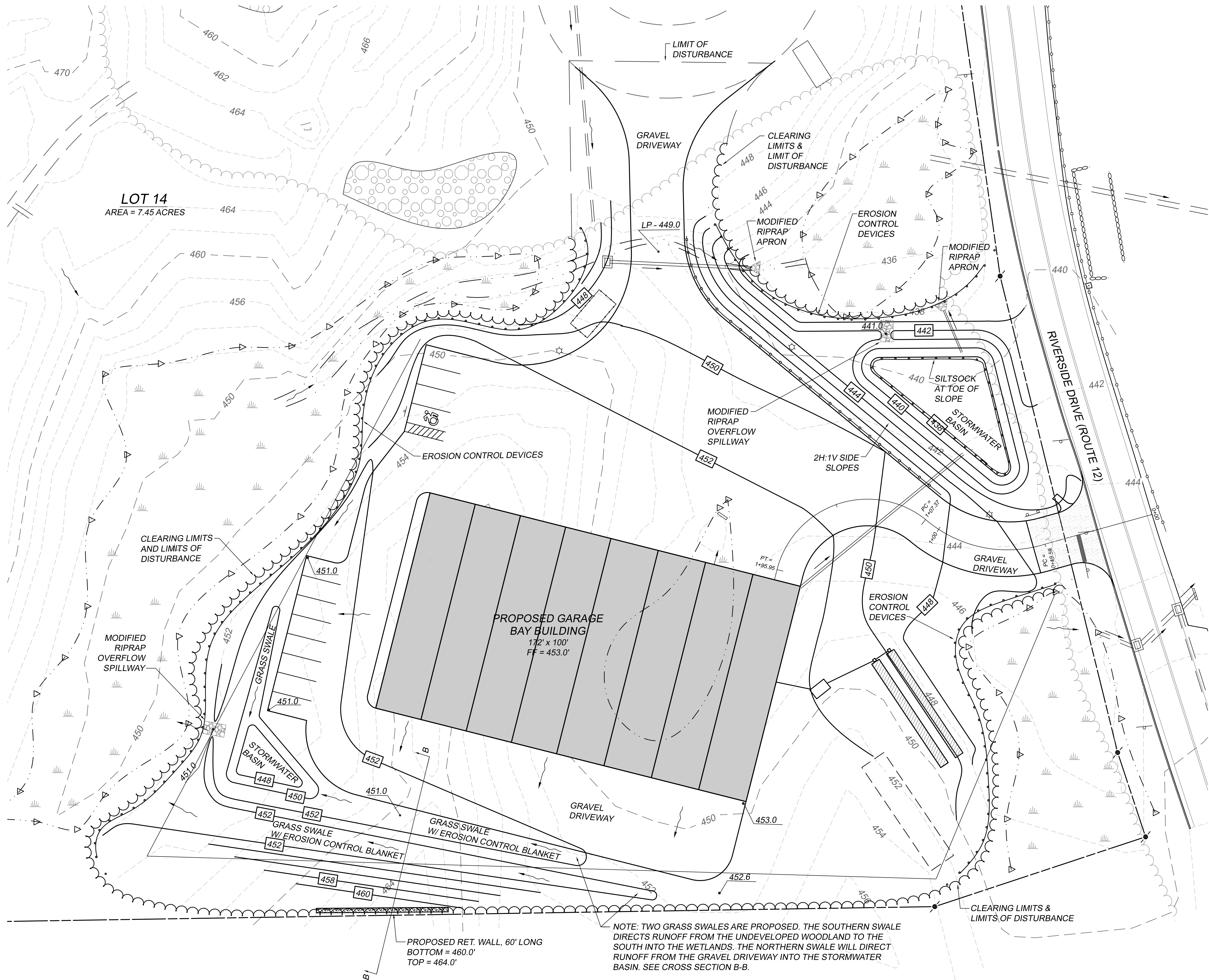
LEGEND	
	BUILDING SETBACK LINE
	PROPERTY LINE
	EDGE OF WETLANDS
	WETLAND BUFFER/UPLAND REVIEW AREA
	TEST PIT
	LEACHING TRENCH
	STONEWALL
	UTILITIES
	TREELINE
	GUARDRAIL
	FENCE

LAYOUT & UTILITIES PLAN
PREPARED FOR
JJS UNIVERSAL CONSTRUCTION CO.
1574 RIVERSIDE DRIVE - THOMPSON, CT
MAP 55 BLOCK 65 LOT 14

J&D CIVIL ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB CHECKED: JJB	REVISIONS:
-------------------------------	------------

JOB NO: 20278	DATE: SEPTEMBER 3, 2021
SCALE: 1" = 30'	SHEET: 2 OF 6



SURVEY NOTES:

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THE SURVEY TYPE IS TOPOGRAPHIC, PERFORMED ON JANUARY 18, 2021, AND IS INTENDED TO BE USED FOR THE DESIGN OF A SITE DEVELOPMENT PLAN.

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

2. TEST PIT AND PERC TEST LOCATIONS HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND J & D CIVIL ENGINEERS DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT.

3. REFERENCE PLAN: PROPERTY BOUNDARY SURVEY, SHOWING LAND OF THE CRAVER POINT REALTY TRUST, PREPARED BY MICHAEL C. HEALEY, L.S. SCALE 1" = 40'. PREPARED ON NOVEMBER 17, 1997.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12107 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
© 2021 J&D CIVIL ENGINEERS, LLC

LEGEND	
	PROPERTY LINE
	EXISTING CONTOUR LINE
	PROPOSED CONTOUR LINE
	EDGE OF WETLANDS
	WETLAND BUFFER/UPLAND REVIEW AREA
	EROSION CONTROL DEVICES
	TEST PIT
	LEACHING TRENCH
	STONEWALL
	UTILITIES
	TREELINE
	GUARDRAIL
	FENCE

GRADING & EROSION CONTROL PLAN
PREPARED FOR
JJS UNIVERSAL CONSTRUCTION CO.
1574 RIVERSIDE DRIVE - THOMPSON, CT
MAP 55 BLOCK 65 LOT 14

J&D CIVIL ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB
CHECKED: JJB

REVISIONS:

JOB NO: 20278
SCALE: 1" = 20'

DATE: SEPTEMBER 3, 2021
SHEET: 3 OF 6

TEST PIT RESULTS

OBSERVED BY: MELISSA SORILELLI
DATE: APRIL 29, 2021

PIT NO. 3

0" - 7" = TOPSOIL
7" - 34" = ORANGE BROWN FINE SAND
34" - 70" = GRAY COMPACT LARGE
BOULDERS, FINE SANDY LOAM / TRACE
SILT.

MOTTLING: 26"
WATER: 45"
LEDGE: N/A
ROOTS: 26"
RESTRICTIVE: N/A

PIT NO. 4

0" - 2" = ORGANIC MATTER, FOREST
LITTER
2" - 24" = ORANGE BROWN FINE SANDY
LOAM

MOTTLING: N/A
WATER: N/A
LEDGE: 24"
ROOTS: N/A
RESTRICTIVE: N/A

PIT NO. 5

0" - 6" = TOPSOIL
6" - 31" = ORANGE BROWN FINE SANDY
LOAM
31" - 91" = LIGHT BROWN / GRAY
COMPACT TILL

MOTTLING: N/A
WATER: 80"
LEDGE: N/A
ROOTS: 31"
RESTRICTIVE: 31"

PIT NO. 6

0" - 7" = TOPSOIL
7" - 24" = ORANGE BROWN FINE SANDY
LOAM
24" - 79" = LIGHT BROWN / GRAY
COMPACT TILL WITH LARGE ROCKS

MOTTLING: N/A
WATER: 72"
LEDGE: N/A
ROOTS: N/A
RESTRICTIVE: 27"

PIT NO. 7

0" - 11" = TOPSOIL
11" - 18" = ORANGE BROWN FINE SANDY
LOAM
18" - 109" = LIGHT BROWN SAND

MOTTLING: N/A
WATER: 89"
LEDGE: N/A
ROOTS: N/A
RESTRICTIVE: N/A

PERC TEST RESULTS

OBSERVED BY: MELISSA SORILELLI
DATE: MAY 06, 2021

HOLE 5 / 6

TIME	READING
12:42	8.25"
12:52	11"
1:02	12.25"
1:12	13.5"
1:22	14.25"

DEPTH: 18"
RATE: 8.42 MIN/IN

HOLE 3 / 4

TIME	READING
12:50	10.5"
1:00	14"
1:10	16"
1:20	17.5"
1:30	18.5"

DEPTH: 24"
RATE: 6.13 MIN/IN

HOLE 7 / 8

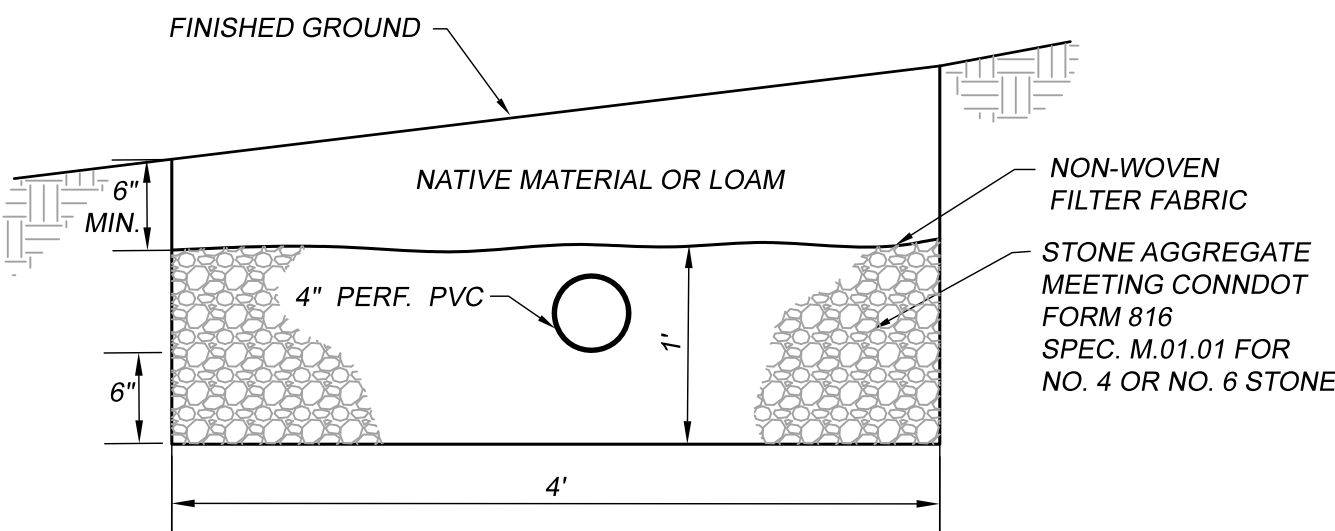
TIME	READING
12:39	11.5"
12:44	17.25"
12:49	EMPTY

DEPTH: 22"
RATE: 1.7 MIN/IN

PIT NO. 8

0" - 15" = TOPSOIL
15" - 42" = ORANGE BROWN FINE SANDY
LOAM
42" - 60" = GRAVELLY SANDY LOAM

MOTTLING: N/A
WATER: 9"
LEDGE: N/A
ROOTS: N/A
RESTRICTIVE: N/A



LEACHING TRENCH DETAIL
N.T.S.

SURVEY NOTES:

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THE SURVEY TYPE IS TOPOGRAPHIC, PERFORMED ON JANUARY 18, 2021, AND IS INTENDED TO BE USED FOR THE DESIGN OF AN ENGINEERED SEPTIC SYSTEM.

HORIZONTAL ACCURACY: CLASS B
TOPOGRAPHIC ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

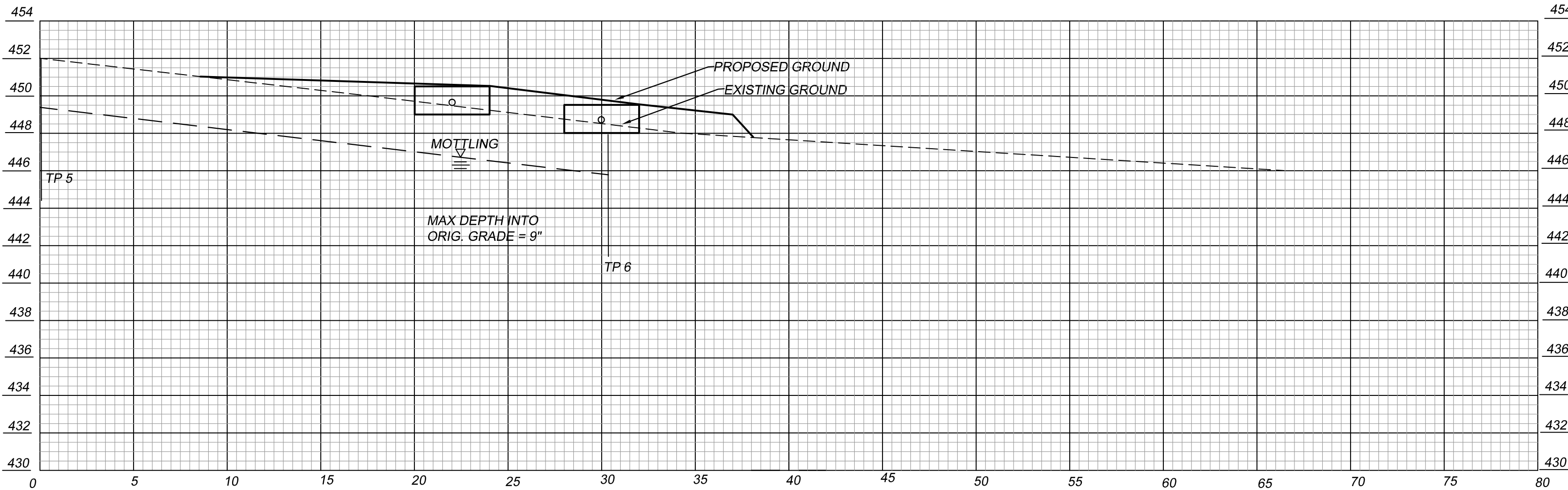
2. TEST PIT AND PERC TEST LOCATIONS HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND J & D CIVIL ENGINEERS DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT.

3. REFERENCE PLAN: PROPERTY BOUNDARY SURVEY, SHOWING LAND OF THE CRAVER POINT REALTY TRUST, PREPARED BY MICHAEL C. HEALEY, L.S. SCALE 1" = 40'. PREPARED ON NOVEMBER 17, 1997.

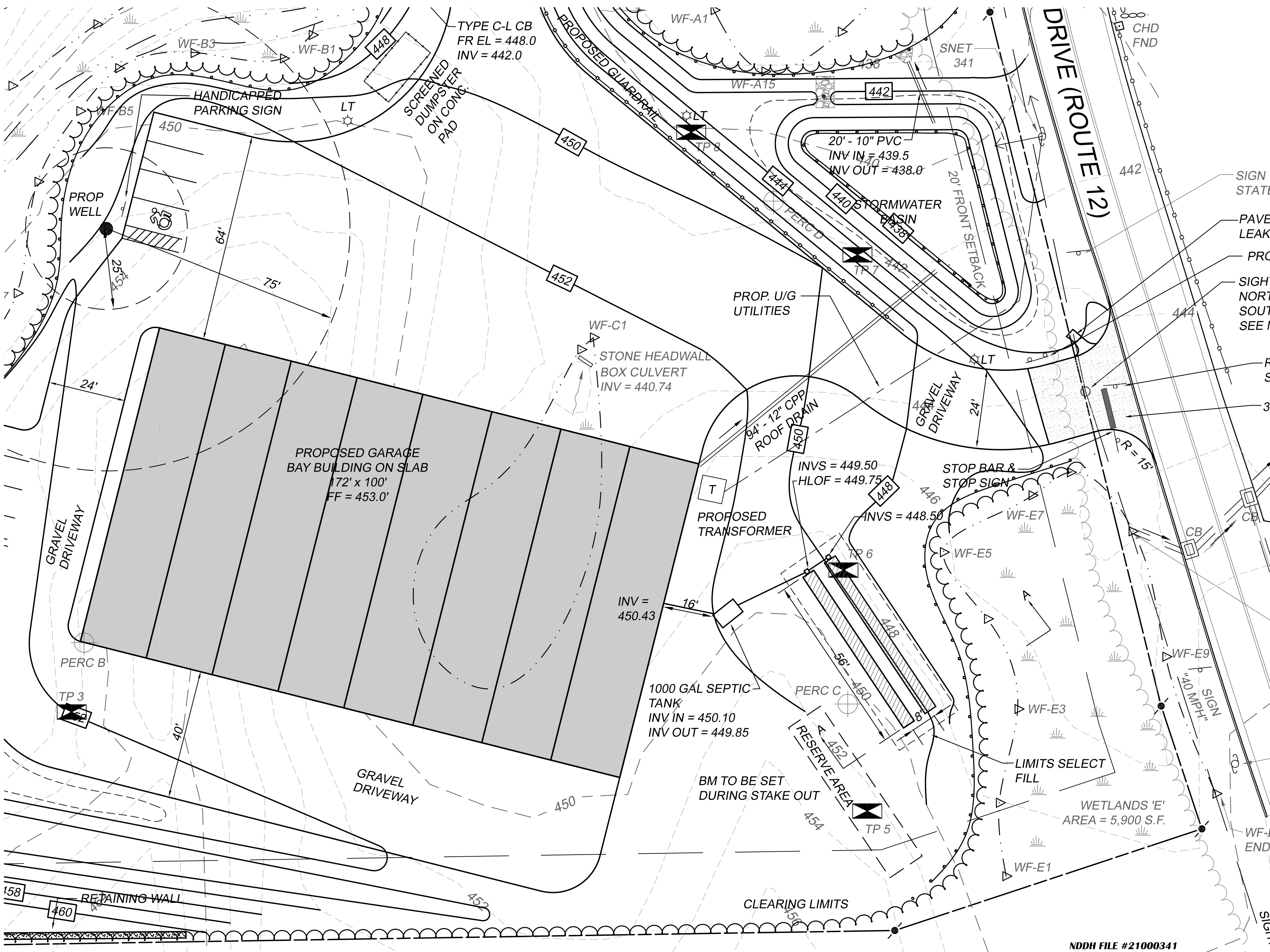
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12/07
LICENSE 12107
NUMBER 12107

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
© 2021 J&D CIVIL ENGINEERS, LLC



LEACHING FIELD CROSS SECTION A-A
1" = 5'



SEPTIC SYSTEM DESIGN CRITERIA

PERC RATE: 8.24 MINS/INCH

DESIGN FLOW: 20 EMPLOYEES (FACTORY) @ 25 GPD = 500 GPD

APPLICATION RATE: 1.5 GPD /SF ELA

ELA REQUIRED: 500 GPD/1.5 GPD PER SF = 333 SF ELA

SEPTIC TANK: 1000 GALLON

LEACHING AREA PROVIDED: 112' OF 4' WIDE STONE TRENCHES @ 3 SF/LF = 336 SQUARE FEET, SPACED 8' O.C.

MOTTLING: 27" - 31", LEDGE: N/A, WATER: 72-80", SLOPE: 8-10%

MLSS (PRIMARY) = 43.4' (HF=26, PF=1, FF=500/300=1.67)

LSS PROVIDED = 56'

SPECIFICATIONS

SEPTIC SYSTEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE "CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS".

SEPTIC TANK: JOLLEY PRECAST, INC. OR EQUAL TWO-COMPARTMENT TANK WITH OUTLET FILTER. INSTALL RISERS OVER TANK CLEANOUTS IF COVER OVER TANK EXCEEDS 1'.

DISTRIBUTION BOXES: JOLLEY OR EQUAL 4 HOLE D-BOXES

HOUSE, EFFLUENT AND "TIGHT PIPE" FOR DRAIN OUTLETS: 4" PVC SCHEDULE 40, ASTM D 1785 OR ASTM D 2665 WITH RUBBER COMPRESSION GASKET ASTM D 3139 OR SOLVENT WELD COUPLINGS.

DISTRIBUTION: 4' WIDE STONE FILLED TRENCHES.

POLYLOK PIPE SEAL AS MANUFACTURED BY SUPERIOR SEPTIC TANKS (OR EQUAL) SHALL BE USED TO SEAL SEPTIC TANK AND D-BOX INLETS AND OUTLETS.

BOTTOM OF TRENCHES TO BE LEVEL.

TOPSOIL SHALL BE STRIPPED IN AREA OF LEACH FIELD AND THE SUBSOIL SCARIFIED PRIOR TO PLACEMENT OF SELECT SEPTIC FILL.

ALL FILL SHALL BE CLEAN BANK RUN GRAVEL, MEETING THE FOLLOWING REQUIREMENTS OF THE CT DEPT. OF PUBLIC HEALTH:
MAX. PERCENT GRAVEL (PLUS NO. 4 SIEVE MATERIAL) - 45%
GRADATION ON FILL LESS GRAVEL:

SIEVE	WET PERCENT PASSING	DRY PERCENT PASSING
NO. 4	100	100
NO. 10	70-100	70-100
NO. 40	10-50*	10-75
NO. 100	0-20	0-5
NO. 200	0-5	0-2.5

*PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%.

FILL MUST PERC AT A RATE EQUAL TO OR FASTER THAN THE UNDERLYING SOIL.

THIS DESIGN IS BASED ON TEST PIT INFORMATION RECORDED BY NDDH. J & D HAS MADE NO INDEPENDENT INVESTIGATION OF SOIL CONDITIONS. THE CONTRACTOR IS ADVISED TO PERFORM SUFFICIENT SITE INVESTIGATION TO DETERMINE CONSTRUCTABILITY OF THE DESIGN PRIOR TO BIDDING OR COMMENCING WORK.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE PROPOSED ACTIVITY ON THE SITE WILL CONSIST OF THE CONSTRUCTION OF A COMMERCIAL BUILDING, WELL, SEPTIC SYSTEM AND DRIVEWAY.
2. EROSION CONTROL DEVICES MUST BE INSTALLED WHERE INDICATED ON THIS SHEET PRIOR TO THE START OF CONSTRUCTION.
3. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM AND SEEDED OR STABILIZED WITH TEMPORARY MULCH AS SOON AS FINAL GRADES HAVE BEEN ATTAINED.
4. THE OWNER OF RECORD SHALL DESIGNATE THE ON SITE ENVIRONMENTAL AGENT RESPONSIBLE FOR REGULARLY CHECKING THE CONDITION OF THE EROSION CONTROL DEVICES AND REMOVING ACCUMULATED SEDIMENT.

LEGEND

	BUILDING SETBACK LINE
	PROPERTY LINE
	EXISTING CONTOUR LINE
	PROPOSED CONTOUR LINE
	EDGE OF WETLANDS
	WETLAND BUFFER/UPLAND REVIEW AREA
	EROSION CONTROL DEVICES
	TEST PIT
	LEACHING TRENCH
	UTILITIES
	TREELINE
	GUARDRAIL
	FENCE

SEPTIC SYSTEM PLAN
PREPARED FOR
JJS UNIVERSAL CONSTRUCTION CO.
1574 RIVERSIDE DRIVE - THOMPSON, CT
MAP 55 BLOCK 65 LOT 14

J&D CIVIL ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: JJB
CHECKED: DRB

REVISIONS:

JOB NO: 20278
SCALE: 1" = 20'

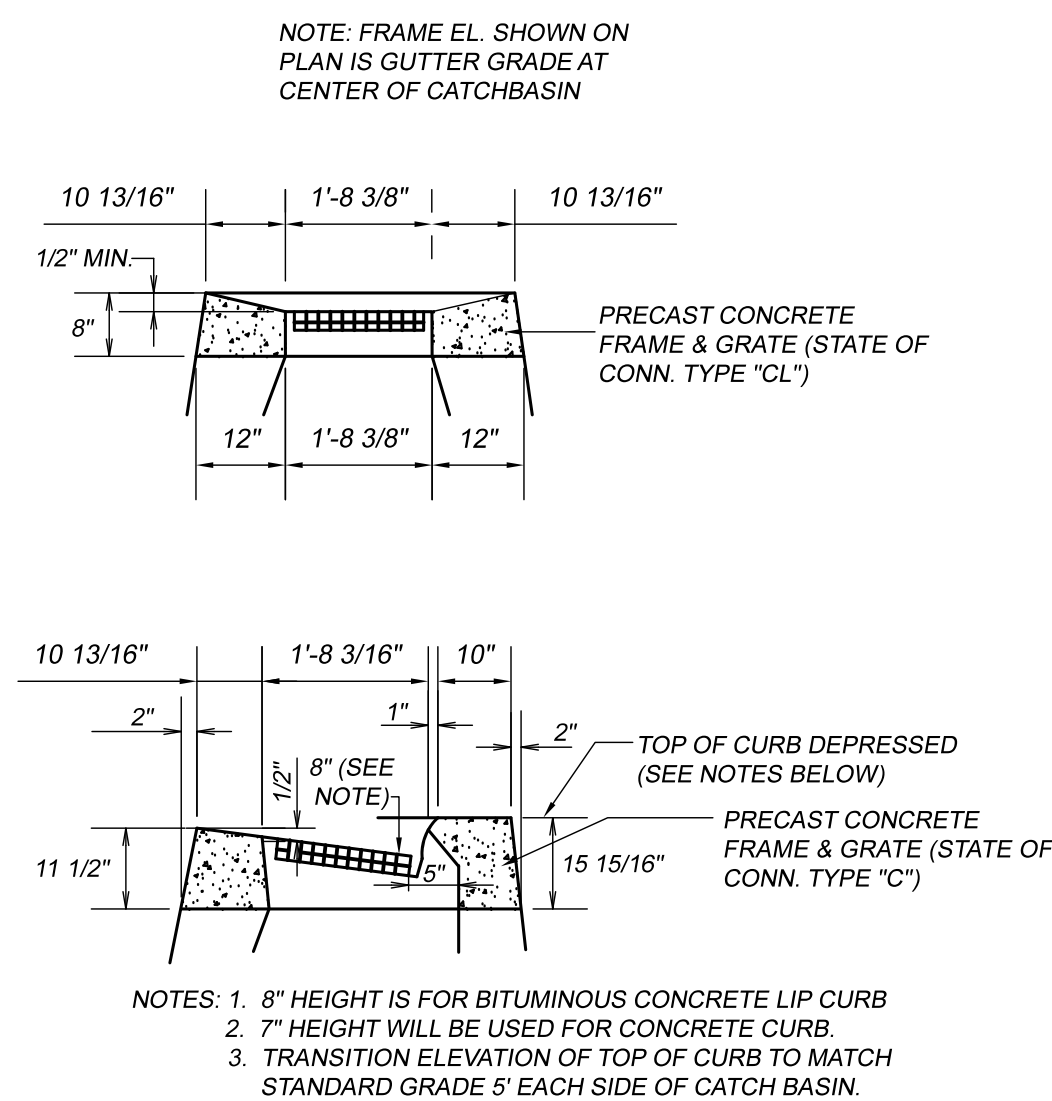
DATE: SEPTEMBER 3, 2021
SHEET: 4 OF 6



NOTES

1. SILT SOCK MANUFACTURER SHALL BE SILT SOXX OR ENGINEER APPROVED EQUAL
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS
3. SEDIMENT SILT SOCK TO BE FILLED WITH LEAF COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS.
4. FOLLOWING CONSTRUCTION AND SITE STABILIZATION, COMPOST MATERIAL SHALL BE REMOVED OR DISPERSED ON SITE, AS APPROVED BY THE ENGINEER.

SILT SOCK DETAIL
NOT TO SCALE



FRAME AND GRATE FOR
TYPE "C" OR "CL" CATCH
BASIN

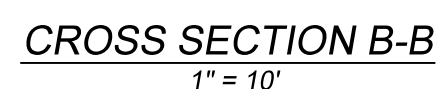
N.T.S.



N.T.S.



N.T.S.


$$1'' = 10'$$

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT AN INDUSTRIAL BUILDING. SITE WORK WILL INCLUDE CONSTRUCTION OF BUILDING, ACCESS DRIVE, PARKING AREAS, AND NECESSARY UTILITIES.

ATTENTION SHALL BE GIVEN TO THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES. NO ERODED SEDIMENTS SHALL BE PERMITTED TO FLOW OFF THE SITE. IF FIELD CONDITIONS WARRANT IT OR THE TOWN REQUESTS IT, ADDITIONAL E & S CONTROL MEASURES BEYOND WHAT IS SHOWN ON THE PLAN, SHALL BE INSTALLED.

THE SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES WILL BE APPROXIMATELY AS FOLLOWS:

1. INSTALLATION OF EROSION CONTROL DEVICES
2. CLEARING & GRUBBING
3. ROUGH SITE GRADING
4. INSTALL TEMPORARY SEDIMENT TRAPS AS NEEDED TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE DOWNSTREAM WETLANDS OR DRAINAGE PIPE
5. BEGIN CONSTRUCTION AND INSTALLATION OF UTILITIES INCLUDING DRAINAGE PIPES AND CB'S
6. PREPARATION OF ACCESS DRIVE AND PARKING LOT BASE
7. AFTER SITE IS STABILIZED, CONSTRUCT INFILTRATION BASIN, SWALE, FOREBAY AND STORMWATER BASIN
8. PERMANENT STABILIZATION INCLUDING LANDSCAPING
9. REMOVAL OF EROSION CONTROL MEASURES

SEDIMENT AND EROSION CONTROL DEVICES WILL BE INSTALLED AS DETAILED ON THIS SHEET AND CHECKED REGULARLY FOR REPLACEMENT AND AFTER EVERY RAIN FOR REMOVAL OF DEPOSITED MATERIALS. RESPONSIBILITY FOR COMPLIANCE WITH THIS PLAN SHALL BELONG TO THE CONTRACTOR. THE CONTRACTOR SHALL BE THE DESIGNATED ON-SITE AGENT RESPONSIBLE FOR ENSURING TO THE TOWN THAT E & S CONTROL MEASURES ARE STRICTLY ENFORCED.

SEEDING DATES FOR PERMANENT VEGETATION ARE APRIL 1 - JUNE 15 AND AUGUST 15 - SEPTEMBER 15. SEEDING DATES FOR TEMPORARY VEGETATION ARE MARCH 1 - OCTOBER 15. OUTSIDE OF THESE DATES TEMPORARY MULCH CONSISTING OF STRAW OR HAY APPLIED AT THE RATE OF 95 LB/1000 SQUARE FEET SHALL BE USED. HYDROSEEDING WILL BE PERMITTED WHERE SLOPES ARE NO STEEPER THAN 2 TO 1 AND SEEDING RATES WILL BE INCREASED BY 10%.

1. ALL PROPOSED WORK SHALL CONFORM TO "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL OF SOIL AND WATER CONSERVATION AND TOWN REGULATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE GOALS OF THIS EROSION CONTROL PLAN ARE MET BY WHATEVER MEANS ARE NECESSARY. THE CONTRACTOR SHALL PLAN ALL LAND DISTURBING ACTIVITIES IN A MANNER AS TO MINIMIZE THE EXTENT OF DISTURBED AREAS.
3. PRIOR TO CONSTRUCTION OR EXCAVATION, SEDIMENT BARRIERS SHALL BE INSTALLED IN LOCATIONS AS SHOWN ON THE PLAN OR AS REQUIRED BY THE TOWN AND MAINTAINED THROUGHOUT CONSTRUCTION.
4. UPON FINAL GRADING, DISTURBED AREAS SHALL COVERED WITH A MINIMUM OF 6" LOAM AND SEEDING WITH PERENNIAL GRASSES AS SPECIFIED FOR THE PROJECT. IMMEDIATELY AFTER SEEDING, MULCH THE SEEDBED AREA WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE. SEEDING DATES ARE TO BE BETWEEN APRIL 1 THRU JUNE 15 AND AUGUST 15 THRU OCTOBER 15.
5. DAILY INSPECTIONS SHALL BE MADE OF EROSION AND SEDIMENT CONTROL MEASURES TO INSURE EFFECTIVENESS AND IMMEDIATE CORRECTIVE ACTION SHALL BE TAKEN IF FAILURE OCCURS. ADDITIONAL EROSION CONTROL MEASURES BEYOND WHAT IS SHOWN ON THE PLAN MAY BE NECESSARY.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN STABILIZED AND VEGETATIVE COVER HAS BEEN ESTABLISHED, AT WHICH TIME THEY SHALL BE REMOVED.
7. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THIS EROSION AND SEDIMENT CONTROL PLAN.

1. KEEP LAND DISTURBANCE TO A MINIMUM - THE MORE LAND THAT IS IN VEGETATIVE COVER, THE MORE SURFACE WATER WILL INFILTRATE INTO THE SOIL, THUS MINIMIZING STORMWATER RUNOFF AND POTENTIAL EROSION. KEEPING LAND DISTURBANCE TO A MINIMUM NOT ONLY INVOLVES MINIMIZING THE EXTENT OF EXPOSURE AT AN ONE TIME, BUT ALSO THE DURATION OF EXPOSURE.

2. PHASE CONSTRUCTION SO THAT AREAS WHICH ARE ACTIVELY BEING DEVELOPED AT ANY ONE TIME ARE MINIMIZED AND ONLY THAT AREA UNDER CONSTRUCTION IS EXPOSED. CLEAR ONLY THOSE AREAS ESSENTIAL FOR CONSTRUCTION.
3. SEQUENCE THE CONSTRUCTION OF STORM DRAINAGE SYSTEMS SO THAT THEY ARE OPERATIONAL AS SOON AS POSSIBLE DURING CONSTRUCTION. ENSURE ALL OUTLETS ARE STABLE BEFORE OUTLETTING STORM DRAINAGE FLOW INTO THEM.
4. SCHEDULE CONSTRUCTION SO THAT FINAL GRADING AND STABILIZATION IS COMPLETED AS SOON AS POSSIBLE.

1. USE DIVERSIONS, STONE DIKES, SILT FENCES AND SIMILAR MEASURES TO BREAK FLOW LINES AND DISSIPATE STORM WATER ENERGY.

2. AVOID DIVERTING ONE DRAINAGE SYSTEM INTO ANOTHER WITHOUT CALCULATING THE POTENTIAL FOR DOWNSTREAM FLOODING OR EROSION.
3. CLEAN RUNOFF SHOULD BE KEPT SEPARATED FROM SEDIMENT LADEN WATER AND SHOULD NOT BE DIRECTED OVER DISTURBED AREAS WITHOUT ADDITIONAL CONTROLS. ADDITIONALLY, PREVENT THE MIXING OF CLEAN OFF-SITE GENERATED RUNOFF WITH SEDIMENT LADEN RUNOFF GENERATED ON-SITE UNTIL AFTER ADEQUATE INFILTRATION OF ON-SITE WATERS HAS OCCURRED.

1. **DO NOT RELY EXCLUSIVELY ON PERIMETER EROSION CONTROL DEVICES.**
2. **CONTROL EROSION AND SEDIMENTATION BY INSTALLING INTERNAL EROSION CONTROL IN THE SMALLEST DRAINAGE AREA POSSIBLE.**
3. **DIRECT RUNOFF FROM SMALL DISTURBED AREAS TO ADJOINING UNDISTURBED VEGETATED AREAS.**
4. **CONCENTRATED RUNOFF SHOULD BE CONVEYED TO SEDIMENT TRAPS OR BASINS AND STABLE OUTLETS USING RIP RAPPED CHANNELS, STORM DRAINS OR SIMILAR MEASURES.**



PREPARED FOR

1574 RIVERSIDE DRIVE - THOMPSON, CT

MAP 55 BLOCK 65 LOT 14

**J&D CIVIL
ENGINEERS, LLC**
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDI
CHECKED: JJB

REVISIONS:**JOB NO: 20278**

DATE: SEPTEMBER 3, 2021

SCALE: AS NOTED

SHEET: 6 OF 6

Stormwater Management Report

Prepared For

JJS Universal Construction Co.
C/O Wojciech Sudyka

1574 Riverside Drive
North Grosvenordale, CT

Dated: September 3, 2021

Prepared By

J&D Civil Engineers, LLC
401 Ravenelle Road
North Grosvenordale, CT

Project Narrative

The applicant, Mr. Wojciech Sudyka, is proposing to construct an expansion to his existing construction company. The site currently has two separate commercial buildings at the north end, close to the state line. The applicant is interested in constructing a 17,200 square foot garage building near the south end of the site, along with an associated driveway, septic, and drainage system. The garage will consist of 8 separate bays, some of which will be used by the applicant, and some of which may be rented or leased to other local contractors.

Site Description

The property is approximately 7.5 acres in size, and is located on the west side of Route 12, right at the state line with Massachusetts. There is a body of water known as Perry Pond located at the west side of the site, and the water has an approximate elevation of 466 feet. From the pond, the land slopes down towards the road, which has a low point elevation of 436 feet. The north side of the site contains 1.5 acres of developed area, with two detached commercial buildings, a driveway, and storage areas for vehicles and construction supplies. The remaining land is vacant, and consists of a pond and mature forest.

There are 4 main pockets of wetlands on site. One of the wetlands pockets at the center of the site will be filled in. The other three wetland areas will remain, and serve as part of the proposed drainage system. All wetland soils have been delineated by Scott Rabideau, a Professional Wetland Scientist. Additionally, an ecologic survey was conducted of the wetlands pocket that will be disturbed.

The soils in this watershed primarily consist of Charlton-Chatfield Complex (73C), according to the National Resource Conservation Service. These soils represent at least 90% of the watershed, and are composed of very rocky, sandy loams. These soils correspond to Hydrologic Group B, which have a high infiltration rate and low potential for runoff. There is a small area of Group C soils on the adjacent property to the south, referred to as Hollis Chatfield Rock Outcrop Complex. These Group C soils have a moderate infiltration rate, and moderate potential for runoff. There is also a small area of Group D soils at the low point of the site, referred to as Scarboro Muck by the NRCS. These soils have a very low infiltration rate, and a high potential for runoff. There do not appear to be any Group A, sandy or gravelly soils, present in the watershed. Please see the attached drainage area maps and soil reports for more information.

Existing and Proposed Drainage Patterns

The watershed that was analyzed is approximately 27 acres in size. The watershed extends slightly north into Massachusetts, and approximately 1,500 feet south across two wooded residential properties. Under existing conditions, there are two main drainage areas in the watershed, described as West and East on the drainage area maps. Drainage Area: East is primarily wooded, and drains into a small wetland depression before entering a catch basin and flowing east under the highway. Drainage Area: West includes most of the developed and/or impervious areas, and drains into another small wetland depression before crossing under the

highway. According to historical State maps, there exists a drainage structure consisting of a 2x2 box culvert. However, we could not find any evidence of this structure, either an inlet or outlet. It appears as though this water filtrates into the ground, and slowly seeps through a stone headwall on the other side of the highway.

Under proposed conditions, Drainage Area: East remains unchanged. The remaining area is divided into 4 new drainage areas. The undeveloped portion of the land to the south, Drainage Area: West, has been decreased in size, and is directed by a grass swale into the wetlands. The Drainage Area: Back Parking consists of the rear portion of the parking lot and driveway, and drains into a small infiltration basin for water quality treatment before entering the nearby wetlands. The Drainage Area: Front Parking consists of the building and the front portion of the parking lot and driveway. This drainage area drains to an infiltration basin for water quality treatment before entering the wetlands and ultimately crossing under the road. The last proposed Drainage Area: North is composed of the existing developed area to the northeast, and flow into the wetlands before crossing under the road. Please see the attached HydroCAD report for specific details on each drainage area.

Methodology

The HydroCAD computer program was used for hydraulic computations for this project. This program models the hydrology and hydraulics of stormwater runoff based largely upon the methods developed by the Soil Conservation Service (now known as the Natural Resources Conservation Service). Required input data includes the size of the contributing drainage area, curve numbers which are based upon land use and soil types, and times of concentration. Hydrographs with peak flows determined are calculated for each drainage area based upon the SCS synthetic unit hydrograph method. The rainfall distribution used in the program was the SCS Type III storm recommended for New England.

Stormwater Quality

The drainage for this project has been designed to maximize stormwater quality and prevent any dirty or otherwise polluted water from directly entering a wetlands or drainage structure. The project incorporates several best management practices as recommended by the 2004 CT Stormwater Quality Manual. Impervious surfaces have been minimized, and the majority of the watershed that was analyzed consists of mature, undeveloped forest. Runoff generated from these areas does not require any treatment, and therefore is being directed into existing wetlands and/or drainage structures.

This project involves approximately 2 acres of land being disturbed, with the majority of that area converted into impervious building or gravel parking. Runoff generated by the building roof does not require any treatment either. The portion of gravel parking and driveway to the rear, known as Drainage Area: Back Parking will be directed into one of two grass swales. The grass swales will provide some treatment before the runoff enters a stormwater infiltration basin for additional treatment and storage. This basin has been sized to capture the required Water Quality Volume. The developed portion of the site closest to the road, known as Drainage Area:

Front Parking will be directed into a stormwater infiltration basin for storage and treatment. This basin has been sized to capture the required Water Quality Volume. After leaving the infiltration basins, clean runoff will enter the various wetlands pockets on site, which will also provide a degree of treatment and storage.

During construction, several methods will be used to maximize stormwater quality and reduce the amount of erosion from the site. Erosion control devices such as silt fence or hay bales will be placed above any wetlands, or at the toe of any embankments. Disturbed areas shall be stabilized as soon as possible with loam and seed or mulch. Erosion control blankets shall be installed in areas of high flow.

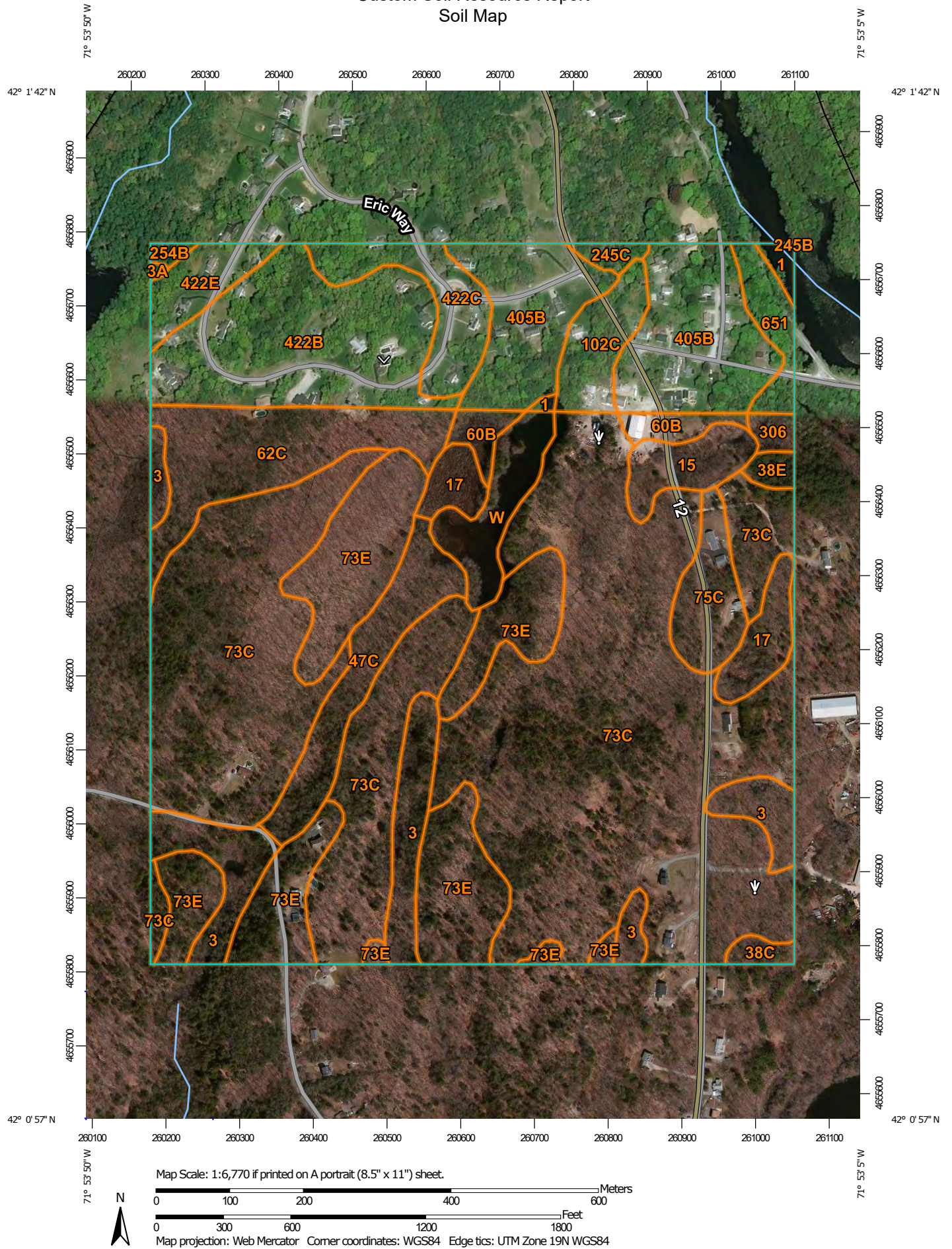
Comparison of Peak Flows

Under proposed conditions, there is no increase in peak runoff existing the site. The impervious (building) and near-impervious (gravel parking) surfaces are directed into infiltration basins. These basins allow runoff to naturally infiltrate into the ground and also provide storage to attenuate the peak runoff.

The peak discharges under various storms for existing and proposed conditions are provided below. All numbers are shown in CFS, Cubic Feet per Second.

	2 Year	10 Year	25 Year	50 Year	100 Year
Existing	4.98	17.56	24.20	28.77	33.18
Proposed	3.54	14.27	20.44	25.16	30.66

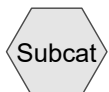
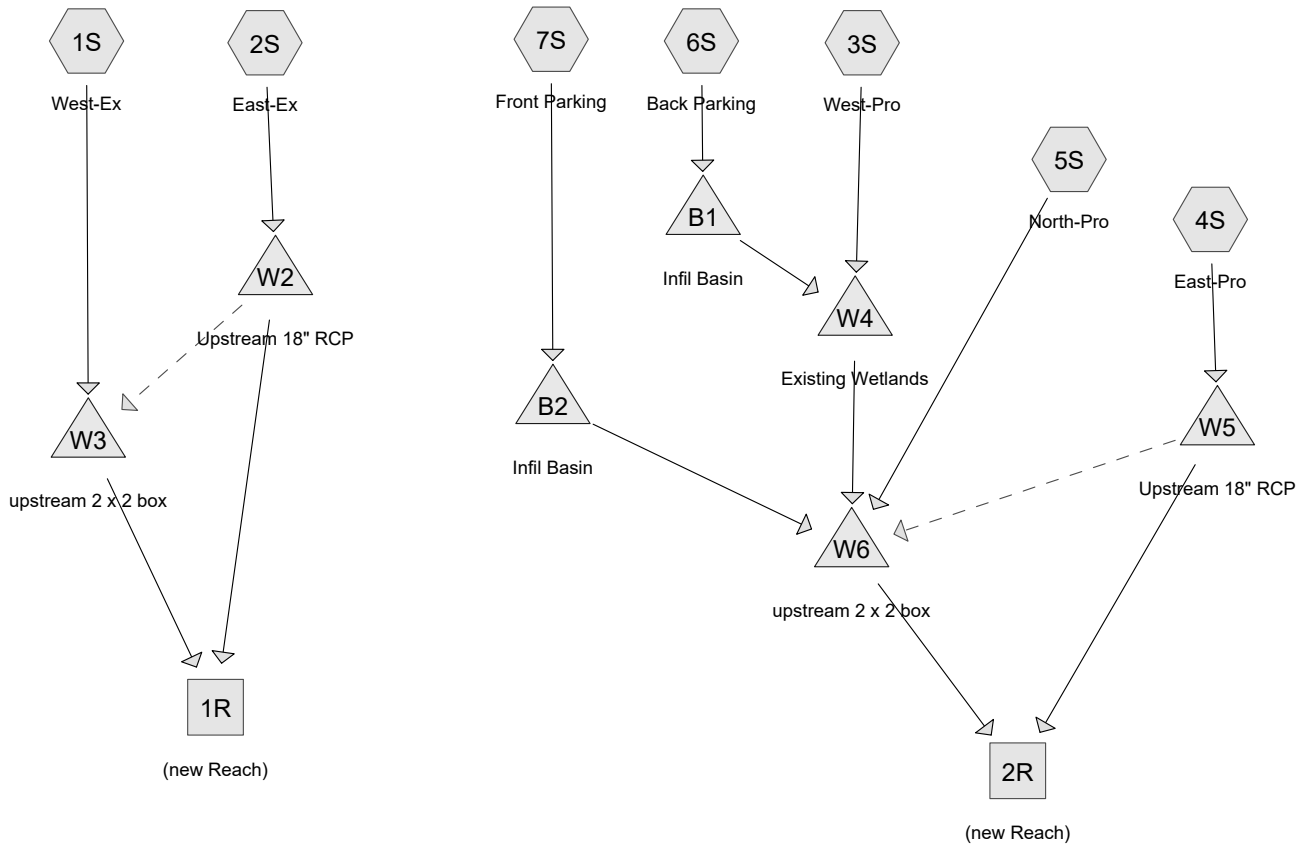
Custom Soil Resource Report Soil Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	11.0	5.2%
15	Scarboro muck, 0 to 3 percent slopes	3.2	1.5%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	4.2	2.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	0.7	0.3%
38E	Hinckley loamy sand, 15 to 45 percent slopes	0.7	0.3%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	6.5	3.1%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	2.4	1.2%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	10.1	4.8%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	90.5	42.9%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	24.1	11.4%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	3.9	1.9%
306	Udorthents-Urban land complex	0.7	0.3%
W	Water	4.3	2.0%
Subtotals for Soil Survey Area		162.3	76.9%
Totals for Area of Interest		211.0	100.0%

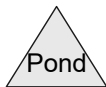
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	0.7	0.3%
3A	Scarboro and Walpole soils, 0 to 3 percent slopes	0.1	0.0%
102C	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	3.7	1.7%
245B	Hinckley loamy sand, 3 to 8 percent slopes	0.0	0.0%
245C	Hinckley loamy sand, 8 to 15 percent slopes	0.7	0.3%



Subcat



Reach



Pond



Link

Drainage Diagram for 20278 Sudyka 2021-08-18
 Prepared by J&D Civil Engineers LLC, Printed 9/3/2021
 HydroCAD® 9.10 s/n 02673 © 2010 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: West-Ex

Runoff = 13.86 cfs @ 12.61 hrs, Volume= 2.136 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
0.908	98	Paved parking, HSG B
0.064	98	Paved parking, HSG D
12.020	55	Woods, Good, HSG B
0.879	77	Woods, Good, HSG D
3.251	79	<50% Grass cover, Poor, HSG B
0.231	89	<50% Grass cover, Poor, HSG D
17.353	63	Weighted Average
16.381		94.40% Pervious Area
0.972		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	1,405	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
39.3	1,605	Total			

Summary for Subcatchment 2S: East-Ex

Runoff = 4.75 cfs @ 12.86 hrs, Volume= 0.957 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.997	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
9.524	59	Weighted Average
9.120		95.76% Pervious Area
0.404		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 3S: West-Pro

Runoff = 6.98 cfs @ 12.69 hrs, Volume= 1.234 af, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
* 0.417	98	
11.781	55	Woods, Good, HSG B
1.538	61	>75% Grass cover, Good, HSG B
13.736	57	Weighted Average
13.319		96.96% Pervious Area
0.417		3.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
23.5	1,650	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
42.8	1,850	Total			

Summary for Subcatchment 4S: East-Pro

Runoff = 4.70 cfs @ 12.86 hrs, Volume= 0.947 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.500	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
0.400	69	50-75% Grass cover, Fair, HSG B
9.427	59	Weighted Average
9.023		95.71% Pervious Area
0.404		4.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 5S: North-Pro

Runoff = 3.69 cfs @ 12.27 hrs, Volume= 0.385 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
* 0.338	98	
0.099	55	Woods, Good, HSG B
1.455	61	>75% Grass cover, Good, HSG B
0.420	80	>75% Grass cover, Good, HSG D
2.312	70	Weighted Average
1.974		85.38% Pervious Area
0.338		14.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	90	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.20"
2.3	315	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.6	165	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	570	Total			

Summary for Subcatchment 6S: Back Parking

Runoff = 1.40 cfs @ 12.08 hrs, Volume= 0.096 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
0.278	85	Gravel roads, HSG B
0.201	61	>75% Grass cover, Good, HSG B
0.479	75	Weighted Average
0.479		100.00% Pervious Area

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

Summary for Subcatchment 7S: Front Parking

Runoff = 4.92 cfs @ 12.07 hrs, Volume= 0.363 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10 year Rainfall=4.95"

Area (ac)	CN	Description
* 0.650	98	
0.152	80	>75% Grass cover, Good, HSG D
0.220	91	Gravel roads, HSG D
1.022	94	Weighted Average
0.372		36.40% Pervious Area
0.650		63.60% Impervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 26.877 ac, 5.12% Impervious, Inflow Depth = 1.38" for CT 10 year event
 Inflow = 17.56 cfs @ 12.71 hrs, Volume= 3.094 af
 Outflow = 17.56 cfs @ 12.71 hrs, Volume= 3.094 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: (new Reach)

Inflow Area = 26.976 ac, 6.71% Impervious, Inflow Depth > 1.27" for CT 10 year event
 Inflow = 14.27 cfs @ 12.72 hrs, Volume= 2.859 af
 Outflow = 14.27 cfs @ 12.72 hrs, Volume= 2.859 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond B1: Infil Basin

Inflow Area = 0.479 ac, 0.00% Impervious, Inflow Depth = 2.41" for CT 10 year event
 Inflow = 1.40 cfs @ 12.08 hrs, Volume= 0.096 af
 Outflow = 0.03 cfs @ 19.80 hrs, Volume= 0.011 af, Atten= 98%, Lag= 463.2 min
 Primary = 0.03 cfs @ 19.80 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 451.01' @ 19.80 hrs Surf.Area= 3,595 sf Storage= 3,752 cf

Plug-Flow detention time= 607.8 min calculated for 0.011 af (12% of inflow)
 Center-of-Mass det. time= 447.7 min (1,282.1 - 834.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	448.00'	9,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
448.00	384	94.0	0	0	384
450.00	1,152	220.0	1,467	1,467	3,548
451.00	3,542	316.0	2,238	3,705	7,652
452.00	8,657	590.0	5,912	9,618	27,411

Device	Routing	Invert	Outlet Devices
#1	Primary	451.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.01 cfs @ 19.80 hrs HW=451.01' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.28 fps)

Summary for Pond B2: Infil Basin

Inflow Area = 1.022 ac, 63.60% Impervious, Inflow Depth = 4.26" for CT 10 year event
 Inflow = 4.92 cfs @ 12.07 hrs, Volume= 0.363 af
 Outflow = 2.00 cfs @ 12.26 hrs, Volume= 0.293 af, Atten= 59%, Lag= 11.4 min
 Primary = 2.00 cfs @ 12.26 hrs, Volume= 0.293 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 440.85' @ 12.26 hrs Surf.Area= 2,891 sf Storage= 6,500 cf

Plug-Flow detention time= 163.7 min calculated for 0.293 af (81% of inflow)
 Center-of-Mass det. time= 90.1 min (862.9 - 772.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	438.00'	13,826 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
438.00	1,716	187.0	0	0	1,716
440.00	2,520	215.0	4,210	4,210	2,698
442.00	3,436	243.0	5,932	10,143	3,816
443.00	3,936	257.0	3,683	13,826	4,427

Device	Routing	Invert	Outlet Devices
#1	Primary	439.50'	10.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.50' / 438.00' S= 0.0750 '/' Cc= 0.900 n= 0.010 PVC, smooth interior
#2	Primary	441.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.00 cfs @ 12.26 hrs HW=440.85' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.00 cfs @ 3.67 fps)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W2: Upstream 18" RCP

Inflow Area = 9.524 ac, 4.24% Impervious, Inflow Depth = 1.21" for CT 10 year event
 Inflow = 4.75 cfs @ 12.86 hrs, Volume= 0.957 af
 Outflow = 4.75 cfs @ 12.87 hrs, Volume= 0.957 af, Atten= 0%, Lag= 0.6 min
 Primary = 4.00 cfs @ 12.87 hrs, Volume= 0.933 af
 Secondary = 0.74 cfs @ 12.87 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.30' @ 12.87 hrs Surf.Area= 743 sf Storage= 213 cf

Plug-Flow detention time= 0.6 min calculated for 0.957 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (927.6 - 927.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	444.25'	160.0 deg x 20.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir C= 2.47		

Primary OutFlow Max=4.00 cfs @ 12.87 hrs HW=444.30' (Free Discharge)

↑**1=Culvert** (Barrel Controls 4.00 cfs @ 4.25 fps)

Secondary OutFlow Max=0.73 cfs @ 12.87 hrs HW=444.30' (Free Discharge)

↑**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.73 cfs @ 0.70 fps)

Summary for Pond W3: upstream 2 x 2 box

Inflow Area = 17.353 ac, 5.60% Impervious, Inflow Depth = 1.49" for CT 10 year event
 Inflow = 13.88 cfs @ 12.63 hrs, Volume= 2.160 af
 Outflow = 13.66 cfs @ 12.70 hrs, Volume= 2.160 af, Atten= 2%, Lag= 3.9 min
 Primary = 13.66 cfs @ 12.70 hrs, Volume= 2.160 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 436.30' @ 12.70 hrs Surf.Area= 3,059 sf Storage= 3,350 cf

Plug-Flow detention time= 4.9 min calculated for 2.160 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (901.5 - 896.6)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	35,056 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	16,424	589.0	13,836	35,056	28,238

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 ' / Cc= 0.900 n= 0.025 Rubble masonry, cemented

Primary OutFlow Max=13.66 cfs @ 12.70 hrs HW=436.30' (Free Discharge)

↑**1=Culvert** (Inlet Controls 13.66 cfs @ 3.80 fps)

Summary for Pond W4: Existing Wetlands

Inflow Area = 14.215 ac, 2.93% Impervious, Inflow Depth = 1.05" for CT 10 year event
 Inflow = 6.98 cfs @ 12.69 hrs, Volume= 1.245 af
 Outflow = 6.98 cfs @ 12.70 hrs, Volume= 1.234 af, Atten= 0%, Lag= 0.2 min
 Primary = 6.98 cfs @ 12.70 hrs, Volume= 1.234 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 448.37' @ 12.70 hrs Surf.Area= 390 sf Storage= 605 cf

Plug-Flow detention time= 7.1 min calculated for 1.234 af (99% of inflow)
 Center-of-Mass det. time= 2.2 min (925.7 - 923.5)

Volume	Invert	Avail.Storage	Storage Description
#1	446.00'	1,570 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
446.00	168	675.0	0	0	168
448.00	313	2,526.0	474	474	471,679
450.00	824	13,261.0	1,097	1,570	13,957,957

Device	Routing	Invert	Outlet Devices
#1	Primary	448.00'	20.0" x 36.0" Horiz. Orifice/Grate C= 0.600 in 20.0" x 36.0" Grate Limited to weir flow at low heads
#2	Primary	449.00'	50.0' long x 26.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.97 cfs @ 12.70 hrs HW=448.37' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 6.97 cfs @ 2.00 fps)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W5: Upstream 18" RCP

Inflow Area = 9.427 ac, 4.29% Impervious, Inflow Depth = 1.21" for CT 10 year event
 Inflow = 4.70 cfs @ 12.86 hrs, Volume= 0.947 af
 Outflow = 4.68 cfs @ 12.92 hrs, Volume= 0.947 af, Atten= 0%, Lag= 3.5 min
 Primary = 4.68 cfs @ 12.92 hrs, Volume= 0.947 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.41' @ 12.92 hrs Surf.Area= 1,005 sf Storage= 305 cf

Plug-Flow detention time= 0.7 min calculated for 0.947 af (100% of inflow)
 Center-of-Mass det. time= 0.7 min (927.6 - 927.0)

Volume	Invert	Avail.Storage	Storage Description						
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)						
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)				
443.25	24	20.0	0	0	24				
444.00	213	58.0	77	77	262				
445.00	3,200	240.0	1,413	1,490	4,580				
Device	Routing	Invert	Outlet Devices						
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean						
#2	Secondary	445.00'	30.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63						

Primary OutFlow Max=4.68 cfs @ 12.92 hrs HW=444.41' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 4.68 cfs @ 4.41 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=443.25' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W6: upstream 2 x 2 box

Inflow Area = 17.549 ac, 8.01% Impervious, Inflow Depth > 1.31" for CT 10 year event
 Inflow = 10.38 cfs @ 12.56 hrs, Volume= 1.912 af
 Outflow = 10.25 cfs @ 12.63 hrs, Volume= 1.912 af, Atten= 1%, Lag= 4.2 min
 Primary = 10.25 cfs @ 12.63 hrs, Volume= 1.912 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

20278 Sudyka 2021-08-18

Type III 24-hr CT 10 year Rainfall=4.95"

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Peak Elev= 435.98' @ 12.63 hrs Surf.Area= 2,481 sf Storage= 2,485 cf

Plug-Flow detention time= 5.0 min calculated for 1.911 af (100% of inflow)

Center-of-Mass det. time= 4.9 min (907.8 - 902.8)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	33,862 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	13,925	546.0	12,641	33,862	24,361

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented
#2	Primary	439.00'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.25 cfs @ 12.63 hrs HW=435.98' (Free Discharge)↑ **1=Culvert** (Inlet Controls 10.25 cfs @ 3.45 fps)└ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: West-Ex

Runoff = 28.74 cfs @ 12.57 hrs, Volume= 4.195 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
0.908	98	Paved parking, HSG B
0.064	98	Paved parking, HSG D
12.020	55	Woods, Good, HSG B
0.879	77	Woods, Good, HSG D
3.251	79	<50% Grass cover, Poor, HSG B
0.231	89	<50% Grass cover, Poor, HSG D
17.353	63	Weighted Average
16.381		94.40% Pervious Area
0.972		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	1,405	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
39.3	1,605	Total			

Summary for Subcatchment 2S: East-Ex

Runoff = 10.86 cfs @ 12.80 hrs, Volume= 1.989 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.997	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
9.524	59	Weighted Average
9.120		95.76% Pervious Area
0.404		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 3S: West-Pro

Runoff = 16.78 cfs @ 12.64 hrs, Volume= 2.648 af, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
* 0.417	98	
11.781	55	Woods, Good, HSG B
1.538	61	>75% Grass cover, Good, HSG B
13.736	57	Weighted Average
13.319		96.96% Pervious Area
0.417		3.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
23.5	1,650	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
42.8	1,850	Total			

Summary for Subcatchment 4S: East-Pro

Runoff = 10.75 cfs @ 12.80 hrs, Volume= 1.969 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.500	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
0.400	69	50-75% Grass cover, Fair, HSG B
9.427	59	Weighted Average
9.023		95.71% Pervious Area
0.404		4.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 5S: North-Pro

Runoff = 6.81 cfs @ 12.26 hrs, Volume= 0.697 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
* 0.338	98	
0.099	55	Woods, Good, HSG B
1.455	61	>75% Grass cover, Good, HSG B
0.420	80	>75% Grass cover, Good, HSG D
2.312	70	Weighted Average
1.974		85.38% Pervious Area
0.338		14.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	90	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.20"
2.3	315	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.6	165	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	570	Total			

Summary for Subcatchment 6S: Back Parking

Runoff = 2.41 cfs @ 12.07 hrs, Volume= 0.166 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
0.278	85	Gravel roads, HSG B
0.201	61	>75% Grass cover, Good, HSG B
0.479	75	Weighted Average
0.479		100.00% Pervious Area

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

Summary for Subcatchment 7S: Front Parking

Runoff = 7.11 cfs @ 12.07 hrs, Volume= 0.536 af, Depth= 6.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100 year Rainfall=7.00"

Area (ac)	CN	Description
* 0.650	98	
0.152	80	>75% Grass cover, Good, HSG D
0.220	91	Gravel roads, HSG D
1.022	94	Weighted Average
0.372		36.40% Pervious Area
0.650		63.60% Impervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 26.877 ac, 5.12% Impervious, Inflow Depth = 2.76" for CT 100 year event
 Inflow = 33.18 cfs @ 12.82 hrs, Volume= 6.184 af
 Outflow = 33.18 cfs @ 12.82 hrs, Volume= 6.184 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: (new Reach)

Inflow Area = 26.976 ac, 6.71% Impervious, Inflow Depth > 2.60" for CT 100 year event
 Inflow = 30.66 cfs @ 12.77 hrs, Volume= 5.849 af
 Outflow = 30.66 cfs @ 12.77 hrs, Volume= 5.849 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond B1: Infil Basin

Inflow Area = 0.479 ac, 0.00% Impervious, Inflow Depth = 4.15" for CT 100 year event
 Inflow = 2.41 cfs @ 12.07 hrs, Volume= 0.166 af
 Outflow = 0.28 cfs @ 12.77 hrs, Volume= 0.081 af, Atten= 88%, Lag= 41.9 min
 Primary = 0.28 cfs @ 12.77 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 451.09' @ 12.77 hrs Surf.Area= 3,921 sf Storage= 4,051 cf

Plug-Flow detention time= 261.9 min calculated for 0.081 af (49% of inflow)
 Center-of-Mass det. time= 146.5 min (965.3 - 818.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	448.00'	9,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
448.00	384	94.0	0	0	384
450.00	1,152	220.0	1,467	1,467	3,548
451.00	3,542	316.0	2,238	3,705	7,652
452.00	8,657	590.0	5,912	9,618	27,411

Device	Routing	Invert	Outlet Devices
#1	Primary	451.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.27 cfs @ 12.77 hrs HW=451.09' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.27 cfs @ 0.74 fps)

Summary for Pond B2: Infil Basin

Inflow Area = 1.022 ac, 63.60% Impervious, Inflow Depth = 6.29" for CT 100 year event
 Inflow = 7.11 cfs @ 12.07 hrs, Volume= 0.536 af
 Outflow = 3.99 cfs @ 12.17 hrs, Volume= 0.465 af, Atten= 44%, Lag= 6.2 min
 Primary = 3.99 cfs @ 12.17 hrs, Volume= 0.465 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 441.29' @ 12.17 hrs Surf.Area= 3,095 sf Storage= 7,830 cf

Plug-Flow detention time= 136.2 min calculated for 0.465 af (87% of inflow)
 Center-of-Mass det. time= 77.3 min (841.0 - 763.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	438.00'	13,826 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
438.00	1,716	187.0	0	0	1,716
440.00	2,520	215.0	4,210	4,210	2,698
442.00	3,436	243.0	5,932	10,143	3,816
443.00	3,936	257.0	3,683	13,826	4,427

Device	Routing	Invert	Outlet Devices
#1	Primary	439.50'	10.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.50' / 438.00' S= 0.0750 '/' Cc= 0.900 n= 0.010 PVC, smooth interior
#2	Primary	441.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=3.99 cfs @ 12.17 hrs HW=441.29' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.43 cfs @ 4.46 fps)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.56 cfs @ 1.34 fps)

Summary for Pond W2: Upstream 18" RCP

Inflow Area = 9.524 ac, 4.24% Impervious, Inflow Depth = 2.51" for CT 100 year event
 Inflow = 10.86 cfs @ 12.80 hrs, Volume= 1.989 af
 Outflow = 10.85 cfs @ 12.81 hrs, Volume= 1.989 af, Atten= 0%, Lag= 0.5 min
 Primary = 4.97 cfs @ 12.81 hrs, Volume= 1.598 af
 Secondary = 5.88 cfs @ 12.81 hrs, Volume= 0.391 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.45' @ 12.81 hrs Surf.Area= 1,128 sf Storage= 353 cf

Plug-Flow detention time= 0.6 min calculated for 1.988 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (904.1 - 903.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	444.25'	160.0 deg x 20.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir C= 2.47		

Primary OutFlow Max=4.97 cfs @ 12.81 hrs HW=444.45' (Free Discharge)

↑**1=Culvert** (Barrel Controls 4.97 cfs @ 4.48 fps)

Secondary OutFlow Max=5.88 cfs @ 12.81 hrs HW=444.45' (Free Discharge)

↑**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 5.88 cfs @ 1.37 fps)

Summary for Pond W3: upstream 2 x 2 box

Inflow Area = 17.353 ac, 5.60% Impervious, Inflow Depth = 3.17" for CT 100 year event
 Inflow = 33.15 cfs @ 12.62 hrs, Volume= 4.586 af
 Outflow = 28.22 cfs @ 12.83 hrs, Volume= 4.586 af, Atten= 15%, Lag= 12.4 min
 Primary = 28.22 cfs @ 12.83 hrs, Volume= 4.586 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 438.29' @ 12.83 hrs Surf.Area= 8,408 sf Storage= 14,189 cf

Plug-Flow detention time= 5.7 min calculated for 4.585 af (100% of inflow)
 Center-of-Mass det. time= 5.7 min (874.5 - 868.8)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	35,056 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	16,424	589.0	13,836	35,056	28,238

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 ' / Cc= 0.900 n= 0.025 Rubble masonry, cemented

Primary OutFlow Max=28.22 cfs @ 12.83 hrs HW=438.29' (Free Discharge)

↑**1=Culvert** (Inlet Controls 28.22 cfs @ 7.05 fps)

Summary for Pond W4: Existing Wetlands

Inflow Area = 14.215 ac, 2.93% Impervious, Inflow Depth = 2.30" for CT 100 year event
 Inflow = 17.04 cfs @ 12.64 hrs, Volume= 2.728 af
 Outflow = 17.04 cfs @ 12.65 hrs, Volume= 2.718 af, Atten= 0%, Lag= 0.2 min
 Primary = 17.04 cfs @ 12.65 hrs, Volume= 2.718 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 448.68' @ 12.65 hrs Surf.Area= 459 sf Storage= 734 cf

Plug-Flow detention time= 3.6 min calculated for 2.718 af (100% of inflow)
 Center-of-Mass det. time= 1.2 min (898.3 - 897.1)

Volume	Invert	Avail.Storage	Storage Description
#1	446.00'	1,570 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
446.00	168	675.0	0	0	168
448.00	313	2,526.0	474	474	471,679
450.00	824	13,261.0	1,097	1,570	13,957,957

Device	Routing	Invert	Outlet Devices
#1	Primary	448.00'	20.0" x 36.0" Horiz. Orifice/Grate C= 0.600 in 20.0" x 36.0" Grate Limited to weir flow at low heads
#2	Primary	449.00'	50.0' long x 26.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=17.04 cfs @ 12.65 hrs HW=448.68' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 17.04 cfs @ 2.69 fps)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W5: Upstream 18" RCP

Inflow Area = 9.427 ac, 4.29% Impervious, Inflow Depth = 2.51" for CT 100 year event
 Inflow = 10.75 cfs @ 12.80 hrs, Volume= 1.969 af
 Outflow = 12.06 cfs @ 12.81 hrs, Volume= 1.969 af, Atten= 0%, Lag= 0.4 min
 Primary = 8.85 cfs @ 12.81 hrs, Volume= 1.909 af
 Secondary = 3.21 cfs @ 12.81 hrs, Volume= 0.059 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 445.12' @ 12.81 hrs Surf.Area= 3,200 sf Storage= 1,490 cf

Plug-Flow detention time= 1.4 min calculated for 1.968 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (904.9 - 903.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	445.00'	30.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=8.85 cfs @ 12.81 hrs HW=445.12' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 8.85 cfs @ 5.16 fps)

Secondary OutFlow Max=3.20 cfs @ 12.81 hrs HW=445.12' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 3.20 cfs @ 0.91 fps)

Summary for Pond W6: upstream 2 x 2 box

Inflow Area = 17.549 ac, 8.01% Impervious, Inflow Depth > 2.69" for CT 100 year event
 Inflow = 24.18 cfs @ 12.67 hrs, Volume= 3.940 af
 Outflow = 21.81 cfs @ 12.76 hrs, Volume= 3.939 af, Atten= 10%, Lag= 5.6 min
 Primary = 21.81 cfs @ 12.76 hrs, Volume= 3.939 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

20278 Sudyka 2021-08-18

Type III 24-hr CT 100 year Rainfall=7.00"

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Peak Elev= 437.20' @ 12.76 hrs Surf.Area= 5,094 sf Storage= 6,988 cf

Plug-Flow detention time= 4.8 min calculated for 3.939 af (100% of inflow)

Center-of-Mass det. time= 4.8 min (884.6 - 879.8)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	33,862 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	13,925	546.0	12,641	33,862	24,361

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented
#2	Primary	439.00'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=21.81 cfs @ 12.76 hrs HW=437.20' (Free Discharge)↑ **1=Culvert** (Inlet Controls 21.81 cfs @ 5.45 fps)└ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: West-Ex

Runoff = 4.14 cfs @ 12.67 hrs, Volume= 0.784 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
0.908	98	Paved parking, HSG B
0.064	98	Paved parking, HSG D
12.020	55	Woods, Good, HSG B
0.879	77	Woods, Good, HSG D
3.251	79	<50% Grass cover, Poor, HSG B
0.231	89	<50% Grass cover, Poor, HSG D
17.353	63	Weighted Average
16.381		94.40% Pervious Area
0.972		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	1,405	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
39.3	1,605	Total			

Summary for Subcatchment 2S: East-Ex

Runoff = 1.12 cfs @ 12.99 hrs, Volume= 0.312 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.997	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
9.524	59	Weighted Average
9.120		95.76% Pervious Area
0.404		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 3S: West-Pro

Runoff = 1.39 cfs @ 12.80 hrs, Volume= 0.374 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
* 0.417	98	
11.781	55	Woods, Good, HSG B
1.538	61	>75% Grass cover, Good, HSG B
13.736	57	Weighted Average
13.319		96.96% Pervious Area
0.417		3.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
23.5	1,650	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
42.8	1,850	Total			

Summary for Subcatchment 4S: East-Pro

Runoff = 1.11 cfs @ 12.99 hrs, Volume= 0.309 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.500	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
0.400	69	50-75% Grass cover, Fair, HSG B
9.427	59	Weighted Average
9.023		95.71% Pervious Area
0.404		4.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 5S: North-Pro

Runoff = 1.44 cfs @ 12.28 hrs, Volume= 0.165 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
* 0.338	98	
0.099	55	Woods, Good, HSG B
1.455	61	>75% Grass cover, Good, HSG B
0.420	80	>75% Grass cover, Good, HSG D
2.312	70	Weighted Average
1.974		85.38% Pervious Area
0.338		14.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	90	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.20"
2.3	315	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.6	165	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	570	Total			

Summary for Subcatchment 6S: Back Parking

Runoff = 0.63 cfs @ 12.08 hrs, Volume= 0.045 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
0.278	85	Gravel roads, HSG B
0.201	61	>75% Grass cover, Good, HSG B
0.479	75	Weighted Average
0.479		100.00% Pervious Area

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

Summary for Subcatchment 7S: Front Parking

Runoff = 3.08 cfs @ 12.07 hrs, Volume= 0.221 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 2 year Rainfall=3.25"

Area (ac)	CN	Description
* 0.650	98	
0.152	80	>75% Grass cover, Good, HSG D
0.220	91	Gravel roads, HSG D
1.022	94	Weighted Average
0.372		36.40% Pervious Area
0.650		63.60% Impervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 26.877 ac, 5.12% Impervious, Inflow Depth = 0.49" for CT 2 year event
 Inflow = 4.98 cfs @ 12.78 hrs, Volume= 1.095 af
 Outflow = 4.98 cfs @ 12.78 hrs, Volume= 1.095 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: (new Reach)

Inflow Area = 26.976 ac, 6.71% Impervious, Inflow Depth > 0.44" for CT 2 year event
 Inflow = 3.54 cfs @ 12.80 hrs, Volume= 0.987 af
 Outflow = 3.54 cfs @ 12.80 hrs, Volume= 0.987 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond B1: Infil Basin

Inflow Area = 0.479 ac, 0.00% Impervious, Inflow Depth = 1.13" for CT 2 year event
 Inflow = 0.63 cfs @ 12.08 hrs, Volume= 0.045 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 450.34' @ 24.29 hrs Surf.Area= 1,809 sf Storage= 1,961 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description		
#1	448.00'	9,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
448.00	384	94.0	0	0	384
450.00	1,152	220.0	1,467	1,467	3,548
451.00	3,542	316.0	2,238	3,705	7,652
452.00	8,657	590.0	5,912	9,618	27,411

Device	Routing	Invert	Outlet Devices
#1	Primary	451.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=448.00' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond B2: Infil Basin

Inflow Area = 1.022 ac, 63.60% Impervious, Inflow Depth = 2.59" for CT 2 year event
 Inflow = 3.08 cfs @ 12.07 hrs, Volume= 0.221 af
 Outflow = 1.06 cfs @ 12.33 hrs, Volume= 0.151 af, Atten= 66%, Lag= 15.6 min
 Primary = 1.06 cfs @ 12.33 hrs, Volume= 0.151 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 440.18' @ 12.33 hrs Surf.Area= 2,597 sf Storage= 4,670 cf

Plug-Flow detention time= 210.1 min calculated for 0.151 af (68% of inflow)
 Center-of-Mass det. time= 116.1 min (901.7 - 785.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	438.00'	13,826 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
438.00	1,716	187.0	0	0	1,716
440.00	2,520	215.0	4,210	4,210	2,698
442.00	3,436	243.0	5,932	10,143	3,816
443.00	3,936	257.0	3,683	13,826	4,427

Device	Routing	Invert	Outlet Devices
#1	Primary	439.50'	10.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.50' / 438.00' S= 0.0750 '/' Cc= 0.900 n= 0.010 PVC, smooth interior
#2	Primary	441.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=1.06 cfs @ 12.33 hrs HW=440.18' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.06 cfs @ 2.22 fps)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W2: Upstream 18" RCP

Inflow Area = 9.524 ac, 4.24% Impervious, Inflow Depth = 0.39" for CT 2 year event
 Inflow = 1.12 cfs @ 12.99 hrs, Volume= 0.312 af
 Outflow = 1.12 cfs @ 13.01 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.9 min
 Primary = 1.12 cfs @ 13.01 hrs, Volume= 0.312 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 443.76' @ 13.01 hrs Surf.Area= 133 sf Storage= 37 cf

Plug-Flow detention time= 0.6 min calculated for 0.312 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (972.3 - 971.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	444.25'	160.0 deg x 20.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir C= 2.47		

Primary OutFlow Max=1.12 cfs @ 13.01 hrs HW=443.76' (Free Discharge)

↑**1=Culvert** (Barrel Controls 1.12 cfs @ 3.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=443.25' (Free Discharge)

↑**2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond W3: upstream 2 x 2 box

Inflow Area = 17.353 ac, 5.60% Impervious, Inflow Depth = 0.54" for CT 2 year event
 Inflow = 4.14 cfs @ 12.67 hrs, Volume= 0.784 af
 Outflow = 4.06 cfs @ 12.73 hrs, Volume= 0.784 af, Atten= 2%, Lag= 3.9 min
 Primary = 4.06 cfs @ 12.73 hrs, Volume= 0.784 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 435.30' @ 12.73 hrs Surf.Area= 1,704 sf Storage= 1,061 cf

Plug-Flow detention time= 5.9 min calculated for 0.783 af (100% of inflow)
 Center-of-Mass det. time= 5.9 min (939.6 - 933.7)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	35,056 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	16,424	589.0	13,836	35,056	28,238

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 ' S= 0.0380 ' Cc= 0.900 n= 0.025 Rubble masonry, cemented

Primary OutFlow Max=4.06 cfs @ 12.73 hrs HW=435.30' (Free Discharge)

↑**1=Culvert** (Inlet Controls 4.06 cfs @ 2.53 fps)

Summary for Pond W4: Existing Wetlands

Inflow Area = 14.215 ac, 2.93% Impervious, Inflow Depth = 0.32" for CT 2 year event
 Inflow = 1.39 cfs @ 12.80 hrs, Volume= 0.374 af
 Outflow = 1.39 cfs @ 12.81 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.4 min
 Primary = 1.39 cfs @ 12.81 hrs, Volume= 0.363 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 448.13' @ 12.81 hrs Surf.Area= 338 sf Storage= 515 cf

Plug-Flow detention time= 21.9 min calculated for 0.363 af (97% of inflow)
 Center-of-Mass det. time= 7.5 min (978.6 - 971.2)

Volume	Invert	Avail.Storage	Storage Description
#1	446.00'	1,570 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
446.00	168	675.0	0	0	168
448.00	313	2,526.0	474	474	471,679
450.00	824	13,261.0	1,097	1,570	13,957,957

Device	Routing	Invert	Outlet Devices
#1	Primary	448.00'	20.0" x 36.0" Horiz. Orifice/Grate C= 0.600 in 20.0" x 36.0" Grate Limited to weir flow at low heads
#2	Primary	449.00'	50.0' long x 26.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.39 cfs @ 12.81 hrs HW=448.13' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 1.39 cfs @ 1.17 fps)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W5: Upstream 18" RCP

Inflow Area = 9.427 ac, 4.29% Impervious, Inflow Depth = 0.39" for CT 2 year event
 Inflow = 1.11 cfs @ 12.99 hrs, Volume= 0.309 af
 Outflow = 1.11 cfs @ 13.01 hrs, Volume= 0.309 af, Atten= 0%, Lag= 0.9 min
 Primary = 1.11 cfs @ 13.01 hrs, Volume= 0.309 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 443.76' @ 13.01 hrs Surf.Area= 132 sf Storage= 36 cf

Plug-Flow detention time= 0.6 min calculated for 0.308 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (972.3 - 971.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	445.00'	30.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=1.11 cfs @ 13.01 hrs HW=443.76' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 1.11 cfs @ 3.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=443.25' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W6: upstream 2 x 2 box

Inflow Area = 17.549 ac, 8.01% Impervious, Inflow Depth > 0.46" for CT 2 year event
 Inflow = 2.79 cfs @ 12.56 hrs, Volume= 0.679 af
 Outflow = 2.65 cfs @ 12.69 hrs, Volume= 0.679 af, Atten= 5%, Lag= 7.5 min
 Primary = 2.65 cfs @ 12.69 hrs, Volume= 0.679 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

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Type III 24-hr CT 2 year Rainfall=3.25"

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Peak Elev= 435.10' @ 12.69 hrs Surf.Area= 1,507 sf Storage= 744 cf

Plug-Flow detention time= 6.3 min calculated for 0.679 af (100% of inflow)

Center-of-Mass det. time= 6.2 min (945.3 - 939.1)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	33,862 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	13,925	546.0	12,641	33,862	24,361

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented
#2	Primary	439.00'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.65 cfs @ 12.69 hrs HW=435.10' (Free Discharge)↑ **1=Culvert** (Inlet Controls 2.65 cfs @ 2.20 fps)└ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: West-Ex

Runoff = 19.38 cfs @ 12.58 hrs, Volume= 2.897 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
0.908	98	Paved parking, HSG B
0.064	98	Paved parking, HSG D
12.020	55	Woods, Good, HSG B
0.879	77	Woods, Good, HSG D
3.251	79	<50% Grass cover, Poor, HSG B
0.231	89	<50% Grass cover, Poor, HSG D
17.353	63	Weighted Average
16.381		94.40% Pervious Area
0.972		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	1,405	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
39.3	1,605	Total			

Summary for Subcatchment 2S: East-Ex

Runoff = 6.97 cfs @ 12.86 hrs, Volume= 1.334 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.997	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
9.524	59	Weighted Average
9.120		95.76% Pervious Area
0.404		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 3S: West-Pro

Runoff = 10.52 cfs @ 12.65 hrs, Volume= 1.747 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
* 0.417	98	
11.781	55	Woods, Good, HSG B
1.538	61	>75% Grass cover, Good, HSG B
13.736	57	Weighted Average
13.319		96.96% Pervious Area
0.417		3.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
23.5	1,650	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
42.8	1,850	Total			

Summary for Subcatchment 4S: East-Pro

Runoff = 6.90 cfs @ 12.86 hrs, Volume= 1.321 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.500	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
0.400	69	50-75% Grass cover, Fair, HSG B
9.427	59	Weighted Average
9.023		95.71% Pervious Area
0.404		4.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 5S: North-Pro

Runoff = 4.87 cfs @ 12.27 hrs, Volume= 0.503 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
* 0.338	98	
0.099	55	Woods, Good, HSG B
1.455	61	>75% Grass cover, Good, HSG B
0.420	80	>75% Grass cover, Good, HSG D
2.312	70	Weighted Average
1.974		85.38% Pervious Area
0.338		14.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	90	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.20"
2.3	315	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.6	165	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	570	Total			

Summary for Subcatchment 6S: Back Parking

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 0.123 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
0.278	85	Gravel roads, HSG B
0.201	61	>75% Grass cover, Good, HSG B
0.479	75	Weighted Average
0.479		100.00% Pervious Area

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

Summary for Subcatchment 7S: Front Parking

Runoff = 5.77 cfs @ 12.07 hrs, Volume= 0.430 af, Depth= 5.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25 year Rainfall=5.75"

Area (ac)	CN	Description
* 0.650	98	
0.152	80	>75% Grass cover, Good, HSG D
0.220	91	Gravel roads, HSG D
1.022	94	Weighted Average
0.372		36.40% Pervious Area
0.650		63.60% Impervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 26.877 ac, 5.12% Impervious, Inflow Depth = 1.89" for CT 25 year event
 Inflow = 24.20 cfs @ 12.74 hrs, Volume= 4.232 af
 Outflow = 24.20 cfs @ 12.74 hrs, Volume= 4.232 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: (new Reach)

Inflow Area = 26.976 ac, 6.71% Impervious, Inflow Depth > 1.76" for CT 25 year event
 Inflow = 20.44 cfs @ 12.72 hrs, Volume= 3.957 af
 Outflow = 20.44 cfs @ 12.72 hrs, Volume= 3.957 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond B1: Infil Basin

Inflow Area = 0.479 ac, 0.00% Impervious, Inflow Depth = 3.07" for CT 25 year event
 Inflow = 1.79 cfs @ 12.08 hrs, Volume= 0.123 af
 Outflow = 0.09 cfs @ 14.97 hrs, Volume= 0.037 af, Atten= 95%, Lag= 173.9 min
 Primary = 0.09 cfs @ 14.97 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 451.04' @ 14.97 hrs Surf.Area= 3,714 sf Storage= 3,859 cf

Plug-Flow detention time= 383.5 min calculated for 0.037 af (31% of inflow)
 Center-of-Mass det. time= 252.9 min (1,080.3 - 827.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	448.00'	9,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
448.00	384	94.0	0	0	384
450.00	1,152	220.0	1,467	1,467	3,548
451.00	3,542	316.0	2,238	3,705	7,652
452.00	8,657	590.0	5,912	9,618	27,411

Device	Routing	Invert	Outlet Devices
#1	Primary	451.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.09 cfs @ 14.97 hrs HW=451.04' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.50 fps)

Summary for Pond B2: Infil Basin

Inflow Area = 1.022 ac, 63.60% Impervious, Inflow Depth = 5.05" for CT 25 year event
 Inflow = 5.77 cfs @ 12.07 hrs, Volume= 0.430 af
 Outflow = 2.48 cfs @ 12.24 hrs, Volume= 0.360 af, Atten= 57%, Lag= 10.2 min
 Primary = 2.48 cfs @ 12.24 hrs, Volume= 0.360 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 441.08' @ 12.24 hrs Surf.Area= 2,998 sf Storage= 7,194 cf

Plug-Flow detention time= 152.0 min calculated for 0.360 af (84% of inflow)
 Center-of-Mass det. time= 84.8 min (853.5 - 768.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	438.00'	13,826 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
438.00	1,716	187.0	0	0	1,716
440.00	2,520	215.0	4,210	4,210	2,698
442.00	3,436	243.0	5,932	10,143	3,816
443.00	3,936	257.0	3,683	13,826	4,427

Device	Routing	Invert	Outlet Devices
#1	Primary	439.50'	10.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.50' / 438.00' S= 0.0750 '/' Cc= 0.900 n= 0.010 PVC, smooth interior
#2	Primary	441.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.47 cfs @ 12.24 hrs HW=441.08' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.24 cfs @ 4.11 fps)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.23 cfs @ 0.70 fps)

Summary for Pond W2: Upstream 18" RCP

Inflow Area = 9.524 ac, 4.24% Impervious, Inflow Depth = 1.68" for CT 25 year event
 Inflow = 6.97 cfs @ 12.86 hrs, Volume= 1.334 af
 Outflow = 6.97 cfs @ 12.86 hrs, Volume= 1.334 af, Atten= 0%, Lag= 0.1 min
 Primary = 4.42 cfs @ 12.86 hrs, Volume= 1.204 af
 Secondary = 2.55 cfs @ 12.86 hrs, Volume= 0.130 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.37' @ 12.86 hrs Surf.Area= 900 sf Storage= 267 cf

Plug-Flow detention time= 0.6 min calculated for 1.334 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (916.6 - 916.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	444.25'	160.0 deg x 20.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir C= 2.47		

Primary OutFlow Max=4.42 cfs @ 12.86 hrs HW=444.37' (Free Discharge)

↑**1=Culvert** (Barrel Controls 4.42 cfs @ 4.35 fps)

Secondary OutFlow Max=2.54 cfs @ 12.86 hrs HW=444.37' (Free Discharge)

↑**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.54 cfs @ 1.05 fps)

Summary for Pond W3: upstream 2 x 2 box

Inflow Area = 17.353 ac, 5.60% Impervious, Inflow Depth = 2.09" for CT 25 year event
 Inflow = 20.94 cfs @ 12.62 hrs, Volume= 3.028 af
 Outflow = 19.82 cfs @ 12.74 hrs, Volume= 3.028 af, Atten= 5%, Lag= 7.0 min
 Primary = 19.82 cfs @ 12.74 hrs, Volume= 3.028 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 436.92' @ 12.74 hrs Surf.Area= 4,418 sf Storage= 5,680 cf

Plug-Flow detention time= 4.8 min calculated for 3.028 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (888.4 - 883.6)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	35,056 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	16,424	589.0	13,836	35,056	28,238

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 ' S= 0.0380 ' Cc= 0.900 n= 0.025 Rubble masonry, cemented

Primary OutFlow Max=19.82 cfs @ 12.74 hrs HW=436.92' (Free Discharge)

↑**1=Culvert** (Inlet Controls 19.82 cfs @ 4.96 fps)

Summary for Pond W4: Existing Wetlands

Inflow Area = 14.215 ac, 2.93% Impervious, Inflow Depth = 1.51" for CT 25 year event
 Inflow = 10.52 cfs @ 12.65 hrs, Volume= 1.785 af
 Outflow = 10.52 cfs @ 12.66 hrs, Volume= 1.774 af, Atten= 0%, Lag= 0.3 min
 Primary = 10.52 cfs @ 12.66 hrs, Volume= 1.774 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 448.49' @ 12.66 hrs Surf.Area= 416 sf Storage= 652 cf

Plug-Flow detention time= 5.1 min calculated for 1.773 af (99% of inflow)
 Center-of-Mass det. time= 1.6 min (913.6 - 911.9)

Volume	Invert	Avail.Storage	Storage Description
#1	446.00'	1,570 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
446.00	168	675.0	0	0	168
448.00	313	2,526.0	474	474	471,679
450.00	824	13,261.0	1,097	1,570	13,957,957

Device	Routing	Invert	Outlet Devices
#1	Primary	448.00'	20.0" x 36.0" Horiz. Orifice/Grate C= 0.600 in 20.0" x 36.0" Grate Limited to weir flow at low heads
#2	Primary	449.00'	50.0' long x 26.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.52 cfs @ 12.66 hrs HW=448.49' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 10.52 cfs @ 2.29 fps)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W5: Upstream 18" RCP

Inflow Area = 9.427 ac, 4.29% Impervious, Inflow Depth = 1.68" for CT 25 year event
 Inflow = 6.90 cfs @ 12.86 hrs, Volume= 1.321 af
 Outflow = 6.79 cfs @ 12.93 hrs, Volume= 1.321 af, Atten= 2%, Lag= 4.5 min
 Primary = 6.79 cfs @ 12.93 hrs, Volume= 1.321 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.73' @ 12.93 hrs Surf.Area= 2,054 sf Storage= 792 cf

Plug-Flow detention time= 0.9 min calculated for 1.320 af (100% of inflow)
 Center-of-Mass det. time= 0.9 min (916.9 - 916.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	445.00'	30.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63		

Primary OutFlow Max=6.79 cfs @ 12.93 hrs HW=444.73' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 6.79 cfs @ 4.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=443.25' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W6: upstream 2 x 2 box

Inflow Area = 17.549 ac, 8.01% Impervious, Inflow Depth > 1.80" for CT 25 year event
 Inflow = 14.81 cfs @ 12.56 hrs, Volume= 2.636 af
 Outflow = 14.58 cfs @ 12.64 hrs, Volume= 2.636 af, Atten= 2%, Lag= 4.4 min
 Primary = 14.58 cfs @ 12.64 hrs, Volume= 2.636 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

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Type III 24-hr CT 25 year Rainfall=5.75"

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Peak Elev= 436.38' @ 12.64 hrs Surf.Area= 3,218 sf Storage= 3,600 cf

Plug-Flow detention time= 4.7 min calculated for 2.636 af (100% of inflow)

Center-of-Mass det. time= 4.7 min (898.4 - 893.6)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	33,862 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	13,925	546.0	12,641	33,862	24,361

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented
#2	Primary	439.00'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=14.58 cfs @ 12.64 hrs HW=436.38' (Free Discharge)↑ **1=Culvert** (Inlet Controls 14.58 cfs @ 3.88 fps)└ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Subcatchment 1S: West-Ex

Runoff = 23.78 cfs @ 12.58 hrs, Volume= 3.506 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
0.908	98	Paved parking, HSG B
0.064	98	Paved parking, HSG D
12.020	55	Woods, Good, HSG B
0.879	77	Woods, Good, HSG D
3.251	79	<50% Grass cover, Poor, HSG B
0.231	89	<50% Grass cover, Poor, HSG D
17.353	63	Weighted Average
16.381		94.40% Pervious Area
0.972		5.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
20.0	1,405	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
39.3	1,605	Total			

Summary for Subcatchment 2S: East-Ex

Runoff = 8.78 cfs @ 12.80 hrs, Volume= 1.640 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.997	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
9.524	59	Weighted Average
9.120		95.76% Pervious Area
0.404		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 3S: West-Pro

Runoff = 13.44 cfs @ 12.65 hrs, Volume= 2.166 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
* 0.417	98	
11.781	55	Woods, Good, HSG B
1.538	61	>75% Grass cover, Good, HSG B
13.736	57	Weighted Average
13.319		96.96% Pervious Area
0.417		3.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3	200	0.1050	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
23.5	1,650	0.0550	1.17		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
42.8	1,850	Total			

Summary for Subcatchment 4S: East-Pro

Runoff = 8.69 cfs @ 12.80 hrs, Volume= 1.623 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
0.354	98	Paved parking, HSG B
0.050	98	Paved parking, HSG C
7.500	55	Woods, Good, HSG B
1.123	70	Woods, Good, HSG C
0.400	69	50-75% Grass cover, Fair, HSG B
9.427	59	Weighted Average
9.023		95.71% Pervious Area
0.404		4.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.8	200	0.0300	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
25.5	1,474	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
57.3	1,674	Total			

Summary for Subcatchment 5S: North-Pro

Runoff = 5.79 cfs @ 12.26 hrs, Volume= 0.594 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
* 0.338	98	
0.099	55	Woods, Good, HSG B
1.455	61	>75% Grass cover, Good, HSG B
0.420	80	>75% Grass cover, Good, HSG D
2.312	70	Weighted Average
1.974		85.38% Pervious Area
0.338		14.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	90	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.20"
2.3	315	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.6	165	0.0600	1.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.5	570	Total			

Summary for Subcatchment 6S: Back Parking

Runoff = 2.09 cfs @ 12.07 hrs, Volume= 0.143 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

Area (ac)	CN	Description
0.278	85	Gravel roads, HSG B
0.201	61	>75% Grass cover, Good, HSG B
0.479	75	Weighted Average
0.479		100.00% Pervious Area

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

Summary for Subcatchment 7S: Front Parking

Runoff = 6.41 cfs @ 12.07 hrs, Volume= 0.481 af, Depth= 5.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 50 year Rainfall=6.35"

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Type III 24-hr CT 50 year Rainfall=6.35"

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Area (ac)	CN	Description
* 0.650	98	
0.152	80	>75% Grass cover, Good, HSG D
0.220	91	Gravel roads, HSG D
1.022	94	Weighted Average
0.372		36.40% Pervious Area
0.650		63.60% Impervious Area

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

Summary for Reach 1R: (new Reach)

Inflow Area = 26.877 ac, 5.12% Impervious, Inflow Depth = 2.30" for CT 50 year event
 Inflow = 28.77 cfs @ 12.79 hrs, Volume= 5.145 af
 Outflow = 28.77 cfs @ 12.79 hrs, Volume= 5.145 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: (new Reach)

Inflow Area = 26.976 ac, 6.71% Impervious, Inflow Depth > 2.15" for CT 50 year event
 Inflow = 25.16 cfs @ 12.73 hrs, Volume= 4.841 af
 Outflow = 25.16 cfs @ 12.73 hrs, Volume= 4.841 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond B1: Infil Basin

Inflow Area = 0.479 ac, 0.00% Impervious, Inflow Depth = 3.58" for CT 50 year event
 Inflow = 2.09 cfs @ 12.07 hrs, Volume= 0.143 af
 Outflow = 0.15 cfs @ 13.61 hrs, Volume= 0.058 af, Atten= 93%, Lag= 91.9 min
 Primary = 0.15 cfs @ 13.61 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 451.06' @ 13.61 hrs Surf.Area= 3,787 sf Storage= 3,926 cf

Plug-Flow detention time= 310.0 min calculated for 0.058 af (41% of inflow)
 Center-of-Mass det. time= 188.0 min (1,010.9 - 823.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	448.00'	9,618 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
448.00	384	94.0	0	0	384
450.00	1,152	220.0	1,467	1,467	3,548
451.00	3,542	316.0	2,238	3,705	7,652
452.00	8,657	590.0	5,912	9,618	27,411

Device	Routing	Invert	Outlet Devices
#1	Primary	451.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.14 cfs @ 13.61 hrs HW=451.06' (Free Discharge)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.14 cfs @ 0.60 fps)

Summary for Pond B2: Infil Basin

Inflow Area = 1.022 ac, 63.60% Impervious, Inflow Depth = 5.64" for CT 50 year event
 Inflow = 6.41 cfs @ 12.07 hrs, Volume= 0.481 af
 Outflow = 3.17 cfs @ 12.20 hrs, Volume= 0.411 af, Atten= 51%, Lag= 7.8 min
 Primary = 3.17 cfs @ 12.20 hrs, Volume= 0.411 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 441.19' @ 12.20 hrs Surf.Area= 3,049 sf Storage= 7,527 cf

Plug-Flow detention time= 143.7 min calculated for 0.410 af (85% of inflow)
 Center-of-Mass det. time= 81.0 min (847.1 - 766.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	438.00'	13,826 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
438.00	1,716	187.0	0	0	1,716
440.00	2,520	215.0	4,210	4,210	2,698
442.00	3,436	243.0	5,932	10,143	3,816
443.00	3,936	257.0	3,683	13,826	4,427

Device	Routing	Invert	Outlet Devices
#1	Primary	439.50'	10.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.50' / 438.00' S= 0.0750 '/' Cc= 0.900 n= 0.010 PVC, smooth interior
#2	Primary	441.00'	4.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=3.16 cfs @ 12.20 hrs HW=441.19' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.34 cfs @ 4.29 fps)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.82 cfs @ 1.07 fps)

Summary for Pond W2: Upstream 18" RCP

Inflow Area = 9.524 ac, 4.24% Impervious, Inflow Depth = 2.07" for CT 50 year event
 Inflow = 8.78 cfs @ 12.80 hrs, Volume= 1.640 af
 Outflow = 8.77 cfs @ 12.81 hrs, Volume= 1.640 af, Atten= 0%, Lag= 0.6 min
 Primary = 4.69 cfs @ 12.81 hrs, Volume= 1.396 af
 Secondary = 4.08 cfs @ 12.81 hrs, Volume= 0.244 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 444.41' @ 12.81 hrs Surf.Area= 1,011 sf Storage= 308 cf

Plug-Flow detention time= 0.6 min calculated for 1.640 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (910.1 - 909.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
443.25	24	20.0	0	0	24
444.00	213	58.0	77	77	262
445.00	3,200	240.0	1,413	1,490	4,580
Device	Routing	Invert	Outlet Devices		
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean		
#2	Secondary	444.25'	160.0 deg x 20.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir C= 2.47		

Primary OutFlow Max=4.69 cfs @ 12.81 hrs HW=444.41' (Free Discharge)

↑**1=Culvert** (Barrel Controls 4.69 cfs @ 4.42 fps)

Secondary OutFlow Max=4.08 cfs @ 12.81 hrs HW=444.41' (Free Discharge)

↑**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.08 cfs @ 1.22 fps)

Summary for Pond W3: upstream 2 x 2 box

Inflow Area = 17.353 ac, 5.60% Impervious, Inflow Depth = 2.59" for CT 50 year event
 Inflow = 26.65 cfs @ 12.62 hrs, Volume= 3.750 af
 Outflow = 24.09 cfs @ 12.78 hrs, Volume= 3.750 af, Atten= 10%, Lag= 9.6 min
 Primary = 24.09 cfs @ 12.78 hrs, Volume= 3.750 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 437.55' @ 12.78 hrs Surf.Area= 6,025 sf Storage= 8,938 cf

Plug-Flow detention time= 5.0 min calculated for 3.748 af (100% of inflow)
 Center-of-Mass det. time= 5.0 min (880.8 - 875.8)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	35,056 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	16,424	589.0	13,836	35,056	28,238

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 ' S= 0.0380 ' Cc= 0.900 n= 0.025 Rubble masonry, cemented

Primary OutFlow Max=24.09 cfs @ 12.78 hrs HW=437.55' (Free Discharge)

↑**1=Culvert** (Inlet Controls 24.09 cfs @ 6.02 fps)

Summary for Pond W4: Existing Wetlands

Inflow Area = 14.215 ac, 2.93% Impervious, Inflow Depth = 1.88" for CT 50 year event
 Inflow = 13.44 cfs @ 12.65 hrs, Volume= 2.224 af
 Outflow = 13.43 cfs @ 12.65 hrs, Volume= 2.213 af, Atten= 0%, Lag= 0.1 min
 Primary = 13.43 cfs @ 12.65 hrs, Volume= 2.213 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 448.58' @ 12.65 hrs Surf.Area= 436 sf Storage= 689 cf

Plug-Flow detention time= 4.3 min calculated for 2.213 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (905.6 - 904.2)

Volume	Invert	Avail.Storage	Storage Description
#1	446.00'	1,570 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
446.00	168	675.0	0	0	168
448.00	313	2,526.0	474	474	471,679
450.00	824	13,261.0	1,097	1,570	13,957,957

Device	Routing	Invert	Outlet Devices
#1	Primary	448.00'	20.0" x 36.0" Horiz. Orifice/Grate C= 0.600 in 20.0" x 36.0" Grate Limited to weir flow at low heads
#2	Primary	449.00'	50.0' long x 26.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.43 cfs @ 12.65 hrs HW=448.58' (Free Discharge)

↑ **1=Orifice/Grate** (Weir Controls 13.43 cfs @ 2.49 fps)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond W5: Upstream 18" RCP

Inflow Area = 9.427 ac, 4.29% Impervious, Inflow Depth = 2.07" for CT 50 year event
 Inflow = 8.69 cfs @ 12.80 hrs, Volume= 1.623 af
 Outflow = 8.50 cfs @ 12.94 hrs, Volume= 1.623 af, Atten= 2%, Lag= 8.1 min
 Primary = 8.39 cfs @ 12.94 hrs, Volume= 1.623 af
 Secondary = 0.11 cfs @ 12.94 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 445.01' @ 12.94 hrs Surf.Area= 3,200 sf Storage= 1,490 cf

Plug-Flow detention time= 1.2 min calculated for 1.622 af (100% of inflow)
 Center-of-Mass det. time= 1.2 min (910.7 - 909.5)

Volume	Invert	Avail.Storage	Storage Description			
#1	443.25'	1,490 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
443.25	24	20.0	0	0	24	
444.00	213	58.0	77	77	262	
445.00	3,200	240.0	1,413	1,490	4,580	
Device	Routing	Invert	Outlet Devices			
#1	Primary	443.25'	18.0" Round Culvert L= 50.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 443.25' / 443.00' S= 0.0050 ' / Cc= 0.900 n= 0.011 Concrete pipe, straight & clean			
#2	Secondary	445.00'	30.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63			

Primary OutFlow Max=8.39 cfs @ 12.94 hrs HW=445.01' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 8.39 cfs @ 5.10 fps)

Secondary OutFlow Max=0.08 cfs @ 12.94 hrs HW=445.01' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.27 fps)

Summary for Pond W6: upstream 2 x 2 box

Inflow Area = 17.549 ac, 8.01% Impervious, Inflow Depth > 2.20" for CT 50 year event
 Inflow = 18.28 cfs @ 12.56 hrs, Volume= 3.218 af
 Outflow = 17.82 cfs @ 12.65 hrs, Volume= 3.218 af, Atten= 3%, Lag= 5.5 min
 Primary = 17.82 cfs @ 12.65 hrs, Volume= 3.218 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 436.68' @ 12.65 hrs Surf.Area= 3,863 sf Storage= 4,677 cf

Plug-Flow detention time= 4.7 min calculated for 3.218 af (100% of inflow)
Center-of-Mass det. time= 4.7 min (892.0 - 887.3)

Volume	Invert	Avail.Storage	Storage Description
#1	434.50'	33,862 cf	Custom Stage Data (Irregular) Listed below (Recalc)

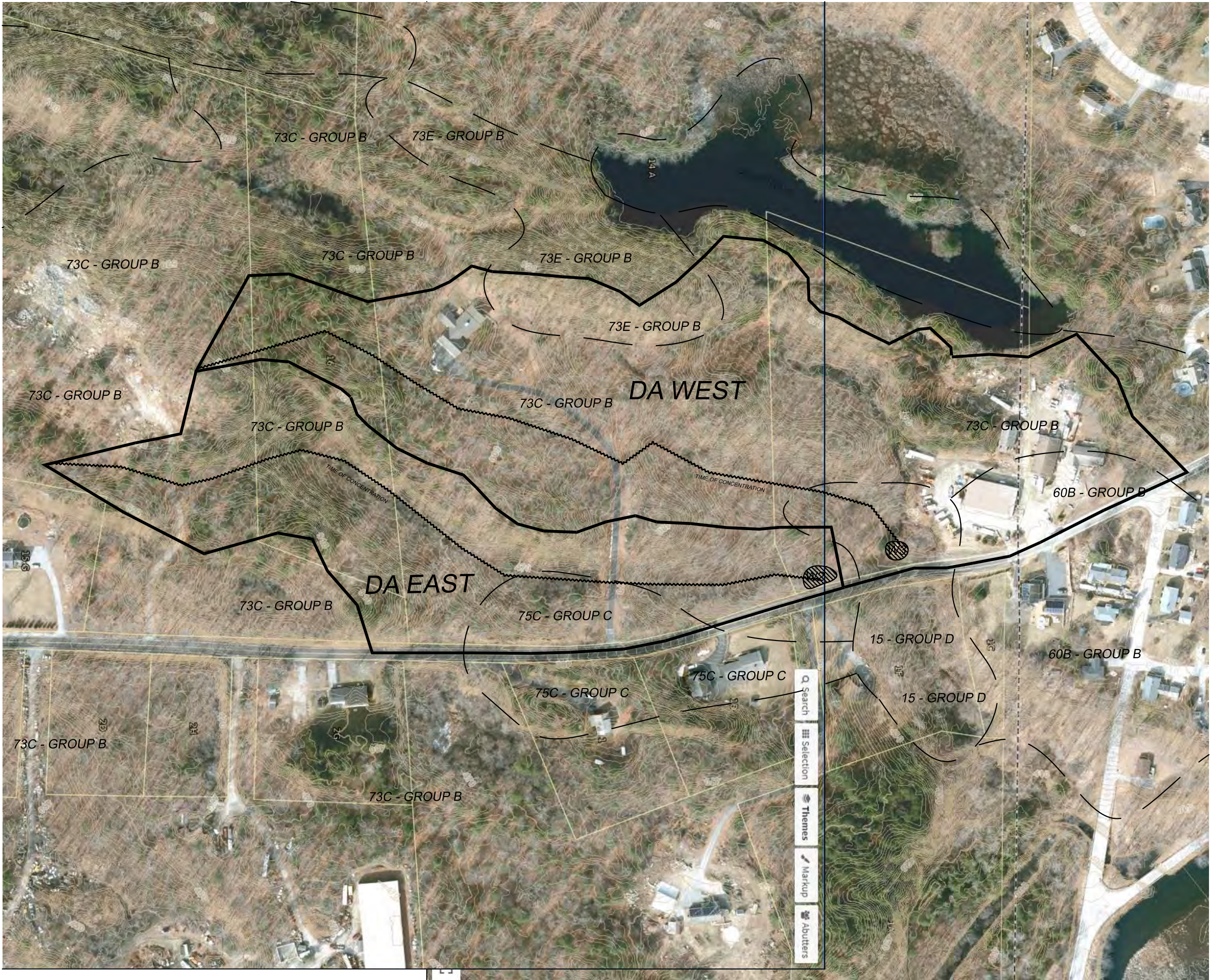
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.50	980	72.0	0	0	980
436.00	2,500	220.0	2,523	2,523	4,426
438.00	7,330	406.0	9,407	11,930	13,713
439.00	11,400	470.0	9,290	21,220	18,196
440.00	13,925	546.0	12,641	33,862	24,361

Device	Routing	Invert	Outlet Devices
#1	Primary	434.50'	24.0" W x 24.0" H Box Culvert L= 125.0' Box, 0° wingwalls, square crown edge, Ke= 0.700 Inlet / Outlet Invert= 434.50' / 429.75' S= 0.0380 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented
#2	Primary	439.00'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

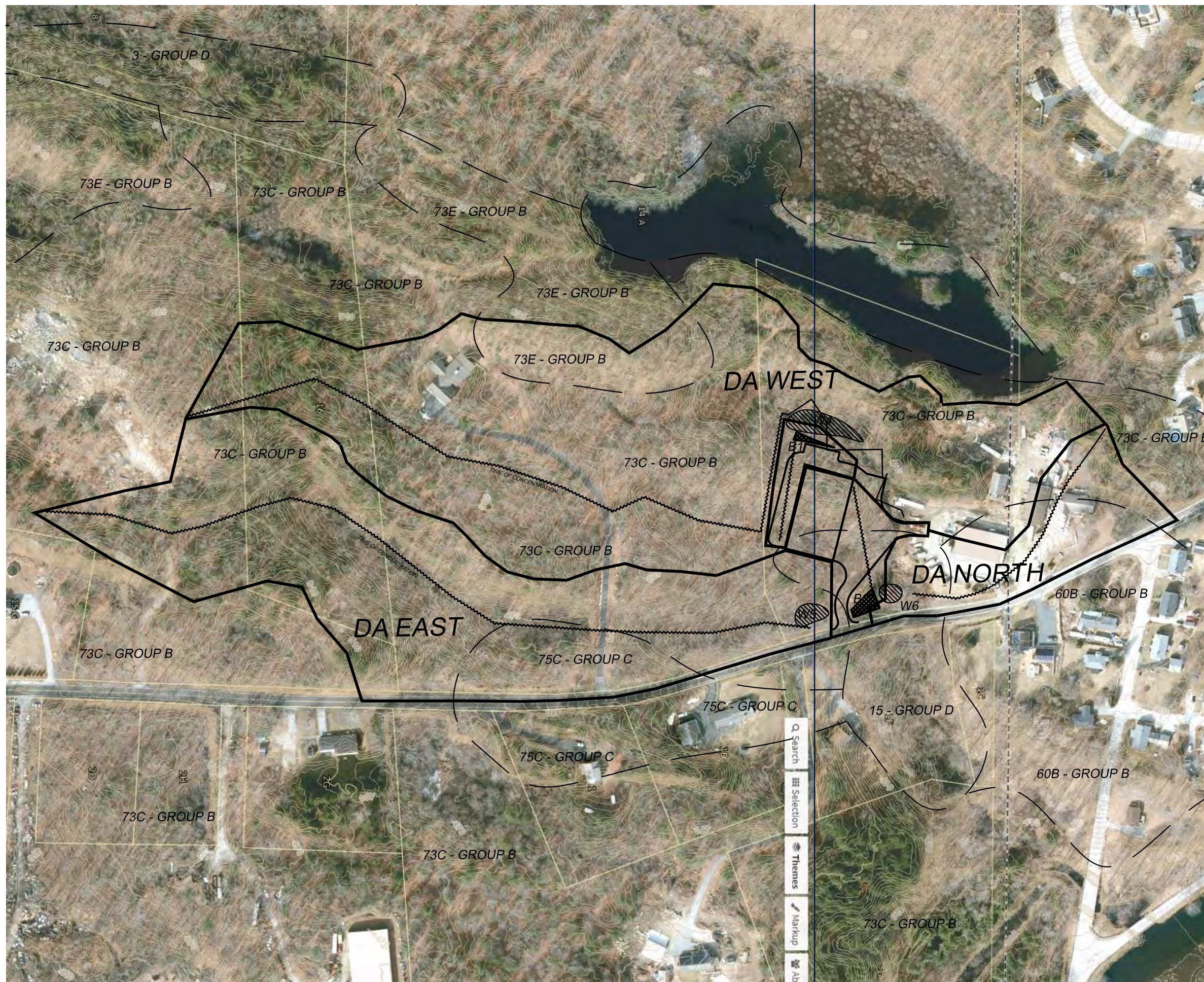
Primary OutFlow Max=17.82 cfs @ 12.65 hrs HW=436.68' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 17.82 cfs @ 4.46 fps)

└ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)



EXISTING DRAINAGE AREAS PREPARED FOR WOJCIECH SUDYKA 1574 RIVERSIDE DRIVE - THOMPSON, CT MAP 55 BLOCK 65 LOT 14			
J&D CIVIL ENGINEERS, LLC 401 RAVENELLE ROAD N. GROSVENORDALE, CT 06255 860-923-2920			
DESIGNED: JJB		REVISIONS:	
CHECKED: DRB			
JOB NO: 2027S		DATE: AUGUST 2021	
SCALE: 1" = 200'		SHEET: 1 OF 1	



PROPOSED DRAINAGE AREAS PREPARED FOR WOJCIECH SUDYKA 1574 RIVERSIDE DRIVE - THOMPSON, CT MAP 55 BLOCK 65 LOT 14			
J&D CIVIL ENGINEERS, LLC 401 RAVENELLE ROAD N. GROSVENORDALE, CT 06255 860-923-2920			
DESIGNED: JJB CHECKED: DRB		REVISIONS:	
JOB NO: 20278		DATE: AUGUST 2021	
SCALE: 1" = 200'		SHEET: 1 OF 1	



Natural Resource Services, Inc.

November 30, 2020

Wojciech Sudyka
JJS Universal Construction Company
63 Airport Road
Dudley, MA 01571

RE: Freshwater Wetland Delineations
A.P. 55, Block 65, Lot 14; 1574 Riverside Drive
Thompson, Connecticut

Dear Mr. Sudyka:

Natural Resource Services, Inc. (NRS) has completed the freshwater wetland delineations within the above referenced property. This field work was performed staff biologist, Hannah Chace, and myself on November 25th, 2020. The wetland delineation and classification of this property was conducted in accordance with Section 22a – 36 to 45, inclusive, of the Connecticut General Statutes, as amended, and the Inland Wetlands and Watercourses Regulations of the Town of Thompson Connecticut (the regulations). All work was performed by a duly qualified soil scientist, which is consistent with the requirements of the regulations. These delineations are not to be considered final until reviewed and approved by the Town of Thompson Inland Wetland and Watercourses Agency.

As part of our work, a hand-held GPS unit was used to locate the established wetland flagging. While this location work should not be construed as a professional survey, the data obtained is valuable for preliminary planning purposes. An aerial photograph is attached to this letter. The GPS data has been added as an overlay on the photo to provide a visual representation of the established wetland delineation.

The site is partially developed and listed in the town's tax assessor database as being 7.4 acres in size. The commercially developed portion of the lot resides in the northeastern corner of the property. The rest of the property slopes from the north, where Perry Pond occurs, down to the southern portion of the lot where it ends at the public roadway. There are a network of drainage ways along the slope that contain poorly drained to very poorly drained soils and are dominated by hydrophytic vegetation. In addition, there are multiple intermittent watercourses within the drainage ways. This network of watercourses and hydric soils comprise an inland wetland defined as a swamp in Section 2.1 of the regulations.

A review of the Connecticut Department of Energy and Environmental Protection remote sensing tools was also conducted for this property. The Connecticut DEEP Natural Diversity Database depicts the area of Perry Pond as critical habitat, but no state or federally listed species are within or close to the property. The property is not within an Aquifer Protection Area or one

of the ten (10) especially noteworthy wetlands and watercourses identified in the Town of Thompson Inland Wetland Inventory.

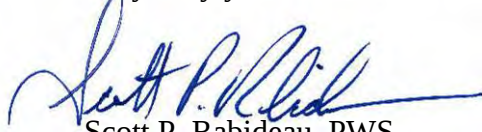
The following chart depicts the NRS flag series, wetland classification and required setback.

Flag Series	Classification	Setback
A1 – A15	Shrub Wetland	100-foot Upland Review Area
B1 – B30	Forested Wetland	100-foot Upland Review Area
C1 – C8	Forested Wetland	100-foot Upland Review Area
D1 – D34	Perry Pond	100-foot Upland Review Area
E1 – E10	Forested Wetland	100-foot Upland Review Area

All of these wetlands are identified on the accompanying GIS graphic. In accordance with Section 2.1 of the regulations, each of these wetlands receives a 100-foot upland review area. The upland review area encompasses the vast majority of the undeveloped land within this lot.

Please do not hesitate to contact me if you have any questions regarding the field work performed by NRS or the information presented in this letter of findings.

Very truly yours,



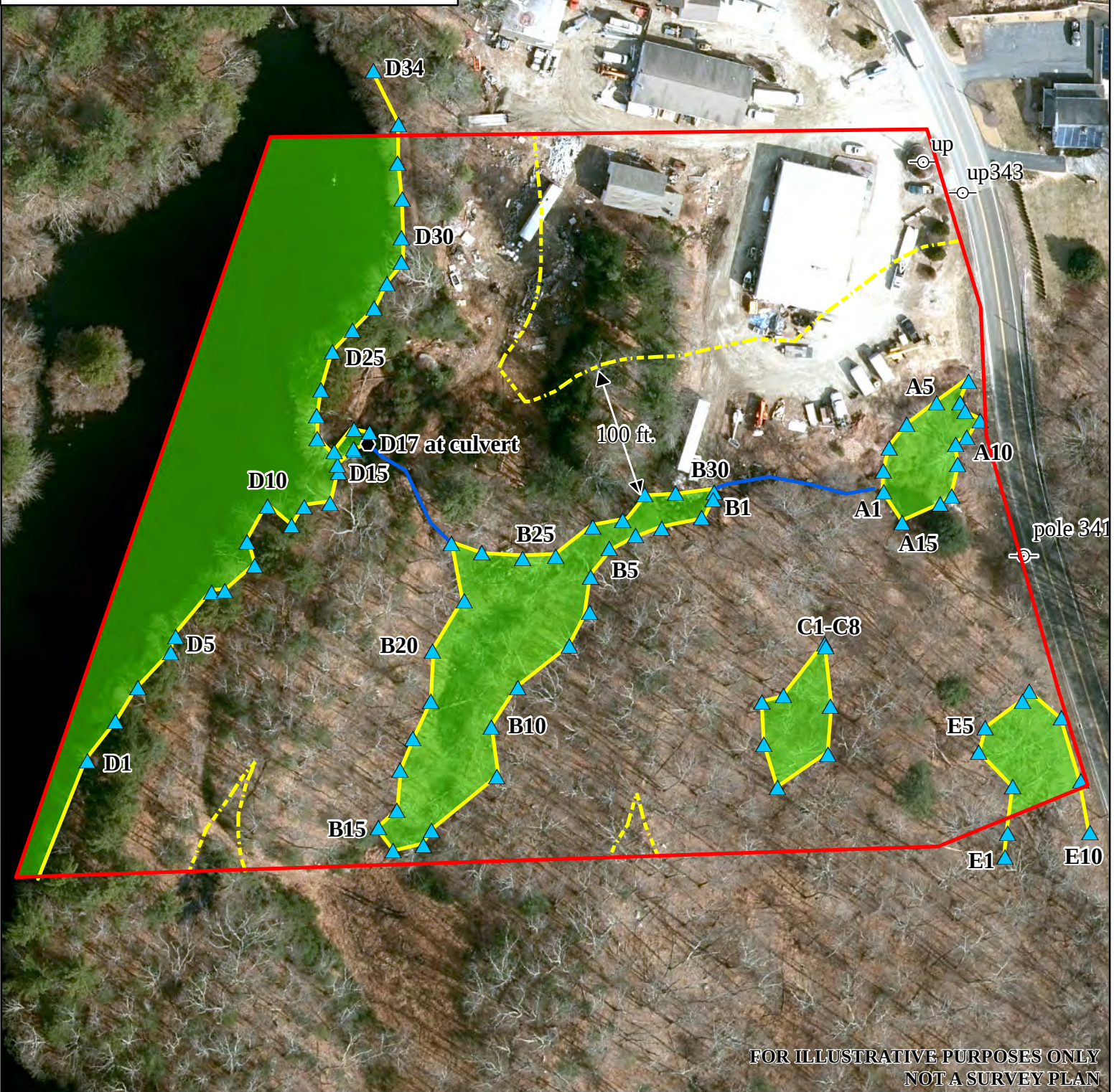
Scott P. Rabideau, PWS
Principal

Enclosures

Legend

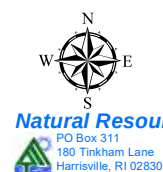
- Approximate Site Location (GIS)
- ▲ — Approximate Wetland Delineation
- Approximate Wetland Area
- - - Approximate 100 ft. Upland Review Area
- Approximate Watercourse

0 50 100 200 Feet

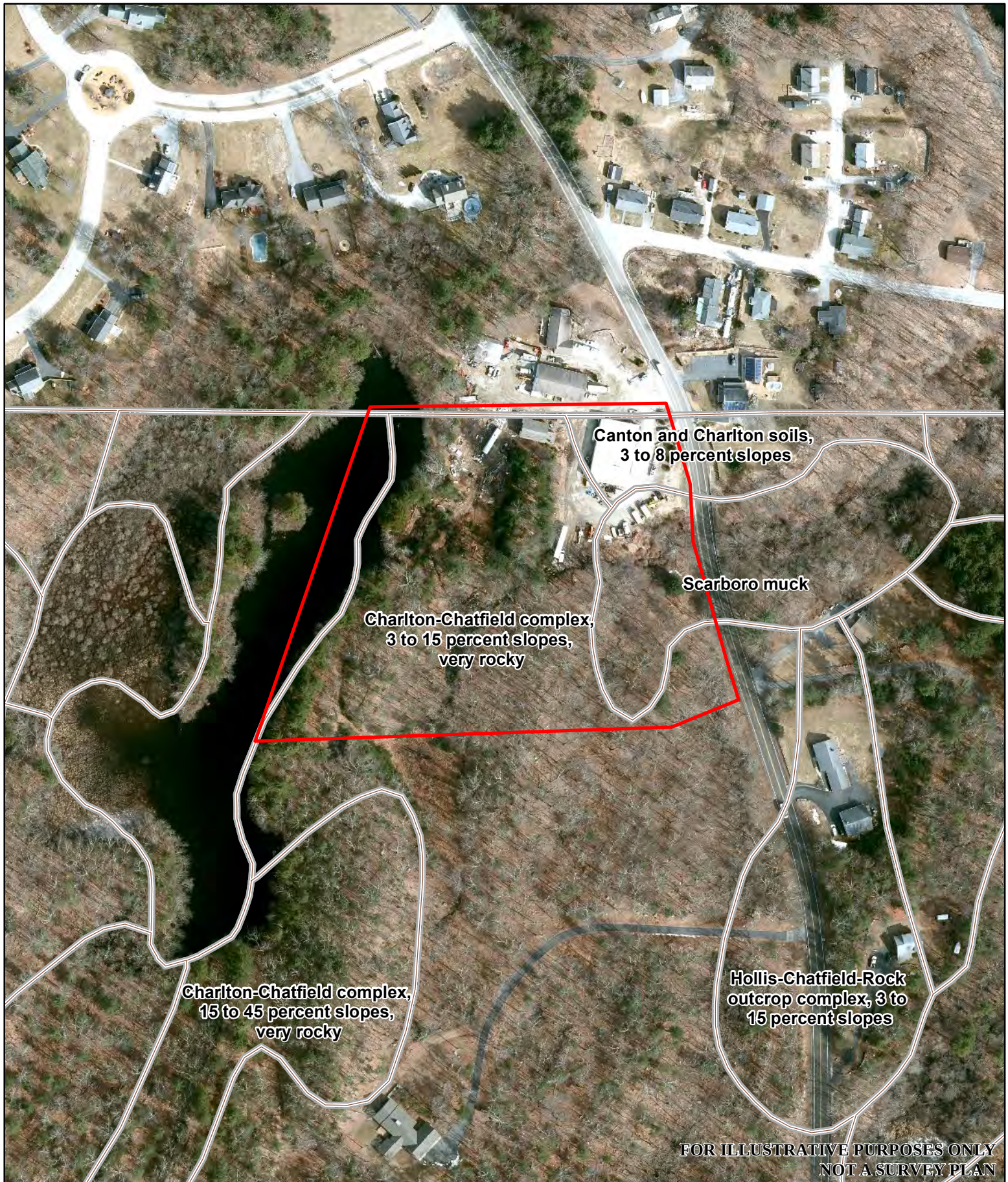


**Site Sketch Depicting Approximate
Wetland Delineation
1574 Riverside Dr
A.P. 55, Block 65, Lot 14
Thompson, CT**

*Performed by
Scott P. Rabideau, PWS - 11/25/2020
Located using hand-held Trimble GeoXH*



Spring 2019 aerial
NECCOG
Natural Resource Services, Inc.
p: (401) 568-7390
f: (401) 568-7490

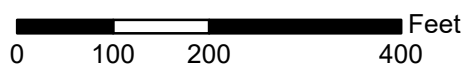


FOR ILLUSTRATIVE PURPOSES ONLY
NOT A SURVEY PLAN

USDA Soil Survey Map
1574 Riverside Dr
A.P. 55, Block 65, Lot 14

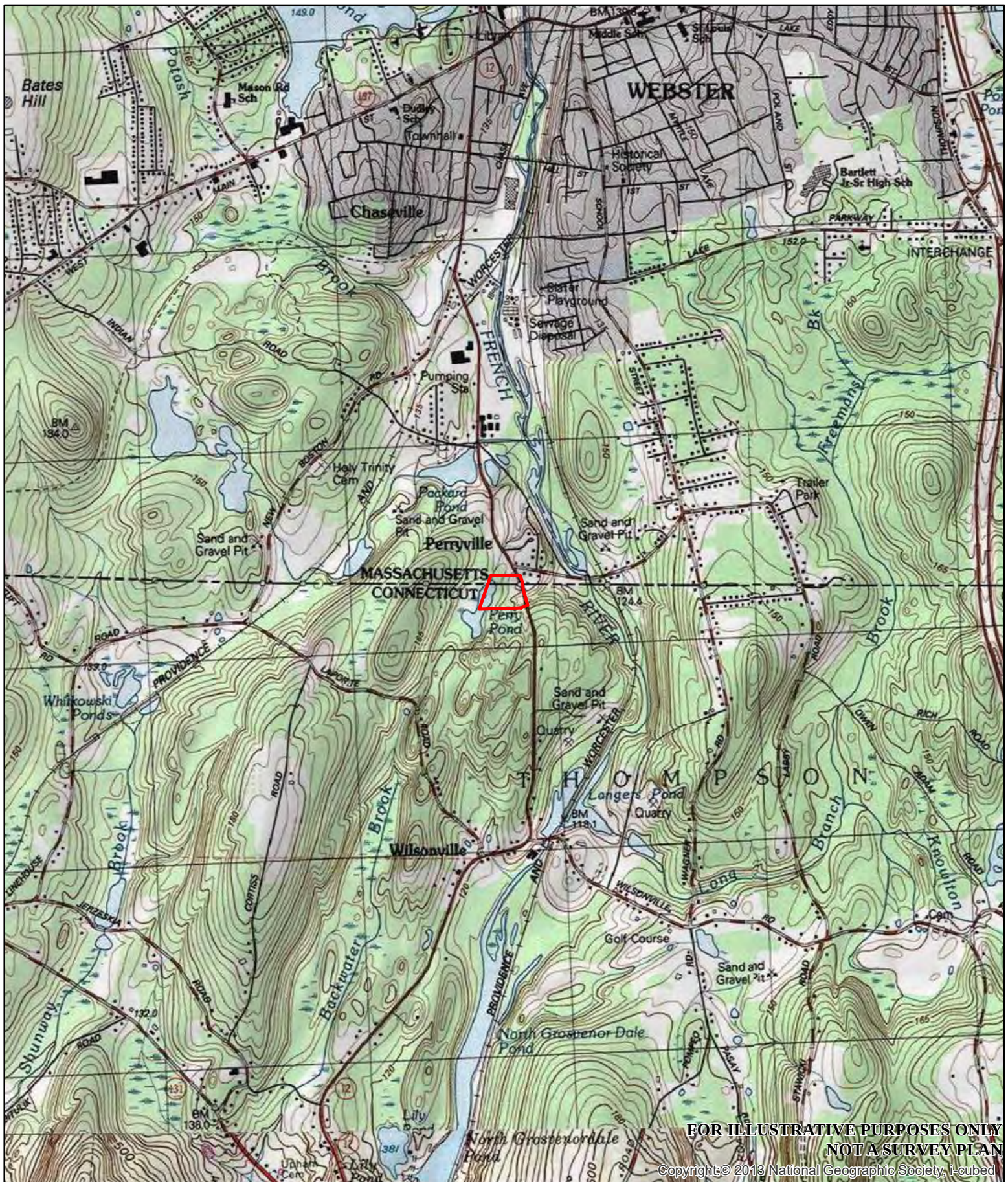
Thompson, CT

— Approximate Site Location



Spring 2019 aerial
NECCOG

Natural Resource Services, Inc.
PO Box 311
180 Tinkham Lane
Harrisville, RI 02830
p: (401) 568-7390
f: (401) 568-7490



USGS Topographic Map
1574 Riverside Dr
A.P. 55, Block 65, Lot 14

Thompson, CT

— Approximate Site Location

0 1,000 2,000 4,000 Feet



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 PO Box 311
 180 Tinkham Lane
 Harrisville, RI 02830
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Wetland Delineation Soil Data Form

Site Location: 1574 Riverside Drive - Thompson

Date: 11/25/2020

Soil Type Mapped: Scarboro Muck

Observation Plot: @A1

For Wetland Labeled: A1 – A15

Horizon	Depth	Color	Redox	Texture	Structure
Ap	0-22"	10YR 3/1	-	SL	-
Bw	22-26"	2.5Y 5/2	-	SL	-

Landscape Position: Toeslope/ Depression

Secondary Indicators

Vegetation: *Vitis labrusca*, *Lonicera morrowii*, *Rubus allegheniensis*, *Poa sp.*, *Solidago sp.*

Surface Indicators: - Surface scouring
- Depression

Determination: Wetland

Soil Scientist: 

Wetland Delineation Soil Data Form

Site Location: 1574 Riverside Drive - Thompson

Date: 11/25/2020

Soil Type Mapped: Scarboro Muck

Observation Plot: @ D10

For Wetland Labeled: D1 – D31

Horizon	Depth	Color	Redox	Texture	Structure
Ap	0-12"	10YR 3/1	-	SL	-
Bw1	12-20"	10YR 3/3	-	SL	-

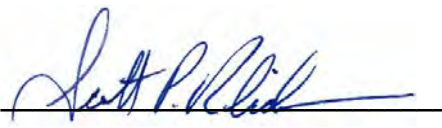
Landscape Position: Footslope

Secondary Indicators

Vegetation: *Quercus alba*, *Pinus strobus*, *Betula lenta*, *Quercus rubra*, *Lonicera morrowii*

Surface Indicators: - None

Determination: Upland

Soil Scientist: 

Wetland Delineation Soil Data Form

Site Location: 1574 Riverside Drive - Thompson

Date: 11/25/2020

Soil Type Mapped: Charlton-Chatfield complex

Observation Plot: @B7

For Wetland Labeled: B1 – B30

Horizon	Depth	Color	Redox	Texture	Structure
Ap	0-7"	10YR 2/2	10YR 5/6	SiL	-
Resistance (Stony)	7"				

Landscape Position: Toeslope

Secondary Indicators

Vegetation: *Quercus rubra*, *Betula lenta*, *Pinus strobus*, *Osmundastrum cinnamomeum*,
Onoclea sensibilis, *Sphagnum* sp., *Berberis thunbergia*, *Rubus hispidus*

Surface Indicators: - Buttressed roots

Determination: Wetland

Soil Scientist:



Wetland Delineation Soil Data Form

Site Location: 1574 Riverside Drive - Thompson

Date: 11/25/2020

Soil Type Mapped: Charlton-Chatfield complex

Observation Plot: @ B7

For Wetland Labeled: B1 – B30

Horizon	Depth	Color	Redox	Texture	Structure
Ap	0-8"	10YR 2/2	-	SiL	-
Bw	8-16"	10YR 4/6	-	SL	-

Landscape Position: Backslope

Secondary Indicators

Vegetation: *Quercus rubra*, *Pinus strobus*, *Osmundastrum cinnamomeum*

Surface Indicators: - None

Determination: Upland

Soil Scientist:





Natural Resource Services, Inc.

August 2, 2021

Marla Butts, Wetlands Agent
Thompson Inland Wetlands Commission
815 Riverside Drive
North Grosvenor Dale, CT 06255

RE: Wetland Inventory and Assessment
Plat 55, Block 65, Lot 14; 1574 Riverside Drive
Thompson, Connecticut

Dear Ms. Butts:

Natural Resource Services, Inc. (NRS) is providing a habitat assessment for a wetland area located within Plat 55, Block 65, Lot 14 on Riverside Drive. The property is 7.45 acres in size, and commercially developed. The area reviewed is within a topographic depression that is approximately 3,350 square feet in size. It is located in the southeast quadrant of the property, isolated from the surrounding wetland features. The area has been identified on the site with blue flagging labeled C1 – C8 (see attached GIS graphic).

The northeastern quarter of the property is developed. There are two buildings within the property with surrounding parking areas. The development continues off property with a few buildings sprawling to the northwest of those on property. South and west of this development remain in a naturalized and forested condition, with numerous wetland features within the landscape.

NRS has performed a habitat assessment within the C series wetland. Staff biologist Hannah Chace conducted this assessment on July 20th, 2021. Wetland soils, vegetation and hydrology were evaluated and recorded using an Army Corp of Engineers wetland determination data form. Other potential habitat features were documented in photographs and described. Dominant species present within the wetland include Black birch, Red maple, Red oak, Highbush blueberry, Cinnamon fern, Hay-scented fern, and Dewberry. Habitat features included two large snags, a large boulder with crevices, and woody and leafy debris. In comparison to those other wetlands located within the property, this location is more isolated and retains fewer hydrologic indicators than other locations.

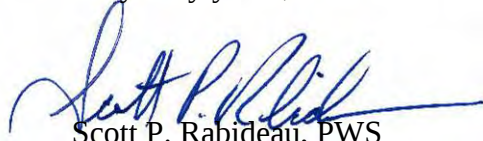
Whereas the D, B, and A series wetlands are connected by drainageways and intermittent watercourses, the C series wetland is isolated within its small depression, with no clear connection to other wetland areas other than potential diffuse overland surface flow.

Despite generally dry conditions expected in July, the elevated levels of rainfall this year were evident throughout the property. Intermittent streams had sustained flows and surface hydrology was evident within all observed wetlands. However, the C series wetland lacks surface hydrologic indicators in at least half of the designated wetland. While surface water and sphagnum patches were evident in the northern portion of the wetland the southern portion is more elevated on the landscape and lacks surface hydrology.

I am providing you with a GIS graphic depicting the subject property and area in question. The graphic identifies the lot and approximate limits of regulated freshwater wetlands in the general vicinity.

Please do not hesitate to call or email me should any additional information be required to facilitate your review of this area.

Very truly yours,



Scott P. Rabideau, PWS
Principal

Enclosure

Cc: Wojciech Sudyka
JJS Universal Construction Company
Daniel Blanchette, PE

Habitat notes

- Two large snags



- Large boulder with crevices



- Woody and leaf debris

- Surface hydrology with sphagnum in the depressed area



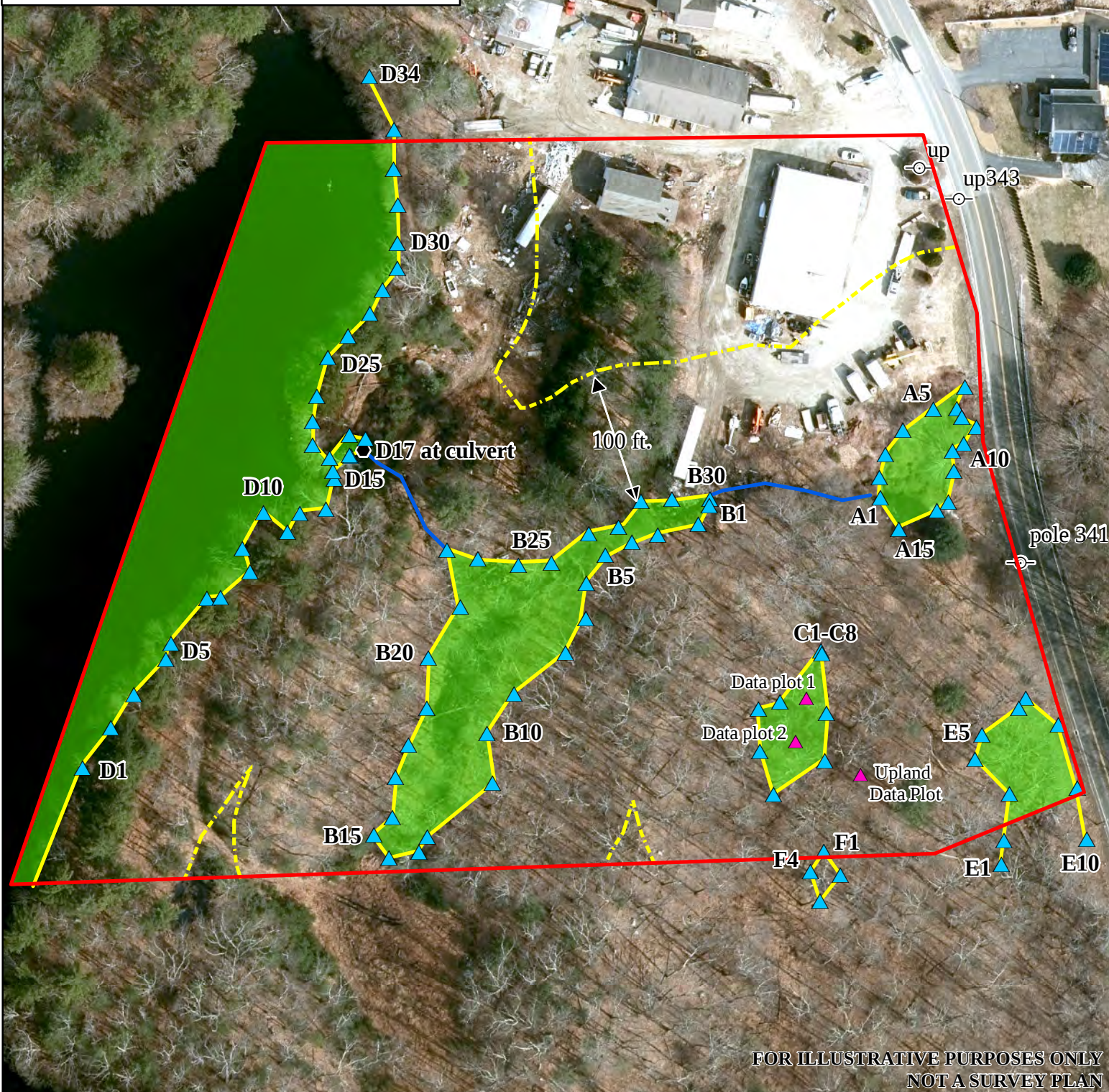
- American toad, (also green frog found near the stream in the flooded soil testing pits)



Legend

- Approximate Site Location (GIS)
- ▲ — Approximate Wetland Delineation
- Approximate Wetland Area
- Approximate 100 ft. Upland Review Area
- Approximate Watercourse

0 50 100 200 Feet



**Site Sketch Depicting Approximate
Wetland Delineation
1574 Riverside Dr
A.P. 55, Block 65, Lot 14
Thompson, CT**

*Performed by
Scott P. Rabideau, PWS - 11/25/2020
Located using hand-held Trimble GeoXH*



Spring 2019 aerial
NECCOG
Natural Resource Services, Inc.
p: (401) 568-7390
f: (401) 568-7490

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 1574 Riverside Drive City/County: Thompson Sampling Date: July 20, 2021
 Applicant/Owner: _____ State: CT Sampling Point: DP1
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (RR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Scarboro muck NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐
 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 ☒	No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☐
Hydric Soil Present?	Yes ☒	No ☐	
Wetland Hydrology Present?	Yes ☒	No ☐	
Remarks: (Explain alternative procedures here or in a separate report.) Community type: Select from list <u>Higher than average rainfall this month</u>			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☒ 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)	☐ 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 ☐ Depth (inches): <u>1</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

 Sampling Point: DP1

Tree Stratum (Plot size: <u>20</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Betula lenta</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57</u> (A/B)
2. <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
		<u>60</u>	= Total Cover	
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	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 = _____
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
		<u>15</u>	= Total Cover	
Herb Stratum (Plot size: _____)				
1. <u>Dennstaedtia punctilobula</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☐ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ 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.
2. <u>Rubus hispidus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Betula lenta</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Sphagnum sp.</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
5. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. <u>Osmundastrum cinnamomea</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
		<u>75</u>	= Total Cover	
Woody Vine Stratum (Plot size: <u>20</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		<u>0</u>	= Total Cover	
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: DP1

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

[illegible]

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils³:

- | | |
|--------------------------|--|
| ☐ | 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) |
| ☐ | Dark Surface (S7) (LRR K, L) |
| ☐ | 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) |

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

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 1574 Riverside Drive City/County: Thompson Sampling Date: July 20, 2021
 Applicant/Owner: _____ State: CT Sampling Point: DP2
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (RR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Scarboro muck NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☐
 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 ☐	No ☒	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks: (Explain alternative procedures here or in a separate report.) Community type: Select from list <u>Higher than average rainfall this month</u>					

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ 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)	☐ 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 ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): <u>14</u> Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): <u>0</u>		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

 Sampling Point: DP2

Tree Stratum (Plot size: <u>20</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula lenta</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)														
2. <u>Quercus rubra</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Pinus strobus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
			<u>60</u> = Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>180</u> (A)</td> <td><u>640</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.55</u>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>180</u> (A)	<u>640</u> (B)
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species <u>30</u>	x 2 = <u>60</u>																	
FAC species <u>40</u>	x 3 = <u>120</u>																	
FACU species <u>90</u>	x 4 = <u>360</u>																	
UPL species <u>20</u>	x 5 = <u>100</u>																	
Column Totals: <u>180</u> (A)	<u>640</u> (B)																	
			<u>60</u> = Total Cover															
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u>Betula lenta</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
			<u>60</u> = Total Cover															
Herb Stratum (Plot size: <u>5</u>)																		
1. <u>Osmundastrum cinnamomea</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☐ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ 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.														
2. <u>Dennstaedtia punctilobula</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>															
3. <u>Mainthemum canadense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
			<u>55</u> = Total Cover															
Woody Vine Stratum (Plot size: <u>20</u>)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☐ No ☒														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
			<u>0</u> = Total Cover															
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: DP2

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

[illegible]

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils³:

- | | |
|--------------------------|--|
| ☐ | 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) |
| ☐ | Dark Surface (S7) (LRR K, L) |
| ☐ | 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) |

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

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Recommendation for site Walk on Application IWA21028, Sudyka .Obby Marla Butts, Wetlands Agent

This is a request that you consider conducting a site walk on November 6, 2021 for Application IWA21028, Sudyka, 1575 Riverside Drive. While I am still recovering from abdominal surgery and won't be able to accompany you, Dan Malo has agreed to attend in my stead to help you orient to the proposed conditions in relation to the existing conditions and develop the appropriate meeting minutes. This request is based on the following:

On October 18, 2021 I conducted a site walk with Conservation Agent Dan Malo and Mr. Sudyka's engineer, Daniel Blanchette of J&D Civil Engineers, LLC and was concerned about the condition and function of Perry Pond Dam, the grades around Perry Pond including the earthen embankment in Massachusetts and how these conditions are handled in the application. Attached is a map generated using Thompson's MapGeo application and contains references to my observations from that site walk which warrant your review and determination as to your action on Application IWA21028. I also ask that you refer to Application Plan sheet 2 of 4 (also attached) to assist you in understanding the site conditions.

We began walking south from the existing "Building" crossing a small stream to a point identified on Sheet 2 where a catch basin/inlet is proposed (invert elevation 442.0, my map #1A). Note that Sheet 2 shows that an existing 4" CCP is also terminating in this area but the outfall was not observed. We continued southward to the wetlands proposed to be filled (C series wetlands). We found the stone headwall and culvert located at the northeast end of the wetlands (my map #1B). We then walked west to the southern end of the B Series Wetland and continued westerly reaching the dirt path that generally ran parallel to the east side of Perry Pond (see Plan Sheet 2).

At or about Wetlands Delineation D15 (just after the "shed") we observed what appeared to be a potential over flow channel coming from Perry Pond (my map #2). At Wetlands Delineation D17 (my map #3) looking west from the dirt path we observed water flowing from the base of the slope but did not see either a culvert outfall or inlet (Plan Sheet #2 references inlet invert at 463.55, outlet unknown).

We followed the path to the yard area and then walked northwest observing water flowing into a 4" or 6" blue plastic pipe (my map #4). The inlet to the pipe had a "Have-a-Heart" metal trap placed over the inlet apparently to protect it from debris entering the small pipe the drained southeast into the yard area. Dan & I followed the water flow travelling northwest and found the flow originated at the tow of the earthen embankment that assists in creating Perry Pond (my map #5).

Reversing our steps to the blue pipe, we then travelled south and observed a masonry structure that appeared to be a spillway of sorts constructed between two outcrops of ledge (identified on Plan Sheet 2 as "Stone & Mortar Dam"). Looking east we could see water flowing from the toe of slope draining away from the dam but did not follow its path through the underbrush (my map #6). I did not observe the waterward side of this structure but Daniel reported that he thought he could see what might be a gate valve submerged below the water.

At this point we returned to the yard area and at the catch basin located between the Garage and Building (see Plan Sheet 2, my map #7) we could hear water flowing but could not see where it was coming from or where it was going to. The plans are absent any information as to the origin of this water.

You will note from Plan Sheet 2 that the dam is bisected by the state line – half of the masonry structure as well as the earthen embankment are located in Massachusetts. The portion in Connecticut is not shown in DEEP's list of registered dams and its hazard classification is unknown.

USGS StreamStats (see attached report) shows the outfall for Perry Pond draining northeast away from Connecticut, but this was not verified by my visual observation. The drainage area for Perry Pond at its suggested discharge from Perry Pond is identified as 37+ acres of contributing drainage area.

During our site walk we did not observe evidence of recent overtopping of either the masonry portion of the dam, the earthen embankment north of the masonry wall or the natural ground near Wetlands Delineation D15-D17. The engineering report makes no mention of the dam, its condition or as to how water flows from Perry Pond. It is clear that water is being discharged from Perry Pond into Connecticut but the extent is unidentified. Additionally, the hazard classification and functional condition of the dam needs to be assessed.

For these reasons I recommend you conduct a site walk.

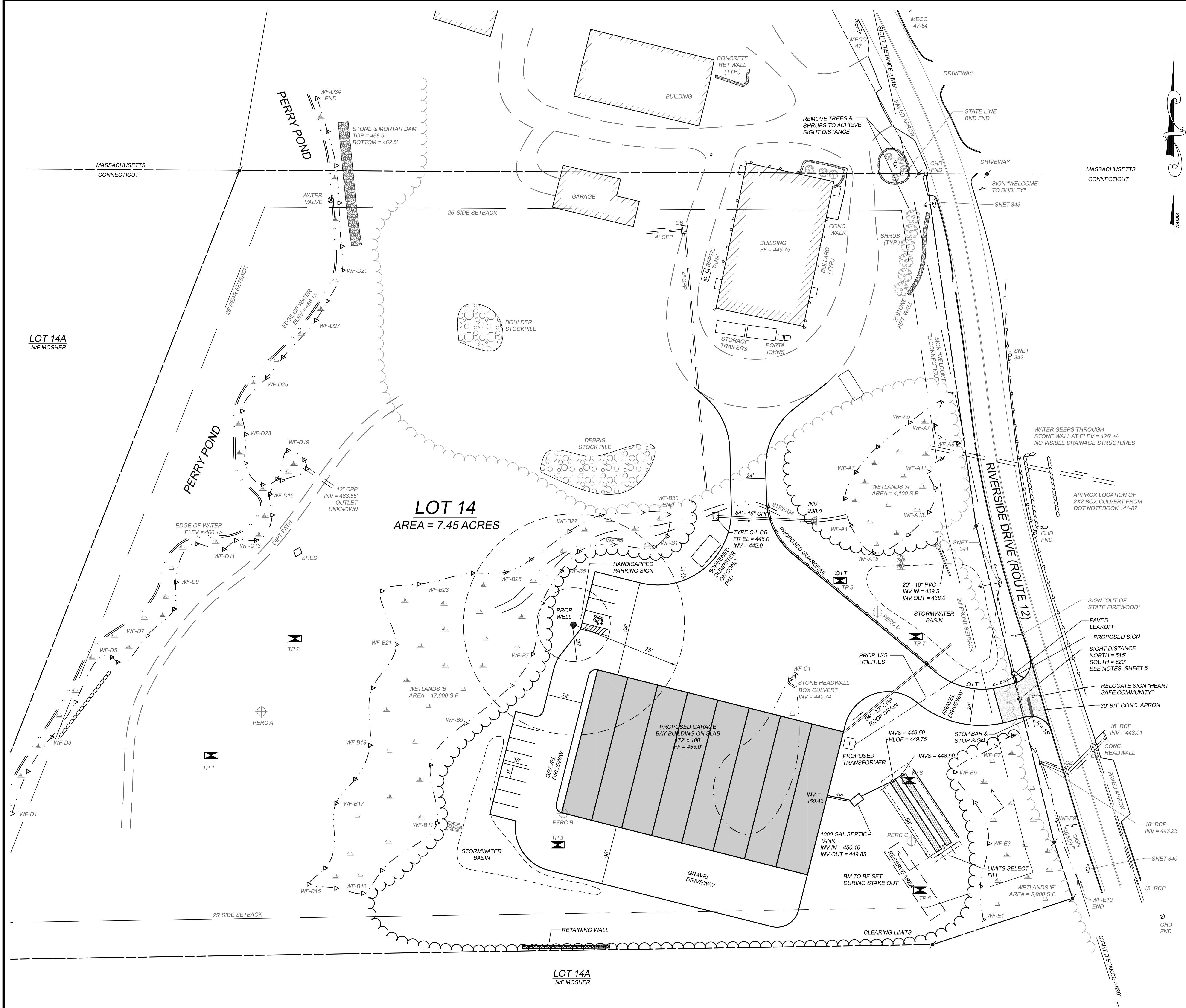
Map Points of Interest MPB Site Walk 10-18-2021 Application IWA210280

**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated October 19, 2021
Data updated March 20, 2019

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.



SURVEY NOTES:

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THE SURVEY TYPE IS TOPOGRAPHIC, PERFORMED ON JANUARY 18, 2021, AND IS INTENDED TO BE USED FOR THE DESIGN OF A SITE DEVELOPMENT PLAN.

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

2. TEST PIT AND PERC TEST LOCATIONS HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND J & D CIVIL ENGINEERS DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT.

3. REFERENCE PLAN: PROPERTY BOUNDARY SURVEY, SHOWING LAND OF THE CRAVER POINT REALTY TRUST, PREPARED BY MICHAEL C. HEALEY, L.S. SCALE 1" = 40'. PREPARED ON NOVEMBER 17, 1997.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12/10/21 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE © 2021 J&D CIVIL ENGINEERS, LLC

FLOOD NOTES

PORTIONS OF THE PROPERTY ARE WITHIN 100 YEAR FLOOD ZONE PER FEMA FIRM MAP 090117-0020B, DATED NOVEMBER 1, 1984.

ZONE A ELEVATION = 468' +/-

WETLAND NOTES

ALL WETLAND SOILS SHOWN WERE DELINEATED IN NOVEMBER 2020 BY SCOTT P. RABIDEAU, PWS, OF NATURAL RESOURCES SERVICES INC.

PROPERTY OWNER
SUDYKA WOJIECH

REFERENCE DEED
THOMPSON LAND RECORDS
VOL. 791 PG. 266

ASSESSORS REFERENCE
MAP 55 BLOCK 65 LOT 14

LEGEND	
	BUILDING SETBACK LINE
	PROPERTY LINE
	EDGE OF WETLANDS
	WETLAND BUFFER/UPLAND REVIEW AREA
	TEST PIT
	LEACHING TRENCH
	STONEWALL
	UTILITIES
	TREELINE
	GUARDRAIL
	FENCE

LAYOUT & UTILITIES PLAN
PREPARED FOR
JJS UNIVERSAL CONSTRUCTION CO.
1574 RIVERSIDE DRIVE - THOMPSON, CT
MAP 55 BLOCK 65 LOT 14

J&D CIVIL ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB CHECKED: JJB	REVISIONS:
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JOB NO: 20278 SCALE: 1" = 30'	DATE: SEPTEMBER 3, 2021 SHEET: 2 OF 6
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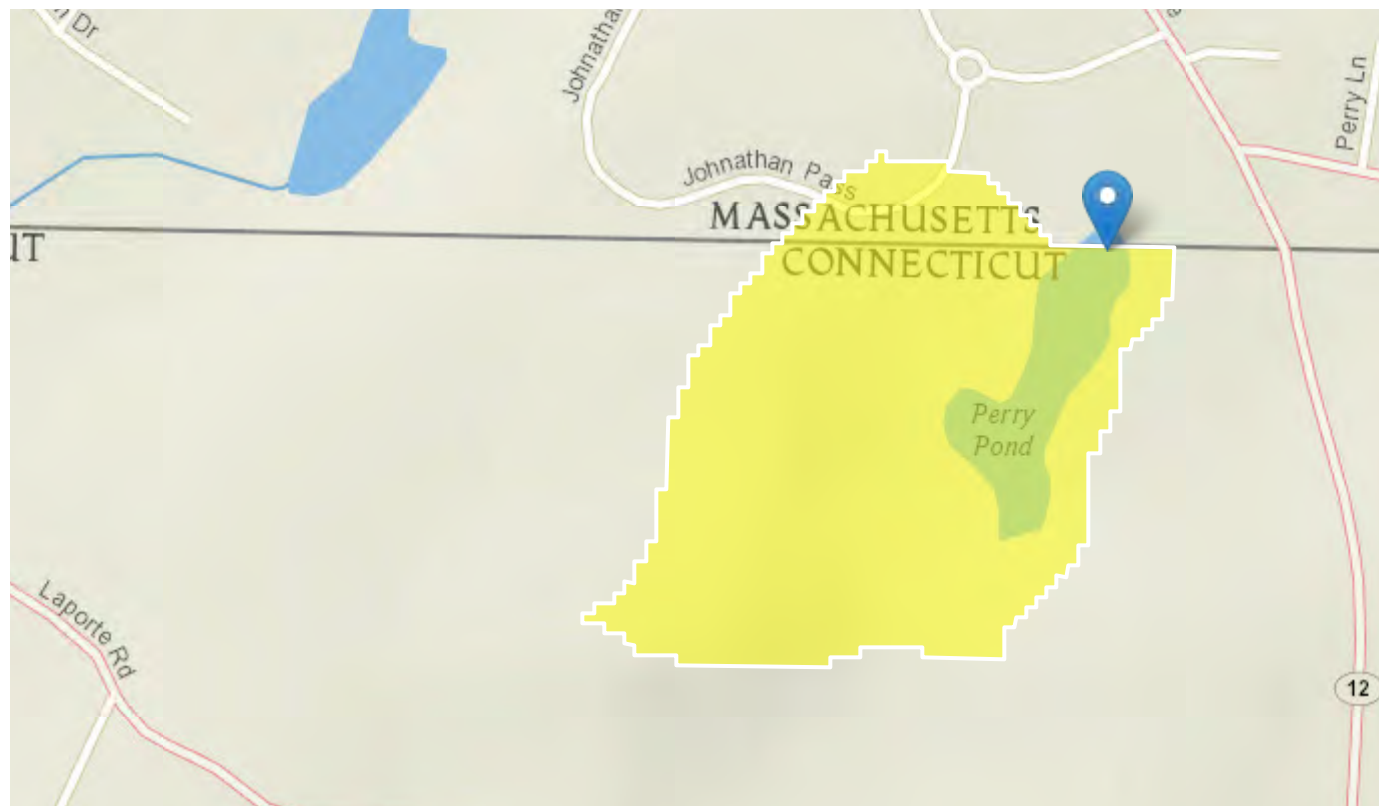
StreamStats Report for Perry Pond

Region ID: CT

Workspace ID: CT20211028083059315000

Clicked Point (Latitude, Longitude): 42.02448, -71.88990

Time: 2021-10-28 04:31:08 -0400



Note StreamStats reports Perry Pond drains north into MA but this is not verified by field inspection of MPB 10/18/2021

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0584	square miles
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	3	inches
SSURGOCCDD	Percentage of area with hydrologic soil types C, D, or C/D from SSURGO	0.0972	percent

Parameter Code	Parameter Description	Value	Unit
I24H5Y	Maximum 24-hour precipitation that occurs on average once in 5 years	4.15	inches
I24H10Y	Maximum 24-hour precipitation that occurs on average once in 10 years	5.03	inches
I24H25Y	Maximum 24-hour precipitation that occurs on average once in 25 years	6.18	inches
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	7.06	inches
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.93	inches
I24H200Y	Maximum 24-hour precipitation that occurs on average once in 200 years	9.2	inches
I24H500Y	Maximum 24-hour precipitation that occurs on average once in 500 years	10.87	inches

General Disclaimers

The delineation point is in an exclusion area. Warning! Outside the hydrologic region (Connecticut) defined by the study. Accuracy of peak-flow statistics is unknown.

Peak-Flow Statistics Parameters [Statewide DA only SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0584	square miles	0.69	325

Peak-Flow Statistics Parameters [Statewide Multiparameter SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0584	square miles	0.69	325
I24H2Y	24 Hour 2 Year Precipitation	3	inches	2.77	3.32
SSURGOCCDD	Percent soil type C or D from SSURGO	0.0972	percent	0.118	0.945

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
I24H5Y	24 Hour 5 Year Precipitation	4.15	inches	4	4.7
I24H10Y	24 Hour 10 Year Precipitation	5.03	inches	4.86	5.79
I24H25Y	24 Hour 25 Year Precipitation	6.18	inches	5.99	7.22
I24H50Y	24 Hour 50 Year Precipitation	7.06	inches	6.81	8.3
I24H100Y	24 Hour 100 Year Precipitation	7.93	inches	7.62	9.38
I24H200Y	24 Hour 200 YearPrecipitation	9.2	inches	8.7	11.22
I24H500Y	24 Hour 500 Year Precipitation	10.87	inches	10.1	13.64

Peak-Flow Statistics Disclaimers [Statewide DA only SIR 2020 5054]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Statewide DA only SIR 2020 5054]

Statistic	Value	Unit
Drainage Area Only 50-percent AEP flood	7.04	ft^3/s
Drainage Area Only 20-percent AEP flood	12.8	ft^3/s
Drainage Area Only 10-percent AEP flood	17.6	ft^3/s
Drainage Area Only 4-percent AEP flood	24.6	ft^3/s
Drainage Area Only 2-percent AEP flood	30.6	ft^3/s
Drainage Area Only 1-percent AEP flood	37	ft^3/s
Drainage Area Only 0.5-percent AEP flood	44.1	ft^3/s
Drainage Area Only 0.2-percent AEP flood	54.6	ft^3/s

Peak-Flow Statistics Disclaimers [Statewide Multiparameter SIR 2020 5054]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Statewide Multiparameter SIR 2020 5054]

Statistic	Value	Unit
50-percent AEP flood	2.96	ft^3/s
20-percent AEP flood	5.55	ft^3/s

Statistic	Value	Unit
10-percent AEP flood	7.99	ft ³ /s
4-percent AEP flood	11.7	ft ³ /s
2-percent AEP flood	14.9	ft ³ /s
1-percent AEP flood	18.3	ft ³ /s
0.5-percent AEP flood	23.3	ft ³ /s
0.2-percent AEP flood	30.4	ft ³ /s

Peak-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Drainage Area Only 50-percent AEP flood	7.04	ft ³ /s
Drainage Area Only 20-percent AEP flood	12.8	ft ³ /s
Drainage Area Only 10-percent AEP flood	17.6	ft ³ /s
Drainage Area Only 4-percent AEP flood	24.6	ft ³ /s
Drainage Area Only 2-percent AEP flood	30.6	ft ³ /s
Drainage Area Only 1-percent AEP flood	37	ft ³ /s
Drainage Area Only 0.5-percent AEP flood	44.1	ft ³ /s
Drainage Area Only 0.2-percent AEP flood	54.6	ft ³ /s
50-percent AEP flood	2.96	ft ³ /s
20-percent AEP flood	5.55	ft ³ /s
10-percent AEP flood	7.99	ft ³ /s
4-percent AEP flood	11.7	ft ³ /s
2-percent AEP flood	14.9	ft ³ /s
1-percent AEP flood	18.3	ft ³ /s
0.5-percent AEP flood	23.3	ft ³ /s
0.2-percent AEP flood	30.4	ft ³ /s

Peak-Flow Statistics Citations

Ahearn, E.A., and Hodgkins, G.A., 2020, Estimating flood magnitude and frequency on streams and rivers in Connecticut, based on data through water year 2015: U.S. Geological Survey Scientific Investigations Report 2020–5054, 42 p. (<https://doi.org/10.3133/sir20205054>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.6.2

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

Agenda Item E.b) 1. New Applications

DEC21030, Diane Chapin, 382 Lowell Davis Rd (Assessor's map 99, block 43, lot 5F), construct outdoor riding arena in the 100-foot upland review area as agricultural use permitted as of right, received 11/8/2021.



Town of Thompson
INLAND WETLANDS COMMISSION
815 RIVERSIDE DRIVE
NORTH GROSVENORDALE, CT 06255

For Commission Use Only
Application #: DEC21030

Received

NOV 08 2021

Thompson Wetlands Office

APPLICATION FORM - USE PERMITTED AS OF RIGHT OR NON-REGULATED USE

Applies to those actions proposed as a use permitted as of right or non-regulated use listed in sections 4.1 and 4.2 of the Thompson Inland Wetland and Watercourse Regulations, except timber harvests (for timber harvests use Timber Harvest Form). Unless identified as "Optional" all information is mandatory.

Part I Request for Use Permitted as of Right or Non-Regulation Use (check one only):

1. Propose use or activity conforms to the following permitted uses as outlined in section 4.1 of the Thompson Inland Wetland and Watercourse Regulations (check as appropriate):
 - a. ☒ Grazing, farming, nurseries, gardening and harvesting of crops.
 - b. ☐ Farm pond three (3) acres or less essential to the farming operation.
 - c. ☐ Construction of a residential home for which a building permit has been issued prior to July 1, 1987, attach copy of valid building permit and site plan.
 - d. ☐ Boat anchorage or mooring.
 - e. ☐ Use incidental to the maintenance and enjoyment of property presently used for residential purposes that contains a dwelling. Such property is equal to or smaller than the largest minimum residential lot size as permitted in the Town of Thompson.
 - f. ☐ Construction and operation by a water company of a dam, reservoir or other facility necessary for the impounding, storage and withdrawal of water in connection with public water supplies.
 - g. ☐ Maintenance of drainage pipes on residential property that existed prior to July 1, 1974.
2. Proposed use or activity will not disturb the natural or indigenous character of the wetland or watercourse and conforms to one of the following non-regulated uses outlined in section 4.2 of the Thompson Inland Wetlands and Watercourses Regulations (check as appropriate):
 - a. ☐ Conservation of soil, vegetation, water, fish or wildlife.
 - b. ☒ Outdoor recreation
 - c. ☐ Dry Hydrant installation by authority of the municipal fire department
3. The proposed use or activity is not regulated by the Thompson Inland Wetlands and Watercourses Regulations because (check as appropriate):
 - a. ☐ The proposed activity or use is one which is the exclusive jurisdiction of State or Federal agency. Provide documentation (See Section 5 of these regulations)
 - b. ☐ The use or activity legally existed as of July 1, 1974, and does not involve new, additional or expanded use or activity. Provide documentation.
 - c. ☐ The proposed activity is not a regulated activity as defined by section 2 to the Thompson Inland Wetlands and Watercourses Regulations (delineation of wetlands by a qualified soil scientist may be required)



Part II Contact Information

1) Applicant Contact Information

a) Applicant Name: Diane Chapin

b) Mailing Address: 382 Lowell Davis Rd
(include town state zip) N. Grovesnorale CT

c) Daytime Phone #: 860-207-0125

d) Evening Phone #: _____

e) Cell Phone # (optional): _____

f) Email Address (optional): diane.g.chapin@gmail.com

2) Applicant's Interest in Property (check one only)

☒ property owner ☐ lessee ☐ easement holder

3) Owner Contact Information (required if applicant is not property owner)

a) Name: Same

b) Mailing Address: _____
(include town state zip) _____

c) Daytime Phone #: _____

d) Evening Phone #: _____

e) Cell Phone # (optional): _____

f) Email Address (optional): _____

Part III Site Information

1) Property Involved (following information obtained from tax assessor and town clerk's records):

Street Address	Assessor's Reference		
	Map	Block	Lot
<u>382 Lowell Davis Rd</u>	<u>99</u>	<u>43</u>	<u>5F</u>

2) Attach an 8 1/2 inch by 11 inch location map for the property (printable map from Thompson MapGeo with property outlined is acceptable – see <https://thompsonct.mapgeo.io>)

3) Wetlands (as delineated by qualified soil scientist) / Watercourse Area Altered

a) Wetlands: 0 (in square feet)

b) Open Water Body: 0 (in square feet)

c) Stream: 0 (in linear feet)

4) Noteworthy Wetlands / Watercourses: Does the property contain a noteworthy wetland or watercourse as identified in the document "Town of Thompson Inland Wetland Inventory" prepared by the Northeastern Connecticut Regional Planning Agency dated 1980? (see http://thompsonct.org/images/stories/Inland_Wetlands/Inlands-Wetlands-Watercourse-Map.pdf - check one) ☒ No ☐ Yes (If Yes, then upland review area = 200 ft.)

5) Upland Review Area altered: 16,000 (in square feet)

For 6 & 7 below see http://thompsonct.org/images/stories/Planning_Development/Inland_Wetlands/Drainage-BasinsTopo-Grid-2017.pdf

6) U.S.G.S. Topographic Quadrangle (check all involved)

☐ #13 Webster MA

☐ #14 Oxford MA

☐ #28 Putnam

☒ #29 Thompson

7) Drainage Basin #(s) wherein the proposed activity will take place (check all involved):

French River ☒ 3300 ☐ 3301

Quinebaug River ☐ 3700 ☐ 3708

Five Mile River ☐ 3400 ☐ 3401 ☐ 3402

Part IV Description of Activity Proposed

1. Detailed project description and purpose:

Construct outdoor riding arena
20x60 meters according to USDF standards (USDF "underfoot")
Area will be graded & constructed to allow for
drainage and retain all footing materials - Base
approx 6" of compacted crushed stone, footing
top layer approx 2 inches of angular sand. Sub Base
will be compacted prior to base which will also
be compacted.

2. Attach a diagram, drawing or plot plan of sufficient scale and detail to portray the proposed activity.

Part V Application Permissions & Certifications

1) Owner's Permission¹

I, the undersigned, am the owner of the above reference property and hereby grant permission to the Thompson Inland Wetlands Commission and its duly authorized agents to enter upon this property at reasonable times both before and after a final decision on this application has been issued by the Thompson Inland Wetlands Commission for purposes of inspection and enforcement of the Inland Wetlands and Watercourse regulation of the town of Thompson. Further, I have had an opportunity to review the Inland Wetlands and Watercourses Regulations of the Town of Thompson and understand that these regulations regulate activities conducted on my property.

Diane Chapin
 (Signature of property owner)

10/15/21
 Date

For all persons excluding individuals print name and title of signatory above

2) Applicant's Certification¹

I, the undersigned, certify that the information supplied in the completed application is accurate, to the best of my knowledge and belief and am aware of the penalties for obtaining the permit through deception, inaccurate or misleading information.

Diane Chapin
 (Signature of applicant)

10/15/21
 Date

For all persons excluding individuals print name and title of signatory above

*** For Commission Use Only ***	
Agency Response:	
IWC Chair Signature:	Date:

¹ If owner is (1) a corporation, then signature is required to be by a principal executive officer of at least the level of vice president, (2) a limited liability company (LLC), then signature is required to be by a manager, if management of the LLC is vested in a manager(s) in accordance with the company's "Articles of Organization", or a member of the LLC if no authority is vested in a manager(s), (3) a partnership, then signature is required by a general partner, (4) the Town of Thompson, then signature is required by the First Selectman, (5) any other municipality, the signature is required by a ranking elected official, or by other representatives of such applicant authorized by law, and (6) a sole proprietor, then signature is required by the proprietor.

Locus Map for 382 Lowell Davis Rd



Property Information

Property ID 2547
Location 382 LOWELL DAVIS RD
Owner CHAPIN DIANE G



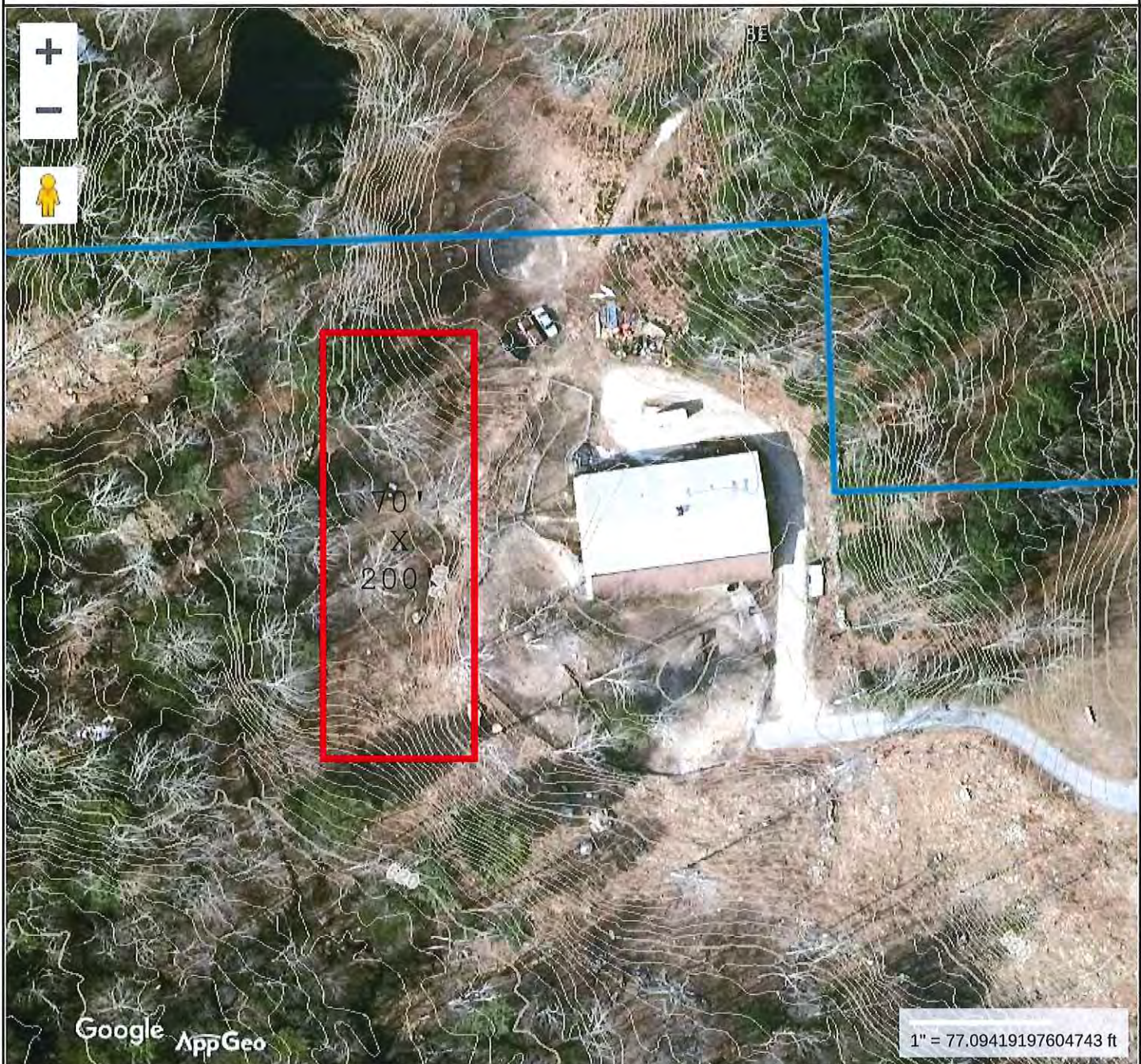
MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated October 19, 2021
Data updated March 20, 2019

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.

Chapin Arena



Property Information

Property ID 2545
Location 388 LOWELL DAVIS RD
Owner LOFFREDO BRIAN F + COLLEEN P



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated September 21, 2020
Data updated March 20, 2019

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.

Agenda Item E.b) 2. New Applications

IWA21030, Max Candidus, 0 Sunnyside Drive (Assessor's map 133, block 1, lot 3), construct a driveway and septic system for a new single family home, portions of which are in wetlands and the 100-foot upland review area, stamped received 11/3/21, to be statutorily received 11/9/21.

Copy 1

for commission use:	rev 1/11
application #	<u>FWA21031</u>
date received	<u>November 3, 2021</u>

PERMIT APPLICATION
TO CONDUCT A REGULATED ACTIVITY

Town of Thompson
INLAND WETLANDS COMMISSION
815 RIVERSIDE DRIVE
NORTH GROSVENORDALE, CT 06255

Instructions:

All applicants must complete this application for preliminary review. The Commission will notify the applicant of any additional information that may be required and will schedule a public hearing if necessary. In addition to the information supplied herein, the applicant may submit other supporting facts or documents which may assist the Commission in its evaluation of the proposal. In order to streamline the application review process, it is recommended that all applications containing significant impact to the wetlands be submitted to the Thompson Conservation Commission for review prior to submission to the regulatory commissions.

Two (2) copies of the completed application and two (2) copies of all the additional attached documents (site plan, etc.) must be submitted to the Town Clerk. State Statute provides that you may submit an application up to three (3) business days prior to the next regularly scheduled meeting, which means by the close of business hours on the Wednesday before a regular meeting date. The applicant is advised to read Sections 7 and 8 of the Regulations for further information regarding application requirements and procedures. THE APPLICANT IS FURTHER ADVISED THAT A BUFFER/SETBACK OF 100 FEET FROM A WETLAND OR WATERCOURSE IS REQUIRED, AND A BUFFER/SETBACK OF 200 FEET FROM THE TEN (10) ESPECIALLY NOTEWORTHY WETLANDS AND WATERCOURSES IDENTIFIED IN THE TOWN OF THOMPSON INLAND WETLAND INVENTORY PREPARED BY NORTHEASTERN CONNECTICUT REGIONAL PLANNING AGENCY 1980 PAGES 9, 14 AND 15 IS REQUIRED. See Section 6 of the Regulations for further information regarding activities.

NO PERMIT SHALL BE TRANSFERRED WITHOUT PERMISSION OF THE AGENCY.

WE MUST HAVE THE FOLLOWING INFORMATION TO PROCESS YOUR APPLICATION:

- Directions to the property from the Thompson Town Hall
- Location of Utility Pole nearest your property
 - *Pole Number *Location of property in reference to Pole (side of street)
- Locations of proposed house, septic test pits, well and driveway must be staked and labeled on site (These requirements must be LEGIBLY PRINTED on your MAPS at the time of application, but NOT in the area of the map details. Use outside edge of map for this information. Thank you.)

FAILURE TO HAVE THE ABOVE INFORMATION WILL POSTPONE PROCESSING OF YOUR APPLICATION

FEE SCHEDULE:

(Additional \$60.00 fee to State as per Public Act 09-03, Section 396)

- Individual Lot \$50 + \$60
(Permit Fee Now Includes Mandatory Legal Advertisement Fee of \$20. This DOES NOT include Legal Notice fees for Public Hearings, which will be billed separately.)
- Complex Application Fee.....Applicants will be billed for professional review as needed,
see regulations booklet Section 18.5

For: Conceptual Approval of Subdivisions use "Subdivision Review Application"

Please complete the following application information.

Date October 16, 2021

1) Name of Applicant Max Candidus
Home Address 18 Hilltop Place, New London NH 03257
Home Tele & Hrs 617-308-7100 Business Tele & Hrs _____
Business Address _____

2) Applicant's interest in the Property: _____ Owner ☒ Other
INLAND WETLANDS APPROVALS CAN BE GRANTED TO PROPERTY OWNER ONLY.
No permit shall be assigned or transferred without written permission of the Commission.

3) Name of Property Owner (if not applicant) David Eddy
Home Address 270 Sand Dam Road, Thompson CT 06277
Business Address _____
Home Tele & Hrs _____ Business Tele & Hrs _____

4) Geographical Location of the Property (site plan to include utility pole number nearest property or other identifying landmarks)

Pole # and Location end of Sunnyside Drive
Street or Road Location Sunnyside Drive
Tax Assessor's Map # 133
Block # 1
Lot # that appears on site plan 3
Deed Info : Volume # 785
Page # 193

5) The property to be affected by the proposed activity contains:

Soil Types Loamy sand, fine sandy loam
Wetland Soils ☒ (Swamp ☒ Marsh _____ Bog _____ Vernal Pool _____)
Watercourses ☒ (Lake or Pond ☒ Stream or River _____ Intermittent Stream _____)
Floodplain - Yes / No

6) Purpose and Description of the Activity for which Approval is requested:

- a. Give a complete description of the proposed activity Construction of a new single family home, driveway,
and septic system. Approximately 1,400 SF of wetland soils will be filled in to construct the driveway. One
culvert will be installed under the driveway, and discharge to the pond

If the above activity involves deposition or removal of material, what is the quantity? n/a

b. Submit a Site Plan, drawn to scale, with the certification of the preparing Surveyor and/or Engineer including:

- ☒ 1-Locus map at approx. 1" = 1000'
- ☒ 2-Location of property, with boundaries defined and utility pole # near property and any other identifying landmarks.
- ☒ 3-Location of wetlands and /or watercourses. A wetland delineation in the field must be marked with numbered wetlands flags by a certified soil scientist and located on the map/site plan. Site plan shall bear the soil scientist's original signature.
- ☒ 4-Soil types on the property.
- ☒ 5-Flood Hazard area classification and delineation with base flood elevations.
- ☒ 6-(a)Location of the proposed activity (i.e. house, septic, well or other areas to be disturbed).
(b)Location of perc tests and soil test holes.
(c)Copy of NDDH approval to construct or repair subsurface sewage disposal system.
- ☒ 7-Nature and volume of the material to be placed, removed, or transferred.
- ☒ 8-Topographical contours, proposed and existing.
- ☒ 9-Location and supporting data for proposed drainage.
- ☒ 10-Date, scale (recommend 1"=40') and North arrow.
- ☒ 11-Subdivisions must be A-2 Surveys and have Certified Soil Scientist's original signature on face sheet.
- ☒ 12-Proposed limits of clearing/disturbance and location of stockpiles during construction.
- ☒ 13-Location of proposed Erosion and Sedimentation controls and other management practices which may be considered as a condition of issuing a permit for the proposed regulated activity. The erosion and sedimentation control provisions must comply with the most current DEP edition of the *Connecticut Guidelines for Soil Erosion and Sedimentation Control* and be so noted on the plans.
- ☒ 14 -Location of proposed Stormwater treatment design on the site plan must comply with the most current CT DEP edition of the *Connecticut Stormwater Quality Manual* and be so noted on the plans. It is strongly recommended that low impact development techniques, stormwater management techniques that are designed to approximate the pre-development site hydrology, be utilized in the stormwater system design wherever practical and possible.
- ☒ 15-Location of proposed mitigation or wetland enhancement measures which may be considered as a condition of issuing a permit for the proposed regulated activity.
- ☒ 16-Timing and description of phases of activities, installation of sediment and stormwater control measures and temporary and permanent stabilization methods.

c. Explain whatever measures you propose to lessen or to compensate for the impacts to the wetlands or watercourse(s) The driveway was designed to involve the minimum amount of wetlands disturbance. Erosion control devices shall be installed immediately downhill of all proposed land disturbances, prior to any construction. Temporary erosion control blankets shall be installed along all steep slopes, to stabilize the site as turf is being established. Approximately 99% of the wetlands and watercourses on site shall remain undisturbed.

d. Have any alternatives been considered? yes

If yes, explain why this proposal was chosen Several alternative designs were considered for the driveway. The design as submitted requires the smallest necessary amount of wetlands disturbance.

7) Is any portion of this property located within 500' of the boundary of an adjoining municipality? No

If yes, Applicant is required to give written notice of the application by certified mail, return receipt requested, to the adjacent municipal wetlands agency on the same day of filing this permit application with the Thompson Inland Wetlands & Watercourses Commission. Documentation of notice shall be provided to the Commission.

8) Is any portion of this property located within the watershed of a water company as defined in section 16-1 of the Connecticut General Statutes? No If yes, the Applicant is required to provide written notice of the application by certified mail, return receipt requested, to the water company on the same day of filing this permit application with the Thompson Inland Wetlands and Watercourses Commission. Documentation of such notice shall be provided to the Commission.

9) Does any portion of this property contain a Natural Diversity Data Base (NDDB) area of concern as defined on the most updated map of Federal and State Listed Species and Significant Natural Communities, for Thompson, Connecticut, prepared by the Connecticut Department of Environmental Protection? Yes If yes, the Applicant must contact the CT DEP for information regarding the State or Federal Listed Species of Concern.

10) Names and Addresses of Abutters:

See Attached

11) Estimated start date Spring 2022

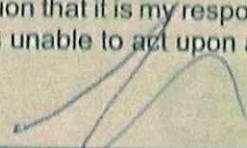
Estimated date of completion (all disturbed areas are stabilized) Fall 2022

12) The undersigned hereby consents to necessary and proper inspections of the above mentioned property by the Agents of the Town of Thompson Inland Wetlands Commission, at reasonable times, both before and after the approval in question has been granted, including site walks by Commission members and staff for the purpose of understanding existing site conditions, which may be necessary in order to render a decision on this application.

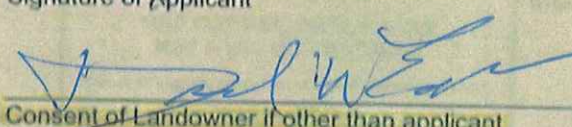
The undersigned swears that the information supplied in this completed application is accurate to the best of her/his knowledge and belief.

ABSOLUTELY NO WORK IS TO BEGIN UNTIL ALL NECESSARY APPROVALS ARE OBTAINED.

I understand by signing this application that it is my responsibility to provide all the information as requested. I understand that the commission is unable to act upon an incomplete application.


Signature of Applicant

10-15-21
Date


Consent of Landowner if other than applicant

10/21/2021
Date

Please attach a written consent by the owner if applicant is not the property owner.

To Whom It May Concern,

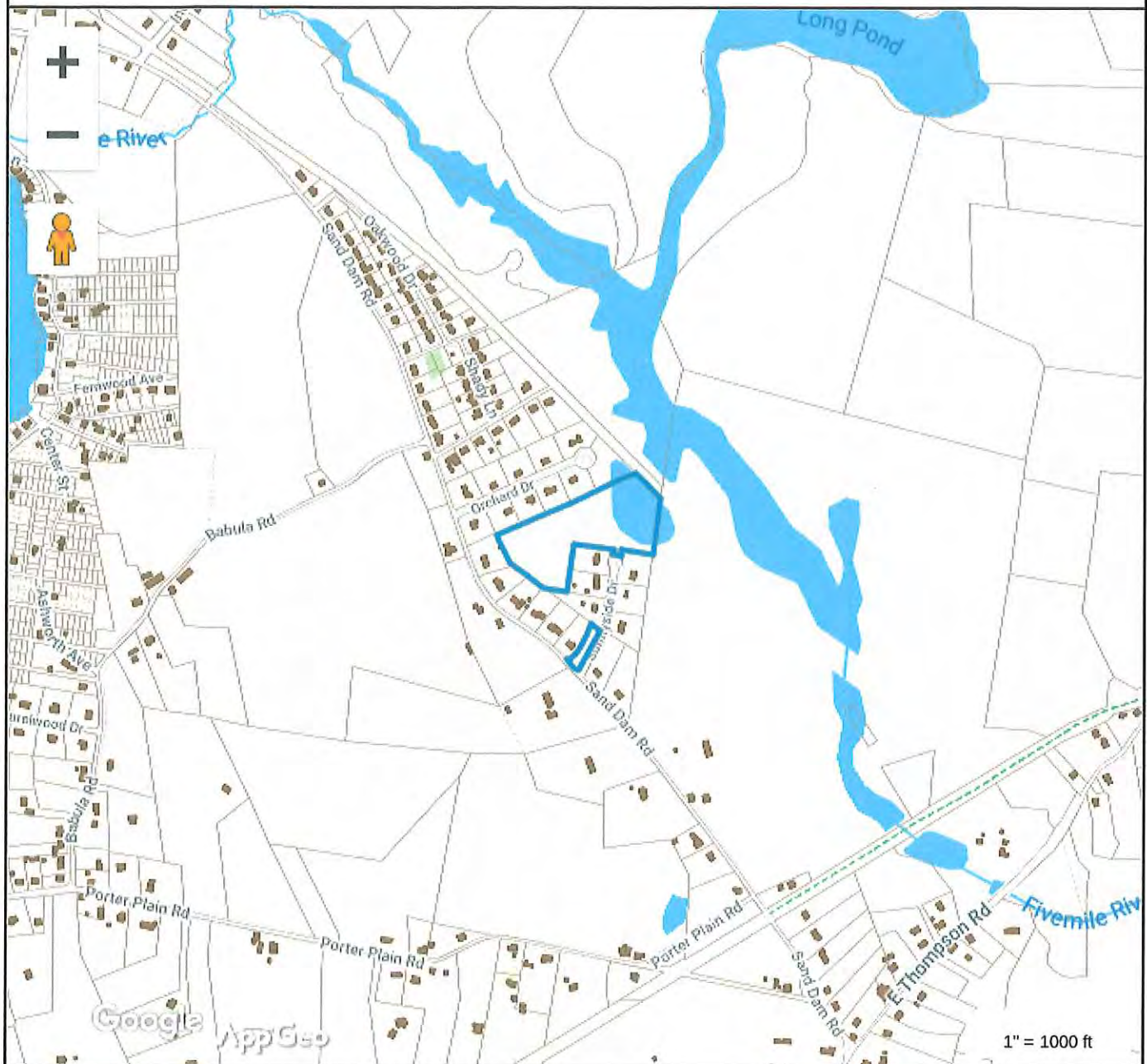
Please be advised that Max Candidus of New London, NH is a potential buyer of my property and he, as well as my Agent, Ryan Lajoie, have my permission to submit the enclosed application.



David Eddy

01/21/2021

Date

**Property Information**

Property ID 3932
Location 0 SUNNYSIDE DR
Owner EDDY DAVID



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

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Geometry updated September 21, 2020
Data updated March 20, 2019

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.

Natural Diversity Data Base Areas

THOMPSON, CT

June 2021

 State and Federal Listed Species

 Critical Habitat

 Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a variety of data sources. Exact locations of species have been buffered to produce the generalized locations.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a hatched area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

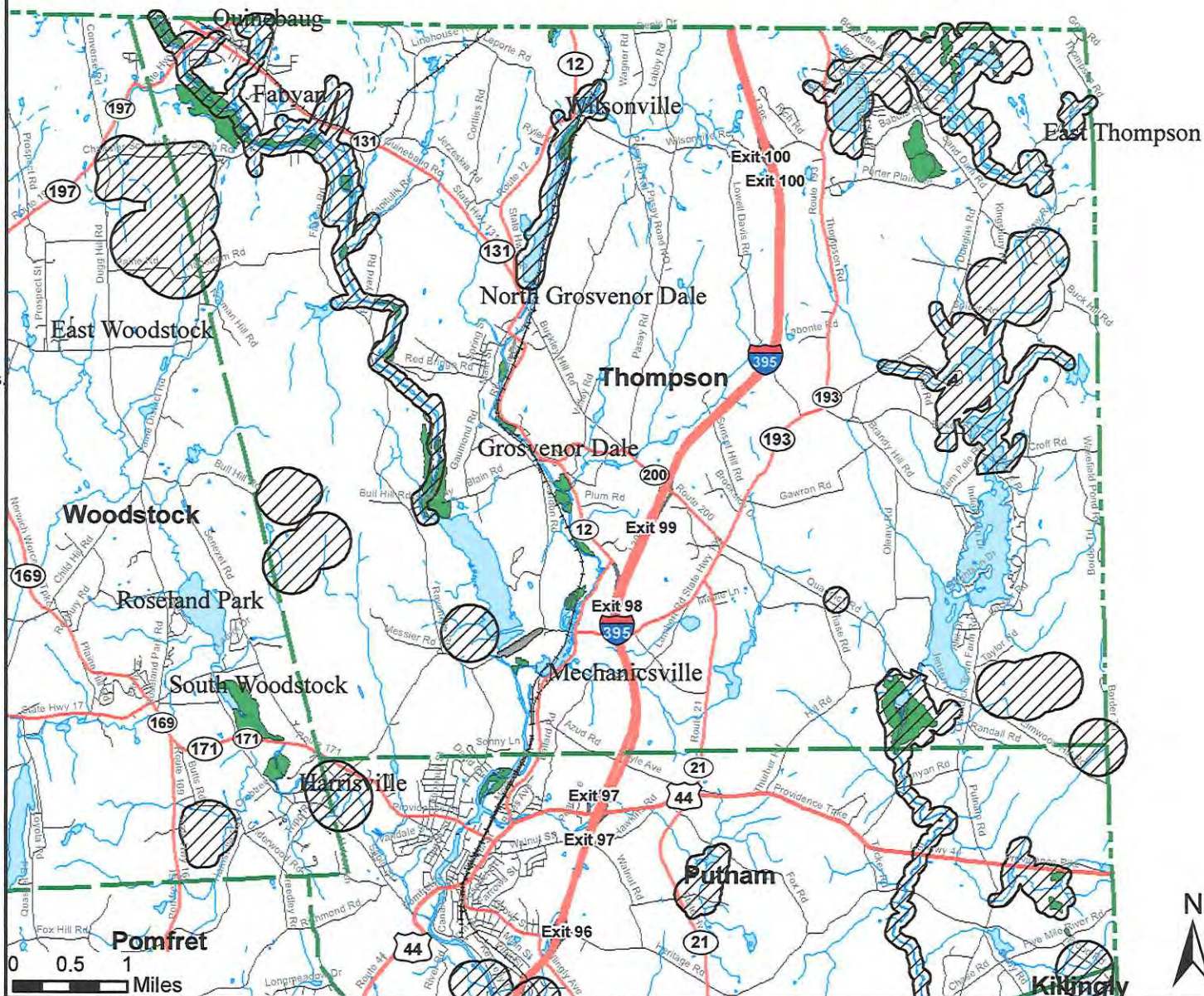
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at <http://cteco.uconn.edu> to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St, Hartford, CT 06106
email: deep.nddbrequest@ct.gov
Phone: (860) 424-3011



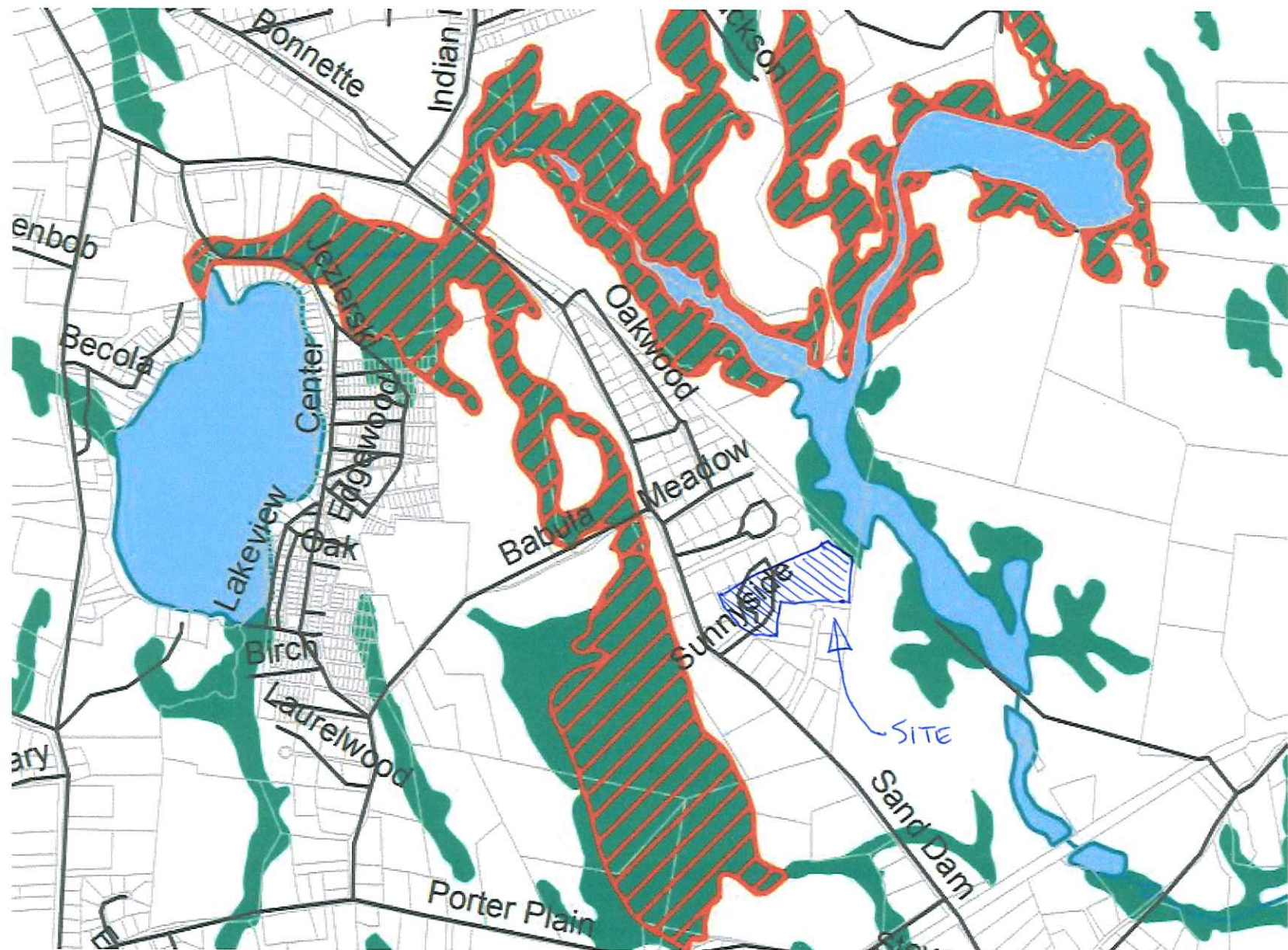
Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



Abutters List

Site Address	Owner Name	Owner Address	Owner City	Owner State	Owner Zip	Map Block Lot
16 SUNNYSIDE DR	PACHECO JOSE + JACHIMCZYK CAITLYN	16 SUNNYSIDE DR	THOMPSON	CT	06277	133 1 3 BB
22 SUNNYSIDE DR	LALIBERTE JARRED + KATARZYNA	22 SUNNYSIDE DR	THOMPSON	CT	06277	133 1 3 DD
259 SAND DAM RD	GAJEWSKI LEONARD W + DIANE W	259 SAND DAM RD	THOMPSON	CT	06277	133 1 3 D
27 SUNNYSIDE DR	POIRIER ROBERT E JR + GAIL E	27 SUNNYSIDE DR	THOMPSON	CT	06277	133 1 3 EE
267 SAND DAM RD	POIRIER MICHAEL C + LAURIE J	267 SAND DAM RD	THOMPSON	CT	06277	133 1 3 E
30 SUNNYSIDE DR	FULONE BRETT D + JENNIFER A	30 SUNNYSIDE DR	THOMPSON	CT	06277	133 1 3 FF
275 SAND DAM RD	SMALARZ PAUL A + LINDA D	275 SAND DAM RD	THOMPSON	CT	06277	133 1 3 F
281 SAND DAM RD	LAABS DAVID J + DEBORAH L	281 SAND DAM RD	THOMPSON	CT	06277	133 1 3 G
9 ORCHARD DR	PEDERSON WILLIAM E	P O BOX 31	THOMPSON	CT	06277	133 1 3 M
17 ORCHARD DR	GRUDZIEN HEIDI M	17 ORCHARD DR	THOMPSON	CT	06277	133 1 3 N
23 ORCHARD DR	BELLEROSE BERNARD E + CYNTHIA L (LU)	23 ORCHARD DR	THOMPSON	CT	06277	133 1 3 O
31 ORCHARD DR	POLLETTA MICHAEL P + PAMELA J	31 ORCHARD DR	THOMPSON	CT	06277	133 1 3 P
0 ORCHARD DR	EDDY DAVID	270 SAND DAM RD	THOMPSON	CT	06277	133 1 3 Q
343 SAND DAM RD	BUTLER JULIE M + VERNON J	343A SAND DAM RD	THOMPSON	CT	06277	135 1 2

SIGNIFICANT WETLANDS MAP



Daniel Blanchette

From: Daniel Blanchette
Sent: Thursday, October 28, 2021 9:02 AM
To: 'DEEP Nddbrequest'
Subject: NDDB Request for Single Family Construction, 0 Sunnyside Dr, Thompson
Attachments: 21163 Candidus NDDB application.pdf

Good Morning,

As required by the wetlands regulations in the town of Thompson, I am notifying you of an upcoming project within an area of concern, according to the current NDDB mapping. My client is proposing to construct a new single family home on a vacant lot. The lot address is 0 Sunnyside Drive in Thompson. A detailed site plan is attached to the form. The site has a pocket of wetlands in the middle, and a pond towards the northeast corner. To construct the driveway, it will be necessary to fill in about 1,400 square feet of wetlands. Due to the steep topography, it is not possible to design a driveway that avoids all wetlands. The proposed design represents the minimum level of necessary disturbance. Erosion controls including silt fence and blankets shall be installed upstream of the wetlands.

Please let me know if you have any questions.

Thanks,

Daniel Blanchette, PE

J&D Civil Engineers, LLC
401 Ravenelle Road
N. Grosvenordale, CT 06255
www.jdcivilengineers.com
860-923-2920

E.c) Applications Received After Agenda was Published

F.a) Permit Extensions / Changes - None

Agenda Item G.a) Violations & Pending Enforcement Actions

Notice of Violation VIOL21019, LIS Properties, L.L.C., 715 Riverside Dr. (Assessor's map 63, block 58, Lot 23), unauthorized structures diverting watercourse, flooding Thatcher Rd. & Riverside Dr., issued 7/7/21, request remove or response by 7/13/21 - status.

Agenda Item G.b) Violations & Pending Enforcement Actions

Notice of Violation VIOL21023, Jamie Piette, 0 & 73 Center Street (Assessor's map16, block X, lots H & 2), unauthorized construction of retaining wall and associated backfill in or near Little Pond, issued 8/24/21, instruct cease further work, by 9/8/21 submit schedule for submission of A-2 survey and attend IWC meeting - status.

Agenda Item H Other Business

- a) Initial Discussion of Proposed Revisions to Subdivision Regulations posted on thompsonct.org for comment by January 31, 2022.

Agenda Item H Other Business

- b) Draft 2022 IWC meeting schedule

Proposed IWC 2022 Meeting Schedule

Site Walk	Saturday, January 8, 2022
Regular Meeting Monday	Tuesday, January 11, 2022
Site Walk	Saturday, February 5, 2022
Regular Meeting Monday	Tuesday, February 8, 2022
Site Walk	Saturday, March 5, 2022
Regular Meeting Monday	Tuesday, March 8, 2022
Site Walk	Saturday, April 9, 2022
Regular Meeting Monday	Tuesday, April 12, 2022
Site Walk	Saturday, May 7, 2022
Regular Meeting Monday	Tuesday, May 10, 2022
Site Walk	Saturday, June 11, 2022
Regular Meeting Monday	Tuesday, June 14, 2022
Site Walk	Saturday, July 9, 2022
Regular Meeting Monday	Tuesday, July 12, 2022
Site Walk	Saturday, August 6, 2022
Regular Meeting Monday	Tuesday, August 9, 2022
Site Walk	Saturday, September 10, 2022
Regular Meeting Monday	Tuesday, September 13, 2022
Site Walk	Saturday, October 8, 2022
Regular Meeting Monday	Tuesday, October 11, 2022
Site Walk	Saturday, November 5, 2022
Regular Meeting Monday	Tuesday, November 8, 2022
Site Walk	Saturday, December 10, 2022
Regular Meeting Monday	Tuesday, December 13, 2022

Agenda Item I Reports

1 Budget & Expenditures

2 Wetlands Agent Report

Agenda Item J, Correspondence - None

Agenda Item K, Signing of Mylars - None

Agenda Item L, Comments by Commissioners

Agenda Item M, Adjournment