

INLAND WETLANDS COMMISSION

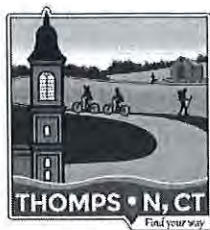
TUESDAY, April 4, 2023

ZOOM Meeting

A) Call to Order & Roll Call

B) Appointment of Alternates

Agenda Item C.a.
Action on Minutes of Previous Meeting
Minutes of March 14, 2022



TOWN OF THOMPSON Inland Wetlands Commission

815 Riverside Drive, P.O. Box 899
North Grosvenordale, CT 06255
Phone: 860-923-1852, Ext. 1
Email: wetlands@thompsonct.org
Web: <https://www.thompsonct.org/>

RECEIVED
TOWN OF THOMPSON, CT.

2023 MAR 16 P 1:57

Maile Lujan
TOWN CLERK, *Class*

MEETING MINUTES: Tuesday, March 14, 2023, 7:00PM

Via ZOOM Online Meeting Portal

- A) The meeting was called to order at 7:00 PM by Chairman George O'Neil who announced the protocols for conducting the online meeting.

Members and staff present: George O'Neil (Chairman), Charlie Obert (Vice Chairman) at 7:03 PM, Diane Chapin (Treasurer) Fran Morano (Commissioner), Marla Butts (Wetlands Agent), Gloria Harvey (Recording Secretary), Amy St. Onge (First Selectman)

Members of the public: John Rice, Janet Blanchette, J & D Civil Engineers, Bernard Mayo, Roberta Gray, Jason Lavalley, Deb and Alex Kennett and others.

- B) Appointment of Alternates - None
C) Action on Minutes of Previous Meetings

- a) Minutes of February 14, 2023

The Minutes of February 14, 2023 were unanimously accepted as presented.

- b) Diane Chapin made a motion to vote to amend the agenda to include the Minutes of the Special Meeting Site Walk on March 11, 2023. Fran Morano seconded the motion. The motion was unanimously **APPROVED**.

The Minutes of The Special Meeting Site Walk on March 11, 2023 were unanimously accepted as presented.

- D) Citizens Comments on Agenda Items - None
E) Applications

- a) Old Applications

1. **WAA22029**, Gary Rawson, 0 Logee Road (Assessor's map 141, block 17, lot 184R), construct a new single-family home in a 100-foot upland review area for Quaddick Reservoir, stamped received 11/16/22, awaiting NDDH approval.
2. **WAA22030**, Gary Rawson, 0 Logee Point Road, (Assessor's map 141, block 17, lot 184I), construct a new single-family home in a 100-foot upland review area for Quaddick Reservoir, stamped received 11/16/22, NDDH approval received 3/6/23 – Marla will draft the approval, mail the appropriate documents and issue the approval within the next week. Building Department had no objections to this application and stated that parking over the septic system is permitted.
3. **WAA23001**, Hany Youssef, 274 Riverside Drive, (Assessor's map 87, block 95, lot 39), construct a 13' x 50' concrete pad for a refrigeration/freezer unit, stamped received 1/19/23, revised 2/1/2023 to include construction of 2 second floor decks. One 50' x 13'

over proposed concrete slab and one 18' x 36' along entire width of the south side of the building, under review. Application is on hold pending receipt of revised drawings to match what he has indicated in writing. Marla commented that Hany Youssef has changed his plans and the building office and the IWC are looking for architectural engineering plans stamped by an engineer. When the plans are received Marla will issue a Wetlands Agent Approval.

4. **IWA23002**, Jason Lavalley, 0 Azud Road, (Assessor's Map 67, block 53, lots 1H and 1G), construct multifamily dwellings in 5 phases within upland review area with drainage discharging to wetlands/watercourses, stamped received 2/7/2023, statutory receipt date 2/14/2023, under review. In response from a request from Marla to Janet Blanchette requesting an expert evaluation of vernal pools, Janet Blanchette forwarded Margaret Washburn, Soil Scientist, resume stating she was impressed with her thorough investigation of vernal pools and recommended the IWC continue to use her as the consultant on this project because of her lifelong experience and history with this site. Janet Blanchette also forwarded and explained an updated color-coded plan, stating the only substantial engineering change, requested by the Fire Marshall, was to install an underground cistern near the upland review area so the water from the storm management system will not run directly into the vernal pools. In 2004 when wetlands were delineated, Margaret Washburn noted both pools were vernal pools and Marla suggested the Commission table their decision until it's later in the breeding season so Margaret Washburn could revisit the site to make sure the pools are functioning as vernal pools as they were in 2004. Marla stated the Commission has 65 days to render a decision or hold a Public Hearing and didn't believe the next IWC meeting on April 11, 2023 was sufficient time to render a decision without having all the information in place and questions answered. Upon Marla's initial evaluation of the application, she raised a list of questions which will require additional information for the Commission to make an informed decision by April 20, 2023. The Commission reserved its right to hold a Public Hearing and asked the applicant to grant a 65-day extension for it to decide if a public hearing is necessary, thereby ensuring there is sufficient time to collect and submit to the Commission an evaluation and report on the function of the wetlands as a viable vernal pool and any other information it deems necessary to make an informed decision. Jason Lavalley, 83 Rich Road, North Grosvenordale, joined the Zoom meeting and agreed to the 65-day extension. He asked Janet Blanchette to draft a letter stating this agreement which he will sign when he returns from vacation. Marla pointed out to the Commission that their approval of this plan would involve all Phases even though Phases 1 requires no work in the upland review area and could be built without any approval from the IWC and pointed out to the Commission that the plans included temporary grades (light solid grey lines) to show what the grades would be at the end of a phase if the subsequent phase was not built. She asked Janet Blanchette to supply the month and date when the open water area was surveyed identifying the pool area and Janet Blanchette will research or she offered to send out her survey crew now and then get back to Marla. Charlie Obert referred to the 4 units closest to the wetlands in Phase 2 stating they are not separated from the wetland retention ditch between buildings and wetlands and Janet Blanchette said the area will be stabilized by planting soil erosion protection and will be stabilized with a permanent erosion control blanket, and native plantings. Charlie Obert also asked if the units would be rented or owned by homeowners and Janet Blanchette replied that initially they would be rented and may be subsequently converted into condominiums with a homeowners association established to set the rules for what could and could not be done on the land. No further action required by the Commissioner at this point.

b) New Applications

1. **WAA23003**, George Marrier, 0 Brickyard Road (Assessor's Map 38, block 87, lot 6), construct driveway and detached garage in 100-foot upland review area for new single-family home, stamped received 2/15/2023, issued 2/15/23, legal notice to be published 2/24/23, appeal period ends 3/11/23. No appeals were received. Wetlands Agent Approval issued and no action is required by the Commission.
2. **IWA23003**, Bernard P Mayo, 73 LaPorte Road, (Assessor's Map 55, block 65, lot 7A), filling of wetlands for the construction of new detached garage associated with existing single-family house, stamped received 3/3/23, to be statutorily received 3/14/23. NDDH Approval received, however they are requiring a new application with a corrected site plan. Wetlands have been delineated and Provost and Rovero designed the plan. Marla questioned filling in wetlands to build a detached garage when there is an alternative location and Bernard Mayo, 73 LaPorte Road, North Grosvenordale, replied he discussed this with his engineer and decided to stay away from any potential interference from bedrock. Marla stated if an alternative plan was developed that had no fill in wetlands, this application could be converted to Wetlands Agent Approval which Marla would bring it before the Commission at the next meeting where they may vote to bring it to a Wetlands Agent Approval. No action is required by the Commission at this time.
3. **DEC23004**, Town of Thompson, 15 Thatcher Road (Assessor's Map 63, block 58, lot 24), demolish and reconstruct Thompson Schools track in upland review area, stamped received 3/6/23. The plan was delivered to the Wetlands Office by John Rice and Marla noticed it involved work in the upland review area. She expressed concern during construction with sediment control, erosion, catch basins, and the drainage system. John Rice, 39 East Thompson Road, said he will meet with Marla and they will incorporate her suggestions in the plan. Marla recommended approval of this plan as a non-regulated use as recreation with concerns about erosion and sediment control and suggested that they add some kind of control before it hits the open water area in case there is a failure of the system when they are reconstructing the track.

Charlie Obert made a motion to approve DEC23004 as a use permitted by right, non-regulated use, for recreation provided clarification of sediment control and erosion are included in the plan. Fran Morano seconded the motion. The motion was unanimously **APPROVED**.

c) Applications Received After Agenda was Published - None

F) Permit Extensions / Changes - None

G) Violations & Pending Enforcement Actions

- a) **Notice of Permit Violation VIOL21036**, Permit IWA20022, Marc Baer, 1227 Thompson Rd (Assessor's map 116, block 24, lot 10), grades not as authorized in modified plan approved by the Commission on February 9, 2021 – Marla drove by the site and reported all earth moving equipment has been removed. She will touch base with Marc Baer before next month's meeting to discuss the status of this application.
- b) **Notice of Violation VIOL22031**, Douglas and Roberta Gray, 0 New Road, (Assessors map 154, block 3, lot 2J), watercourse alternative causing flooding, issued 1/23/22 – Plan from Kevin Calabro showing if the grades are sufficient enough to have the water run down along his driveway has not been received. Marla visited the site and noticed grading work has been done so she provided him and his engineer with a copy of the maps that the Gray's had used when

they had the stone removed. She told Mr. Calabro she would be issuing him a notice of violation for the work he did, for the installation of the underdrain and for any work he has done along the driveway with a requirement to submit an application by next month's meeting. She also told him not to do any further grading work until the IWC receives the plan he is going to use. Charlie Obert questioned who is in violation and Marla replied there were two areas altered without approval; the Gray's for having blocked and altered a watercourse near the Calabro's property boundary line and Mr. Calabro because he has done alterations within the upland review area in two locations and the underdrain which IWC needs to see it on a plan. Roberta Gray, 131 New Road, stated that she is upset about this violation notice and would like it removed. She would like to see the burden of responsibility for any future proposal for a solution placed with the responsible party.

H) Other Business

a) Update on Proposed Subdivision Regulations

Marla reported that the next PZC Special Subcommittee Meeting is on March 22, 2023 and will discuss areas of significant concerns that need to be addressed. Copies of topics that will be discussed have been distributed to subcommittee members and town staff. Copies of the discussion topics will be forwarded to all Commissioners.

b) FY23 Budget Update

The Board of Finance posted the entire schedule for their budget workshops on their March 16th agenda. No decision has been made for the IWC budget. They are just starting to review it now.

c) Review of By-laws

Marla addressed changes and suggestions to the bylaws and put them in redline version for the Commissioners to review before voting on them. She also included several grammatical/punctuation corrections.

d) IWC Regulations Revisions

Marla suggested scheduling a Special in-person Meeting to discuss substantive changes to the regulations including conceptual subdivision approvals, fee schedule, and declaratory rulings by the Wetlands Agent for work done in the upland review area. The Commissioners agreed to schedule this Special Meeting on April 6th at 6 PM in the conference room on the 2nd floor.

I) Citizen's Comments

Deb and Alex Kennett stated they appreciate that the water item is a process, however the water that is flowing down is draining into their backyard and stated they are looking for a solution. The Chairman directed them to discuss this issue with the Inland Wetlands Agent.

J) Reports

a) Budget & Expenditures

Commissioner Chapin reported available budget from July 1, 2022 to February 22, 2023 is \$10,859.77, and the IWC has expended 60.4% of the budget.

b) Wetlands Agent Report

Update - On 2/21/23 Marla submitted her completed comments on a draft of the proposed subdivision regulations. No progress has been made on the pre-1990 file destruction due to Marla's commitment on completing the subdivision regulations review. Now she will focus on IWC regulations.

Inspections/Followup Actions – Complaint 23-02, Report of tree cutting and earthmoving along former railroad bed southwest of Laporte Rd – On March 8, 2023 Dan Malo and Marla walked from Laporte Rd southwest along the former railroad bed and observed some trees had been felled along a portion of the bed near 295 Linehouse Road and that some excavation of soils had occurred on the 295 Linehouse Road property within 100 feet of a pond and possibly in delineated wetlands. This property was the subject of past Complaint 20-14 involving the dredging of that pond by the LeBlanc's with the side casting of spoils in or near wetlands. That complaint was closed following a letter sent to the property owners Philip and Debra Leblanc advising them to do no more earth moving or construction work either in the pond or within the pond or 100 feet of the pond without first obtaining approval from the Commission. While no action is required regarding the cutting of trees, Marla will complete a review of all information in the Wetlands Office files. She expects to be issuing a notice of violation to Mr. & Ms. Leblanc asking them to cease any further earthmoving work and attend the next IWC meeting to explain their actions and the reason why no approval was obtained prior to conducting the recent earthmoving work.

Building Permits – 8 Building Permits were reviewed.

Miscellaneous – Marla attended the Connecticut Association of Wetlands Scientist Conference and got information regarding the reorganization of the Army Corps of Engineers for New England District, as well as a report that the Environment Committee of the legislature is considering some changes to the Inland Wetlands and Watercourses Act involving requirements for DEEP to update its training program and by regulation require inland wetlands agencies file a report on who has been certified. Status and language for the bill can be found by searching for Environment Committee Bill No.5616 on the Connecticut General Assembly webpage <https://www.cga.ct.gov/> . Charlie Obert questioned reappointment and Marla will contact Town Treasurer.

Purchase Requisitions – Paid \$60.00 to Chase Graphics for "Thompson Wetlands Office" multi-year date stamp, paid \$80.00 reimbursement for Connecticut Association of Wetland Scientists Conference on 3/9/2023, Payment pending \$29.40 Stonebridge Press legal notice WAA23003 Mr. Mariner.

- K) Correspondence - None
- L) Signing of Mylars-None
- M) Comments by Commissioners

Charlie Obert commented on problems on New Road which the town has not been able to resolve to date and hopefully will be addressed in the updated subdivision regulations.

Marla stated that she never told the Gray's there was no watercourse. She suggested there is a resolution that doesn't involve litigation. Mr. Calabro needs to see if he has a solution he can provide and if he can't there is an alternative that the Commission has to decide if they want to pursue it. One solution is an order could be issued to have the Gray's remove what they filled in the watercourse channel which would result in a show cause hearing where the Commission would have to decide if the order could be rescinded or modified. The other possible solution is to handle it through Mr. Calabro's property.

George O'Neil commented on what constitutes the definition between wetlands and watercourses and stated the Commission is doing as much as they can to move forward by the next meeting. He thanked the Commissioners for their hard work on this matter.

N) Adjournment

At 8:38 PM after completion of the agenda, Diane Chapin made a motion to adjourn the meeting. The motion was seconded by Fran Morano. The motion was unanimously **APPROVED**.

To see/hear the entire meeting via ZOOM, copy and paste the following link into your search bar:

<https://us02web.zoom.us/j/84820000?pwd=U4mH0s#W>

Passcode: U4mH0s#W

Respectfully submitted, Gloria Harvey, Recording Secretary

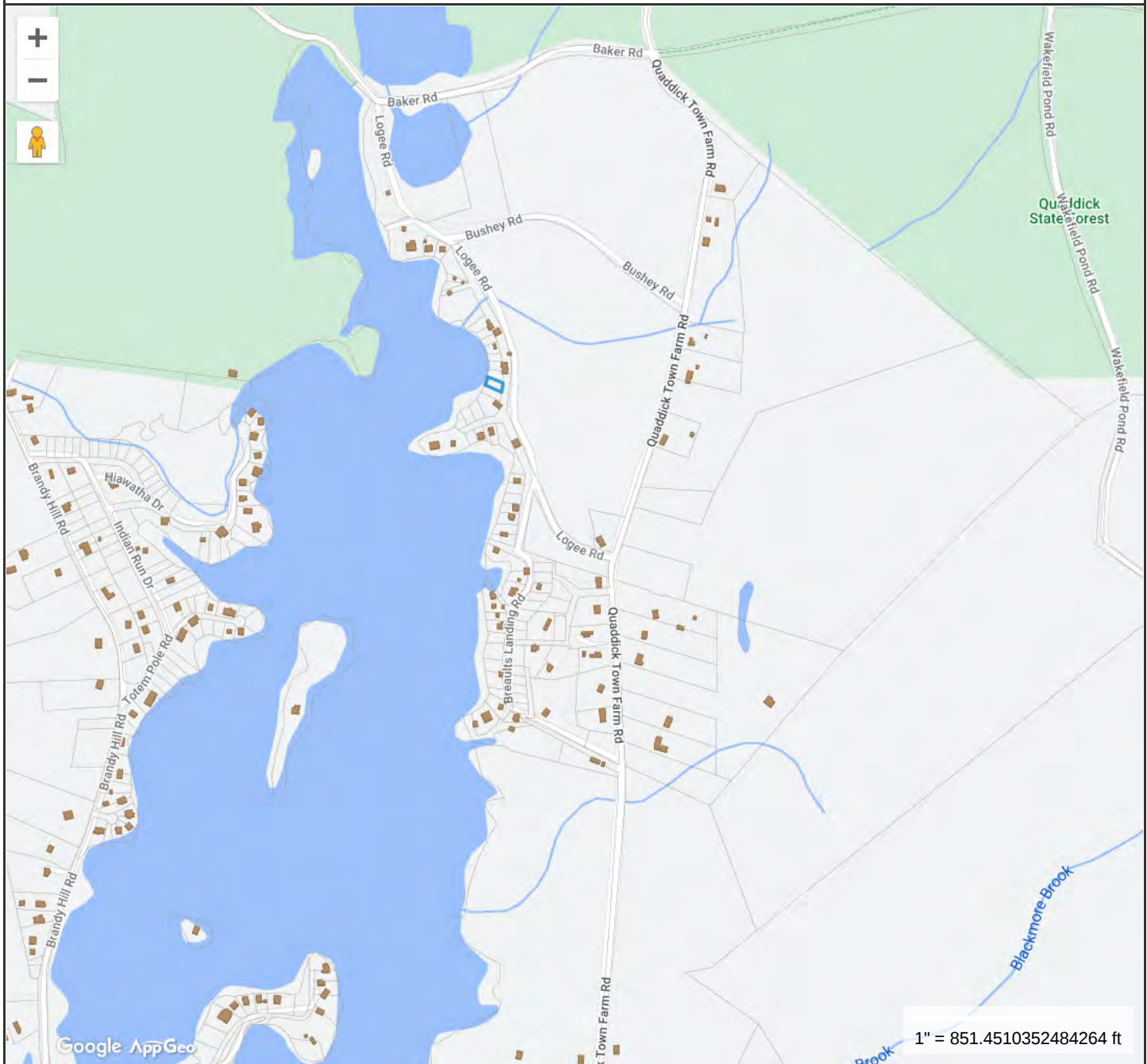
Gloria Harvey

Agenda Item D.
Citizens Comments on Agenda Items

Agenda Item E.a) 1. Old Applications

WAA22029, Gary Rawson, 0 Logee Road (Assessor's map 141, block 17, lot 184R), construct a new single-family home in a 100-foot upland review area for Quaddick Reservoir, stamped received 11/16/22, awaiting NDDH approval.

Locus Map for Application WAA2029 0 Logee Road

**Property Information**

Property ID 004384
Location 0 LOGEE RD
Owner QUADDICK CAMPING AREA INC

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

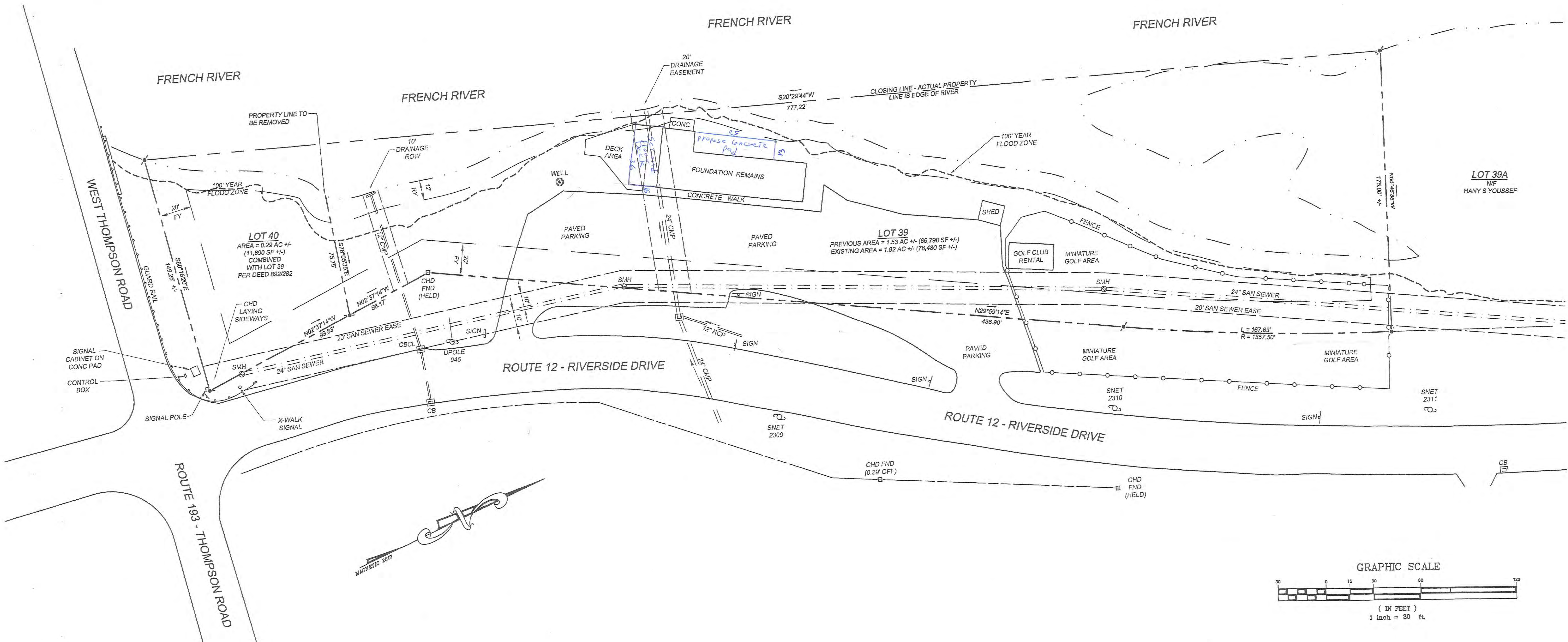
Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated December 1, 2022
Data updated December 1, 2022

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

Agenda Item E.a) 2. New Applications

WAA23001, Hany Youssef, 274 Riverside Drive, (Assessor's map 87, block 95, lot 39), construct a 13' x 50' concrete pad for a refrigeration/freezer unit, stamped received 1/19/23, revised 2/1/2023 to include construction of 2 second floor decks: a 50' x 13' over proposed concrete slab and an 18' x 36' along entire width of the south side of the building, under review – on hold pending receipt of revised plans.



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 28, 1996.

SURVEY TYPE: BOUNDARY SURVEY

PURPOSE: TO SHOW THE COMBINATION OF LOTS 39 AND 40, PER DEED 892/282 IN THE THOMPSON LAND RECORDS.

BOUNDARY DETERMINATION CATEGORY: DEPENDENT RESURVEY LOT 39, FIRST SURVEY OF LOT 40.

HORIZONTAL ACCURACY: A-2

2. REFERENCE PLANS:

(A) "SITE DEVELOPMENT PLAN PREPARED FOR NORTHEAST AUTOBODY, INCORPORATED OWNER CHARLES E. PAQUETTE" BY ALBERT L. FITZBACK, LLS, SEPTEMBER 12, 1991 ON FILE AS MAP 1196 IN THE THOMPSON LAND RECORDS

(B) CT HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF THOMPSON NUMBER 141-01, SHEETS 1 AND 2 OF 5

(C) SITE DEVELOPMENT PLAN PREPARED FOR CHARLES PAQUETTE, CONNECTICUT ROUTE 12, THOMPSON CT, PREPARED BY MESSIER AND ASSOCIATES, INC. DATED 11/88, REVISED 10/30/91, ON FILE AS MAP 1431 IN THE THOMPSON LAND RECORDS.

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

3. SEWER EASEMENT IN FAVOR OF THE TOWN OF THOMPSON, RECORDED IN 243/308 IN THE THOMPSON LAND RECORDS

4. 10' DRAINAGE RIGHT OF WAY IN FAVOR OF THE STATE OF CONNECTICUT PER REF. MAP B.

5. 20' DRAINAGE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT PER REF. MAP A.

Dennis R. Blanchette
DATE 10/13/2017
LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE

BEARING SYSTEM NOTES

PREVIOUS SURVEYS USED A MAGNETIC BEARING SYSTEM THAT APPEARS TO BE APPROXIMATELY 73 DEGREES OFF FROM MAGNETIC NORTH. THIS SURVEY USES A RECENT MAGNETIC BEARING.

100 YEAR FLOOD ZONE PER FEMA MAP 0012B, ELEVATION VARIES FROM 310.5 TO 311.

ZONING INFORMATION:

ZONE: COMM
MINIMUM LOT AREA: 15,000 SF
MINIMUM FRONTAGE 75'
MINIMUM FRONT YARD: 20'
MINIMUM SIDE YARD: 12'
MINIMUM REAR YARD: 12'

PROPERTY OWNER
HANY S AND SALAMA
YOUSSEF

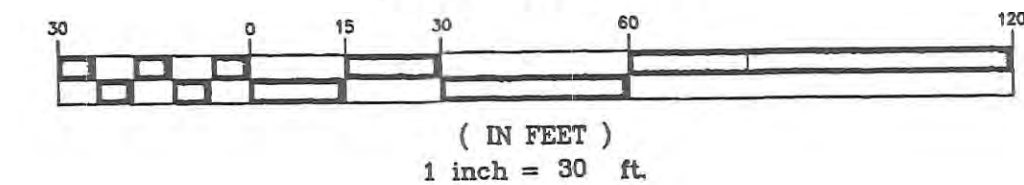
REFERENCE DEED
THOMPSON LAND RECORDS
VOL 883 PG 15
VOL 892 PG 282

ASSESSORS REFERENCE
MAP 87 BLOCK 95 LOT 39
MAP 87 BLOCK 95 LOT 40

LEGEND

	MONUMENT
	ANGLE POINT
	PROPERTY LINE
	EASEMENT LINE
	BUILDING SETBACK
	EDGE OF WATER
	EDGE OF WETLANDS
	GUARD RAIL
	UTILITIES
	EXISTING DRAINAGE
	EXISTING SEWER

GRAPHIC SCALE



Received

JAN 19 2023

Thompson Wetlands Office

App # 00A023001

PROPERTY SURVEY

PREPARED FOR
HANY YOUSSEF

274 RIVERSIDE DR
N. GROSVENORDALE, CT

J&D CIVIL ENGINEERS, LLC

401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB
CHECKED: DRB

REVISIONS:

JOB NO: 15146

SCALE: 1" = 30'

DATE: OCTOBER 26, 2017

SHEET: 1 OF 1



THIS MAP PRODUCED BY
COMPUTER DRAWING
SOFTWARE
J&D CIVIL ENGINEERS
AND ASSOCIATES, LLC
10/13/2017

Doc # 1747
10/03/2018 02:21:28 PM
1 Pages
SURVEY MAP # 1747
Renee Waldron Town Clerk

Agenda Item E.a) 3. New Applications

IWA23002, Jason Lavallee, 0 Azud Road, (Assessor's Map 67, block 53, lots 1H and 1G, construct multifamily dwellings in 5 phases within upland review area with drainage discharging to wetlands/watercourses, stamped received 2/7/2023, statutory receipt date 2/14/2023, received written 65-day grant of extension to process application, revised plans received 3/30/23.

CIVIL
ENGINEERS, LLC

March 22, 2023

Inland Wetlands Commission
Town of Thompson
815 Riverside Drive
North Grosvenordale, CT 06255

Re: Lavallee Construction LLC – Hillside Townhomes
Azud Road and Riverside Drive – Thompson
Map 67, Block 53, Lots 1G and 1H

Job No.: 22203

Dear Commission Members:

Lavallee Construction is granting a 65-day extension for the wetlands permit process to allow for more time to investigate and evaluate the potential vernal pools within the wetlands.

Very truly yours,

Jason Lavallee



3/22/23

Cc: Maria Butts

Z:\JD Civil Business Public\Projects\22203 Lavallee-multi family\Documents\22203 P & Z time extension letter.docx

IWA23002 Timelines

Appl #	Submission Date	Statutory Date of Receipt	65 Day Decision or Hearing Date	Extension Granted	Max Decision or Hearing Date	Potential Hearing Date
IWA23003	2/7/2023	2/14/2023	4/20/2023	65 days	6/24/2023	6/13/2023

Appl. IWA 23002

J & D CIVIL
ENGINEERS, LLC

401 Ravenelle Road
N. Grosvenordale, CT 06255
www.jdcivilengineers.com
(860) 923-2920

March 28, 2023

Received

Wetlands Commission
Town of Thompson
815 Riverside Drive
North Grosvenordale, CT 06255

MAR 30 2023

Thompson Wetlands Office

Re: Lavallee Construction LLC – Hillside Townhomes
Azud Road and Riverside Drive – Thompson
Map 67, Block 53, Lots 1G and 1H

Job No.: 22203

Dear Commission Members:

The project plans have been revised to address comments from the commission members and wetlands agent. This letter will describe those revisions and will give a more detailed description of the proposed stormwater system.

We anticipate that the ponds are functioning as vernal pools. Our consultant, Margaret Washburn will investigate the ponds on April 2, 2023 and we will provide a preliminary verbal report of the findings at your April 4, 2023 meeting. A written report will be prepared in April with the goal of proving the commission with the information requested so that a decision can be made at the May meeting.

J & D's surveyors surveyed the edges of the small ponds on March 23rd and we have added those limits to the plans. The upper pond is 0.11 acres in size and the lower pond is 0.04 acres in size.

The owner, Mr. Lavallee, listened to your concerns regarding construction and long term impacts to the wetlands due the close proximity of Building "F". Therefore, Building F has been eliminated from the project and the plans have been updated to reflect this. Elimination of this building has the following effects to reduce potential impacts to the wetlands and ponds:

- There will be no disturbance to the existing steep wooded slope uphill of the wetlands.
- Significantly reduced disturbance in upland review area.
- The proposed drainage pipe angling down the steep slope was relocated to the top
- Proposed impervious reduced

In addition, J & D added cape cod curb to the driveway where building F had been located so that no impervious area drains directly toward the wetlands or ponds.

J & D moved the third well outside of the 100' upland review area. It should be noted that it is likely that two wells will be sufficient to provide domestic water for the project. The third well is indicated on the plans as an alternate, or back up, location. The wells, which are more than 200' feet from the ponds, will be drawing water from the underlying bedrock aquifer approximately 400' below the ground's surface. The wetlands and ponds are fed from precipitation, runoff, and shallow subsurface flow above the bedrock aquifer. Therefore, withdrawing drinking water from the deep aquifer will not affect the shallow subsurface flow to the wetlands during the critical spring breeding time.

The proposed stormwater system has been designed with no direct discharges to the wetlands or ponds as suggested by Marla during our initial site visit in order to not impact the water quality. Runoff from precipitation will feed the wetland/pond system through infiltration via the bottom of stormwater basins in well-drained soil with large surface areas for recharge. Specifically, the linear stormwater basin above the ponds is 200' long with an average width of 11' and a depth of 2'. It can store a significant amount of runoff from precipitation that will slowly infiltrate into the ground and feed the wetland/pond system.

Designing and performing calculations for the stormwater system for this site to accommodate phased construction took dozens of hours. One of the most critical design goals was to not adversely impact the Riverside Drive drainage system. The basins, and stormwater system were designed with sufficient capacity that the runoff from the site toward Riverside Drive will decrease after development and installation of the stormwater basins.

Very truly yours,

J & D Civil Engineers, LLC



Janet J. Blanchette, PE

Cc: Jason Lavallee, Marla Butts

HILLSIDE TOWNHOMES

PREPARED FOR:
LAVALLEE CONSTRUCTION, LLC

**RIVERSIDE DRIVE AND AZUD ROAD
THOMPSON, CONNECTICUT**

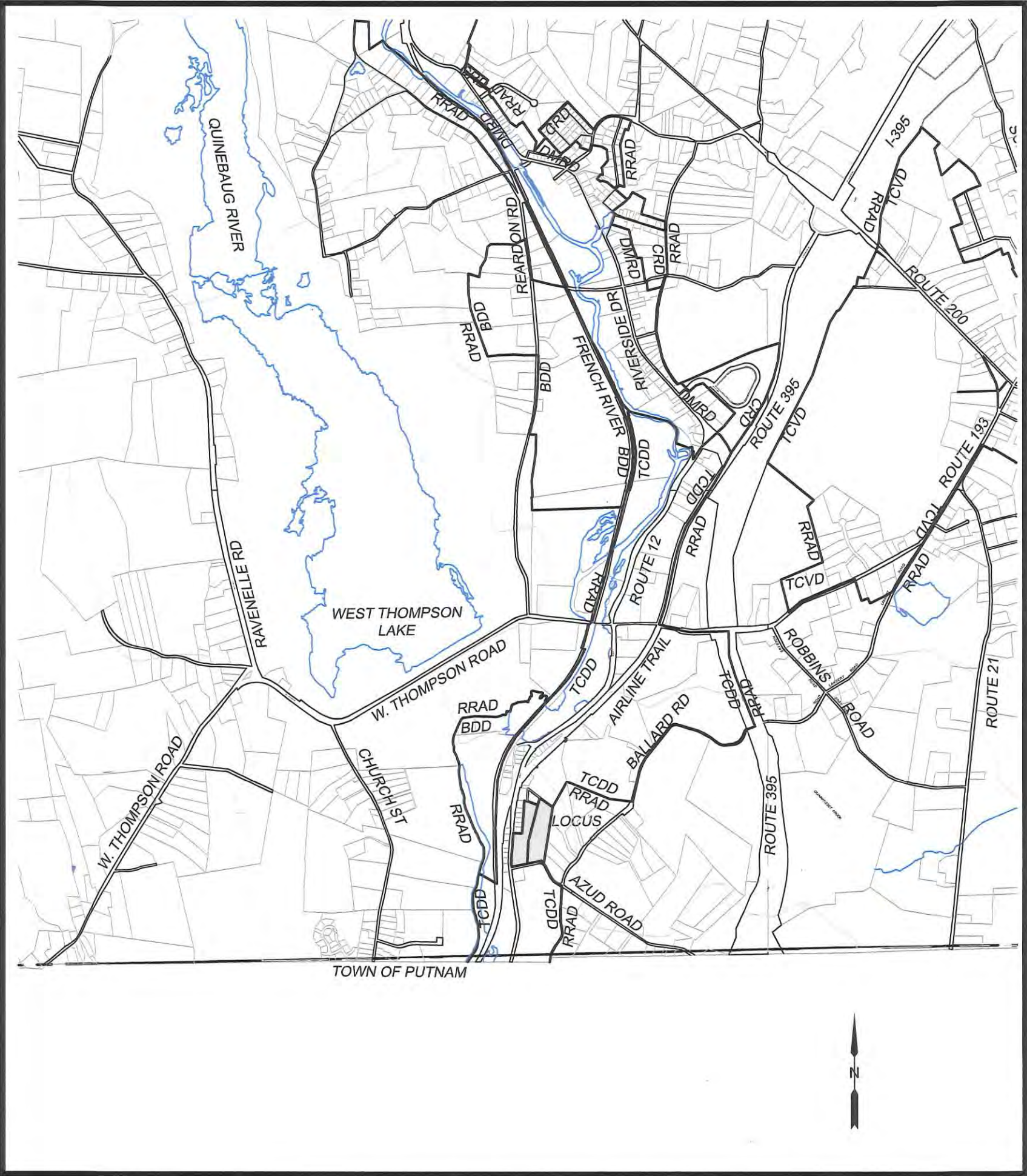
**DATED: JANUARY 31, 2023
REVISED THROUGH 3-28-23**

PREPARED FOR:
LAVALLEE CONSTRUCTION, LLC
83 RICH ROAD
NORTH GROSVENORDALE, CT 06255

DIRECTIONS TO SITE FROM TOWN HALL:
HEAD SOUTH ON RIVERSIDE DRIVE (ROUTE 12).
SITE IS ON THE LEFT JUST BEFORE AZUD ROAD.

INDEX OF DRAWINGS

- 1 COVER AND LOCATION MAP
- 2 VICINITY AND INDEX PLAN
- 3 PROPERTY SURVEY
- 4 40 SCALE UTILITY AND DRIVEWAY LAYOUT PLAN
- 5 PROFILE SHEET
- 6 PHASES 1 & 2 SITE DEVELOPMENT PLAN
- 7 PHASE 3 SITE DEVELOPMENT PLAN
- 8 PHASE 4 & 5 SITE DEVELOPMENT PLAN
- 9 CONSTRUCTION DETAILS - SEWER AND MISC.
- 10 CONSTRUCTION DETAILS - E & S
- 11 CONSTRUCTION DETAILS - DRAINAGE



LOCATION MAP

1" = 2000'

TABLE OF ZONING COMPLIANCE

ZONE: THOMPSON CORRIDOR DEVELOPMENT DISTRICT (TCDD)

ITEM	REQUIRED*	PROPOSED
FRONTAGE	100'	1153' ±
LOT COVERAGE	<75%	24%
FRONT SETBACK	20'	25' ±
SIDE SETBACK	25'	65' ±
REAR SETBACK	25'	269' ±
LOT SIZE	40,000 SF	558,445 SF

*MULTI-FAMILY, THREE OR MORE UNITS

Received

MAR 30 2023

Thompson Wetlands Office

PERMIT APPROVAL BY THE THOMPSON
INLAND WETLAND COMMISSION

CHAIRMAN

DATE

SPECIAL PERMIT APPROVAL BY THE THOMPSON
PLANNING AND ZONING COMMISSION

CHAIRMAN

DATE

**J & D CIVIL
ENGINEERS, LLC**

**401 RAVENELLE ROAD
THOMPSON, CT 06255**

**JDCIVILENGINEERS.COM
860-923-2920**

Revised Plans Appl TWA 23002 Copy 1

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 28, 1996.

SURVEY TYPE: COMPILATION PLAN

PURPOSE: TO DEPICT NEARBY PROPERTIES AND STRUCTURES.

HORIZONTAL ACCURACY: CLASS D

THIS PLAN WAS COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.

2. REFERENCE PLANS:
(A) "SUBDIVISION PLAN PREPARED FOR JASON LAVALLEE, RIVERSIDE DRIVE, THOMPSON CT" ON FILE AS MAP #1562.

(B) MAPGEO GIS WEBSITE, 2019 AERIAL PHOTOGRAPHY

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

DENNIS R. BLANCHETTE DATE 12/10/23 LICENSE NUMBER 12107

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
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LEGEND

- SUBJECT PROPERTY LINE
ABUTTING PROPERTY LINE
EASEMENT LINE
WETLAND SOILS

VICINITY PLAN & INDEX MAP
PREPARED FOR
LAVALLEE CONSTRUCTION LLC
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT
MAP 67 BLOCK 53 LOTS 1G AND 1H

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

DESIGNED: JJB
CHECKED: DRB
REVISIONS:
2-15-23, 3-28-23

JOB NO: 22203
SCALE: 1" = 80'
DATE: JANUARY 2023
SHEET: 2



REFERENCE PLANS

- (A) CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF THOMPSON PUTNAM-WEBSETER ROAD FROM THE QUINEBAUG SCHOOL SO. WESTERLY ABOUT 3,700 FEET ROUTE NO. 12 MAP 141-14 SHEET 1 OF 2 AND SHEET 2 OF 2, DATED SEPT. 1946
- (B) CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF THOMPSON PUTNAM-GROSVENORDALE ROAD FROM THE PUTNAM TOWN LINE NORTHERLY ABOUT 6,000 FEET ROUTE NO. 12 MAP 141-12 SHEET 1 OF 3, DATED SEPT. 1938
- (C) RIGHT OF WAY AND TRACK MAP THE NEW YORK, NEW HAVEN AND HARTFORD R.R. CO. OPERATED BY THE NEW YORK, NEW HAVEN AND HARTFORD R.R. CO. SURVEY STATION 3065+20 TO 3127+30.53 AND SURVEY STATION 3127+30.53 TO 1293+60
- (D) SUBDIVISION OF DWELLINGS AND LANDS OF THE GROSVENOR-DALE COMPANY SOUTH GROSVENORDALE-MECHANICSVILLE, THOMPSON, CONNECTICUT BY WATERMAN ENGINEERING COMPANY MARCH, 1938
- (E) PLOT OF LAND IN MECHANICSVILLE THOMPSON CONN. OWNED BY EDWARD J. BALL SCALE 1" = 20' 1933 GEORGE W. PERRY C.E.
- (F) PLAN OF LAND CONVEYED BY BERTI E. ARNOLD TO PAUL E. AZUD THOMPSON, CONNECTICUT SCALE 1" = 100' OCT. 14, 1959 GILBERT F. PERRY C.E.
- (G) PLAN OF LAND TO BE CONVEYED BY CARMINE DEFILIPPO TO MECHANICSVILLE SUPPLY COMPANY, INC. IN THE TOWN OF THOMPSON, CONN. SCALE 1" = 100' FEB. 20 1952 WILLIAM W. PIKE, SURVEYOR
- (H) GUERIN MILLS INC., BEACHMONT MILL THOMPSON LAND RECORDS MAP 151
- (I) PROPERTY SURVEY PREPARED FOR JACK R.E. LLC, RIVERSIDE DRIVE - THOMPSON, CT. PLAN PREPARED BY J & D CIVIL ENGINEERS, LLC, DATED SEPTEMBER 7, 2007
- (J) PROPERTY SURVEY PREPARED FOR JASON LAVALLEE, RIVERSIDE DRIVE - THOMPSON, CT. PLAN PREPARED BY J & D CIVIL ENGINEERS, LLC, DATED JANUARY 17, 2011, REVISED 1-24-2011.
- (K) "SUBDIVISION PLAN PREPARED FOR JASON LAVALLEE RIVERSIDE DRIVE - THOMPSON, CT" BY J & D CIVIL ENGINEERS, LLC, DATED FEBRUARY 3, 2011, REVISED THROUGH 10-24-11, SHEET 3 OF 8

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.

SURVEY TYPE: PROPERTY SURVEY

BOUNDARY DETERMINATION CATEGORY: PROPERTY BOUNDARY LINES DEPICTED HEREON CONTIGUOUS WITH PROPERTY BOUNDARY LINES AS DEPICTED ON THE SURVEY REFERENCE PLANS LISTED HEREON ARE A "RESURVEY". THE REMAINDER OF THE PROPERTY BOUNDARY LINES DEPICTED HEREON ARE AN "ORIGINAL SURVEY".

PURPOSE: TO COMBINE LOTS 1G AND 1H.

HORIZONTAL ACCURACY: CLASS A-2

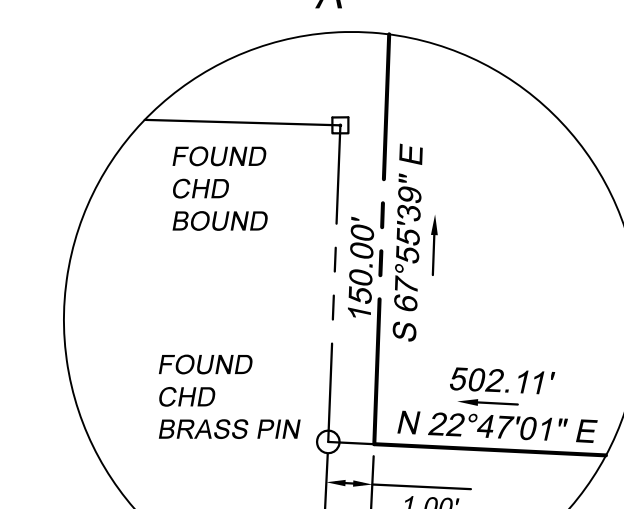
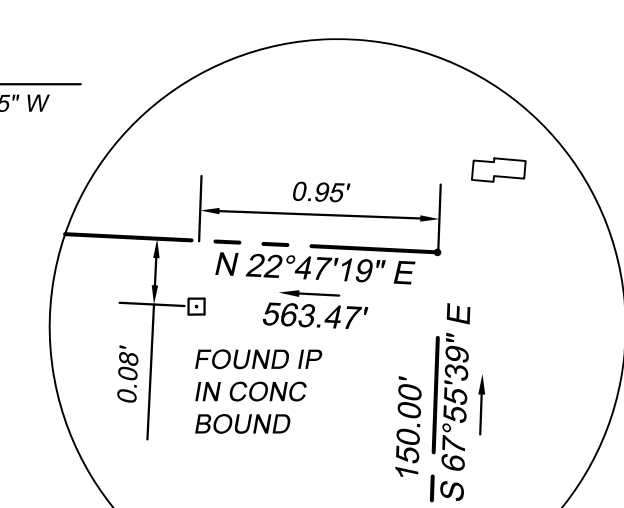
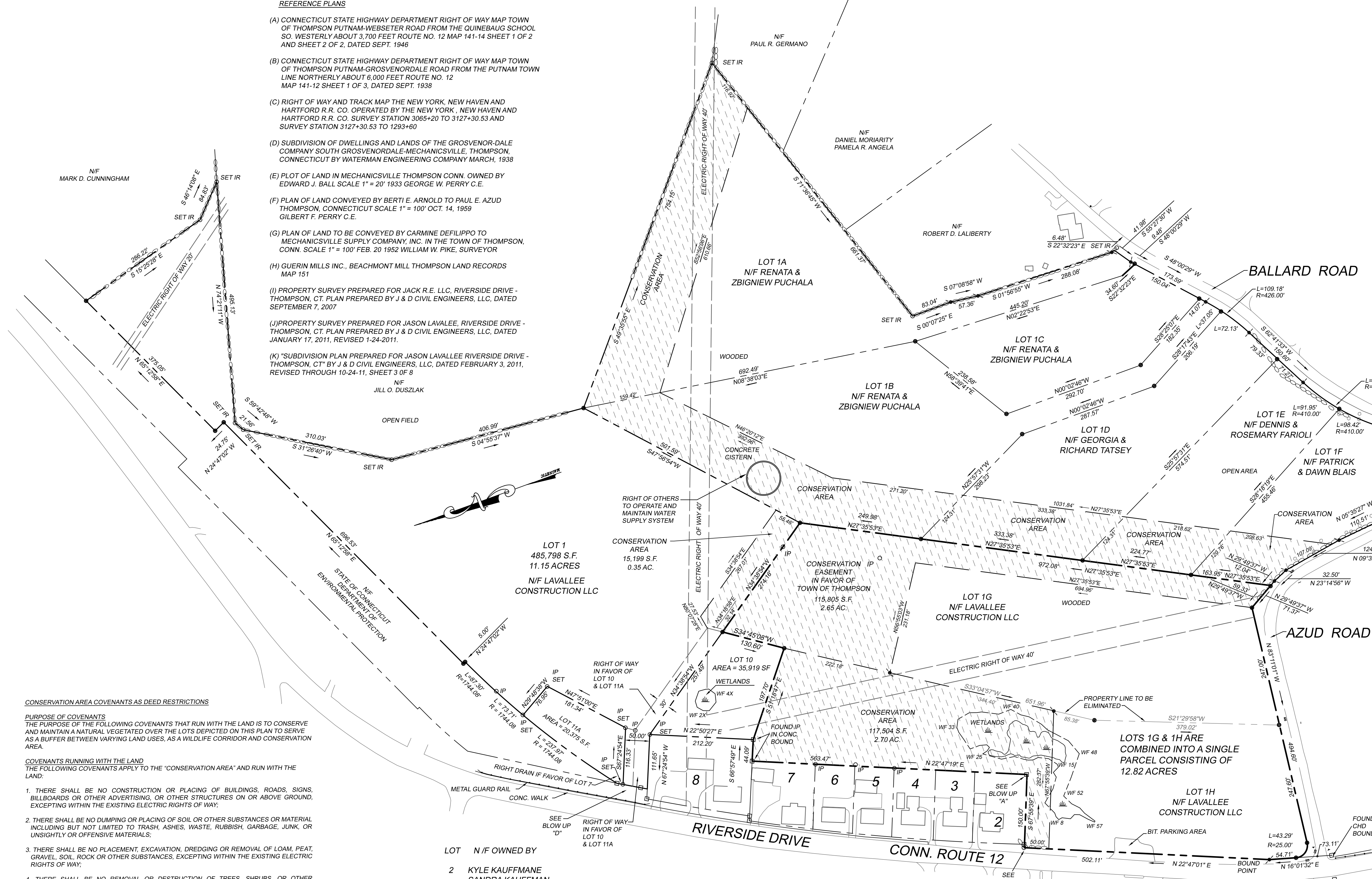
2. GENERAL NOTES:

ELECTRIC RIGHT OF WAYS DEPICTED HEREON ARE APPROXIMATE LOCATION THE PROPERTY DEPICTED HEREON IS SUBJECT TO RIGHTS OF RECORD

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

DENNIS R. BLANCHETTE DATE 12/07 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE



CONSERVATION AREA COVENANTS AS DEED RESTRICTIONS

PURPOSE OF COVENANTS
THE PURPOSE OF THE FOLLOWING COVENANTS THAT RUN WITH THE LAND IS TO CONSERVE AND MAINTAIN A NATURAL VEGETATED OVER THE LOTS DEPICTED ON THIS PLAN TO SERVE AS A BUFFER BETWEEN VARYING LAND USES, AS A WILDLIFE CORRIDOR AND CONSERVATION AREA.

COVENANTS RUNNING WITH THE LAND
THE FOLLOWING COVENANTS APPLY TO THE "CONSERVATION AREA" AND RUN WITH THE LAND:

- THERE SHALL BE NO CONSTRUCTION OR PLACING OF BUILDINGS, ROADS, SIGNS, BILLBOARDS OR OTHER ADVERTISING, OR OTHER STRUCTURES ON OR ABOVE GROUND, EXCEPTING WITHIN THE EXISTING ELECTRIC RIGHTS OF WAY;
- THERE SHALL BE NO DUMPING OR PLACING OF SOIL OR OTHER SUBSTANCES OR MATERIAL INCLUDING BUT NOT LIMITED TO TRASH, ASHES, WASTE, RUBBISH, GARBAGE, JUNK, OR UNSIGHTLY OR OFFENSIVE MATERIALS;
- THERE SHALL BE NO PLACEMENT, EXCAVATION, DREDGING OR REMOVAL OF LOAM, PEAT, GRAVEL, SOIL, ROCK OR OTHER SUBSTANCES, EXCEPTING WITHIN THE EXISTING ELECTRIC RIGHTS OF WAY;
- THERE SHALL BE NO REMOVAL OR DESTRUCTION OF TREES, SHRUBS, OR OTHER VEGETATION, OR THE INTRODUCTION OF ANY TREE, SHRUB OR VEGETATION THAT WOULD BE HARMFUL TO OR COMPETE WITH THE INDIGENOUS SPECIES AS THE SAME NOW EXIST; DESTRUCTION OF WILDLIFE OR ITS HABITAT, THE APPLICATION OF PESTICIDES OR HERBICIDES, OR ANY ACTIVITY OR USE WHICH IS OR HAS THE POTENTIAL FOR BEING DETRIMENTAL TO DRAINAGE, FLOOD CONTROL, WATER QUALITY, EROSION CONTROL, SOIL CONSERVATION, WILDLIFE OR THE LAND AND WATER AREAS IN THEIR NATURAL CONDITION, EXCEPTING WITHIN THE EXISTING ELECTRIC RIGHTS OF WAY;

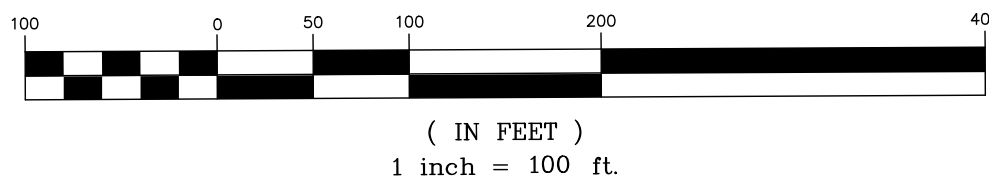
THE ONLY EXCEPTION TO COVENANT #4 WOULD BE FOR URGENT MATTERS OF SAFETY OR FOR THE NEED TO REMOVE INVASIVE SPECIES. IN THE EVENT THAT THERE IS AN URGENT SAFETY MATTER OR AN INVASIVE SPECIES PROBLEM, THE LANDOWNER SHALL DOCUMENT WITH PHOTOGRAPHS AND OTHER RELEVANT DOCUMENTATION THE CONDITIONS THAT COMPEL THE NEED TO BREACH THE PROHIBITION OF THE COVENANT.

5. THERE SHALL BE NO USE OR PLACEMENT OF ANY VEHICLE;

6. THERE SHALL BE NO REMOVAL OR DISTURBANCE OF ANY BOUNDARY MARKERS OF THE CONSERVATION AREA, PERMANENT IRON PINS OR BOUNDARY MARKERS, OR ANY OTHER FIELD IDENTIFICATIONS OF THE CONSERVATION AREA BOUNDARIES.

- LOT N/F OWNED BY
- 2 KYLE KAUFFMAN
SANDRA KAUFFMAN
- 3 JAMES BELLAVANCE
PAMELA BELLAVANCE
- 4 TINA REKOWSKI
JAMES REKOWSKI
- 5 PARMi LEO
- 6 JOHN J. BONNER
CHERYL M. BONNER
- 7 KAEVON SAFFORD
- 8 SCOTT J. WIGGLESWORTH
KIM M. WIGGLESWORTH
- 10 TOWN
OF
11A THOMPSON

GRAPHIC SCALE



LEGEND

- — — — — PROPERTY LINE
- - - - - EDGE OF WETLANDS
- ○ ○ ○ ○ STONE WALL
- — — — — EASEMENT
- MONUMENT
- IRON ROD SET
- EXISTING IRON ROD
- ANGLE POINT

TOWN OF THOMPSON
RECEIVED FOR RECORDING

TOWN CLERK DATE TIME MAP #

PROPERTY IS NOT WITHIN 100 YEAR FLOOD ZONE PER FIRM MAP 090117 0014 B DATED: NOV. 1, 1984

PROPERTY SURVEY MAP
PREPARED FOR
LAVALLEE CONSTRUCTION, LLC
RIVERSIDE DRIVE - THOMPSON, CT

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

DESIGNED: DRB

REVISIONS:

CHECKED: JJB

JOB NO: 22203

SCALE: 1" = 100'

DATE: JANUARY 2023

SHEET: 3



LEGEND

---	PROPERTY LINE
- - -	EDGE OF WETLANDS
=====	STONEWALL
----	UTILITIES
----	GUARDRAIL
----	UPLAND REVIEW AREA
----	EXISTING DRAINAGE
----	PROPOSED DRAINAGE
----	PROPOSED SEWER
----	EXISTING SEWER
----	EXISTING UTILITY POLE
----	SIGN
----	PROPOSED WATER LINE

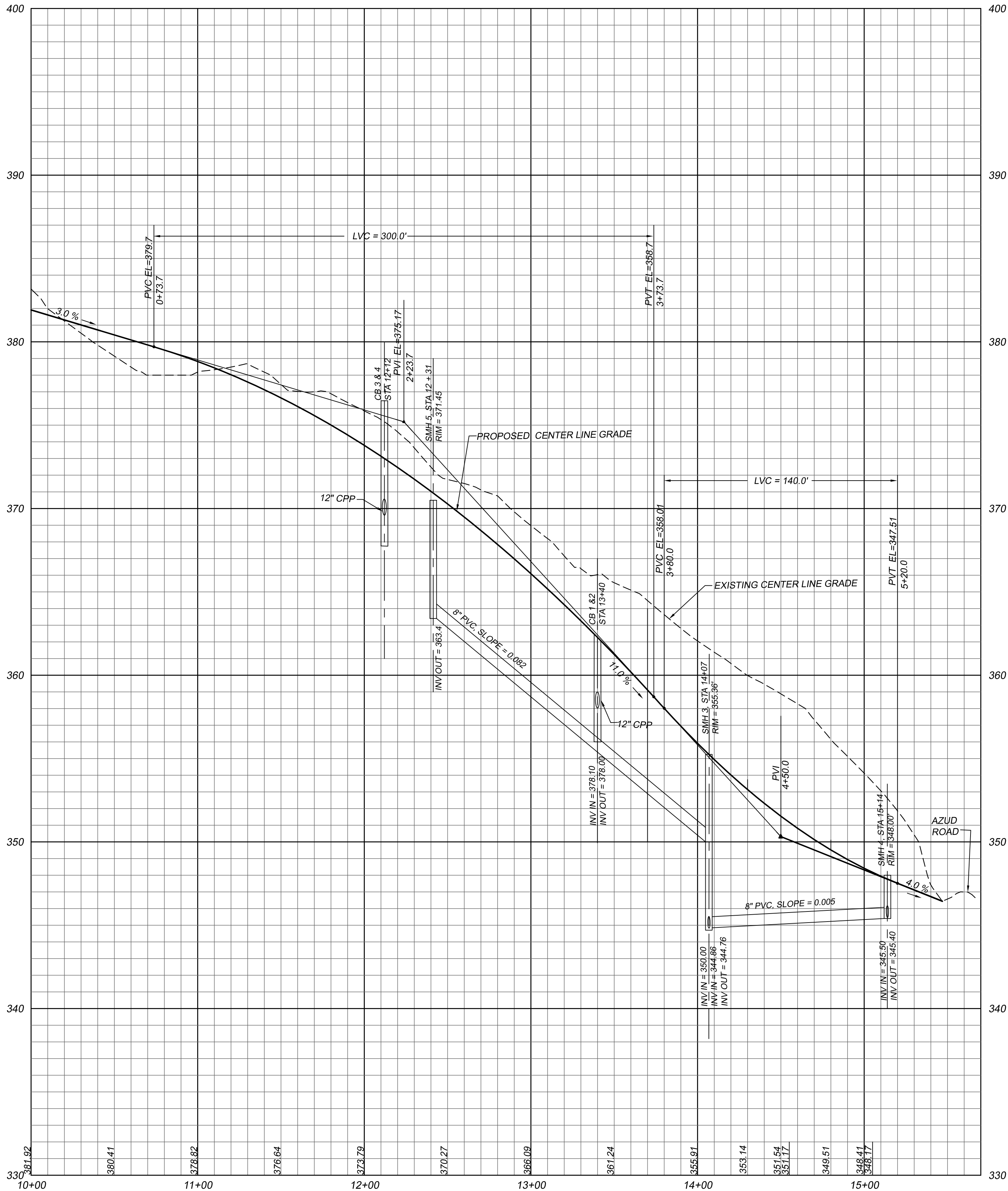
**UTILITY & ROAD LAYOUT PLAN
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT**

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

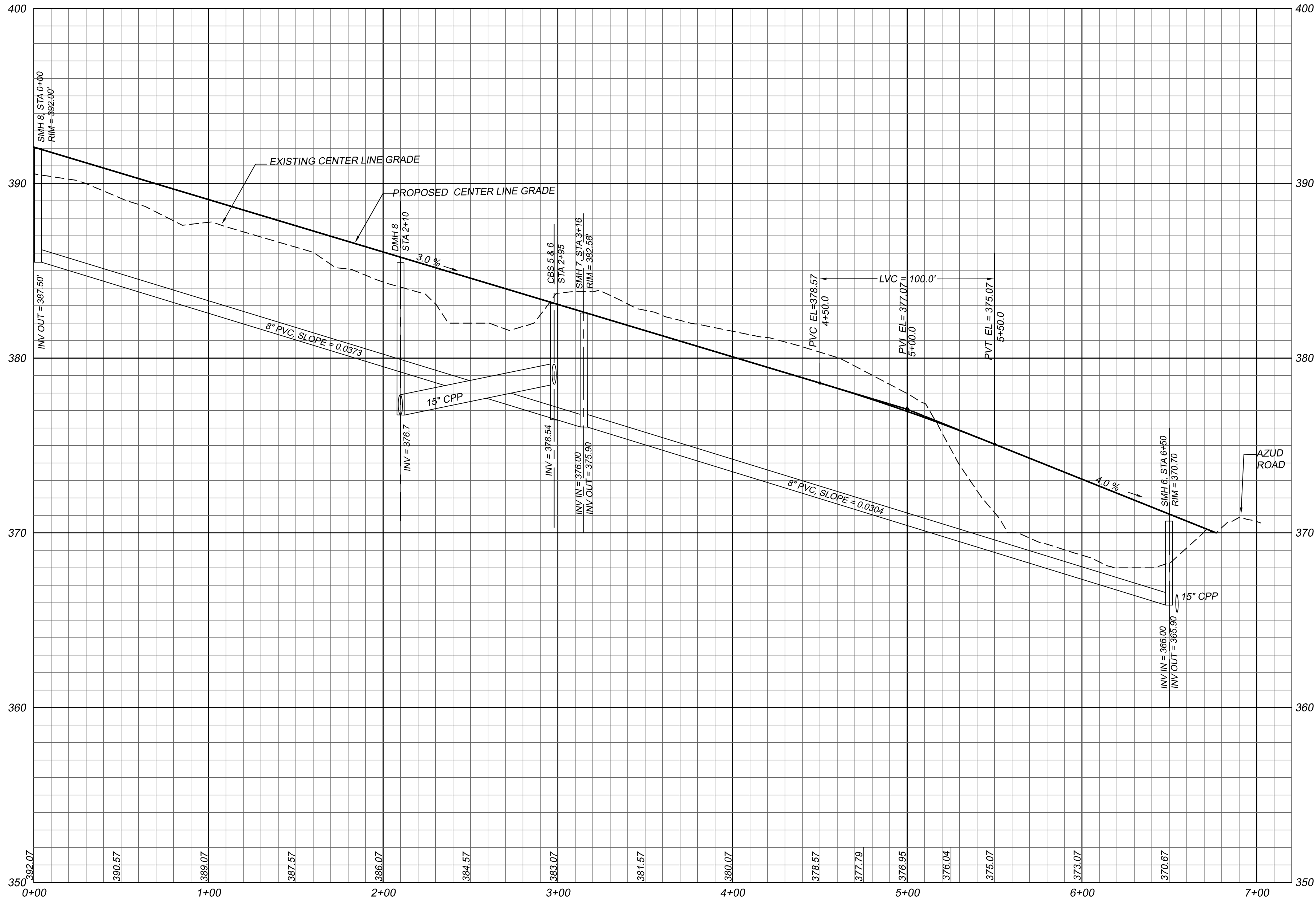
DESIGNED: JJB CHECKED: DRB	REVISIONS: 2-14-23, 3-2-23, 3-28-23
JOB NO: 22203 SCALE: 1" = 40'	DATE: JANUARY 31, 2023 SHEET: 4

22203.Laville.mxd 2023-03-28.dwg TITLE PLAN SH 4 3/28/2023 14:13:48

22203 Lxavle final 2023-03-28.dwg PROFILE SHIT 5 3/28/2023 14:14:42



LOWER ROAD PROFILE STA 0+00 - STA 15+00
SEWER PROFILE STA 11+26 - STA 15+14
1" = 40' H
1" = 4' V



UPPER ROAD & SEWER PROFILE STA 0+00 - STA 6+60
1" = 40' H
1" = 4' V

DRIVEWAY PROFILES
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT

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

DESIGNED: JJB
CHECKED: DRB

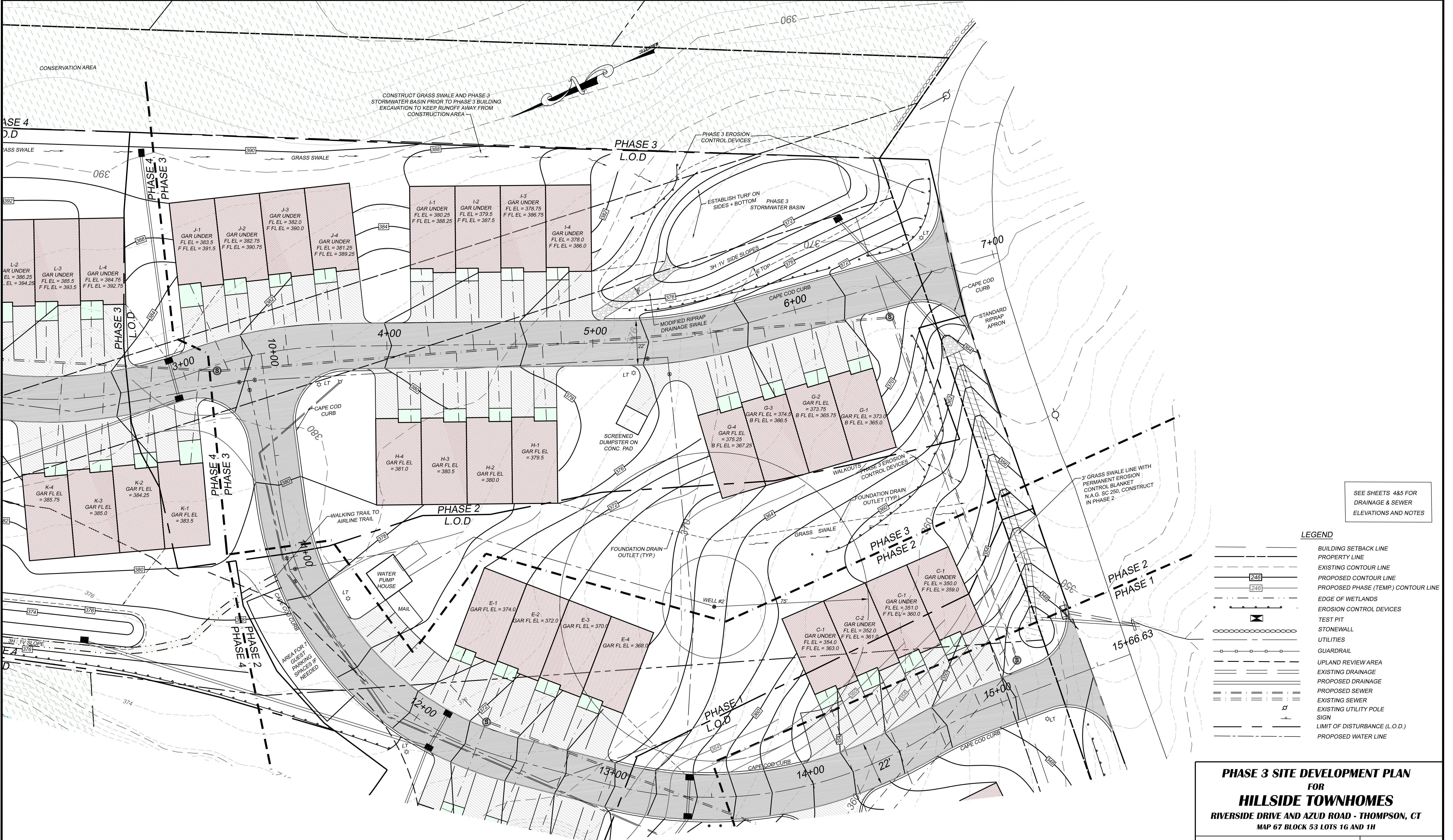
REVISIONS:
3-28-23

JOB NO: 22203
SCALE: 1" = 40'

DATE: JANUARY 31, 2023
SHEET: 5



222033 Layout final 2023-03-28 DWG PHASES 1 & 2 SHEET 6 OF 6 3/28/2023 14:15:19



SEE SHEETS 485 FOR
DRAINAGE & SEWER
ELEVATIONS AND NOTES

LEGEND

- BUILDING SETBACK LINE
- PROPERTY LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED PHASE (TEMP.) CONTOUR LINE
- EDGE OF WETLANDS
- EROSION CONTROL DEVICES
- TEST PIT
- STONEWALL
- UTILITIES
- GUARDRAIL
- UPLAND REVIEW AREA
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- PROPOSED SEWER
- EXISTING SEWER
- EXISTING UTILITY POLE
- SIGN
- LIMIT OF DISTURBANCE (L.O.D.)
- PROPOSED WATER LINE

PHASE 3 SITE DEVELOPMENT PLAN
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT
MAP 67 BLOCK 53 LOTS 1G AND 1H

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

DESIGNED: JJB CHECKED: DRB	REVISIONS: 3-2-23, 3-28-23
JOB NO: 22203 SCALE: 1" = 40'	DATE: JANUARY 31, 2023 SHEET: 7

222033 Landscape final 2023-03-28.dwg Phases 4 and 5 sht 8 3/28/2023 14:24:28



SEE SHEETS 4&5 FOR
DRAINAGE & SEWER
ELEVATIONS AND NOTES

LEGEND

- BUILDING SETBACK LINE
- PROPERTY LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED PHASE (TEMP.) CONTOUR LINE
- EDGE OF WETLANDS
- EROSION CONTROL DEVICES
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- PROPOSED DRAINAGE
- PROPOSED SEWER
- EXISTING SEWER
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- SIGN
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- PROPOSED WATER LINE

PHASES 4 & 5 SITE DEVELOPMENT PLAN
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT
MAP 67 BLOCK 53 LOTS 1G AND 1H

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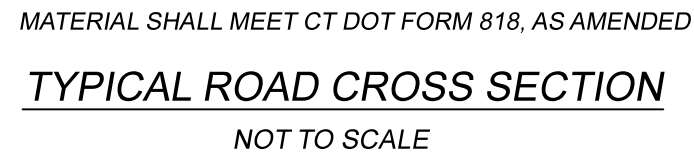
DESIGNED: JJB
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REVISIONS:
2-15-23, 3-2-23,
3-28-23

JOB NO: 22203
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DATE: JANUARY 2023
SHEET: 8

PIPE DIAMETER				
	6"	8"	10"	12"
	OR LESS			
W (FEET)	2.5	3	3	3
A (INCHES)	3	3	3	3
B "	6	6	6	6
C "	3	3	4	4
D "	3	3	3	3
E "	4	4	4	4
F "	4	4	4	4


$$\begin{aligned} 1'' &= 40' H \\ 1'' &= 4' V \end{aligned}$$


THE CONTRACTOR SHALL PROTECT BENCHMARKS, PROPERTY CORNERS AND SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. ANY SUCH ITEMS WHICH NEED TO BE REPLACED SHALL BE AT THE CONTRACTOR'S EXPENSE.

**SHEET: 9**

PHASING NARRATIVE :

LAVALLEE CONSTRUCTION INTENDS TO BUILD THE PROJECT OVER A MULTI-YEAR PERIOD. WORK WILL GENERALLY PROCEED FROM THE SOUTHWEST (LOWEST GROUND) TO THE NORTHEAST (HIGHEST GROUND). THE FOLLOWING IS THE WORK WHICH SHALL BE COMPLETED IN EACH PHASE PRIOR TO INITIATING BUILDING CONSTRUCTION ON SUBSEQUENT PHASES.

PHASE 1: 8 UNITS, BUILDINGS: A AND B
DRIVEWAY: LOWER ROAD STATION 13+50 TO 15+50
(INTERSECTION WITH AZUD ROAD)
SEWER: 436" SEWER FROM RIVERSIDE DRIVE INCLUDING SMH 1, SMH 2, SMH 3, SMH 4
WATER: WELL 1 - PRIVATE, SERVES 8 TWO BEDROOM UNITS X (3) = 24 PEOPLE
DRAINAGE: REPLACE CULVERT UNDER AZUD ROAD, CONSTRUCT PHASE 1 STORMWATER BASIN PRIOR TO ANY PAVING OR CO'S BEING ISSUED.

PHASE 2: 12 UNITS, BUILDINGS: C, D, AND E
DRIVEWAY: LOWER ROAD STATION 10+50 TO 13+50
SEWER: 186" SEWER INCLUDING SMH 5
WATER: WELL 2 - ESTABLISH PUBLIC WATER SUPPLY - COORDINATE WITH CT DPH
DRAINAGE: CONSTRUCT PHASE 2 STORMWATER BASIN PRIOR TO ANY PAVING OR CO'S BEING ISSUED. INSTALL CB 1, CB 2, CB 3, AND CB 4, CONSTRUCT GRASS SWALE ADJACENT TO AZUD ROAD PRIOR TO BUILDING EXCAVATION.
FIRE PROTECTION: INSTALL 10,000 GALLON CISTERN AND PIPE NETWORK TO DRY HYDRANT AT DRIVEWAY INTERSECTION PRIOR TO CO'S BEING ISSUED.

PHASE 3: 16 UNITS, BUILDINGS: G, H, I, AND J
DRIVEWAY: UPPER ROAD STATION 3+00 TO 6+80
(INTERSECTION WITH AZUD ROAD) AND 10+00 - 10+50
SEWER: 516" SEWER INCLUDING SMH 6 AND SMH 7
WATER: COORDINATE WITH CT DPH FOR WELL 3 AND/OR WATER PUMP HOUSE IF NECESSARY
DRAINAGE: CONSTRUCT GRASS SWALE ON THE EAST SIDE OF THE PROJECT AND PHASE 3 STORMWATER BASIN PRIOR TO BUILDING EXCAVATION.

PHASE 4: 12 UNITS, BUILDINGS: K, L, AND M
DRIVEWAY: UPPER ROAD STATION 1+00 TO 3+00
(INTERSECTION WITH AZUD ROAD)
SEWER: 306" SEWER INCLUDING SMH 8
WATER: EXTEND PUBLIC WATER TO UNITS
DRAINAGE: CB 5, CB 6, CB 7, DMH 8, CONSTRUCT PHASE 4 STORMWATER BASIN PRIOR TO ANY PAVING OR CO'S BEING ISSUED.

PHASE 5: BUILDINGS: N, O, AND P
DRIVEWAY: STATION 0+00 TO 6+80 (INTERSECTION WITH AZUD ROAD) AND 10+00 - 10+50
SEWER: INSTALL SEWER LATERALS TO MAIN
WATER: EXTEND PUBLIC WATER TO UNITS
DRAINAGE: NONE

SEQUENCE OF CONSTRUCTION :

SEE PHASING NARRATIVE FOR FEATURES TO BE CONSTRUCTED IN EACH PHASE. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH PHASE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE BUILDING CONSTRUCTION FOR ANY FOLLOWING PHASE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

- EXCAVATING CONTRACTOR SHALL NOTIFY CALL BEFORE YOU DIG AS REQUIRED, AND IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL BURIED UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
- FIELD STAKE THE BUILDINGS, DRIVEWAYS AND UTILTY STRUCTURES. THROUGHOUT THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL PROTECT DOWNSTREAM WETLANDS FROM SEDIMENTATION.
- INSTALL COMPOST FILTER SOCK ALONG THE DOWNSLOPE SIDE OF CONSTRUCTION ACTIVITIES AS SHOWN ON THE DRAWINGS.
- STRIP TOPSOIL FROM SITE. STOCKPILE SIDE SLOPES MUST BE 2:1 OR FLATTER. INSTALL FILTER SOCK BELOW TOPSOIL AND EXCESS MATERIAL STOCKPILES.
- UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION. EROSION AND SEDIMENT CONTROL BMPs SHALL BE IMPLEMENTED AND MAINTAINED UNTIL THE PERMANENT STABILIZATION IS COMPLETED. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH ONE OF THE FOLLOWING: (1) A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. (2) AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.
- IN THE EVENT THAT CONSTRUCTION OF ANY STRUCTURES IS DELAYED, EITHER DO NOT BEGIN EARTHWORK IN THE AREA OF FEATURES THAT WILL NOT BE CONSTRUCTED IMMEDIATELY, OR COMPLETE EARTHWORK, THEN PROVIDE STABILIZATION OF BUILDING PADS AND ALL ASSOCIATED DISTURBED AREAS WITH CLEAN STONE OR VEGETATION AS INDICATED IN THE PLAN.
- FINE GRADE AND RESPREAD TOPSOIL ALL AREAS AND IMMEDIATELY PERMANENTLY SEED AND MULCH ALL DISTURBED AREAS. PROVIDE EROSION CONTROL BLANKET IN AREAS SHOWN AND AREAS STEEPER THAN 3:1 SLOPE.
- AFTER PERMANENT STABILIZATION OF SITE (I.E. A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION) HAS BEEN ACHIEVED, THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE CONTROLS SHALL BE REESTABLISHED. PERMANENT STORMWATER FEATURES SHOULD BE CLEANOUT OUT AS NEEDED UPON FINAL STABILIZATION OF THE SITE.

GENERAL SEEDING NOTES

- TEMPORARY SEEDING NOTES - SITE PREPARATION: APPLY 1-2 TON /ACRE AGRICULTURAL GRADE LIMESTONE AND 10-10-10 FERTILIZER AT A RATE OF 300 LBS./ACRE AND WORK IN WHERE POSSIBLE. REFER TO FIGURE TS-2 IN THE 2002 CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL FOR APPROPRIATE SEEDING MIXES AND RATES. MULCH SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- PERMANENT SEEDING NOTES - SITE PREPARATION: GRADE AS NECESSARY TO BRING THE SUBGRADE TO A TRUE, SMOOTH SLOPE PARALLEL TO AND SIX INCHES BELOW FINISHED GRADE. PLACE TOPSOIL OVER SPECIFIED AREAS TO A DEPTH SUFFICIENTLY GREATER THAN SIX INCHES SO THAT AFTER SETTLEMENT AND LIGHT ROLLING THE COMPLETE WORK WILL CONFORM TO LINES, GRADES AND ELEVATIONS SHOWN.
- APPLY 4 TONS/ACRE AGRICULTURAL GRADE LIMESTONE AND 10-10-10 FERTILIZER AT A RATE OF 300 LBS/AC OR AS PER SOIL TEST. LIMESTONE AND FERTILIZER MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS.
- FERTILIZER AND AGRICULTURAL LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL BY ROTOTILLING OR OTHER METHOD TO A MINIMUM DEPTH OF FOUR INCHES. THE ENTIRE SURFACE SHALL BE DONE IN TWO SEPARATE OPERATIONS. THE SECOND SEEDING SHALL BE DONE IMMEDIATELY AFTER THE FIRST AND AT RIGHT ANGLES TO THE FIRST SEEDING AND LIGHTLY RAKED INTO THE SOIL. MULCH SEEDED AREAS IMMEDIATELY AFTER SEEDING.

AREA TO BE SEEDED	MIXTURE NUMBER	SPECIES	SEEDING RATES (LB/AC) PURE LIVE SEED
SLOPES, BANKS CHANNELS AND DIVERSIONS	2	CREEPING RED FESCUE	20
		REDTOP	2
		TALL FESCUE OR SMOOTH BROMEGRASS	20
LAWN AND HIGH MAINTENANCE AREAS	1	KENTUCKY BLUEGRASS	20
		CREEPING RED FESCUE	20
		PERENNIAL RYEGRASS	5

SEED MIXTURE NUMBERS REFER TO TO FIGURE PS-3, 2002 CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO MANUAL FOR POTENTIAL ALTERNATIVE MIXTURES.

PURE LIVE SEED (PLS) IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100.

SOIL EROSION AND SEDIMENT CONTROL NARRATIVE

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A MULTI-FAMILY DEVELOPMENT. SITE WORK WILL INCLUDE CONSTRUCTION OF BUILDINGS, ACCESS DRIVES, 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.

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%.

OPERATIONS AND MAINTENANCE

- 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.
- 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.
- 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.
- UPON FINAL GRADING, DISTURBED AREAS SHALL COVERED WITH A MINIMUM OF 6" LOAM AND SEEDED WITH PERENNIAL GRASSES AS SPECIFIED FOR THE PROJECT. IMMEDIATELY AFTER SEEDING, MULCH THE SEEDED AREA, NOT COVERED WITH EROSION CONTROL BLANKET, 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.
- 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.
- 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.
- SITE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THIS EROSION AND SEDIMENT CONTROL PLAN.

MINIMIZE DISTURBED AREAS

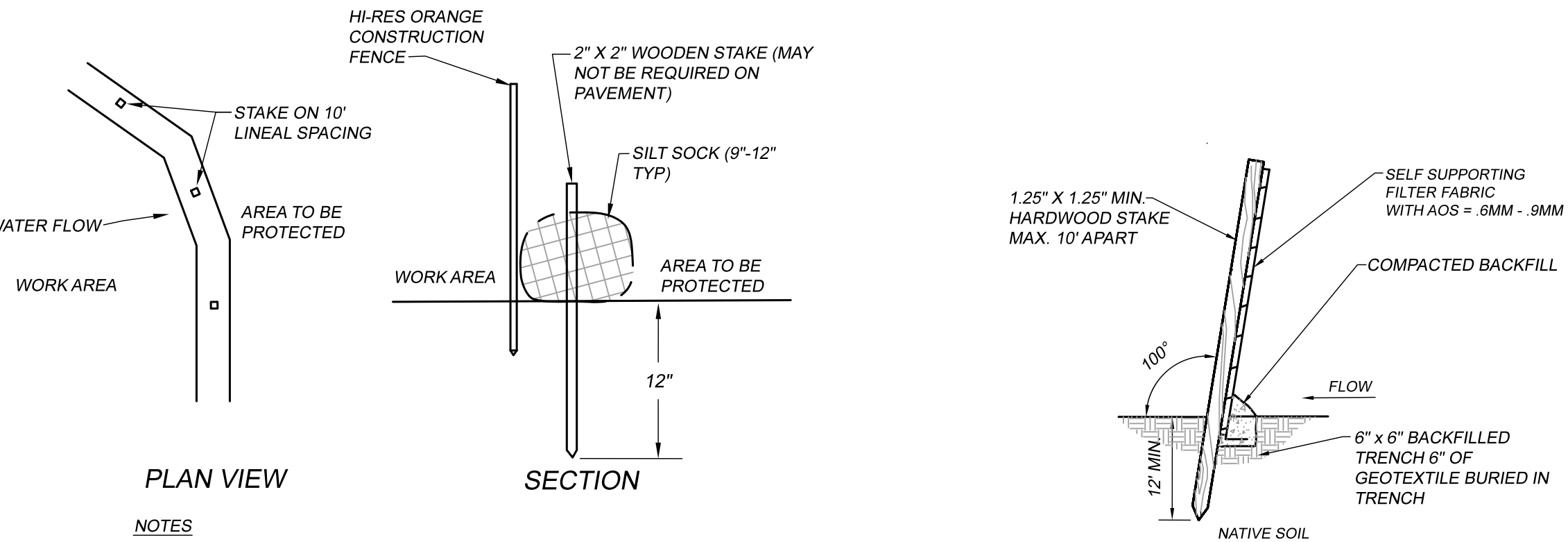
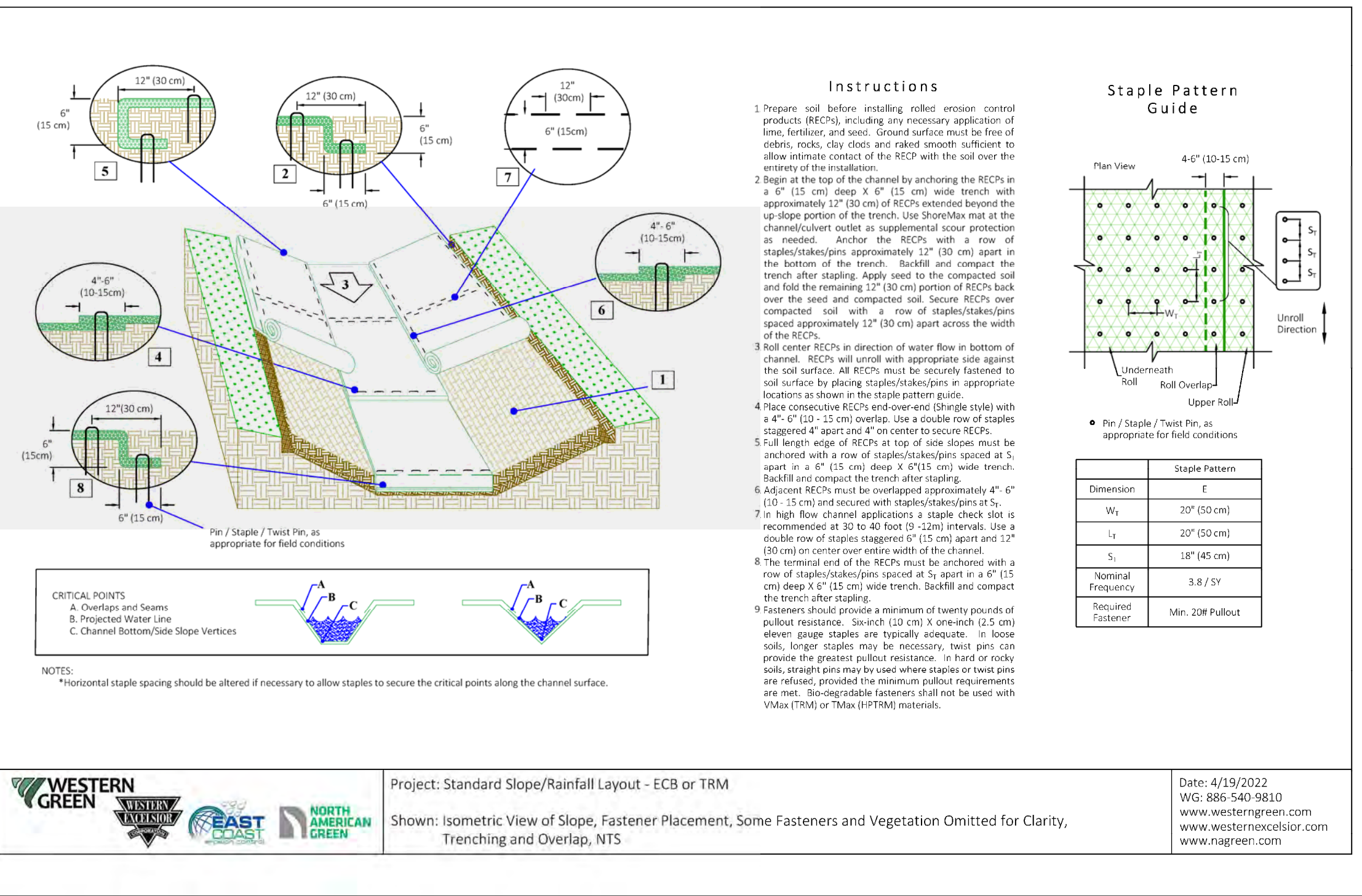
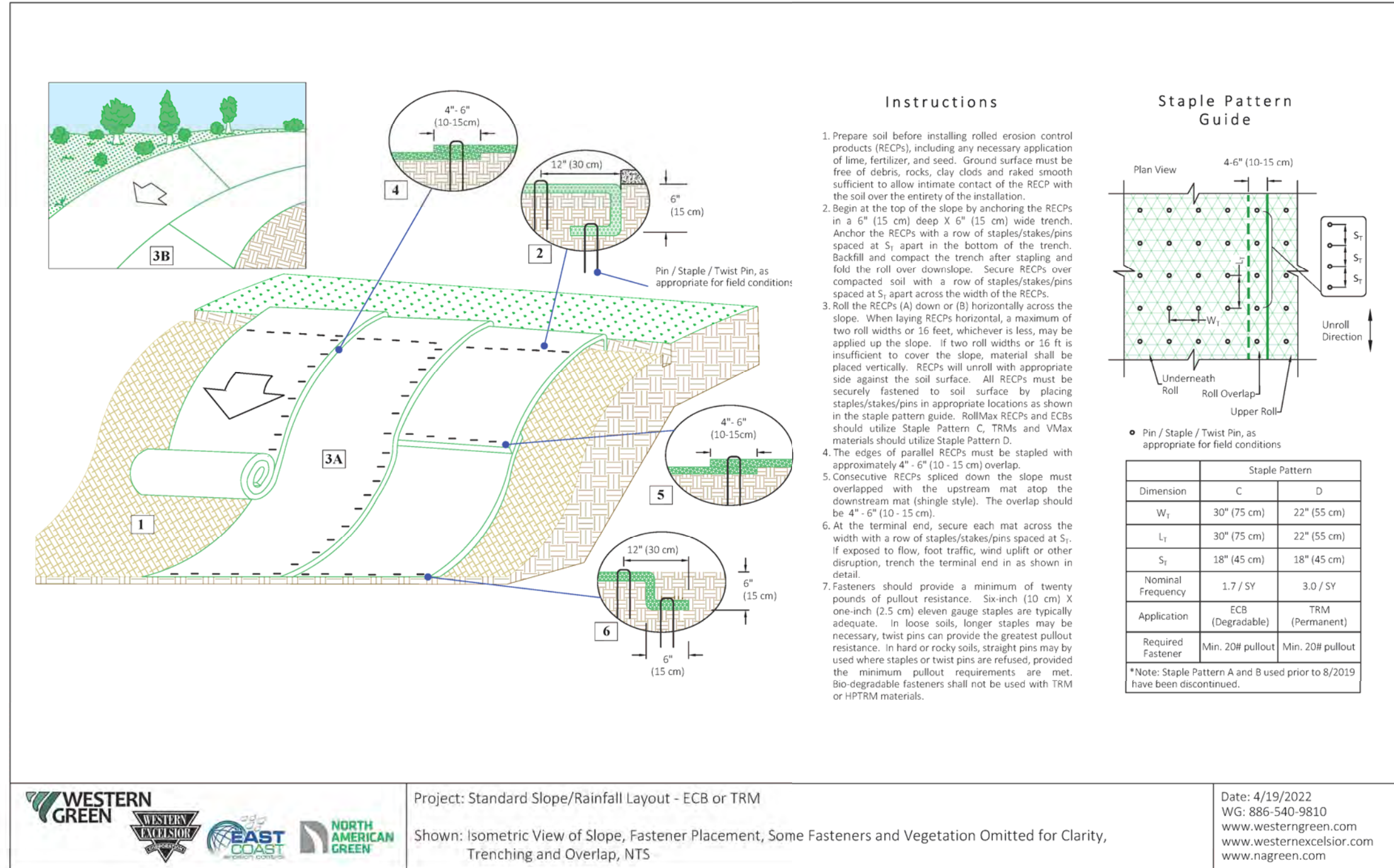
- KEEP LAND DISTURBANCE TO A MINIMUM - THE MORE LAND THAT IS IN VEGETATIVE COVER, THE MORE SURFACE WATER WILL INFILTRATE INTO THE SOIL, THUS MINIMIZING STORMWATER RUNOFF AND POTENTIAL EROSION. KEEPING LAND DISTURBANCE TO A MINIMUM NOT ONLY INVOLVES MINIMIZING THE EXTENT OF EXPOSURE AT AN ONE TIME, BUT ALSO THE DURATION OF EXPOSURE.
- 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.
- 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.
- SCHEDULE CONSTRUCTION SO THAT FINAL GRADING AND STABILIZATION IS COMPLETED AS SOON AS POSSIBLE.

MANAGING RUNOFF

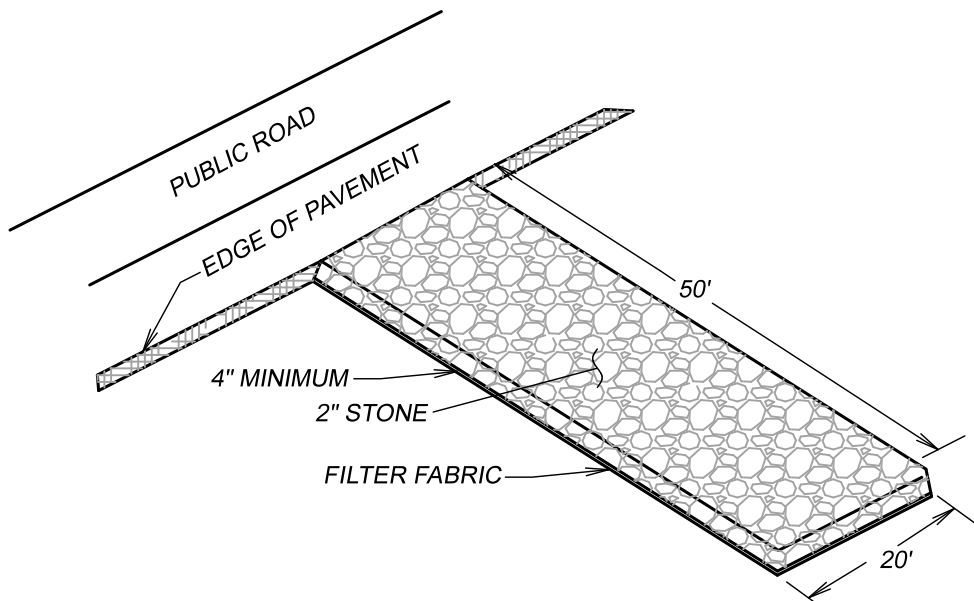
- USE DIVERSIONS, STONE DIKES, SILT FENCES AND SIMILAR MEASURES TO BREAK FLOW LINES AND DISSIPATE STORM WATER ENERGY.
- AVOID DIVERTING ONE DRAINAGE SYSTEM INTO ANOTHER WITHOUT CALCULATING THE POTENTIAL FOR DOWNSTREAM FLOODING OR EROSION.
- CLEAN RUNOFF SHOULD BE KEPT SEPARATED FROM SEDIMENT LADEN WATER 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.

INTERNAL EROSION CONTROLS

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



SILT FENCE INSTALLATION
NOT TO SCALE



TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES

- SILT SOCK MANUFACTURER SHALL BE SILT SOXX OR ENGINEER APPROVED EQUAL
- ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS
- SEDIMENT SILT SOCK TO BE FILLED WITH LEAF COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS.
- 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

CONSTRUCTION DETAILS
EROSION AND SEDIMENT CONTROL
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT

J&D CIVIL
ENGINEERS, LLC

401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: JJB
CHECKED: DRB

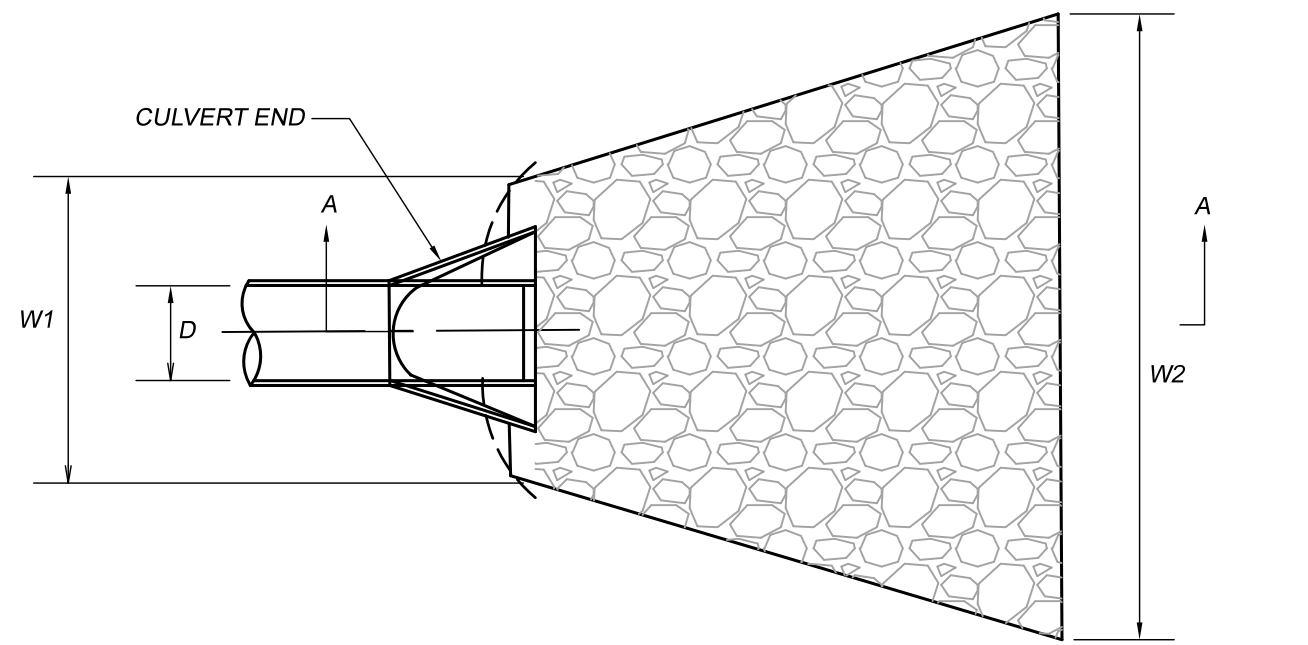
REVISIONS:
3-2-23, 3-28-23

JOB NO: 22203

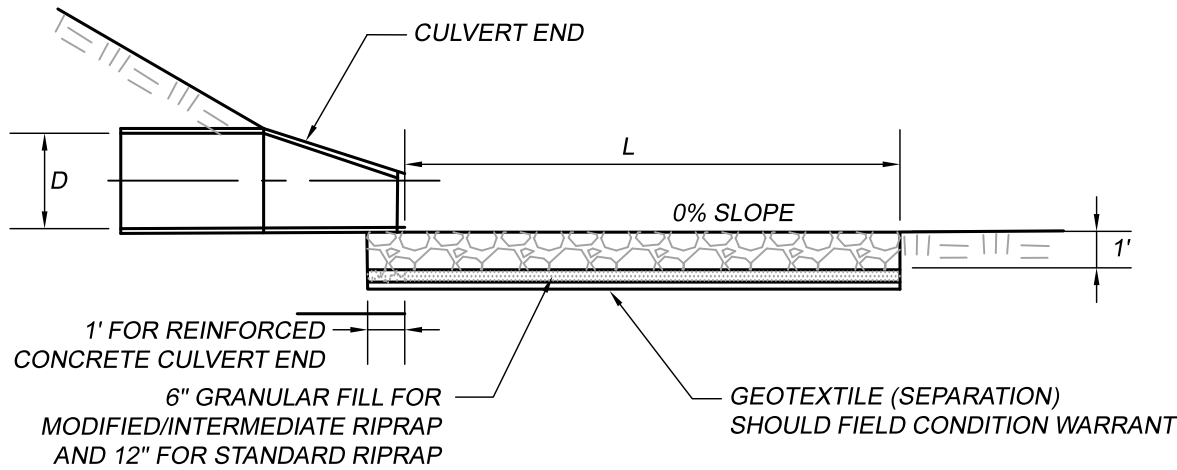
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DATE: JANUARY 31, 2023

SHEET: 10



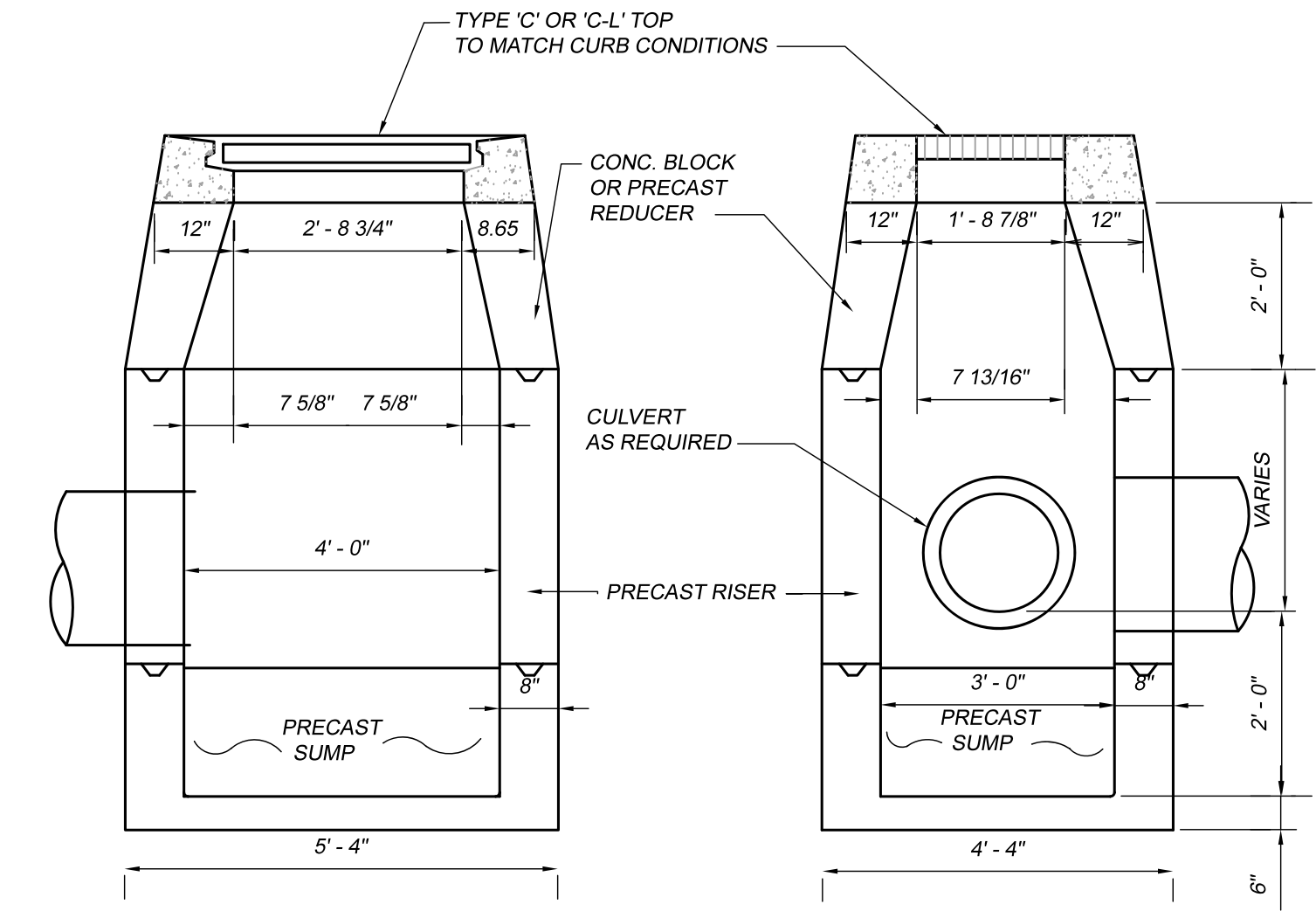
PLAN VIEW



SECTION A-A

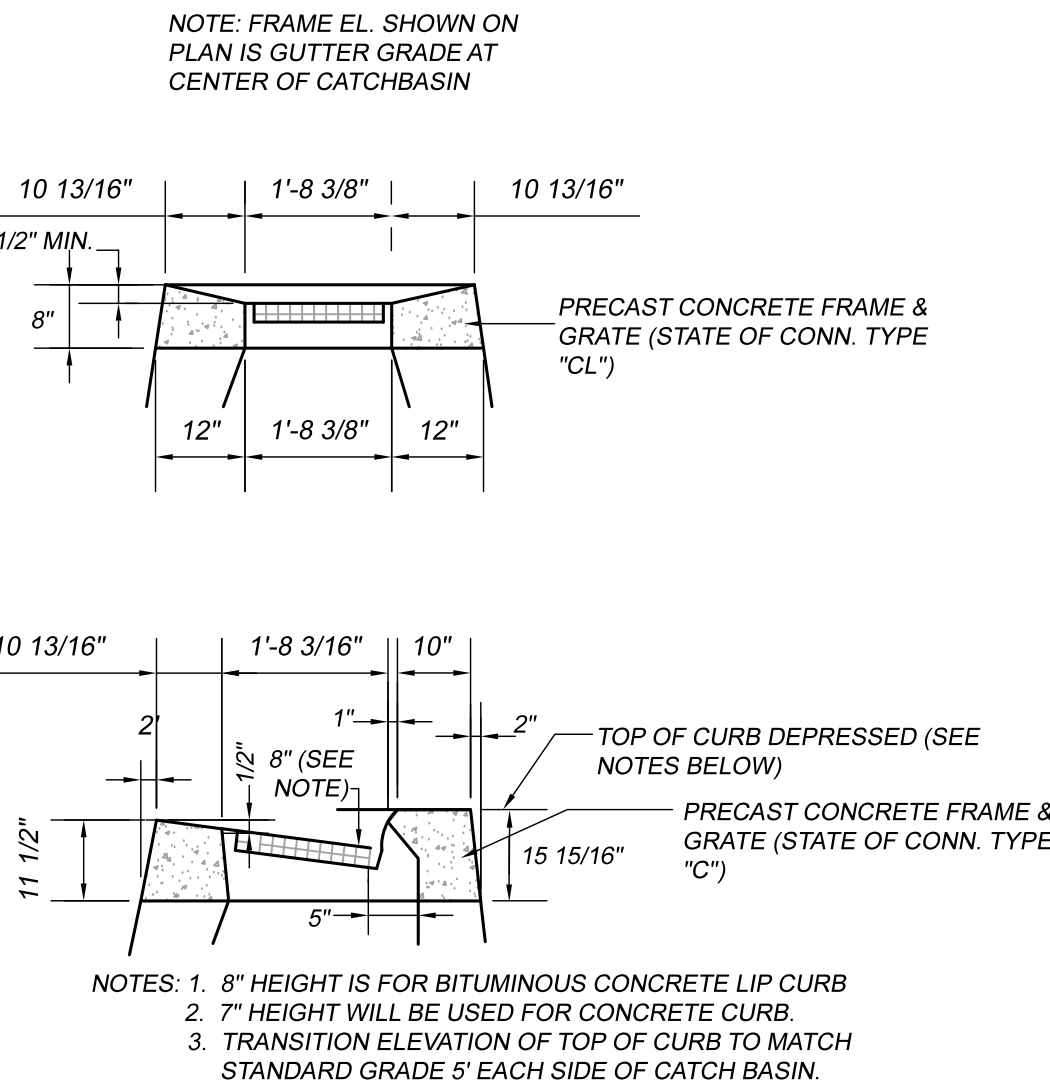
APRON #	W1	W2	L
1	3'	10'	10'
2	3'	10'	10'
3	4'	11'	10'
4	8'	12'	16'

MODIFIED RIPRAP APRON - TYPE A
NOT TO SCALE

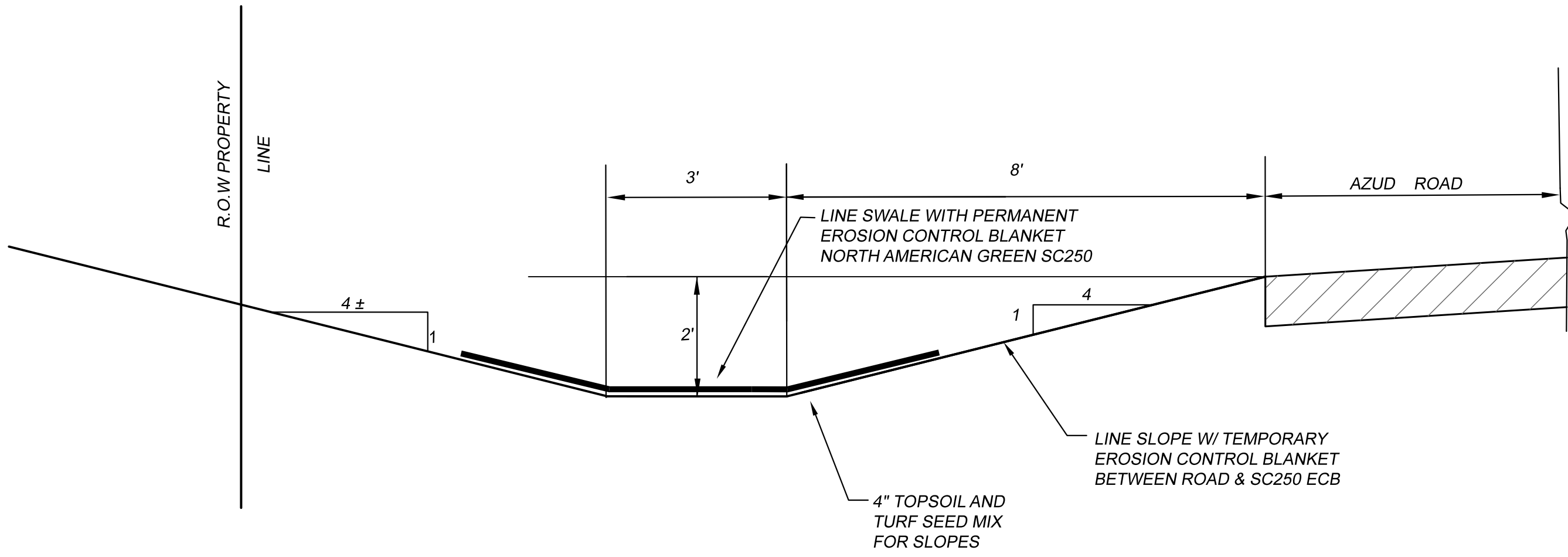


NOTE: CATCHBASIN TO BE FITTED WITH "SNOUT" HOOD WHERE INDICATED ON PLANS. HOODED BASINS SHALL HAVE 4" SUMPS.

TYPE "C" OR "C-L" CATCH BASIN WITH SUMP
NOT TO SCALE



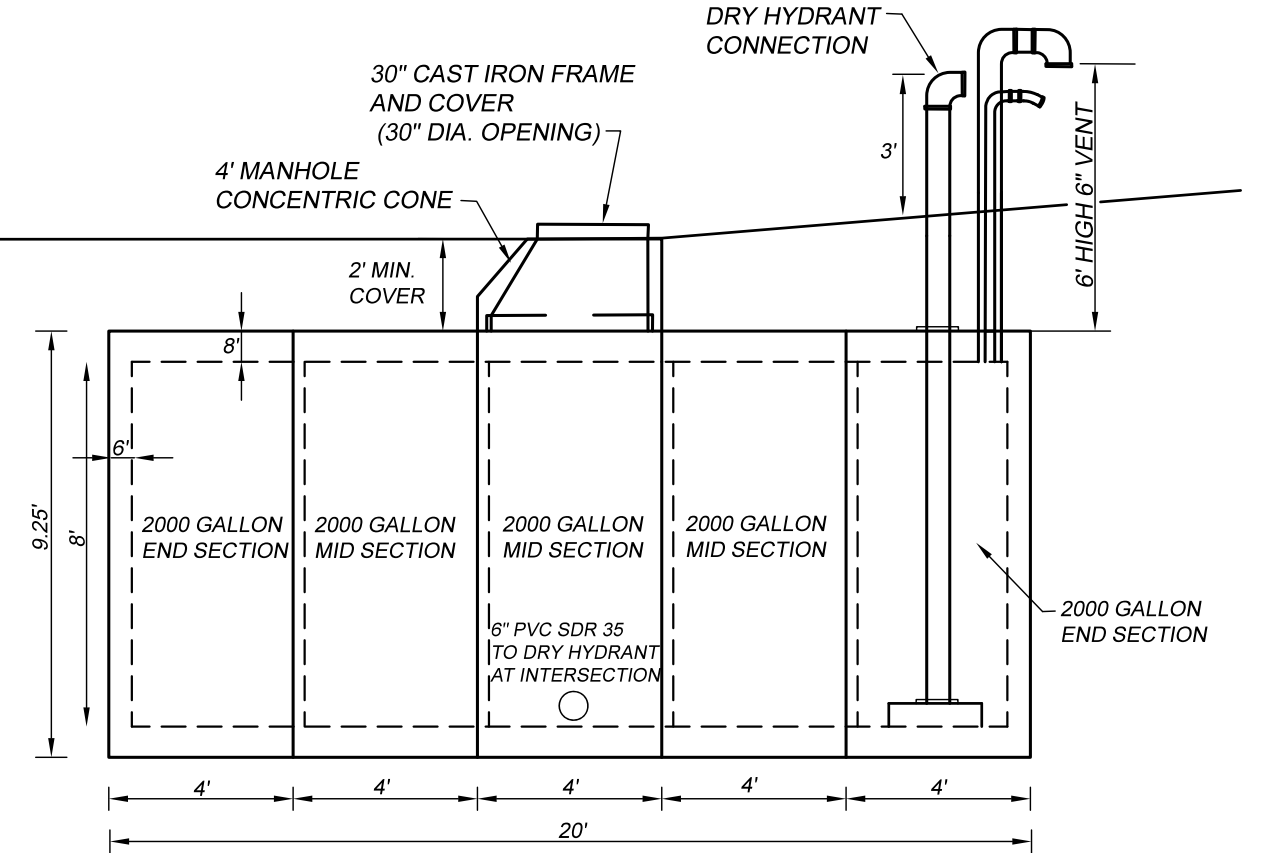
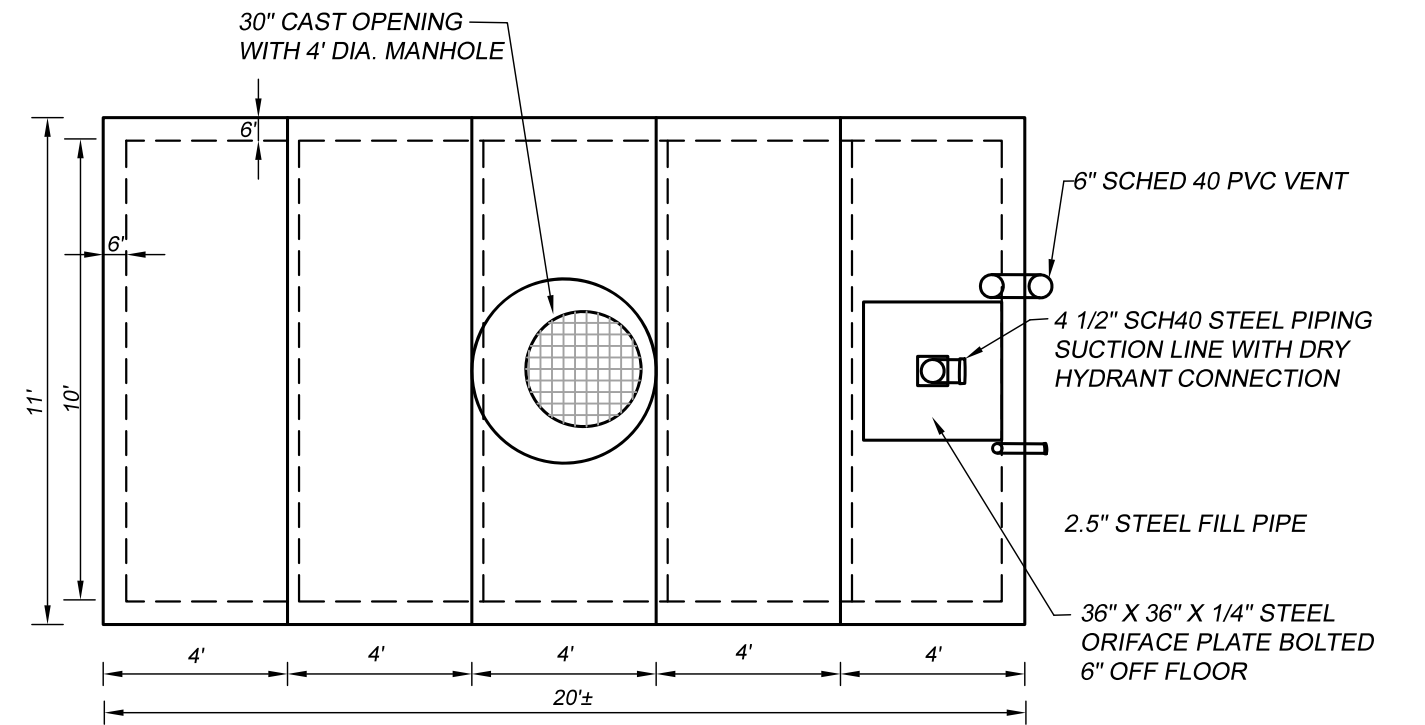
FRAME AND GRATE FOR
TYPE "C" OR "CL" CATCH BASIN
NOT TO SCALE



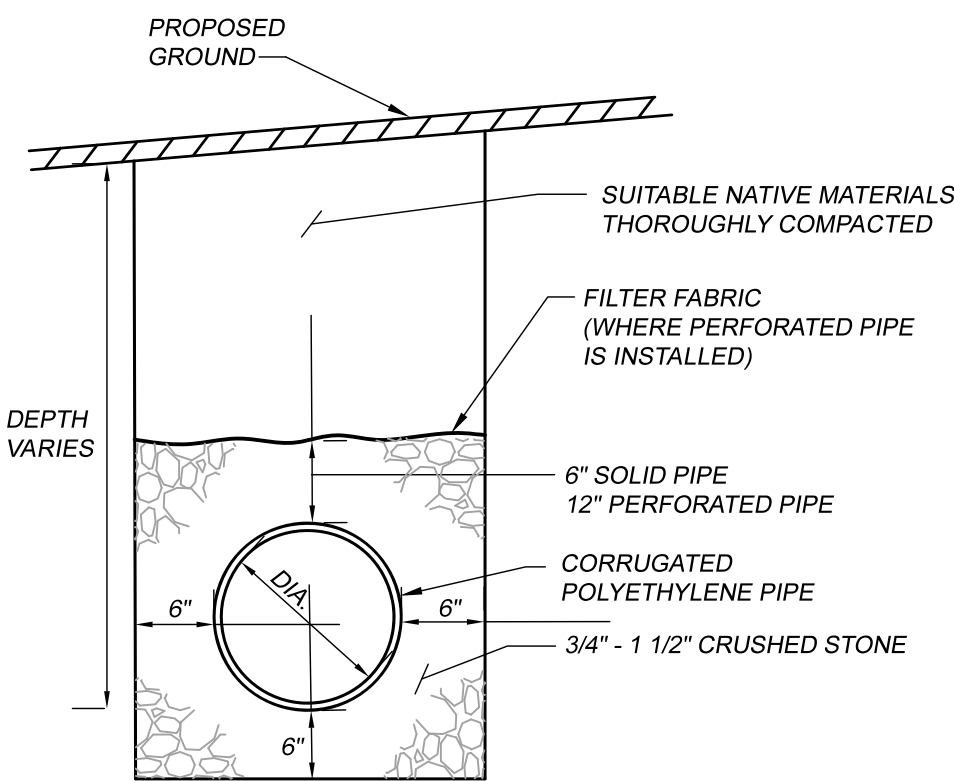
AZUD ROAD DRAINAGE SWALE SECTION
1" = 2'

CISTERN NOTES:

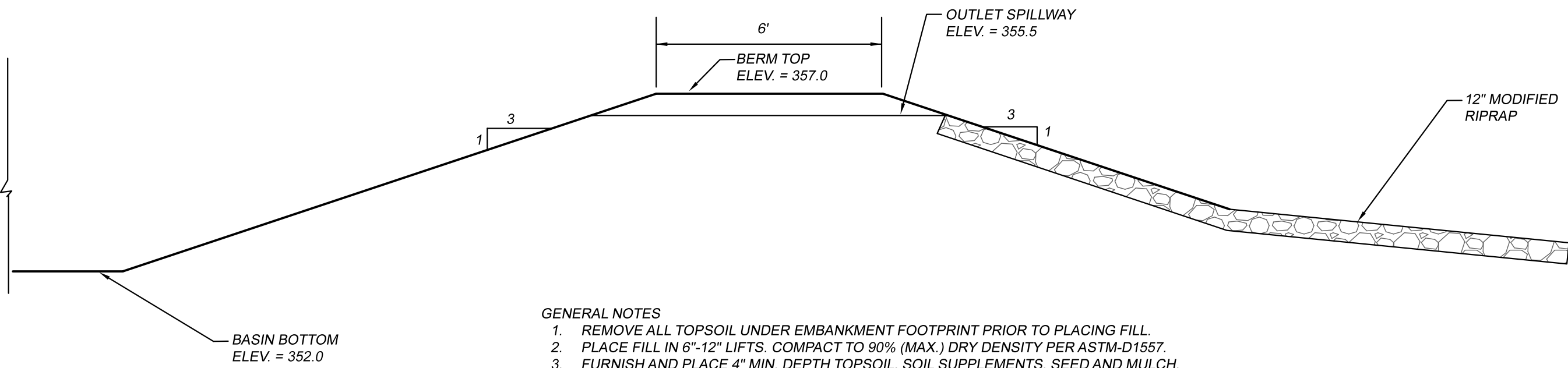
1. CONCRETE TANKS SHALL MEET THE REQUIREMENTS FOR RESISTING EARTHQUAKE DAMAGE BY COMPLYING WITH THE EARTHQUAKE PROVISIONS OF ACI 350.
2. CONCRETE TANK WALLS SHALL BE MADE IMPERMEABLE BY MEANS OF AN IMPERVIOUS MEMBRANE OR COATING APPLIED TO THE INTERIOR SURFACE OF THE TANK TO PREVENT VISIBLE LEAKAGE OR SEEPAGE THROUGH THE TANK WALL.
3. LEAKAGE TESTING
A) PREPARATION- THE TANK SHALL BE FILLED WITH WATER TO THE MAXIMUM LEVEL AND LEFT TO STAND FOR AT LEAST 24 HOURS
B) MEASUREMENT- THE DROP IN LIQUID LEVEL SHALL BE MEASURED OVER THE NEXT 72-HOUR PERIOD TO DETERMINE THE LIQUID VOLUME LOSS. EVAPORATIVE LOSSES SHALL BE MEASURED OR CALCULATED AND SHALL BE DEDUCTED FROM THE MEASURED LOSS TO DETERMINE WHETHER THERE IS NET LEAKAGE.
C) THERE SHALL BE NO MEASURABLE LEAKAGE AFTER THE TANK IS PLACED IN SERVICE.
4. CAST-IN-PLACE CONCRETE MUST ACHIEVE A 28-DAY STRENGTH OF A GAUGE PRESSURE OF 3000 PSI. IT MUST BE PLACED WITHIN A MINIMUM IF 4IN. SLUMP AND VIBRATED IN A PROFESSIONAL MANNER.
5. ALL SUCTION AND FILL PIPING MUST BE ASTM INTERNATIONAL SCHEDULE 40 STEEL. ALL VENT PIPING MUST BE ASTM SCHEDULE 40 PVC.
6. ALL PVC PIPING MUST HAVE GLUED JOINTS.
7. THE FINAL SUCTION CONNECTION MUST BE 4 1/2 IN. MALE NATIONAL STANDARD HOSE THREAD AND MUST BE CAPPED.
8. THE FILLER PIPE SIAMASE MUST HAVE 2 1/2 IN. FEMALE NATIONAL STANDARD THREADS WITH PLASTIC CAPS.
9. ALL BACKFILL MATERIAL MUST BE SCREENED GRAVEL WITH NO STONES LARGER THEN 1 1/2IN. AND MUST BE COMPACTED TO 95 PERCENT IN ACCORDANCE WITH ASTM D1557.
10. BEDDING FOR THE CISTERN MUST CONSIST OF A MINIMUM OF 12 IN. OF 3/4IN TO 1 1/2IN CRUSHED, WASHED STONE, COMPACTED.



10,000 GALLON FIRE PROTECTION CISTERN
NOT TO SCALE

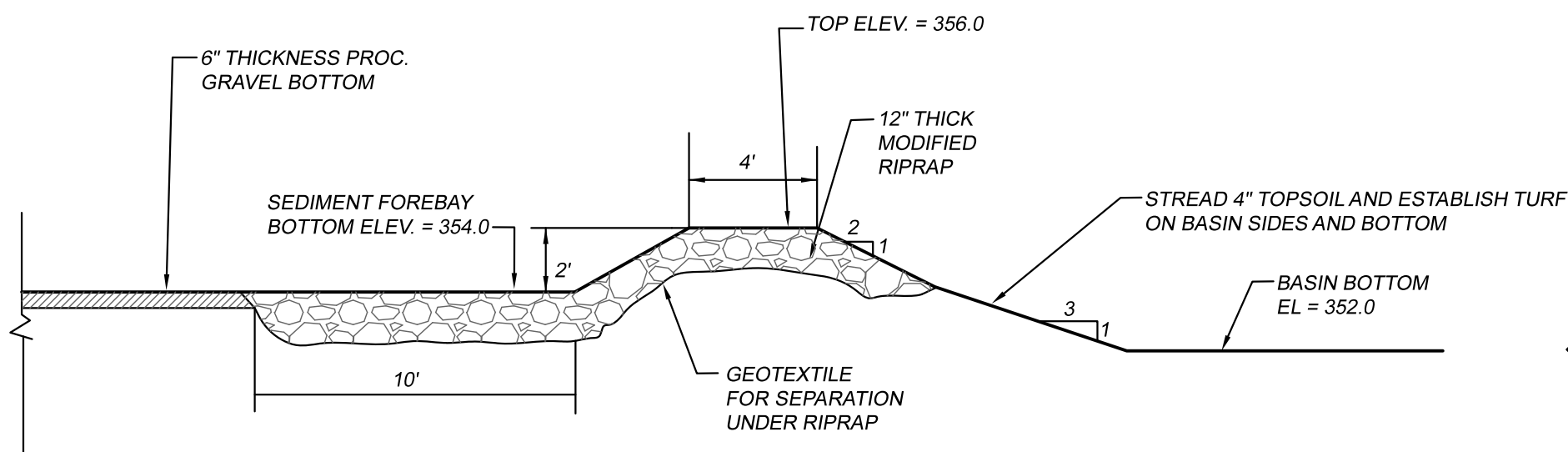


CPP DRAINAGE PIPE
INSTALLATION DETAIL
NOT TO SCALE



- GENERAL NOTES
1. REMOVE ALL TOPSOIL UNDER EMBANKMENT FOOTPRINT PRIOR TO PLACING FILL.
 2. PLACE FILL IN 6"-12" LIFTS. COMPACT TO 90% (MAX.) DRY DENSITY PER ASTM-D1557.
 3. FURNISH AND PLACE 4" MIN. DEPTH TOPSOIL, SOIL SUPPLEMENTS, SEED AND MULCH.

PHASE 2 STORMWATER BASIN
TYPICAL SECTION
N.T.S.



PHASE 2 STORMWATER BASIN
CROSS SECTION THROUGH SEDIMENT FOREBAY
1" = 5'

CONSTRUCTION DETAILS
DRAINAGE
FOR
HILLSIDE TOWNHOMES
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT

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

DESIGNED: JJB
CHECKED: DRB

REVISIONS:
3-2-23

JOB NO: 22203
SCALE: AS NOTED

DATE: JANUARY 31, 2023
SHEET: 11

Hillside Townhomes

Stormwater Management Report

Prepared for: Lavallee Construction LLC

Azud Road and Riverside Drive
Thompson, CT

January 31, 2023

Rev March 28, 2023

Prepared by:

**J & D Civil
Engineers, LLC**

401 Ravenelle Road
N. Grosvenordale, CT 06255

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- H. Stormwater Quality

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- I. Hydrologic Model
- II. Drainage Area Map
- III. Calculations – Water Quality, Infiltration velocities, Outlet Protection
- IV. LID Checklist

A. Project Narrative

Lavallee Construction proposes to construct a multi-family housing project with two driveways onto Azud Road. The complete project consists of 15 4-unit buildings. The project will be constructed in phases from the lower elevation to the upper elevation. This will allow the project infrastructure: driveways, sewer lines, stormwater facilities and water system to be built incrementally in a logical manner. A full phasing plan narrative is located on the detail sheets. The following is a summary of the phasing narrative:

Phase 1: 8 units, Buildings: A and B

Driveway: lower road station 13+50 to 15+50 (intersection with Azud Road)

Drainage: replace culvert under Azud Road, construct Phase 1 stormwater basin prior to any paving or CO's being issued.

Phase 2: 12 units, Buildings: C, D, and E

Driveway: lower road station 10+50 to 13+50

Drainage: construct Phase 2 stormwater basin prior to any paving or co's being issued. install CB 1, CB 2, CB 3, and CB 4, construct grass swale adjacent to Azud Road prior to building excavation

Phase 3: 16 units, Buildings: G, H, I, and J

Driveway: upper road station 3+00 to 6+80 (intersection with Azud Road) and 10+00 - 10+50

Drainage: construct grass swale on the east side of the project and phase 3 stormwater basin prior to building excavation.

Phase 4: 12 units, Buildings: K, L, and M

Driveway: upper road station 1+00 to 3+00 (intersection with Azud Road)

Drainage: CB 5, CB 6, CB 7, DMH 8, construct Phase 4 stormwater basin prior to any paving or CO's being issued.

Phase 5: Buildings: N, O, AND P

Driveway: station 0+00 to 6+80 (intersection with Azud Road) and 10+00 - 10+50

Drainage: none

Low Impact Development (LID) features were incorporated into the design of the stormwater system to the extent possible. There are no direct discharges to downstream wetlands or the CT DOT drainage system in Riverside Drive (Route 12). Runoff is directed to grass swales, sediment forebays, and stormwater basins. The drainage area that sheet flows to the wetlands does not contain any impervious areas. An LID checklist is attached to this report.

B. Existing Site and Hydrologic Soil Group Description

The property is approximately 12 acres in size and contains conservation lands that were created when the property was subdivided. All of the proposed construction takes place within a 6-acre portion of the site.

The Natural Resource Conservation Service (NRCS) groups soils into four categories according to their runoff producing characteristics. Hydrologic Soil Group A consists of soils that have a high infiltrative capacity and a low runoff potential even when saturated. Hydrologic Soil Group D soils have a very low infiltration rate and high runoff potential. Most of the site is within Hydrologic Soil Group B and is well drained Charlton Chatfield soil. Perc rates within the 2011 subdivision averaged less than 5 minutes per inch. The lowest part of the property along Riverside Drive contains Hinckley sand and gravel in Hydrologic Soil Group A.

The wetlands on the northwest end of the property were formed by gravel excavation years ago. They currently contain two ponds. When the wetlands were delineated in 2004 they were functioning as vernal pools. The ponds rarely overflow but can discharge to a well-defined outlet channel near Riverside Drive. Typically, the soil is so pervious that the runoff from the hillside infiltrates into the ground and never leaves the wetlands. On January 18, 2023 runoff was flowing from the upper pond to the lower pond and then infiltrating before reaching the outlet channel. The leaves in the outlet channel had not been displaced by runoff or show sign of water movement over them since fall. So evidently there had been no discharge from the lower pond for several months.

However, during heavy rainfall or high groundwater conditions the ponds can flow out of the pond via the channel and then flow into Riverside Drive. This does not occur frequently. On January 26, 2023 following a heavy rainfall and when groundwater conditions were high a fairly significant flow was observed out of the pond. The flow spread out on a paved apron near Riverside Drive and then flowed in the shoulder of the road to the state catchbasin. There was no bypass of the catchbasin. All of the runoff entered it.

C. Drainage Patterns

The site drains toward three structures as follows:

1. Azud Road 15" culvert – approximately 300' uphill of Riverside Drive

2. Azud Road CB – the last CB just uphill of Riverside Drive
3. Route 12 CB – The state's CB at the intersection of Riverside Drive and Azud Road

For both existing and proposed conditions the site was broken up into appropriate drainage areas to each of the three downslope structures. These drainage areas can be seen on the maps bound into this report

D. Methodology

The HydroCAD computer program was utilized for the drainage design of 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 Connecticut. Precipitation amounts were obtained for the location from NOAA.

E. Results and Comparison of Existing and Proposed Flows

Peak Flow Comparison

	10 YR Exist	10 YR Prop.	25 YR Exist	25 YR Prop.	100 YR Exist	100 YR Prop.
Azud Rd Culvert	7.2 CFS	3.6 CFS	10.9	8.9 CFS	17.0 CFS	18.9 CFS
Azud Rd CB	1.6 CFS	1.3 CFS	2.4 CFS	1.9 CFS	3.8 CFS	2.8 CFS
Route 12 CB	11.1 CFS	4.6 CFS	16.5 CFS	9.5 CFS	25.4 CFS	21.7 CFS

As per the results above, peak flows will generally decrease after construction due to the project's design of stormwater basins. The one exception is for the 100-year storm at the AZUD road culvert. For more frequent storm events flow will be decreased to this culvert. This town owned 15" culvert is undersized for existing conditions. Even without this project the culvert should be replaced with an 18" culvert due to the size of the drainage area in order to keep stormwater from flooding the road and running down to Riverside Drive. In addition, replacing the culvert will remove a very dangerous inlet structure from Azud Road.

F. Stormwater Basins

Because of the developer's desire to develop the project in phases, a stormwater basin has been designed for each phase except the last phase. This has the benefit of distributing stormwater features throughout the site instead of concentrating flow to one discharge point. In addition to attenuating peak flows, the stormwater basins will help treat the stormwater through settling out of coarse particles and via filtration.

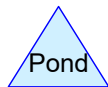
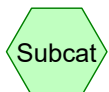
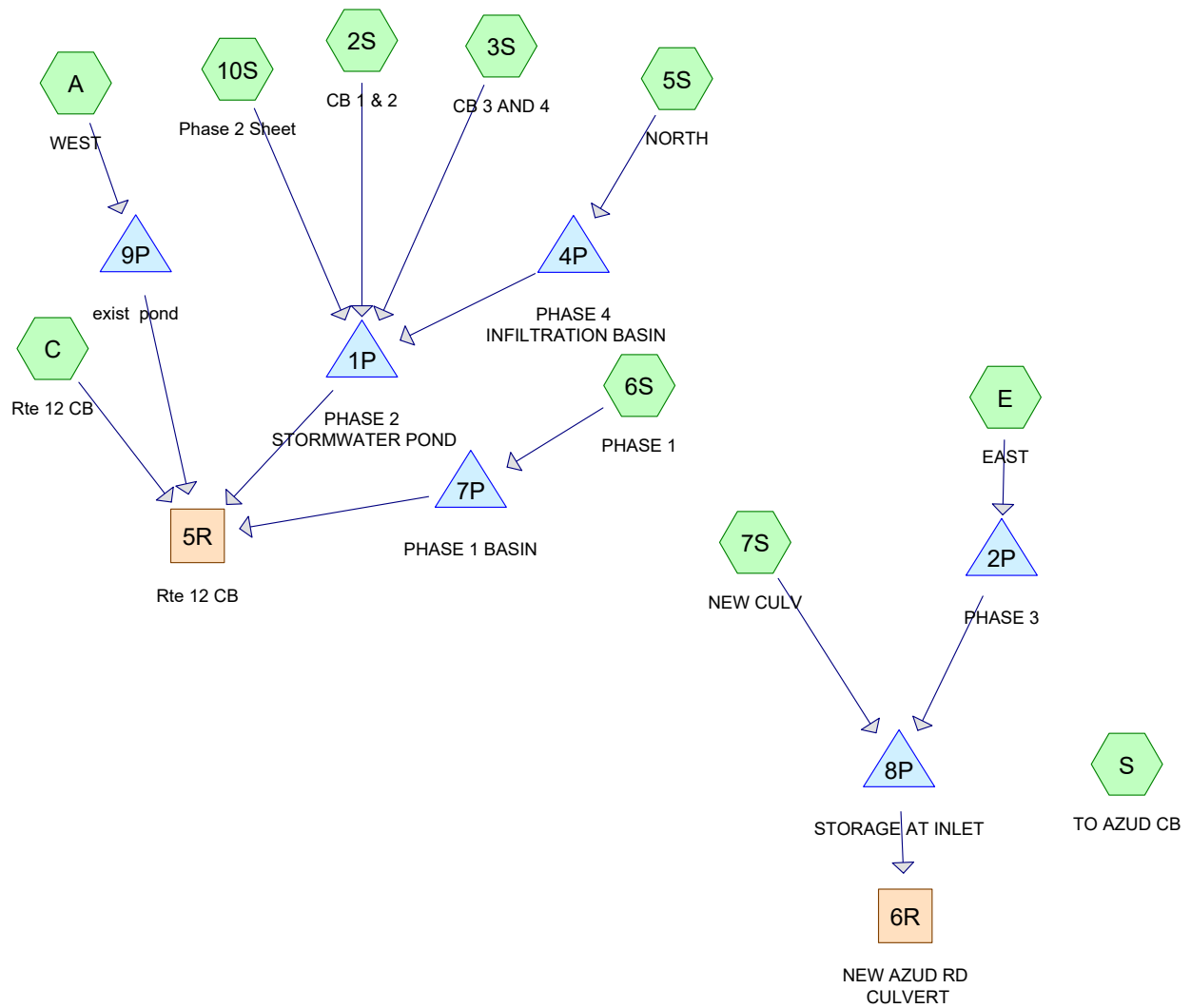
The basin for Phase 1 will be created in the excessively well drained Hinckley soils by adding a small berm to the downstream end of a previously excavated area. The basin area is large enough that it will not discharge at all during frequent storm events.

The stormwater basin for Phase 2 will be adjacent to the existing wetlands but will not drain into them since the ponds within the wetlands may function as vernal pools. The discharge channel from the Phase 2 basin will be located next to the outlet channel from the existing pond. The bottom of the Phase 2 basin will be set at the same elevation as the outlet to the existing pond so it will be a few feet higher than the bottom of the lower pond. A sediment forebay will be constructed at the upper end of the Phase 2 stormwater basin to trap sediment from the proposed driveway system.

The stormwater basin for Phase 3 will be constructed by adding a low berm on the lower side of a flat area near Azud Road. In Phase 4, a linear basin, primarily for stormwater quality, will be constructed behind some of the units and it will overflow to the Phase 2 basin.

G. Stormwater Quality

Water quality calculations are included and the design of drainage features includes ample storage to contain the water quality volume for the site.



Routing Diagram for 22203 LAVALLEE PROP multi-family 2023-03-22

Prepared by J & D Civil Engineers, LLC, Printed 3/28/2023
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22203 LAVALLEE PROP multi-family 2023-03-22

Prepared by J & D Civil Engineers, LLC

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	CT 10-year	Type III 24-hr		Default	24.00	1	5.18	2
2	CT 100-year	Type III 24-hr		Default	24.00	1	8.03	2
3	CT 25-year	Type III 24-hr		Default	24.00	1	6.30	2

Summary for Subcatchment 2S: CB 1 & 2

Runoff = 1.43 cfs @ 12.07 hrs, Volume= 0.107 af, Depth= 4.60"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.260	98	Paved parking, HSG B
0.020	61	>75% Grass cover, Good, HSG B
0.280	95	Weighted Average
0.020		7.14% Pervious Area
0.260		92.86% Impervious Area

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

Summary for Subcatchment 3S: CB 3 AND 4

Runoff = 1.11 cfs @ 12.07 hrs, Volume= 0.076 af, Depth= 3.05"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.300	80	Weighted Average
0.150		50.00% Pervious Area
0.150		50.00% Impervious Area

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

Summary for Subcatchment 5S: NORTH

Runoff = 6.66 cfs @ 12.35 hrs, Volume= 0.783 af, Depth= 1.93"
 Routed to Pond 4P : PHASE 4 INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

22203 LAVALLEE PROP multi-family 2023-03-22 Type III 24-hr CT 10-year Rainfall=5.18"

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Page 4

Area (ac)	CN	Description
0.930	98	Paved parking, HSG B
1.110	61	>75% Grass cover, Good, HSG B
2.830	60	Woods, Fair, HSG B
4.870	67	Weighted Average
3.940		80.90% Pervious Area
0.930		19.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	200	0.0800	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	290	0.1500	2.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.3	300	0.0370	3.90		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.9	790	Total			

Summary for Subcatchment 6S: PHASE 1

Runoff = 1.82 cfs @ 12.10 hrs, Volume= 0.134 af, Depth= 2.51"
 Routed to Pond 7P : PHASE 1 BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.270	98	Paved parking, HSG B
0.300	61	>75% Grass cover, Good, HSG B
0.070	39	>75% Grass cover, Good, HSG A
0.640	74	Weighted Average
0.370		57.81% Pervious Area
0.270		42.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	160	0.1200	0.39		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment 7S: NEW CULV

Runoff = 3.56 cfs @ 12.29 hrs, Volume= 0.386 af, Depth= 2.42"
 Routed to Pond 8P : STORAGE AT INLET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.630	98	Paved parking, HSG B
0.480	61	>75% Grass cover, Good, HSG B
0.800	60	Woods, Fair, HSG B
1.910	73	Weighted Average
1.280		67.02% Pervious Area
0.630		32.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	200	0.0900	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.0	140	0.1100	2.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	340	Total			

Summary for Subcatchment 10S: Phase 2 Sheet

Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 1.77"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.050	98	Roofs, HSG B
0.350	61	>75% Grass cover, Good, HSG B
0.040	60	Woods, Fair, HSG B
0.440	65	Weighted Average
0.390		88.64% Pervious Area
0.050		11.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	130	0.1500	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment A: WEST

Runoff = 1.87 cfs @ 12.24 hrs, Volume= 0.199 af, Depth= 1.41"
 Routed to Pond 9P : exist pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.060	43	Woods/grass comb., Fair, HSG A
1.300	60	Woods, Fair, HSG B
0.340	61	>75% Grass cover, Good, HSG B
1.700	60	Weighted Average
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	105	0.0570	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
9.3	110	0.1800	0.20		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
15.8	215	Total			

Summary for Subcatchment C: Rte 12 CB

Runoff = 3.14 cfs @ 12.35 hrs, Volume= 0.365 af, Depth= 1.93"
 Routed to Reach 5R : Rte 12 CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.330	96	Gravel surface, HSG A
0.510	98	Paved parking, HSG A
0.160	36	Woods, Fair, HSG A
0.380	60	Woods, Fair, HSG B
0.490	49	50-75% Grass cover, Fair, HSG A
0.400	43	Woods/grass comb., Fair, HSG A
2.270	67	Weighted Average
1.760		77.53% Pervious Area
0.510		22.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	200	0.1300	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	110	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.2	722	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.3	1,032	Total			

Summary for Subcatchment E: EAST

Runoff = 5.77 cfs @ 12.34 hrs, Volume= 0.677 af, Depth= 1.62"
 Routed to Pond 2P : PHASE 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.330	98	Paved parking, HSG B
2.100	61	>75% Grass cover, Good, HSG B
2.570	60	Woods, Fair, HSG B
5.000	63	Weighted Average
4.670		93.40% Pervious Area
0.330		6.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	200	0.1000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
2.9	345	0.1600	2.00		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
22.0	545	Total			

Summary for Subcatchment S: TO AZUD CB

Runoff = 1.31 cfs @ 12.12 hrs, Volume= 0.103 af, Depth= 2.17"
 Routed to nonexistent node 9R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.18"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG A
0.200	98	Paved parking, HSG B
0.160	39	>75% Grass cover, Good, HSG A
0.180	61	>75% Grass cover, Good, HSG B
0.570	70	Weighted Average
0.340		59.65% Pervious Area
0.230		40.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	200	0.1100	0.40		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Reach 5R: Rte 12 CB

Inflow Area = 10.500 ac, 20.67% Impervious, Inflow Depth = 0.67" for CT 10-year event
 Inflow = 4.62 cfs @ 12.35 hrs, Volume= 0.583 af
 Outflow = 4.62 cfs @ 12.35 hrs, Volume= 0.583 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 6R: NEW AZUD RD CULVERT

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 0.87" for CT 10-year event
 Inflow = 3.56 cfs @ 12.30 hrs, Volume= 0.500 af
 Outflow = 3.56 cfs @ 12.30 hrs, Volume= 0.500 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: PHASE 2 STORMWATER POND

Inflow Area = 5.890 ac, 23.60% Impervious, Inflow Depth = 1.38" for CT 10-year event
 Inflow = 7.53 cfs @ 12.35 hrs, Volume= 0.675 af
 Outflow = 1.79 cfs @ 13.10 hrs, Volume= 0.675 af, Atten= 76%, Lag= 45.1 min
 Discarded = 0.67 cfs @ 13.10 hrs, Volume= 0.579 af
 Primary = 1.12 cfs @ 13.10 hrs, Volume= 0.096 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 355.73' @ 13.10 hrs Surf.Area= 7,272 sf Storage= 13,960 cf

Plug-Flow detention time= 190.7 min calculated for 0.675 af (100% of inflow)
 Center-of-Mass det. time= 190.7 min (991.6 - 801.0)

Volume	Invert	Avail.Storage	Storage Description
#1	353.00'	24,374 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)
353.00	1,896	170.0	0	0	1,896
354.00	5,044	297.0	3,344	3,344	6,621
356.00	7,651	375.0	12,605	15,949	10,846
357.00	9,223	414.0	8,425	24,374	13,327

Device	Routing	Invert	Outlet Devices
#1	Discarded	353.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	355.50'	4.0' long + 0.5' /' SideZ x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66			
2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32			

Discarded OutFlow Max=0.67 cfs @ 13.10 hrs HW=355.73' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.67 cfs)

Primary OutFlow Max=1.11 cfs @ 13.10 hrs HW=355.73' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 1.11 cfs @ 1.16 fps)

Summary for Pond 2P: PHASE 3

Inflow Area = 5.000 ac, 6.60% Impervious, Inflow Depth = 1.62" for CT 10-year event
 Inflow = 5.77 cfs @ 12.34 hrs, Volume= 0.677 af
 Outflow = 1.77 cfs @ 12.93 hrs, Volume= 0.677 af, Atten= 69%, Lag= 35.8 min
 Discarded = 0.45 cfs @ 12.93 hrs, Volume= 0.561 af
 Primary = 1.32 cfs @ 12.93 hrs, Volume= 0.115 af
 Routed to Pond 8P : STORAGE AT INLET

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 375.12' @ 12.93 hrs Surf.Area= 4,859 sf Storage= 11,238 cf

Plug-Flow detention time= 258.5 min calculated for 0.677 af (100% of inflow)
 Center-of-Mass det. time= 258.5 min (1,137.5 - 879.0)

Volume	Invert	Avail.Storage	Storage Description
#1	372.00'	18,853 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)
372.00	2,534	221.0	0	0	2,534
374.00	3,862	265.0	6,350	6,350	4,304
376.50	6,235	343.0	12,503	18,853	8,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	372.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.00'	19.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	100.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.45 cfs @ 12.93 hrs HW=375.12' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.45 cfs)

Primary OutFlow Max=1.30 cfs @ 12.93 hrs HW=375.12' (Free Discharge)
 ↑ **2=Orifice/Grate** (Weir Controls 1.30 cfs @ 1.15 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 4P: PHASE 4 INFILTRATION BASIN

Inflow Area = 4.870 ac, 19.10% Impervious, Inflow Depth = 1.93" for CT 10-year event
 Inflow = 6.66 cfs @ 12.35 hrs, Volume= 0.783 af
 Outflow = 6.65 cfs @ 12.36 hrs, Volume= 0.783 af, Atten= 0%, Lag= 0.7 min
 Discarded = 0.33 cfs @ 12.36 hrs, Volume= 0.357 af
 Primary = 6.32 cfs @ 12.36 hrs, Volume= 0.426 af
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 376.02' @ 12.36 hrs Surf.Area= 3,539 sf Storage= 4,684 cf

Plug-Flow detention time= 83.5 min calculated for 0.783 af (100% of inflow)
 Center-of-Mass det. time= 83.5 min (953.5 - 870.0)

Volume	Invert	Avail.Storage	Storage Description
#1	374.00'	8,843 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)
374.00	1,276	430.0	0	0	1,276
376.00	3,505	462.0	4,597	4,597	3,716
377.00	5,032	495.0	4,246	8,843	6,275

Device	Routing	Invert	Outlet Devices
#1	Discarded	374.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.70'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	140.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.33 cfs @ 12.36 hrs HW=376.02' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.33 cfs)

Primary OutFlow Max=6.13 cfs @ 12.36 hrs HW=376.02' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 4.84 cfs @ 1.86 fps)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 1.29 cfs @ 0.37 fps)

Summary for Pond 7P: PHASE 1 BASIN

Inflow Area = 0.640 ac, 42.19% Impervious, Inflow Depth = 2.51" for CT 10-year event
 Inflow = 1.82 cfs @ 12.10 hrs, Volume= 0.134 af
 Outflow = 0.24 cfs @ 12.83 hrs, Volume= 0.134 af, Atten= 87%, Lag= 43.5 min
 Discarded = 0.24 cfs @ 12.83 hrs, Volume= 0.134 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 347.69' @ 12.83 hrs Surf.Area= 1,696 sf Storage= 2,135 cf

Plug-Flow detention time= 87.4 min calculated for 0.134 af (100% of inflow)
 Center-of-Mass det. time= 87.4 min (923.9 - 836.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	346.00'	7,861 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)
346.00	875	128.0	0	0	875
348.00	1,875	183.0	2,687	2,687	2,271
350.00	3,371	259.0	5,173	7,861	4,981

Device	Routing	Invert	Outlet Devices											
#1	Discarded	346.00'	6.000 in/hr Exfiltration over Surface area											
#2	Primary	349.00'	15.0' long + 0.5 ' /' SideZ x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.67	2.65	2.66	2.66	
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Discarded OutFlow Max=0.24 cfs @ 12.83 hrs HW=347.69' (Free Discharge)
 ↗1=Exfiltration (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=346.00' (Free Discharge)
 ↗2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 8P: STORAGE AT INLET

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 0.87" for CT 10-year event
 Inflow = 3.56 cfs @ 12.29 hrs, Volume= 0.501 af
 Outflow = 3.56 cfs @ 12.30 hrs, Volume= 0.500 af, Atten= 0%, Lag= 0.6 min
 Primary = 3.56 cfs @ 12.30 hrs, Volume= 0.500 af
 Routed to Reach 6R : NEW AZUD RD CULVERT

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 345.47' @ 12.30 hrs Surf.Area= 188 sf Storage= 157 cf

Plug-Flow detention time= 2.3 min calculated for 0.500 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (847.2 - 845.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	344.00'	1,058 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)
344.00	43	25.0	0	0	43
346.00	266	46.0	277	277	181
347.50	827	110.0	781	1,058	984

Device	Routing	Invert	Outlet Devices
#1	Primary	344.50'	18.0" Round Culvert L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 344.50' / 344.00' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	347.00'	20.0' long + 0.5 '/ SideZ 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=3.56 cfs @ 12.30 hrs HW=345.47' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 3.56 cfs @ 2.95 fps)
 ↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 9P: exist pond

Inflow Area = 1.700 ac, 0.00% Impervious, Inflow Depth = 1.41" for CT 10-year event
 Inflow = 1.87 cfs @ 12.24 hrs, Volume= 0.199 af
 Outflow = 1.65 cfs @ 12.34 hrs, Volume= 0.199 af, Atten= 12%, Lag= 6.1 min
 Discarded = 0.16 cfs @ 12.34 hrs, Volume= 0.078 af
 Primary = 1.48 cfs @ 12.34 hrs, Volume= 0.122 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 352.33' @ 12.34 hrs Surf.Area= 2,367 sf Storage= 648 cf

Plug-Flow detention time= 6.9 min calculated for 0.199 af (100% of inflow)
 Center-of-Mass det. time= 6.9 min (888.8 - 881.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	352.00'	35,597 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)
352.00	1,543	157.0	0	0	1,543
354.00	9,094	680.0	9,589	9,589	36,388
356.00	17,356	768.0	26,009	35,597	46,631

Device	Routing	Invert	Outlet Devices
#1	Discarded	352.00'	3.000 in/hr Exfiltration over Surface area
#2	Primary	352.00'	3.0' long + 0.5 '/ SideZ x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.16 cfs @ 12.34 hrs HW=352.33' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.48 cfs @ 12.34 hrs HW=352.33' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 1.48 cfs @ 1.40 fps)

Summary for Subcatchment 2S: CB 1 & 2

Runoff = 2.26 cfs @ 12.07 hrs, Volume= 0.173 af, Depth= 7.43"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.260	98	Paved parking, HSG B
0.020	61	>75% Grass cover, Good, HSG B
0.280	95	Weighted Average
0.020		7.14% Pervious Area
0.260		92.86% Impervious Area

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

Summary for Subcatchment 3S: CB 3 AND 4

Runoff = 2.03 cfs @ 12.07 hrs, Volume= 0.141 af, Depth= 5.65"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.300	80	Weighted Average
0.150		50.00% Pervious Area
0.150		50.00% Impervious Area

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

Summary for Subcatchment 5S: NORTH

Runoff = 14.76 cfs @ 12.34 hrs, Volume= 1.683 af, Depth= 4.15"
 Routed to Pond 4P : PHASE 4 INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

22203 LAVALLEE PROP multi-family 2023-03-22 Type III 24-hr CT 100-year Rainfall=8.03"

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Area (ac)	CN	Description
0.930	98	Paved parking, HSG B
1.110	61	>75% Grass cover, Good, HSG B
2.830	60	Woods, Fair, HSG B
4.870	67	Weighted Average
3.940		80.90% Pervious Area
0.930		19.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	200	0.0800	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	290	0.1500	2.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.3	300	0.0370	3.90		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.9	790	Total			

Summary for Subcatchment 6S: PHASE 1

Runoff = 3.61 cfs @ 12.10 hrs, Volume= 0.264 af, Depth= 4.95"
 Routed to Pond 7P : PHASE 1 BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.270	98	Paved parking, HSG B
0.300	61	>75% Grass cover, Good, HSG B
0.070	39	>75% Grass cover, Good, HSG A
0.640	74	Weighted Average
0.370		57.81% Pervious Area
0.270		42.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	160	0.1200	0.39		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment 7S: NEW CULV

Runoff = 7.17 cfs @ 12.28 hrs, Volume= 0.770 af, Depth= 4.84"
 Routed to Pond 8P : STORAGE AT INLET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

22203 LAVALLEE PROP multi-family 2023-03-22 Type III 24-hr CT 100-year Rainfall=8.03"

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Area (ac)	CN	Description
0.630	98	Paved parking, HSG B
0.480	61	>75% Grass cover, Good, HSG B
0.800	60	Woods, Fair, HSG B
1.910	73	Weighted Average
1.280		67.02% Pervious Area
0.630		32.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	200	0.0900	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.0	140	0.1100	2.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	340	Total			

Summary for Subcatchment 10S: Phase 2 Sheet

Runoff = 2.08 cfs @ 12.08 hrs, Volume= 0.144 af, Depth= 3.92"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.050	98	Roofs, HSG B
0.350	61	>75% Grass cover, Good, HSG B
0.040	60	Woods, Fair, HSG B
0.440	65	Weighted Average
0.390		88.64% Pervious Area
0.050		11.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	130	0.1500	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment A: WEST

Runoff = 4.86 cfs @ 12.23 hrs, Volume= 0.475 af, Depth= 3.36"
 Routed to Pond 9P : exist pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

22203 LAVALLEE PROP multi-family 2023-03-22 Type III 24-hr CT 100-year Rainfall=8.03"

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Area (ac)	CN	Description
0.060	43	Woods/grass comb., Fair, HSG A
1.300	60	Woods, Fair, HSG B
0.340	61	>75% Grass cover, Good, HSG B
1.700	60	Weighted Average
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	105	0.0570	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
9.3	110	0.1800	0.20		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
15.8	215	Total			

Summary for Subcatchment C: Rte 12 CB

Runoff = 6.95 cfs @ 12.33 hrs, Volume= 0.784 af, Depth= 4.15"
 Routed to Reach 5R : Rte 12 CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.330	96	Gravel surface, HSG A
0.510	98	Paved parking, HSG A
0.160	36	Woods, Fair, HSG A
0.380	60	Woods, Fair, HSG B
0.490	49	50-75% Grass cover, Fair, HSG A
0.400	43	Woods/grass comb., Fair, HSG A
2.270	67	Weighted Average
1.760		77.53% Pervious Area
0.510		22.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	200	0.1300	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	110	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.2	722	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.3	1,032	Total			

Summary for Subcatchment E: EAST

Runoff = 13.88 cfs @ 12.30 hrs, Volume= 1.538 af, Depth= 3.69"
 Routed to Pond 2P : PHASE 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.330	98	Paved parking, HSG B
2.100	61	>75% Grass cover, Good, HSG B
2.570	60	Woods, Fair, HSG B
5.000	63	Weighted Average
4.670		93.40% Pervious Area
0.330		6.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	200	0.1000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
2.9	345	0.1600	2.00		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
22.0	545	Total			

Summary for Subcatchment S: TO AZUD CB

Runoff = 2.76 cfs @ 12.12 hrs, Volume= 0.213 af, Depth= 4.49"
 Routed to nonexistent node 9R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.03"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG A
0.200	98	Paved parking, HSG B
0.160	39	>75% Grass cover, Good, HSG A
0.180	61	>75% Grass cover, Good, HSG B
0.570	70	Weighted Average
0.340		59.65% Pervious Area
0.230		40.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	200	0.1100	0.40		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Reach 5R: Rte 12 CB

Inflow Area = 10.500 ac, 20.67% Impervious, Inflow Depth = 2.36" for CT 100-year event
 Inflow = 21.70 cfs @ 12.44 hrs, Volume= 2.068 af
 Outflow = 21.70 cfs @ 12.44 hrs, Volume= 2.068 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 6R: NEW AZUD RD CULVERT

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 2.79" for CT 100-year event
 Inflow = 18.88 cfs @ 12.38 hrs, Volume= 1.604 af
 Outflow = 18.88 cfs @ 12.38 hrs, Volume= 1.604 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: PHASE 2 STORMWATER POND

Inflow Area = 5.890 ac, 23.60% Impervious, Inflow Depth = 3.49" for CT 100-year event
 Inflow = 16.70 cfs @ 12.32 hrs, Volume= 1.713 af
 Outflow = 13.21 cfs @ 12.50 hrs, Volume= 1.713 af, Atten= 21%, Lag= 10.9 min
 Discarded = 0.78 cfs @ 12.50 hrs, Volume= 0.783 af
 Primary = 12.43 cfs @ 12.50 hrs, Volume= 0.930 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 356.54' @ 12.50 hrs Surf.Area= 8,475 sf Storage= 20,268 cf

Plug-Flow detention time= 114.0 min calculated for 1.713 af (100% of inflow)
 Center-of-Mass det. time= 114.0 min (921.5 - 807.5)

Volume	Invert	Avail.Storage	Storage Description											
#1	353.00'	24,374 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)					
353.00	1,896	170.0	0			0			1,896					
354.00	5,044	297.0	3,344			3,344			6,621					
356.00	7,651	375.0	12,605			15,949			10,846					
357.00	9,223	414.0	8,425			24,374			13,327					
Device	Routing	Invert	Outlet Devices											
#1	Discarded	353.00'	4.000 in/hr Exfiltration over Surface area											
#2	Primary	355.50'	4.0' long + 0.5' /' SideZ x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66		
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Discarded OutFlow Max=0.78 cfs @ 12.50 hrs HW=356.54' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.78 cfs)

Primary OutFlow Max=12.42 cfs @ 12.50 hrs HW=356.54' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 12.42 cfs @ 2.66 fps)

Summary for Pond 2P: PHASE 3

Inflow Area = 5.000 ac, 6.60% Impervious, Inflow Depth = 3.69" for CT 100-year event
 Inflow = 13.88 cfs @ 12.30 hrs, Volume= 1.538 af
 Outflow = 12.94 cfs @ 12.40 hrs, Volume= 1.538 af, Atten= 7%, Lag= 5.7 min
 Discarded = 0.49 cfs @ 12.40 hrs, Volume= 0.703 af
 Primary = 12.45 cfs @ 12.40 hrs, Volume= 0.835 af
 Routed to Pond 8P : STORAGE AT INLET

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 375.56' @ 12.40 hrs Surf.Area= 5,273 sf Storage= 13,431 cf

Plug-Flow detention time= 150.3 min calculated for 1.538 af (100% of inflow)
 Center-of-Mass det. time= 150.4 min (1,004.6 - 854.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	372.00'	18,853 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)
372.00	2,534	221.0	0	0	2,534
374.00	3,862	265.0	6,350	6,350	4,304
376.50	6,235	343.0	12,503	18,853	8,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	372.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.00'	19.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	100.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.49 cfs @ 12.40 hrs HW=375.56' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.49 cfs)

Primary OutFlow Max=12.45 cfs @ 12.40 hrs HW=375.56' (Free Discharge)
 ↑ **2=Orifice/Grate** (Weir Controls 12.45 cfs @ 2.44 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 4P: PHASE 4 INFILTRATION BASIN

Inflow Area = 4.870 ac, 19.10% Impervious, Inflow Depth = 4.15" for CT 100-year event
 Inflow = 14.76 cfs @ 12.34 hrs, Volume= 1.683 af
 Outflow = 14.76 cfs @ 12.35 hrs, Volume= 1.683 af, Atten= 0%, Lag= 0.3 min
 Discarded = 0.34 cfs @ 12.35 hrs, Volume= 0.428 af
 Primary = 14.43 cfs @ 12.35 hrs, Volume= 1.255 af
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 376.08' @ 12.35 hrs Surf.Area= 3,623 sf Storage= 4,897 cf

Plug-Flow detention time= 48.3 min calculated for 1.682 af (100% of inflow)
 Center-of-Mass det. time= 48.4 min (895.9 - 847.5)

Volume	Invert	Avail.Storage	Storage Description
#1	374.00'	8,843 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)
374.00	1,276	430.0	0	0	1,276
376.00	3,505	462.0	4,597	4,597	3,716
377.00	5,032	495.0	4,246	8,843	6,275

Device	Routing	Invert	Outlet Devices
#1	Discarded	374.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.70'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	140.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.34 cfs @ 12.35 hrs HW=376.08' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=14.32 cfs @ 12.35 hrs HW=376.08' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 6.23 cfs @ 2.03 fps)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 8.09 cfs @ 0.69 fps)

Summary for Pond 7P: PHASE 1 BASIN

Inflow Area = 0.640 ac, 42.19% Impervious, Inflow Depth = 4.95" for CT 100-year event
 Inflow = 3.61 cfs @ 12.10 hrs, Volume= 0.264 af
 Outflow = 0.40 cfs @ 12.90 hrs, Volume= 0.264 af, Atten= 89%, Lag= 48.3 min
 Discarded = 0.36 cfs @ 12.90 hrs, Volume= 0.263 af
 Primary = 0.04 cfs @ 12.90 hrs, Volume= 0.001 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 349.01' @ 12.90 hrs Surf.Area= 2,573 sf Storage= 4,914 cf

Plug-Flow detention time= 150.8 min calculated for 0.264 af (100% of inflow)

Center-of-Mass det. time= 150.7 min (967.6 - 816.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	346.00'	7,861 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)
346.00	875	128.0	0	0	875
348.00	1,875	183.0	2,687	2,687	2,271
350.00	3,371	259.0	5,173	7,861	4,981

Device	Routing	Invert	Outlet Devices											
#1	Discarded	346.00'	6.000 in/hr Exfiltration over Surface area											
#2	Primary	349.00'	15.0' long + 0.5 ' /' SideZ x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.67	2.65	2.66	2.66	
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Discarded OutFlow Max=0.36 cfs @ 12.90 hrs HW=349.01' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Primary OutFlow Max=0.01 cfs @ 12.90 hrs HW=349.01' (Free Discharge)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.18 fps)

Summary for Pond 8P: STORAGE AT INLET

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 2.79" for CT 100-year event
 Inflow = 18.89 cfs @ 12.38 hrs, Volume= 1.605 af
 Outflow = 18.88 cfs @ 12.38 hrs, Volume= 1.604 af, Atten= 0%, Lag= 0.3 min
 Primary = 18.88 cfs @ 12.38 hrs, Volume= 1.604 af
 Routed to Reach 6R : NEW AZUD RD CULVERT

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 347.28' @ 12.38 hrs Surf.Area= 727 sf Storage= 890 cf

Plug-Flow detention time= 1.3 min calculated for 1.604 af (100% of inflow)

Center-of-Mass det. time= 1.0 min (818.4 - 817.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	344.00'	1,058 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)
344.00	43	25.0	0	0	43
346.00	266	46.0	277	277	181
347.50	827	110.0	781	1,058	984

Device	Routing	Invert	Outlet Devices
#1	Primary	344.50'	18.0" Round Culvert L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 344.50' / 344.00' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	347.00'	20.0' long + 0.5 '/ SideZ 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=18.87 cfs @ 12.38 hrs HW=347.28' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 10.71 cfs @ 6.06 fps)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 8.16 cfs @ 1.43 fps)

Summary for Pond 9P: exist pond

Inflow Area = 1.700 ac, 0.00% Impervious, Inflow Depth = 3.36" for CT 100-year event
 Inflow = 4.86 cfs @ 12.23 hrs, Volume= 0.475 af
 Outflow = 4.44 cfs @ 12.30 hrs, Volume= 0.475 af, Atten= 9%, Lag= 4.4 min
 Discarded = 0.22 cfs @ 12.30 hrs, Volume= 0.123 af
 Primary = 4.22 cfs @ 12.30 hrs, Volume= 0.352 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 352.61' @ 12.30 hrs Surf.Area= 3,192 sf Storage= 1,424 cf

Plug-Flow detention time= 6.6 min calculated for 0.475 af (100% of inflow)
 Center-of-Mass det. time= 6.6 min (861.6 - 855.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	352.00'	35,597 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)
352.00	1,543	157.0	0	0	1,543
354.00	9,094	680.0	9,589	9,589	36,388
356.00	17,356	768.0	26,009	35,597	46,631

Device	Routing	Invert	Outlet Devices
#1	Discarded	352.00'	3.000 in/hr Exfiltration over Surface area
#2	Primary	352.00'	3.0' long + 0.5 '/ SideZ x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.22 cfs @ 12.30 hrs HW=352.61' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=4.21 cfs @ 12.30 hrs HW=352.61' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 4.21 cfs @ 2.08 fps)

Summary for Subcatchment 2S: CB 1 & 2

Runoff = 1.76 cfs @ 12.07 hrs, Volume= 0.133 af, Depth= 5.71"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.260	98	Paved parking, HSG B
0.020	61	>75% Grass cover, Good, HSG B
0.280	95	Weighted Average
0.020		7.14% Pervious Area
0.260		92.86% Impervious Area

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

Summary for Subcatchment 3S: CB 3 AND 4

Runoff = 1.47 cfs @ 12.07 hrs, Volume= 0.101 af, Depth= 4.05"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.300	80	Weighted Average
0.150		50.00% Pervious Area
0.150		50.00% Impervious Area

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

Summary for Subcatchment 5S: NORTH

Runoff = 9.72 cfs @ 12.35 hrs, Volume= 1.120 af, Depth= 2.76"
 Routed to Pond 4P : PHASE 4 INFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.930	98	Paved parking, HSG B
1.110	61	>75% Grass cover, Good, HSG B
2.830	60	Woods, Fair, HSG B
4.870	67	Weighted Average
3.940		80.90% Pervious Area
0.930		19.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	200	0.0800	0.16		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	290	0.1500	2.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.3	300	0.0370	3.90		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.9	790	Total			

Summary for Subcatchment 6S: PHASE 1

Runoff = 2.51 cfs @ 12.10 hrs, Volume= 0.183 af, Depth= 3.44"
 Routed to Pond 7P : PHASE 1 BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.270	98	Paved parking, HSG B
0.300	61	>75% Grass cover, Good, HSG B
0.070	39	>75% Grass cover, Good, HSG A
0.640	74	Weighted Average
0.370		57.81% Pervious Area
0.270		42.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	160	0.1200	0.39		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment 7S: NEW CULV

Runoff = 4.95 cfs @ 12.29 hrs, Volume= 0.531 af, Depth= 3.34"
 Routed to Pond 8P : STORAGE AT INLET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.630	98	Paved parking, HSG B
0.480	61	>75% Grass cover, Good, HSG B
0.800	60	Woods, Fair, HSG B
1.910	73	Weighted Average
1.280		67.02% Pervious Area
0.630		32.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	200	0.0900	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.0	140	0.1100	2.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	340	Total			

Summary for Subcatchment 10S: Phase 2 Sheet

Runoff = 1.34 cfs @ 12.08 hrs, Volume= 0.094 af, Depth= 2.57"
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.050	98	Roofs, HSG B
0.350	61	>75% Grass cover, Good, HSG B
0.040	60	Woods, Fair, HSG B
0.440	65	Weighted Average
0.390		88.64% Pervious Area
0.050		11.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	130	0.1500	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Subcatchment A: WEST

Runoff = 2.97 cfs @ 12.23 hrs, Volume= 0.300 af, Depth= 2.12"
 Routed to Pond 9P : exist pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.060	43	Woods/grass comb., Fair, HSG A
1.300	60	Woods, Fair, HSG B
0.340	61	>75% Grass cover, Good, HSG B
1.700	60	Weighted Average
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	105	0.0570	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
9.3	110	0.1800	0.20		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
15.8	215	Total			

Summary for Subcatchment C: Rte 12 CB

Runoff = 4.57 cfs @ 12.34 hrs, Volume= 0.522 af, Depth= 2.76"
 Routed to Reach 5R : Rte 12 CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.330	96	Gravel surface, HSG A
0.510	98	Paved parking, HSG A
0.160	36	Woods, Fair, HSG A
0.380	60	Woods, Fair, HSG B
0.490	49	50-75% Grass cover, Fair, HSG A
0.400	43	Woods/grass comb., Fair, HSG A
2.270	67	Weighted Average
1.760		77.53% Pervious Area
0.510		22.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.2	200	0.1300	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	110	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.2	722	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.3	1,032	Total			

Summary for Subcatchment E: EAST

Runoff = 8.77 cfs @ 12.32 hrs, Volume= 0.995 af, Depth= 2.39"
 Routed to Pond 2P : PHASE 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.330	98	Paved parking, HSG B
2.100	61	>75% Grass cover, Good, HSG B
2.570	60	Woods, Fair, HSG B
5.000	63	Weighted Average
4.670		93.40% Pervious Area
0.330		6.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	200	0.1000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
2.9	345	0.1600	2.00		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
22.0	545	Total			

Summary for Subcatchment S: TO AZUD CB

Runoff = 1.87 cfs @ 12.12 hrs, Volume= 0.145 af, Depth= 3.05"
 Routed to nonexistent node 9R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.30"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG A
0.200	98	Paved parking, HSG B
0.160	39	>75% Grass cover, Good, HSG A
0.180	61	>75% Grass cover, Good, HSG B
0.570	70	Weighted Average
0.340		59.65% Pervious Area
0.230		40.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	200	0.1100	0.40		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"

Summary for Reach 5R: Rte 12 CB

Inflow Area = 10.500 ac, 20.67% Impervious, Inflow Depth = 1.28" for CT 25-year event
 Inflow = 9.48 cfs @ 12.60 hrs, Volume= 1.117 af
 Outflow = 9.48 cfs @ 12.60 hrs, Volume= 1.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach 6R: NEW AZUD RD CULVERT

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 1.56" for CT 25-year event
 Inflow = 8.66 cfs @ 12.58 hrs, Volume= 0.900 af
 Outflow = 8.66 cfs @ 12.58 hrs, Volume= 0.900 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: PHASE 2 STORMWATER POND

Inflow Area = 5.890 ac, 23.60% Impervious, Inflow Depth = 2.15" for CT 25-year event
 Inflow = 11.01 cfs @ 12.33 hrs, Volume= 1.053 af
 Outflow = 5.94 cfs @ 12.68 hrs, Volume= 1.053 af, Atten= 46%, Lag= 20.9 min
 Discarded = 0.72 cfs @ 12.68 hrs, Volume= 0.661 af
 Primary = 5.22 cfs @ 12.68 hrs, Volume= 0.392 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 356.10' @ 12.68 hrs Surf.Area= 7,794 sf Storage= 16,683 cf

Plug-Flow detention time= 148.3 min calculated for 1.053 af (100% of inflow)
 Center-of-Mass det. time= 148.3 min (950.3 - 802.0)

Volume	Invert	Avail.Storage	Storage Description										
#1	353.00'	24,374 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)		
353.00	1,896	170.0	0				0				1,896		
354.00	5,044	297.0	3,344				3,344				6,621		
356.00	7,651	375.0	12,605				15,949				10,846		
357.00	9,223	414.0	8,425				24,374				13,327		
Device	Routing	Invert	Outlet Devices										
#1	Discarded	353.00'	4.000 in/hr Exfiltration over Surface area										
#2	Primary	355.50'	4.0' long + 0.5 ' /' SideZ x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66	
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32		

Discarded OutFlow Max=0.72 cfs @ 12.68 hrs HW=356.09' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.72 cfs)

Primary OutFlow Max=5.22 cfs @ 12.68 hrs HW=356.09' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 5.22 cfs @ 2.04 fps)

Summary for Pond 2P: PHASE 3

Inflow Area = 5.000 ac, 6.60% Impervious, Inflow Depth = 2.39" for CT 25-year event
 Inflow = 8.77 cfs @ 12.32 hrs, Volume= 0.995 af
 Outflow = 6.15 cfs @ 12.57 hrs, Volume= 0.995 af, Atten= 30%, Lag= 14.7 min
 Discarded = 0.47 cfs @ 12.57 hrs, Volume= 0.626 af
 Primary = 5.68 cfs @ 12.57 hrs, Volume= 0.369 af
 Routed to Pond 8P : STORAGE AT INLET

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 375.33' @ 12.57 hrs Surf.Area= 5,054 sf Storage= 12,261 cf

Plug-Flow detention time= 201.8 min calculated for 0.995 af (100% of inflow)
 Center-of-Mass det. time= 201.9 min (1,069.0 - 867.1)

Volume	Invert	Avail.Storage	Storage Description
#1	372.00'	18,853 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)
372.00	2,534	221.0	0	0	2,534
374.00	3,862	265.0	6,350	6,350	4,304
376.50	6,235	343.0	12,503	18,853	8,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	372.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.00'	19.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	100.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.47 cfs @ 12.57 hrs HW=375.33' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.47 cfs)

Primary OutFlow Max=5.68 cfs @ 12.57 hrs HW=375.33' (Free Discharge)
 ↑ **2=Orifice/Grate** (Weir Controls 5.68 cfs @ 1.88 fps)
 ↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 4P: PHASE 4 INFILTRATION BASIN

Inflow Area = 4.870 ac, 19.10% Impervious, Inflow Depth = 2.76" for CT 25-year event
 Inflow = 9.72 cfs @ 12.35 hrs, Volume= 1.120 af
 Outflow = 9.71 cfs @ 12.35 hrs, Volume= 1.120 af, Atten= 0%, Lag= 0.3 min
 Discarded = 0.33 cfs @ 12.35 hrs, Volume= 0.395 af
 Primary = 9.38 cfs @ 12.35 hrs, Volume= 0.724 af
 Routed to Pond 1P : PHASE 2 STORMWATER POND

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 376.05' @ 12.35 hrs Surf.Area= 3,576 sf Storage= 4,778 cf

Plug-Flow detention time= 66.2 min calculated for 1.119 af (100% of inflow)
 Center-of-Mass det. time= 66.2 min (925.6 - 859.4)

Volume	Invert	Avail.Storage	Storage Description
#1	374.00'	8,843 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)
374.00	1,276	430.0	0	0	1,276
376.00	3,505	462.0	4,597	4,597	3,716
377.00	5,032	495.0	4,246	8,843	6,275

Device	Routing	Invert	Outlet Devices
#1	Discarded	374.00'	4.000 in/hr Exfiltration over Surface area
#2	Primary	375.70'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	376.00'	140.0' long + 0.5 ' SideZ x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.33 cfs @ 12.35 hrs HW=376.05' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.33 cfs)

Primary OutFlow Max=9.26 cfs @ 12.35 hrs HW=376.05' (Free Discharge)

↑ **2=Orifice/Grate** (Weir Controls 5.44 cfs @ 1.94 fps)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 3.82 cfs @ 0.54 fps)

Summary for Pond 7P: PHASE 1 BASIN

Inflow Area = 0.640 ac, 42.19% Impervious, Inflow Depth = 3.44" for CT 25-year event
 Inflow = 2.51 cfs @ 12.10 hrs, Volume= 0.183 af
 Outflow = 0.28 cfs @ 12.93 hrs, Volume= 0.183 af, Atten= 89%, Lag= 49.6 min
 Discarded = 0.28 cfs @ 12.93 hrs, Volume= 0.183 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 348.25' @ 12.93 hrs Surf.Area= 2,036 sf Storage= 3,169 cf

Plug-Flow detention time= 115.4 min calculated for 0.183 af (100% of inflow)
 Center-of-Mass det. time= 115.4 min (942.7 - 827.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	346.00'	7,861 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)
346.00	875	128.0	0	0	875
348.00	1,875	183.0	2,687	2,687	2,271
350.00	3,371	259.0	5,173	7,861	4,981

Device	Routing	Invert	Outlet Devices											
#1	Discarded	346.00'	6.000 in/hr Exfiltration over Surface area											
#2	Primary	349.00'	15.0' long + 0.5 ' SideZ x 4.0' 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)	2.38	2.54	2.69	2.68	2.67	2.67	2.67	2.65	2.66	2.66	
				2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32			

Discarded OutFlow Max=0.28 cfs @ 12.93 hrs HW=348.25' (Free Discharge)
 ↗1=Exfiltration (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=346.00' (Free Discharge)
 ↗2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 8P: STORAGE AT INLET

Inflow Area = 6.910 ac, 13.89% Impervious, Inflow Depth = 1.56" for CT 25-year event
 Inflow = 8.85 cfs @ 12.54 hrs, Volume= 0.901 af
 Outflow = 8.66 cfs @ 12.58 hrs, Volume= 0.900 af, Atten= 2%, Lag= 2.1 min
 Primary = 8.66 cfs @ 12.58 hrs, Volume= 0.900 af
 Routed to Reach 6R : NEW AZUD RD CULVERT

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 346.58' @ 12.58 hrs Surf.Area= 446 sf Storage= 481 cf

Plug-Flow detention time= 1.6 min calculated for 0.900 af (100% of inflow)
 Center-of-Mass det. time= 1.1 min (829.1 - 828.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	344.00'	1,058 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)
344.00	43	25.0	0	0	43
346.00	266	46.0	277	277	181
347.50	827	110.0	781	1,058	984

Device	Routing	Invert	Outlet Devices
#1	Primary	344.50'	18.0" Round Culvert L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 344.50' / 344.00' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	347.00'	20.0' long + 0.5 '/ SideZ 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=8.65 cfs @ 12.58 hrs HW=346.58' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 8.65 cfs @ 4.90 fps)
 ↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 9P: exist pond

Inflow Area = 1.700 ac, 0.00% Impervious, Inflow Depth = 2.12" for CT 25-year event
 Inflow = 2.97 cfs @ 12.23 hrs, Volume= 0.300 af
 Outflow = 2.67 cfs @ 12.32 hrs, Volume= 0.300 af, Atten= 10%, Lag= 5.0 min
 Discarded = 0.19 cfs @ 12.32 hrs, Volume= 0.097 af
 Primary = 2.48 cfs @ 12.32 hrs, Volume= 0.204 af
 Routed to Reach 5R : Rte 12 CB

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 352.45' @ 12.32 hrs Surf.Area= 2,704 sf Storage= 951 cf

Plug-Flow detention time= 6.8 min calculated for 0.300 af (100% of inflow)
 Center-of-Mass det. time= 6.8 min (875.7 - 868.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	352.00'	35,597 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)
352.00	1,543	157.0	0	0	1,543
354.00	9,094	680.0	9,589	9,589	36,388
356.00	17,356	768.0	26,009	35,597	46,631

Device	Routing	Invert	Outlet Devices
#1	Discarded	352.00'	3.000 in/hr Exfiltration over Surface area
#2	Primary	352.00'	3.0' long + 0.5 '/ SideZ x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.19 cfs @ 12.32 hrs HW=352.45' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.19 cfs)

Primary OutFlow Max=2.48 cfs @ 12.32 hrs HW=352.45' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 2.48 cfs @ 1.70 fps)

22203 Lavallee final 2023-03-28.dwg EXISTING Drainage Areas 3/28/2023 09:25:40



EXISTING CONDITIONS DRAINAGE AREA PLAN
PREPARED FOR
LAVALLEE CONSTRUCTION LLC
RIVERSIDE DRIVE AND AZUD ROAD - THOMPSON, CT
MAP 67 BLOCK 53 LOTS 1G AND 1H

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

DESIGNED: JJB
CHECKED: DRB

REVISIONS:
3-28-23

JOB NO: 22203
SCALE: 1" = 60'

DATE: JANUARY 17, 2023
SHEET: 1 OF 1

JOB NO. 22203
DATE 1/25/23
BY JJB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. 1
JOB _____
SUBJECT WQV
CLIENT LAVALLEE

STORMWATER QUALITY CALCULATIONS

DETERMINE WQV FOR THE 4 STORMWATER BASINS

$$WQV = \frac{1'' R A}{12}$$

(IN AC-FT)

$$R = 0.05 + 0.0009 I$$

$$I = \% \text{ IMPERVIOUS}$$

$$A = \text{AREA (AC)}$$

STORMWATER BASIN #1

TOTAL AREA = 0.64 AC, ALL FROM PHASE I
% IMPERVIOUS = 42.2% (SEE HYDROCAD)

$$R = 0.088$$

$$WQV = \frac{1(0.088)(0.64)}{12} = 0.0047 \text{ AC-FT}$$

$$\underline{\underline{WQV = 204 \text{ FT}^3 \text{ REQUIRED}}}$$

STORMWATER BASIN #2

$$\begin{aligned} \text{TOTAL AREA} &= \text{AREA 'WEST'} + \text{CB 1, 2, 3 \& 4} \\ &= 1.98 + 0.28 + 0.41 = 2.67 \text{ AC} \end{aligned}$$

$$\text{AREA IMP} = 0.08 + 0.26 + 0.26 = 0.60 \text{ AC}$$

$$\% \text{ IMP AREA} = 0.60 / 2.67 = 0.23 = 23\%$$

$$R = 0.05 + 0.0009(23) = 0.07$$

$$WQV = \frac{1(0.07)(2.67)}{12} = 0.016 \text{ AC-FT}$$

$$\underline{\underline{WQV = 685 \text{ FT}^3 \text{ REQUIRED}}}$$

JOB NO. 22203
DATE 1/25/23
BY JJB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. 2
JOB _____
SUBJECT WQV
CLIENT LAVALLEE

STORMWATER BASIN #3

$$\text{TOTAL AREA} = \text{AREA 'EAST'} = 5.00 \text{ AC}$$

$$\% \text{ IMP AREA} = 6.6 \%$$

$$R = 0.05 + 0.0009(6.6) = 0.056$$

$$\text{WQV} = \frac{1(0.056)(5.0)}{12} = 0.023 \text{ AC-FT}$$

$$\underline{\underline{\text{WQV} = 1,016 \text{ FT}^3 \text{ REQ'D}}}$$

STORMWATER BASIN #4

$$\text{TOTAL AREA} = \text{'NORTH'} = 4.91 \text{ AC}$$

$$\% \text{ IMP. AREA} = 18.9 \%$$

$$R = 0.05 + 0.0009(18.9) = 0.67$$

$$\text{WQV} = \frac{1(0.67)(4.91)}{12} = 0.027 \text{ AC-FT}$$

$$\underline{\underline{\text{WQV} = 1194 \text{ FT}^3 \text{ REQ'D}}}$$

DETERMINE WQV PROVIDED ON SITE

STORMWATER BASIN #1 - THIS BASIN STORES

7860 FT^3 OF RUNOFF AND IS DESIGNED FOR INFILTRATION IN THE VERY PERVIOUS HINKLEY SOILS,

$$\underline{\underline{7860 \text{ FT}^3 > 204 \text{ FT}^3 \therefore \text{GOOD}}}$$

JOB NO. 222203
DATE 1/25/23
BY JJB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. 3
JOB _____
SUBJECT WQV
CLIENT LAVALLEE

STORMWATER BASIN #2

CREATE A SEPARATE SEDIMENT FOREBAY AT
OUTLET OF PIPES. DIMENSIONS:
 $\frac{1}{2} (50)(50) 2' \text{ DEEP} =$

STORMWATER BASIN #3 - THIS BASIN STORES
APPROXIMATELY 10,000 FT³ UP TO ELEV 375.00
CB GRATE

$$\underline{\underline{10,000 > 1,016 \text{ FT}^3 \therefore \text{GOOD}}}$$

STORMWATER BASIN #4 - THIS BASIN STORES
APPROXIMATELY 4000 FT³ UP TO ELEV 375.7
YARD BOX GRATE

$$\underline{\underline{4000 \text{ FT}^3 > 1194 \text{ FT}^3 \therefore \text{GOOD}}}$$

JOB NO. 22203
DATE 1/20/23
BY JSB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. _____
JOB _____
SUBJECT DRAINAGE
CLIENT LAVALLEE

INFILTRATION VELOCITIES TO USE IN HYDROCAD

$V = \text{EXFILTRATION VELOCITY (IN/HR)}$

$$V = \frac{60}{P}$$

$P = \text{PERC RATE IN MIN/IN}$

FOR HYD SOIL GROUP B (73 C, 73 E)

CHARLTON CHATFIELD

DRAINAGE CLASS: WELL DRAINED

PERC RATES FROM 2011 SUBDIVISION

A	4.4
B	3.6
C	2.2
D	6.6
E	4.4
F	6.6

} AVERAGE 4.6 MIN/IN

$$V = \frac{60}{4.6} = 13 \text{ IN/HR}$$

TO BE CONSERVATIVE USE $\frac{1}{3}$ OR $V = 4 \text{ IN/HR}$

FOR HYD SOIL GROUP A (30 C - HINCKLEY LOAMY SAND)

EXISTING WETLANDS INFILTRATE INTO GROUND

ASSUME PERC = 2 MIN/IN

$$V = \frac{60}{2} = 30 \text{ IN/HR}$$

TO BE CONSERVATIVE USE $\frac{1}{3}$ OR 10 IN/HR

(THIS IS ONLY APPLICABLE FOR THE
PHASE I STORMWATER BASIN)

JOB NO. 22203
DATE 1/30/23
BY JJB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. _____
JOB HILLSIDE
SUBJECT DRAWAGE
CLIENT LAVALLEE

DESIGN OF RIPRAP OUTLET PROTECTION

- USE 25 YR DESIGN STORM
- USE CONDOT DRAINAGE MANUAL CHAPTER 8.7
OUTLET PROTECTION GUIDELINES
- FOR RIPRAP SIZES FOR TYPE 'A' APRONS

VELOCITY	RIPRAP	d_{50}
0-8 FT/S	MODIFIED	$< 0.42'$
8-10 FT/S	INTERMEDIATE	$0.42' < 0.67'$
10-14 FT/S	STANDARD	$0.67' < 1.25'$

OUTLET #1 - FROM CBS #3 + #4

$$Q_{25} = 2.2 \text{ CFS}$$

$$\text{PIPE} = 12" \text{ CPP}, S = \frac{368.67 - 355.0}{90} = 0.15 \text{ FT/FT}$$

$$Q_{\text{FULL}} = 14.9 \text{ CFS}, V_{\text{FULL}} = 19 \text{ FT/S} \quad \frac{Q}{Q_{\text{FULL}}} = 0.15$$

$$V = 9.8 \text{ FT/S} \quad \therefore \text{USE INTERMEDIATE RIPRAP}$$

$$\text{USE A RIPRAP APRON W/ } L_a = 10'$$

$$W_1 = 3D = 3'$$

$$W_2 = 3D + 0.7L_a = 3 + 7 = 10'$$

JOB NO. 22203
DATE 1/30/23
BY JJB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. _____
JOB HILLSIDE
SUBJECT DRAWAGE
CLIENT LAVALLEE

OUTLET # 2 - FROM CB # 2

$$Q_{25} = 1.76 \text{ CFS}$$

$$\text{PIPE} = 12" \text{ CPP} \quad S = \frac{357.93 - 357.0}{104} = 0.009 \text{ FT/FT}$$

$$Q_{\text{FULL}} = 3.7 \text{ CFS}, V_{\text{FULL}} = 4.67, \frac{Q}{Q_{\text{FULL}}} = 0.48$$

$$V = 4.6 \text{ FT/s} \quad \therefore \text{USE MODIFIED RIPRAP}$$

$$L_q = 10'$$

$$W_1 = 3D = 3', W_2 = 3D + 0.7L_q = 10'$$

OUTLET # 3 - FROM PHASE 3 BASIN

$$Q_{25} = 5.68 \text{ CFS}$$

$$\text{PIPE} = 15" \text{ CPP} \quad S = \frac{368 - 364}{70'} = 0.057$$

$$Q_F = 16.7 \text{ CFS}, V_F = 13.6, \frac{Q}{Q_F} = 42\%, V = 12.5 \text{ FT/s}$$

$$\therefore \text{USE STANDARD RIPRAP}, L_q = 10'$$

$$W_1 = 3D = 3.75', \text{ SAY } 4'$$

$$W_2 = 3D + 0.7L_q = 3.75 + 7 = 10.75, \text{ SAY } 11'$$

JOB NO. 22203
DATE 1/30/23
BY JSB
CH'D BY _____

J & D CIVIL
ENGINEERS LLC
401 Ravenelle Road
North Grosvenordale, CT 06255
(860) 923-2920 | www.jdcivilengineers.com

SHEET NO. _____
JOB HILLSIDE
SUBJECT DRAWAGE
CLIENT LAVALLEE

OUTLET #4 - FROM PHASE 4 BASIN

$$Q_{25} = 9.46 \text{ CFS}, \text{ PIPE} = 15''$$

$$S = \frac{373.7 - 355.0}{190'} = 0.098 \text{ FT/FT}$$

$$Q_F = 21.9, V_F = 17.8, \frac{Q}{Q_F} = 43\%, V = 16.7 \text{ FT/S}$$

OUTLET $V > 14 \text{ FT/S}$ \therefore SCOUR HOLE

NOTE: THIS OUTLET WILL BE ADJACENT TO
OUTLET #1 AT THE SEDIMENT FOREBAY
 \therefore SHOW AREA W/ STANDARD RIPRAP

OUTLET PROTECTION - OUTLET VELOCITY ≤ 14 feet/sec

DISCHARGE (cfs)	OUTLET PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
0-5	10	10		<i>USE</i>						
6	12	11								
7		13	12							
8		14	13	12		<i>MINIMUM</i>				
9			14	13						
10			15	13						
11			16	14				<i>LENGTH</i>		
12				14						
14				16	14					
16				17	15	14			<i>OUTLINED</i>	
18				18	16	15				
20					17	15	14			
22		<i>USE</i>			18	16	15			
24						17	15	14		
26						17	16	15		
28						18	16	15		
30						19	17	16		
35						20	18	17	16	
40			<i>PREFORMED</i>				20	18	17	16
45							21	19	18	16
50							22	20	18	17
55								21	19	18
60								22	20	19
65								24	21	20
70					<i>SCOUR</i>			25	22	20
75								26	23	21
80									24	22
90									26	24
100									28	25
110										27
125							<i>HOLE</i>			29
130										30

Table 8-6.1 - Length - L_a (feet)

Type A Riprap Apron

- Notes: 1. Bold face outlined boxes indicate minimum L_a to be used for a given pipe diameter or span.
 2. Rounding and interpolating are acceptable.

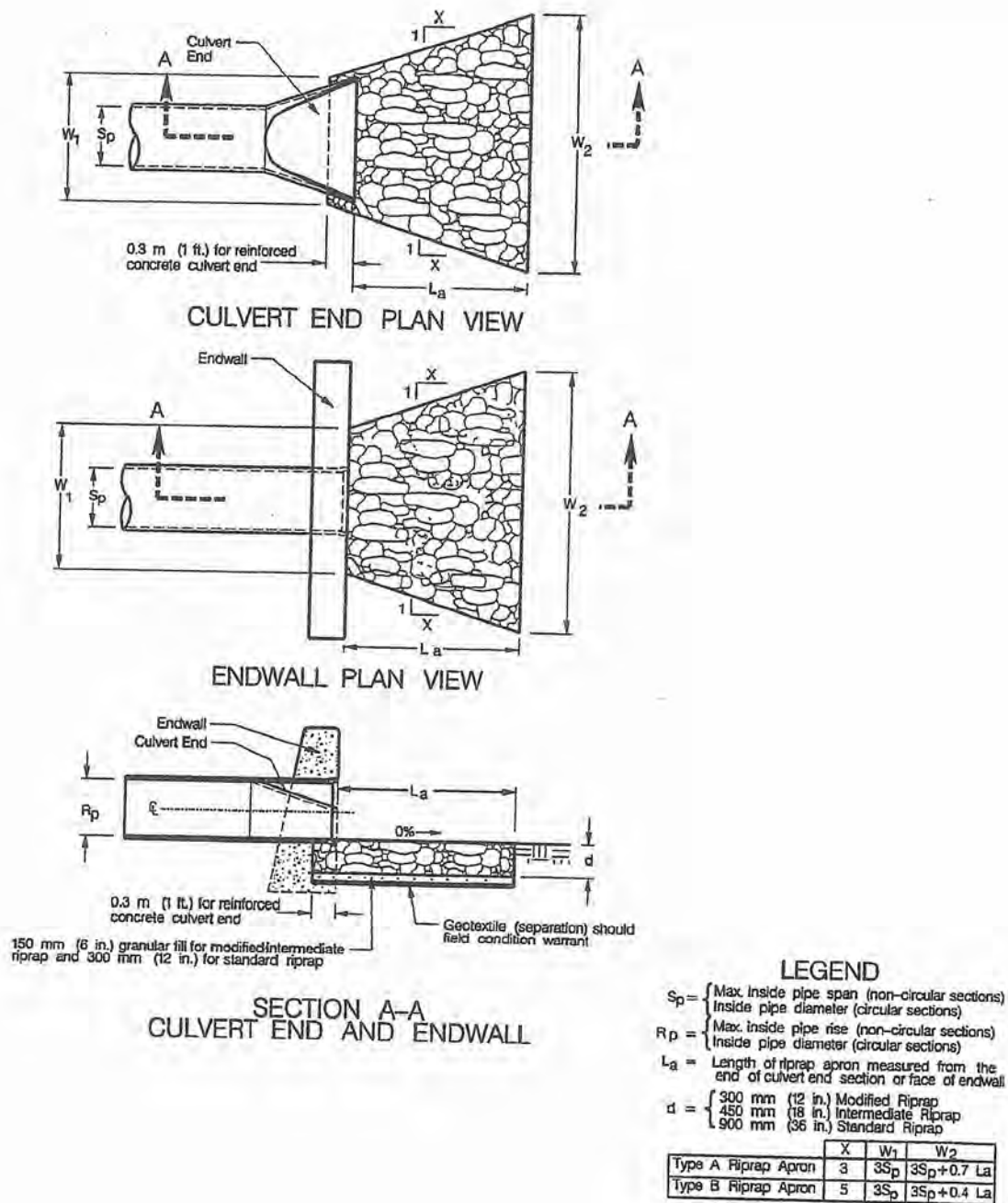


Figure 8-9 Type A and B Riprap Apron
(to be used where there is no defined channel downstream of the outlet)

Appendix B LID Checklist

TOWN OF THOMPSON

LID CHECKLIST—Required for site plan review

Applicants must complete and submit the following checklist with the application

Date: <u>JANUARY 31, 2023</u>	Project: <u>HILLSIDE TOWNHOMES</u>	Verifier: <u>JANET BLANCHETTE, PE</u>
Name and Profession		
Conformance with the following criteria shall be initialed in the spaces provided below by a Connecticut Registered Professional Engineer, Land Surveyor or Certified Soils Scientist as appropriate. If conditions cannot be met, or are not appropriate for the project, comments addressing each item should be provided by the applicant in the space provided.		

Item	Description	Verified	Comments
1	Development is designed avoiding critical watercourses, wetlands and steep slopes.	YES AND NO	NO DISTURBANCE TO WETLANDS. THE SITE WAS PREVIOUSLY EXCAVATED & LEFT WITH STEEP SLOPES. DEVELOPMENT WILL DECREASE THE SLOPE
2	Development has been located to maximize preservation of contiguous natural sensitive areas.	YES	IN 2011 THE OWNER SET ASIDE ALMOST HALF OF THE AREA OF THE TWO LOTS FOR CONSERVATION RESTRICTIONS WHEN THE PROPERTY WAS SUB-
3	Natural areas, including woodlands, regulated wetland areas and naturally vegetated areas have been preserved and/or replicated to the maximum extent practical.	YES	DIVIDED.
4	Onsite soils have been assessed to determine suitability for stormwater infiltration.	YES	

5	<p>Limits of disturbance have been delineated to avoid unnecessary clearing or grading.</p>	YES	LIMITS OF DISTURBANCE (L.O.D.) LINES FOR EACH PHASE HAVE BEEN SHOWN
6	<p>Reduce and Disconnect Impervious Cover</p> <p>Impervious surfaces have been kept to the minimum extent practicable, using the following methods:</p> <p>(Check which methods were used.)</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Minimized road widths 22' <input checked="" type="checkbox"/> Minimized driveway area <input checked="" type="checkbox"/> Minimized sidewalk area <input checked="" type="checkbox"/> Minimized cul-de-sacs <input checked="" type="checkbox"/> Minimized building footprint <input checked="" type="checkbox"/> Minimized parking lot area 	YES	
7	<p>Impervious surfaces have been disconnected from the stormwater system and directed to appropriate pervious areas, where practicable. Pervious areas may be LID practices or uncompacted turf areas.</p>	YES	PROPOSED IMPERVIOUS AREAS HAVE NOT BEEN CONNECTED TO EXISTING STORMWATER SYSTEMS
8	<p>Sheet flow is used to the maximum extent possible to avoid concentrating runoff.</p>	YES	
9	<p>Vegetated swales have been installed adjacent to driveways and/or roads in lieu of a curb and gutter stormwater collection system.</p>	YES	

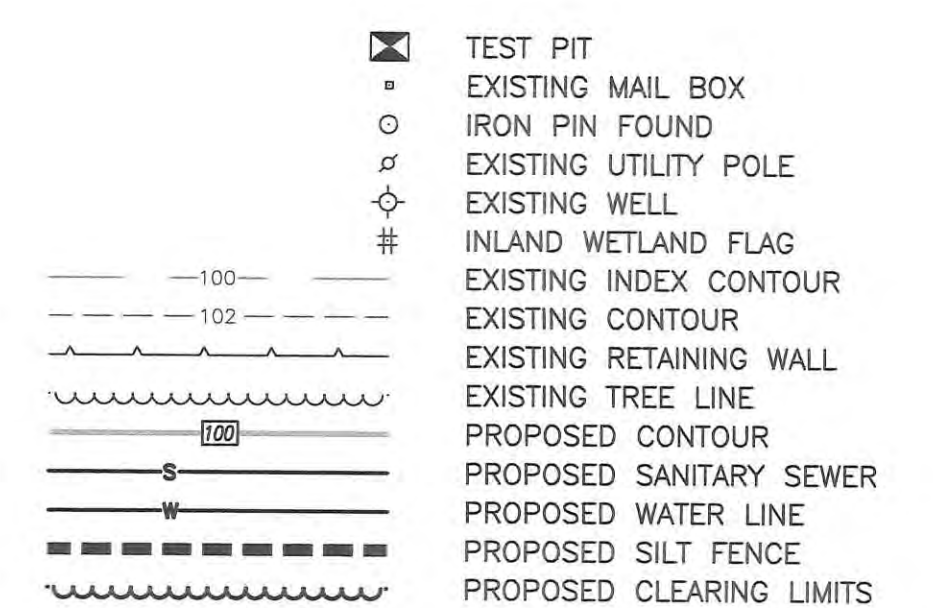
10	Rooftop drainage is discharged to bioretention/rain gardens.	YES	ROOFTOPS DRAIN TO STORMWATER BASINS FOR INFILTRATION
11	Rooftop drainage is discharged to drywell or infiltration trench.	NO	
12	Rain water harvesting methods such as rain barrels or cisterns have been installed to manage roof drainage.	NO	
13	Bioretention basins or rain gardens have been incorporated within yards, median strips, cul-de-sac islands and parking lot islands.	NO	
14	Permeable (porous) pavement has been incorporated into areas of low traffic, parking lots, residential and light commercial use driveways, walkways, bike paths etc.	NO	
15	Stormwater infiltration for impervious areas has been provided by the use of underground storage units, devices, and/or infiltration swales/trenches.	YES	

Agenda Item E.a) 4. Old Applications

IWA23003, Bernard P Mayo, 73 LaPorte Road,
(Assessor's Map 55, block 65, lot 7A), filling of wetlands
for the construction of new detached garage associated
with existing single-family house, stamped received
3/3/23, statutorily received 3/14/23, revised plans
received 3/30/23 .

<u>TEST PIT</u>	<u>DEPTH</u>	<u>PROFILE</u>
3	0" - 3" 3" - 23" 23" - 30" 30" - 90"	Topsoil /Organics Fine Sandy Loam Roots Stoney Gravelly Loam Sand w/silt tight Tight Moist Stony Gravelly Sand Watermarks N/A N/A N/A 30"
	Ledge GWT Mottling Washed	N/A N/A N/A 30"
4	0" - 3" 3" - 29" 29" - 90"	Topsoil /Organics Fine Sandy Loam roots tight Moist Stony Gravelly Loam Sand with Large Rocks Washed 70" possible large Rock N/A N/A N/A 29"
	Ledge GWT Mottling Washed	N/A N/A N/A 29"

Percolation Rate = 18 min. / in.
3 bedroom house requires = 675 s.f. effective leaching area
Effective Leaching area = 3 s.f. / l.f. of trench
Length Required = $675/3 = 225$ l.f.
Length Provided = 4 (56.25') = 225 l.f.
Min. Leaching system Spread (MLSS) = $30 \times 1.5 \times 1.25 = 56.25'$
MLSS Provided = 112.5'
EXISTING LEACHING SYSTEM
4 Stone Leaching Trenches @ 56.25 l.f. each



1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-6 as amended on October 28, 2016;

This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.

- This survey conforms to a Class "C" horizontal accuracy.
- Topographic features conform to a Class "T-2" accuracy.
- Survey Type: General Location Class.

2. The subject parcel is shown as lot #7A, block #65 on assessor's map #55.

3. Zone: RRAD.

4. Owner of record: Bernard P. Mayo
P.O. Box 802
North Grosvenordale, CT 06255

5. The intent of this survey is to show a proposed garage and connection to the existing septic system on the subject property.

6. Elevations based on NAVD 1988. Contour interval = 2'.

7. Reference is made to a warranty deed in Volume 724, Page 78 of the Thompson land records for the subject parcel.

8. The locations of existing utilities are based on surface evidence and other sources of information. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455.

9. Wetlands were flagged in the field by Joseph Theroux in January 2023.

10. The proposed garage will not have a tub, shower or any bedrooms.

11. The location of the existing septic system is taken from the as-built survey prepared by Provost & Rovero, Inc.

MAP REFERENCES:

1. "General Location Survey - Prepared for - Marc Ayotte - Laporte Road - Thompson, Connecticut - Scale: 1" = 30' - Dated: 12/6/2001 - Provost Rovero Fitzbach"

GENERAL LOCATION SURVEY
PROPOSED SITE PLAN
PREPARED FOR
BERNARD P. MAYO
73 LAPORTE ROAD
THOMPSON, CONNECTICUT

Provost & Rovero, Inc.
Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering

57 East Main Street, P.O. Box 191
Plainfield, Connecticut 06374
(860) 230-0856 - FAX: (860) 230-0860
info@prorovinc.com
www.prorovinc.com

\\Users\Dave\Desktop\JOBS\223043\Drawings\SITE PLAN.dwg Feb 14, 2023 - 3:28 PM

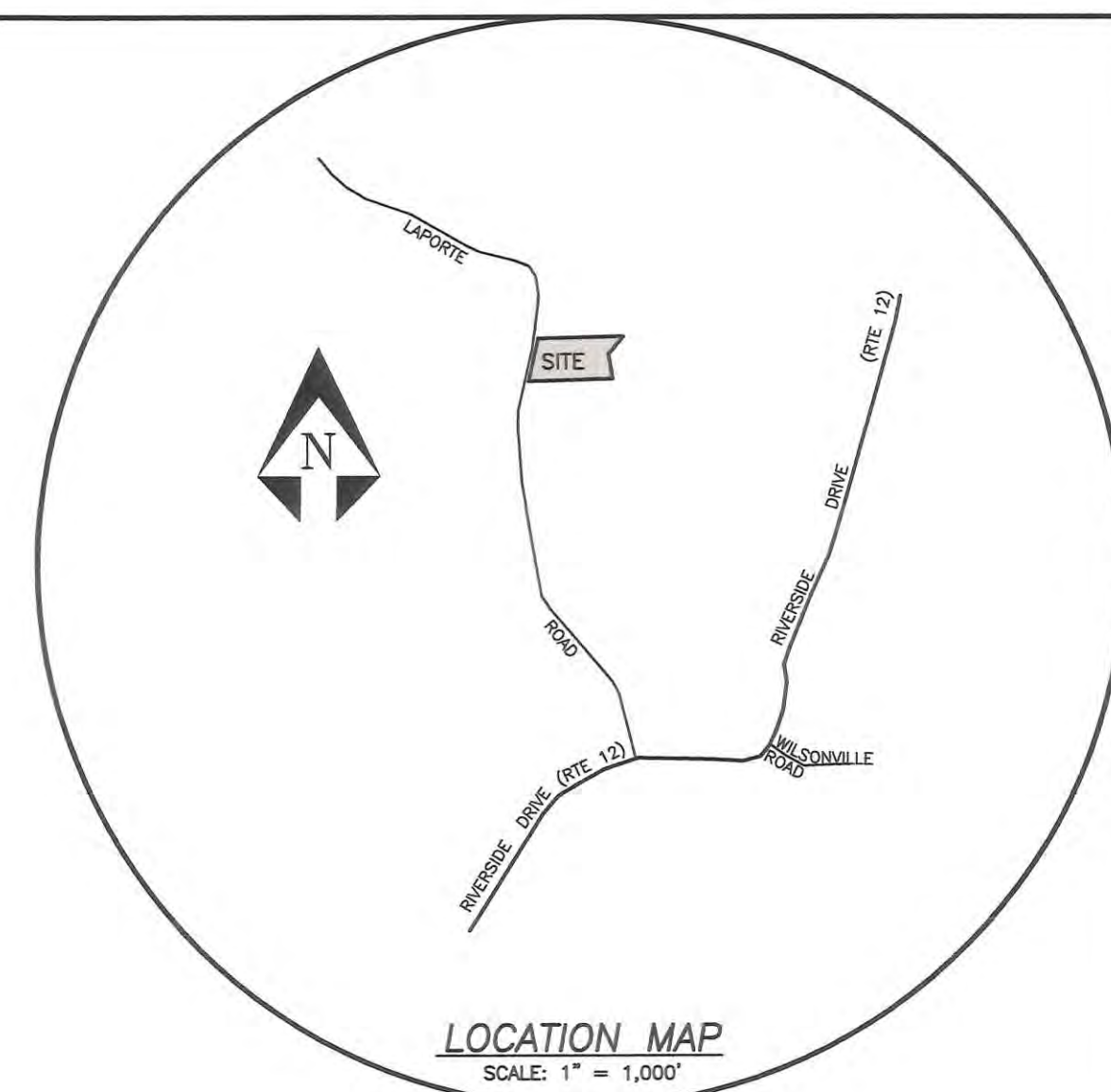
TEST PIT	DEPTH	PROFILE
3	0" - 3"	Topsoil /Organics
	3" - 23"	Fine Sandy Loam Roots
	23" - 30"	Stoney Gravelly Loam Sand w/silt tight
	30" - 90"	Tight Moist Stony Gravelly
		Sand Watermarks
	Ledge	N/A
	GWT	N/A
4	0" - 3"	Topsoil /Organics
	3" - 29"	Fine Sandy Loam roots
	29" - 90"	tight Moist Stony Gravelly Loam Sand
		with Large Rocks Washed
	Ledge	70" possible large Rock
	GWT	N/A
	Metalling	N/A
	Washed	29"
















Percolation Rate	=	18 min. / in.
3 bedroom house requires	=	675 s.f. effective leaching area
Effective Leaching area	=	3 s.f. / i.f. of trench
Length Required	=	$675/3 = 225$ i.f.
Length Provided	=	4 (56.25') = 225 i.f.
Min. Leaching system Spread (MLSS)	=	$30 \times 1.5 \times 1.25 = 56.25'$
MLSS Provided	=	112.5'

EXISTING LEACHING SYSTEM

4 Stone Leaching Trenches @ 56.25 i.f. each

4 Stone Leaching Trenches @ 56.25 l.f. each



 TEST PIT
 EXISTING MAIL BOX
 IRON PIN FOUND
 EXISTING UTILITY POLE
 EXISTING WELL
 INLAND WETLAND FLAG
 EXISTING INDEX CONTOUR
 EXISTING CONTOUR
 EXISTING RETAINING WALL
 EXISTING TREE LINE
 PROPOSED CONTOUR
 PROPOSED SANITARY SEWER
 PROPOSED WATER LINE
 PROPOSED SILT FENCE
 PROPOSED CLEARING LIMITS

This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-20 as amended on October 26, 2018;

This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.

- This survey conforms to a Class "C" horizontal accuracy.
- Topographic features conform to a Class "I-2" accuracy.
- Survey Type: General Location Survey.

2. The subject parcel is shown as lot #7A, block #65 on assessor's map #55.
3. Zone: RRAD.
4. Owner of record: Bernard P. Mayo
P.O. Box 802
North Grovesendale, CT 06255
5. The intent of this survey is to show a proposed garage and connection to the existing septic system on the subject property.
6. Elevation based on NAVD 1988. Contour interval = 2'.
7. Reference is made to a warranty deed in Volume 724, Page 78 of the Thompson land records for the subject parcel.
8. The locations of existing utilities are based on surface evidence and other sources of information. Therefore any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4435.
9. Wetlands were flagged in the field by Joseph Theroux in January 2023.
10. The proposed garage will not have a tub, shower or any bedrooms.
11. The location of the existing septic system is taken from the as-built survey prepared by Provost & Rovero, Inc.

1. "General Location Survey - Prepared for - Marc Ayotte - Laporte Road - Thompson, Connecticut - Scale: 1" = 30' - Dated: 12/6/2001 - Provost Rovers Fitzback"

MAR 30 2023

73 LAPORTE ROAD **Thompson Wetlands Office**
THOMPSON, CONNECTICUT

Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering

57 East Main Street, P.O. Box 191
Plainfield, Connecticut 06374
(860) 230-0856 - FAX: (860) 230-0860
info@prorovinc.com
www.prorovinc.com

Provost & Rovero, Inc.

REVISIONS	
DATE	DESCRIPTION
3/30/2023	I.W. COMMENTS

DATE: 2/14/2023	DRAWN: DJH
SCALE: 1" = 20'	DESIGN: DJH
SHEET: 1 OF 2	CHK BY: ---
DWG. No: Client File	JOR No: 223043

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

DAVID J. HELD, L.S. LIC. NO. 24267 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR

\\Users\Dave\Desktop\JOBS\223043\Drawings\SITE PLAN rev 3-30-23.dwg Mar 30, 2023 - 11:17 AM

Revised Plans App/ IWA 23003

Copy 1

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Agenda Item E.b) 1. New Applications

WAA23005, Matthew Saad, 33 Becola Road,
(Assessor's Map 116, block 24, lot 26), repair and
replacement of septic system for residential home
(reapplication for expired Approval WAA16023,
stamped received 3/20/23, issued 3/20/23, legal notice
to be published 3/31/23, end of appeal period 4/14/23

For Wetland Agent:	rev 01/11
APPLICATION #WAA	<u>23005</u>
DATE RECEIVED	<u>March 20, 2023</u>

Application
for
Wetland Agent Approval
to conduct a regulated activity

Town of Thompson

INLAND WETLANDS COMMISSION
815 RIVERSIDE DRIVE
NORTH GROSVENORDALE, CT 06255

Instructions:

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 Agent.

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 AN INLAND 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 regulated activities.

Please provide the following information:

- 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

NO APPROVAL SHALL BE TRANSFERRED WITHOUT PERMISSION OF THE AGENCY.

FEE SCHEDULE:

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

- Individual Lot \$50 + \$60
(Includes Mandatory Legal Advertisements Fee of \$20)

If the Agent finds that greater than a minimal impact may occur to wetlands, then this proposal must undergo a full permit application. Fee will be applied to the permit application.

Please complete the following application information.
If you need assistance contact the Wetland Agent (office 860- 923-1852)
Fax 860-923-9897

www.thompsonct.org/wetlands

Received

MAR 20 2023

Thompson Wetlands Office

Date MARCH 16-2023

1) Name of Applicant MATTHEW SAAD
Home Address 33 BECOLA RD THOMPSON CT 06277
Home Tele & Hrs CELL # 508-868-6185 Business Tele & Hrs _____
Business Address N/A

2) Applicant's interest in the Property: ☒ Owner ☐ Other
INLAND WETLANDS APPROVALS CAN BE GRANTED TO PROPERTY OWNER ONLY.

3) Name of Property Owner (if not applicant) SAME
Home Address _____
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 CL & P POLE 1428 FRONT OF
Street or Road Location PROPERTY
Tax Assessor's Map # 116
Block # 24
Lot # that appears on site plan 26
Deed Information : Volume # _____
Page # _____

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

Soil Types SANDY GRAVEL
Wetland Soils _____ (Swamp _____ Marsh _____ Bog _____ Vernal Pool _____)
Watercourses _____ (Lake or Pond ☒ Stream or River _____ Intermittent Stream _____)
Floodplain - Yes ☐ No ☒

6) Description of the Activity for which Approval is requested SEPTIC SYSTEM
REPAIR

7) 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.
- ☐ 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-Proposed limits of clearing/disturbance and location of stockpiles during construction.
- ☐ 12-Location of proposed Erosion and Sedimentation controls and other management practices and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity. The erosion and sedimentation control provisions on the site plan must comply with the most current CT DEP edition of the *Connecticut Guidelines for Soil Erosion and Sedimentation Control* and be so noted on the plans.
- ☐ 13 -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.
- ☐ 14-Location of proposed mitigation or wetland enhancement measures which may be considered as a condition of issuing a permit for the proposed regulated activity.
- ☐ 15-Timing and description of phases of activities, installation of sediment and stormwater control measures and temporary and permanent stabilization methods.

The Wetland Agent will notify you if any additional information is needed in order to properly evaluate your proposal.

- 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 (NDDDB) area of concern as defined on the map of Federal and State Listed Species and Significant Natural Communities, for Thompson, Connecticut, prepared by the Connecticut Department of Environmental Protection? _____ 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:

JANET PECKHAM 36 BECOLA

TIM COX 37 BECOLA

~~_____~~

JAMES DALESSANDRO 9 BEACON RD. WEBSTER MA
01570

11) Estimated start date _____

Estimated date of completion (all disturbed areas are stabilized) _____

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 by the Agent, 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.

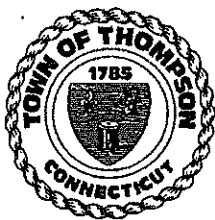
The undersigned swears that the information supplied in this completed application is accurate to the best of her/his knowledge and belief.

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

Upon Approval the Applicant is responsible for publishing a notice of the approval, at the applicant's expense, in a newspaper having a general circulation in the Town of Thompson. The Agent will provide the necessary notice to the newspaper for public notice, and such notice must be published within ten (10) days of the date of approval.

x <u>Matthew J. Lu</u>	<u>3/15/23</u>
Signature of Applicant	Date
<u>Matthew J. Lu</u>	<u>3/15/23</u>
Consent of Landowner if other than applicant	Date

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



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

WETLAND AGENT APPROVAL WAA16023

APPROVAL GRANTED TO:

Matthew Saad
33 Becola Road
Thompson, CT 06277

DATE OF APPROVAL: November 22, 2016

EXPIRATION DATE: November 22, 2021

LOCATION OF AUTHORIZED ACTIVITY: 33 Becola Road., Assessor's Map 116, Block 24, Lot 26

DESCRIPTION OF AUTHORIZED ACTIVITY: To conduct regulated activities associated with repair and replacement of a septic system for residential home as shown in Wetlands Agent Approval application WAA16023 stamped received by the Thompson Wetlands Office November 21, 2016 and as shown in drawing(s) entitled "System Repair Plan Prepared for Matthew J. Saad and Christine R. Saad, Becolla Road, Thompson, Connecticut" prepared by PC Survey Associates dated November 2016 stamped received November 21, 2016.

This approval is issued pursuant to section 11(b) of the Inland Wetlands and Watercourses Regulations of the Town of Thompson.

APPROVAL CONDITIONS:

1. A notice of decision will be requested to be published in the Thompson Villager. Note this approval is subject to appeal to the Inland Wetlands Commission for 15 days from the date of publication for a final decision.
2. If the authorized activity also involves an activity or a project which requires zoning or subdivision approval, special permit, variance, or special exception, then no work pursuant to this approval may begin until such other approval is obtained. (See section 11.10.c. of the Inland Wetlands and Watercourses Regulations of the Town of Thompson)
3. This approval will be valid for five (5) years. You are expected to notify the Wetland Agent of your starting date and to complete your activities within 2 years of beginning your site work. If you expect to take longer, you must contact the Wetland Agent for an extension.
4. The Thompson Wetland Agent/Inland Wetlands Commission must be notified in writing one week prior to the beginning of any regulated activities. Please use the enclosed card.
5. Appropriate erosion and sediment controls shall be installed prior to the beginning of any regulated activities. Until all disturbed soils are stabilized appropriate erosion and sediment controls shall be used and maintained. (See document entitled "2002 Connecticut Guidelines for Soil Erosion and Sediment Controls" for guidance.)
6. If there are any changes in the location of any of the proposed activities for which this approval has been granted, then the new proposal must be presented to Thompson Wetland Agent/ Inland Wetlands Commission for approval of such changes prior to commencing activities.

Wetland Agent: _____

Marla Butts

Dated: November 22, 2016

Agenda Item E.b) 2 New Applications

DEC23008, Philip LeBlanc, 295 Linehouse Road,
(Assessor's Map 55, block 69A/lot 3A), earthmoving to
remove glass contaminating soil and regrading for
garden as use permitted as of right, stamped received
3/27/23



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

For Commission Use Only
Application #: DEC 23008

Received

MAR 27 2023

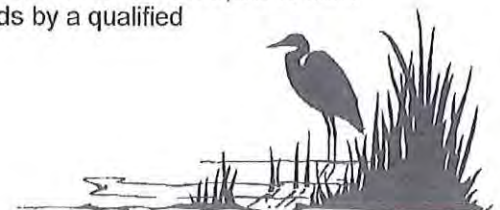
Thompson Wetlands Office

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: Philip LeBlancb) Mailing Address: 295 Linehouse Road, North Grosvenordale, CT(include town state zip) 06255

c) Daytime Phone #:

d) Evening Phone #:

e) Cell Phone # (optional): 860 634 2497

f) Email Address (optional):

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:

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>295 Linehouse Road</u>	<u>55</u>	<u>69A</u>	<u>3A</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: _____ (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:

Removal glass contaminated top soil for "SAFE" gardening purposes.

Remove glass particles to regrade soil

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 purposed 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.

Philip LeBlanc

(Signature of property owner)

Date

3/27/2023

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.

(Signature of applicant)

Date

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

***** For Commission Use Only *****

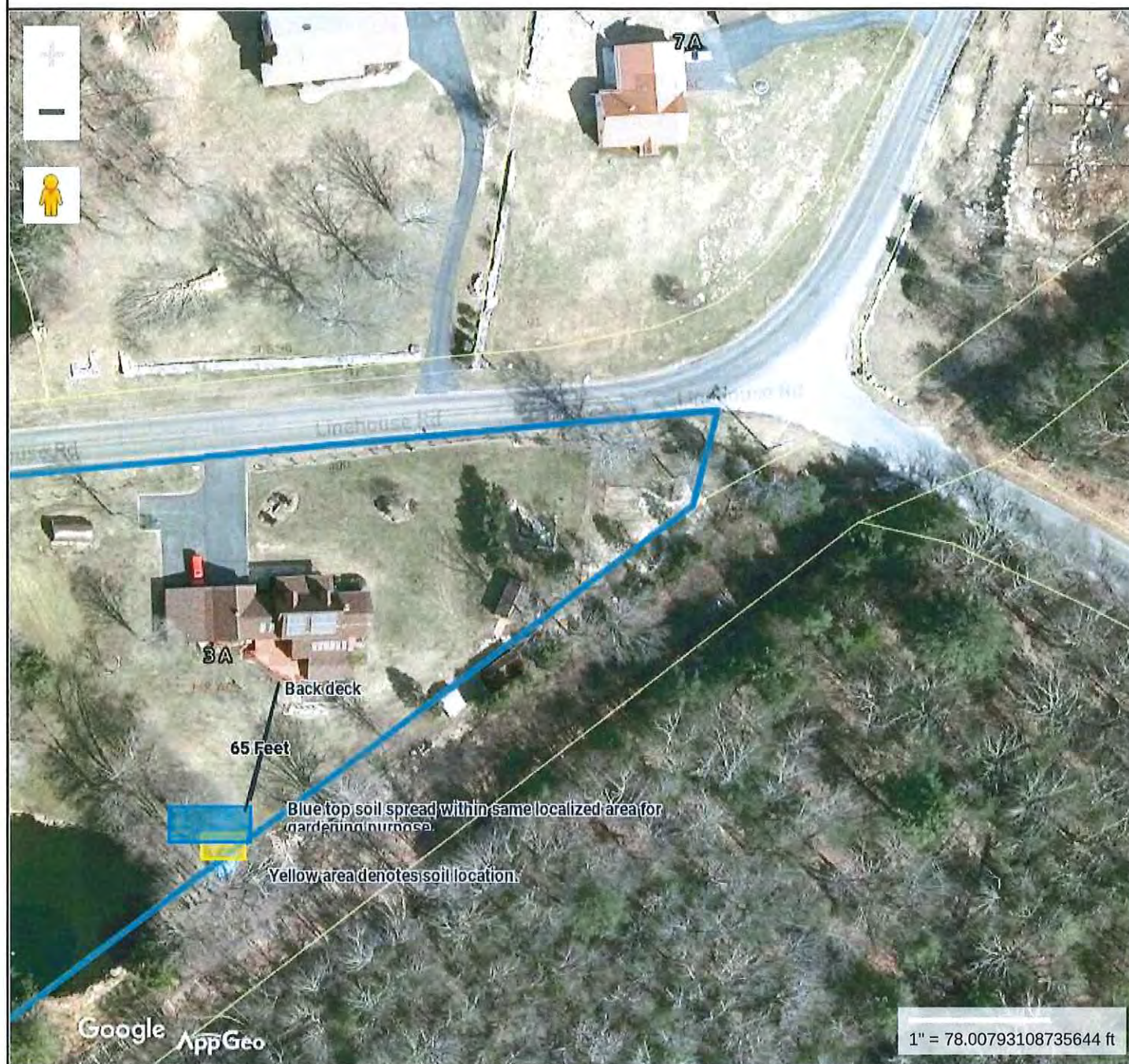
Agency Response:

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.

295 Linehouse Road



Property Information

Property ID 1092
Location 295 LINEHOUSE RD
Owner LEBLANC DEBRA JOAN + PHILIP R



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 December 1, 2022
Data updated December 1, 2022

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

Agenda Item E.c) Applications Received After Agenda
was Published

None

Agenda Item F) Permit Extensions / Changes - None

Agenda Item G.a) Violations & Pending Enforcement Actions

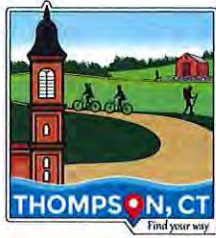
Notice of Permit Violation VIOL21036, Permit IWA20022, Marc Baer, 1227 Thompson Rd (Assessor's map 116, block 24, lot 10), grades not as authorized in modified plan approved by the Commission on February 9, 2021 - status.

Agenda Item G.b) Violations & Pending Enforcement Actions

Notice of Violation VIOL22031, Douglas and Roberta Gray, 0 New Road, (Assessors map 154, block 3, lot2J), watercourse alternative causing flooding, issued 11/23/22 - status.

Agenda Item G.c) Violations & Pending Enforcement Actions

Notice of Violation VIOL23006, Philip and Debra Joan Leblanc, 295 Linehouse Road, (Assessor's map 55, block 69A, lot 3A), earthmoving in 100-foot upland review area, Issued 3/20/23 – status.



**TOWN OF
THOMPSON**
Inland Wetlands Commission

815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255
Phone: 860-923-1852, Ext. 1
Email: wetlands@thompsonct.org
Web: <https://www.thompsonct.org/>

NOTICE OF VIOLATION

March 20, 2023

Philip and Debra Joan Leblanc
295 Linehouse Road
North Grosvenordale, CT 06255

RE: **Violation VIOL23006**
295 Linehouse Road
Assessor's Map 55, Block 69A, Lot 3A

Dear Mr. & Ms. Leblanc,

On February 20, 2023 I received a complaint (#23-02) that tree cutting and earthmoving work was occurring either in or near wetlands along the Southbridge Branch of the Providence and Worcester rail line right-of-way just south of its crossing with Laporte Road.

On March 8, 2023, I made a site visit and walked a portion of this landbanked railroad bed. I observed recent earthmoving activities had recently occurred on your property within 100 feet of your pond (see attached photograph).

No valid permit exists for this activity in the 100-foot upland review area for wetlands and watercourses. Consequently, this activity is occurring in violation of section 6 of the Inland Wetlands and Watercourses Regulation of the Town of Thompson.

You are advised to cease any further work on the property and attend the next regularly scheduled meeting of the Thompson Inland Wetlands Commission to discuss these activities on your property. This meeting will be held virtually on April 4, 2023, at 7:00 p.m. via ZOOM, a communications platform that allows users to connect with video, audio, phone, and chat. The ZOOM link and passcode will be included in the agenda posted at www.thompsonct.org several days before the meeting. A description of ZOOM meetings can be found at <https://www.thompsonct.org/inland-wetlands-commission>.

If you cannot attend this meeting or wish to discuss this matter with me before the next Inland Wetlands Commission meeting, please contact me at 860-923-1852, extension 1. I am usually in the office on Mondays.



Please be prepared to provide an explanation as to why regulated activities are occurring on this property without the benefit of a valid wetlands permit.

Failure to comply with this notice may result in the issuance of a Cease and Desist Order, which would be filed in the permanent land records in the Town of Thompson, and which will encumber your deed until the violation is resolved.

I appreciate your cooperation in this matter.

Sincerely



Marla Butts
Wetlands Agent

File: NOV VIOL23006 Leblanc 295 Linehouse Rd

Attachment as Stated

Certified Mail: 7021 2720 0000 8273 5404

cc: Thompson Building Official
Thompson Zoning Enforcement Officer
cc:via email: Robert Garland, Providence and Worcester Railroad
Timothy Kenny, Providence





Agenda Item G.d) Violations & Pending Enforcement Actions

Notice of Violation VIOL23007, Kevin Calabro, 117
New Road, (Assessor's map 154, block 3, lot 3H),
earthmoving in 100-foot upland review area, issued
3/24/23 - status.



**TOWN OF
THOMPSON**
Inland Wetlands Commission

815 Riverside Drive
P.O. Box 899
North Grosvenordale, CT 06255
Phone: 860-923-1852, Ext. 1
Email: wetlands@thompsonct.org
Web: <https://www.thompsonct.org/>

NOTICE OF VIOLATION

March 24, 2023

Kevin Calabro
117 New Road
Thompson CT 06277-1912

RE: **Violation VIOL23007**
117 New Road
Assessor's Map 154, Block 3, Lot 3H

Dear Mr. & Ms. Leblanc,

On March 8, 2023, I made a site visit of your property and observed recent earthmoving activities had recently occurred on your property within 100 feet of delineated wetlands (see attached drawings).

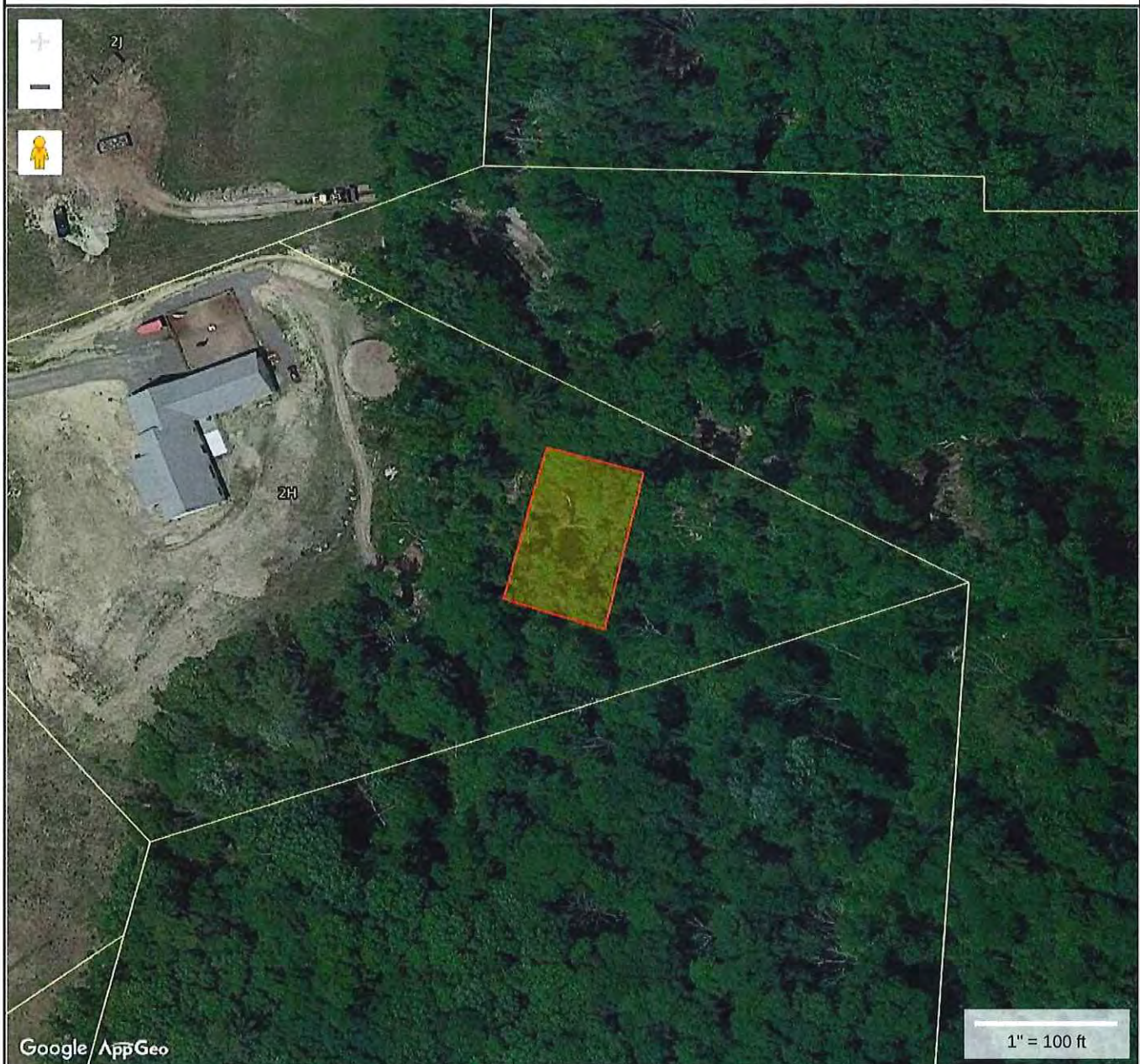
No valid permit exists for this activity in the 100-foot upland review area for wetlands and watercourses. Consequently, this activity has occurred in violation of section 6 of the Inland Wetlands and Watercourses Regulation of the Town of Thompson.

As you are aware, the Inland Wetlands Commission is expecting a report and/or plan from Norman Thibeault, your engineer, regarding the handling of water that flows from your artesian well and currently down the side of your driveway. Additionally, it is expected that Mr. Thibeault will document the location of the under drain near your septic system that is believed to be within the 100-foot upland review area for wetlands on your property. Given this recent work in the upland review area it is likely that you will be required to apply for a permit to seek authorization for all unauthorized grading work and any other regulated activities that you may wish to do to address the conveyance of flows from your artesian well.

You are advised to cease any further earthmoving work on the property and either submit a permit application by April 3, 2023 to seek authorization for all regulated activities conducted and planned on your property OR on April 4, 2023 attend the next regularly scheduled meeting of the Thompson Inland Wetlands Commission to discuss these activities on your property.



Proximate Location of Recent Earthmoving Work at 117 New Road in URA



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 December 1, 2022
Data updated December 1, 2022

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

2019 Aerial Proximate Location of Recent Earthmoving Work at 117 New Road in URA

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

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Geometry updated December 1, 2022
Data updated December 1, 2022

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

Agenda Item H.a) Other Business

Election of Officers

Agenda Item H.b) Other Business

Approval of By-laws

**TOWN OF THOMPSON
INLAND WETLANDS COMMISSION
815 RIVERSIDE DRIVE
NORTH GROSVENORDALE, CT. 06255**

BYLAWS OF THE THOMPSON INLAND WETLANDS COMMISSION

Revised April 4, 2023

ARTICLE I PURPOSE AND AUTHORIZATION

The objectives and purposes of the Town of Thompson Inland Wetlands Commission are those set forth in the Connecticut General Statutes section 22a-36 through 22a-45, as amended, and those powers and duties delegated to the Town of Thompson Inland Wetlands Commission by the aforementioned statutes and by ordinances enacted by the Town of Thompson in accordance with its regulations established there under (hereafter referred to as “the IWC Regulations”).

ARTICLE II NAME

The Commission shall be known as the Thompson Inland Wetlands Commission.

ARTICLE III OFFICE OF AGENCY

The office of the Thompson Inland Wetlands Commission shall be the Municipal Building at 815 Riverside Drive, North Grosvenordale, CT, where all Commission records will be kept.

ARTICLE IV MEMBERSHIP

1. The membership, terms of members and the filling of vacancies shall be as specified in the ordinance adopted on May 20, 1974, as amended May 6, 2019, establishing the Commission and the aforementioned general statutes. The number of members shall be five (5) and two (2) alternates, with terms of office of five (5) years for staggered terms of five (5) years beginning on March 15th wherein no more than two (2) terms expire in the same calendar year.
2. Resignations from the Commission shall be in writing and transmitted to the Chair, who will then forward it to the Board of Selectmen and the Town Clerk.
3. The Chair may recommend to the Board of Selectmen the removal of any member who misses more than 50% of the Commission's regular meetings in a calendar year.

ARTICLE V OFFICERS AND THEIR DUTIES

1. The officers of the Commission shall consist of a Chair, Vice-Chair, and a Treasurer.

2. The Chair shall preside at all meetings and hearings of the Commission and shall have the duties normally conferred by parliamentary usage on such officers. The Chair shall have the authority to seat alternates, appoint committees, call special meetings, establish the agenda, and generally perform other duties as may be prescribed in these bylaws.
3. The Chair shall have the privilege of discussing all matters before the Commission and of voting thereon.
4. In the absence of the Chair, the Vice-Chair shall preside and have all the powers and duties of the Chair as stated in these bylaws. In the event that the Vice-Chair is acting Chair at the start of the meeting, he or she shall remain as Chair throughout the entire meeting.
5. The Treasurer shall be responsible for reporting on account balances in the Commission's budget at its regular meetings and shall on the request of the Commission conduct an investigation of expenditures from the inland wetlands budget and report to the Commission with the results of the requested investigation. The Treasurer may from time to time conduct an investigation of expenditures from the inland wetlands budget and report to the Commission any concerns regarding such expenditures.

ARTICLE VI STAFF AND THEIR DUTIES

1. The Commission may by a majority vote appoint a duly authorized agent to carry out specific functions and duties as prescribed by the Commission. These duties may include:
 - a) making determinations of regulated activities except for those identified in section 4 of the IWC Regulations and issuing wetlands agent approvals provided the duly authorized agent has provided proof of completing the comprehensive training program developed pursuant to § 22a-39(l) of the Connecticut General Statutes,
 - b) issuing notices of violation and enforcement orders,
 - c) making permit compliance inspections,
 - d) investigating complaints, and
 - e) authorize the expenditure of funds up to \$100 without the prior approval of the Commission.
2. The duly authorized agent shall make a report to the Commission at its regular meeting. Such report shall consist of a list and description of all determination, approvals and activities performed.
3. Any determination or approval made by the duly authorized agent is subject to appeal and/or approval by the Commission.
4. The Commission shall include in its annual fiscal budget proposal funding for a Recording Secretary who may be hired by the chief elected official. The Recording Secretary shall in coordination with the Chair or the duly authorized agent produce and file agendas, minutes, draft and arrange for the publication of legal notices, draft permits for approved applications, keep records of the Commission all in accordance with the Freedom of Information Act (Chapter 14 of the Connecticut General Statutes), the Inland Wetlands and Watercourses Act

(§ 22a-36 through 22a-45 of the Connecticut General Statutes) and other applicable statutes and perform other such duties as may be identified in a job description for the Recording Secretary.

ARTICLE VII ELECTION OF OFFICERS

1. An Annual organizational meeting shall be held on the second Tuesday in April at which time officers will be elected and bylaws reviewed and be made a part of the minutes of the annual meeting. A majority of the members must be present before election of officers can take place.
2. Nominations shall be made from the floor at the annual organizational meeting and elections of the officers specified in Section 1 of Article V shall follow immediately thereafter.
3. A candidate receiving a majority vote of those present shall be declared elected and shall serve for one year or until his successor shall take office.
4. Vacancies in offices shall be filled by election at a meeting warned for the purpose.

ARTICLE VIII MEETINGS

1. In the event that both Chair and Vice-Chair are absent at the start of a meeting, the Treasurer shall preside and have all the powers and duties of the Chair as stated in these bylaws and he or she shall remain as Chair throughout the meeting.
2. Alternates shall be seated by the Chair as regular members in alphabetical order by last name on a rotating basis. Unseated alternates may take part in Commission discussions but shall not vote except for election of officers.
3. An annual schedule of regular meetings shall be adopted at the November meeting for the following calendar year to be forwarded to the Town Clerk for filing under the Freedom of Information Act (see § 1-225(b) of the Connecticut General Statutes). Regular meetings will be scheduled for the second Tuesday of every month at 7:00 P.M. to be held either in a municipal building, virtually via ZOOM or in a hybrid format via ZOOM, except when there is a conflict with holidays or other events. Conflicts may be resolved by scheduling a regular meeting to an alternative date or alternatively by cancelling the regularly scheduled meeting and holding a special meeting in accordance with the requirements of the Freedom of Information Act (see § 1-225 of the Connecticut General Statutes).
4. Three (3) members constitute a quorum and no action on an agenda item may be taken in the absence of a quorum. If a member recuses himself/herself from any agenda item that results in a lack of a quorum, then no business on that item may be transacted.
5. All Commission meetings shall be open to the public unless closed by a two-thirds vote of the members present for an executive session.

6. Executive sessions closed to the public shall be limited to types of discussions specified in the state Freedom of Information Act, including but not limited to the following:
 - a) Specific employees (unless the employee agrees to an open session),
 - b) Strategy relating to negotiations regarding pending claims to litigation,
 - c) Security matters, and
 - d) Real estate acquisition
7. The Chair shall govern the proceedings at the meetings of the Commission using as a guide Robert's Rules of Order, 11th edition in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Commission may adopt.

ARTICLE IX CONFLICT OF INTEREST AND DISQUALIFICATION

No member of the Commission shall participate as a Commission member in a hearing or decision of the Commission upon any matter in which he/she (or any member of his/her immediate family) is directly or indirectly involved financially and/or is an abutter of the property in question. If a member declares a conflict of interest, he/she must state that they have this interest and abstain from voting.

ARTICLE X ORDER OF BUSINESS

1. Unless otherwise determined by the Chair, the order of business at regular meetings shall be:
 - A. Call to Order & Role Call
 - B. Appointment of Alternates
 - C. Action on Minutes of Previous Meetings
 - D. Citizen's Comments Pertaining to Agenda Items
 - E. Applications
 - a. Old Applications
 - b. New Applications
 - c. Applications Received After Agenda was Published
 - F. Permit Extensions / Changes
 - G. Active Violations and Pending Enforcement Actions
 - H. Other Business
 - I. Citizen's Comments
 - J. Reports
 - a. Budget and Expenditures
 - b. Wetlands Agent Report
 - K. Correspondence
 - L. Signing of Mylars
 - M. Comments by Commission
 - N. Adjournment
2. A motion from the floor must be made and passed by a majority vote of the Commission members present in order to dispense with any item on the agenda or change the order of business.

ARTICLE XI

PUBLIC HEARINGS

1. A public hearing shall only be held by the Commission on any application in accordance with section 9 of the IWC Regulations and § 8-7d of the Connecticut General Statutes. All applications, maps, and documents relating to the hearing shall be open for public inspection. Any person may appear and be heard at any public hearing.
2. Where possible, public hearings shall be completed in a single session. However, the hearing may be continued (to a date and place certain) where necessary for the full development of the evidence, for the full participation of the parties, or for such other substantial purposes, provided that the public hearing shall be completed within thirty-five (35) days from the date it commenced, unless the applicant consents to an extension. Verbal notice at the public hearing as to the date and place where the continuation will take place shall be considered sufficient notice to interested parties.

ARTICLE XII

CONDUCTING THE PUBLIC HEARING

1. If a recording by a sound-recording device is made at the direction of the Commission, then such recording shall be maintained as a public document in accordance with the Freedom of Information Act and § 7-109 of the Connecticut General Statutes. An order of presentation and documents offered shall be submitted into the minutes of the Commission.
2. An officer of the Commission shall preside as Chair at the public hearing in accordance with Article V and Article VIII of these bylaws.
3. At the opening of the public hearing the Chair shall state a summary of the question or issue that is the subject of the public hearing and shall describe the method of conduct of the hearing including the order presentations, the reading of the legal advertisement and the involvement of the public at the hearing.
4. Comments shall be limited to the subject advertised for hearing.
5. Each party and members of the public shall make their presentation as provided for in the Chair's opening statement in succession without allowing an interruption of comments pro or con.
6. The Chair shall make clear to the hearing participants that all questions and comments must be directed through the Chair only after being properly recognized.
7. All persons recognized shall approach the hearing table in order to facilitate proper recording of comments. Before commenting on the matter before the hearing, each person shall give his/her name and address.

8. The Chair shall assure an orderly hearing and shall take necessary steps to maintain the order and decorum of the hearing at all times. The Chair shall reserve the right to terminate the hearing in the event the discussion becomes unruly and unmanageable.
9. The polling of persons present at the hearing shall not be allowed on any general question presented to the Commission or applicant at the public hearing. The hearing shall be conducted only for the purpose of taking testimony to be considered in deliberations during the regular meeting of the Commission.

ARTICLE XIII THE HEARING RECORD

1. The hearing record shall consist of the following:
 - a) any recording of the hearing made at the direction of the Commission,
 - b) minutes of the hearing, and
 - c) all physical evidence and material received (i.e.: legal documents, reports, plans, etc).
2. Reports, documents, and plans received at previous meetings may be entered into the record of the public hearing.
3. Decisions shall be based solely on the contents of the hearing record. Documentary evidence not entered into the record of the hearing shall not be considered when rendering a final decision.

ARTICLE XIV COMMITTEES

Committees may be appointed by the Chair for purposes and terms that the Commission approves.

ARTICLE XV EMPLOYEES

Within the limits of the funds available for its use, the Commission may seek the employment of such staff personnel and/or consultants as it sees fit to aid the Commission in its work. Appointments shall be made by the Board of Selectmen.

ARTICLE XVI AMENDMENTS

These bylaws may be amended by a majority (3) vote of the entire voting membership of the Commission only after the proposed change has been read and discussed at a previous regular meeting except that the bylaws may be changed at any meeting by the unanimous vote of the entire voting membership (5) of the Commission.

Agenda Item H.c) Other Business

IWC Regulation Revisions

Agenda Item H.d) Other Business

Update on Proposed Revisions Subdivision Regulations

Agenda Item H.e) Other Business

FY23-24 Budget

Agenda Item I

Citizens Comments on Agenda Items

Agenda Item J Reports

a) Budget & Expenditures

b) Wetlands Agent Report

Agenda Item K, Correspondence

None

Agenda Item L, Signing of Mylars - None

Agenda Item M, Comments by Commissioners

Agenda Item N, Adjournment