

Brooklyn Inland Wetlands Commission
Regular Meeting Agenda
Tuesday, December 12, 2023
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.

In-Person: Clifford B. Green Memorial Center, 69 South Main Street, Brooklyn, CT	
Online: Click link below: https://us06web.zoom.us/j/83921116459	OR Go to Zoom.us , click Sign In On the top right, click Join a Meeting Enter meeting ID: 839 2111 6459
Phone: Dial 1 646 558 8656 US Toll Enter meeting number: 839 2111 6459 You can bypass attendee number by pressing #	

Call to Order:

Roll Call:

Staff Present:

Seating of Alternates:

Public Commentary:

Additions to Agenda: None.

Approval of Minutes: Regular Meeting Minutes November 14, 2023

Public Hearings:

1. **IWWC 23-011 Nicole Wineland-Thomson Fisher, applicant; 459 & 481 Wolf Den Road, Map 18, Lots 18A & 18B, RA Zone;** Proposal to construct driveway & parking lot for events venue; majority of parking lot in the upland review area; 310 sf of wetlands to be permanently filled; grading for tent area, and excavation of 1400 sf of wetlands to create pond.

Old Business:

1. **IWWC 23-011 Nicole Wineland-Thomson Fisher, applicant; 459 & 481 Wolf Den Road, Map 18, Lots 18A & 18B, RA Zone;** Proposal to construct driveway & parking lot for events venue; majority of parking lot in the upland review area; 310 sf of wetlands to be permanently filled; grading for tent area, and excavation of 1400 sf of wetlands to create pond.

New Business:

1. **SUBD 23-002 KA&G Investments LLC, owner/applicant; Map 32 Lot 15; Wauregan Road and Gorman Road; R-30 Zone;** 14-lot subdivision for development of single-family homes.
2. **IWWC 23-013 Robert & Teresa Ross, owners/applicants; Map 10 Lot 7; Hartford Road, RA Zone;** Proposal to construct single-family home, garage, pole barn, koi pond, and to repair and stabilize a box culvert over Stony Brook.
3. **IWWC 23-014 Richard Oliverson, applicant; Map 26 Lot 15; 98 Barrett Hill Road, RA Zone;** Proposed 12' x 16' pergola on stone pad and landscape fabric; total regulated area in upland review area equals 320 sf. Duly Authorized Agent Approval with Vice Chairman's Approval.
4. **IWWC 23-015 LAC Properties, owner/applicant; Map 41 Lot 1; Providence Road, PC Zone;** Proposal to fill wetlands to level site for development of a commercial building, driveways and septic system. Proposed fill equals 8,900 sf; total regulated area altered equals 64,000 sf / 1.5 acres.
5. **SUBD 23-003 Tetreault Building Company, owner/applicant; Map 23 Lot 38; Wauregan Road, RA Zone;** Proposed 7-lot subdivision. Private road, residential houses, septic systems, minor grading.

Other Business:

1. 36 Paradise Drive Enforcement Order discussion with First Selectman re: Town Attorney taking it to Superior Court to be upheld.
2. 2024 IWWC meeting dates

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary:

Adjourn:

Richard Oliverson, Chairman

Brooklyn Inland Wetlands and Watercourses Commission
Regular Meeting Minutes
Tuesday, November 14, 2023
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.

Call to Order: 6:01 pm

Roll Call: Richard Oliverson; Adam Brindamour; Jason Burgess; James Paquin; Demian Sorrentino; Janet Booth; Adam Tucker.

Staff Present: WEO, Margaret Washburn; Recording Secretary, Terry Mahanna.

Attendance: Attending in person: Daniel Blanchette, J&D Engineers; Gregory Fisher, 459 & 481 Wolf Den Road owner; Paul Terwilliger, PC Survey Associates.

Attending via Zoom: Sharon Loughlin; Jackie Igliozi; Maria Gandy-Winslow; glahaie; Nicole-Wineland-Thomson Fisher

Seating of Alternates: None.

Public Commentary: None.

Approval of Minutes:

Special Meeting Minutes October 10, 2023. Demian Sorrentino asked that the following (from Margaret Washburn's 10/10/23 Agent Report) be reflected under Old Business > Line item 2: **IWWC 23-002 104 Church Street – Map 35 Lot 4-3 – Stephanie Turner, owner** > On 10/10/23, Fire Marshal Doug Kramer called me and told me I could relay this to Ms. Turner; I sent it to Ms. Turner in an email: "Fire Marshal Doug Kramer says that with the trees left on either side of the driveway, it is too tight for a fire truck to turn into the driveway. Removing the trees and widening the driveway would allow for a firetruck to pull in. Also, on 10/10/23, Highway Foreman Tommy Rukstela told me that sight line is not an issue; he also said that he did not look at the work relative to Town specifications.

Public Hearings: None

Old Business:

1. IWWC 23-011 Nicole Wineland-Thomson Fisher, applicant; 459 Wolf Den Road, Map 18, Lots 18A & 18B, RA Zone; Proposal to construct a gravel road and parking lot for 40 cars for wedding and event venue; majority of parking lot is within the upland review area, one small pocket of wetlands will be permanently filled.

Daniel Blanchette of J&D Engineers, presented on behalf of the Gregory Fisher, owner, who was also present. An aerial view plan was displayed as Mr. Blanchette described the property/project:

- 100 acres mostly wooded;
- 2,000 feet south of the Little Dipper;
- All drainage flows towards Blackwell's Brook;
- The gravel driveway will be at the north end of the property;
- Smaller events will be held in the barn, with larger events being held in a (temporary) tent which will be placed in an area where grading is proposed;
- Six delineated pockets of wetlands were shown on the map, with borderline wetlands not easy to detect or flag; he proposes to fill 300 sf in the parking area.
- Silt fence is proposed on the downward slope; a drainage analysis was done as there is a fair amount of runoff; a grass swale will be placed above the driveway with water runoff going downhill into a small catch basin; there are no concerns of impacts to Blackwell's Brook – swales and basins will provide infiltration and storage; approximately 50% runoff will drain into the basins, with the remainder going into the wetlands;
- Approximately 1,400 sf will be excavated for an 80'x120', 6-feet deep pond;
- Mr. Blanchette confirmed that Syl Pauley's comments received at the 10-10-23 meeting have been addressed.

Mr. Blanchette and Mr. Fisher answered questions from the commission and confirmed:

- The driveway and parking lot surfaces will consist of trucked-in gravel;
- There are no wetlands in the proposed tent area; material from the pond will be used to fill the tent area. Tents will be temporary; the need will be assessed on a case-by case basis for events;
- The pond is for aesthetics and wildlife; A proposed curtain drain will drain into the pond; drainage calculations were done; one pipe is 12" and the other is 15";
- Parking lot will allow for the needed turning radius for trucks and busses;
- Wetlands west of the parking lot probably connect at some point per the soil scientist, but not within 125' from the disturbance;
- Water drains will collect water approximately half the year;
- The stone wall near the road will be opened for constructing the driveway;
- Excess soil will not come out as a result of grading;
- A stockpile area for use during construction is not currently designated, although it can be;
- There is no overflow parking required as guests will be bussed in, with event staff using the parking lot;

Mr. Blanchette also noted that a Special Permit (which at the time did not include Wetlands) was previously approved by the Planning & Zoning Commission and will now be modified.

Janet Booth made a **motion** to conduct a site walk on November 25, 2023 at 8:00 a.m. which was seconded by Demian Sorrentino. Motion passed unanimously by vote 7-0-0.

Margaret Washburn will reach out to Syl Pauley and request he send his additional comments on the revised plans by November 22, 2023.

After discussion, a **motion** was made by Mr. Sorrentino and seconded by Jason Burgess, to hold a public hearing at the next meeting on December 12, 2023 at 6:00 p.m. The motion passed unanimously by vote 7-0-0.

Ms. Washburn reviewed the required fees and notification/signage with Mr. Fisher.

A **motion** to continue discussion to the next meeting was made by Demian Sorrentino and seconded by Adam Brindamour. The motion passed unanimously by vote 7-0-0.

2. DR22-001 – Map 34 Lot 31 Brown Road - Jared Chviek. RA Zone. Application for a Declaratory Ruling. Work includes removing dead oak trees killed by gypsy moths, creating pasture for cows, installing electric fence with solar powered generators, cutting and stockpiling firewood, and mitigation in the form of invasive species removal. **Complaint from Sharon Hawes, received on 10/16/22.**

Margaret Washburn indicated that she received an email by the complainant earlier in the day who asked that this discussion be continued to the next meeting. The Commission did not want to continue it and therefore discussion followed. The Commission determined that the complaints were unsubstantiated with not enough evidence of a violation on the part of Mr. Chviek. Ms. Washburn added that she asked Mr. Chviek if she could conduct a site visit and was told no.

A **motion** was made by James Paquin and seconded by Demian Sorrentino to conclude that there are no violations by Mr. Chviek due to insufficient evidence of noncompliance. The complaint is therefore unsubstantiated. Should any future complaints of the same nature and with insufficient evidence, be received they will be filed with no action from this Commission or the IWWC Agent. Motion carried by unanimous vote 7-0-0.

New Business:

1. IWWC 23-012 Vachon Brooklyn LLC, owner; 512 Providence Road, Map 41, Lots 13A & 14, Planned Commercial Zone; Construction of a concrete pad and fencing for a dumpster enclosure and installation of fencing and bollards around an existing propane tank in the upland review area. Duly Authorized Agent Approval with Chairman's Approval.

No further discussion occurred during this meeting.

Other Business:

1. 43 Herrick Road - James Salsich. Informal discussion with PC Survey.

Paul Terwilliger was present and described the project: There are no wetlands on the property, although some to the west on neighboring property. He wants to know if he needs to flag on the abutting property as the neighbor wants wetlands flagged and wants to dictate who should do it.

Demian Sorrentino indicated it is not policy that the neighboring property be delineated.

Margaret Washburn mentioned that she inspected the property and there is no chance of sediment moving past the stone wall to the wetlands as long as silt fence is installed.

2. Discussion regarding potential shift from printed meeting packets to digital information sharing, etc.

The Commission would still like full-sized, printed plans and a printed agenda and minutes Terry Mahanna mentioned that new iPad are not in this year's budget, although there may be some already in circulation that the Commission can use.

Margaret Washburn and Terry Mahanna will provide proposed 2024 meeting dates at the next meeting for the Commission's vote.

Re: 36 Paradise Drive - Demian Sorrentino asked Margaret Washburn why the Town attorney has not taken the enforcement order to Superior Court. Ms. Washburn indicated she will request Austin Tanner's presence at the next IWWC meeting to address this.

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary: None

Adjourn: Motion to adjourn was made at 7:05 p.m. by James Paquin and seconded by Adam Tucker. Motion carried unanimously by vote 7-0-0.

Submitted By:
Terry Mahanna
Recording Secretary

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

TOWN ENGINEER'S RESPONSE TO J&D CIVIL ENGINEERS, LLC RESPONSE TO TOWN ENGINEER'S REVIEW COMMENTS PERTAINING TO PROPOSED WILLOW HILL EVENTS WEDDING/EVENT VENUE PLANS (ASSESSOR'S MAP 19, BLOCK 18 - LOTS 18A & 18B)

WOLF DEN ROAD

BROOKLYN, CT

(December 11, 2023)

The purpose of this document is to respond to J&D Civil Engineers December 4, 2023 response to my comments of November 20, 2023 for set of plans entitled "Site Plan Modification for Special Permit #22-007 Application for Wedding/Event Venue for Willow Hill LLC, 459 Wolf Den Road, Brooklyn, Connecticut, Dated: September 29, 2023" prepared by J&D Civil Engineers, LLC.

My comments are in the order presented in the J&D correspondence.

Access Driveway and Parking Lot Plan – Sheet 2 of 6

1. Comment has been addressed.
2. The engineer's response indicated that the stormwater basins will have some portion of their volume within the seasonal high water level. A review of the test pit data located on Sheet 5 of 6 indicates each of the three (3) basins will be impacted at some time by ground water. The Drainage Report does not appear to have taken this into account in designing the storage volume of the basins. If this is true, the basins need to be redesigned to either be constructed out of the high water level or make a reasonable assumption on volume of ground water that would accumulate in the basin and increase (enlarge) storage volume to accommodate that in addition to stormwater flow. This needs to be addressed for the stormwater basins to function properly.
3. Comment has been addressed.
4. Comment has been addressed.
5. Comment has been addressed, insofar as the wetland commission and Wetlands Enforcement Officer not requiring the pond to be addressed in the soil scientist's report. However, my questions regarding the quality and health of the pond, due to possible stagnation, has not been answered.
6. Comment has been addressed. However, a note is needed on the plan indicating that the bag is a temporary device only needed during construction of the pond.
7. Comment has been addressed.
8. Comment has been addressed.

Notes and Details - Sheet 4 & 5 of 6

1. The "Curtain Drain Installation Detail" has not been modified to indicate where the perforations are located.
2. Comment has been addressed. The revised note can be found on Sheet 4 of 6.
3. Comment has been addressed.

4. Comment has been addressed.
5. Comment has been addressed.
6. Comment has been addressed.

Drainage Report

1. Water Quality Volume (WQV) has not been fully met in the design of the stormwater basins. The aggregate WQV provided by the basins only provide 86% of the volume required by Zoning Regulation 7.H.3. However, the basins may need to be redesigned as noted in Note 2 under Sheet 2 of 6, above, and could be able designed to meet the WQV.
2. Why have the under drains been removed from the stormwater basins?

By: *Syl Pauley, Jr., P.E.*
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

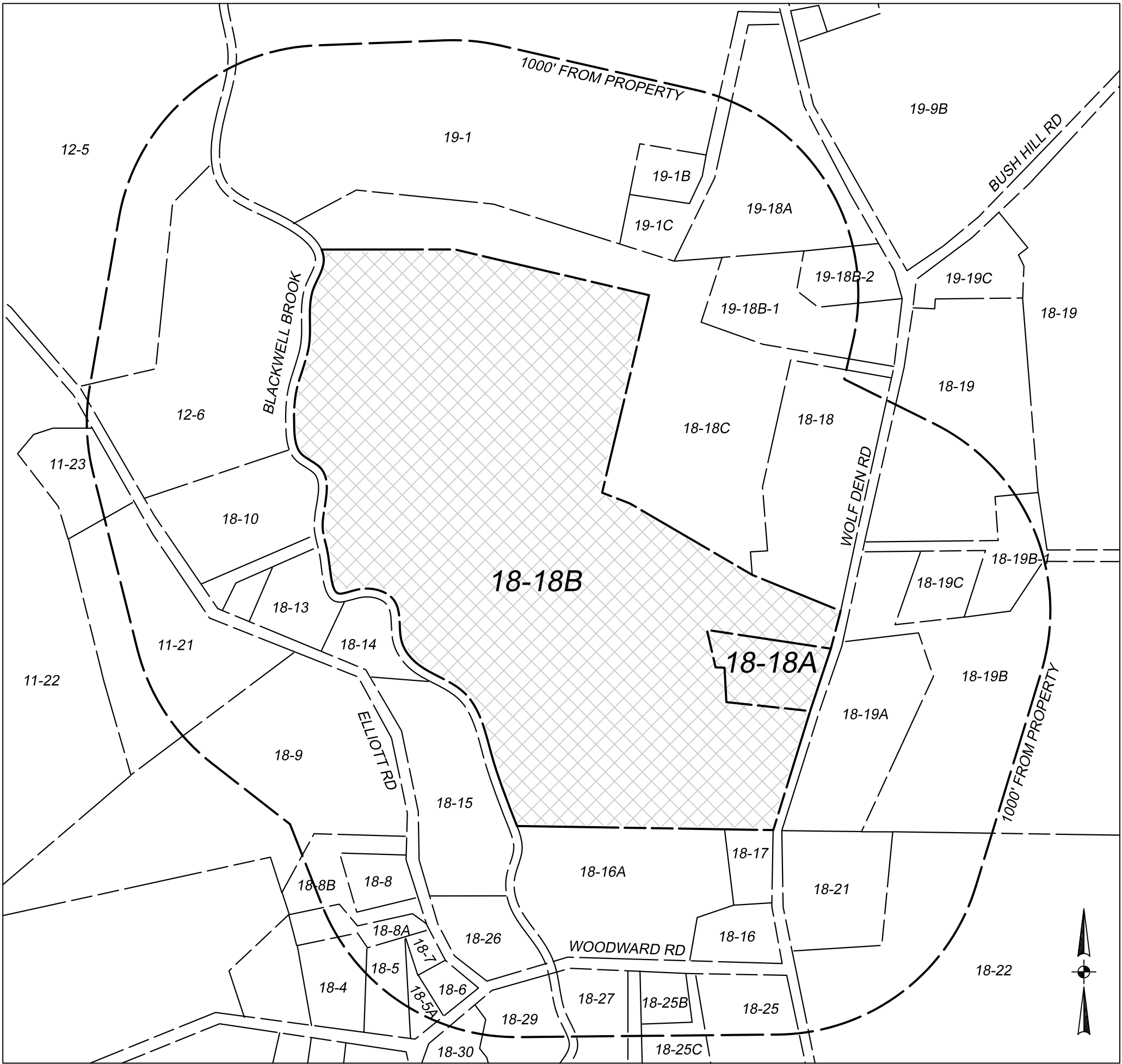
**SITE PLAN MODIFICATION FOR
SPECIAL PERMIT # 22-007
FOR WEDDING/EVENT VENUE FOR
WILLOW HILL LLC
459 & 481 WOLF DEN ROAD
BROOKLYN, CONNECTICUT
DATED: SEPTEMBER 29, 2023
REVISED THROUGH: DECEMBER 4, 2023**

PREPARED FOR:

WILLOW HILL LLC, CARE OF
NICOLE WINELAND-THOMSON FISHER
AND GREGORY FISHER
53 BARNARD AVENUE
WATERTOWN, MA 02472

INDEX OF DRAWINGS

- 1 COVER
- 2 ACCESS DRIVEWAY AND PARKING LOT PLAN
- 3 EVENT AREA PLAN
- 4 NOTES AND DETAILS
- 5 DRIVEWAY AND PARKING LOT DETAILS
- 6 LANDSCAPING PLAN



LOCATION MAP
1" = 500'

ZONE: RESIDENTIAL AGRICULTURAL (RA)
USE: SPECIAL EVENTS

ITEM	REQUIRED	EXISTING	PROPOSED
FRONTAGE	150'	>336'	> 336'
FRONT SETBACK	50'	115'	115'
SIDE SETBACK	40'	5'	5'
REAR SETBACK	50'	293'	293'
LOT SIZE	2 ACRES	4+ ACRES	4+ ACRES
EVENT SETBACK*	200'	77.6'	77.6'
PARKING SPACES	57	15	59

*A VARIANCE WAS OBTAINED TO REDUCE THIS SETBACK REQUIREMENT

SPECIAL PERMIT APPROVAL BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

TOWN OF BROOKLYN
RECEIVED FOR RECORDING

CHAIRMAN

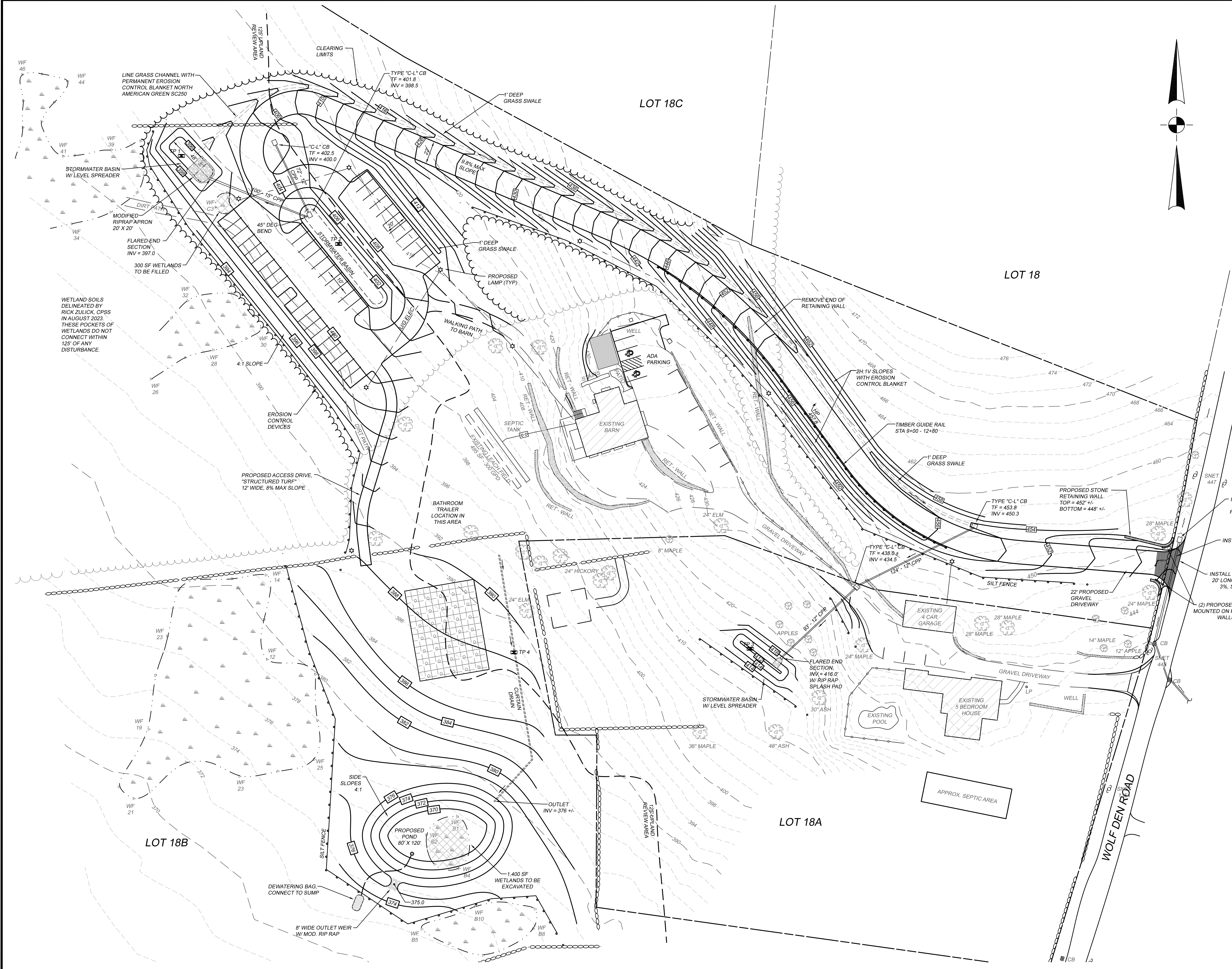
DATE

TOWN CLERK DATE TIME MAP #

J & D CIVIL
ENGINEERS, LLC

**401 RAVENELLE ROAD
THOMPSON, CT 06255**

JDCIVILENGINEERS.COM
860-923-2920



SURVEY NOTES

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

SURVEY TYPE: GENERAL LOCATION

PURPOSE: SITE DEVELOPMENT

BOUNDARY DETERMINATION CATEGORY: NONE

HORIZONTAL ACCURACY: CLASS B

VERTICAL ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

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 SURVEY OR LIMITED PROPERTY/BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.

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

DENNIS R. BLANCHETTE DATE 12107 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE © 2023 J&D CIVIL ENGINEERS, LLC

- LEGEND**
- BUILDING SETBACK LINE
 - PROPERTY LINE
 - EXISTING MAJOR CONTOUR LINE
 - EXISTING MINOR CONTOUR LINE
 - PROPOSED CONTOUR LINE
 - STONEWALL
 - UTILITIES
 - TREELINE
 - FENCE
 - SILT FENCE OR SILT SOCK
 - PROPOSED LAMP
 - UNDERGROUND ELECTRIC

ACCESS DRIVEWAY AND PARKING LOT PLAN
PREPARED FOR
WILLOW HILL LLC
459 WOLF DEN ROAD, BROOKLYN, CT
MAP 15 - LOTS 18 & 18A

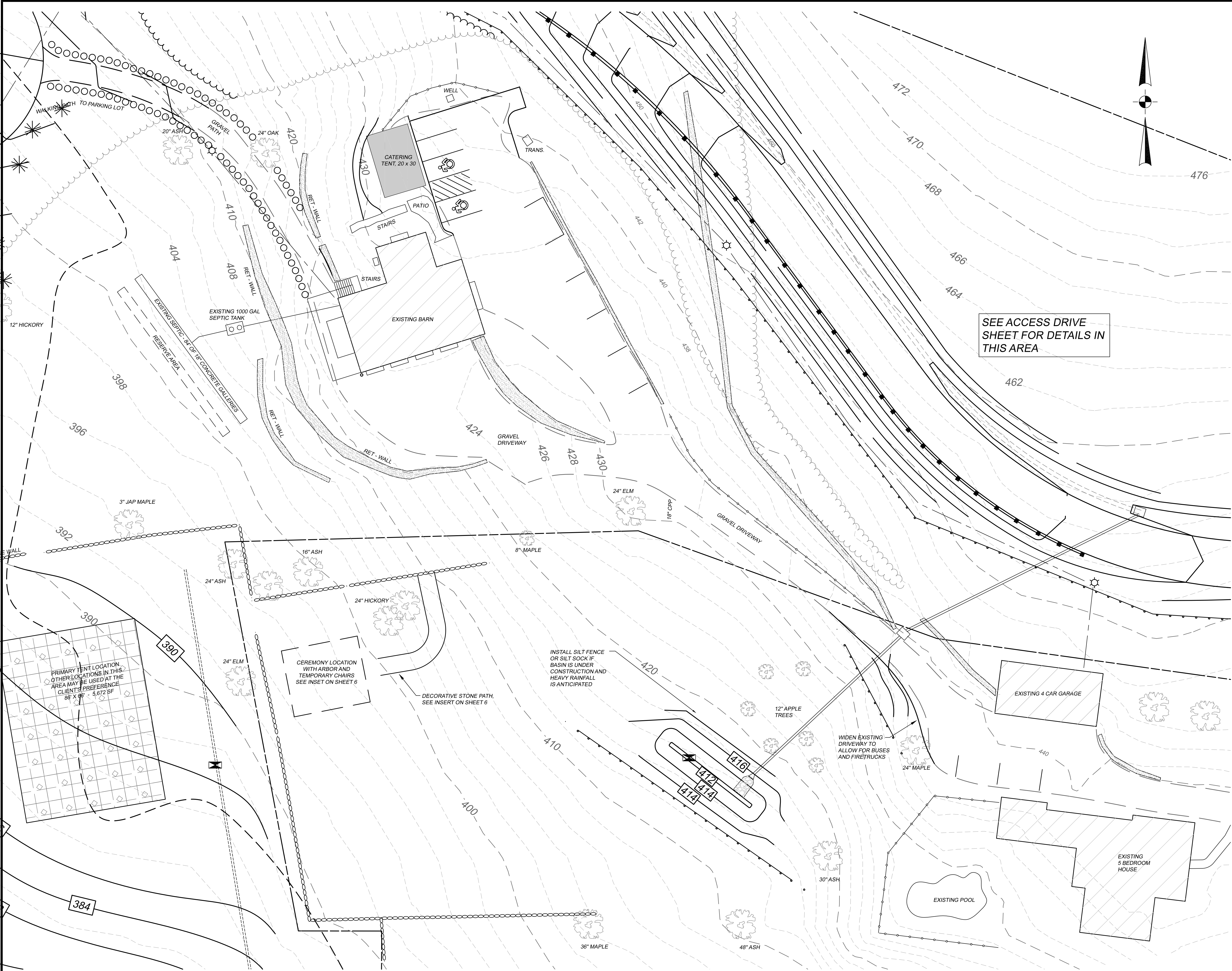
J&D CIVIL ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB
CHECKED: DRB

REVISIONS:
2023-11-05 TOWN COMMENTS
2023-12-04 TOWN COMMENTS

JOB NO: 22172
SCALE: 1" = 40'

DATE: SEPTEMBER 29, 2023
SHEET: 2 OF 6



SURVEY NOTES

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

SURVEY TYPE: GENERAL LOCATION

PURPOSE: TO DEPICT EXISTING CONDITIONS

BOUNDARY DETERMINATION CATEGORY: NONE

HORIZONTAL ACCURACY: CLASS B

VERTICAL ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

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.

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

DENNIS R. BLANCHETTE DATE 12107
LICENSE
NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
© 2023 J&D CIVIL ENGINEERS, LLC

LEGEND	
	BUILDING SETBACK LINE
	PROPERTY LINE
	EXISTING MAJOR CONTOUR LINE
	EXISTING MINOR CONTOUR LINE
	PROPOSED CONTOUR LINE
	LEACHING TRENCH
	STONEWALL
	UTILITIES
	TREELINE
	FENCE
	PROPOSED LAMP

EVENT AREA PLAN
PREPARED FOR
WILLOW HILL LLC
459 WOLF DEN ROAD, BROOKLYN, CT
MAP 18 - LOTS 18 & 18A

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

DESIGNED: DDB CHECKED: DRB	REVISIONS: 2023-11-08 TOWN COMMENTS 2023-12-04 TOWN COMMENTS
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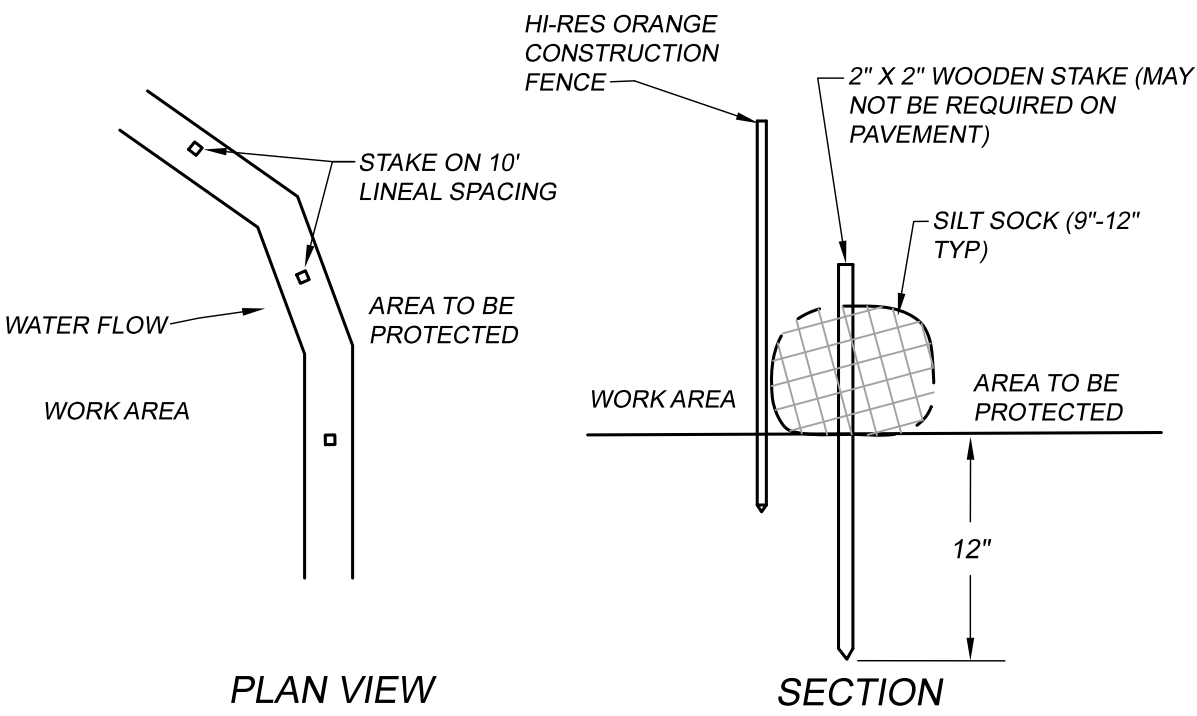
JOB NO: 22172 SCALE: 1" = 20'	DATE: SEPTEMBER 29, 2023 SHEET: 3 OF 6
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PROJECT DESCRIPTION:

1. THE APPLICANT IS PROPOSING TO HOLD WEDDINGS, BANQUETS, AND OTHER SIMILAR EVENTS AT THE PROPERTY. THE MAXIMUM NUMBER OF GUESTS SHALL BE LIMITED TO 225 PERSONS.
2. THE EXISTING FIVE BEDROOM HOUSE SHALL BE USED AS A PRIVATE RESIDENCE BY THE OWNER AND APPLICANT.
3. THE EXISTING BARN MAY BE USED TO HOLD SMALLER EVENTS. ADDITIONALLY, A TEMPORARY TENT OR TENTS MAY BE INSTALLED TO HOLD LARGER EVENTS.
4. GUESTS SHALL NOT BE ALLOWED TO USE THE RESTROOMS INSIDE THE BARN. A PORTABLE RESTROOM TRAILER SHALL BE DELIVERED TO THE SITE FOR ALL EVENTS.
5. NO FOOD SHALL BE PREPARED ON SITE. ALL FOOD SHALL BE PROFESSIONALLY CATERED AND DELIVERED TO THE SITE.
6. NO NEW BUILDINGS ARE PROPOSED WITH THIS APPLICATION. THE ONLY CONSTRUCTION SHALL CONSIST OF DRIVEWAYS, PARKING LOTS, DRAINAGE STRUCTURES, UTILITIES, AND LANDSCAPING.
7. THE MAXIMUM NUMBER OF EVENTS TO BE HELD IN A TWELVE MONTH PERIOD IS ESTIMATED AT 70 EVENTS WITH AMPLIFIED MUSIC, AND 30 EVENTS WITHOUT AMPLIFIED MUSIC.
8. NO SINGLE EVENT SHALL LAST FOR MORE THAN 3 CONSECUTIVE DAYS.
9. AMPLIFIED MUSIC, BOTH INDOOR AND OUTDOOR, SHALL BE TURNED OFF AT 10:00 PM.
10. THE MAXIMUM OCCUPANCY OF THE BARN SHALL BE 110 PERSONS. THE MAXIMUM OCCUPANCY OF A TEMPORARY TENT SHALL BE 225 PERSONS.

SIGN NOTES

1. THE APPLICANT IS PROPOSING TO INSTALL TWO SIGNS AT THE NEW ENTRANCE TO THE SITE.
2. EACH SIGN SHALL BE LESS THAN 3 FEET LONG AND LESS THAN 1 FOOT HIGH.
3. SIGNS SHALL BE MOUNTED ON RETAINING WALLS, AT A HEIGHT OF 2-3 FEET.
4. NO LIGHTING IS PROPOSED FOR THE SIGNS.
5. SIGNAGE SHALL COMPLY WITH ALL REQUIREMENTS IN 7.A.3.1 OF THE BROOKLYN ZONING REGULATIONS.



NOTES

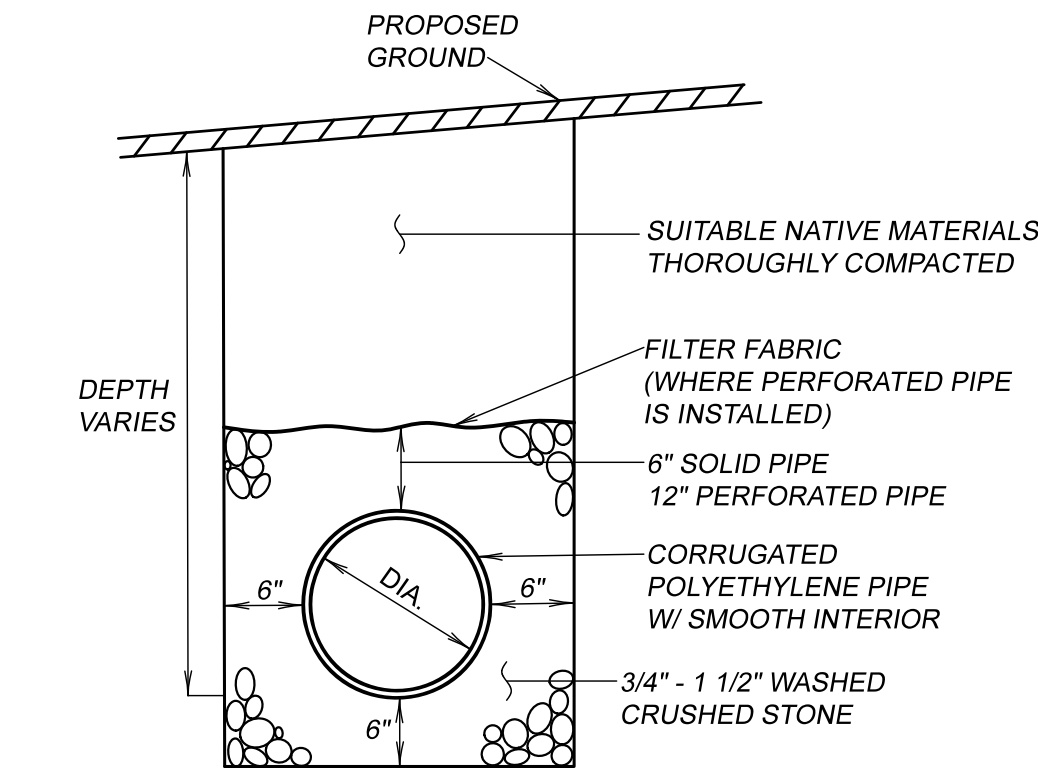
1. SILT SOCK MANUFACTURER SHALL BE SILT SOXX OR ENGINEER APPROVED EQUAL
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS
3. SEDIMENT SILT SOCK TO BE FILLED WITH LEAF COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS
4. FOLLOWING CONSTRUCTION AND SITE STABILIZATION, COMPOST MATERIAL SHALL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

SILT SOCK DETAIL
NOT TO SCALE

NEIGHBORHOOD AGREEMENT:

THE APPLICANTS HAVE MET WITH THEIR ABUTTERS AND AGREED TO THE FOLLOWING TERMS FOR THIS PROJECT:

1. LIMIT WEEKEND EVENTS TO ONE OUTDOOR EVENT WITH AMPLIFIED ENTERTAINMENT PER WEEKEND, WHERE WEEKEND IS DEFINED AS FRIDAY-SATURDAY-SUNDAY.
2. NOISE LEVELS SHALL NOT EXCEED 55 dB DURING THE DAY AND 45 dB AFTER 10:00 PM, AS MEASURED FAT THE PROPERTY LINES THAT ABUT NEIGHBORS AND RUN ALONG WOLF DEN ROAD. SEE CT GENERAL STATUTES 22A-69
3. ON STREET PARKING BY GUESTS AND VENDORS SHALL BE PROHIBITED.
4. THERE SHALL BE NO MORE THAN 2 FIREWORKS DISPLAYS DURING THE CALENDAR YEAR. FIREWORKS DISPLAYS MUST BE RUN BY LICENSED PROFESSIONALS. FIREWORKS SHALL OTHERWISE NOT BE ALLOWED BY GUESTS.
5. RESIDENTS WITHIN 2,500 FEET OF THE PROPERTY IN ALL DIRECTIONS SHALL BE NOTIFIED AT LEAST 10 DAYS PRIOR TO UPCOMING FIREWORKS DISPLAYS.
6. FIREARMS SHALL BE PROHIBITED ON THE PROPERTY DURING ALL EVENTS.
7. OUTDOOR FIRES SHALL ONLY BE ALLOWED IN THE FIREPIT, WHICH WILL BE STARTED AND MAINTAINED BY THE OWNERS OR THEIR EMPLOYEES, AND OUTDOOR GRILL WILL BE AVAILABLE FOR USE ON THE PROPERTY.
8. RENTERS ARE RESPONSIBLE FOR REMOVING ALL EVIDENCE OF THE EVENT UPON CONCLUSION OF THE EVENT OR AS SOON AS REASONABLY FEASIBLE AFTER THE CONCLUSION OF THE EVENT. THIS INCLUDES TRASH, TENTS, FURNITURE, EQUIPMENT, PORTABLE TOILETS, AND ANYTHING ELSE WHICH IS VISIBLE FROM THE ROAD THAT HAS BEEN BROUGHT TO THE VENUE.
9. ALL RENTERS OF THE PROPERTY WILL AGREE TO AND SIGN A CONTRACT FOR USAGE OF THE PREMISES, WHICH WILL INCLUDE BUT NOT BE LIMITED TO THE RESTICTIONS ABOVE. IT WILL ASK THEM TO COMMIT TO RESPECTING THE LOCAL RESIDENTS AND SURROUNDING NEIGHBORHOODS WITH RESPECT TO NOISE, TRASH, AND DRIVING SPEED.
10. OUTDOOR LIGHTING SHALL ONLY BE TURNED ON DURING EVENTS WHEN NECESSARY.
11. ALL OUTDOOR LIGHTING SHALL BE DARK SKY COMPLIANT (IDA SEAL OF APPROVAL), AND MUST COMPLY WITH TOWN AND STATE SAFETY REQUIREMENTS. TO THE GREATEST EXTENT FEASIBLE, OUTDOOR LIGHTING SHALL BE DOWNCAST AND DIRECTED AWAY FROM THE ROAD AND ABUTTING PROPERTIES.
12. THERE SHALL BE AN ANNUAL MEETING WITH NEIGHBORS TO REVIEW THE SPECIAL PERMIT AND TO ENSURE THAT THE ABOVE CONDITIONS AS WELL AS THE INTERESTS OF PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE OF THE NEIGHBORING RESIDENTS ARE BEING MET. ANY DISPUTE THAT CANNOT BE RESOLVED THROUGH DIRECT DIALOGUE SHALL BE BROUGHT TO THE COMMISSION FOR RESOLUTION.



CPP DRAINAGE PIPE INSTALLATION DETAIL
N.T.S.

GENERAL CONSTRUCTION NOTES:

LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. THE CONTRACTOR SHALL NOTIFY CALL BEFORE YOU DIG AND FIELD VERIFY THE LOCATION, DEPTH AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC.

CONSTRUCTION SHALL BE IN CONFORMANCE WITH CONNDOT FORM 818 UNLESS OTHERWISE NOTED ON THE PLANS. UTILITY INSTALLATION SHALL BE IN CONFORMANCE WITH THE APPROPRIATE UTILITY COMPANY.

THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH EACH UTILITY AND ALL COSTS ASSOCIATED WITH THE PROTECTION OF EXISTING FACILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE ALL EXISTING PIPING UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

TYPICAL DETAILS SHOWN ARE TO ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY SUBMIT PROPOSALS FOR ALTERNATE METHODS TO SUIT FIELD CONDITIONS.

ALL PIPING SHALL HAVE WARNING TAPE INSTALLED. IN ADDITION, ALL NONMETALLIC PIPE MUST BE PARALLELED BY A METALLIC WIRE OR METALLIC DETECTION TAPE FOR EASE OF LOCATING.

ALL PIPING SHALL BE CLEANED PRIOR TO INSTALLATION, IN ACCORDANCE WITH THE APPLICABLE UTILITY'S REQUIREMENTS. COPIES OF ALL TESTS SHALL BE PROVIDED TO THE OWNER PRIOR TO ACCEPTANCE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TESTING EQUIPMENT.

ALL TRENCHING SHALL BE DONE IN COMPLIANCE WITH OSHA REGULATIONS AND THE INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER. IF SHORING IS REQUIRED, IT MUST BE DESIGNED BY A LICENSED CT PROFESSIONAL ENGINEER.

BENCHMARKS WILL BE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR IN LAYING OUT THE PROJECT. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

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.

SOIL EROSION AND SEDIMENT CONTROL

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT AN VENUE FOR WEDDINGS AND OTHER SIMILAR EVENTS. SITE WORK WILL INCLUDE CONSTRUCTION OF ACCESS DRIVEWAYS, PARKING AREAS, DRAINAGE STRUCTURES, AND NECESSARY UTILITIES.

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

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

1. INSTALLATION OF EROSION CONTROL DEVICES
2. CLEARING & GRUBBING
3. ROUGH SITE GRADING
4. INSTALLATION OF UTILITIES INCLUDING DRAINAGE PIPES AND CB'S
5. PREPARATION OF ACCESS DRIVEWAYS AND PARKING LOT BASE
6. AFTER SITE IS STABILIZED, CONSTRUCT DRAINAGE BASIN
7. PERMANENT STABILIZATION INCLUDING LANDSCAPING
8. REMOVAL OF EROSION CONTROL MEASURES

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

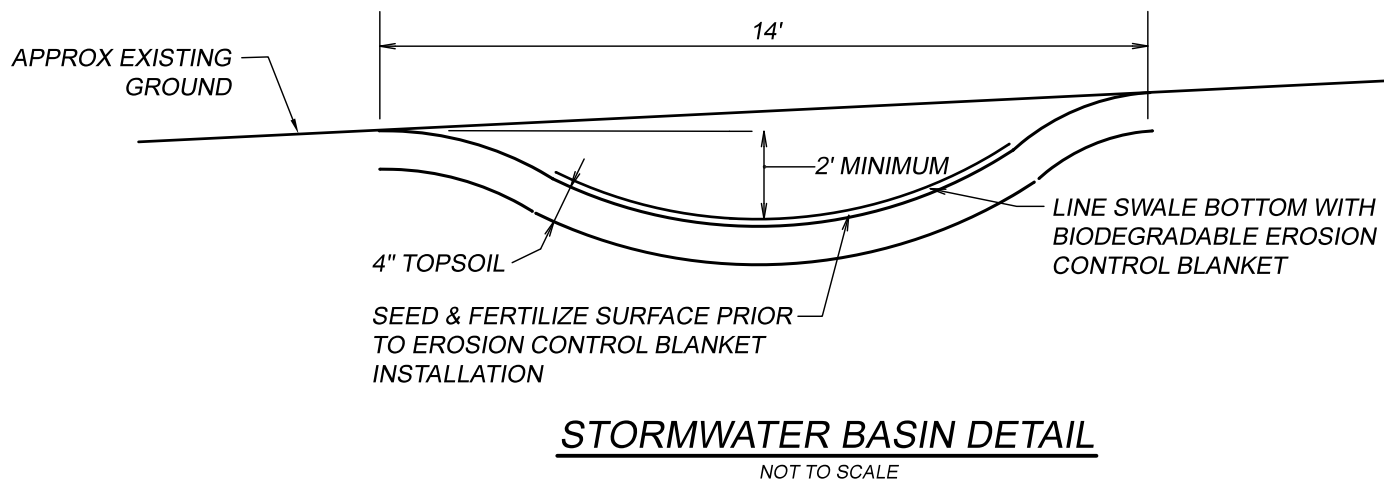
CATCH BASINS SHALL BE PROTECTED WITH FILTER FABRIC AND/OR SURROUNDED BY SILT SOCKS DURING CONSTRUCTION, WHEN DISTURBED AREAS ARE NOT STABILIZED.

OPERATIONS AND MAINTENANCE

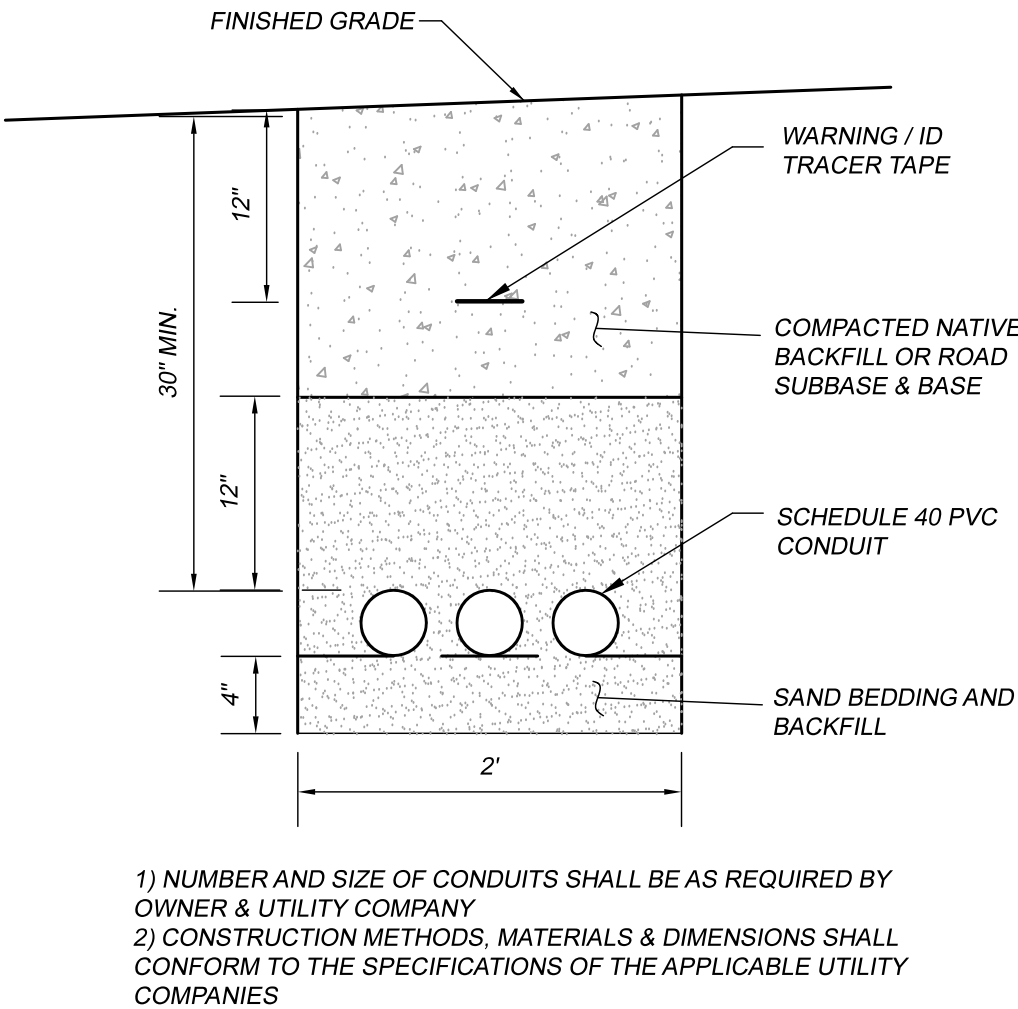
1. ALL PROPOSED WORK SHALL CONFORM TO "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL OF SOIL AND WATER CONSERVATION AND TOWN REGULATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE GOALS OF THIS EROSION CONTROL PLAN ARE MET BY WHATEVER MEANS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

LIGHTING NOTES

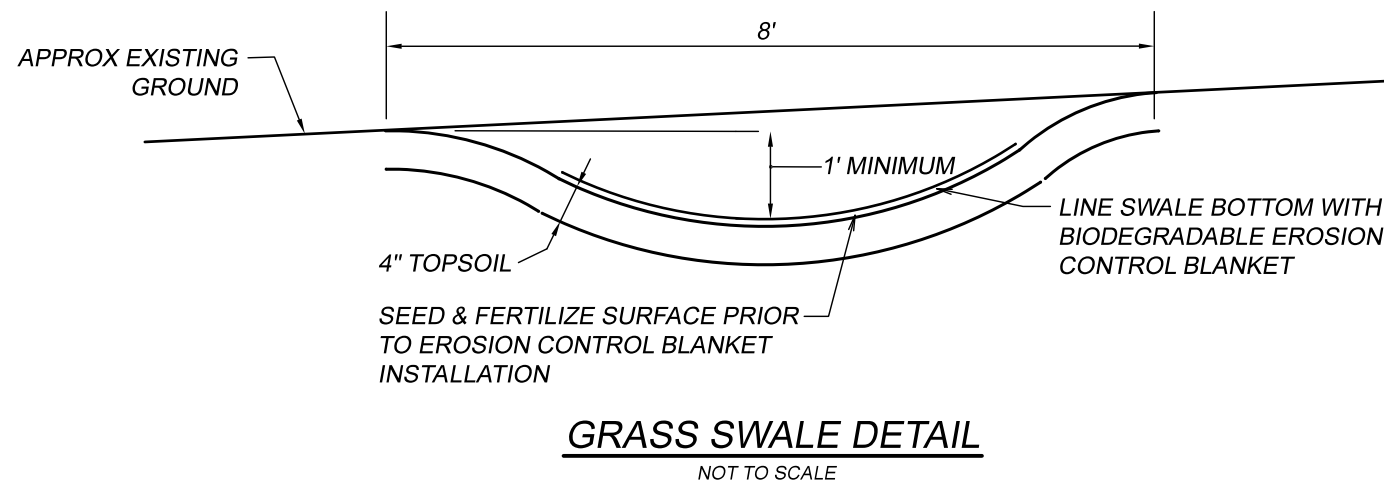
1. LAMP POSTS SHALL BE INSTALLED SOUTH OF THE PROPOSED 40 CAR PARKING LOT, AS INDICATED ON THE SITE PLANS.
2. THE SPECIFIC MANUFACTURER AND MODEL OF LIGHT IS TO BE DETERMINED. LAMP POSTS SHALL BE OF A RURAL OR RUSTIC STYLE.
3. LAMPS SHALL BE INSTALLED ON POLES 10-12 FEET TALL.
4. LAMPS SHALL BE FULL CUTOFF, WITH LED BULBS.
5. LAMP INTENSITY SHALL BE IN THE RANGE OF 8,000 - 12,000 LUMENS, OR 80-120 WATTS.
6. LAMP TEMPERATURE SHALL BE APPROXIMATELY 5,000 K.
7. ALL LAMPS SHALL CONFORM WITH THE REQUIREMENTS IN SECTION 7.G OF THE BROOKLYN ZONING REGULATIONS.
8. ALL LAMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
9. SUFFICIENT EXTERIOR LIGHTING EXISTS ON ALL OTHER PORTIONS OF THE SITE, SUCH AS THE BUILDINGS AND DRIVEWAY.
10. THE PROPOSED LIGHTING IS EXPECTED TO PROVIDE LESS THAN 1 FOOT-CANDLE AT THE PROPERTY LINES.



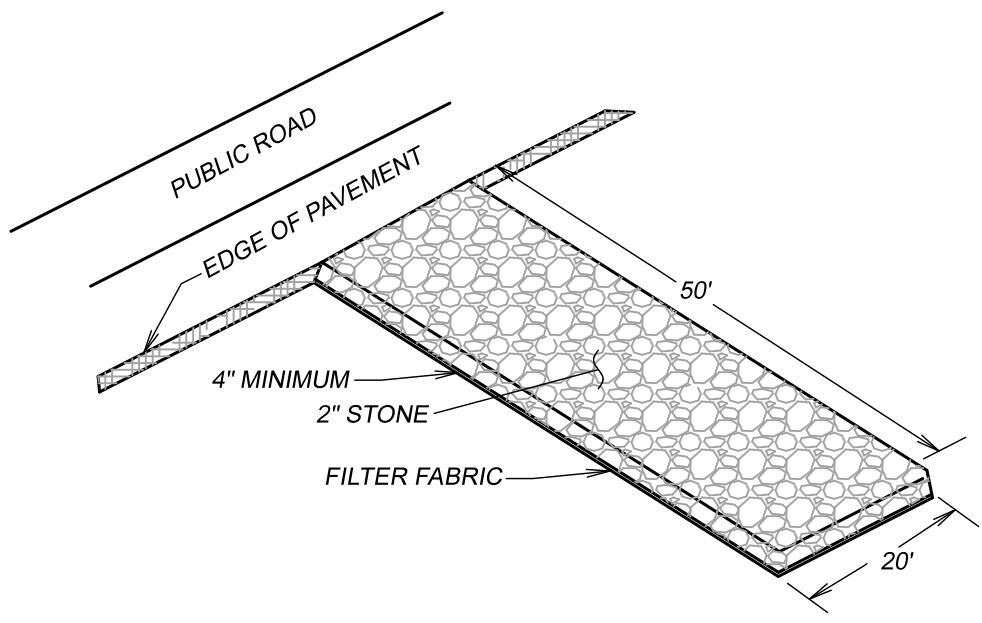
STORMWATER BASIN DETAIL
NOT TO SCALE



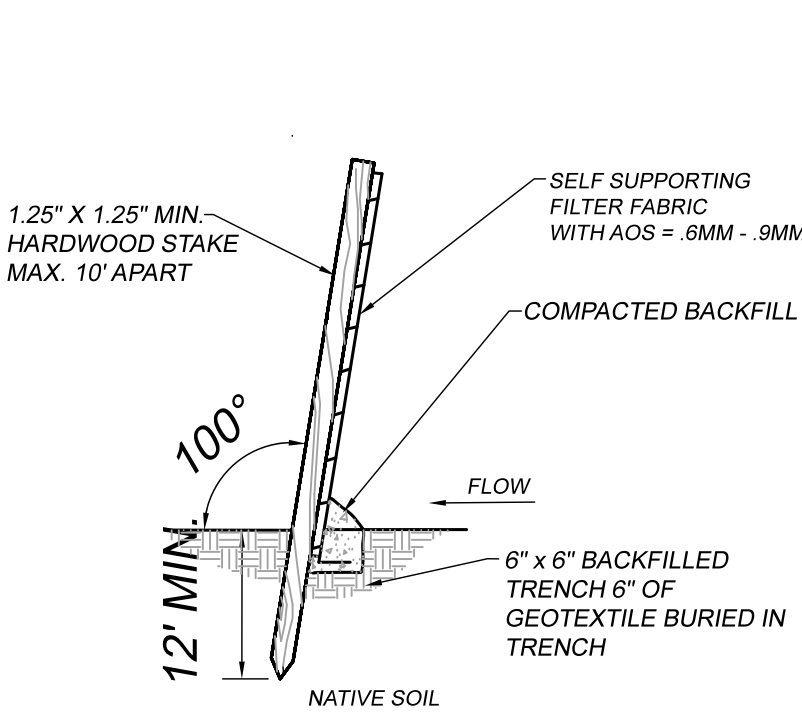
TYPICAL UTILITY TRENCH DETAIL
NOT TO SCALE



GRASS SWALE DETAIL
NOT TO SCALE



TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE



SILT FENCE INSTALLATION
NOT TO SCALE

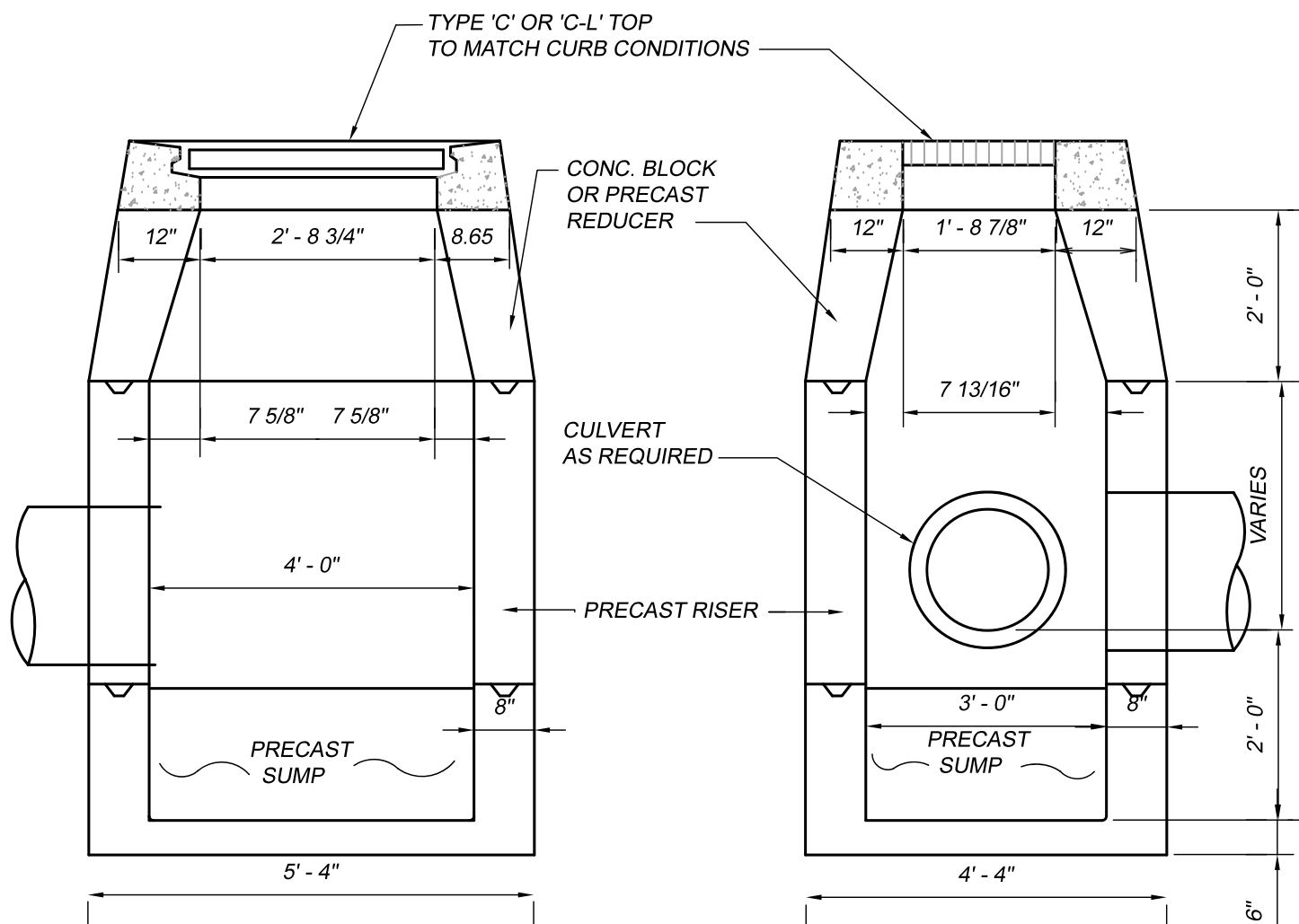
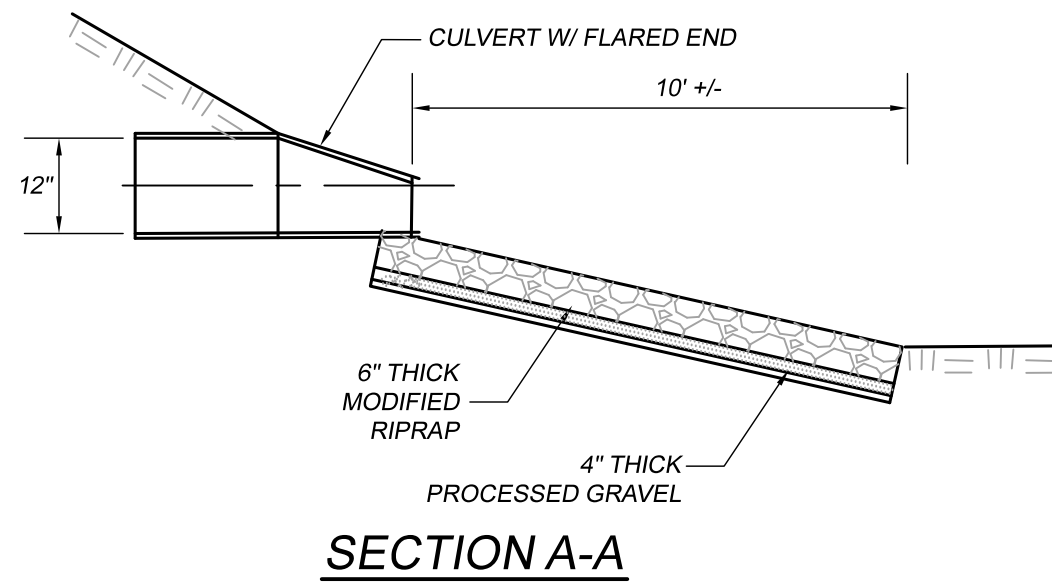
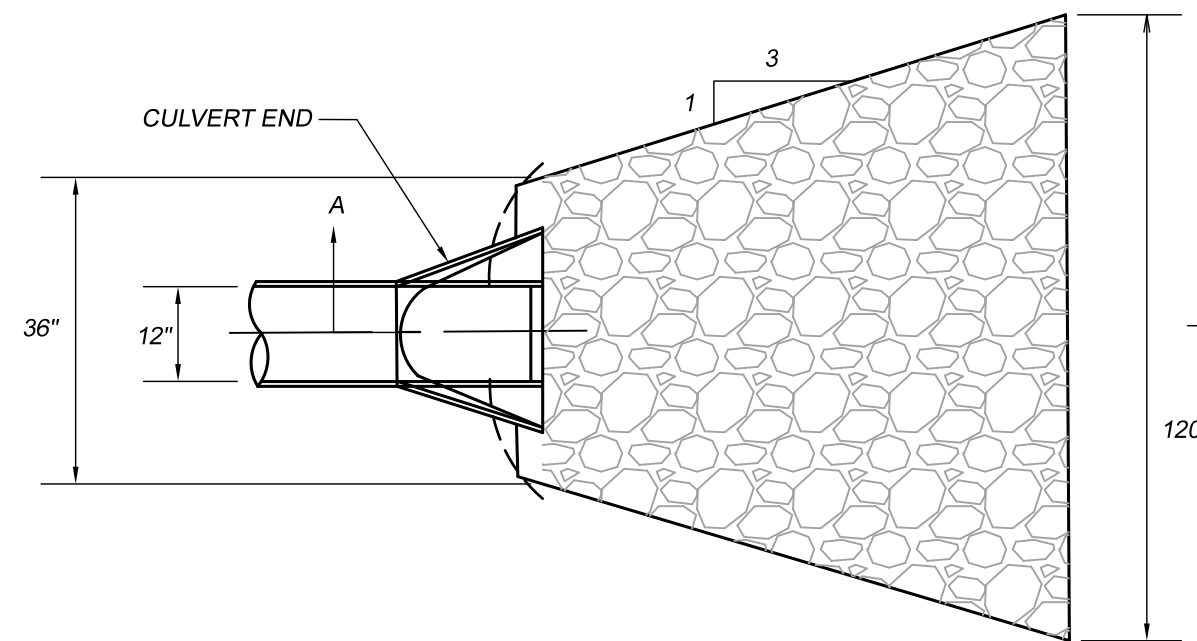
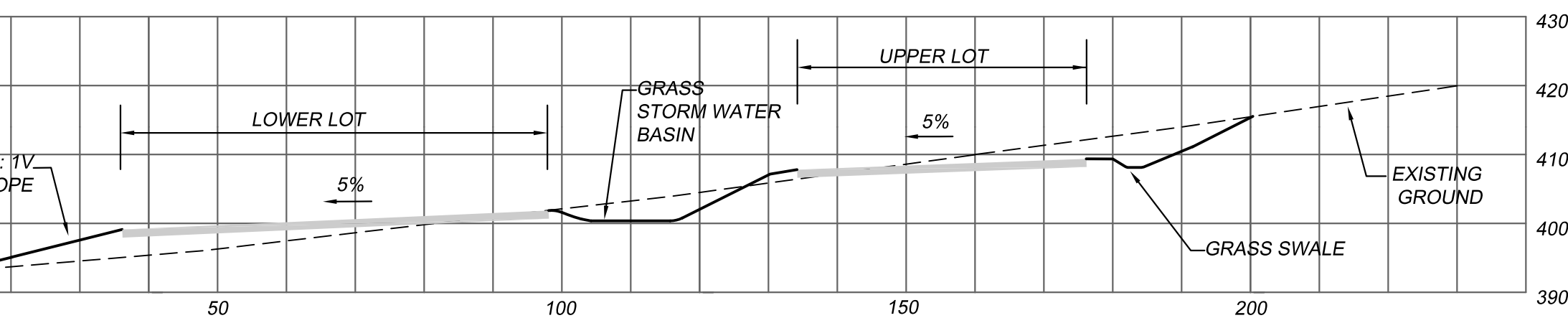
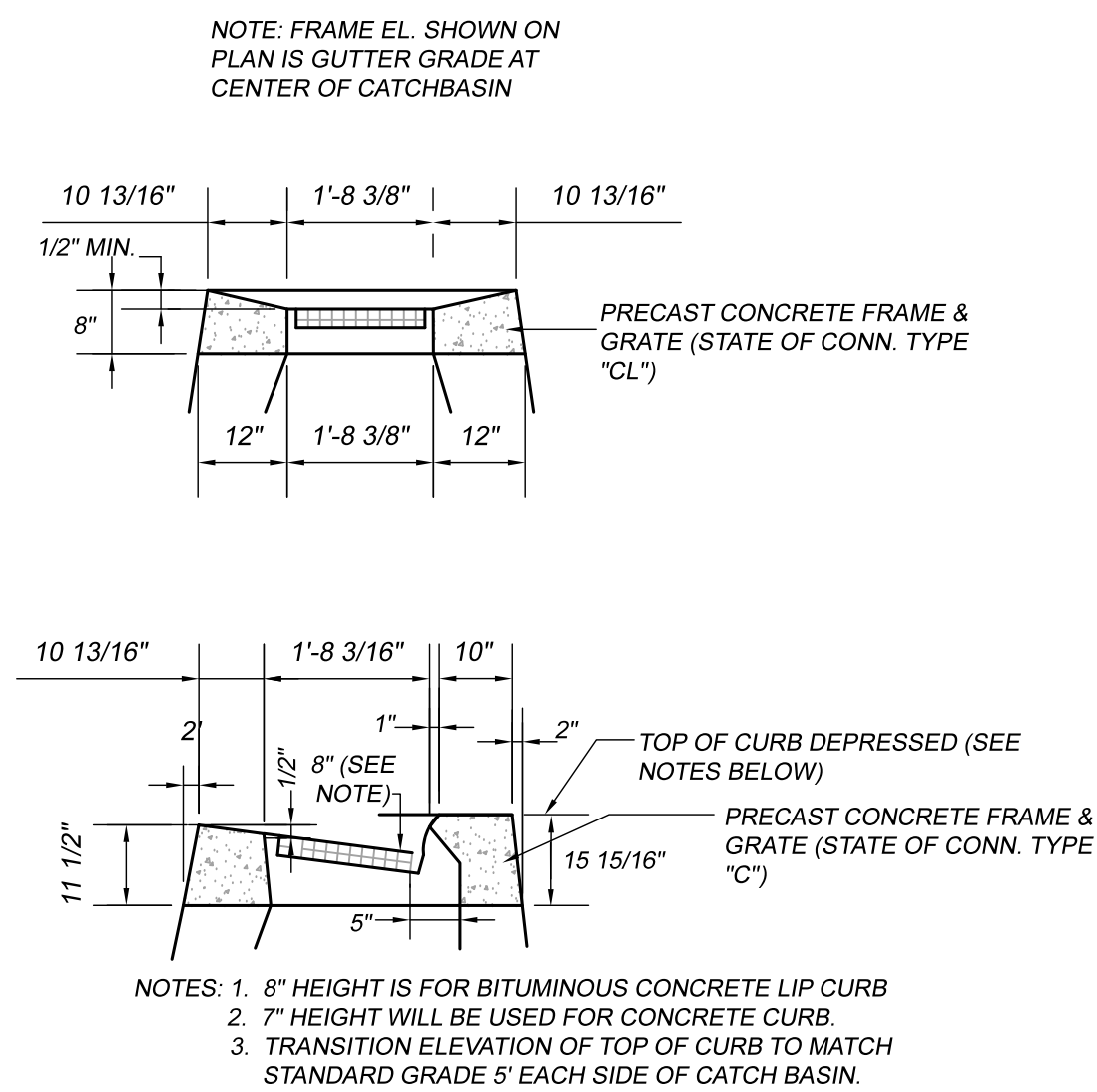
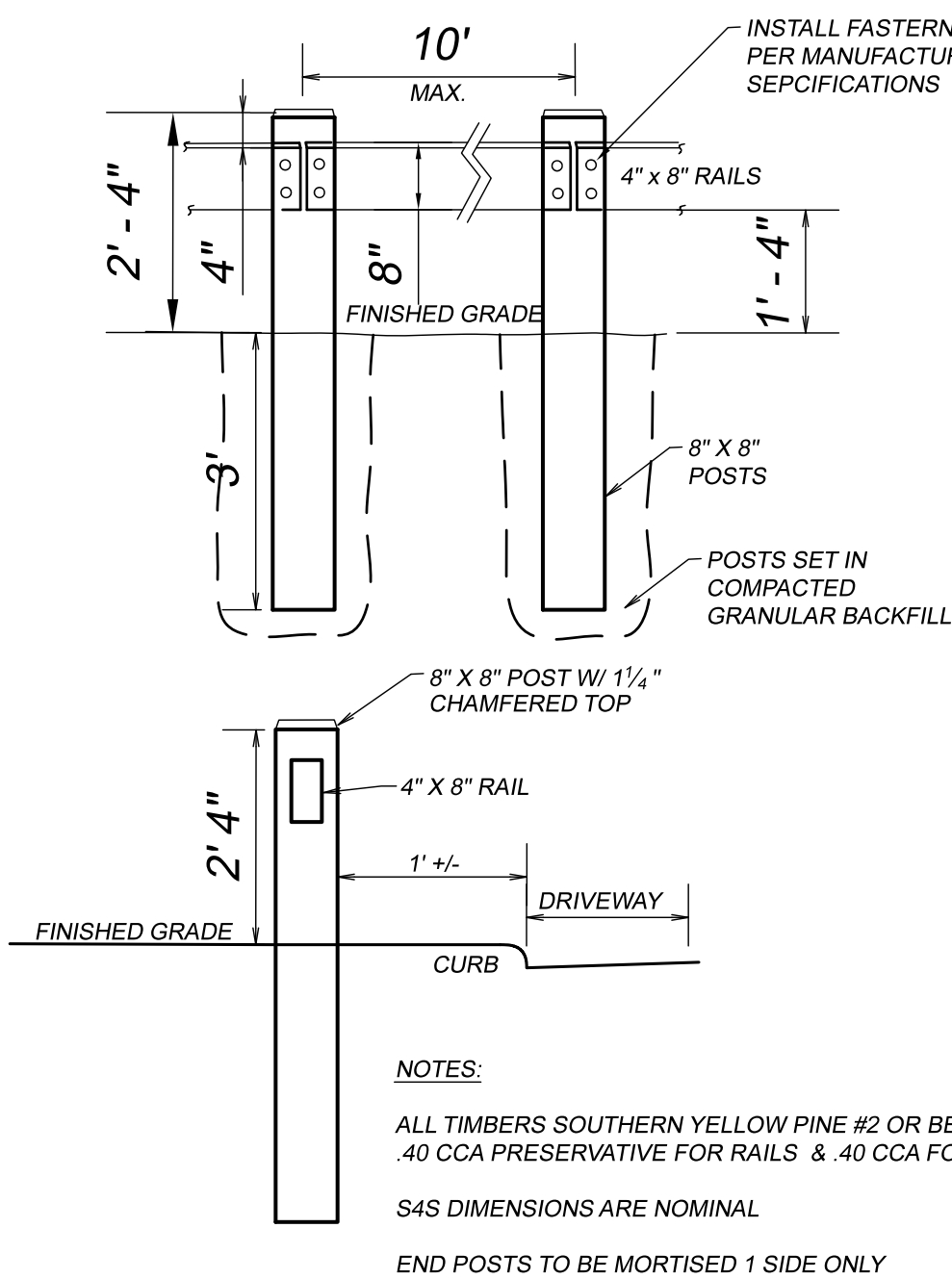
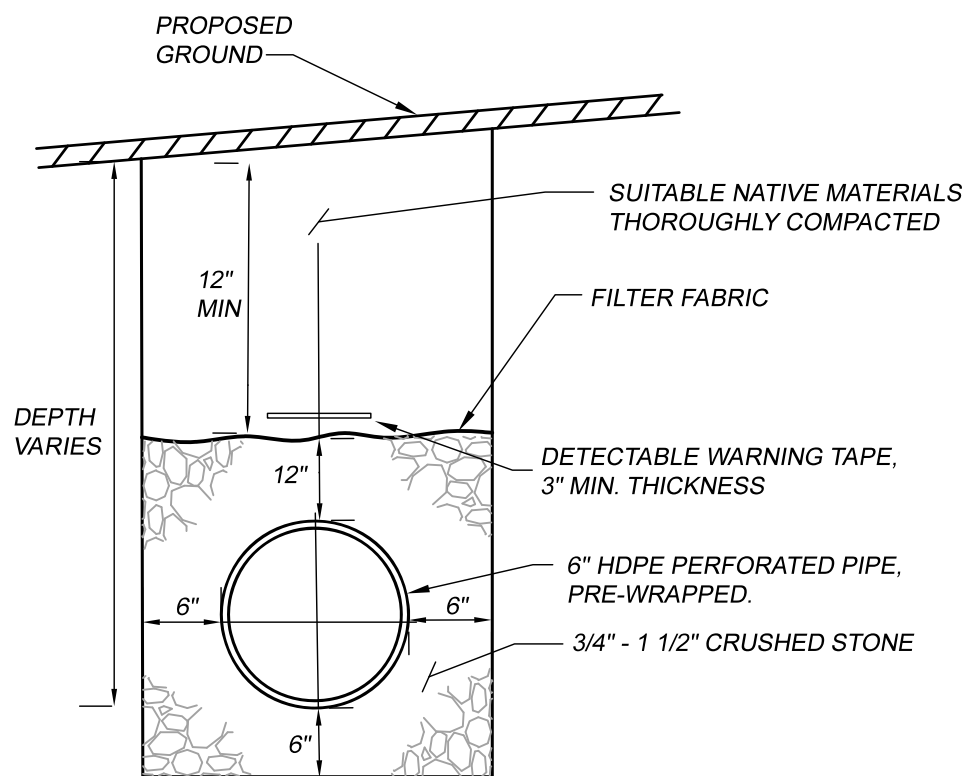
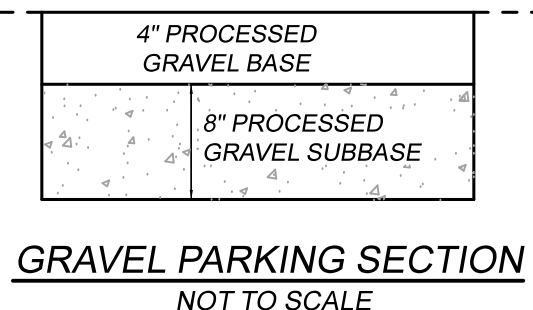
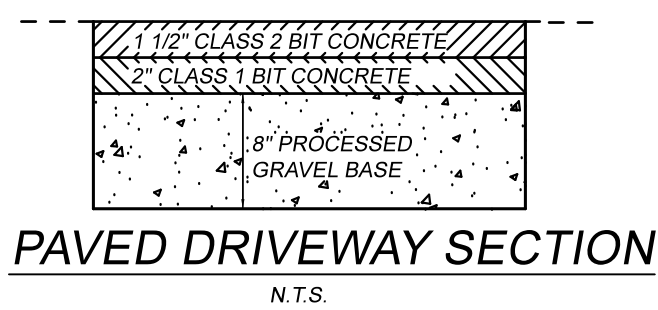
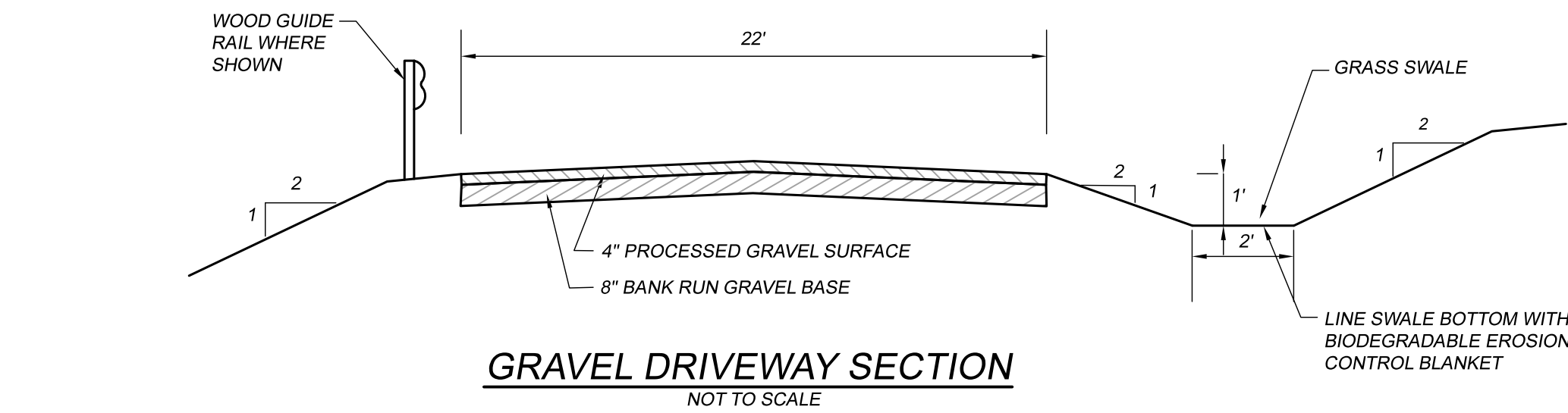
NOTES AND DETAILS
PREPARED FOR
WILLOW HILL EVENTS
459 WOLF DEN ROAD, BROOKLYN, CT
MAP 15 - LOTS 18 & 18A

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

DESIGNED: DDB
CHECKED: DRB

REVISIONS:
2023-11-05 TOWN COMMENTS
2023-12-04 TOWN COMMENTS

JOB NO: 22172
SCALE: 1" = 20'
DATE: SEPTEMBER 29, 2023
SHEET: 4 OF 6



- PARKING NOTES:**
1. THE SITE CURRENTLY CONTAINS PARKING FOR APPROXIMATELY 15 CARS.
 2. THE APPLICANT IS PROPOSING TO CONSTRUCT AN UPPER PARKING LOT FOR AN ADDITIONAL 40 CARS.
 3. GUESTS WILL BE ENCOURAGED TO PARK OFF SITE AT LOCAL HOTELS, AND SHALL BE TRANSPORTED TO THE SITE BY BUS OR SHUTTLE.
 4. TWO ADDITIONAL PARKING SPACES ARE PROPOSED NEAR THE BARN, FOR DELIVERIES AND DROP-OFFS.
 5. TWO HANDICAP ACCESSIBLE SPACES ARE PROPOSED NEAR THE BARN, FOR DISABLED GUESTS.
 6. THE TOTAL NUMBER OF PROPOSED PARKING SPACES IS 59.

- STRUCTURED TURF NOTES:**
1. THE PROPOSED ACCESS DRIVE BELOW THE BARN SHALL BE CONSTRUCTED FOR THE PURPOSE OF DELIVERING A BATHROOM TRAILER TO THE CEREMONY AND TENT AREA.
 2. NO OTHER VEHICLES ARE ANTICIPATED TO USE THIS DRIVEWAY.
 3. THE DRIVEWAY SHALL BE CONSTRUCTED WITH A 50-50 MIXTURE OF PROCESSED GRAVEL AND LOAM, COMPACTED, WITH A MINIMUM THICKNESS OF 12".
 4. THE DRIVEWAY SHALL BE SEEDED AS SOON AS POSSIBLE UPON COMPLETION.

- POND EXCAVATION NOTES:**
1. ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.
 2. ALL PROPOSED WORK SHALL BE PERFORMED DURING THE DRY SEASON (JULY - OCTOBER) AND/OR DURING PERIODS OF DRY WEATHER.
 3. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM, AND STABILIZED AS SOON AS POSSIBLE.
 4. THE DEWATERING BAG SHALL BE PLACED IN THE UPLANDS, IN THE OPEN FIELD. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS REGARDING THE DEWATERING BAG, AND REPLACE AS NECESSARY.
 5. NO SATURATED SOILS OR OTHER MATERIALS SHALL BE TRANSPORTED OFF SITE UNTIL FULLY DRAINED.

- TEST PITS FOR DRAINAGE BASINS**
- OBSERVED BY: DANIEL BLANCHETTE
DATE: DECEMBER 2, 2023
- TEST PIT #1**
- | | |
|----------|--|
| 0 - 9" | TOPSOIL, ORGANICS |
| 9 - 23" | FINE SANDY LOAM, REDDISH BROWN |
| 23 - 33" | VERY FINE SANDY LOAM, GRAY, MOD. COMPACT |
- MOTTLING AT 23"
WATER SEEPS AT 32"
ROOTS TO 21"

- TEST PIT #2**
- | | |
|----------|----------------------------|
| 0 - 8" | TOPSOIL, ORGANICS |
| 8 - 28" | FINE SANDY LOAM, BROWN |
| 28 - 34" | VERY FINE SANDY LOAM, GRAY |
- MOTTLING AT 28"
ROOTS TO 27"
- TEST PIT #3**
- | | |
|----------|----------------------------|
| 0 - 12" | TOPSOIL, ORGANICS |
| 12 - 23" | FINE SANDY LOAM, BROWN |
| 23 - 39" | VERY FINE SANDY LOAM, GRAY |
- MOTTLING AT 23"

- TEST PIT #4**
- | | |
|----------|----------------------------|
| 0 - 10" | TOPSOIL, ORGANICS |
| 10 - 21" | FINE SANDY LOAM, BROWN |
| 21 - 34" | VERY FINE SANDY LOAM, GRAY |
- MOTTLING AT 21"
WATER SEEPS AT 30"

NOTES AND DETAILS

PREPARED FOR

WILLOW HILL EVENTS

459 WOLF DEN ROAD, BROOKLYN, CT

MAP 15 - LOTS 15 & 15A

J&D

CIVIL ENGINEERS, LLC

401 RAVENELLE ROAD

N. GROSVENORDALE, CT 06255

860-923-2920

DESIGNED: DDB

CHECKED: DRB

REVISIONS:

2023-11-05 TOWN COMMENTS

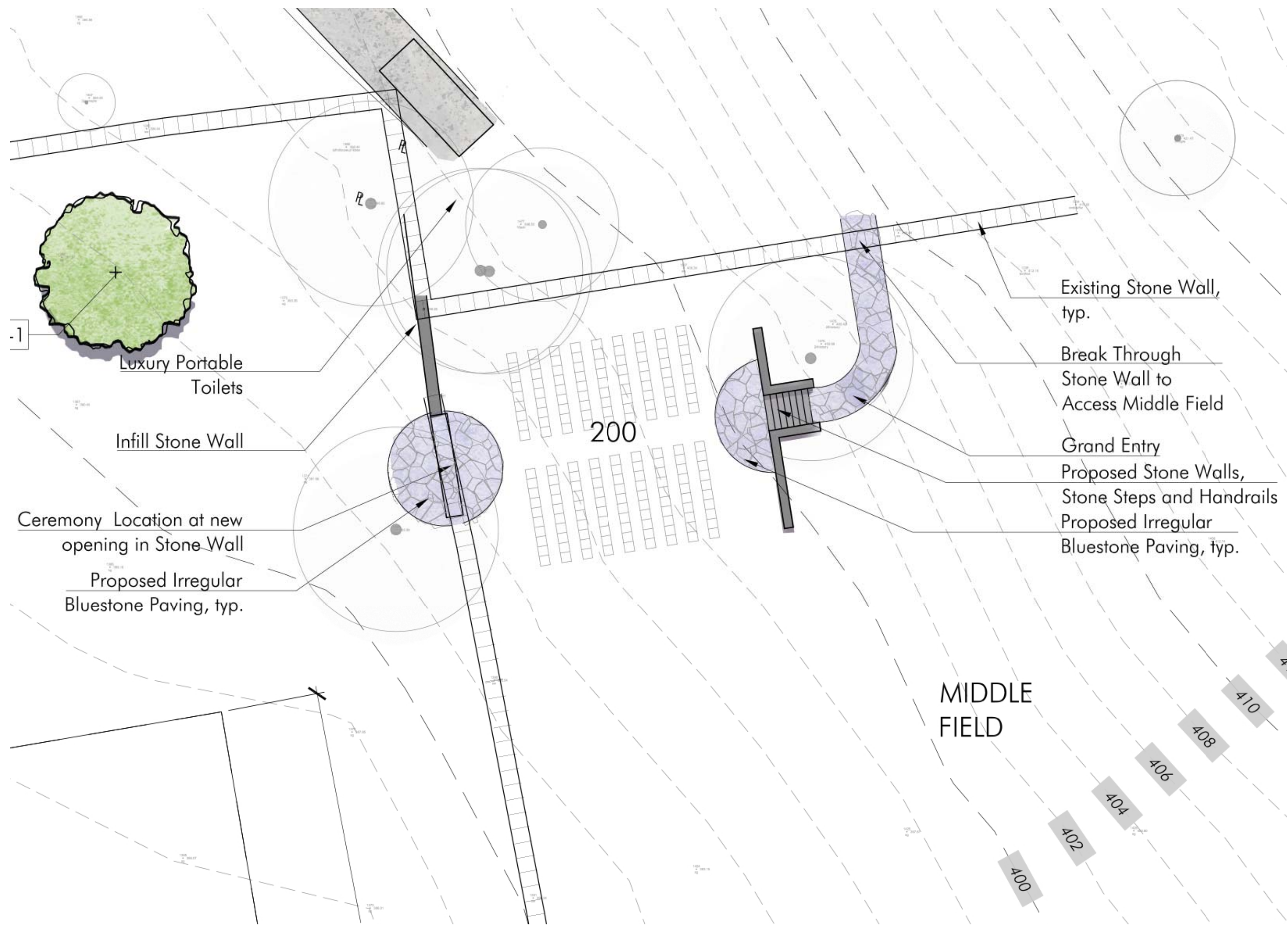
2023-12-04 TOWN COMMENTS

JOB NO: 22172

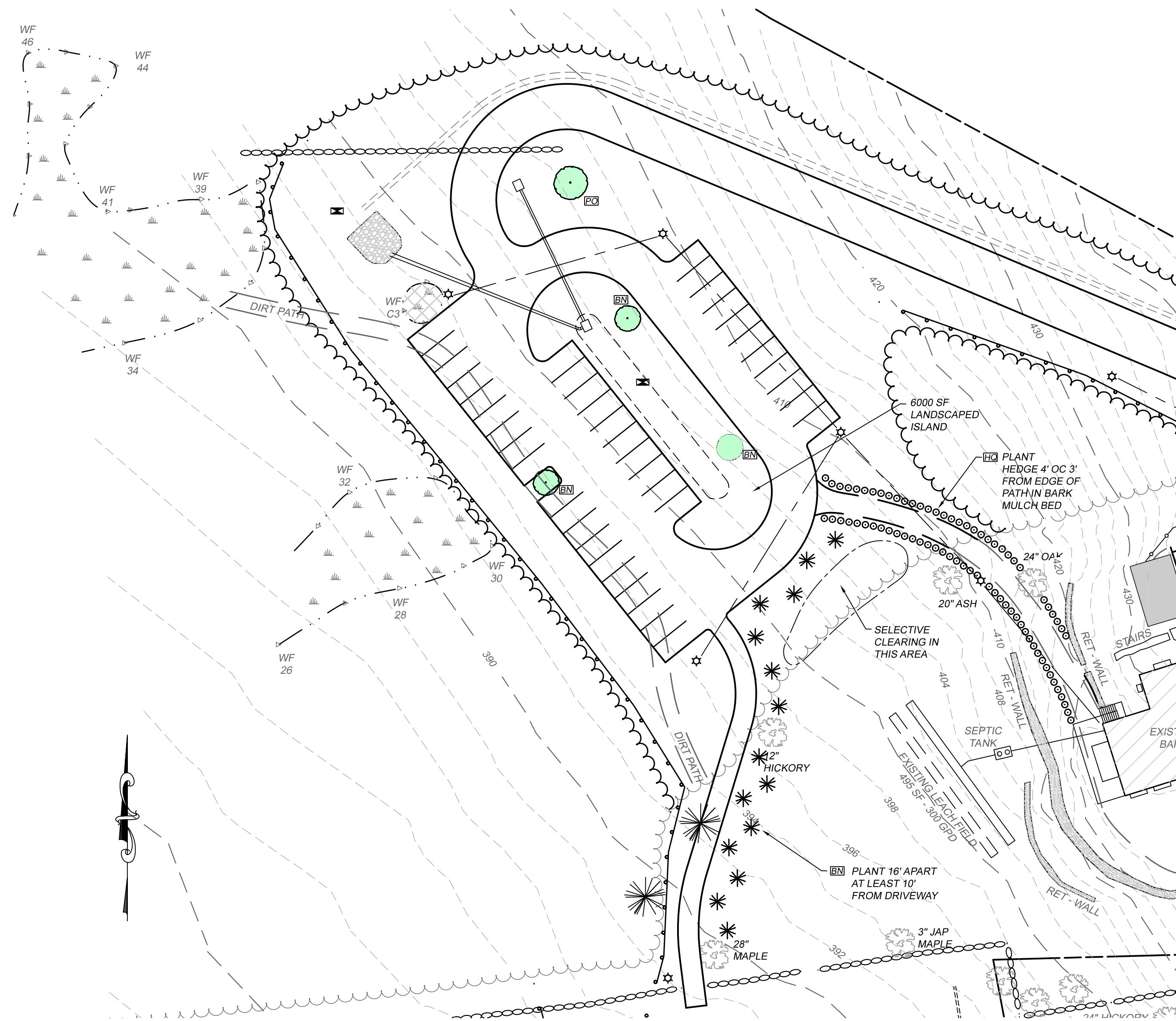
SCALE: 1" = 20'

DATE: SEPTEMBER 29, 2023

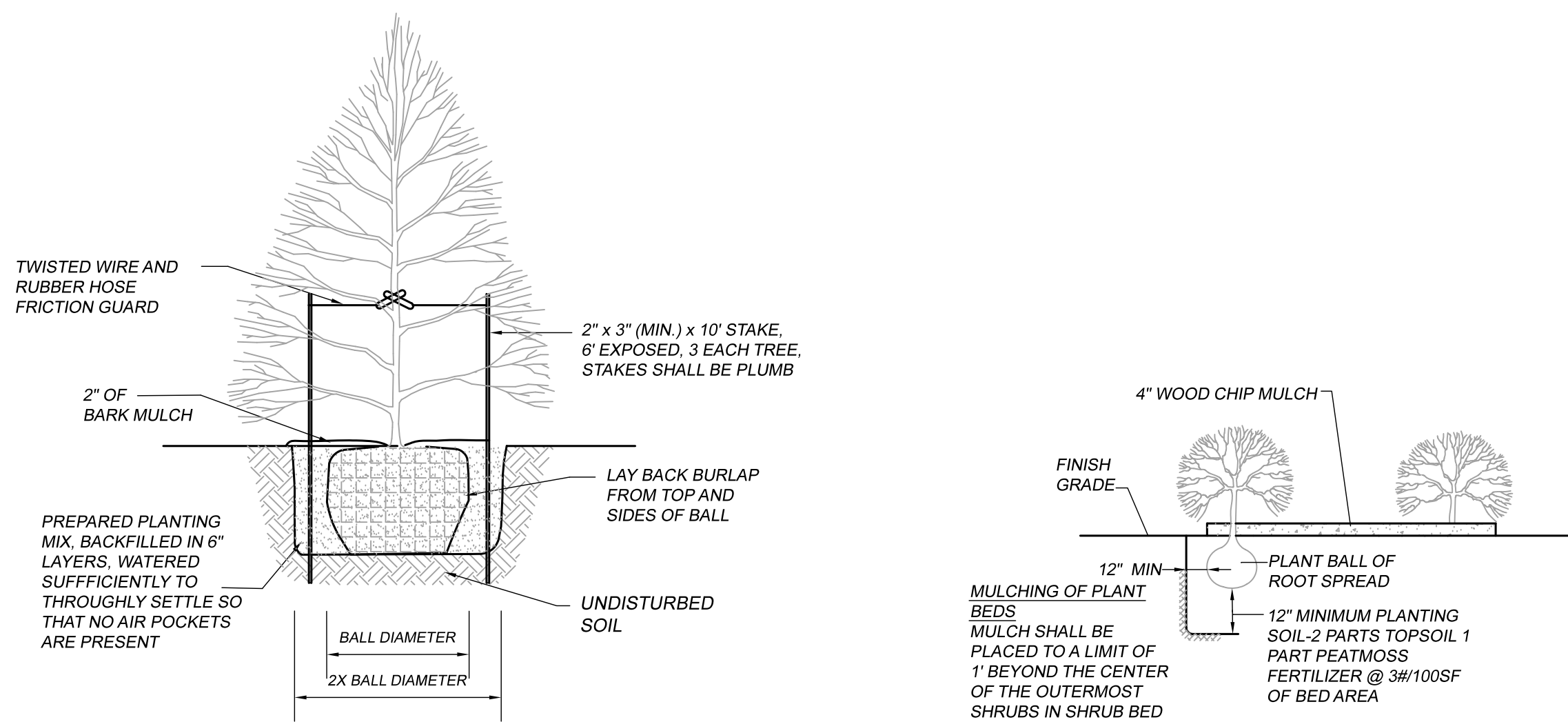
SHEET: 5 OF 6



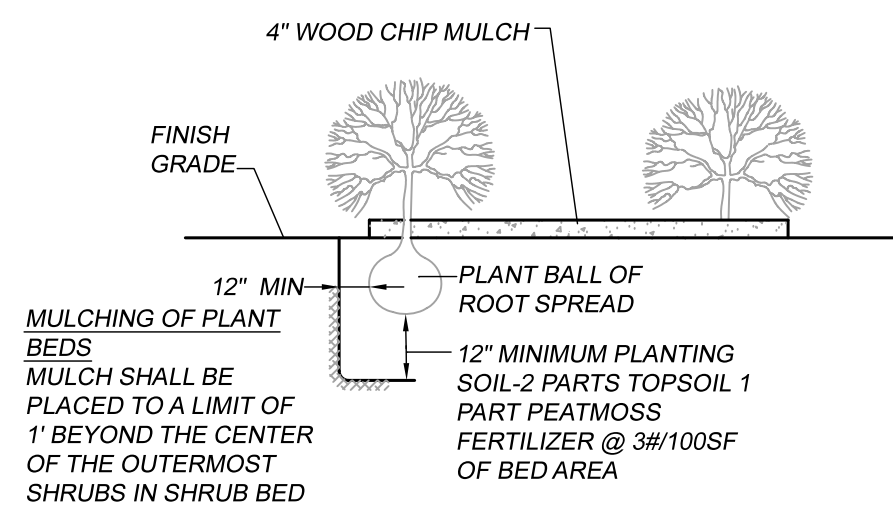
BLOWUP FOR CEREMONY AREA
NOT TO SCALE
COPIED FROM PREVIOUSLY APPROVED PROJECT



BLOWUP FOR PARKING LANDSCAPING
1" = 40'



TREE PLANTING DETAIL
NOT TO SCALE



PLANTING FOR SHRUBS IN BEDS
NOT TO SCALE

PARKING LOT AND DRIVEWAY TURF ESTABLISHMENT NOTE:

ESTABLISH A LOW MOW MEADOW ALONG THE SHOULDERS OF THE DRIVEWAY AND AROUND THE PERIMETER OF THE PARKING LOT.

EXAMPLES OF SEED MIXTURES INCLUDE AMERICAN MEADOWS NO MOW LAWN GRASS SEED MIX, AMERICAN MEADOWS NO MOW FLOWERING LAWN SEED MIX, OR HART SEED (S). LOW GROW MIXTURE.

TOPSOIL SHALL BE PREPARED AS RECOMMENDED FOR THE SEED MIX AND THE RECOMMENDED SEED COVERAGE RATES SHALL BE USED.

PLANT IN COOL TEMPERATURES FOR GERMINATION AND GROWTH.

PLANTING SCHEDULE

KEY	QUAN.	SIZE	NAME	DESCRIPTION
TH	15	7' - 8' HT	THUJA "GREEN GIANT" GREEN GIANT ARBORVITAE	FAST GROWER, 30-50' TALL, 10'-12' WIDE
AB	3	2.5" - 3.0" DIA, 8' HT	ACER FREEMANII JEFFSRED "AUTUMN BLAZE" FREEMAN'S MAPLE	FAST GROWING, 40'- 60' TALL, 30'-40' WIDE
PO	1	2.5" - 3.0" DIA, 8' HT	PLATANUS OCCIDENTALIS AMERICAN SYCAMORE	RAPID GROWTH, 75' - 90' TALL, 75' - 100' WIDE
HQ	74	3 GALLON	HYDRANGEA QUERCIFOLIA "SIKES DWARF" SIKES DWARF HYDRANGEA	SHOWY HEDGE, 2' - 3' TALL, 3' - 4' WIDE

LANDSCAPING PLAN PREPARED FOR WILLOW HILL LLC 459 WOLF DEN ROAD, BROOKLYN, CT MAP 15 - LOTS 15 & 15A	
J&D CIVIL ENGINEERS, LLC 401 RAVENELLE ROAD N. GROSVENORDALE, CT 06255 860-923-2920	
DESIGNED: DDB CHECKED: DRB	REVISIONS:
JOB NO: 22172 SCALE: 1" = 40'	DATE: NOVEMBER 28, 2023 SHEET: 6 OF 6

JOB NO. 22172
DATE 12/4/23
BY DDB
CH'D BY JJB

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

SHEET NO. 1 of 2
JOB STORMWATER
SUBJECT WQV's
CLIENT WILLOW HILL

① WATER QUALITY VOLUME

$$\text{SITE AREA} = 45 \text{ AC } \pm$$

$$\text{AREA IMP} = 1.1 \text{ AC}$$

$$I = 1.4/45 = 0.024$$

$$R = 0.05 + (.009)(I) = 0.0716$$

$$\text{WQV} = \frac{(1") (R) (A)}{12} = 0.27 \text{ AC-FT}$$

$$= 11,695 \text{ CF}$$

TOTAL VOLUME OF 3 BASINS

$$= 1,621 + 2,610 + 5,816 = 10,047 \text{ CF}$$

→ 86 % OF WQV PROVIDED

② WATER QUALITY FLOW

$$Q = \frac{\text{WQV} \times 12}{A} = 0.072 \text{ IN}$$

$$CN = \frac{1000}{\left[10 + 5P + 10Q - 10(Q^2 + 1.25QP)\right]^{\frac{1}{2}}}$$

$$P = 1"$$

$$\begin{aligned} CN &= \frac{1000}{\left[10 + 5(1) + 10(0.072) - 10(0.072^2 + 1.25(0.072)(1))\right]^{\frac{1}{2}}} \\ &= \frac{1000}{10 + 5 + .72 - 3.08} = 68 \end{aligned}$$

JOB NO. 22172
DATE 12/1/23
BY ODS
CH'D BY JTB

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

SHEET NO. 2 of 2
JOB STORMWATER
SUBJECT WQV's
CLIENT WILLOW HILL

$$I_a = 0.941, I_a/p = 0.941$$

T_c FOR GRASS SWALE = 2.8 MINUTES
→ USE MIN T_c = 10 MINUTES

$$QV = 280$$

$$WQF = (280)(0.07)(.072) \\ = 1.4 \text{ CFS}$$

③ GROUNDWATER RECHARGE VOLUME

TYPE "C" SOILS, $D = 0.10$ IN

$$GRV = \frac{(D)(A)(I)}{12}$$

$$= \frac{(0.10)(45)(0.024)}{12}$$

$$= 0.009 \text{ AC-FT} = 392 \text{ CF}$$

④ RUNOFF CAPTURE VOLUME

NOT APPLICABLE

Willow Hill Events Wedding / Event Venue Stormwater Management Report

459 Wolf Den Road
Brooklyn, CT

August 22, 2023

REV November 8, 2023



Prepared by:

J & D Civil
Engineers, LLC

401 Ravenelle Road
N. Grosvenordale, CT 06255

Table of Contents

- A. Project Narrative
- B. Existing Site and Hydrologic Soil Group Descriptions
- C. Methodology
- D. Results and Comparison of Existing and Proposed Flows
- E. Conclusion

Appendices

- I. Hydrologic Model
- II. Drainage Area Map

A. Project Narrative

The project consists of a wedding/event venue on a historic agricultural property. A special permit was granted for the project in March 2023. At this time the project's parking lot is being re-located to another portion of the property where it will be less visible in a wooded area and will require less grading. The surfaces of the proposed access driveway and parking lot will consist of pervious gravel.

Several LID features were incorporated into the design of the stormwater system. This included minimizing impervious area and drainage structures. The following LID elements were incorporated into the design of the project:

- Grass swale uphill of driveway
- Grass swale uphill of parking lot
- Upper stormwater basin
- Stormwater basin within parking lot
- Lower stormwater basin

These elements will trap sediment, reduce velocity of flow, promote infiltration, and capture clean runoff and direct it around graveled areas to reduce the chance of erosion.

B. Existing Site and Hydrologic Soil Group Description

The existing land cover includes woodland, pasture or lawn, and a small amount of impervious area associated with the existing buildings. The site is relatively steep, most of the property is between a 10% and 20% slope. The site drains from north to south primarily via sheet flow. Under both existing and proposed conditions, runoff from the site will enter Blackwell Brook located approximately 1000' downhill of site activities.

The soils in the area as Woodbridge fine sandy loam or Paxton/Montauk fine sandy loam. These soils belong to hydrologic group C, and have low permeability and below average capacity to absorb stormwater.

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. The soils on the site fall with hydrologic soil group C which is on the lower end of the infiltration spectrum.

C. 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.

D. Results and Comparison of Existing and Proposed Flows

Peak Flow Comparison

	Existing	Proposed
10 Year Storm	22.7 CFS	21.9 CFS
25 Year Storm	31.0 CFS	30.2 CFS
100 Year Storm	44.2 CFS	43.4 CFS

E. Conclusion

This drainage system has been designed to provide pollutant reduction, groundwater recharge and runoff volume reduction, and also peak flow control as described in the CT Stormwater Quality Manual and required in the town zoning regulations. Although the model predicts a very slight increase in peak runoff, on the order of 2-3%, this is acceptable due to the large site and significant distance to any other properties.

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Page 1

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	5.19	2
2	CT 100-year	Type III 24-hr		Default	24.00	1	8.04	2
3	CT 25-year	Type III 24-hr		Default	24.00	1	6.31	2

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Drainage Model for Willow Hill

Type III 24-hr CT 10-year Rainfall=5.19"

Printed 11/9/2023

Page 2

Summary for Subcatchment 1S: Existing

Runoff = 21.93 cfs @ 12.46 hrs, Volume= 2.863 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 6.10 cfs @ 12.53 hrs, Volume= 0.861 af, Depth= 2.43"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Drainage Model for Willow Hill

Type III 24-hr CT 10-year Rainfall=5.19"

Printed 11/9/2023

Page 3

Summary for Subcatchment B: northeast

Runoff = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Depth= 2.69"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 1.78 cfs @ 12.20 hrs, Volume= 0.166 af, Depth= 2.52"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Type III 24-hr CT 10-year Rainfall=5.19"

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Summary for Subcatchment D: upper lot

Runoff = 1.03 cfs @ 12.07 hrs, Volume= 0.072 af, Depth= 3.75"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

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

Summary for Subcatchment E: Southern

Runoff = 13.71 cfs @ 12.32 hrs, Volume= 1.517 af, Depth= 2.69"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event
 Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af
 Outflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Type III 24-hr CT 10-year Rainfall=5.19"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 12.94 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 5.35 fps, Avg. Travel Time= 0.4 min

Peak Storage= 26 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.32' , Surface Width= 0.93'

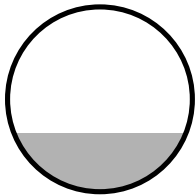
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 12.72 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event

Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af

Outflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.1 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 15.18 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 6.27 fps, Avg. Travel Time= 0.2 min

Peak Storage= 17 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.28' , Surface Width= 0.90'

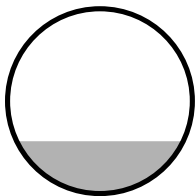
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 15.89 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 93.0' Slope= 0.1989 '/'

Inlet Invert= 434.50', Outlet Invert= 416.00'



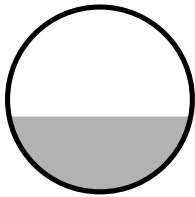
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 2.52" for CT 10-year event
Inflow = 1.78 cfs @ 12.20 hrs, Volume= 0.166 af
Outflow = 1.78 cfs @ 12.21 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.1 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.95 fps, Min. Travel Time= 0.2 min
Avg. Velocity= 2.32 fps, Avg. Travel Time= 0.5 min

Peak Storage= 22 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.41' , Surface Width= 0.98'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.14 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 72.0' Slope= 0.0208 '/
Inlet Invert= 400.00', Outlet Invert= 398.50'

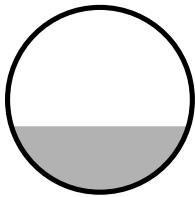
**Summary for Reach 4R: (new Reach)**

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 2.40" for CT 10-year event
Inflow = 2.14 cfs @ 12.23 hrs, Volume= 0.204 af
Outflow = 2.14 cfs @ 12.24 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.2 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.48 fps, Min. Travel Time= 0.3 min
Avg. Velocity= 2.15 fps, Avg. Travel Time= 0.8 min

Peak Storage= 39 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.44' , Surface Width= 1.20'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.91 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 100.0' Slope= 0.0150 '/
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 2.52" for CT 10-year event
 Inflow = 22.66 cfs @ 12.36 hrs, Volume= 2.868 af
 Outflow = 22.66 cfs @ 12.36 hrs, Volume= 2.868 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 3.75" for CT 10-year event
 Inflow = 1.03 cfs @ 12.07 hrs, Volume= 0.072 af
 Outflow = 0.43 cfs @ 12.27 hrs, Volume= 0.039 af, Atten= 59%, Lag= 11.6 min
 Primary = 0.43 cfs @ 12.27 hrs, Volume= 0.039 af
 Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 401.86' @ 12.27 hrs Surf.Area= 1,227 sf Storage= 1,513 cf

Plug-Flow detention time= 212.4 min calculated for 0.039 af (54% of inflow)
 Center-of-Mass det. time= 103.6 min (902.5 - 798.9)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	21.0" x 32.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 12.27 hrs HW=401.86' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 0.42 cfs @ 0.80 fps)

Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 2.43" for CT 10-year event
 Inflow = 7.26 cfs @ 12.49 hrs, Volume= 1.065 af
 Outflow = 7.25 cfs @ 12.49 hrs, Volume= 1.008 af, Atten= 0%, Lag= 0.3 min
 Primary = 7.25 cfs @ 12.49 hrs, Volume= 1.008 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.14' @ 12.49 hrs Surf.Area= 2,144 sf Storage= 2,734 cf

Plug-Flow detention time= 40.3 min calculated for 1.008 af (95% of inflow)
 Center-of-Mass det. time= 11.6 min (876.8 - 865.1)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long 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

Primary OutFlow Max=7.22 cfs @ 12.49 hrs HW=398.14' (Free Discharge)
 1=Broad-Crested Rectangular Weir (Weir Controls 7.22 cfs @ 0.88 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event
 Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af
 Outflow = 2.76 cfs @ 12.48 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.3 min
 Primary = 2.76 cfs @ 12.48 hrs, Volume= 0.343 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.07' @ 12.48 hrs Surf.Area= 990 sf Storage= 981 cf

Plug-Flow detention time= 43.7 min calculated for 0.342 af (94% of inflow)
 Center-of-Mass det. time= 12.7 min (868.8 - 856.1)

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Type III 24-hr CT 10-year Rainfall=5.19"

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Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long 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

Primary OutFlow Max=2.75 cfs @ 12.48 hrs HW=424.07' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.75 cfs @ 0.64 fps)

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Drainage Model for Willow Hill

Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Subcatchment 1S: Existing

Runoff = 43.41 cfs @ 12.45 hrs, Volume= 5.644 af, Depth= 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 12.25 cfs @ 12.50 hrs, Volume= 1.716 af, Depth= 4.85"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Subcatchment B: northeast

Runoff = 5.31 cfs @ 12.46 hrs, Volume= 0.701 af, Depth= 5.19"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 3.53 cfs @ 12.20 hrs, Volume= 0.327 af, Depth= 4.96"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Subcatchment D: upper lot

Runoff = 1.73 cfs @ 12.07 hrs, Volume= 0.124 af, Depth= 6.49"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

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

Summary for Subcatchment E: Southern

Runoff = 26.36 cfs @ 12.31 hrs, Volume= 2.926 af, Depth= 5.19"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event
 Inflow = 5.31 cfs @ 12.46 hrs, Volume= 0.701 af
 Outflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Type III 24-hr CT 100-year Rainfall=8.04"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 15.47 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 6.19 fps, Avg. Travel Time= 0.3 min

Peak Storage= 43 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.45' , Surface Width= 1.00'

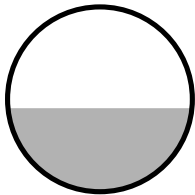
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 12.72 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event

Inflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af

Outflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 18.22 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 7.25 fps, Avg. Travel Time= 0.2 min

Peak Storage= 27 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.40' , Surface Width= 0.98'

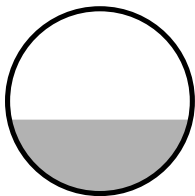
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 15.89 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 93.0' Slope= 0.1989 '/'

Inlet Invert= 434.50', Outlet Invert= 416.00'



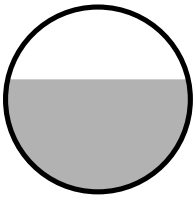
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 4.96" for CT 100-year event
Inflow = 3.53 cfs @ 12.20 hrs, Volume= 0.327 af
Outflow = 3.53 cfs @ 12.20 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.1 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.05 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.4 min

Peak Storage= 36 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 0.98'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.14 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 72.0' Slope= 0.0208 '/
Inlet Invert= 400.00', Outlet Invert= 398.50'

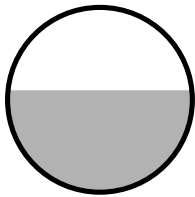
**Summary for Reach 4R: (new Reach)**

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 4.92" for CT 100-year event
Inflow = 4.65 cfs @ 12.15 hrs, Volume= 0.418 af
Outflow = 4.65 cfs @ 12.16 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.70 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.49 fps, Avg. Travel Time= 0.7 min

Peak Storage= 69 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.91 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 100.0' Slope= 0.0150 '/
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 5.00" for CT 100-year event
 Inflow = 44.22 cfs @ 12.34 hrs, Volume= 5.684 af
 Outflow = 44.22 cfs @ 12.34 hrs, Volume= 5.684 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 6.49" for CT 100-year event
 Inflow = 1.73 cfs @ 12.07 hrs, Volume= 0.124 af
 Outflow = 1.67 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 4%, Lag= 1.3 min
 Primary = 1.67 cfs @ 12.09 hrs, Volume= 0.091 af
 Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 401.95' @ 12.09 hrs Surf.Area= 1,267 sf Storage= 1,625 cf

Plug-Flow detention time= 148.6 min calculated for 0.091 af (73% of inflow)
 Center-of-Mass det. time= 61.7 min (845.6 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	21.0" x 32.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.66 cfs @ 12.09 hrs HW=401.95' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 1.66 cfs @ 1.26 fps)

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Drainage Model for Willow Hill

Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 4.86" for CT 100-year event
 Inflow = 14.41 cfs @ 12.48 hrs, Volume= 2.134 af
 Outflow = 14.40 cfs @ 12.48 hrs, Volume= 2.077 af, Atten= 0%, Lag= 0.4 min
 Primary = 14.40 cfs @ 12.48 hrs, Volume= 2.077 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.22' @ 12.48 hrs Surf.Area= 2,406 sf Storage= 2,914 cf

Plug-Flow detention time= 23.5 min calculated for 2.077 af (97% of inflow)
 Center-of-Mass det. time= 8.0 min (852.0 - 844.0)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long 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

Primary OutFlow Max=14.39 cfs @ 12.48 hrs HW=398.22' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 14.39 cfs @ 1.11 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event
 Inflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af
 Outflow = 5.31 cfs @ 12.47 hrs, Volume= 0.680 af, Atten= 0%, Lag= 0.1 min
 Primary = 5.31 cfs @ 12.47 hrs, Volume= 0.680 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.11' @ 12.47 hrs Surf.Area= 1,083 sf Storage= 1,022 cf

Plug-Flow detention time= 26.6 min calculated for 0.680 af (97% of inflow)
 Center-of-Mass det. time= 9.1 min (846.3 - 837.3)

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Type III 24-hr CT 100-year Rainfall=8.04"

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Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long 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

Primary OutFlow Max=5.29 cfs @ 12.47 hrs HW=424.11' (Free Discharge)

1=Broad-Crested Rectangular Weir (Weir Controls 5.29 cfs @ 0.79 fps)

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Drainage Model for Willow Hill

Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment 1S: Existing

Runoff = 30.20 cfs @ 12.45 hrs, Volume= 3.921 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 8.46 cfs @ 12.53 hrs, Volume= 1.186 af, Depth= 3.35"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment B: northeast

Runoff = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Depth= 3.65"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af, Depth= 3.45"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment D: upper lot

Runoff = 1.30 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 4.81"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

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

Summary for Subcatchment E: Southern

Runoff = 18.61 cfs @ 12.32 hrs, Volume= 2.056 af, Depth= 3.65"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event
 Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af
 Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Type III 24-hr CT 25-year Rainfall=6.31"

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 14.09 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 5.72 fps, Avg. Travel Time= 0.4 min

Peak Storage= 33 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.37' , Surface Width= 0.97'

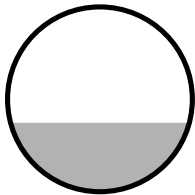
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 12.72 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event

Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af

Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.1 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 16.55 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 6.70 fps, Avg. Travel Time= 0.2 min

Peak Storage= 21 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.33' , Surface Width= 0.94'

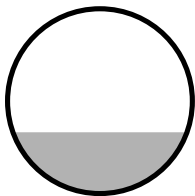
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 15.89 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 93.0' Slope= 0.1989 '/'

Inlet Invert= 434.50', Outlet Invert= 416.00'



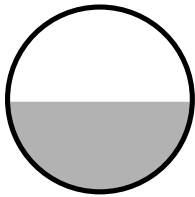
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 3.45" for CT 25-year event
Inflow = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af
Outflow = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.1 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.47 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.49 fps, Avg. Travel Time= 0.5 min

Peak Storage= 27 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.14 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 72.0' Slope= 0.0208 '/
Inlet Invert= 400.00', Outlet Invert= 398.50'

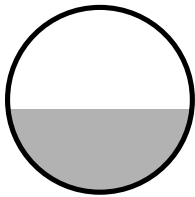
**Summary for Reach 4R: (new Reach)**

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 3.37" for CT 25-year event
Inflow = 3.29 cfs @ 12.16 hrs, Volume= 0.286 af
Outflow = 3.29 cfs @ 12.17 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.2 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.15 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.30 fps, Avg. Travel Time= 0.7 min

Peak Storage= 53 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.56' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.91 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 100.0' Slope= 0.0150 '/
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 3.47" for CT 25-year event
 Inflow = 30.97 cfs @ 12.35 hrs, Volume= 3.942 af
 Outflow = 30.97 cfs @ 12.35 hrs, Volume= 3.942 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 4.81" for CT 25-year event
 Inflow = 1.30 cfs @ 12.07 hrs, Volume= 0.092 af
 Outflow = 1.10 cfs @ 12.12 hrs, Volume= 0.059 af, Atten= 16%, Lag= 2.9 min
 Primary = 1.10 cfs @ 12.12 hrs, Volume= 0.059 af
 Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 401.91' @ 12.12 hrs Surf.Area= 1,251 sf Storage= 1,579 cf

Plug-Flow detention time= 176.5 min calculated for 0.059 af (64% of inflow)
 Center-of-Mass det. time= 77.4 min (869.4 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	21.0" x 32.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.09 cfs @ 12.12 hrs HW=401.91' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 1.09 cfs @ 1.10 fps)

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 3.35" for CT 25-year event
 Inflow = 10.00 cfs @ 12.49 hrs, Volume= 1.472 af
 Outflow = 10.00 cfs @ 12.49 hrs, Volume= 1.415 af, Atten= 0%, Lag= 0.2 min
 Primary = 10.00 cfs @ 12.49 hrs, Volume= 1.415 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.17' @ 12.49 hrs Surf.Area= 2,253 sf Storage= 2,806 cf

Plug-Flow detention time= 31.3 min calculated for 1.415 af (96% of inflow)
 Center-of-Mass det. time= 9.7 min (864.8 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long 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

Primary OutFlow Max=9.97 cfs @ 12.49 hrs HW=398.17' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir** (Weir Controls 9.97 cfs @ 0.98 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event
 Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af
 Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.472 af, Atten= 0%, Lag= 0.2 min
 Primary = 3.75 cfs @ 12.47 hrs, Volume= 0.472 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.09' @ 12.47 hrs Surf.Area= 1,028 sf Storage= 997 cf

Plug-Flow detention time= 34.7 min calculated for 0.472 af (96% of inflow)
 Center-of-Mass det. time= 10.9 min (858.2 - 847.4)

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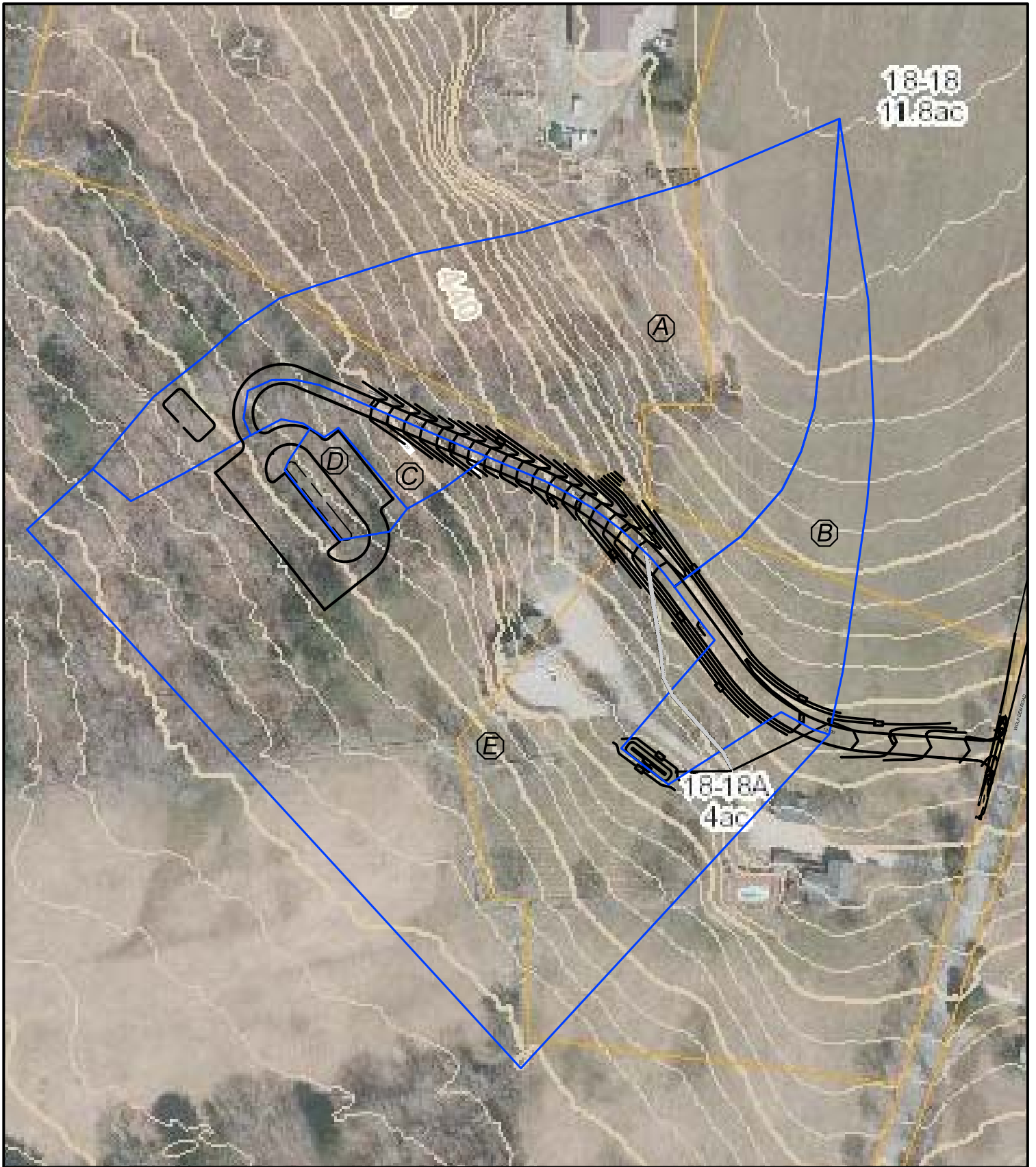
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long 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

Primary OutFlow Max=3.72 cfs @ 12.47 hrs HW=424.09' (Free Discharge)

1=Broad-Crested Rectangular Weir (Weir Controls 3.72 cfs @ 0.70 fps)



DRAINAGE AREA MAP
SCALE 1" = 150'

December 4, 2023

Town of Brooklyn
Planning and Zoning Department

RE: Job #22172
Response to Engineer's Review
Special Permit for
459 Wolf Den Road
Brooklyn, CT

To Whom it May Concern:

My office is assisting Nicole Wineland Thomson-Fisher and Greg Fisher with obtaining a Special Permit modification to hold weddings or other similar events at their property in Brooklyn. On November 20, 2023 we received a letter from Syl Pauly at NECCOG that provides as second round of comments or questions on the application. The following constitutes a response by J&D to those comments and questions. Thank you very much for your detailed and prompt attention. We look forward to working with the Town to get this project approved.

Driveway and Parking Lot

1. The site plans previously included a parking lot with 40 spaces, and also 4 new spaces near the barn. The barn includes 4 car drive-under garage. There is a 4 car garage near the existing house. And additional 7 spaces have been added to the plan, along the existing gravel driveway. Regulatory "no parking signs" are not required by the zoning regulations and are not proposed. It shall be up to the applicant to enforce correct parking procedures. They can install "no parking" signs at a later date, if they feel it is necessary.
2. Test pits have been excavated in the vicinity of the stormwater basins, and that information is included on Sheet 5. The test pits indicated mottling, or seasonal high water level, at 21-28 inches. Since the proposed basins are quite shallow, we do not expect a significant portion of the basins to be within the water table. For the septic system for the barn, the health department recorded mottling at 36 inches.
3. The curtain drain will be used to intercept ground water, both to dry out the tent area and increase water inside the proposed pond. The detail on sheet 5 has been revised to specify at least 24" of cover.
4. Erosion controls have been added.
5. The wetland commission has not asked for this, and the wetland agent Margaret indicated it should not be required.

6. The dewatering bag is temporary, and used to keep the pond dry during excavation.
7. The plans have been revised to include a catch basin at the uphill side of the proposed driveway.
8. The revised site plans include a landscaping sheet by J&D. The previous landscape architect has not been involved with this permit modification.

Notes and Details

1. The detail has been revised to describe the type of pipe, the location of perforations, and the inclusion of detectable warning tape.
2. The intent is to specify that pipes shall be clean when they are installed, not cleaned after installation. This note has been revised to provide clarity.
3. Those dimensions have been added to the detail for the riprap apron.
4. This base material has been specified.
5. A 45° bend has been specified for the outlet pipe for this catch basin.
6. Information has been added regarding the hardware to attach the posts to the brackets.

Drainage Report

1. Additional stormwater calculations for Water Quality Volume and Groundwater Recharge are being submitted. Since the site is not within 500' of a tidal wetland, we have not performed a Runoff Capture Volume calculation.
2. The underdrains have been removed from the stormwater basins.

Please do not hesitate to contact me with any further comments or questions. We look forward to discussing this project with the commission at the upcoming Public Hearing.

Sincerely,

Daniel Blanchette, PE
J&D Civil Engineers, LLC

PREFERRED CONTRACTOR



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TOWN OF BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION PUBLIC HEARING NOTICE

The Brooklyn Inland Wetlands and Watercourses Commission will hold a public hearing, both in-person and via Zoom, on Tuesday, December 12, 2023, at 6:00 p.m. at their regularly scheduled meeting at the Clifford B. Green Community Meeting Room, Suite 24, 69 South Main Street on the following:

IWWC 23-011 Nicole Wineland-Thomson Fisher, applicant; 459 & 481 Wolf Den Road, Map 18, Lots 18A & 18B, RA Zone; Proposal to construct driveway & parking lot for events venue; majority of parking lot in the upland review area; 310 sf of wetlands to be permanently filled; grading for tent area, and excavation of 1400 sf of wetlands to create pond.

A copy of the application is available for review. All interested parties may attend the meeting, be heard and written correspondence received.

Richard Oliverson, Chairman

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TOWN OF BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION PUBLIC HEARING NOTICE

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A copy of the application is available for review. All interested parties may attend the meeting, be heard and written correspondence received.

Richard Oliverson, Chairman

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Revised application form

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date 11/14/23

Application # 1WWC23-011

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Nicole Wineland-Thomson Fisher MAILING ADDRESS 53 Barnard Ave, Watertown, MA 02472
APPLICANT'S INTEREST IN PROPERTY _____ PHONE: CELL 617-955-7734 HOME: _____
E-MAIL Nicole.winelandthomson@gmail.com

PROPERTY OWNER IF DIFFERENT _____ PHONE: CELL: _____ HOME: _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY)
Daniel Blanchette, J&D Civil Engineers LLC

ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS) 459 Wolf Den Road

MAP # 18 LOT # 18A & B ZONE RA TOTAL ACRES 97 ACRES OF WETLANDS ON PROPERTY 20 +/-

PURPOSE AND DESCRIPTION OF THE ACTIVITY

The applicant is proposing to construct a 40 car parking lot within the upland review area. They are also proposing to flatten a portion of the field, where the temporary event tent will be located. In order to provide fill to flatten the field, they will construct a small pond.

The parking lot will require the permanent filling of 300 square feet of wetlands. The pond will require the excavation of 1,400 square feet of wetlands. The total wetland disturbance is approximately 1,700 square feet.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED yes CUBIC YDS 12 SQ FT 310

EXCAVATION PROPOSED yes CUBIC YDS 450 SQ FT 1,400

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE yes OFF SITE _____

TOTAL REGULATED AREA ALTERED: SQ FT 93,200 ACRES 2.14

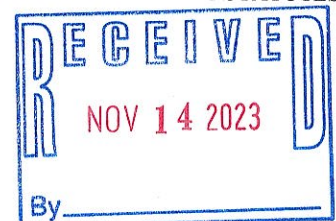
EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):

The originally approved parking lot was located near the road, but that location is not visually appealing and may impact the neighboring houses. Another design was evaluated in the flatter area below the currently proposed design, however that would involve too much wetland disturbance. The currently proposed design involves very minor wetland disturbance but is less of a nuisance to neighbors.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQ FT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? no IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? no



THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: _____ DATE 10/1/2023

OWNER: _____ DATE 10/1/2023

REQUIREMENTS

- ☒ STANDARD APPLICATION FEE \$ (\$150) _____ STATE FEE (\$60) _____ CHECK # _____
- ☒ NOTICE OF ACTION PUBLICATION FEE \$ _____ CHECK # _____
- ☒ PUBLIC HEARING PUBLICATION FEE (\$100) \$ _____ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK# _____
- ☒ SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ _____ CHECK # _____
- ☒ COMPLETION OF CT DEEP REPORTING FORM
- ☒ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF
- ☒ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY
- ☒ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED **SOIL SCIENTIST IDENTIFY THE WETLANDS.**
- ☒ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL
- ☒ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:
- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
 - ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

X PERMIT REQUIRED:

____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

X CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ AUTHORIZED BY IWWC

X SIGNIFICANT ACTIVITY/PUBLIC HEARING

____ NO PERMIT REQUIRED

____ OUTSIDE OF UPLAND REVIEW AREA

____ NO IMPACT

____ CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ TIMBER HARVEST

Brooklyn IWWC

November 25, 2023 Sitewalk Minutes

8:00 AM

Site walk location: 459 Wolf Den Road, Map 18, Lots 18A & 18B; Nicole Wineland-Thomson Fisher
IWWC #23-001

Members present: Rich Oliverson, Adam Brindamour, Jason Burgess, James Paquin, Janet Booth

Others present: Owners, Greg Fisher and Nicole Fisher; Dave Loughlin; Joe Igliozi; Jackie Igliozi

Meeting started: 8:04 AM

The property owners, Greg Fisher and Nicole Fisher escorted the members and others present onto the property to show the location of the proposed activity. The members viewed the area of proposed activity.

Meeting ended: 8:28 AM

Respectfully submitted,

James Paquin, Member Brooklyn IWWC

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEERING PLAN AND DRAINAGE REPORT REVIEW PERTAINING TO PROPOSED WILLOW HILL EVENTS WEDDING/EVENT VENUE (ASSESSOR'S MAP 19, BLOCK 18 - LOTS 18A & 18B) WOLF DEN ROAD BROOKLYN, CT (November 20, 2023)

The comments contained herein pertain to my review of a five (5) sheet set of plans entitled "Site Plan Modification for Special Permit #22-007 Application for Wedding/Event Venue for Willow Hill LLC, 459 Wolf Den Road, Brooklyn, Connecticut, Dated: September 29, 2023 with Revision Date of November 8, 2023. Comments contained herein are applicable to the Brooklyn Planning and Zoning Commission and Inland Wetland and Watercourses Commission applications.

Access Driveway and Parking Lot Plan – Sheet 2 of 5

1. Existing parking spaces need to be shown on the plan in additions to the ones proposed. Parking along the driveway may be hazardous to pedestrian and vehicular traffic, especially if cars are parked on both sides of it. Regulatory signs where parking is to be prohibited need to be included on the plan, with mounting post and sign details described on one of the Detail sheets.
2. Deep soil test pits are required where the "stormwater basins" are located in 1) the area of the proposed parking, 2) the "stormwater basin with level spreader" to the north of the parking area and 3) the basin in the vicinity of the 5-bedroom house. This information is needed to understand the function of an underdrain and holding capacity of the basins, which are calculated in the "Drainage Report." If the groundwater level is penetrated in the construction of any of the basins, the water may remain standing, thus reducing the volume of stormwater the basin can hold and causing the calculation(s) to be inaccurate.
3. Why is there a need for a "curtain drain" between the ceremony area and primary tent location? What is the minimum depth of cover over the crown of the curtain drain pipe? Deep test pits are needed for this installation, too.
4. Erosion and sediment transport control measures need to be shown on the plan along the downhill side of the proposed gravel surfaced driveway and electric trench, from Wolf Den Drive and northerly to contour elevation 420.
5. The proposed 80'x120' pond will be constructed where a wetland exists. This needs to be addressed in the Soil Scientist's report as to what wetland functions are lost and how the pond will function. Will the pond become stagnant and a breeding ground for mosquitoes and unwanted vegetative growth?
6. How does the "dewatering bag" function at the proposed pond, how is it connected and how long will it remain in use? If it is to be permanent, it needs to be depicted on the plan as protected from the elements with a formal access driveway for periodic maintenance, keeping its location is within a regulated wetland.

7. The proposed inlet end of the 15" pipe under the proposed driveway in Wolf Den right-of-way is shown as having a deep excavation in the shoulder of the road so that stormwater runoff can enter the pipe. This deep "hole" (4'±) is a hazard introduced to the motoring public and needs to be protected from entry by an errant vehicle, e.g., guard rail. Alternatively, new catch basins can be installed at each end of the pipe and connected to the existing downhill drainage system to mitigate this hazard.
8. If "Verdant" has not formalized their design in accordance with this new plan, as stated in J&D's response letter of November 8, 2023, how may this affect the proposed grading shown on the revised plan after "Verdant" revises their design? "Verdant" needs to submit their final design plan for review.

Notes and Details – Sheet 5 of 5

1. In the "Curtain Drain Installation Detail" and the "Under Drain Installation Detail" a note needs to be added to each to specify the orientation of the perforations in the pipe, i.e., pointing up or down. Additionally, the type of pipe, e.g., PVC Schedule 40 or SDR 35, needs to be included in the details as well as detectable warning tape, which will ensure the contractor does not forget to install the same if the note under "General Construction Notes" is overlooked.
2. Under "General Construction Notes" it is stated that all installed piping shall be cleaned. How is this to be done for the underdrain and curtain drain since there are no cleanouts at ground surface to access the interior of the pipes for jetting?
3. The following information needs to be added to the "Plan View" of the "Riprap Apron – Type A" detail: diameter of pipe, width of pad at the flared end, full length of pad, angle of pad (1:?), and width of widest portion of the pad.
4. The makeup of the base material under the modified riprap depicted in "Section A – A" of the "Riprap Apron – Type A" detail needs to be added to the detail.
5. A detail (plan and elevation) needs to be added for the special catch basin to be used to connect 12" and 15" pipes in the stormwater basin located within the proposed parking lot area.
6. In the "Timber Guide Rail Detail" there is a note stating that the distance the guide rail is to be set from the edge of driveway is "distance as per plan." There is no distance on the "plan" and using an engineer's scale on the plan is not an accurate way to establish that distance. A measurement needs to be added to the Site Plan or the construction detail. Furthermore, how is the 4"x8" rail to be securely attached to the 8"x8" posts?

Drainage Report

1. Calculations pertinent to Brooklyn Zoning Regulation 7.H.3., Stormwater Management Requirement, need to be included in the Report. It is not sufficient just to include a statement that this regulation has been met – calculations need to be included in the Report showing that the regulation is complied with.
2. It was not evident in the Drainage Report that groundwater collected in the "curtain drain" and "underdrain" has been factored into the sizing of the stormwater basins. Was this done?

Additional Comments to Consider

Some comments made in my response to J&D's November 8, 2023 response to my November 1, 2023 comments are not necessarily repeated here and should be considered as an addition to the comments contained herein.

By: Syl Pauley, Jr., P.E.
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

TOWN ENGINEER'S RESPONSE TO J&D CIVIL ENGINEERS, LLC RESPONSE TO TOWN ENGINEER'S REVIEW COMMENTS PERTAINING TO PROPOSED WILLOW HILL EVENTS WEDDING/EVENT VENUE PLANS (ASSESSOR'S MAP 19, BLOCK 18 - LOTS 18A & 18B)

WOLF DEN ROAD

BROOKLYN, CT

(November 20, 2023)

The purpose of this document is to respond to J&D Civil Engineers November 8, 2023 response to my comments of November 1, 2023 for set of plans entitled "Site Plan Modification for Special Permit #22-007 Application for Wedding/Event Venue for Willow Hill LLC, 459 Wolf Den Road, Brooklyn, Connecticut, Dated: September 29, 2023" prepared by J&D Civil Engineers, LLC.

My comments are in the order presented in the J&D correspondence.

Cover Sheet (Sheet 1 of 5)

1. Comment has been addressed.
2. The existing parking spaces need to be shown on the plan as well as ones proposed. Parking along the driveway may be hazardous to pedestrian and vehicular traffic, especially if cars are parked on both sides of it. Regulatory signs where parking is to be prohibited need to be included on the plan, with mounting post and sign details described on one of the Detail sheets.

Access Driveway and Parking Lot Plan (Sheet 2 of 5)

1. Comment has been addressed.
2. It is concerning that the limits of the wetland shown on both plans differ so greatly. Why have the wetland flag numbers and wetland delineation line changed so drastically in several areas from the original plan dated September 29, 2023?
3. Comment has been addressed.
4. Comment has been addressed.
5. The "Riprap Detail – Type A" is incomplete as it is missing what engineered foundation lies beneath the modified riprap, the angle of the mat (1:?), and the width of the pad at the culvert end and its widest point. The detail needs correcting. Furthermore, this detail should be noted as being specific to the small stormwater basin at the terminus of the 93' length of pipe.
6. Comment has been addressed.
7. Dimensions and a detail of the larger catch basin has not been added to the plan. A diagram needs to be submitted for review to see how the pipe geometry is compatible with a catch basin accommodating such an acute angle of pipes.
8. Soil test pits are needed to have an idea of where the seasonal high groundwater is in order to evaluate the size of "underdrain" and the "curtain drain." How were drainage calculations made without this information?

9. Comment has been addressed.
10. Comment has been addressed.
11. Comment has been addressed.
12. Comment has not been addressed as an erosion control system could not be found on the plan snug to the downhill side of the proposed grading for the driveway and the electrical conduit installation.
13. The pipe needs to be 15" diameter using smooth interior wall HDPE pipe. The configuration in the revised plan has not changed and therefore my original comment stands until the Applicant's engineer comes forward with a solution. The contour elevations on the plan indicate more than 2.25 down to the invert of the pipe.
14. Comment has been addressed.
15. The landscape requirement stands.
16. Comment has been addressed.
17. Verdant landscaping plans have never been submitted to the Town Engineer for review. The updated Verdant plans shall be submitted for review.
18. Comment has been addressed.
19. It can be seen that a temporary restroom location has been added to the plan. However, that area will need to be regraded and surface modified to accommodate a trailer set level, but this is not shown. Furthermore, where will temporary restrooms be located if an event is held in the barn where the barn restrooms are off limits, according to the "Project Description" on Sheet 4 of 5? This needs to be shown on the plan.
20. It was stated that my concern was "noted;" however, there is no indication on the plan as to what this means.
21. Comment has been addressed.
22. Comment has been addressed.
23. Comment has been addressed.
24. This is a new application and needs to be addressed.
25. What happens if it is raining? Walking through grass and soggy soil is not the best way to safely navigate the site. This needs to be addressed further.
26. Comment has been addressed.
27. Comment has been addressed.

Event Area Plan (Sheet 3 of 5)

1. Comment has been addressed.
2. Previous Verdant plans are for a site design that will not be constructed. The revised plans and Verdant's plan do not match up in the wedding ceremony/primary tent location.

Notes and Details (Sheet 4 of 5)

1. Comment has been addressed.
2. Since the plans have changed so drastically, it is unclear if the interested neighbors have been made aware of the changes. It would be prudent to confirm the "Neighborhood Agreement." This comment remains to be addressed.

Notes and Details (Sheet 5 of 5)

1. Comment has been addressed.

2. Comment has been addressed.
3. Comment has been addressed.

Drainage Report

1. Comment has been addressed.
2. Comment has been addressed.
3. No calculations are included in the revised "Drainage Report." This comment remains to be addressed.

By: *Syl Pauley, Jr., P.E.*
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT KA&G Investments LLC MAILING ADDRESS 90 Brown Road, Voluntown, CT 06384
APPLICANT'S INTEREST IN PROPERTY owner PHONE 860-234-3183 EMAIL kaandginvestments@gmail.com

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) David Held, PE, LS Provost & Rovero, Inc.

ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS Wauregan Road & Gorman Road
MAP # 32 LOT # 15-1 ZONE R30 TOTAL ACRES 18.168 ACRES OF WETLANDS ON PROPERTY 2.20 acres

PURPOSE AND DESCRIPTION OF THE ACTIVITY _____
14 lot resubdivision for development of single family homes

WETLANDS EXCAVATION AND FILL:
FILL PROPOSED No CUBIC YDS 0 SQ FT 0
EXCAVATION PROPOSED No CUBIC YDS 0 SQ FT 0
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE _____ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT _____ ACRES 2.5+/-

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): _____
Various development alternatives were considered which would have resulted in more impact to regulated areas and/or direct wetland impact. No direct impact to wetlands is proposed with the chosen design.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY N/A SQFT N/A ACRES N/A

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S) N/A
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: David Held DATE 11-22-2023

OWNER: [Signature] DATE 11/22/23



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street – 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

1. DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
2. ACTION TAKEN (enter one code letter): _____
3. WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (type name): Brooklyn
Does this project cross municipal boundaries (check one)? Yes _____ No x
If Yes, list the other town(s) in which the action is occurring (type name(s)): _____
6. LOCATION (see directions for website information): USGS Quad Map Name: Danielson or Quad Number: 43
Subregional Drainage Basin Number: 3711
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): KAG Investments LLC
8. NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): Waveran Road & Gorman Road
Briefly describe the action/project/activity (check and type information): Temporary _____ Permanent x
Description: 14 lot residential subdivision
9. ACTIVITY PURPOSE CODE (enter one code letter): B
10. ACTIVITY TYPE CODE(S) (enter up to four code numbers): 9, 12, 14, _____
11. WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 0 acres Open Water Body: 0 acres Stream: 0 linear feet
12. UPLAND AREA ALTERED (type in acres as indicated): 2.516 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

PROPOSED 14 LOT RESUBDIVISION

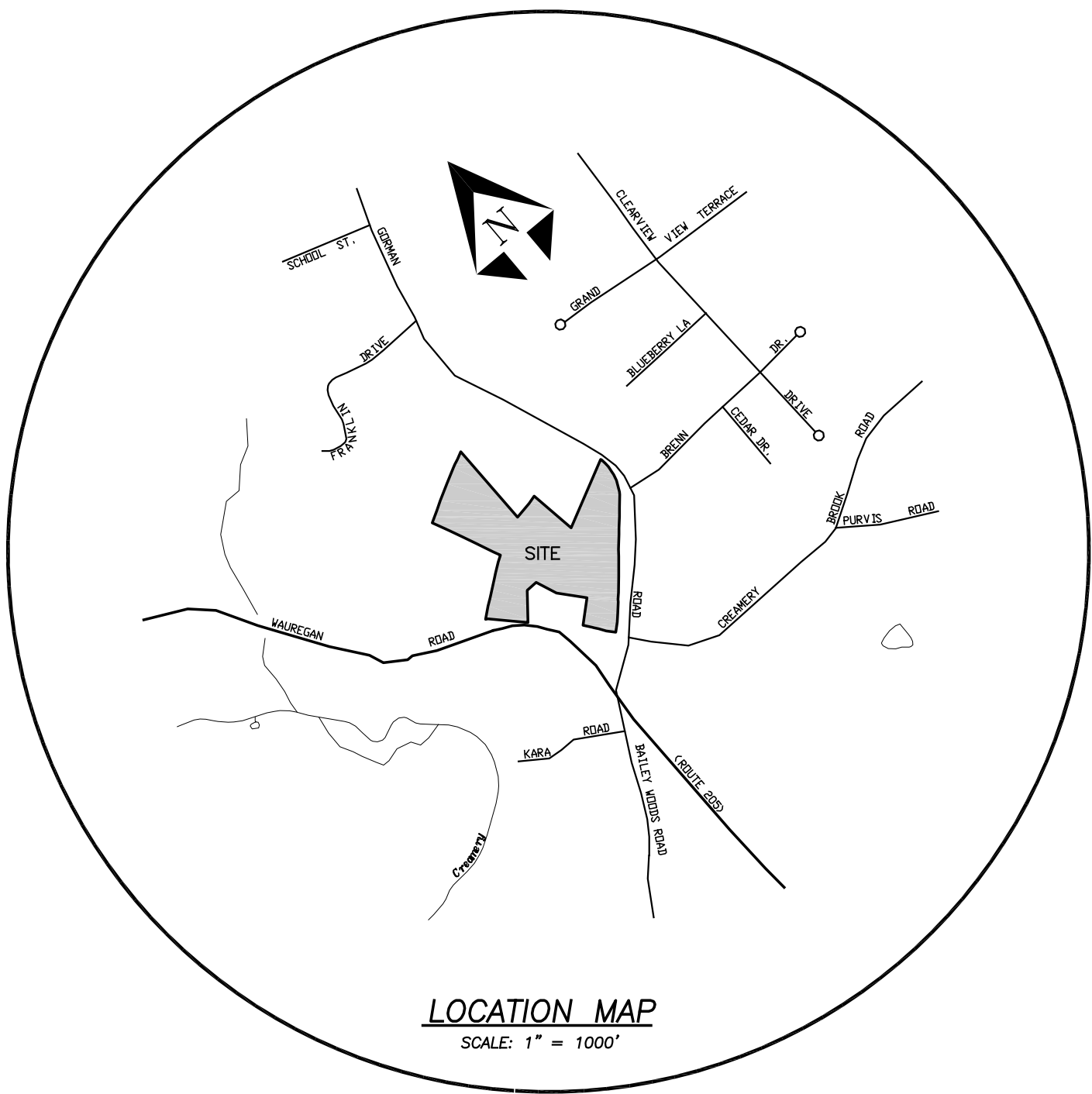
WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

PROPERTY OWNER & APPLICANT:

KA&G INVESTMENTS LLC
90 BROWN ROAD
VOLUNTOWN, CT 06384

LEGEND

○	IRON PIN OR PIPE FOUND
●	DRILL HOLE SET
●	IRON PIN TO BE SET
#	INLAND WETLAND FLAG
⊠	PERCOLATION TEST
⊠	TEST PIT
⊕	EXISTING WELL
⊕	EXISTING MAILBOX
⊕	EXISTING UTILITY POLE
⊕	EXISTING STONE WALL
⊕	EXISTING TREE LINE
⊕	EXISTING GUIDE RAIL
⊕	EXISTING RETAINING WALL
⊕	EXISTING INDEX CONTOUR
⊕	EXISTING CONTOUR
⊕	PROPOSED U.G. UTILITIES
⊕	PROPOSED CONTOUR
⊕	BUILDING SETBACK
⊕	PROPOSED SILT FENCE
⊕	PROPOSED GUIDE RAIL
⊕	PROPOSED CLEARING LIMITS



INDEX TO DRAWINGS

TITLE	SHEET No.
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SITE PLAN No. 1	3 OF 8
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DETAIL SHEET No. 2	6 OF 8
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SIGHTLINE DEMONSTRATION PLAN No. 2	8 OF 8

CT DOT STANDARD DRAWINGS

TITLE	SHEET No.
THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 1	HW-918_01a
THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 2	HW-918_01b
THREE CABLE GUIDERAIL (I-BEAM POSTS) SHEET 3	HW-918_01c

PREPARED BY:

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

REVISIONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA

OCTOBER 30, 2023

APPROVED BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

CHAIRMAN DATE

Per Sec. 8.26 of the Connecticut General Statutes, as amended, approval automatically expires _____ if all physical improvements required by this plan are not completed by that date.

ANY CHANGES TO THESE PLANS WITHIN 200' OF WETLANDS OR WATERCOURSES MUST BE RESUBMITTED TO THE BROOKLYN INLAND WETLANDS COMMISSION.

THE APPLICANT WILL CONTACT THE BROOKLYN INLAND WETLANDS COMMISSION OR ITS AGENT AFTER ALL EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED, PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON THE PROPERTY.

ENDORSED BY THE BROOKLYN INLAND
WETLANDS COMMISSION

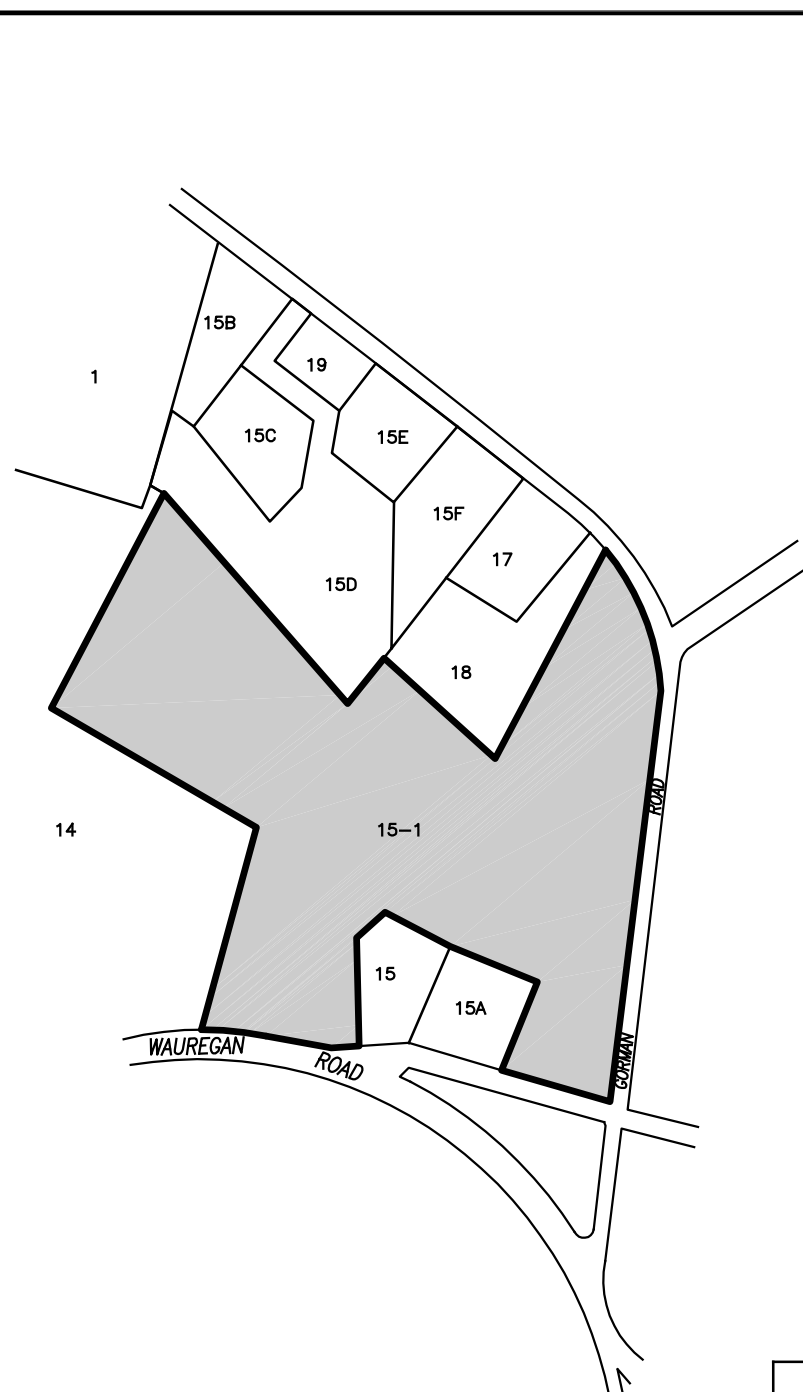
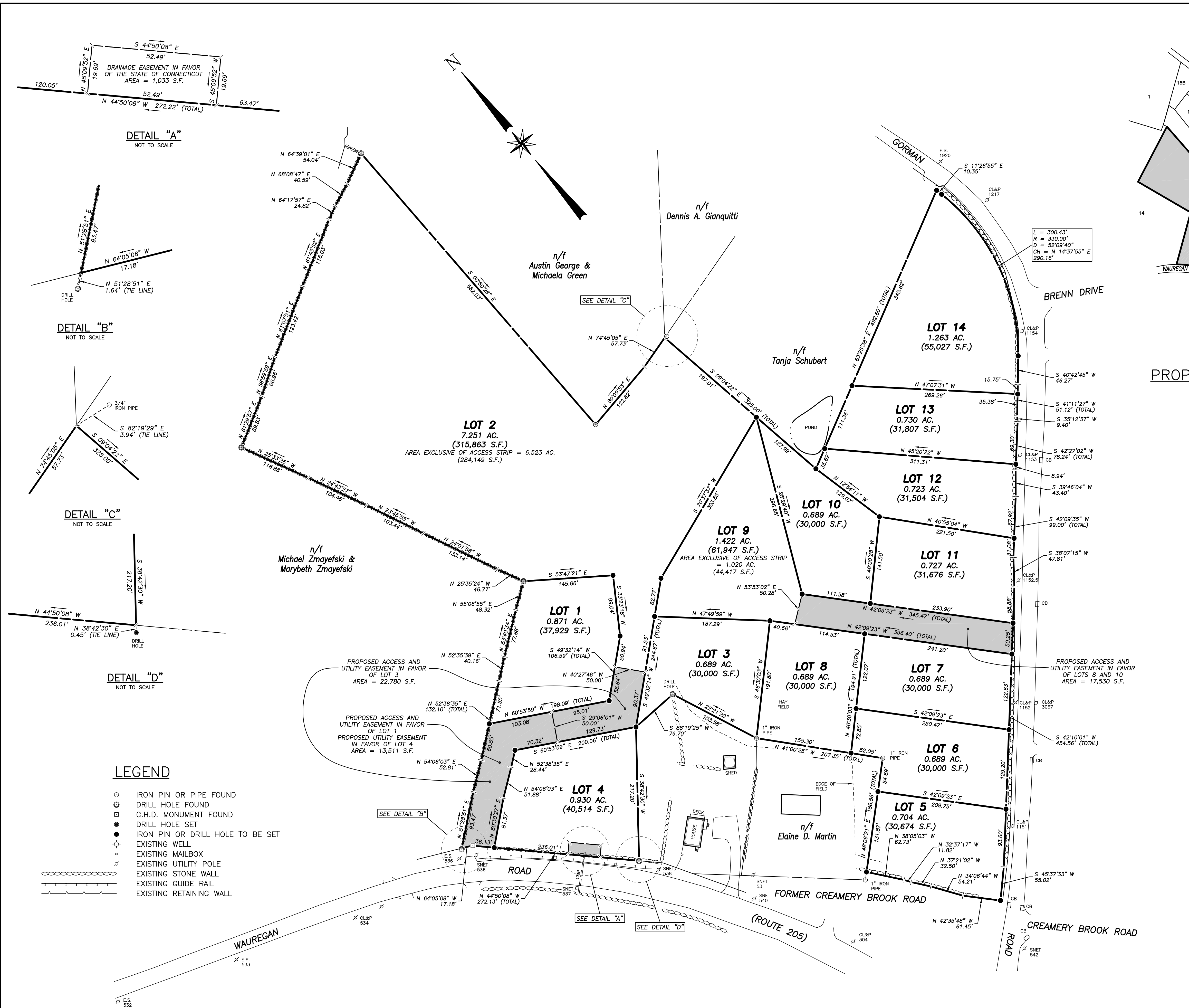
CHAIRMAN DATE

ENGINEER

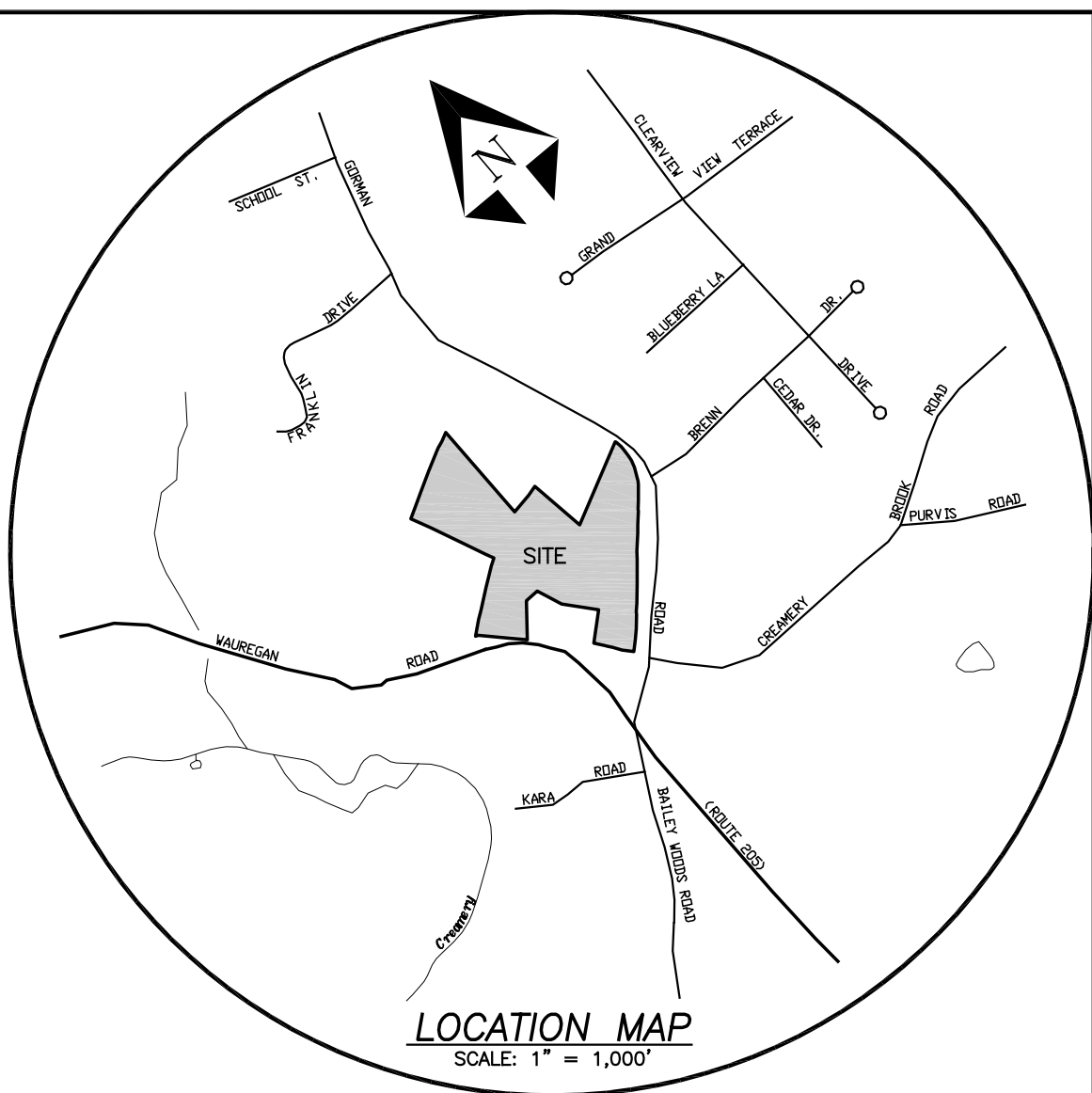
DATE

SHEET 1 OF 8

JOB NO: 233023
DWS NO: Client File



PROPERTY HISTORY
NOT TO SCALE



DATE	LOT	GRANTOR	TO	GRANTEE
11/24/1971	15A	Alex & Charles Pakulis	TO	John Karalis & Amelia Karalis
11/27/1978	18	Alex & Charles Pakulis	TO	Lucien A. Brodeur & Linda K. Brodeur
05/25/1984	15B	Alex & Charles Pakulis	TO	Christopher R. Kounekis & Helene R. Kounekis
08/08/2002	15C	Alex & Clarisse Pakulis	TO	Johnny Gomez & Sherry A. Gomez
12/21/2001	15E	Alex & Clarisse Pakulis	TO	Linda V. Buisson & Scott A. Buisson
03/04/2002	15F	Alex & Clarisse Pakulis	TO	Alice M. Hill & Allen S. Hill
12/09/2009	15D	Est. of Alex Pakulis	TO	Lucien A. Brodeur
10/05/2023	15-1	Norman O. Young, Jr.	TO	KA&G Investments LLC

- NOTES:
- 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 survey conforms to a Class "A-2" horizontal accuracy.
 - Boundary Determination Category: Resurvey and First Survey (along existing boundary lines) and Original Survey (along proposed lot lines).
 - Survey Type: Resubdivision Map.
 - The subject property is shown as Lot 15-1 on Assessor Map 32.
 - Zone: R-30.
 - Bearings shown hereon are referenced to CT state plane coordinates, NAD83(2011), Epoch 2010.0000.
 - The intent of this survey is to show a proposed resubdivision of the subject property.
- MAP REFERENCES:
- "Property Survey - Showing Parcel Division - Prepared for - The Lucien A. Brodeur Irrevocable Grantor Trust - 198 Wauregan Road - Brooklyn, Connecticut - Scale: 1" = 80' - Dated: 9/29/2023 - Provost & Rovero, Inc."
 - "Property Survey - Boundary Line Modification - Prepared for - Lucien Brodeur - Gorman Road - Brooklyn, Connecticut - Scale: 1" = 30' - Dated: March 1, 2022 - Archer Surveying LLC - KWP Associates"
 - "Subdivision Plan - Prepared for - Alex Pakulis & Clarisse Pakulis - Gorman Road - Brooklyn, Connecticut - Scale: 1" = 40' - Dated: 7/25/2001 - Sheet 1 of 3 - KWP Associates"
 - "Town of Brooklyn - Map Showing Land Acquired From - Alex Pakulis Et Al - by - The State of Connecticut - Department of Transportation - Intersection and Drainage Improvements on Route 205 - Scale: 1:500 - Dated: March 1996, Revised: 1-13-97"
 - "Map Showing Property of - John & Amelia Karalis - Creamery Brook Road - Brooklyn, Connecticut - Scale: 1" = 20' - Dated: November 1971 - Donald L. Ayrton, Reg. L.S. 6623"
 - "Connecticut State Highway Department - Right of Way Map - Town of Brooklyn - Brooklyn-Wauregan Road - From the Harris Property - Southerly About 6,100 Feet - Route No. 144 - Scale: 1" = 40' - Dated: June 30, 1930, Revised: March 1962"



REVISIONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA

DATE: 10/30/2023	DRAWN: DJH
SCALE: 1" = 80'	DESIGN: DJH
SHEET: 2 OF 8	CHK BY: ---
DWG. No: Client File	JOB No: 233023

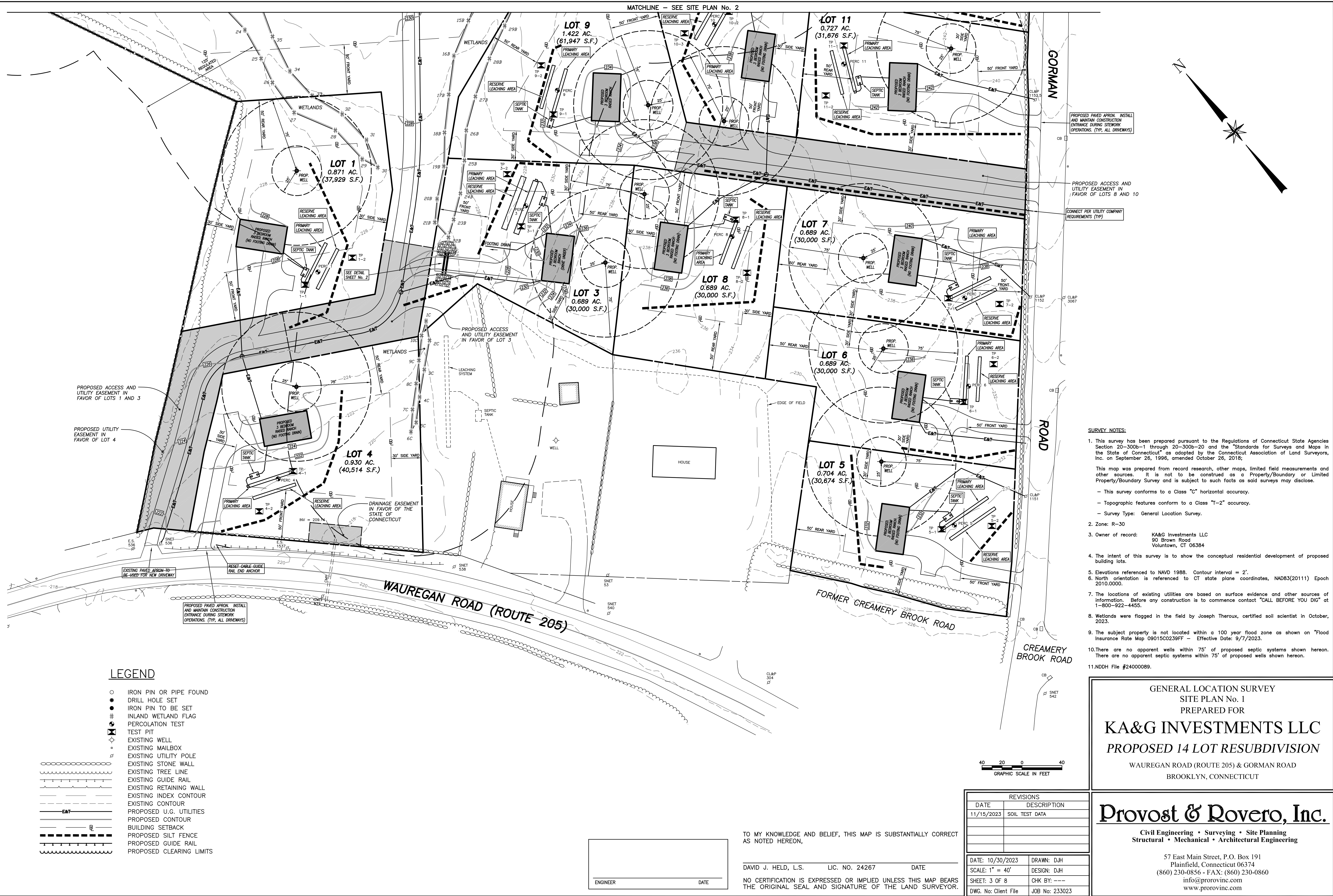
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

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.

RESUBDIVISION MAP
PREPARED FOR
KA&G INVESTMENTS LLC
PROPOSED 14 LOT RESUBDIVISION
WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

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SURVEY NOTES

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996, amended 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 "T-2" accuracy.
- Survey Type: General Location Survey.

2. Zone: R-30

3. Owner of record: KA&G Investments LLC
90 Brown Road
Voluntown, CT 06384

4. The intent of this survey is to show the conceptual residential development of proposed building lots.

6. North orientation is referenced to CT state plane coordinates, NAD83(2011) Epoch 2010.0000.

7. 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.

8. Wetlands were flagged in the field by Joseph Theroux, certified soil scientist in October, 2023.

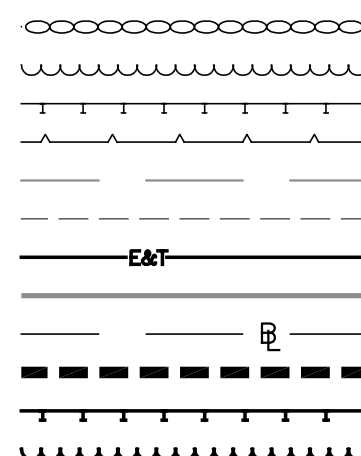
9. The subject property is not located within a 100 year flood zone as shown on "Flood Insurance Rate Map 09015C0239FF - Effective Date: 9/7/2023.

10. There are no apparent wells within 75' of proposed septic systems shown hereon. There are no apparent septic systems within 75' of proposed wells shown hereon.

- 11.NDDH File #24000089.

LEGEND

- IRON PIN OR PIPE FOUND
- DRILL HOLE SET
- IRON PIN TO BE SET
- # INLAND WETLAND FLAG
- ◆ PERCOLATION TEST
- ⊗ TEST PIT
- EXISTING WELL
- EXISTING MAILBOX
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- PROPOSED CONTOUR
- BUILDING SETBACK
- PROPOSED SILT FENCE
- PROPOSED GUIDE RAIL
- PROPOSED CLEARING LIMITS



MATCHLINE — SEE SITE PLAN No. 1

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.



REVISONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA

DATE: 10/30/2023	DRAWN: DJH
SCALE: 1" = 40'	DESIGN: DJH
SHEET: 4 OF 8	CHK BY: ---
DWG. No: Client File	JOB No: 233023

GENERAL LOCATION SURVEY
SITE PLAN No. 2
PREPARED FOR

KA&G INVESTMENTS LLC
PROPOSED 14 LOT RESUBDIVISION

WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

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EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).

2. Soil Survey of Connecticut, N.R.C.S.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.

2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.

3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.

4. Inspect and repair barrier after heavy rainfall.

5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.

6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.

7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:

- the fence has been overtopped, undercut or bypassed by runoff water,
- the fence has been moved out of position (knocked over), or
- the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.

2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.

3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.

4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.

5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:

- the barrier has been overtopped, undercut or bypassed by runoff water,
- the barrier has been moved out of position, or
- the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure TS-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedlings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

2-2

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a uniform depth approximating existing conditions on imported silt or suitable on-site materials.

2. Apply agricultural ground limestone. Apply fertilizer. Quantities shall be determined based on laboratory soil tests. Work lime and fertilizer into the soil to a depth of 4".

3. Inspect seedbed before seeding. If traffic has compacted the soil, retille compacted areas.

4. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.

5. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

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 any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address

the potential overlap of actions in a sequence which may be in conflict with each other.

Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.

Route traffic patterns within the site to avoid existing or newly planted vegetation.

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.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

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.

KEEP CLEAN RUNOFF SEPARATED

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 filtration of on-site waters has occurred.

Segregate construction waters from clean water.

Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.

Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.

Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.

Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.

Grade and landscape around buildings and septic systems to divert water away from them.

TEST PIT OBSERVATIONS

Northeast District Department of Health

November 6, 2023

TEST PIT DEPTH SOIL PROFILE

5-1 0-9" topsoil/roots

9"-35" fine sandy loam mixed w/ rotten rock

35"-51" very fine loamy sand mixed w/ some rocks

48"-103" boney med. coarse sand w/ large rocks

Mottling N/A

Ledge N/A

GWT N/A

Restrictive 35"

5-2 0-22" topsoil/roots

22"-35" fine sandy loam

35"-51" very fine mottled loamy sand, silty w/ rotten rock

51"-100" grey med. coarse sand w/ large rocks

Mottling 35"

Ledge N/A (rotten rock @ 48")

GWT N/A

Restrictive 35"

6-1 0-10" topsoil/roots

10"-21" fine sandy loam

21"-34" very fine loamy sand, silty

34"-88" grey mixed med. coarse sand w/ large rocks

Mottling N/A

Ledge N/A

GWT N/A

Restrictive 34"

6-2 0-20" topsoil/roots

20"-52" fine sandy loam

52"-68" loamy fine sandy, silty

68"-100" med. coarse sand w/ large rocks

Mottling N/A

Ledge N/A (rotten rock @ 58")

GWT N/A

Restrictive 68"

7-1 0-7" topsoil/roots

7"-20" fine sandy loam, small rocks

20"-91" rotten rock mixed in w/ med. coarse sand & large rocks

Mottling N/A

Ledge N/A (rotten rock @ 20")

GWT N/A

Restrictive N/A

7-2 0-8" topsoil/roots

8"-18" fine sandy loam w/ large rocks

18"-32" very fine loamy sand, silty

32"-98" grey mixed loamy med. coarse sand and rocks

Mottling N/A

Ledge N/A (rotten rock @ 20")

GWT N/A

Restrictive 32"

8-1 0-9" topsoil

9"-15" sandy loam, some large rocks

15"-27" yellow/brown loamy fine sand

27"-33" white/grey silty loamy fine sand

33"-82" rotten rock, large rocks w/ silty sand & some gravel

Mottling N/A

Ledge N/A (rotten rock @ 33")

GWT N/A

Restrictive 27"

8-2 0-10" topsoil

10"-16" sandy loam, some large rocks

16"-30" yellow/brown loamy fine sand

30"-54" white/grey silty loamy fine sand

54"-104" very silty sand & gravel and rotten rock

Mottling N/A

Ledge N/A (rotten rock @ 54")

GWT N/A

Restrictive 30"

9-1 0-10" topsoil/roots

10"-18" loamy mixed med. sand w/ some rocks

18"-36" boney coarse sand

36"-97" washed sands w/ large rocks

Mottling N/A

Ledge N/A (rotten rock @ 32")

GWT N/A

Restrictive 36"

9-2 0-6" topsoil/roots

6"-16" loamy mixed med. sand w/ rocks

16"-36" boney coarse sand

36"-90" washed sands w/ large rocks

90"-93" groundwater

Mottling N/A

Ledge N/A

GWT N/A

Restrictive 36"

10-1 0-10" topsoil

10"-30" brown/yellow loamy fine sand, large rocks

30"-46" white/grey loamy very fine sand

46"-80" large rocks, rotten rock w/ silty sandy gravel

Mottling N/A

Ledge N/A (rotten rock @ 30", boulder @ 41")

GWT N/A

Restrictive 30"

10-2 0-12" topsoil

12"-24" yellow/brown sandy loam, large rocks

24"-30" brown/yellow loamy fine sand, large rocks

30"-57" large rocks, rotten rock w/ white/grey loamy very fine sand

57"-84" large rocks, rotten rock w/ silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 30")

GWT N/A

Restrictive 30"

10-3 0-20" topsoil

20"-28" brown/yellow sandy loam, some rotten rock

28"-35" brown/yellow loamy fine sand

35"-59" white/grey very loamy very fine sand, high iron content

59"-87" large rock/rotten rock w/ silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 28")

GWT N/A

Restrictive 28"

11-1 0-10" topsoil

10"-19" brown/yellow loamy fine sand

19"-24" loamy very fine sand, some very large rocks

24"-98" large rocks w/ silty sand & gravel

Mottling N/A

Ledge N/A

GWT N/A

Restrictive 24"

11-2 0-9" topsoil

9"-15" sandy loam, rocks

15"-30" brown/yellow loamy fine sand

30"-32" white/grey silty loamy fine sand

32"-94" rotten rock, large rock w/ silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 32")

GWT N/A

Restrictive 30"

TEST PIT OBSERVATIONS

Northeast District Department of Health

November 6, 2023

TEST PIT DEPTH SOIL PROFILE

12-1 0-7" topsoil/roots

7"-18" fine sandy loam

18"-33" loamy med. coarse sand w/ large rocks

33"-98" boney compact silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 18")

GWT N/A

Restrictive 33"

12-2 0-6" topsoil/roots

6"-22" fine sandy loam w/ small rocks

22"-34" med. coarse sand mixed w/ loam & large rocks

34"-72" boney compact silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 14")

GWT N/A

Restrictive 34"

13-1 0-10" topsoil

10"-27" brown/yellow loamy fine sand

27"-33" loamy very fine sand

33"-77" large rocks, rotten rock w/ silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 33")

GWT 97"

Restrictive 33"

13-2 0-9" topsoil

9"-16" brown/yellow loamy fine sand

16"-28" loamy very fine sand, large rocks

28"-86" large rocks, rotten rock w/ silty sand & gravel

Mottling N/A

Ledge N/A (rotten rock @ 28")

GWT N/A

Restrictive 28"

14-1 0-7" topsoil/roots

7"-28" fine sandy loam

28"-38" loamy very fine sand

38"-90" grey, mod. compact med. coarse sand w/ large rocks, wet

Mottling N/A

Ledge N/A (rotten rock @ 18")

GWT 90"

Restrictive 38"

14-2 0-6" topsoil/roots

6"-30" fine sandy loam

30"-48" grey loamy fine sand, silty

48"-79" mod. compact med. coarse sand w/ large rocks

Mottling N/A

Ledge N/A

GWT N/A

Restrictive 30"

PERCOLATION TESTS

Northeast District Department of Health & David Held, P.E., L.S.

November 6, 2023

Perc 1

Depth: 20"

TIME READING

12:43 10"

12:48 12"

12:50 13.25"

12:58 14.25"

1:03 15"

1:08 16"

Perc Rate: 5.0 min/inch

Perc 2

Depth: 25"

TIME READING

12:40 8.25"

12:45 13"

12:50 15.5"

12:55 17.5"

1:00 19.25"

1:05 20.5"

1:10 21.5"

Perc Rate: 6.0 min/inch

Perc 3

Depth: 18"

TIME READING

12:32 6.75"

12:39 8.5"

12:45 9.5"

12:52 10.5"

1:00 11.25"

1:08 12"

1:16 12.75"

Perc Rate: 10.6 min/inch

Perc 4

Depth: 23"

TIME READING

12:45 8.75"

12:50 13"

12:55 16"

1:00 18.25"

1:05 20"

Perc Rate: 2.9 min/inch

Perc 5

Depth: 13" (inside of 22" deep hole, 35" total depth from surface)

TIME READING

9:15 6.5"

9:22 11"

9:27 12.5"

9:32 13.5" (nearly dry)

Perc Rate: 3.3 min/inch

Perc 6

Depth: 16" (inside of 16" deep hole, 32" total depth from surface)

TIME READING

9:18 10"

9:25 11"

9:30 11.5"

9:40 12.5"

9:50 13.5"

10:00 14.5"

Perc Rate: 10.0 min/inch

PERCOLATION TESTS

Northeast District Department of Health & David Held, P.E., L.S.

November 6, 2023

Perc 7

Depth: 12" (inside of 21" deep hole, 33" total depth from surface)

TIME READING

9:20 7.25"

9:26 9"

9:31 10.5"

9:36 11.5"

9:41 12.5"

Perc Rate: 5.0 min/inch

Perc 8

Depth: 17" (inside of 18" deep hole, 35" total depth from surface)

TIME READING

10:11 9.25"

10:15 12.5"

10:19 14.25"

10:23 15.5"

10:27 16.75"

Perc Rate: 3.2 min/inch

Perc 9

Depth: 24"

TIME READING

12:00 5"

12:03 6"

12:06 7"

12:09 8"

12:13 9.5"

12:16 10.5"

12:23 11.5"

12:28 12.5"

Perc Rate: 5.0 min/inch

Perc 10

Depth: 29"

TIME READING

11:58 15"

12:03 19.25"

12:08 22.25"

12:13 24.5"

12:18 26"

12:23 27.25"

Perc Rate: 4.0 min/inch

Perc 11

Depth: 39" total, 22" hole

TIME READING

9:45 6.5"

9:49 9.25"

9:54 12"

9:59 14.25"

10:04 16"

10:10 17.75"

10:15 19"

Perc Rate: 4.0 min/inch

Perc 12

Depth: 34"

TIME READING

10:14 4"

10:18 5.5"

10:22 6.5"

10:26 7.5"

10:30 8.5"

10:34 9.5"

10:38 10.5"

Perc Rate: 4.0 min/inch

Perc 13

Depth: 36" total, 20" hole

TIME READING

10:30 10.25"

10:35 14"

10:40 16.5"

10:45 18.25"

10:50 20"

11:00 22.25"

Perc Rate: 4.4 min/inch

Perc 14

Depth: 35"

TIME READING

10:46 4.5"

10:50 5.75"

10:54 7"

11:02 8.75"

11:08 9.5"

11:16 10.5"

11:24 11.5"

Perc Rate: 8.0 min/inch

DETAIL SHEET No. 1

PREPARED FOR

KA&G INVESTMENTS LLC

PROPOSED 14 LOT RESUBDIVISION

WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD

BROOKLYN, CONNECTICUT

REVISIONS

DATE DESCRIPTION

11/15/2023 SOIL TEST DATA

DATE: 10/30/2023 DRAWN: DJH

SCALE: AS SHOWN DESIGN: DJH

SHEET: 5 OF 8 CHK BY: ---

DWG. No. Client File JOB No: 233023

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

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C:\Users\Dave\Desktop\0630 23\0203\Drawings\05 DET.dwg Nov 15, 2023 1:25:54 PM

LOT 1
TP 1-1 & 1-2
Depth to restrictive layer = 55 in. avg.
Slope % = 2.5 %
Number of Bedrooms = 3
Percolation rate = 5.0 min/in
Max. depth into exist. grade = 2 in.
System Size = 495 s.f.

24 x 1.50 x 1.00 = 36.0'

MLSS = 36.0'

Proposed Leaching System

45 l.f. Mantis 536-8

LOT 2
TP 2-1 & 2-2
Depth to restrictive layer = 28 in. avg.
Slope % = 7.7 %
Number of Bedrooms = 3
Percolation rate = 5.0 min/in
Max. depth into exist. grade = 0 in.
System Size = 495 s.f.

28 x 1.50 x 1.00 = 42.0'

MLSS = 42.0'

Proposed Leaching System
45 l.f. Mantis 536-8

LOT 3
TP 3-1 & 3-2
Depth to restrictive layer = 27 in. avg.
Slope % = 5.6 %
Number of Bedrooms = 3
Percolation rate = 10.6 min/in
Max. depth into exist. grade = 9 in.
System Size = 675 s.f.

$$30 \times 1.50 \times 1.25 = 56.3'$$

MLSS = 56.3'
Proposed Leaching System
56.3 l.f. GST 6218

LOT 4
TP 4-1 & 4-2
Depth to restrictive layer = 33 in. avg.
Slope % = 3.2 %
Number of Bedrooms = 3
Percolation rate = 2.9 min/in
Max. depth into exist. grade = 8 in.
System Size = 495 s.f.

30 x 1.50 x 1.00 = 45.0'

MLSS = 45.0'

Proposed Leaching System

45 l.f. Mantis 536-8

LOT 5
TP 5-1 & 5-2
Depth to restrictive layer = 35 in. avg.
Slope % = 2.9 %
Number of Bedrooms = 3
Percolation rate = 3.3 min/in
Max. depth into exist. grade = 11 in.
System Size = 495 s.f.

34 x 1.50 x 1.00 = 51.0'

MLSS = 51.0'

Proposed Leaching System

55 l.f. Mantis 536-8

LOT 6
TP 6-1 & 6-2
Depth to restrictive layer = 51 in. avg.
Slope % = 6.2 %
Number of Bedrooms = 3
Percolation rate = 10.0 min/in
Max. depth into exist. grade = 16 in.
System Size = 495 s.f.

18 x 1.50 x 1.00 = 27.0'

MLSS = 27.0'

Proposed Leaching System
45 l.f. Mantis 536-8

LOT 7
TP 7-1 & 7-2
Depth to restrictive layer = 32 in. avg.
Slope % = 8.3 %
Number of Bedrooms = 3
Percolation rate = 5.0 min/in
Max. depth into exist. grade = 0 in.
System Size = 495 s.f.

24 x 1.50 x 1.00 = 36.0'

MLSS = 36.0'

Proposed Leaching System

45 l.f. Mantis 536-8

LOT 8
TP 8-1 & 8-2
Depth to restrictive layer = 29 in. avg.
Slope % = 5.4 %
Number of Bedrooms = 3
Percolation rate = 3.2 min/in
Max. depth into exist. grade = 3 in.
System Size = 495 s.f.

30 x 1.50 x 1.00 = 45.0'

MLSS = 45.0'

Proposed Leaching System

45 l.f. Mantis 536-8

LOT 9
TP 9-1 & 9-2
Depth to restrictive layer = 36 in. avg.
Slope % = 6.2 %
Number of Bedrooms = 3
Percolation rate = 5.0 min/in
Max. depth into exist. grade = 8 in.
System Size = 495 s.f.

26 x 1.50 x 1.00 = 39.0'

MLSS = 39.0'

Proposed Leaching System
45 l.f. Mantis 536-8

LOT 10
TP 10-2 & 10-3
Depth to restrictive layer = 29 in. avg.
Slope % = 3.6 %
Number of Bedrooms = 3
Percolation rate = 4.0 min/in
Max. depth into exist. grade = 4 in.
System Size = 495 s.f.

34 x 1.50 x 1.00 = 51.0'

MLSS = 51.0'

Proposed Leaching System

55 l.f. Mantis 536-8

LOT 11
TP 11-1 & 11-2
Depth to restrictive layer = 27 in. avg.
Slope % = 4.4 %
Number of Bedrooms = 3
Percolation rate = 4.0 min/in
Max. depth into exist. grade = 0 in.
System Size = 495 s.f.

30 x 1.50 x 1.00 = 45.0'

MLSS = 45.0'

Proposed Leaching System
45 l.f. Mantis 536-8

LOT 12
TP 12-1 & 12-2
Depth to restrictive layer = 34 in. avg.
Slope % = 8.9 %
Number of Bedrooms = 3
Percolation rate = 4.0 min/in
Max. depth into exist. grade = 0 in.
System Size = 495 s.f.

$$24 \times 1.50 \times 1.00 = 36.0'$$

MLSS = 36.0'
Proposed Leaching System
45 l.f. Mantis 536-8

LOT 13
TP 13-1 & 13-2
Depth to restrictive layer = 31 in. avg.
Slope % = 6.9 %
Number of Bedrooms = 3
Percolation rate = 4.4 min/in
Max. depth into exist. grade = 4 in.
System Size = 495 s.f.

26 x 1.50 x 1.00 = 39.0'

MLSS = 39.0'

Proposed Leaching System
45 l.f. Mantis 536-8

LOT 14
TP 14-1 & 14-2
Depth to restrictive layer = 34 in. avg.
Slope % = 12.9 %
Number of Bedrooms = 3
Percolation rate = 8.0 min/in
Max. depth into exist. grade = 0 in.
System Size = 495 s.f.

$$20 \times 1.50 \times 1.00 = 30.0'$$

MLSS = 30.0'
Proposed Leaching System
45 l.f. Mantis 536-8



REVISIONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA

DATE: 10/30/2023	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 6 OF 8	CHK BY: ---
DWG. No: Client File	JOB No: 233023

DETAIL SHEET No. 2

PREPARED FOR

KA&G INVESTMENTS LLC

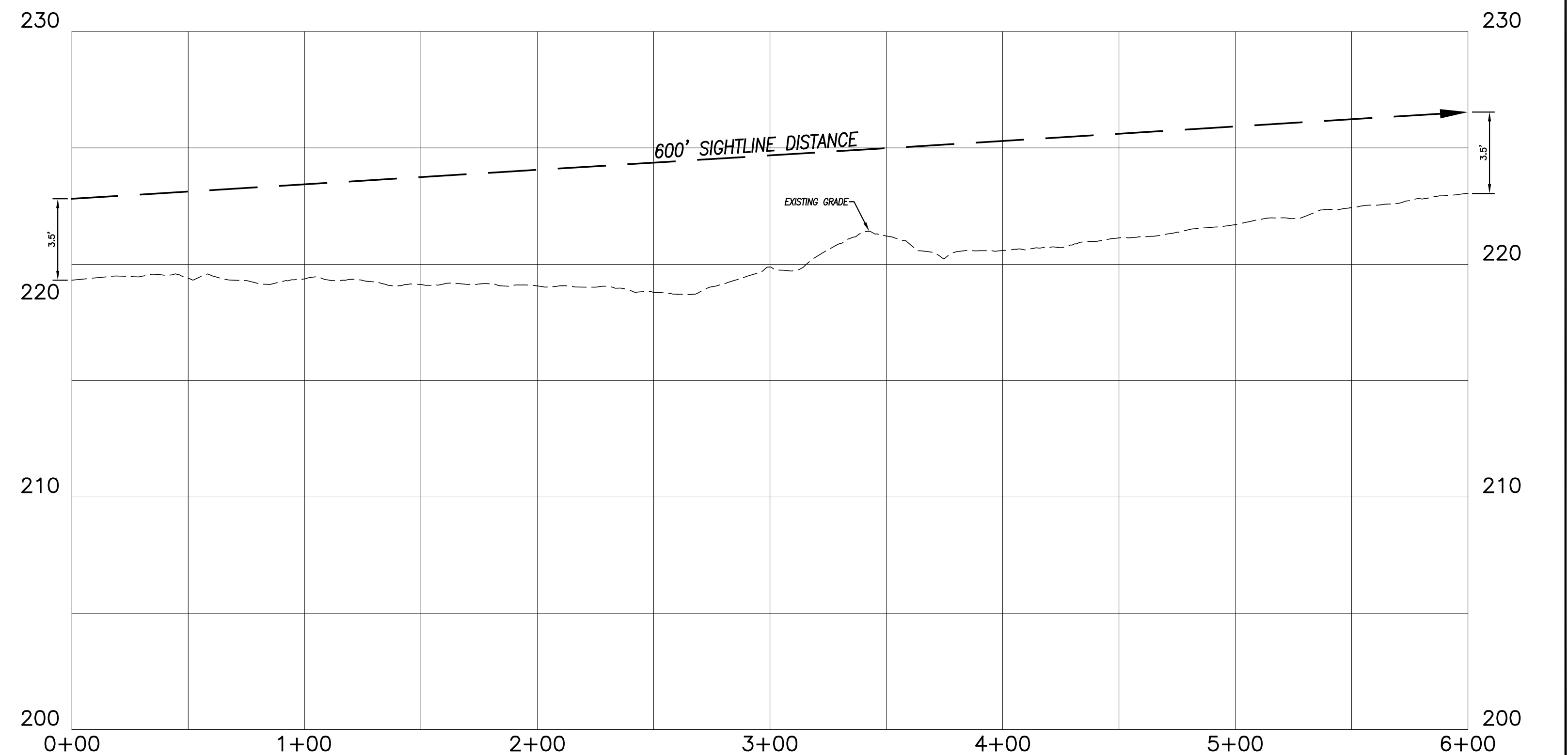
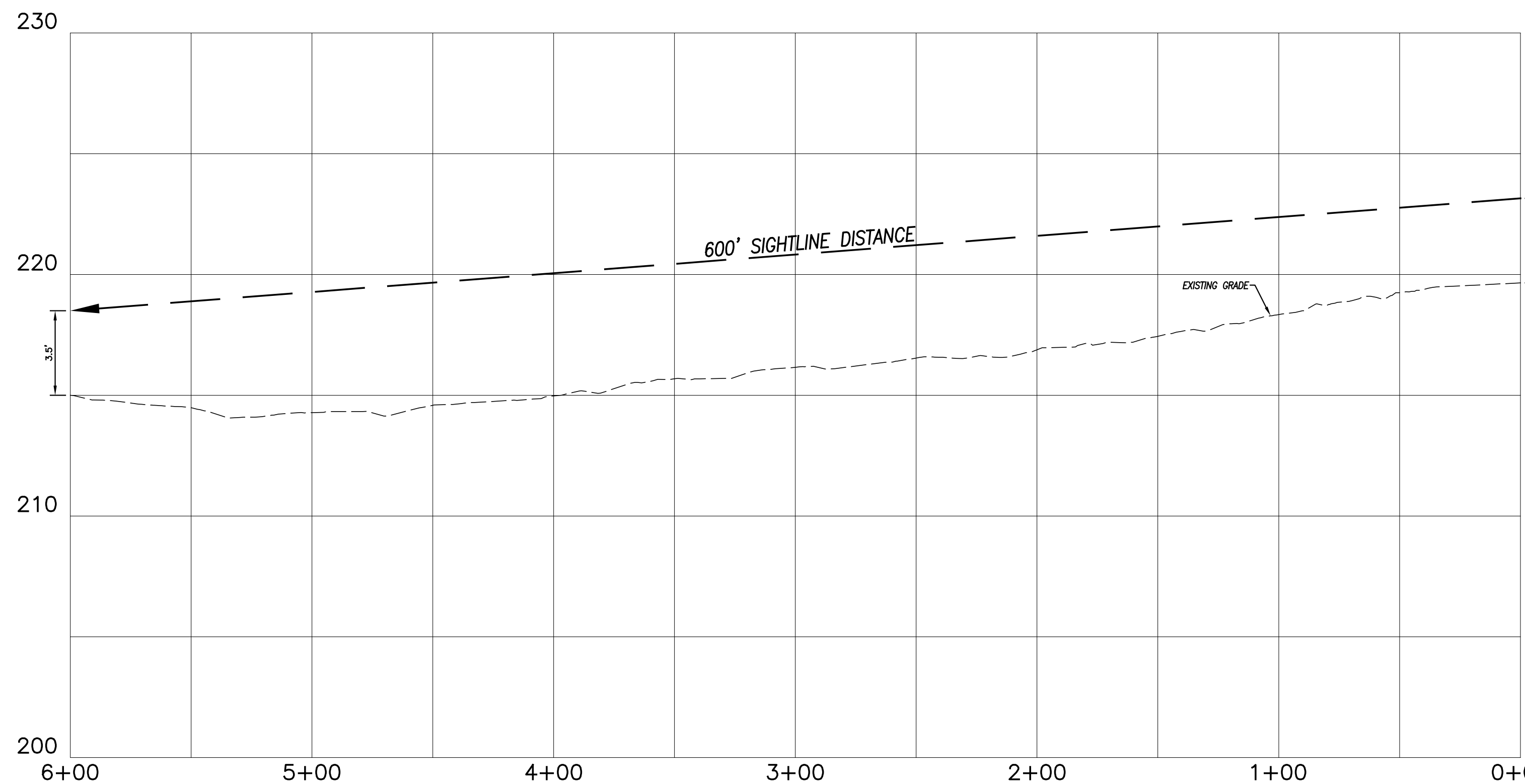
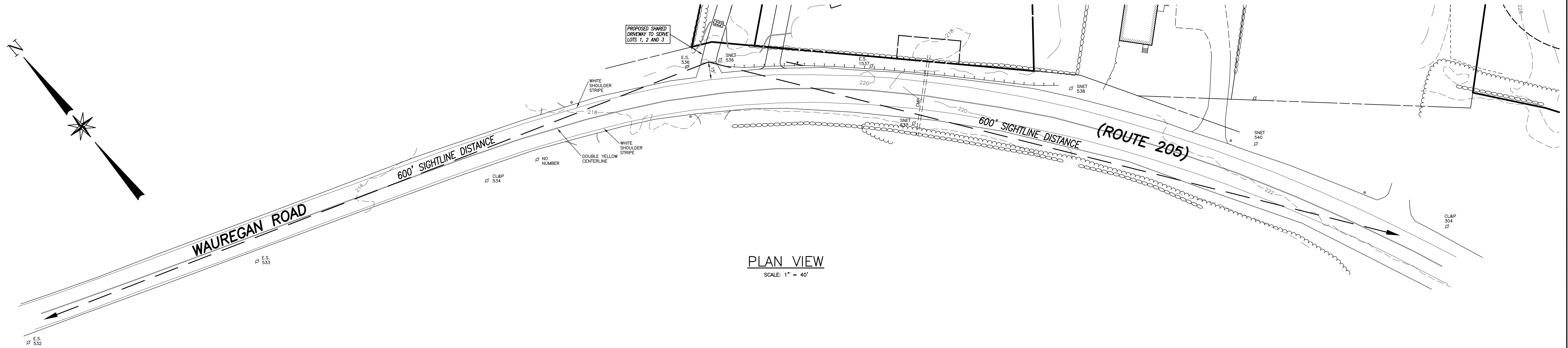
PROPOSED 14 LOT RESUBDIVISION

WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

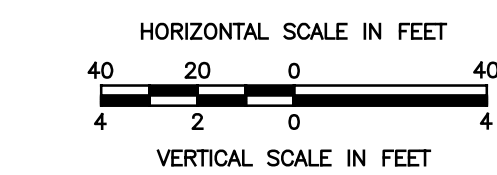
Provost & Rovero, Inc.

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Plainfield, Connecticut 06374
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HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

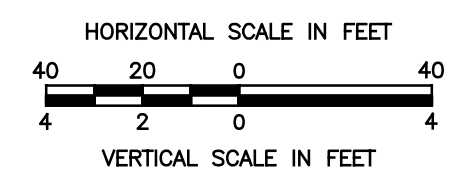
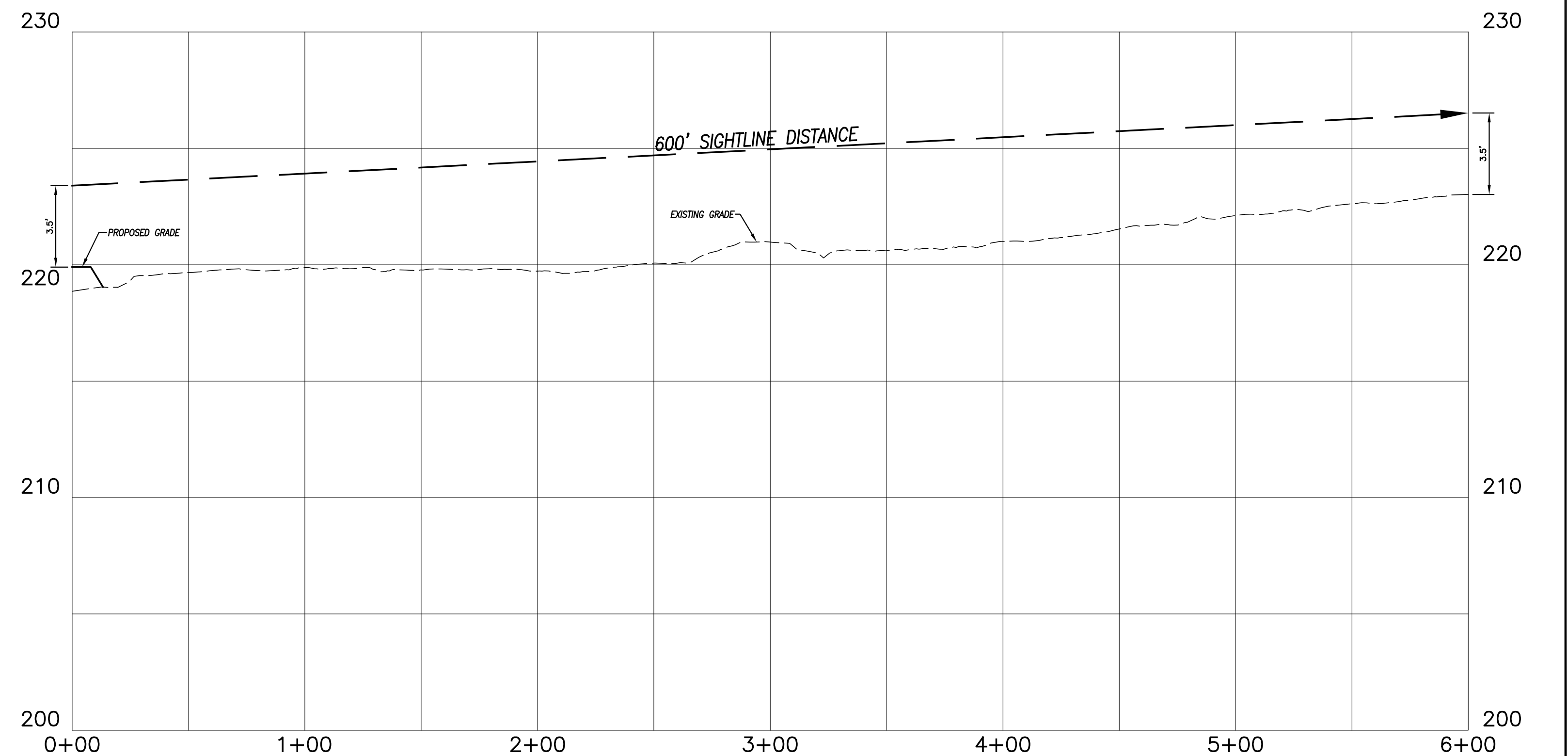
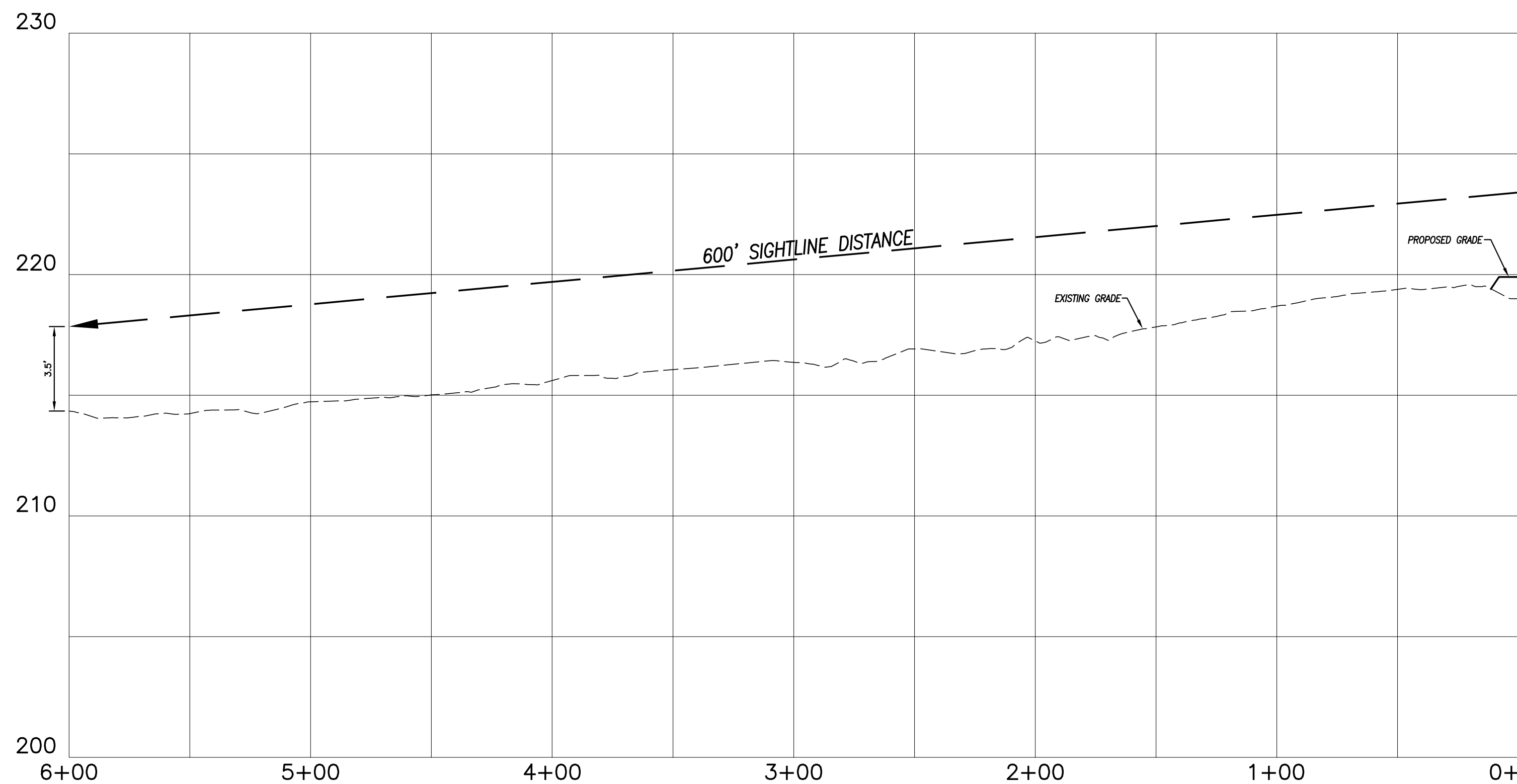
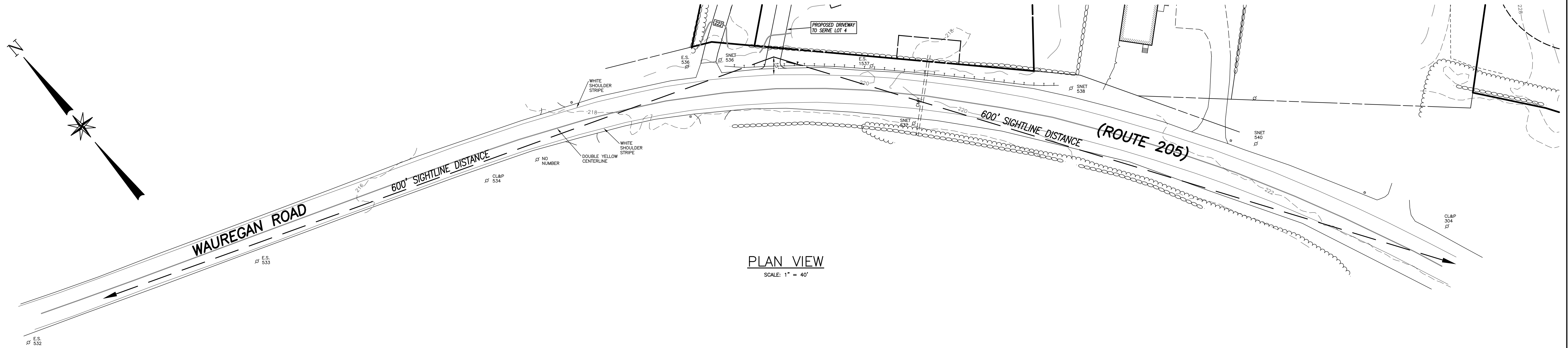


ENGINEER	DATE
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REVISIONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA
DATE: 10/30/2023	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 7 OF 8	CHK BY: ---
DWG. No: Client File	JOB No: 233023

SIGHTLINE DEMONSTRATION PLAN No. 1
LOTS 1, 2 & 3
PREPARED FOR
KA&G INVESTMENTS LLC
PROPOSED 14 LOT RESUBDIVISION
WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

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ENGINEER	DATE
----------	------

REVISIONS	
DATE	DESCRIPTION
11/15/2023	SOIL TEST DATA
DATE: 10/30/2023	DRAWN: DJH
SCALE: AS SHOWN	DESIGN: DJH
SHEET: 8 OF 8	CHK BY: ---
DWG. No: Client File	JOB No: 233023

SIGHTLINE DEMONSTRATION PLAN No. 2
LOT 4
PREPARED FOR
KA&G INVESTMENTS LLC
PROPOSED 14 LOT RESUBDIVISION
WAUREGAN ROAD (ROUTE 205) & GORMAN ROAD
BROOKLYN, CONNECTICUT

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**Driveway Culvert Design
Proposed 14 Lot Resubdivision
Wauregan Road & Gorman Road
Brooklyn, CT**

Prepared for

KA&G Investments LLC

11/20/2023

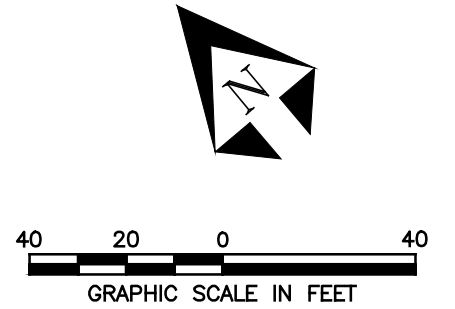
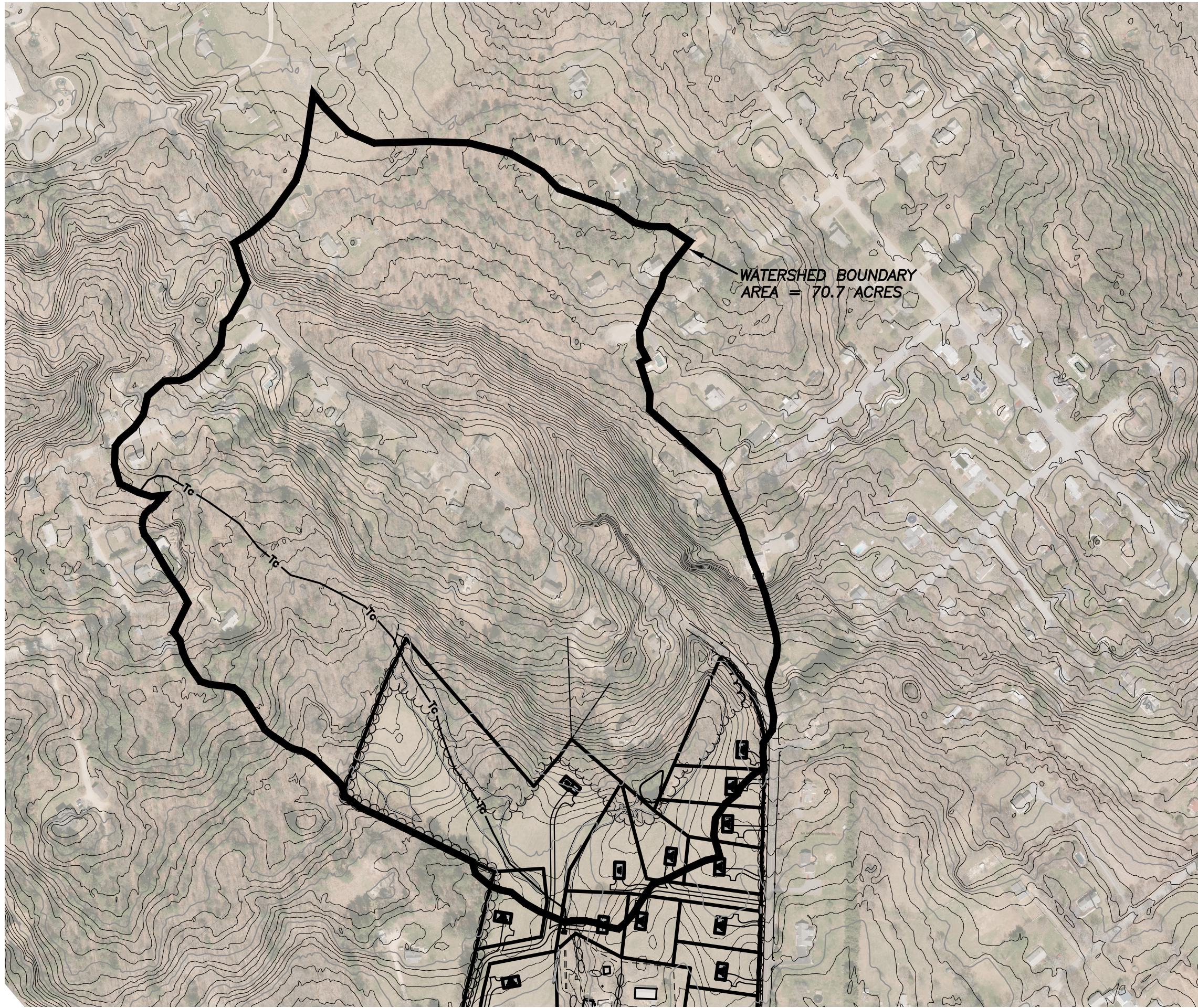


Prepared by:

Provost & Rovero, Inc.

Design Summary

A culvert is proposed to convey periodic flows under the driveway serving proposed lot 3. This culvert has been designed to convey a 10 year design storm. The design flow rate has been determined with the Rational method utilizing ConnDOT IDF data. The culvert has been designed utilizing Federal Highway Administration methodology and Carlson Hydrology software. Watershed mapping and calculation reports are attached hereto.



WATERSHED MAP PREPARED FOR KA&G INVESTMENTS LLC PROPOSED 14 LOT RESUBDIVISION WAUREGAN ROAD & GORMAN ROAD BROOKLYN, CONNECTICUT	
SCALE: 1" = 300'	DATE: 11/16/2023
JOB No: 233023	DRAWN BY: DJH
Provost & Rovero, Inc. 57 EAST MAIN ST. P.O. BOX 191, PLAINFIELD, CT.	

Project: KA&G
Location: LOT 2 DRIVEWAY
Developed

By: DJH
Checked:

Date: 11/15/23
Date:

Sheet Flow

Segment ID: sheet flow

Manning's Roughness Coeff. (n):	0.400	
Flow Length, L (total L <= 100 ft):	100.00	ft
Two-yr 24-hr Rainfall, P:	3.20	in
Land Slope, s:	2.00	%
Tc:	0.358	hr (21.5 min)

Shallow Concentrated Flow

Segment ID: shallow conc.

Surface Description:	Unpaved	
Flow Length, L:	1750.00	ft
Watercourse Slope, s:	3.20	%
Average Velocity, V:	2.89	ft/s
Tc:	0.168	hr (10.1 min)
Total Tc:	0.526	hr (31.6 min)

1.Data:

Drainage Area

A = 70.70 acre

Runoff Coefficient

C = 0.20

Time of Concentration

0.53 hrs

Rainfall ID:

Connecticut DOT

Return Period:

10 YEAR

Rainfall Intensity:

I = 2.73 in/hr

2.Peak Discharge:

Qp = 38.57 cfs

Design Parameters

Section

Shape:	Circular
Material:	Concrete
Diameter:	24.00 in
Manning's n:	0.0130
Number of Barrels:	2

Inlet

Inlet Type:	Square Edge with Headwall
Ke:	0.50

Inverts

Inlet Invert Elevation:	223.300	ft
Outlet Invert Elevation:	223.100	ft
Length:	24.000	ft
Slope:	0.83	%

Culvert Calculation

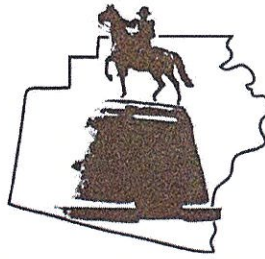
Discharge:	38.60	cfs
Headwater Elevation:	226.134	ft
Tailwater Elevation:	1.000	ft
Downstream Velocity:	7.49	ft/s
Downstream Flow Depth:	1.529	ft
Flow Control Type:	Inlet Control, Submerged	

Received from Syl Pauley 11/29/23

“Hi Margaret,

I have reviewed David Held's 14 lot subdivision and drainage calculations with respect to any wetlands impact and have no questions or comments about this submission.

Syl”



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒ Zoning Enforcement _____ Blight Enforcement _____

SITE INSPECTION NUMBER

1 2 3 4 5

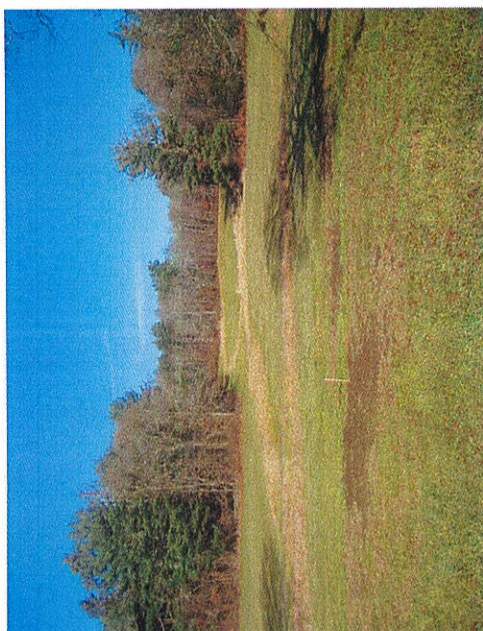
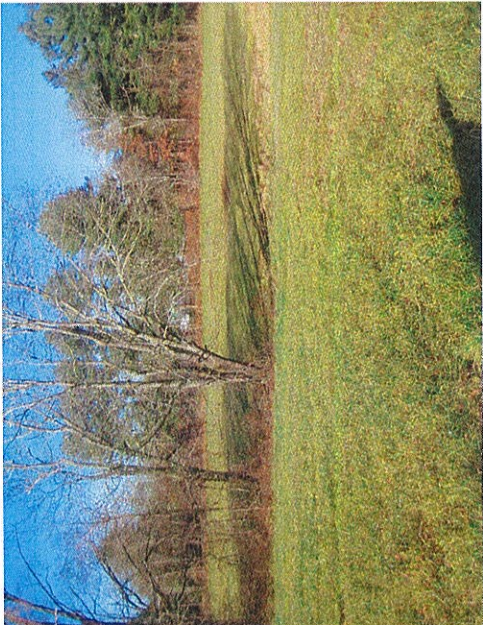
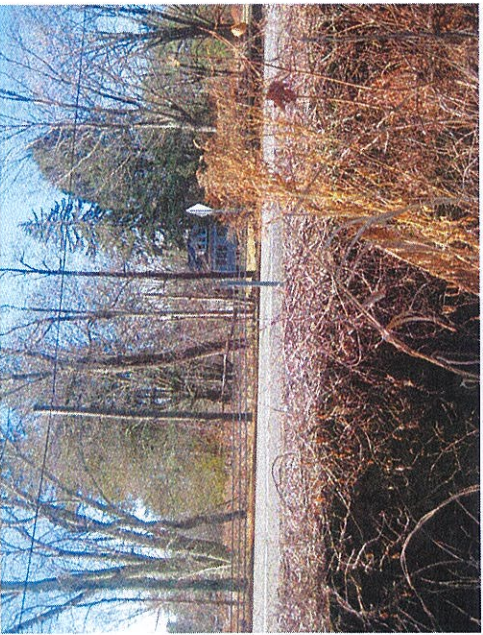
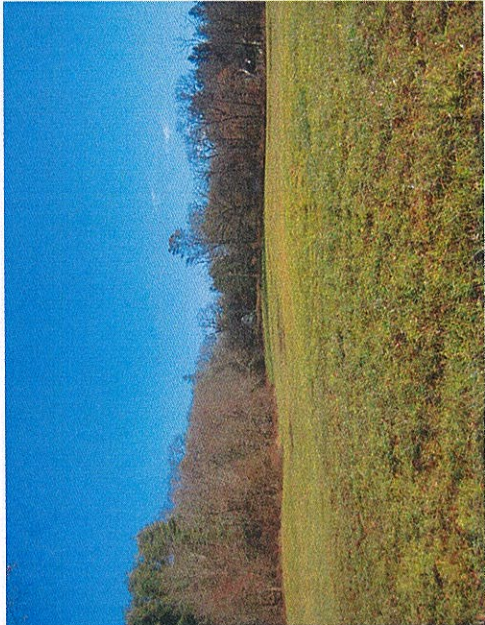
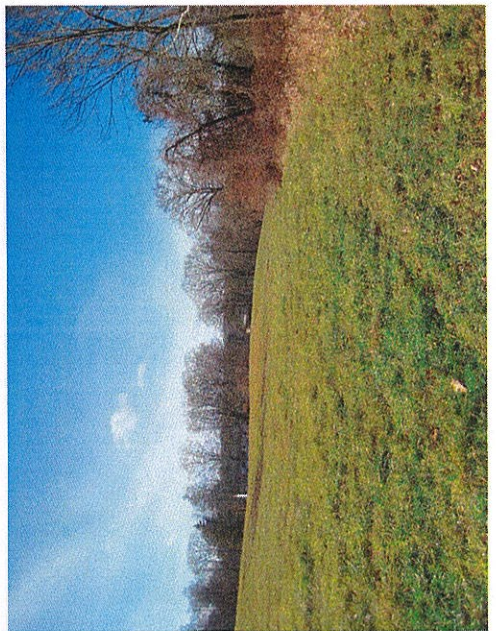
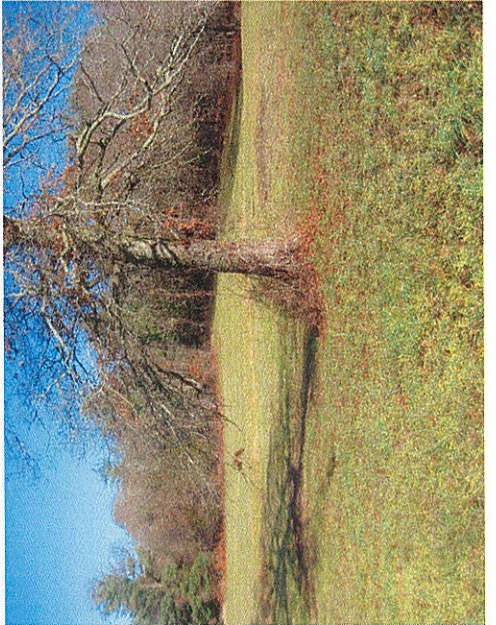
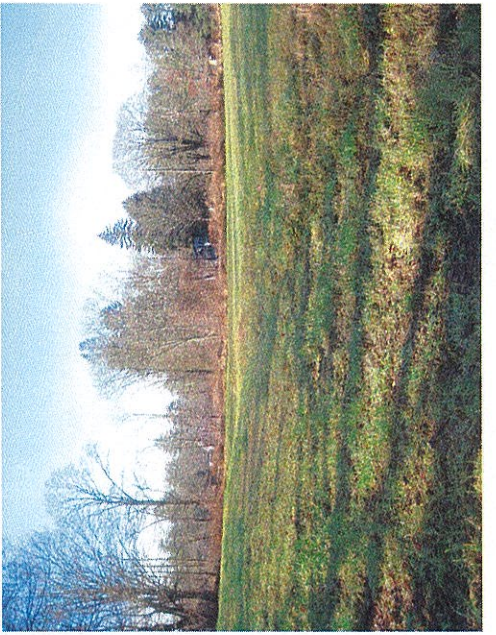
Map 32 Lot 15
Wauregan Rd. + Gorman Rd. 12/4/23
Address Date

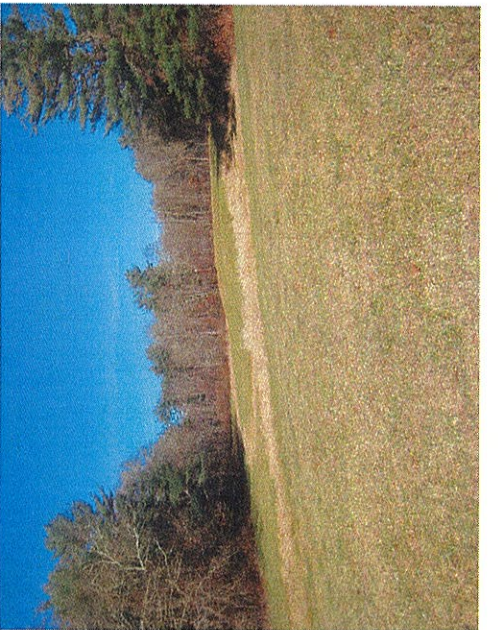
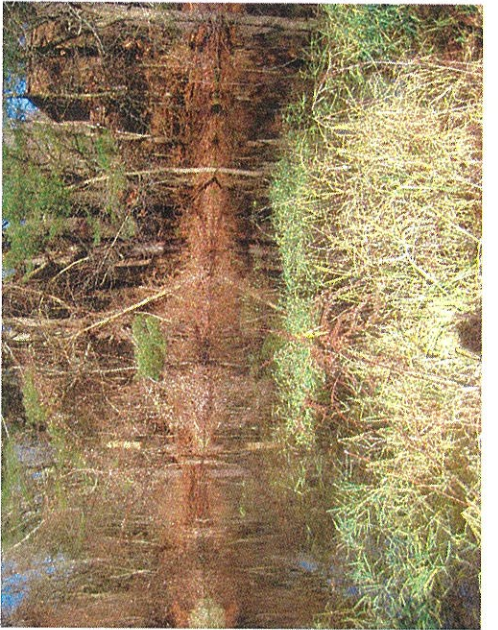
I inspected and took photos with
David Held.

There are no FWWC issues.

Commission Representative M. Washburn

Owner or Authorized Signature _____





Killingly Engineering Associates

Civil Engineering & Surveying



P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglengineering.com

November 03, 2023

Proposed Single Family Home

***Robert N. Ross & Teresa D. Ross
Hartford Road (Route 6)
Brooklyn, CT***

APPLICATION PACKAGE CONTENTS – Inland Wetlands

1. Application fee:

Base Fee:	\$150.00
State fee:	\$ 60.00
Total = \$210.00	

2. 5- full sized sets of plans revised to: 10/18/2023
3. Inland Wetlands Application
4. List of adjacent land owners including across the street
5. DEEP Reporting Form
6. Soil Scientist Delineation Report
7. Soil Scientist Impact Report
8. Web Soil Survey Map
9. GIS mapping
10. Applicant's Certification



INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Robert N. Roos MAILING ADDRESS 24 Plaza St. Brooklyn, CT
APPLICANT'S INTEREST IN PROPERTY _____ PHONE: CELL 860-634-7856 HOME: _____
E-MAIL _____

PROPERTY OWNER IF DIFFERENT _____ PHONE: CELL: _____ HOME: _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) _____
Killingly Engineering Associates - NORMAND THIBEAULT JR, P.E.
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS) Hartford Road (Route 6)

MAP # 10 LOT # 7 ZONE RA TOTAL ACRES 3.82 ACRES OF WETLANDS ON PROPERTY ±1.75

PURPOSE AND DESCRIPTION OF THE ACTIVITY
Proposed construction of a residential home with on site septic, drilled well & improvements to an existing stone culvert

WETLANDS EXCAVATION AND FILL:
FILL PROPOSED 0 CUBIC YDS 0 SQ FT 0
EXCAVATION PROPOSED 0 CUBIC YDS 0 SQ FT 0
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE _____ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT _____ ACRES _____

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):
No Alternatives were considered because no wetlands disturbance is proposed

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY 0 SQ FT 0 ACRES 0

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? NO IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: Robert N. Ross DATE _____

OWNER: " [Signature] " DATE 11/13/2023

REQUIREMENTS

☒ STANDARD APPLICATION FEE \$ (\$150) ☒ STATE FEE (\$60) ☒ CHECK # _____

____ NOTICE OF ACTION PUBLICATION FEE \$ _____ CHECK # _____

____ PUBLIC HEARING PUBLICATION FEE (\$100) \$ _____ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK# _____

____ SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ _____ CHECK # _____

☒ COMPLETION OF CT DEEP REPORTING FORM

☒ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

☒ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

☒ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

SOIL SCIENTIST DELINEATION REPORT
SOIL SURVEY MAPPING

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:
APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

____ PERMIT REQUIRED:

____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

____ CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ AUTHORIZED BY IWWC

____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

____ NO PERMIT REQUIRED

____ OUTSIDE OF UPLAND REVIEW AREA

____ NO IMPACT

____ CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ TIMBER HARVEST



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

GIS CODE #: _____
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____

2. ACTION TAKEN (see instructions - one code only): _____

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Brooklyn

does this project cross municipal boundaries (check one)? yes ☐ no ☐

if yes, list the other town(s) in which the activity is occurring (print name(s)): _____

6. LOCATION (see instructions for information): USGS quad name: Hampton or number: 42

subregional drainage basin number: 3711-01

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Robert W. Ross

8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Hartford Road (Route 6)

briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: Proposed

Construction of a residential home

9. ACTIVITY PURPOSE CODE (see instructions - one code only): A

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 1, 2, 12, 14

11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):

wetlands: 0 acres open water body: 0 acres stream: 0 linear feet

12. UPLAND AREA ALTERED (must provide acres): 0.75 acres

13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO



JOSEPH R. THEROUX

~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
PHONE 860-428-7992 ~ FAX 860-376-6842
426 SHETUCKET TURNPIKE, VOLUNTOWN, CT. 06384
FORESTRY SERVICES ~ ENVIRONMENTAL IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE MONITORING
WETLAND FUNCTION AND VALUE ASSESSMENTS

10/4/23

KILLINGLY ENGINEERING ASSOCIATES
P.O. Box 421
DAYVILLE, CT. 06241

RE: WETLAND DELINEATION, ROSS PROPERTY, HARTFORD RD. BROOKLYN, CT.

DEAR MR. GLAUDE,

AT YOUR REQUEST I HAVE DELINEATED THE INLAND WETLANDS AND WATERCOURSES ON THE SUBJECT PROPERTY.

THESE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY AND THE DEFINITIONS OF WETLANDS AS FOUND IN THE CONNECTICUT STATUTES, CHAPTER 440, SECTIONS 22A-38.

FLUORESCENT PINK FLAGS WITH A CORRESPONDING LOCATION NUMBER DELINEATE THE BOUNDARY BETWEEN THE UPLAND SOILS AND THE INLAND WETLANDS AND WATERCOURSES THAT WERE FOUND.

FLAG NUMBERS WF-1 THROUGH WF-28 AND WF-1 B THROUGH WF-4B DELINEATE THE FORESTED/SCRUB-SHRUB INLAND WETLANDS AND FLOODPLAIN SOILS ASSOCIATED WITH STONY BROOK IN THE EASTERN HALF OF THE PARCEL.

FLAG NUMBERS WF-1 A THROUGH WF-44A DELINEATE THE WESTERN BOUNDARY OF STONY BROOK AND ITS ASSOCIATED FORESTED/SCRUB-SHRUB WETLANDS AND FLOODPLAIN SOILS.

A PALUSTRINE FORESTED WETLAND CORRIDOR EXTENDS AROUND THE FIELD AREA ALONG THE NORTHERN AND WESTERN PROPERTY BOUNDARIES.

THE FLAG SERIES THAT EXTEND ALONG THE GRAVEL AND PAVEMENT MILLINGS DRIVEWAY LOCATED ON THE SOUTHERN PROPERTY LINE DELINEATE WETLAND SOILS AND THE OVERFLOW PATH OF THE BROOK WHEN IT FLOODS INTO THAT GENERAL AREA.

A CORRUGATED PLASTIC DRAIN PIPE WAS INSTALLED UNDER THE DRIVEWAY TO HELP DRAINAGE AND PREVENT THE DRIVEWAY FROM WASHING OUT DURING SIGNIFICANT STORM EVENTS.

THE DISCHARGE AREA FOR THIS SMALL PIPE WAS INVESTIGATED FOR THE PRESENCE OF WETLAND SOILS AND NONE WERE FOUND.

THESE WETLAND SOILS HAVE FORMED FROM THE PROLONGED WETNESS FROM THE SEASONALLY HIGH WATER TABLES AND GROUNDWATER BREAKOUT.

THESE WETLAND SOILS ARE CHARACTERIZED BY THICK ORGANIC "A" HORIZONS, SHALLOW REDOXIMORPHIC FEATURES AND LOW CHROMA COLORS FOUND WITHIN 20 INCHES OF THE SOIL SURFACE.

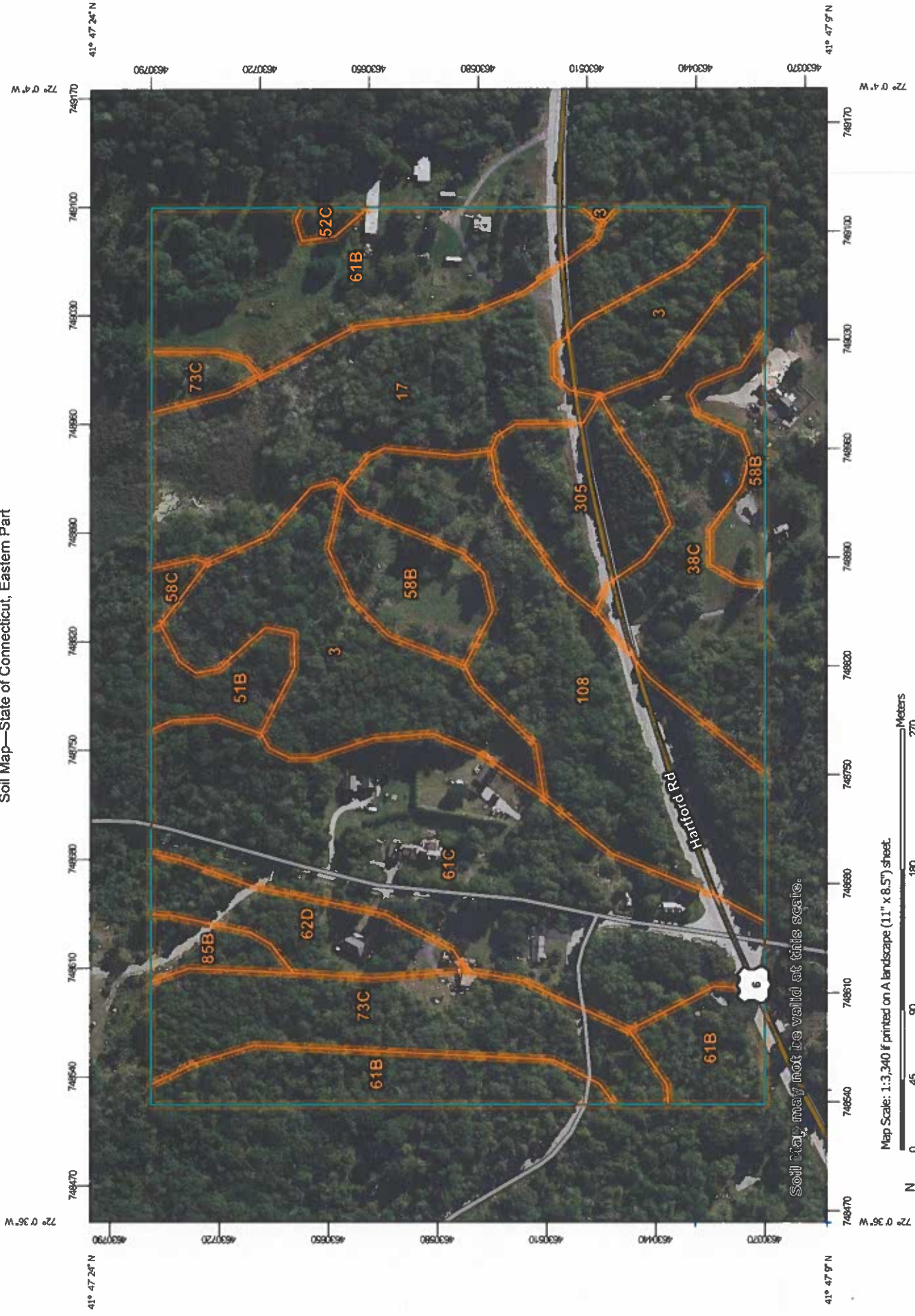
IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING THE DELINEATION OR THIS REPORT, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

JOSEPH R. THEROUX
CERTIFIED SOIL SCIENTIST
MEMBER SSSSNE, NSCSS, SSSA.

Soil Map—State of Connecticut, Eastern Part



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

 Area of Interest (AOI)	 Area of Interest (AOI)
 Soils	 Spoil Area
 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Very Stony Spot
 Soil Map Unit Points	 Wet Spot
 Special Point Features	 Other
 Blowout	 Special Line Features
 Borrow Pit	 Water Features
 Clay Spot	 Streams and Canals
 Closed Depression	 Transportation
 Gravel Pit	 Rails
 Gravelly Spot	 Interstate Highways
 Landfill	 US Routes
 Lava Flow	 Major Roads
 Marsh or swamp	 Local Roads
 Mine or Quarry	 Background
 Miscellaneous Water	 Aerial Photography
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Soddy Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

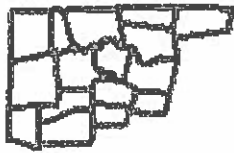
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	6.0	10.7%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	7.4	13.1%
38C	Hinckley loamy sand, 3 to 15 percent slopes	4.4	7.8%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	1.0	1.8%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	0.2	0.3%
58B	Gloucester gravelly sandy loam, 3 to 8 percent slopes, very stony	2.6	4.6%
58C	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony	0.2	0.4%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	8.6	15.3%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	10.0	17.7%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	1.8	3.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	4.5	8.0%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	0.6	1.1%
108	Saco silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded	6.9	12.2%
305	Udorthents-Pits complex, gravelly	2.2	4.0%
Totals for Area of Interest		56.4	100.0%



necog

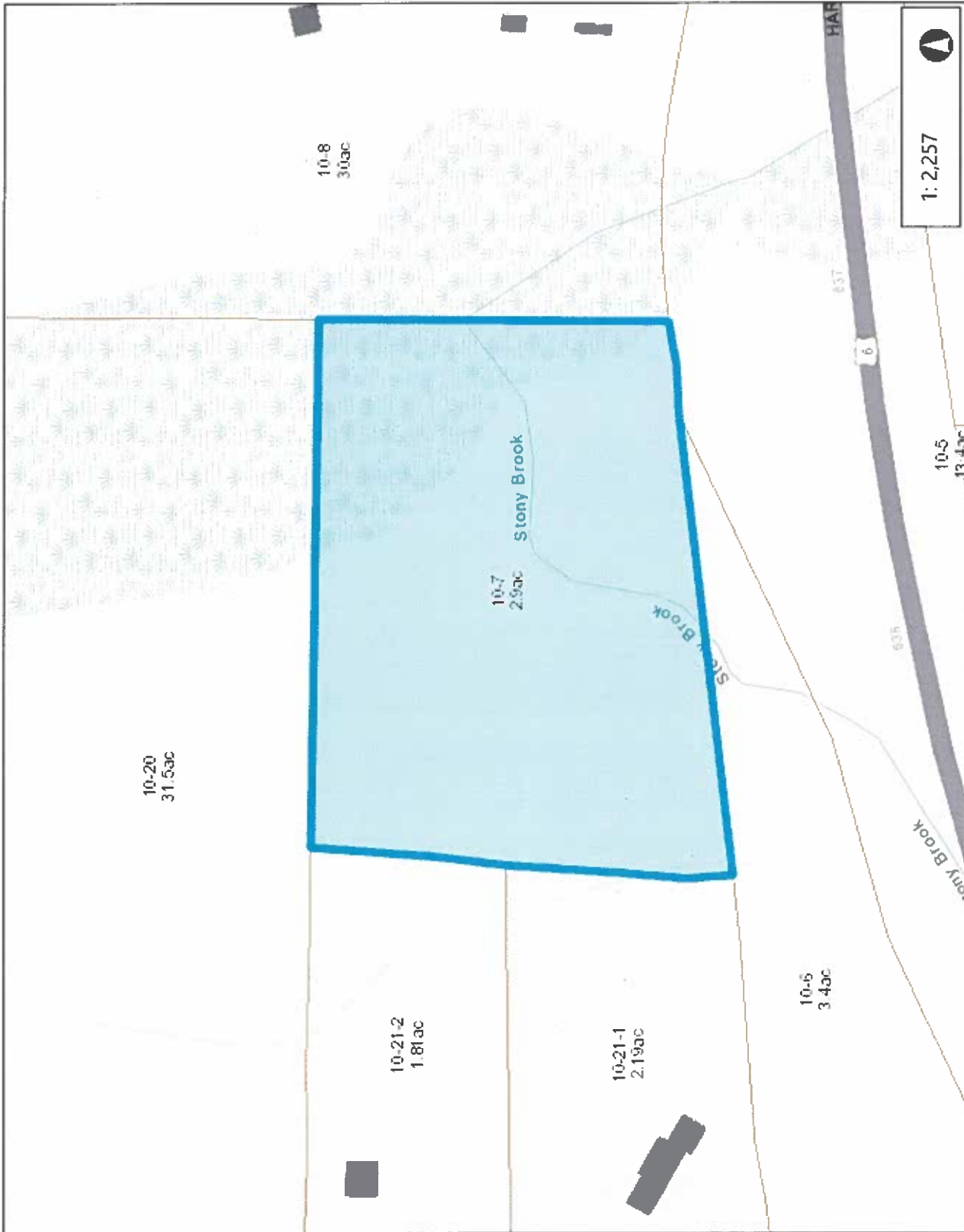
Necog GIS Site



- Legend
- Town
 - Buildings 2012
 - Parcels

Notes

Enter Map Description



This map is a user generated static output from an internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.



Killingly Engineering Associates

P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglyengineering.com

November 03, 2023

Proposed Construction of Residential Home

***Robert N. Ross & Teresa D. Ross
Hartford Road (Route 6)
Brooklyn, CT***

Per Section 7.10 of the Regulations for the Protection and Preservation of Inland Wetland and Watercourses
The applicant certifies that:

- a. The property on which the regulated activity is proposed is not located within 500 feet of the boundary of an adjoining municipality;
- b. Traffic attributable to the completed project on the site will not use streets within an adjoining municipality to enter or exit the site;
- c. Sewer or water drainage from the project site will not flow through and impact the sewage or drainage system within an adjoining municipality;
- d. Water run-off from the improved site will not impact streets or other municipal or private property within an adjoining municipality.

Applicant

Date

NORTHEAST DISTRICT DEPARTMENT OF HEALTH
69 SOUTH MAIN STREET
BROOKLYN, CT 06234
(860) 774-7350

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

File # 24000083 Map # 10 Block # _____ Lot # 7
 Property Owner Robert + Teresa Ross Address Hartford Road, Brooklyn

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 10/18/23

TEST PIT: 1	TEST PIT: 2	TEST PIT: 3	TEST PIT:
0-10" Top Soil	0-6" Top Soil	0-6" Top Soil	
10"-27" Orange Brown Sandy Loam	6"-26" Orange Brown Sandy Loam	6"-28" Orange Brown Sandy Loam	
27"-67" Mottled Gray Sandy Loam with Fines	26"-56" Mottled Tan Sandy Loam with Fines; Compact	28"-68" Mottled Gray Sandy Loam with Fines + Rock; Compact	
67"-74" Groundwater	56"-70" Groundwater	68"-78" Groundwater	
Mottles: 27"	Mottles: 26"	Mottles: 28"	Mottles:
GW: 67"	GW: 56"	GW: 68"	GW:
Ledge: —	Ledge: —	Ledge: —	Ledge:
Roots: —	Roots: —	Roots: —	Roots:
Restrictive: 27"	Restrictive: 26"	Restrictive: 28"	Restrictive:

COMMENTS: _____

GROUNDWATER TABLE (Near max., below max., etc.): Near Max
 SOIL MOISTURE (High, medium, low, etc.): Medium

PERCOLATION TEST DATA

DATE: 10/18/23

PERC: A		PERC:		PERC:		PERC:	
DEPTH: 22"		DEPTH:		DEPTH:		DEPTH:	
PRESOAK: 9:30 AM		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
10:08	1"						
10:13	5"						
10:21	9"						
10:26	10.5"						
10:31	12"						
10:36	13.5"						
10:41	15"						
10:43	15.5"						
PERC RATE: 4 min/inch		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

NORTHEAST DISTRICT DEPARTMENT OF HEALTH
69 SOUTH MAIN STREET
BROOKLYN, CT 06234
(860) 774-7350

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

File # 24000083 Map # 10 Block # Lot # 7
Property Owner Robert + Teresa Ross Address Hartford Road, Brooklyn

LOCATION DRAWING INCLUDING ALL TEST PITS AND PERCOLATION HOLES

* Test pits located by Killingly Engineering Associates.

SPECIAL CONDITIONS		DESIGN RECOMMENDATIONS	
Design Flow > 2000 GPD		Suitable for Sewage Disposal	✓
Public Water Supply Watershed		Unsuitable for Sewage Disposal	
Probable High Groundwater	✓	Wet Season Monitoring Required	
Slope > 25 percent		Engineered Plan Required	✓
Perc Rate < 1 min/inch		Surveyor Plan Required	
Perc Rate > 30 min/inch		Septic Installer Plan Required	
Ledge < 5 feet below grade		Number of Bedrooms	3
Limited Suitable Area		Gallons Per Day (Non-Residential)	
Open Watercourse or Wetlands	✓	Size of Septic Tank Required	1,000 gallon
Flood Plain / Seasonal Flooding		Effective Leaching Area Required	495 sq ft
Max. G.W. < 36 inches below grade		Maximum Depth into Grade	2"

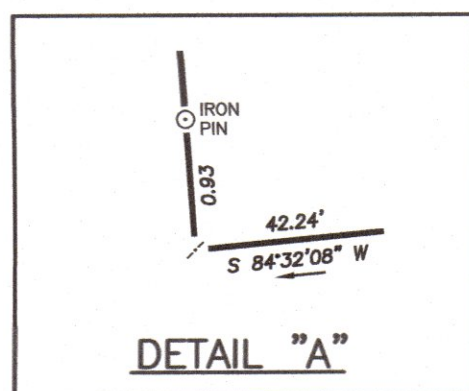
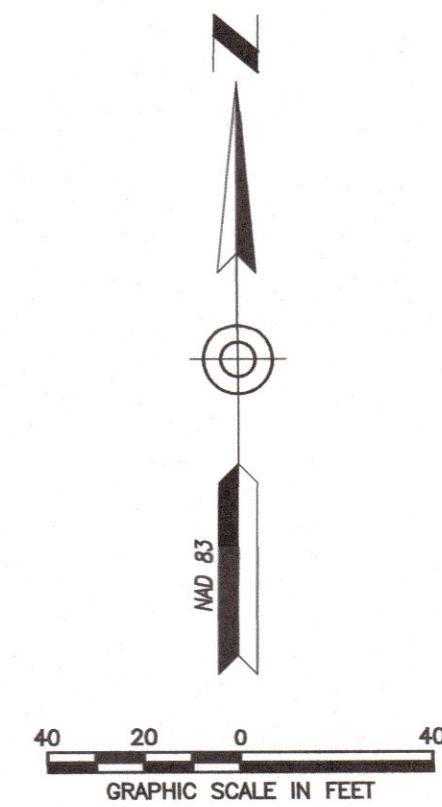
DESIGN RECOMMENDATIONS/COMMENTS

A proposed 3 bedroom home will require a 1,000 gallon two-compartment septic tank and 495 sq ft of ELA. The maximum depth into grade is not to exceed 2" inches. MLSS must be addressed.

Investigated By: Donovan Moe Title: EHS

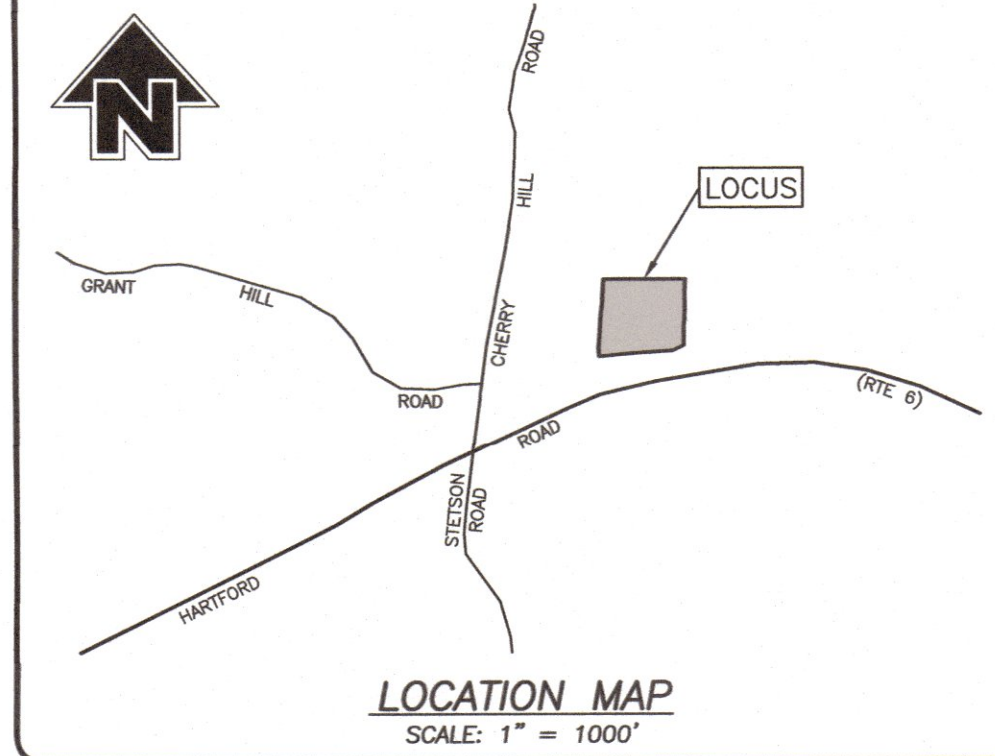
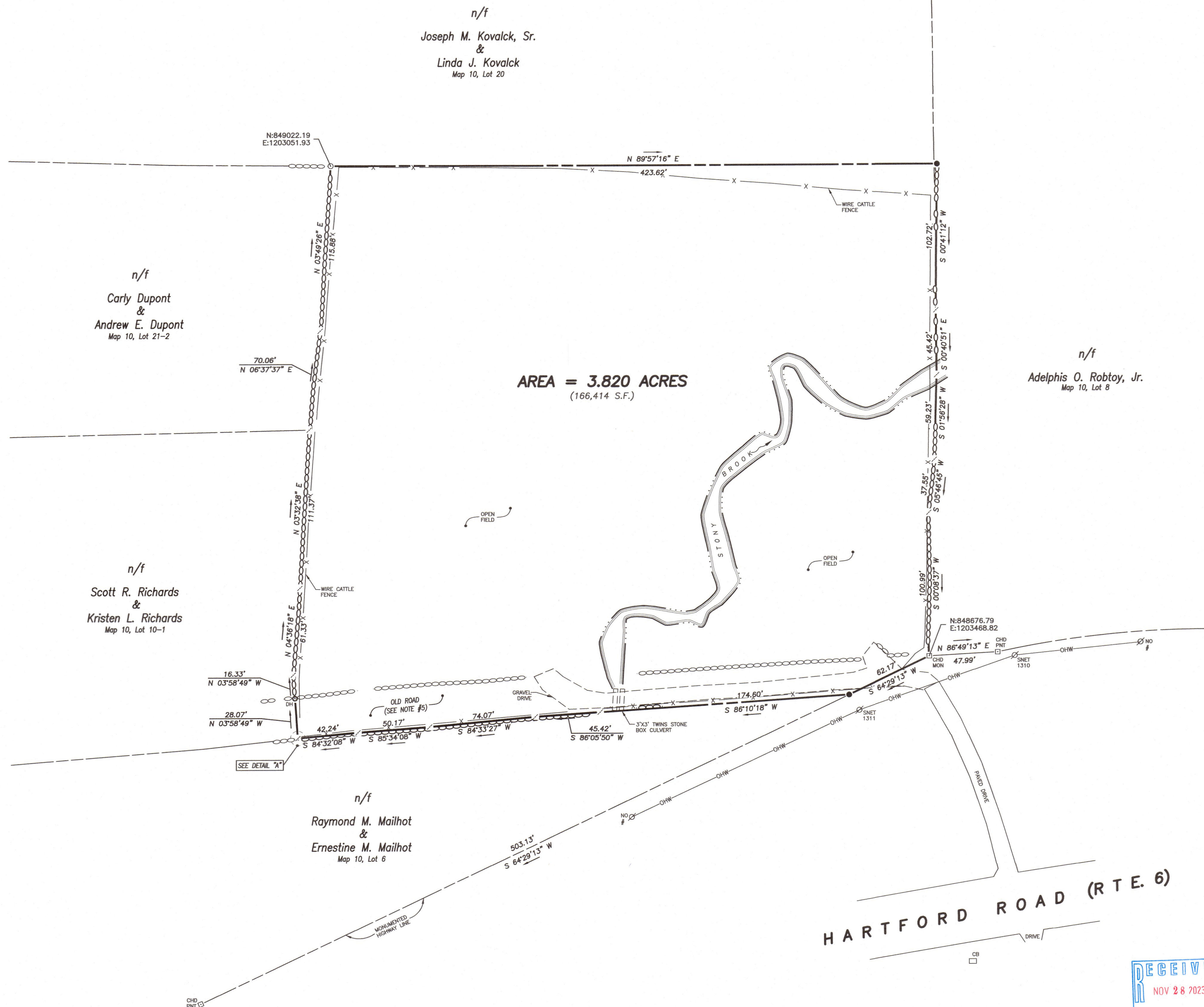
Witnessed By: Killingly Engineering Associates Title: Agent

Copies To: Applicant ✓ Other Killingly Engineering Associates



LEGEND

●	IRON PIN TO BE SET
○	IRON PIN FOUND
○ DH	DRILL HOLE FOUND
□ CHD	CHD MONUMENT FOUND
□ CHD PNT	CHD MONUMENT POINT
○	UTILITY POLE
□ CB	CATCH BASIN
■	INLAND WETLANDS FLAG
— OHW	OVERHEAD WIRES
○○○○○○	STONE WALL



NOTES:

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996, Amended October 26, 2018;
 - This survey conforms to a Class "A-2" horizontal accuracy.
 - Survey Type: Property Survey.
 - Boundary Determination Category: Resurvey
- Zone = RA.
- Owner of record: Robert N. Ross & Teresa D. Ross.
24 Plaza St., Brooklyn, CT 06234
See Volume 715, Page 100
- Parcel is shown as Lot #7 on Assessors Map #10.
- This portion of property was noted as "old road" on the 1935 Connecticut Highway Department Map (Map Reference #1). Warranty deeds conveying ownership of the old road go back to 3/30/1935. See Vol. 23, Pg. 548 of the Brooklyn Land Records.

MAP REFERENCES:

- "Connecticut State Highway Department - Right of Way Map - Town of Brooklyn - Brooklyn - Hampton Road - From Brooklyn Village Westerly to the Hampton Town Line - Route U.S. 6. - Scale: 1" = 40' - Date: November 29, 1935.
- "Property Survey - Proposed Lot Split - Prepared for - Heather Page Sinclair - Cherry Hill Road - Brooklyn, Connecticut - Scale: 1" = 40' Date: September 2004 - Prepared by "PC Survey Associates, LLC". On File in the Brooklyn Land Records in Map Vol. 17, Pg. 18.
- "Subdivision Map - Prepared for - Heather Paige Sinclair - Cherry Hill Road - Brooklyn, Connecticut - Scale: 1" = 40' Date: October 2005 - Prepared by "PC Survey Associates, LLC". On File in the Brooklyn Land Records in Map Vol. 17, Pg. 75.

DATE	DESCRIPTION

PROPERTY SURVEY

PREPARED FOR

**ROBERT N. ROSS &
TERESA D. ROSS**

HARTFORD ROAD (RTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying



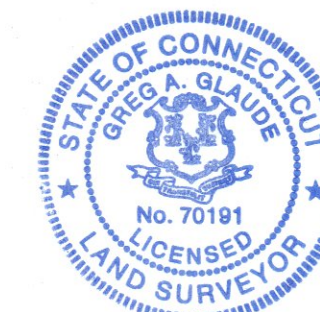
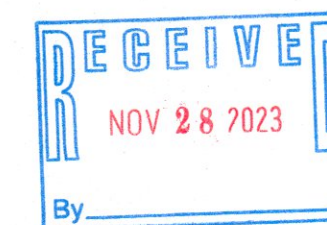
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 10/18/2023	DRAWN: RGS
SCALE: 1" = 40'	DESIGN: --
SHEET: 1 OF 1	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 23116

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

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE 11-27-2023

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



EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

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 any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- 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.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- 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.

KEEP CLEAN RUNOFF SEPARATED

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 filtration of on-site waters has occurred.

- Segregate construction waters from clean water.
- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.

SEPTIC SYSTEM CONSTRUCTION NOTES

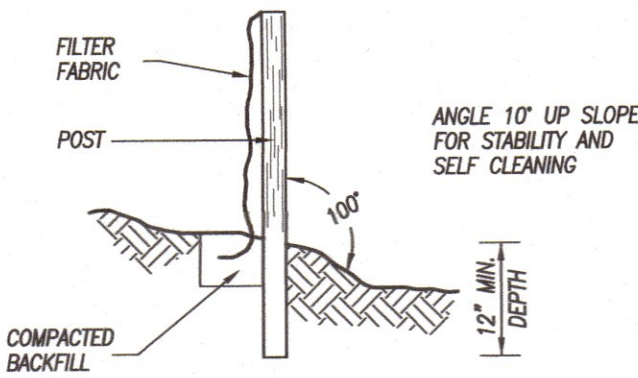
- The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
- Topsoil shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications are as follows:
 - Max. percent of gravel (material between No. 4 & 3 inch sieves) = 45%

SIEVE SIZE	GRADATION OF FILL (MINUS GRAVEL)	
	PERCENT PASSING (WET SIEVE)	PERCENT PASSING (DRY SIEVE)
No. 4	100%	100%
No. 10	70% - 100%	70% - 100%
No. 40	10% - 50%	10% - 75%
No. 100	0% - 20%	0% - 5%
No. 200	0% - 5%	0% - 2.5%

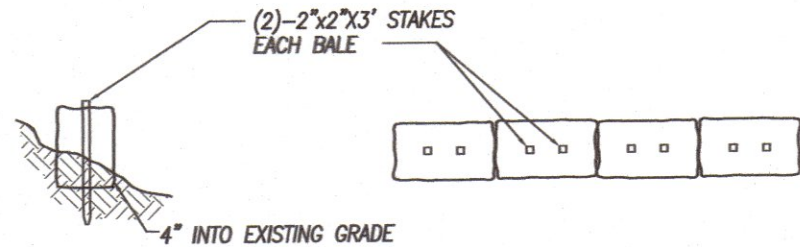
Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of five feet (5') around the perimeter of the system. Common fill shall extend an additional five feet (5') down gradient of the system (10' total) before tapering off at a maximum slope of 2H:1V.

- Septic tank shall be two compartment precast 1000 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.
- Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.
- All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.
- Solid distribution pipe shall be 4" diameter PVC meeting ASTM D-3034 SDR 35 with compression gasket joints. It shall be laid true to the lines and grades shown on the plans and in no case have a slope less than 0.125 inches per foot.
- Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D-3034 or ASTM F1760 for SDR 35, or ASTM F810 for SDR 38.
- Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1785. It shall be laid true to the grades shown on the plans and in no case shall have a slope less than 0.25 inches per foot.
- Solid footing drain outlet pipe shall be 4" Diameter PVC meeting ASTM D 3034, SDR 35 with compression gasketed joints. Footing drain outlet pipe shall not be backfilled with free draining material, such as gravel, broken stone, rock fragments, etc.
- Septic sand shall meet the requirements of ASTM C-33 with less than 10% passing a 100 sieve and less than 5% passing a 200 sieve

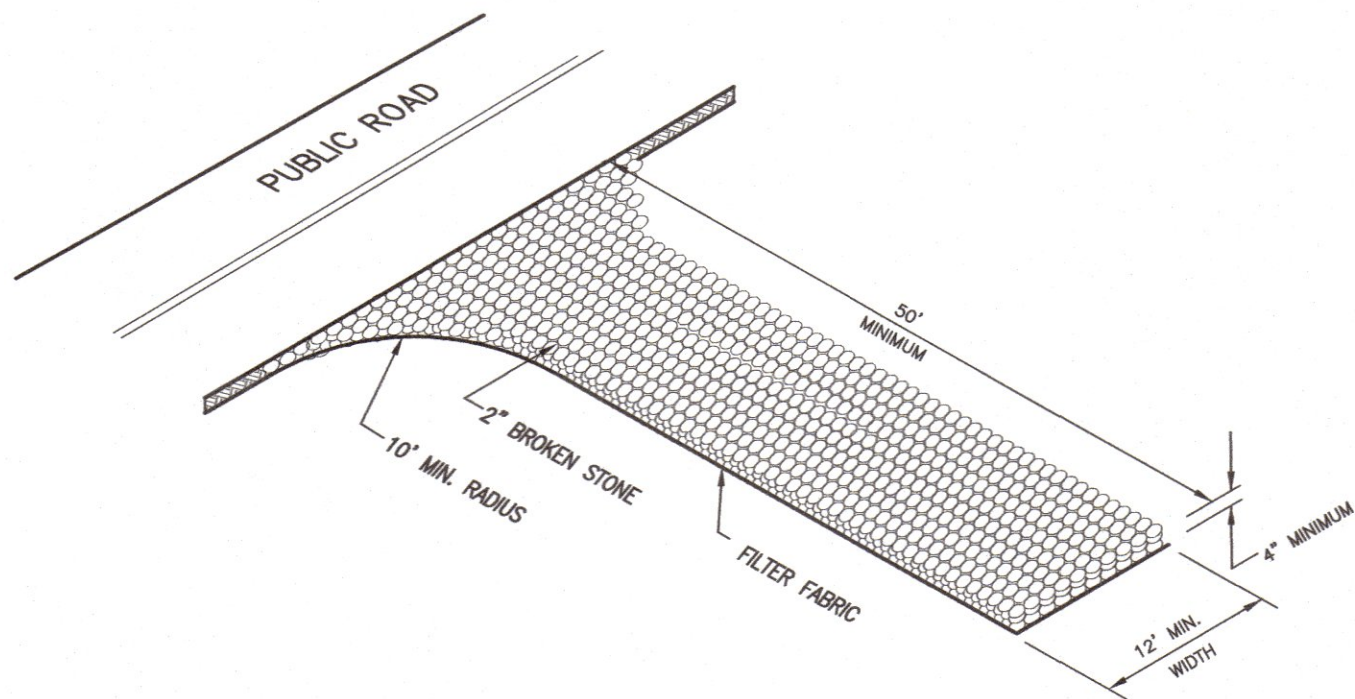
SIEVE SIZE	% PASSING
0.375	100
#4	95-100
#8	80-100
#16	60-85
#30	25-60
#50	10-30
#100	<10
#200	<5



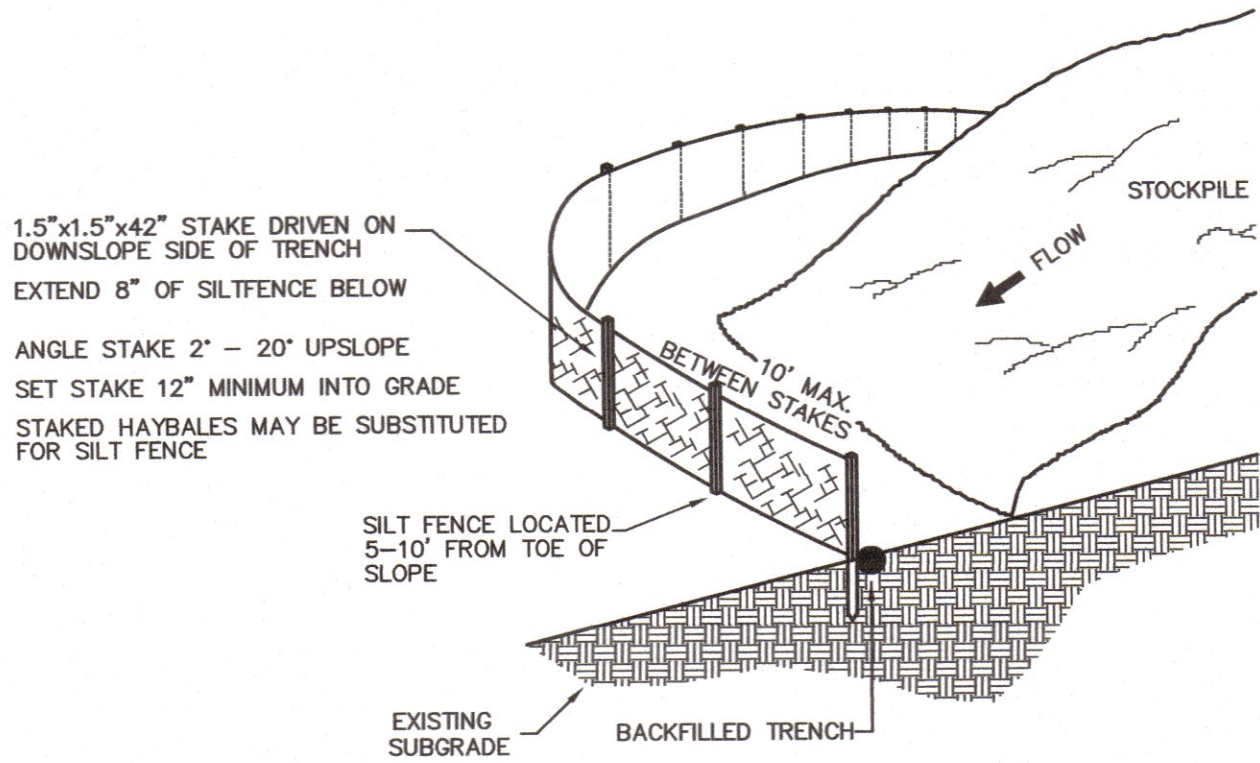
SILT FENCE
NOT TO SCALE



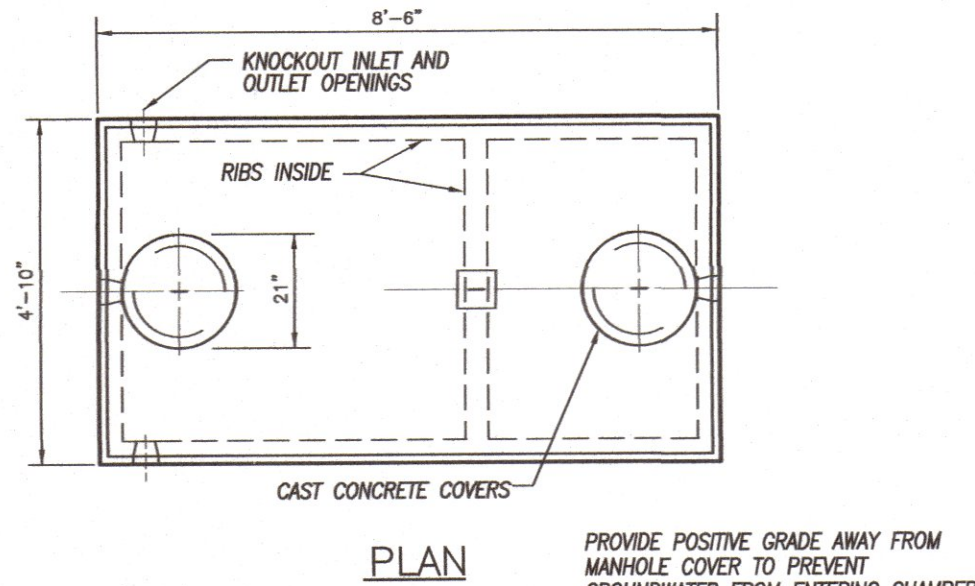
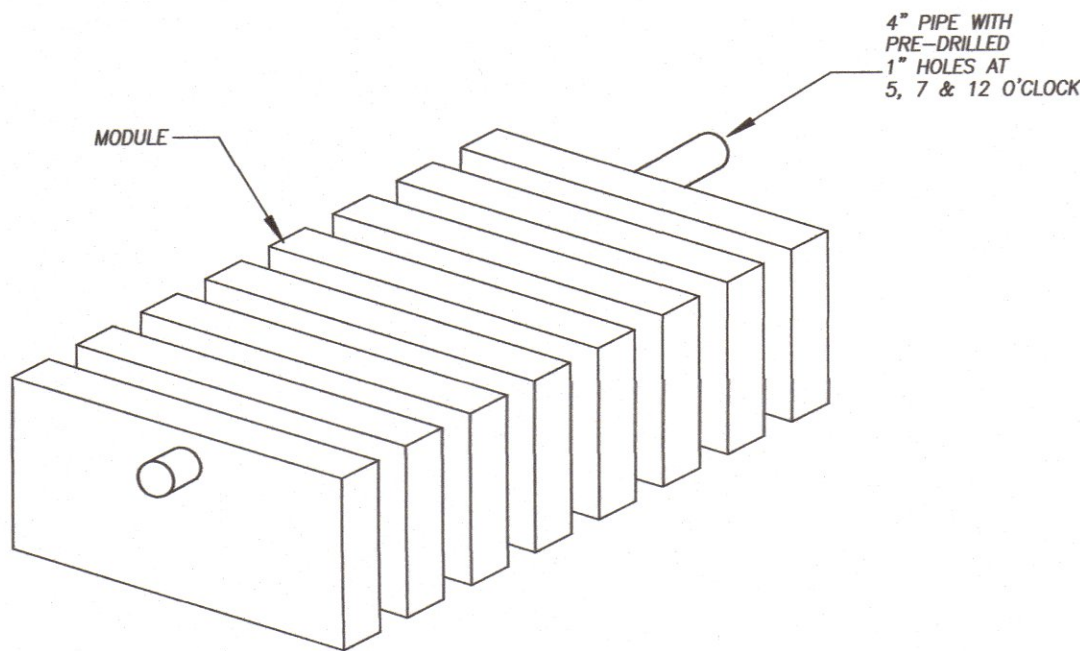
HAYBALE BARRIER
NOT TO SCALE



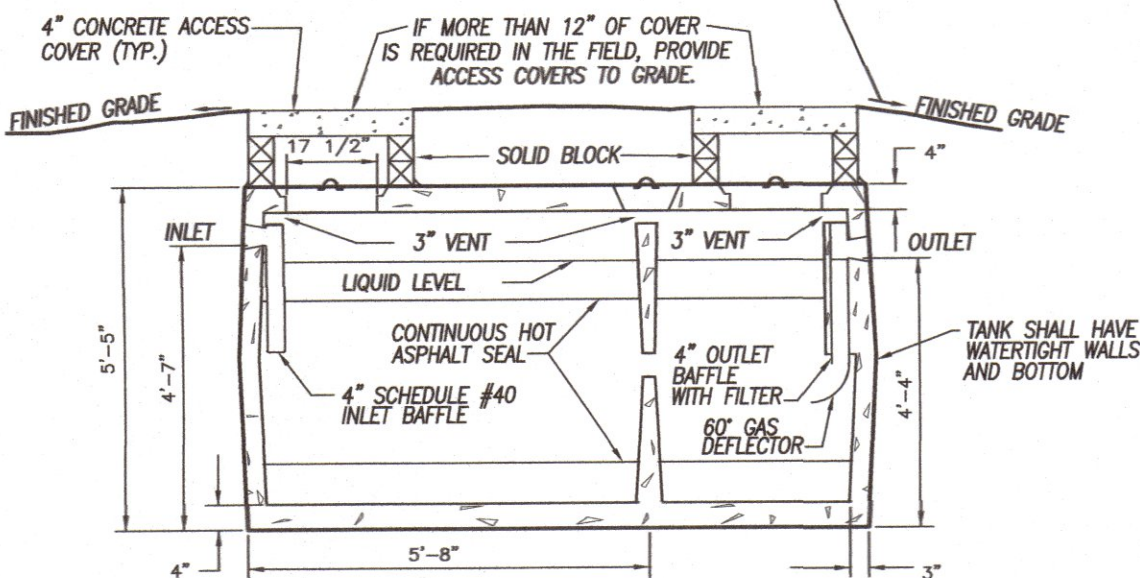
ANTI-TRACKING PAD
NOT TO SCALE



SILT FENCE @ TOE OF SLOPE APPLICATION
NOT TO SCALE

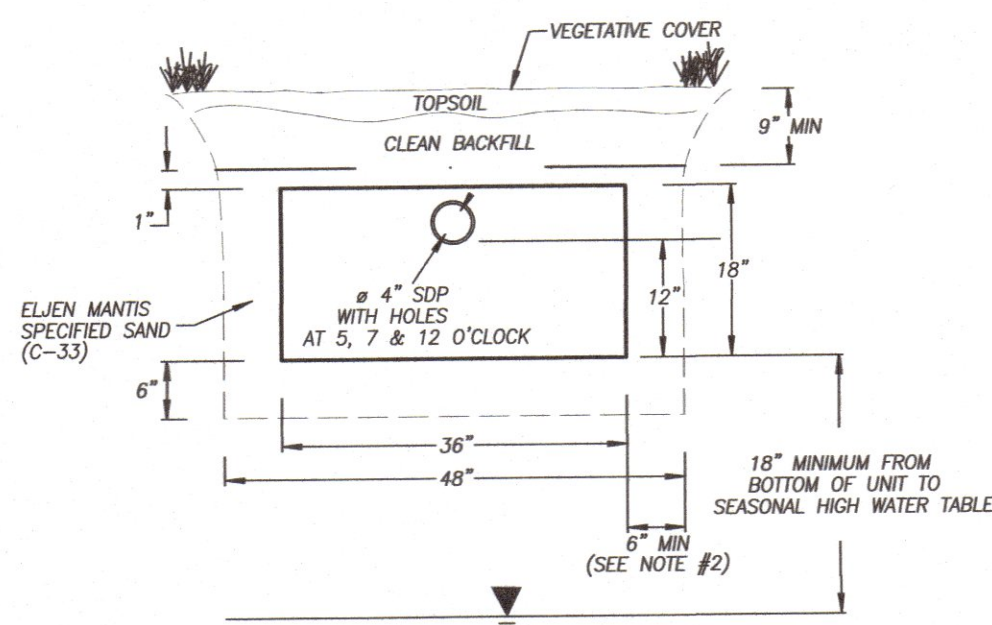


PLAN



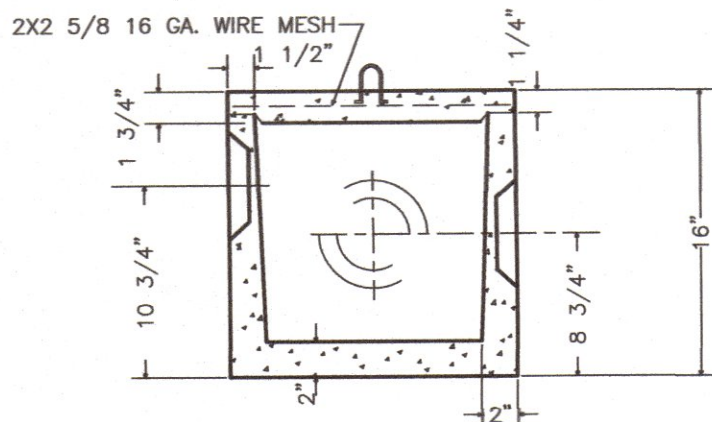
CROSS SECTION

1000 GALLON
2 COMPARTMENT
SEPTIC TANK
NOT TO SCALE



- NOTES:
- VENTING REQUIRED WHEN MORE THAN 18" OF COVER AS MEASURED FROM THE TOP OF THE UNIT TO FINISHED GRADE.
 - FOR SYSTEMS INSTALLED IN FILL, CONTRACTOR SHALL PROVIDE 5' OF SELECT FILL OR ASTM C-33 SAND 5' AROUND PERIMETER OF SYSTEM.

ELJEN 536-8 WASTEWATER
LEACHING SYSTEM



STANDARD D-BOX
NOT TO SCALE



Norman Thibault, Jr. 10/19/23
NORMAN THIBAUT, JR., P.E. No. 22834 DATE

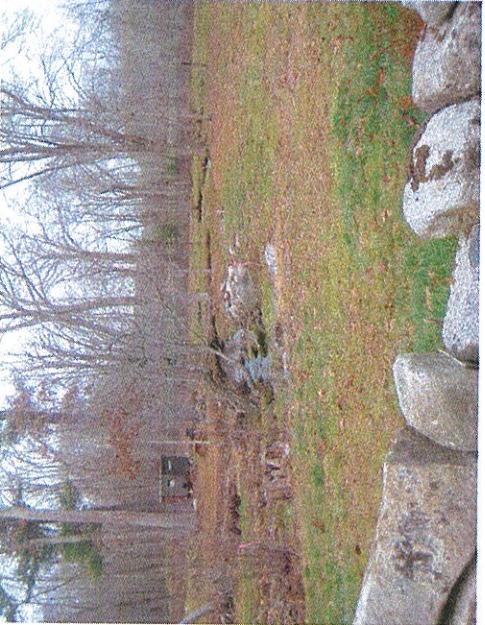
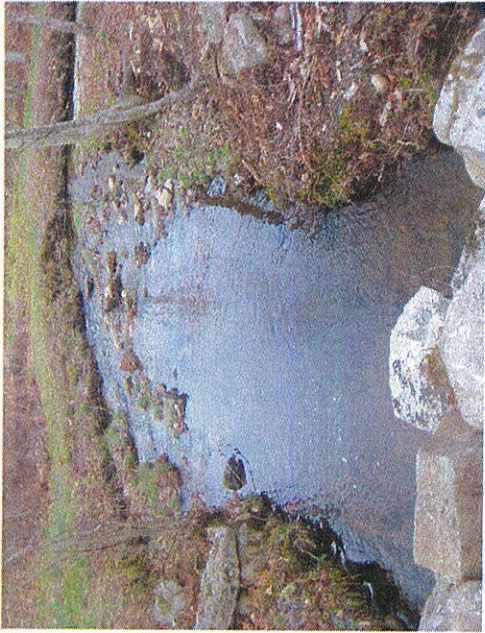
DATE	DESCRIPTION
	REVISIONS

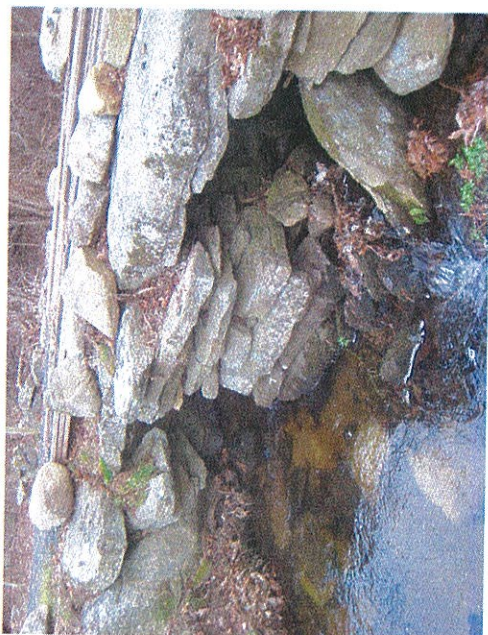
DETAIL SHEET
PREPARED FOR
**ROBERT N. ROSS &
TERESA D. ROSS**

HARTFORD ROAD (RTE 6)
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 10/19/2023	DRAWN: RGS
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 2 OF 2	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 23116





INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date 12/4/23

Application # 23-014

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Richard Oliverson MAILING ADDRESS 278 Church St. Brooklyn CT
APPLICANT'S INTEREST IN PROPERTY contractor PHONE: CELL 860-428-4356 HOME: N/A
E-MAIL richieos@charter.net

PROPERTY OWNER IF DIFFERENT Jeanne + Cam Vautour PHONE: CELL 860-216 HOME:
MAILING ADDRESS 98 Barrett Hill Rd. Brooklyn, CT EMAIL

ENGINEER/SURVEYOR (IF ANY)

N/A

ATTORNEY (IF ANY)

PROPERTY LOCATION/ADDRESS 98 Barrett Hill Rd. Brooklyn, CT

MAP # 26 LOT # 15 ZONE RA TOTAL ACRES 4.6 ACRES OF WETLANDS ON PROPERTY 0.3 acre

PURPOSE AND DESCRIPTION OF THE ACTIVITY

Proposed 12' x 16' pergola on stone pad and landscape fabric.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED 0 CUBIC YDS 0 SQ FT 0

EXCAVATION PROPOSED yes CUBIC YDS 2 SQ FT 320

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE X OFF SITE

TOTAL REGULATED AREA ALTERED: SQ FT 320 ACRES

in upland review area

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):

This site was chosen to cause the least disturbance to existing landscaped areas.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY 0 SQ FT 0 ACRES 0

IS PARCEL LOCATED WITHIN 500 FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S)

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT:



DATE

11.04.23

OWNER:



DATE

10/4/23

REQUIREMENTS

- ☒ STANDARD APPLICATION FEE \$ (\$150) ☒ STATE FEE (\$60) ☒ CHECK # 2208
- ☒ NOTICE OF ACTION PUBLICATION FEE \$ 50.- CHECK # 2208
- ☐ PUBLIC HEARING PUBLICATION FEE (\$100) \$ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK#
- ☐ SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ CHECK #
- ☐ COMPLETION OF CT DEEP REPORTING FORM
- ☐ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF
- ☐ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY
- ☐ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.
- ☐ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL
- ☐ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:
 - o NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
 - o ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:
APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

☐ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

☒ PERMIT REQUIRED:

☒ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)


CHAIR, BROOKLYN IWWC


WETLANDS OFFICER

☐ AUTHORIZED BY IWWC

☐ SIGNIFICANT ACTIVITY/PUBLIC HEARING

☐ NO PERMIT REQUIRED

☐ OUTSIDE OF UPLAND REVIEW AREA

☐ NO IMPACT

CHAIR, BROOKLYN IWWC

WETLANDS OFFICER

☐ TIMBER HARVEST



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street - 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

1. DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
2. ACTION TAKEN (enter one code letter): _____
3. WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (type name): Brooklyn
Does this project cross municipal boundaries (check one)? Yes _____ No ☒
If Yes, list the other town(s) in which the action is occurring (type name(s)): _____
6. LOCATION (see directions for website information): USGS Quad Map Name: Danielson or Quad Number: _____
Subregional Drainage Basin Number: 3710
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): Richard Oliveron
8. NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 98 Barrett Hill Rd.
Briefly describe the action/project/activity (check and type information): Temporary _____ Permanent ☒
Description: proposed 12' x 16' pergola on stone base/landscape fabric
9. ACTIVITY PURPOSE CODE (enter one code letter): A
10. ACTIVITY TYPE CODE(S) (enter up to four code numbers): 12 _____
11. WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 0 acres Open Water Body: 0 acres Stream: 0 linear feet
12. UPLAND AREA ALTERED (type in acres as indicated): 0.3 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

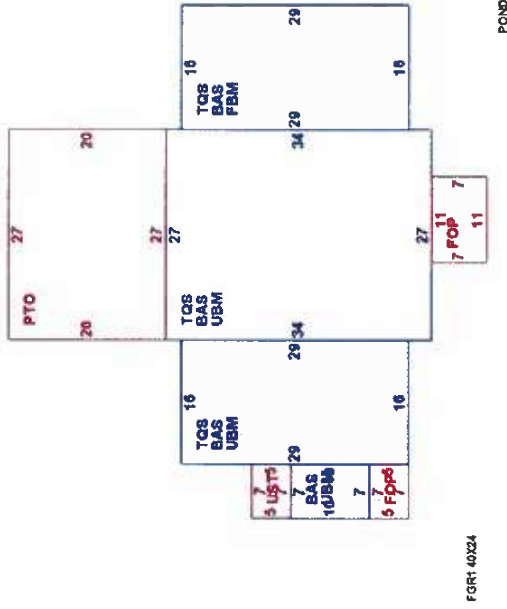
DATE RETURNED TO DEEP:

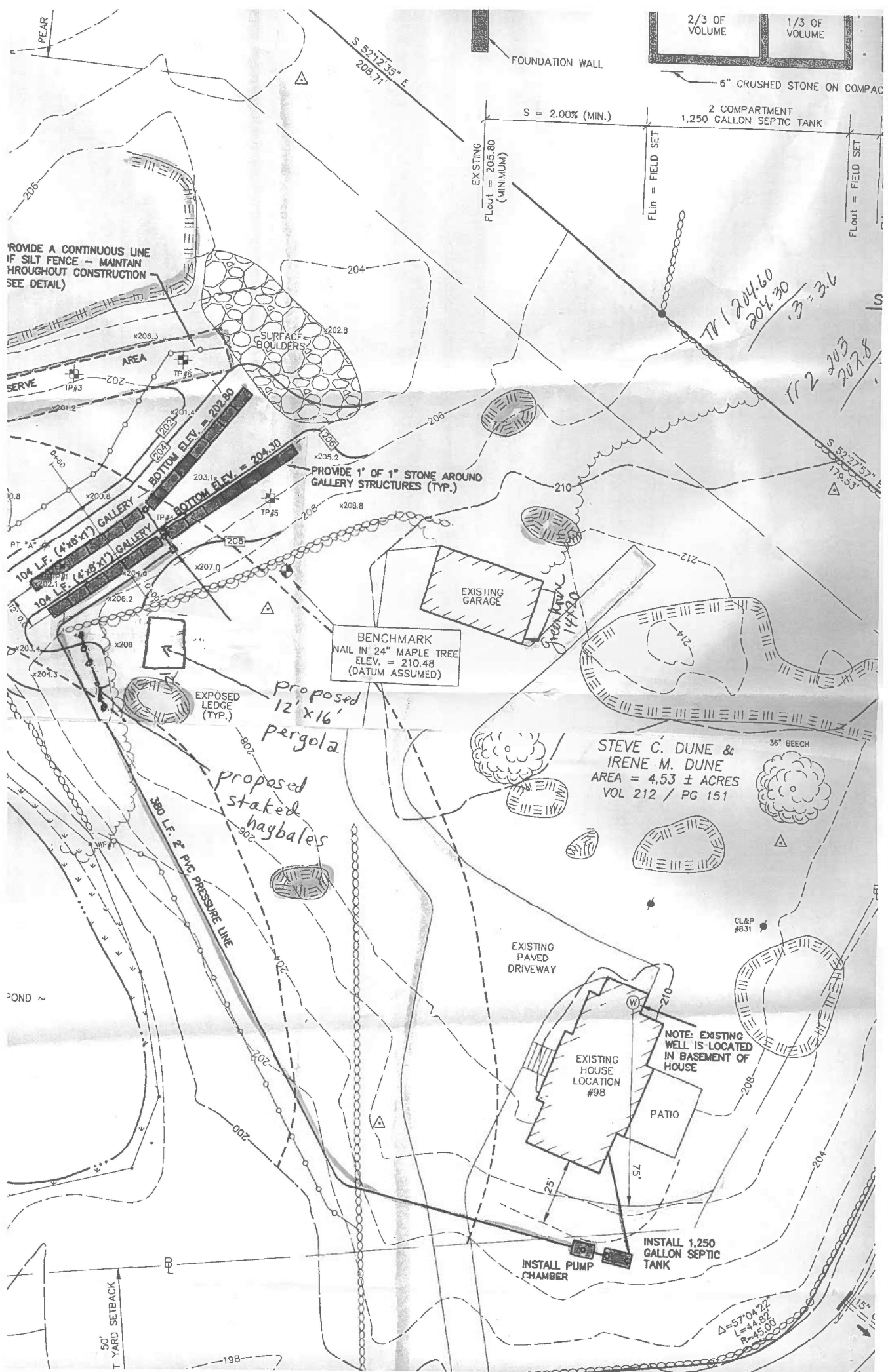
FORM COMPLETED: YES NO

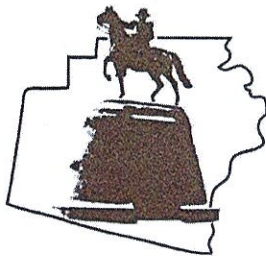
FORM CORRECTED / COMPLETED: YES NO



CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)						
Element	Cd	Description	Element	Cd	Description					
Style: 04	Cape Cod									
Model: 01	Residential									
Grade: 06	B									
Stories: 1.75										
Occupancy: 1	Clapboard									
Exterior Wall 1: 11	Stone/Masonry									
Exterior Wall 2: 21	Gable/Hip									
Roof Structure: 03	Asph/F Glis/Cmp									
Roof Cover: 03	Drywall/Sheet									
Interior Wall 1: 05										
Interior Wall 2: 12	Hardwood									
Interior Flr 1: 02	Oil									
Interior Flr 2: 05	Hot Water									
Heat Fuel: 03	Central									
A/C Type: 04	4 Bedrooms									
Total Bedrooms: 3										
Total Bthrms: 0										
Total Half Baths: 8										
Total Xtra Fixtrs: 02	Average									
Total Rooms: 02	Modern									
Bath Style: Kitchen Style:										
OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)										
Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
FGR1	GARAGE-AVE	L	960	26.00	1946		80		0.00	20,000
FPL3	FIREPLACE 2	B	1	2800.00	1993		78		0.00	2,200
FPO	EXTRA FPL O	B	2	800.00	1993		78		0.00	1,200
SP	SOLAR PANE	B	25	0.00	2015		78		0.00	0
GEN	GENERATOR	B	1	0.00			78		0.00	0
COST / MARKET VALUATION						CONDO DATA				
Building Value New						459,104				
Year Built						1946				
Effective Year Built						1998				
Depreciation Code						VG				
Remodel Rating						22				
Year Remodeled						1				
Depreciation %						78				
Functional Obsol						358,100				
External Obsol										
Trend Factor										
Condition										
Condition %										
Percent Good										
RCNLD										
Dep % Ovr										
Dep Ovr Comment										
Misc Imp Ovr										
Misc Imp Ovr Comment										
Cost to Cure Ovr										
Cost to Cure Ovr Comment										
BUILDING SUB-AREA SUMMARY SECTION										
Code	Description		Living Area	Floor Area	Eff Area	Unit Cost	Undeprc Value			
BAS	First Floor		1,916	1,916	186	116.61	223,430			
FBM	Basement, Finished		0	464	186	46.75	21,690			
FOP	Porch, Open		0	112	22	22.91	2,565			
PTO	Patio		0	540	54	11.66	6,297			
TQS	Three Quarter Story		1,385	1,946	1,385	87.49	161,508			
UBM	Basement, Unfinished		0	1,452	363	29.15	42,330			
UST	Utility, Storage, Unfinished		0	35	11	36.65	1,283			







Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

98 Barrett Hill Rd.

Address

12/4/23

Date

I met Richie Oliverson and Cam Vautoure,
inspected and took photos.

There are no IWWC issues.

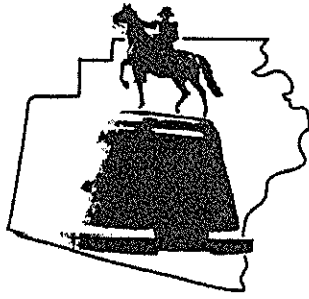
Issue agent approval after Vice-chairman
Adam Brindamour approves, and
report to Commission.

Commission Representative

M. Washburn

Owner or Authorized Signature





TOWN OF BROOKLYN
Land Use Department
69 South Main Street • Suite 22
BROOKLYN, CONNECTICUT 06234
860-779-3411 Ext. 12

DULY AUTHORIZED AGENT APPROVAL - DECISION LETTER
IWWC #23-014 – 98 Barrett Hill Road

CERTIFIED # 7022 2410 0001 4699 4148

Richard Oliverson
278 Church Street
Brooklyn, CT 06234

December 6, 2023

Re: Approval –Application IWWC #23-014
98 Barrett Hill Road, Brooklyn, CT 06234
Map 26 Lot 15 – Richard Oliverson, applicant; Camille and Jeanne Vautour, owners;
Construction of a 12' x 16' pergola on a crushed stone pad and landscape fabric in the upland
review area.

Dear Mr. Oliverson,

On December 6, 2023, the Brooklyn Inland Wetlands and Watercourses Authorized Agent
approved application IWWC #23-014; Richard Oliverson, applicant; Camille and Jeanne
Vautour, owners; Construction of a 12' x 16' pergola on a crushed stone pad and landscape
fabric in the upland review area; 98 Barrett Hill Road, Brooklyn, CT 06234; Map 26 Lot 15; RA
Zone.

**NOTE: This letter constitutes a report to the Brooklyn Inland Wetlands and Watercourses
Commission.**

Special Conditions of this approval are as follows:

- 1. Within ten days of the date of this approval, the applicant, Richard Oliverson, shall
publish, at the applicant's expense, notice of the approval in a newspaper having a general
circulation in Brooklyn, CT. Publication deadline: 12/16/2023.**
- 2. This approval shall not be considered in effect until proof of publication has been
received by the duly authorized agent and the appeal period has expired. Any person may
appeal this decision to the Brooklyn Inland Wetlands and Watercourses Commission
within fifteen days after the publication date of the notice.**

As for all approvals, the standard conditions of wetlands approvals apply to this application:

IWWC Permit Document. A copy of the IWWC approval motion and the conditions stated herein shall constitute the IWWC permit for the approved activity when the permit document is signed and dated by the IWWC Agent.

Notice of Start and Finish. Permittee shall notify the IWWC agent at least 48 hours before the approved activity commences and within 72 hours after completion of the activity.

Permit Duration. This permit is valid for a period in accordance with Section 11.6 of the Brooklyn Inland Wetlands and Watercourses Regulations and the Connecticut General Statutes. Any request to renew or extend the expiration date of a permit can be granted only as authorized by the IWWC Regulations. Expired permits may not be renewed.

Erosion and Sedimentation Controls. Permittee is responsible for implementing the approved erosion and sediment control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan. The permittee shall inspect the erosion controls weekly and after rains and repair deficiencies within twenty-four hours. The IWWC and its staff may require additional erosion if needed to prevent erosion and sedimentation. Restabilization of the site shall take place as soon as possible.

Stockpile locations. During construction, piles of fill, erodible material and debris shall not be created within regulated areas. The locations of debris and other stockpiled materials shall be shown on the submitted plans. Any material excavated at the site shall be disposed of at upland or off-site locations reviewed and approved by staff.

Permit Transfer. The permittee shall not transfer this permit without the written permission of the IWWC.

Work in Watercourse to Occur During Low Flow. Work within a watercourse is limited to periods of low flow. Low flow periods normally occur between August and October. Upon request of permittee, wetlands staff can determine if the activity can occur at other times following an on-site field investigation.

Scope of Permit. This permit is for the approved activity ONLY. Additional activity may require an additional permit. Note that if an approval or permit is granted by another agency and

(1) the approved activity will affect wetlands and/or watercourses; and/or

(2) the activity occurs within 125 feet of flagged boundaries and 175 feet from watercourses; and such activities have not been addressed by this permit, then the applicant shall resubmit the application for further consideration by the Inland Wetlands and Watercourses Commission before any work begins.

Ongoing Compliance with Permit. The permittee shall comply at all times with the permit.

Other Approvals May be Required. Other permits may be required from Town, state or federal agencies. An Army Corps of Engineers permit may be required: U.S. Army Corps of Engineers, 424 Trapelo Rd., Waltham, MA 02254
1-800-362-4367.

This approval will be valid for a five-year period, ending on December 6, 2028. Extension of this permit will be allowed by the IWWC in accordance with state statutes.

If you have any questions, please feel free to call me at 860-779-3411 Extension 31.

Issued by:



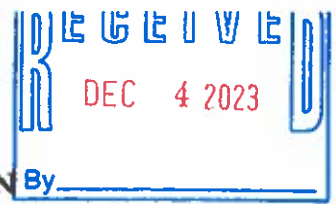
Margaret Washburn
Zoning/Wetlands/Blight Enforcement Officer
69 South Main Street, Suite 23
Brooklyn, CT 06234
(860) 779-3411 ext. 31
Mon. – Thurs. 8:00 am – 3:30 pm
m.washburn@brooklynct.org

File/MW CC: Camille and Jeanne Vautour.

Attached: Public Notice to be published by 12/16/23 at applicant's expense.

**Town of Brooklyn
Public Notice**

On December 6, 2023, the Brooklyn Inland Wetlands and Watercourses Authorized Agent approved application IWWC #23-014; Richard Oliverson, applicant; Camille and Jeanne Vautour, owners; Construction of a 12' x 16' pergola on a crushed stone pad and landscape fabric in the upland review area; 98 Barrett Hill Road, Brooklyn, CT 06234; Map 26 Lot 15; RA Zone. Duly Authorized Agent Approval with Vice Chairman's Approval.



INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT LAC PROPERTIES MAILING ADDRESS 4 GREENE LANE, THOMPSON
APPLICANT'S INTEREST IN PROPERTY OWNER PHONE 860 450 6956 EMAIL _____

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) ARCHER SURVEYING LLC
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS PROVIDENCE ROAD
MAP # 41 LOT # 1 ZONE PL TOTAL ACRES 2.34 ACRES OF WETLANDS ON PROPERTY 8,900 ± SQ FT

PURPOSE AND DESCRIPTION OF THE ACTIVITY FILLING WETLANDS TO LEVEL SITE
FOR DEVELOPMENT OF A COMMERCIAL BUILDING, DRIVEWAYS, SEWER
SYSTEM

WETLANDS EXCAVATION AND FILL:
FILL PROPOSED 8,900 CUBIC YDS _____ SQ FT ✓
EXCAVATION PROPOSED _____ CUBIC YDS _____ SQ FT _____
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE _____ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT 164,000 ACRES 1.5

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): _____

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQFT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S) _____
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE
SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION
DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: [Signature] DATE _____

OWNER: [Signature] DATE _____

REQUIREMENTS

_____ APPLICATION FEE \$ _____ STATE FEE (\$60.00) _____

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP
INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019
DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
196 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or Incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions, only use one code): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): Brooklyn
does this project cross municipal boundaries (check one)? yes ☐ no ☒
if yes, list the other town(s) in which the action is occurring (print name(s)): _____
6. LOCATION (see instructions for information): USGS quad name: Durham or number: _____
subregional drainage basin number: _____
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): LAC Properties
8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): Providence RI
briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☐ description: _____
9. ACTIVITY PURPOSE CODE (see instructions, only use one code): D
10. ACTIVITY TYPE CODE(S) (see instructions for codes): 1 14
11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
wetlands: 0.21 acres open water body: _____ acres stream: _____ linear feet
12. UPLAND AREA ALTERED (must provide acres): 55,000 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for **each** action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is **accurate** and that it reflects the **final** action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following pages.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). Do **not** mail this cover page or the instruction pages. Please mail **only** the **completed** reporting form to:

DEEP Land & Water Resources Division
Inland Wetlands Management Program
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Inland Wetlands Management Program at (860) 424-3019.



REPORT DATE: December 2, 2023

PAGE 1 OF 3

REMA ECOLOGICAL SERVICES, LLC

43 Blue Ridge Drive, Vernon, CT 06066

860.649.REMA (7362) / 860.883.8690

ON-SITE SOIL INVESTIGATION & WETLAND DELINEATION REPORT

PROJECT NAME & SITE LOCATION:

LOT 1, +/- 2.34 (Study Area)

Providence Road (North)

Brooklyn, CT

REMA Job No.: 23-2658-BKY3

Field Investigation Date(s): 7/17 & 10/4/2023

Field Investigation Method(s):

☒ Spade and Auger

☐ Backhoe Test Pits

☐ Other: _____

REPORT PREPARED FOR:

Archer Surveying, LLC

18 Providence Road

Brooklyn, CT 06234

Field Conditions:

Weather: Sunny, 60s to 80s

Soil Moisture: moderate-high

Snow Depth: none

Frost Depth: none

Purpose of Investigation:

- ☒ Wetland Delineation/Flagging in Field
☐ Wetland Mapping on Sketch Plan or Topographic Plan
☐ High Intensity Soil Mapping by Soil Scientist
☒ Medium Intensity Soil Mapping from *The Soil Survey of Connecticut* Maps (USDA-NRCS)
☐ Other: _____

Base Map Source: CT Soil Survey web; USDA-NRCS, Figure A, B, and C (attached)

Wetland Boundary Marker Series: RES-A-1 to RES-A-25 (closed line)

General Site Description/Comments: The "site" consists of a +/- 2.34-acre, commercially zoned parcel, to the north of Providence Road, and to the south/southeast of Brickyard Road, in Brooklyn, CT. In its present state the site is vacant and characterized by moist to dry mowed meadow, scrub-shrub and vine tangles, and ruderal woods along Brickyard Road. Based on archival as well as recent aerial photography, the site has seen a variety of past land disturbance, more recently as a construction yard for the widening and realignment of upon Providence Road (i.e., Route 6). An old, isolated pond in the southeastern section of the site was filled by the late 1980s. The disturbance associated with the construction yard created a low area on disturbed soils that has become a wet meadow wetland. The underlying parent materials are glaciofluvial (i.e., stratified sand and gravel) deposits, as well as shallow sandy fill. The wetland-type soils observed are the poorly drained Aquents (308w) (i.e., disturbed). The undisturbed upland-type soils are the moderately well drained Sudbury sandy loam (23) and the excessively drained Hinckley loamy sand (38) soil series. The disturbed upland-type soils are mapped as udorthents (308). The delineated regulated wetland at the site is an isolated wet meadow, with seasonally saturated, and temporarily flooded hydrologic regimes. Dominant or common vegetation observed include sedges (e.g., broom, fox), soft rush, asters, goldenrods, including roughstem and tall, reed canary grass, mugwort, grasses, Canada thistle, deer tongue, Virginia creeper, daisy fleabane, common vetch, clovers, and others.

ON-SITE SOIL INVESTIGATION & WETLAND DELINEATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: +/- 2.34 acres (Study Area)
Providence Road, Brooklyn, CT

SOIL MAP UNITS**Upland Soils**

Udorthents (308). This soil mapping unit consists of well drained to moderately well drained soils that have been altered by cutting, filling, or grading. The areas either have had two feet or more of the upper part of the original soil removed or have more than two feet of fill material on top of the original soil. Udorthents or Made Land soils can be found on any soil parent material but are typically fluvial on glacial till plains and outwash plains and stream terraces.

Sudbury fine sandy loam (23). The Sudbury series consists of deep, moderately well drained soils formed in a coarse-loamy mantle underlain by sandy water deposited glacial outwash materials. They are nearly level to strongly sloping soils on glaciofluvial landforms, typically in slight depressions and broad drainage ways. The soils formed in loamy over stratified sandy and gravelly outwash derived from a variety of acid crystalline rocks. Typically, these soils have a dark brown sandy loam surface layer 10 inches thick. The subsoil from 10 to 28 inches is yellowish brown sandy loam with mottles below 16 inches. The substratum from 28 to 60 inches is mottled, light brownish gray and dark gray, stratified sands and gravels.

Hinckley gravelly sandy loam (38). This series consists of very deep, excessively drained soils formed in a shallow, loamy sand mantle underlain by gravelly sand, water deposited glacial outwash materials. They are level to very steep soils on outwash plains, terraces, deltas, kames and eskers. The soils formed in loamy over stratified sandy and gravelly glacial outwash derived mainly from crystalline rocks. Typically, these soils have a very dark grayish brown loamy sand surface layer 7 inches thick. The subsoil layers from 7 to 15 inches are strong brown and yellowish brown gravelly loamy sand. From 15 to 18 inches the subsoil is yellowish brown gravelly sand. The substratum from 18 to 60 inches is light olive brown stratified sand, gravel and cobblestones.

Wetland Soils

Aquents (306w). This soil map unit consists of poorly drained and very poorly drained, disturbed land areas. They are most often found on landscapes which have been subject to prior filling and/or excavation activities. In general, this soil map unit occurs where two or more feet of the original soil surface has been filled over, graded or excavated. The Aquents are characterized by a seasonal to prolonged high ground water table and either support or are capable of supporting wetland vegetation. Aquents are recently formed soils which have an aquic moisture regime. An aquic moisture regime is associated with a reducing soil environment that is virtually free of dissolved oxygen because the soil is saturated by groundwater or by water of the capillary fringe. The key feature is the presence of a ground water table at or very near to the soil surface for a period of fourteen days or longer during the growing season.

FIGURE B:

Brickyard Road/Route 6 Parcel, Brooklyn, CT
After recent reconstruction/expansion of Route 6
(as seen on a 2006 aerial photograph)

SUBJECT SITE

Google Earth

Image © 2023 Maxar Technologies

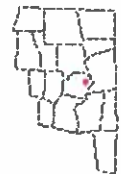
300 ft

N





FIGURE C: 2004 Aerial Photo of Subject Site
Providence Road, Brooklyn, CT



Legend

- ☐ Town
- ☒ Buildings 2012
- ☒ Parcels

Notes

Enter Map Description

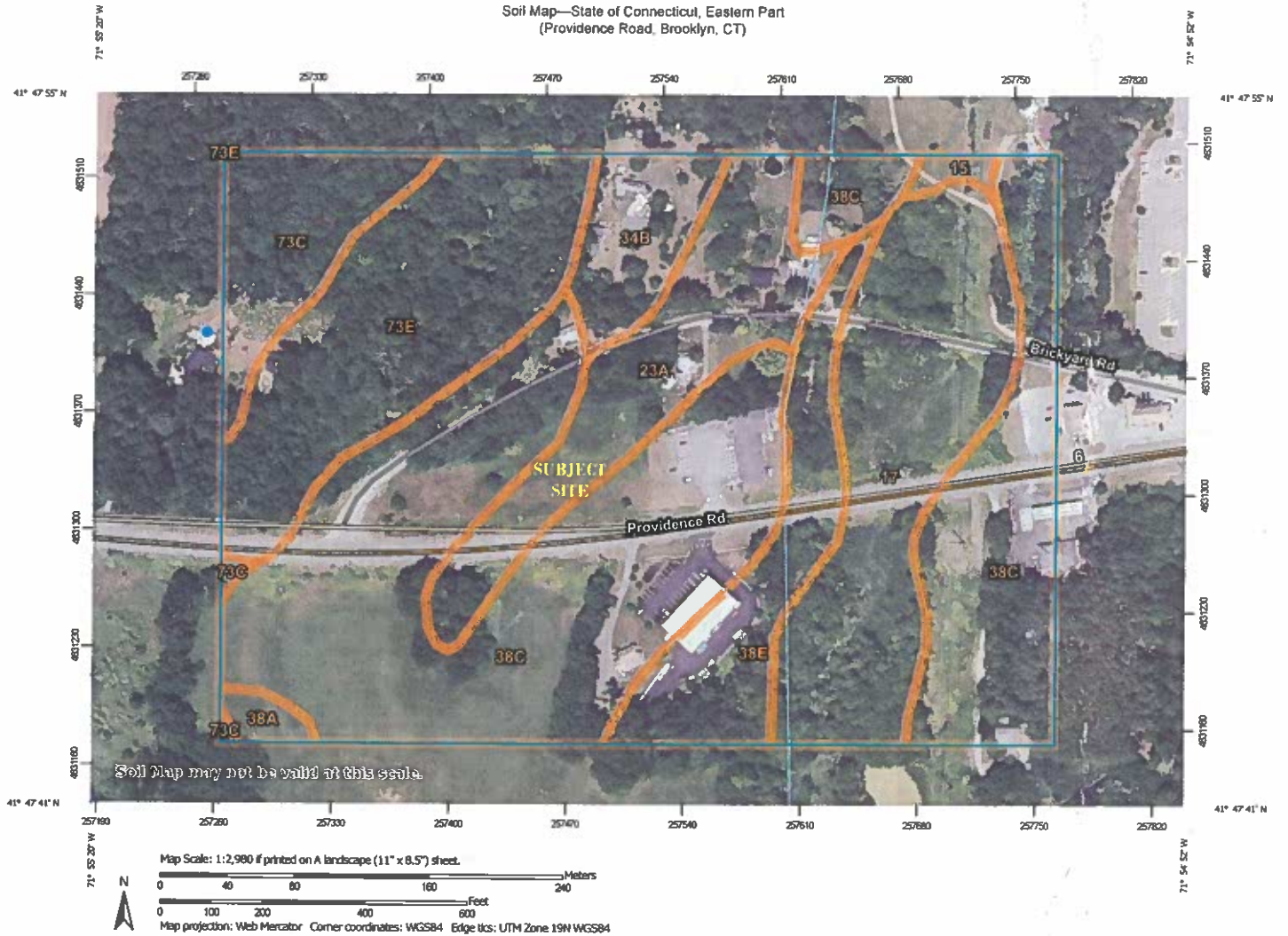
0.0 0 0.02 0.0 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

This map is a user-generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Soil Map—State of Connecticut, Eastern Part
(Providence Road, Brooklyn, CT)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

12/2/2023
Page 1 of 3

Soil Map—State of Connecticut, Eastern Part
(Providence Road, Brooklyn, CT)

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Soil Map Unit Polygons		Stony Spot
	Soil Map Unit Lines		Very Stony Spot
	Soil Map Unit Points		Wet Spot
	Special Point Features		Other
	Blowout		Special Line Features
	Borrow Pit		Water Features
	Clay Spot		Streams and Canals
	Closed Depression		Transportation
	Gravel Pit		Rails
	Gravelly Spot		Interstate Highways
	Landfill		US Routes
	Lava Flow		Major Roads
	Marsh or swamp		Local Roads
	Mine or Quarry		Background
	Miscellaneous Water		Aerial Photography
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Scarboro muck, 0 to 3 percent slopes	0.2	0.5%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	6.7	15.3%
23A	Sudbury sandy loam, 0 to 5 percent slopes	4.4	10.0%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	1.7	4.0%
38A	Hinckley loamy sand, 0 to 3 percent slopes	0.3	0.8%
38C	Hinckley loamy sand, 3 to 15 percent slopes	18.1	41.7%
38E	Hinckley loamy sand, 15 to 45 percent slopes	3.2	7.4%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.5	5.8%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	6.3	14.5%
Totals for Area of Interest		43.5	100.0%

ON-SITE SOIL INVESTIGATION & WETLAND DELINEATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: +/- 2.34 acres (Study Area)
Providence Road, Brooklyn, CT

SOIL MAP UNITS

See previous page

Any accompanying soil logs and soil maps, and the on-site soil investigation narrative are in accordance with the taxonomic classification of the National Cooperative Soil Survey of the USDA Natural Resource Conservation Service, and with the Connecticut Soil Legend (DEP Bulletin No.5, 1983), as amended by USDA-NRCS. Jurisdictional wetland boundaries were delineated pursuant to the Connecticut General Statutes (CGS Sections 22a-36 to 22a-45), as amended. The site investigation was conducted and/or reviewed by the undersigned Registered Soil Scientist(s) [registered with the Society of Soil Scientists of Southern New England (SSSSNE) in accordance with the standards of the Federal Office of Personnel Management].

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

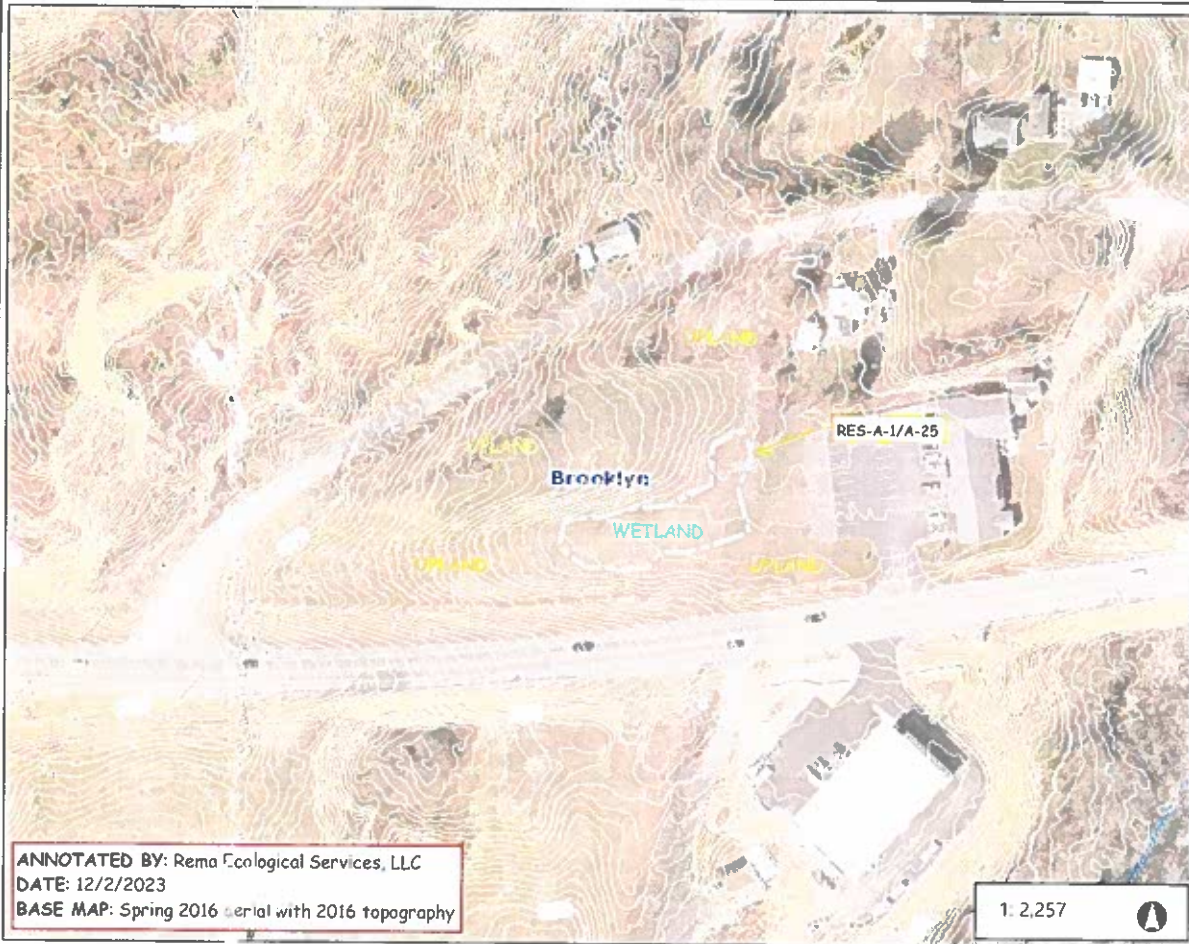


George T. Logan, MS, PWS, CSE
Registered Professional Soil Scientist
Field Investigator/Senior Reviewer



CT Environmental
Conditions Online

FIGURE A: WETLAND DELINEATIONS SKETCH MAP
Providence Road, Brooklyn, CT



Legend

Town Boundary

— State Boundary

— Town Boundary

Coastline

Named Waterbody Line 6

Water

— Dam

— Pond Connector

— Marsh Connector

— Pipeline Connector

— Other Connector

Named Waterbody Poly 6

Light Gray Canvas Base

Notes

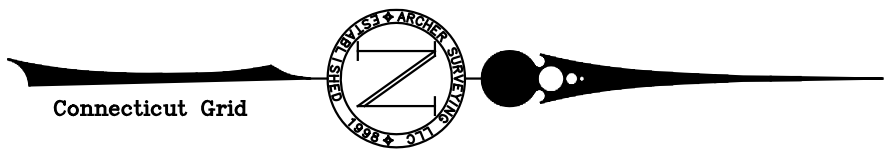
0.1 0 0.04 0.1 Miles

© Connecticut Environmental Conditions Online

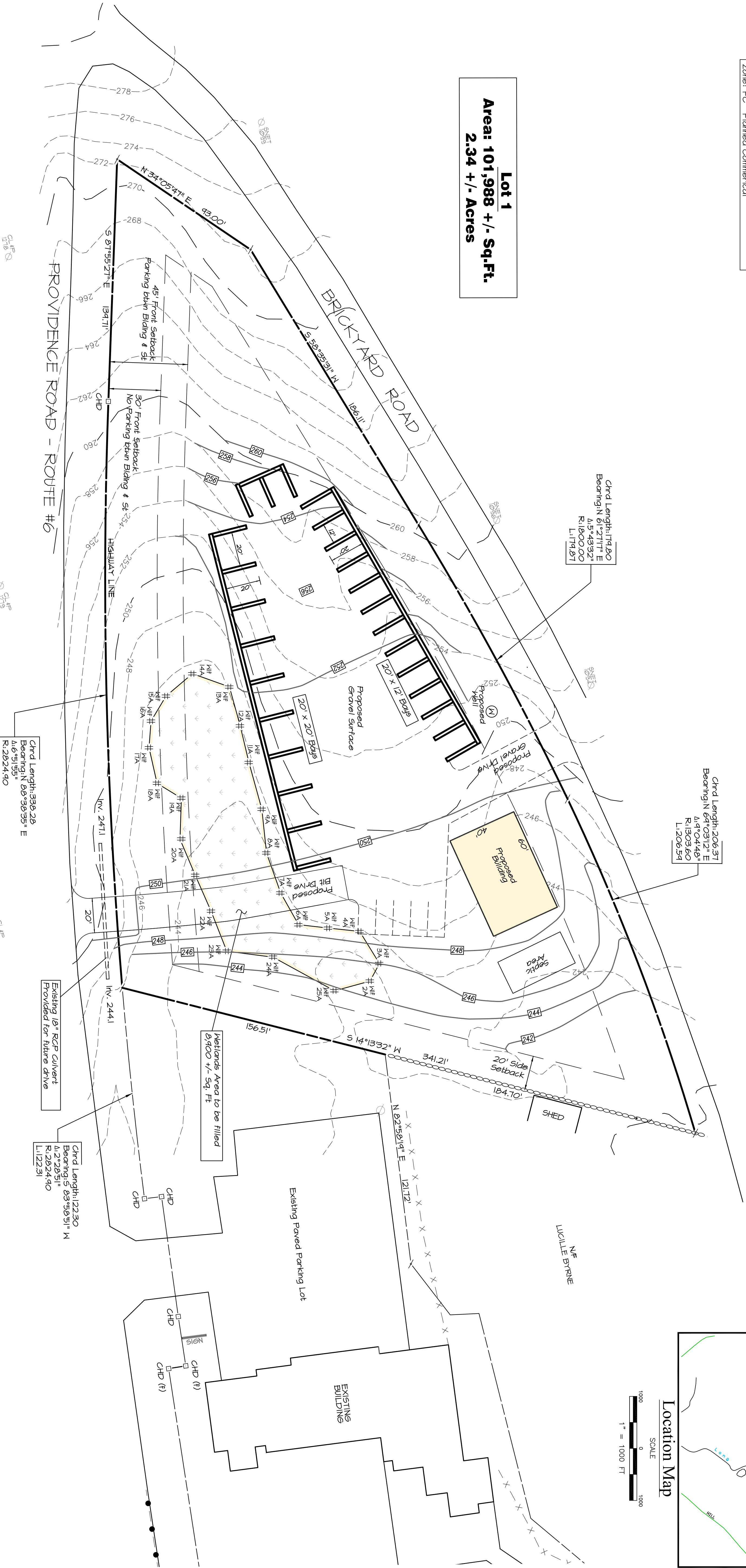
THIS MAP IS NOT TO BE USED FOR NAVIGATION

This map is intended for general planning, management, education, and research purposes only. Data shown on this map may not be complete or current. The data shown may have been compiled at different times and at different map scales, which may not match the scale at which the data is shown on this map.

Subject Parcel Information
Owner: LAC Properties LLC
Parcel Address: Providence Road, Brooklyn, CT
Mailing Address: LAC Properties LLC
4 Greerie Lane, Thompson CT
Parcel ID: M30-41 Lot 1
Deed Vol: 480-19-521
Zone: FC "Planned Commercial"



Lot 1
Area: 101,988 +/- Sq.Ft.
2.34 +/- Acres



LEGEND

	PROPERTY LINE
	EASEMENT
	STONEWALL
	STONEWALL REMAINS
	EXISTING INDEX CONTOUR
	EXISTING CONTOUR
	PROPOSED CONTOUR
	WETLANDS FLAG
	BUILDING SETBACK
	IRON PIN
	DRILL HOLE
	MONUMENT
	PROPERTY POINT
	UTILITY POLE

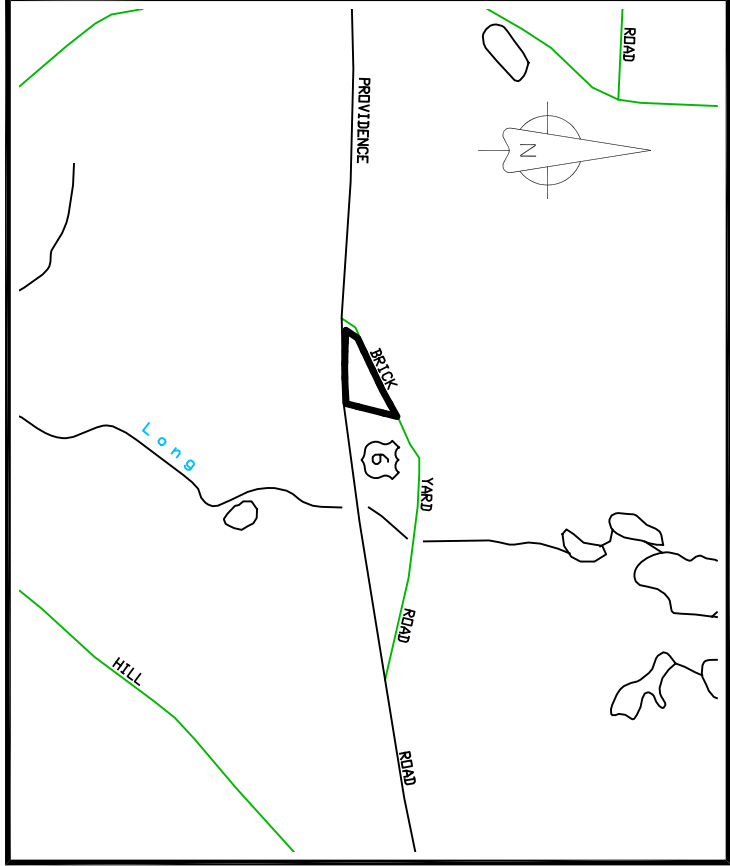
Notes

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-20 and the Standards for Surveys and Maps in State of Connecticut as adopted by the Connecticut Associations of Land Surveyors, Inc. on September 20, 1946
- This Survey conforms to a Class "A-2" Horizontal Accuracy
- Survey Type: Site Development Plan
- Boundary Determination: Resurvey
- Intent: Site Plan for proposed development
- Parcels shown as Lot 1 on Assessor's Tax Map 41 of the Brooklyn Assessors Office
- Vertical Datum Depicted Hereon is Approximate North American Vertical Datum 1985 (NAVD85) Based on Global Positioning System Datum 1983 (NAD83). Based on Global Positioning System Observation.
- Topographic features depicted were taken from NOAA Lidar Data and conforms to Topographic Accuracy Class "1-T" Contour Interval = 2'. Vertical Datum = Approx. NAVD 85.
- Wetlands were delineated by George Logan and Field located by Archer Surveying LLC

To my knowledge and belief this Map is substantially correct as shown hereon.

Paul M. Archer ILS #10013 Date 12/12/2023

Archer Surveying LLC
18 Providence Road, Brooklyn, Connecticut
DAVID A. SMITH, P.E., ILS #10179 DATE 12/12/2023
NOT VALID UNLESS SEAL IS ATTACHED HERETO



Location Map
SCALE
1" = 1000 FT

Site Development Plan

Prepared For:
LAC Properties LLC
Providence Road
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'

0 15 30 60

Archer Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921

Sheet No. 1 OF 1 Project No. AS 2302 Date: November 29, 2023

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # SUBD 23-003

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT TETRAVACT BUILDING COMPANY MAILING ADDRESS 332 MASHANITZILL RD, DANIELSON
APPLICANT'S INTEREST IN PROPERTY OWN PHONE 860 377 9593 EMAIL _____

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) ARCHER SURVEYS LLC
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS _____
MAP # 23 LOT # 39 ZONE RA TOTAL ACRES 1.1 ACRES OF WETLANDS ON PROPERTY 38,230 ± SQ FT

PURPOSE AND DESCRIPTION OF THE ACTIVITY 2 LOT CONSERVATION SUBDIVISION
- PRIVATE ROAD, HOUSES - RESIDENTIAL, SEPTIC SYSTEMS, MINOR
GRADING

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED 0 CUBIC YDS _____ SQ FT _____

EXCAVATION PROPOSED _____ CUBIC YDS _____ SQ FT _____

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE _____ OFF SITE _____

TOTAL REGULATED AREA ALTERED: SQ FT 60,000 ACRES _____

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): - CONSERVATION SUBDIVISION COMPARED TO
CONVENTIONAL SUBDIVISION

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQFT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? NO IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? _____

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISS N TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF Th. COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: Mark W. St. DATE _____

OWNER: Mark W. St. DATE _____

REQUIREMENTS

_____ APPLICATION FEE \$ _____ STATE FEE (\$60.00) _____

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP
INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019
DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____

2. ACTION TAKEN (see instructions, only use one code): _____

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): BROOKLYN

does this project cross municipal boundaries (check one)? yes ☐ no ☒

If yes, list the other town(s) in which the action is occurring (print name(s)): _____

6. LOCATION (see instructions for information): USGS quad name: Danielson or number: _____

subregional drainage basin number: _____

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): TERRACUT BUILDING Co-INC

8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): WATERLOO ROAD

briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: _____

9. ACTIVITY PURPOSE CODE (see instructions, only use one code): C

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 2 3 9

11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):

wetlands: 6 acres open water body: _____ acres stream: _____ linear feet

12. UPLAND AREA ALTERED (must provide acres): .3 acres

13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO



STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

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The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). **Do not** mail this cover page or the instruction pages. Please mail **only** the **completed** reporting form to:

DEEP Land & Water Resources Division
Inland Wetlands Management Program
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Inland Wetlands Management Program at (860) 424-3019.



JOSEPH R. THEROUX

~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
PHONE 860-428-7992 ~ FAX 860-376-6842
426 SHETUCKET TURNPIKE, VOLUNTOWN, CT. 06384
FORESTRY SERVICES ~ WETLAND IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE MONITORING
WETLAND FUNCTION/VALUE ASSESSMENTS

2/13/2023

ARCHER SURVEYING
P.O. Box 22
BROOKLYN, CT. 06234

RE: WETLAND DELINEATION, 173 WAUREGAN RD. BROOKLYN, CT.

DEAR MR. ARCHER,

AT YOUR REQUEST I HAVE DELINEATED THE INLAND WETLANDS AND WATERCOURSES ON THE SUBJECT PROPERTY.

THESE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY AND THE DEFINITIONS OF WETLANDS AND WATERCOURSES AS FOUND IN THE CONNECTICUT STATUTES, CHAPTER 440, SECTION 22A-38.

FLUORESCENT PINK FLAGS WITH A CORRESPONDING LOCATION NUMBER DELINEATE THE BOUNDARIES OF THESE INLAND WETLANDS/WATERCOURSE AND THE ADJACENT UPLAND SOILS.

WETLAND FLAGS WF- 1 THROUGH WF- 35 DELINEATE THE HIGH-WATER MARK OF CREAMERY BROOK, ITS ASSOCIATED FLOODPLAIN SOILS AND ADJACENT INLAND WETLANDS FOUND IN THE WESTERN PORTION OF THE PROPERTY.

WETLAND FLAGS WF-1 A THROUGH WF- 14A DELINEATE THE HIGH-WATER MARK AND HYDRIC SOILS FOUND IN AND ADJACENT TO THE SMALL POND FOUND IN THE EASTERN PORTION OF THE PROPERTY.

THESE WETLAND SOILS HAVE FORMED FROM THE PERSISTENT WETNESS DUE TO THE SHALLOW SEASONAL WATER TABLES AND ARE CHARACTERIZED BY THICK ORGANIC TOPSOIL HORIZONS, SHALLOW REDOXIMORPHIC FEATURES AND LOW CHROMA COLORS WITHIN 20 INCHES OF THE SOIL SURFACE.

IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING THE DELINEATION OR THIS REPORT, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

JOSEPH R. THEROUX
CERTIFIED SOIL SCIENTIST
MEMBER SSSSNE, NSCSS, SSSA.

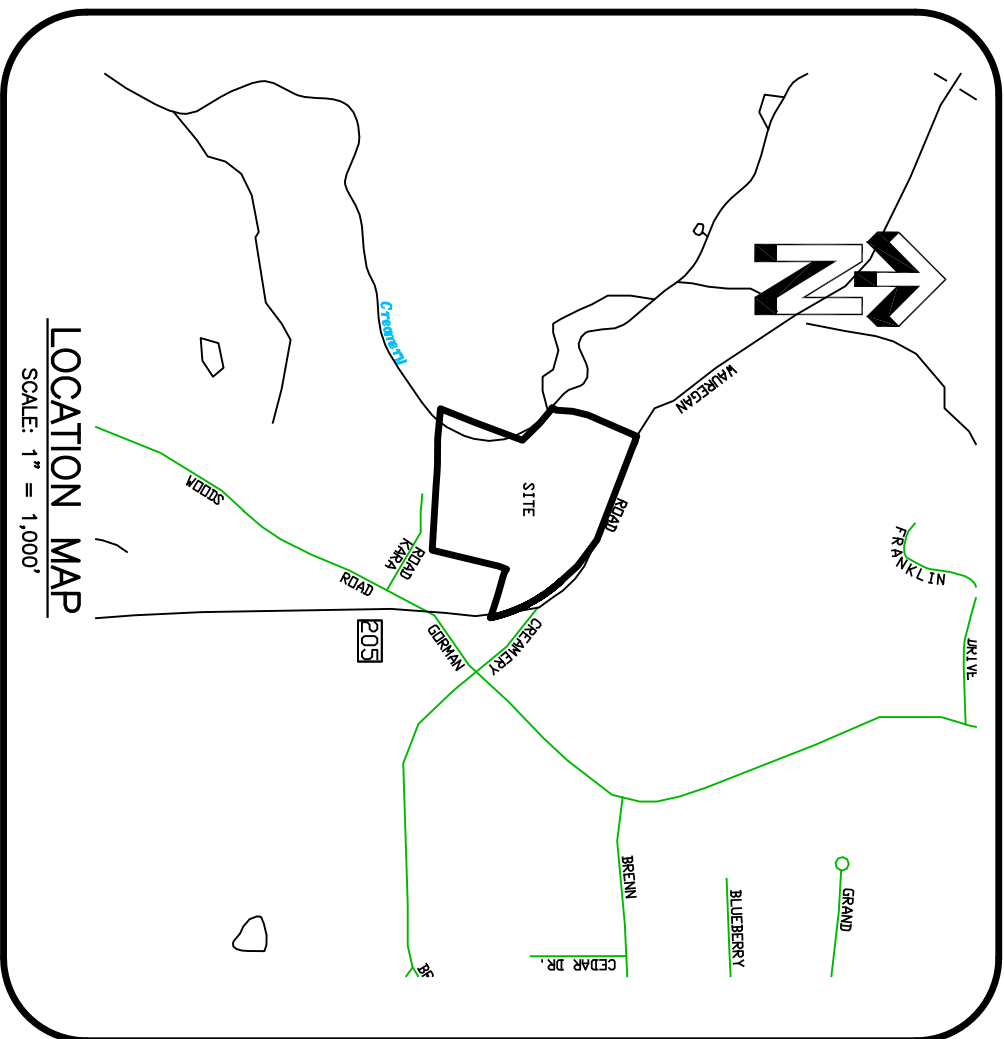
7 LOT SUBDIVISION

PREPARED FOR

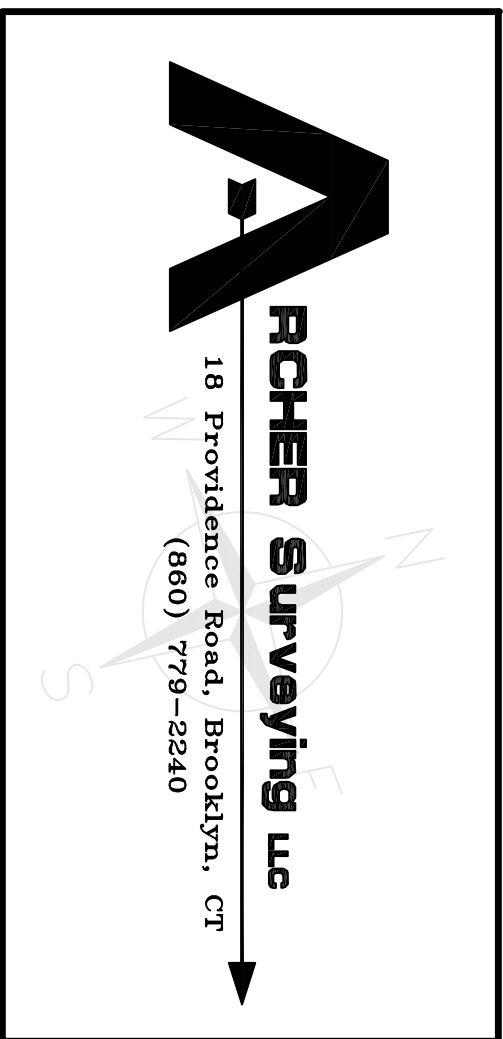
Tetreault Building Company

Wauregan Road - Route #205
Brooklyn, Connecticut

October 27, 2023
Revised:



PREPARED BY



INDEX OF DRAWINGS	
COVER SHEET	SHEET 1 OF 6
SUBDIVISION	SHEET 2 OF 6
SITE DEVELOPMENT PLAN	SHEET 3 OF 6
DETAIL SHEET #1	SHEET 4 OF 6
DETAIL SHEET #2	SHEET 5 OF 6
HISTORY & PARCEL MAP	SHEET 6 OF 6

APPROVED BY THE BROOKLYN
INLAND METLANDS COMMISSION

CHAIRMAN
DATE
Expiration date per section 22A-42A of the Connecticut
General Statutes. Date: _____

APPROVED BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

CHAIRMAN
DATE
Expiration date per section 8-26C of the Connecticut
General Statutes. Date: _____

I have reviewed the plat/wellbore shown on this plan
and they appear to be substantially the same as those
which I delineated in the field.

Certified Soil Scientist _____

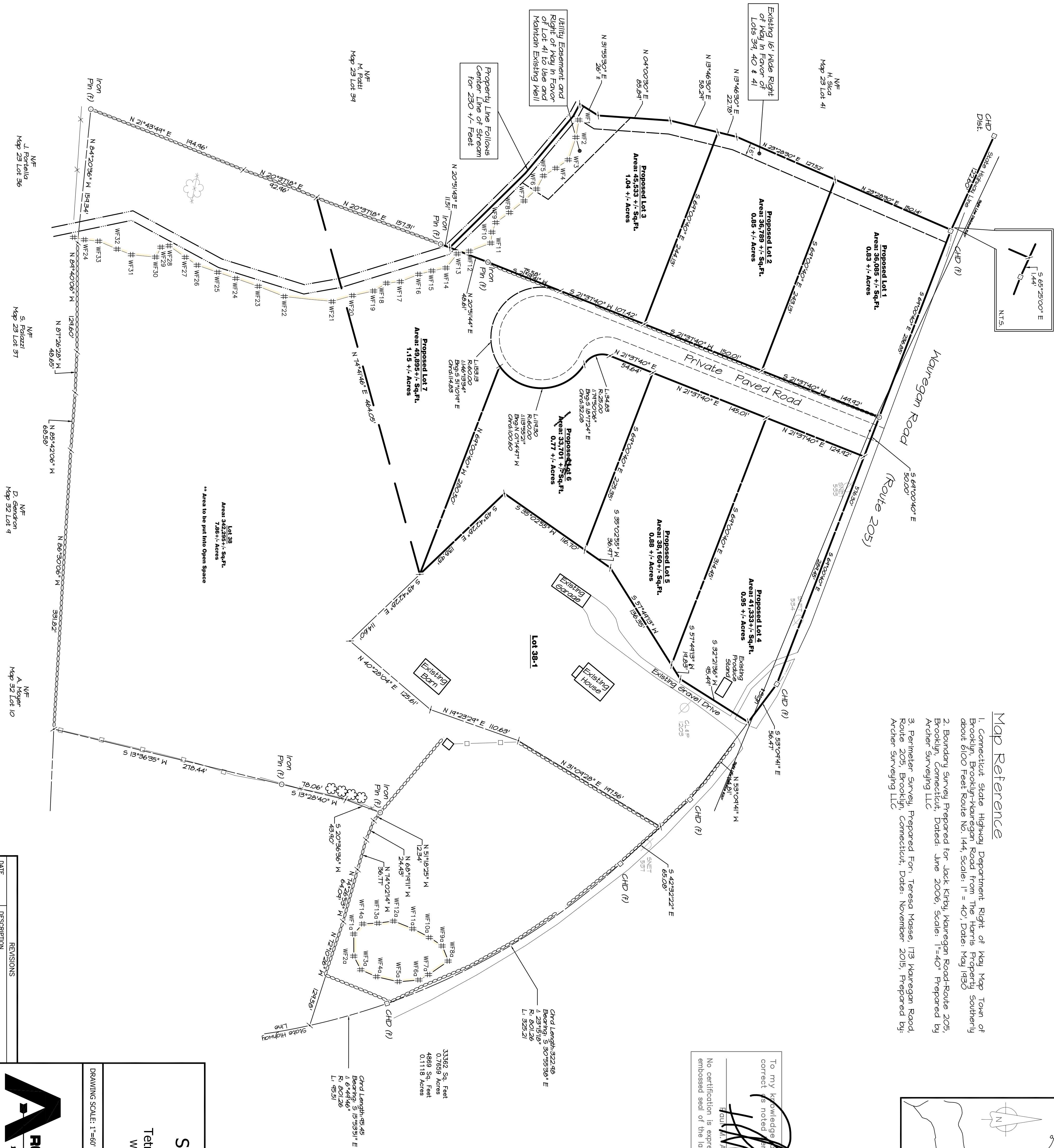


Notes

1. The survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-20 and the "Standards for Surveys and Maps in State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1986
- This Survey conforms to a Class "A2" Horizontal Accuracy
- Survey Type: Subdivision Plan
- Boundary Determination: Reserve on Existing Boundary
- Intent: To Lot Conservation Subdivision
2. Total Area of Subdivision = 6.53 Acres
3. North Orientation: Depicted hereon is approximate North American Datum 1983 (NAD83). Based on Global Positioning System Observation.
4. Vertical Datum Depicted hereon is Approximate North American Vertical Datum 1985 (NAVVD85). Based on Global Positioning System
5. Topographic features depicted were taken from NOAA Lidar Data and conforms to Topographic Accuracy Class "T-1", Contour Interval=2', Vertical Datum = Approx. NAVD 85.
6. Zone = RA
7. Parcel is shown as Lot #39 on Assessor's Map #23
8. This subdivision does include land areas within the Federal Emergency Management Agency's 100 year flood hazard area
9. Wetlands shown were flagged in the field by Joseph Theroux, Certified Soil Scientist in February 2020
10. There are not known endangered species or species of special concern on these subject property June 2023 Natural Diversity Data Base Mapping
11. Parcel does not lie within an aquifer protection area
12. The Subdivision Regulations of the Town of Brooklyn are a part of this plan. Approval of this plan is contingent on completion of the requirements of said regulations, excepting any variances or modifications are on file in the Office of the Planning Commission.
13. Passive Solar Energy techniques were considered in the design of the subdivision

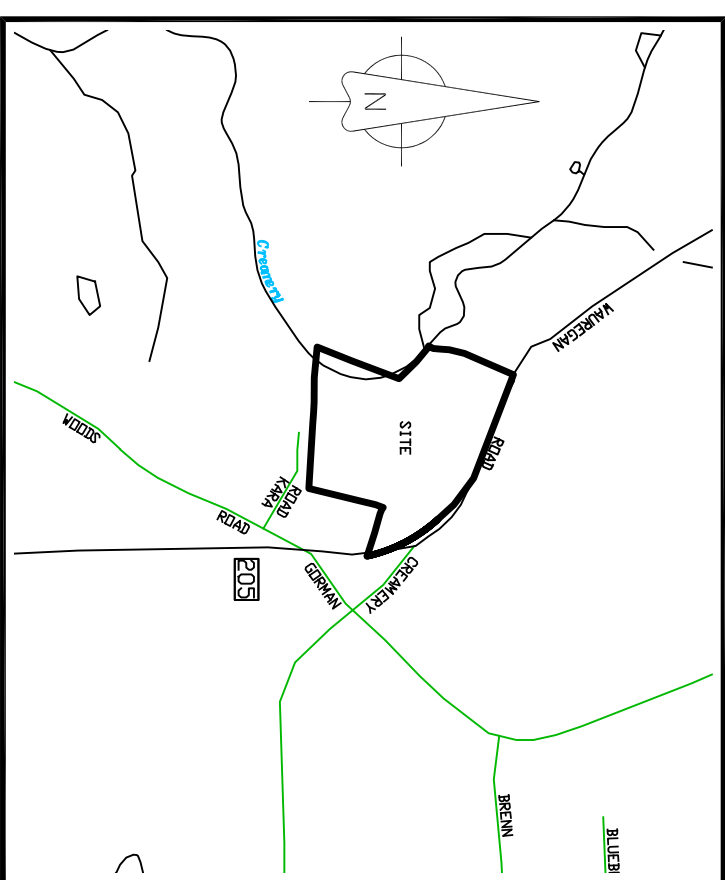
LEGEND

	PROPERTY LINE
	EASEMENT
	STONEWALL
	STONEWALL REMAINS
	EXISTING INDEX CONTOUR
	EXISTING CONTOUR
	PROPOSED CONTOUR
	WETLANDS FLAG
	BUILDING SETBACK
	IRON PIN
	DRILL HOLE
	MONUMENT
	PERCOLATION TEST
	TEST PIT
	PROPERTY POINT
	UTILITY POLE



Map Reference

1. Connecticut State Highway Department Right of Way Map Town of Brooklin, Brooklin-Wauregon Road From The Harris Property Southly about 6100 Feet Route No. 144, Scale: 1" = 40', Date: May 1930
2. Boundary Survey, Prepared for Jack Kirby, Wauregon Route 205, Archer Surveying LLC, Date: June 2010, Scale: 1"=40' Prepared by Archer Surveying LLC
3. Perimeter Survey, Prepared For: Teresa Nasse, 173 Wauregon Road, Route 205, Brooklin, Connecticut, Date: November 2015, Prepared by Archer Surveying LLC



To my knowledge and belief, this map is substantially correct as noted above.

1/29/2023

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

Location Map

REVISIONS	
DATE	DESCRIPTION

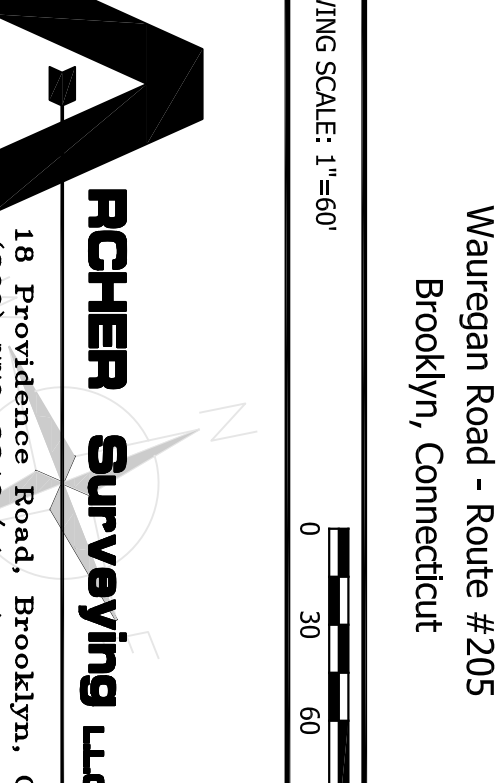
Subdivision Plan

Prepared For:

Tetreault Building Company
 Wauregan Road - Route #205
 Brooklyn, Connecticut

DRIVING SCALE: 1"=60'

0 30 60 120



RICHER Surveying LLC

18 Providence Road, Brooklyn, CT
 (860) 779-2240 / (860) 928-1921

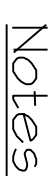
KHP
Surveying & Consulting
 SURVEYING - ENGINEERING - SITE PLANNING

LOUIS J. SOLA, JR.
 L.S.P. SURVEYING AND PLANNING

Sheet No. 2 OF 6

Project No. AS 2223

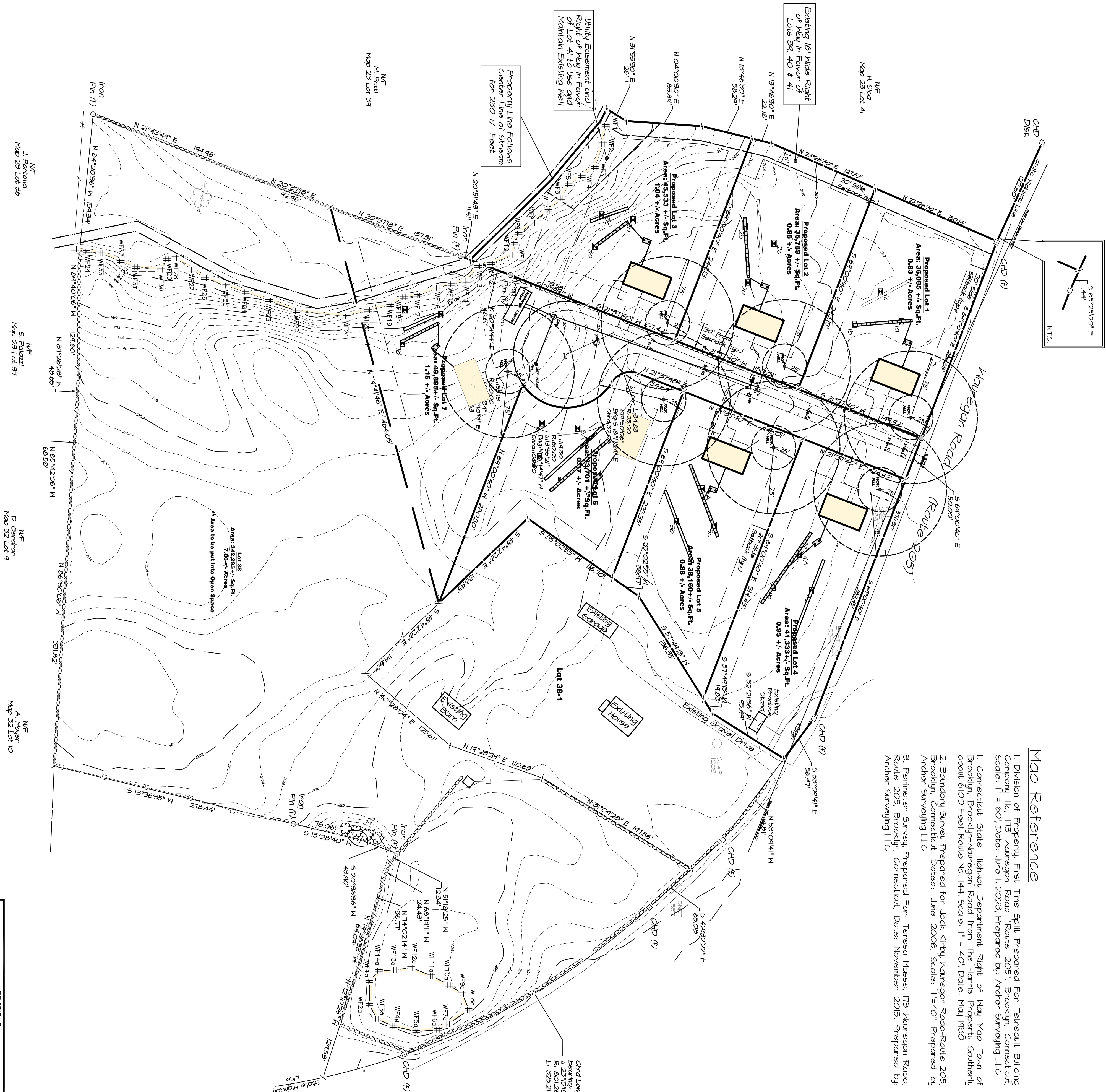
Date: October 27, 2023



10. There are not known endangered species or species of special concern on the subject property June 2023 Natural Diversity Data Base Mapping
11. Parcel does not lie within an aquifer protection area
12. The Subdivision Regulations of the Town of Brooklyn are a part of this plan. Approval of this plan is contingent on completion of the requirements of said regulations excepting any variances or modifications are on file in the office of the commission.
14. Passive Solar Energy techniques were considered in the design of the subdivision

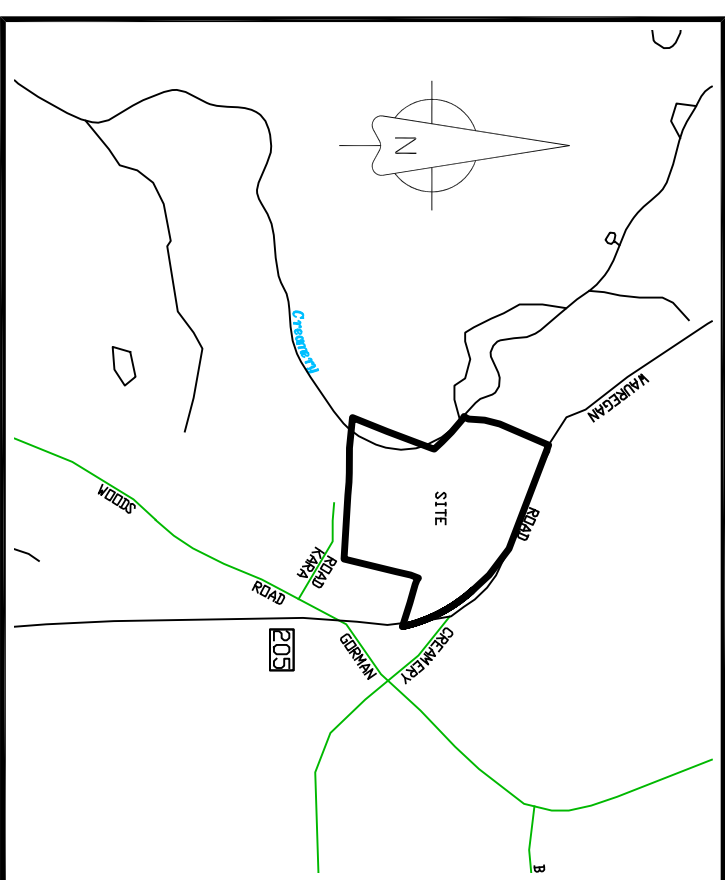
LEGEND

- | | |
|--|------------------------|
| | PROPERTY LINE |
| | EASEMENT |
| | STONEWALL |
| | STONEWALL REMAINS |
| | EXISTING INDEX CONTOUR |
| | PROPOSED CONTOUR |
| | WETLANDS FLAG |
| | BUILDING SETBACK |
| | IRON PIN |
| | DRILL HOLE |
| | MONUMENT |
| | PERCOLATION TEST |
| | PIT |
| | PROPERTY POINT |
| | UTILITY POLE |



Map Reference

1. Division of Property, First Time Split Prepared For: Teleranch Building Company LLC, 173 Mauregon Road "Route 205", Brooklin, Connecticut, Scale: 1" = 60'. Date: June 1, 2023. Prepared by: Archer Surveying LLC
1. Connecticut State Highway Department Right of Way Map "Town of Brooklin, Brooklin-Mauregon Road from the Harris Property Southly about 6100 Feet Road No. 144, Scale: 1" = 40'. Date: May 1950
2. Boundary Survey Prepared For: Jack Kirby Mauregon Road Route 205, Brooklin, Connecticut, Dated: June 2006, Scale: 1"=40" Prepared by Archer Surveying LLC
3. Perimeter Survey, Prepared For: Teresa Nasse, 173 Mauregon Road, Route 205, Brooklin, Connecticut, Date: November 2015, Prepared by Archer Surveying LLC



To my knowledge and belief, this map is substantially correct as noted hereon.

11/29/2023
Paul M. Archer, Conn. L.S. #70013

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

33362 Sq. Feet
0.7659 Acres
4869 Sq. Feet
0.1118 Acres

Chrd Length: 322.98
Bearing: S 30°55'38" E
Δ 23°15'18"
R: 801.26
L: 325.21

Bearing: S 15°53'51" E
Δ 6°49'46"
R: 801.26
L: 95.51

Site Development Plan

Prepared For:
Tetreault Building Company
Wauregan Road - Route #205
Brooklyn, Connecticut

DRAWING SCALE: 1"=60'



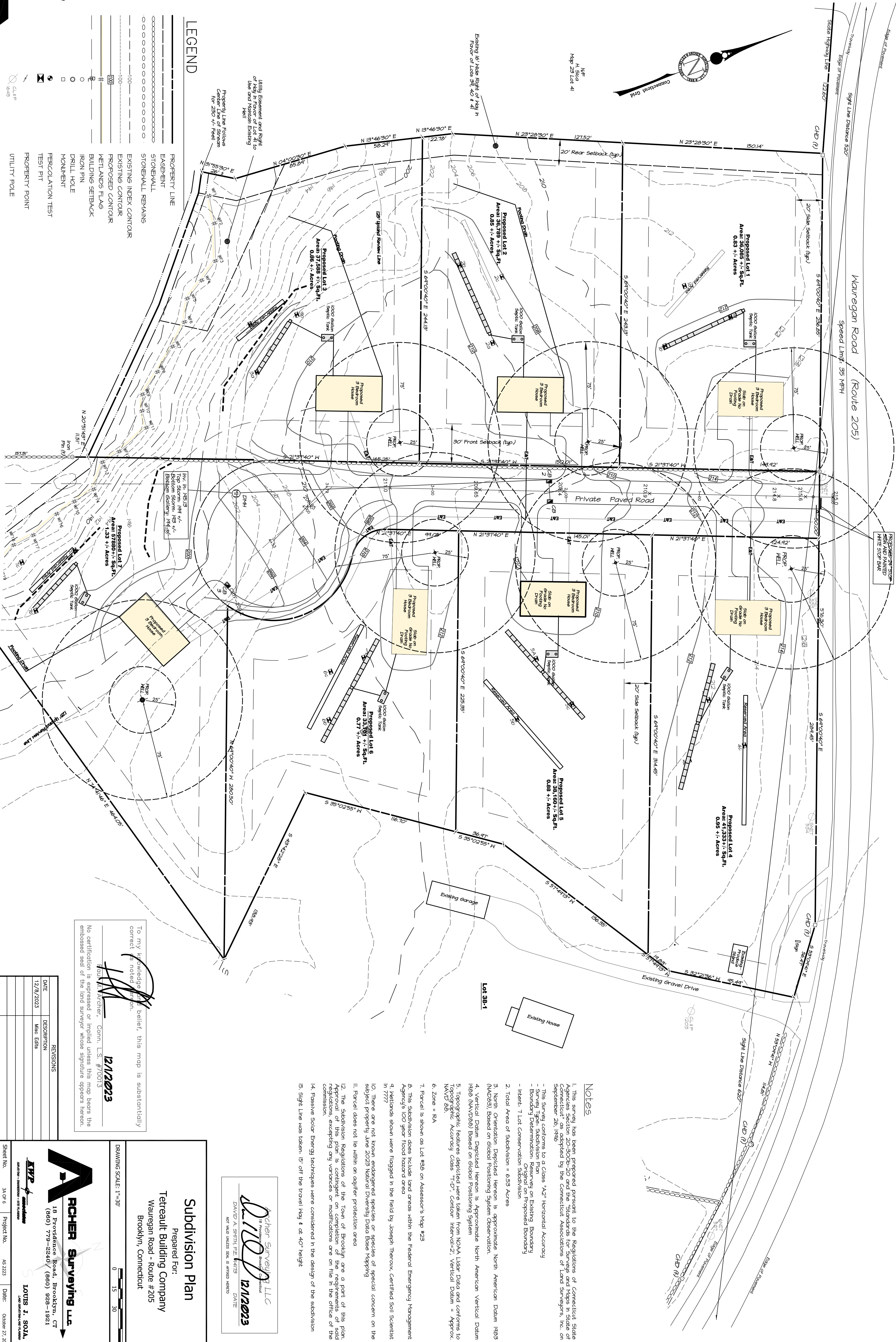
(866) 779-2240 / (866) 928-1921

SURVEYING ~ ENGINEERING ~ SITE PLANNING

LOUIS J. SOJA, JR.

REVISIONS	
DATE	DESCRIPTION
12/8/2023	Misc Edits

Sheet No.	3 OF 6	Project No.	AS 2223	Date:	October 27, 2023
-----------	--------	-------------	---------	-------	------------------



Notes

- This survey has been prepared pursuant to the Regulations of Connecticut State Land Surveyors, and the standards for surveys and maps in State of Connecticut, as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1946.
- This Survey conforms to a Class "A2" Horizontal Accuracy.
- Survey Type: Subdivision Plan.
- Boundary Determination: Original on Proposed Boundary.
- Intent: 1 Lot Conservation Subdivision.
- Total Area of Subdivision = 6.53 Acres.
- North Orientation: Depicted. Hereon is approximate North American Datum 1983 (NAD83). Based on Global Positioning System Observation.
- Vertical Datum: Depicted. Hereon is Approximate North American Vertical Datum 1985 (NAVD85). Based on Global Positioning System.
- Topographic Features depicted were taken from NOAA Lidar Data and conforms to Topographic Accuracy Class "1-D", Contour Interval=2', Vertical Datum = Approx. NAVD 85.
- Zone = RA.
- Parcel is shown as Lot #28 on Assessor's Map #23.
- This Subdivision does include land areas within the Federal Emergency Management Agency (FEMA) Special Flood Hazard Area.
- Wetlands shown were flagged in the field by Joseph Theroux, Certified Soil Scientist in 7777.
- There are not known endangered species or species of special concern on the subject property. June 2023 Natural Diversity Data Base Mapping.
- The Subdivision Regulations of the Town of Brooklyn are a part of this plan. Approval of this plan is contingent on completion of the requirements of said regulations, excepting any variances or modifications are on file in the office of the commission.
- Passive Solar Energy techniques were considered in the design of the subdivision.
- Sight Line was taken: 15' off the travel way & at 40' height.

Archer Surveying LLC
DAVID A. SMITH, P.E., L.S. #70013
DATE: 12/18/2023
NOT VALID UNLESS SEAL IS AFFIXED HEREON

Subdivision Plan

Prepared for:
Tetreault Building Company
Mauregan Road - Route #205
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'

RICHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921

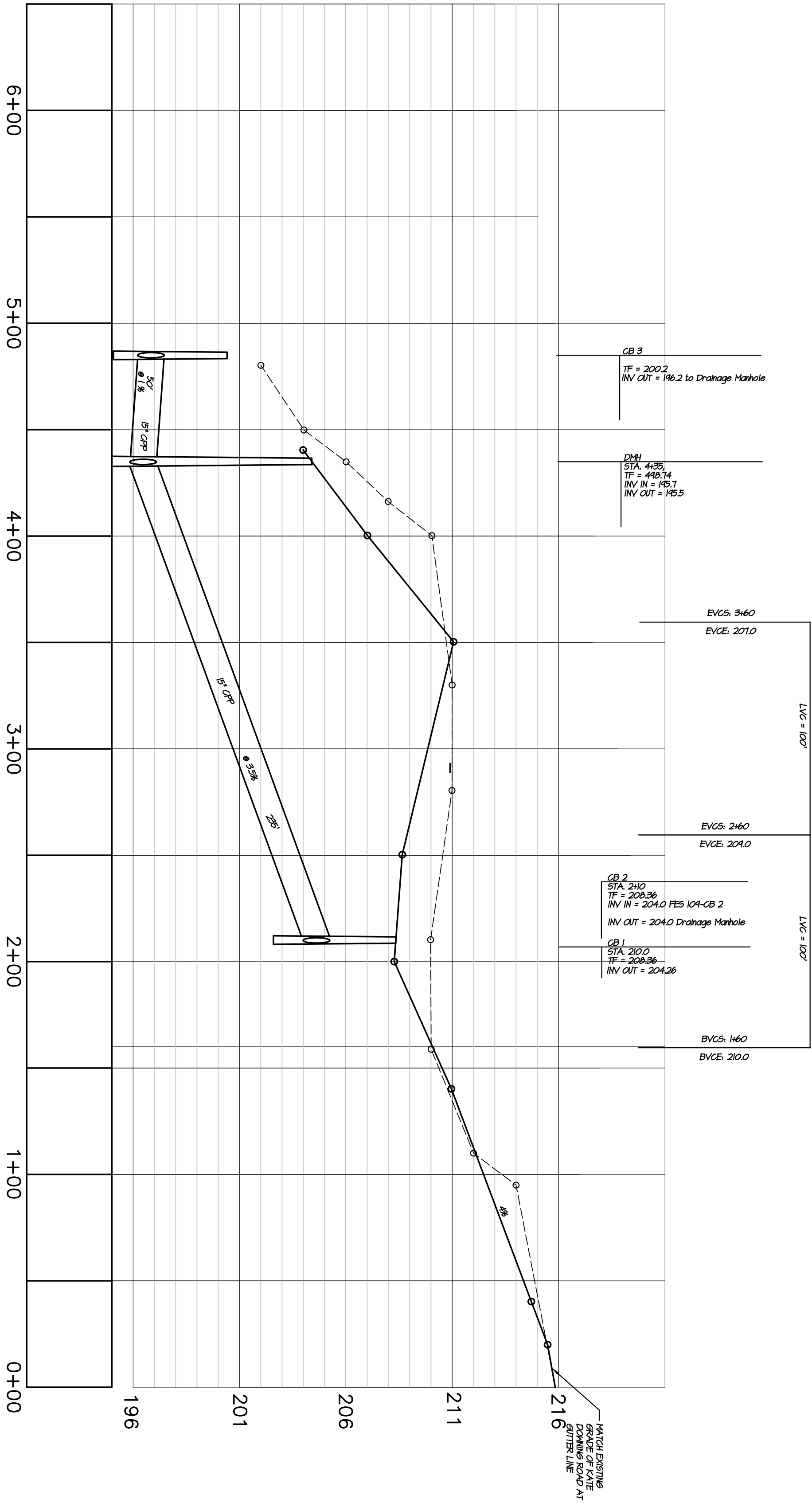
LOUIS J. SOJA, JR.
L.S. #70013
DATE: October 27, 2023

DATE	DESCRIPTION	REVISIONS
12/8/2023	Misc. Edits	

To my knowledge and belief, this map is substantially correct as noted herein.

DAVID A. SMITH, P.E., L.S. #70013

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.



To my knowledge and belief, this map is substantially correct as noted hereon.

[Signature]
DAVID A. SMITH, P.E.
Louis A. Archer, Conn. L.S. #70013
1/1/2023

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

REVISIONS	
DATE	DESCRIPTION

Archer Surveying LLC
18 Providence Road, Brooklyn, Connecticut 06007
DAVID A. SMITH, P.E. 1/1/23
DATE
NOT VALID UNLESS SEAL IS AFFIXED HEREON

Subdivision Plan
Prepared For:
Tetreault Building Company
Wauregan Road - Route #205
Brooklyn, Connecticut

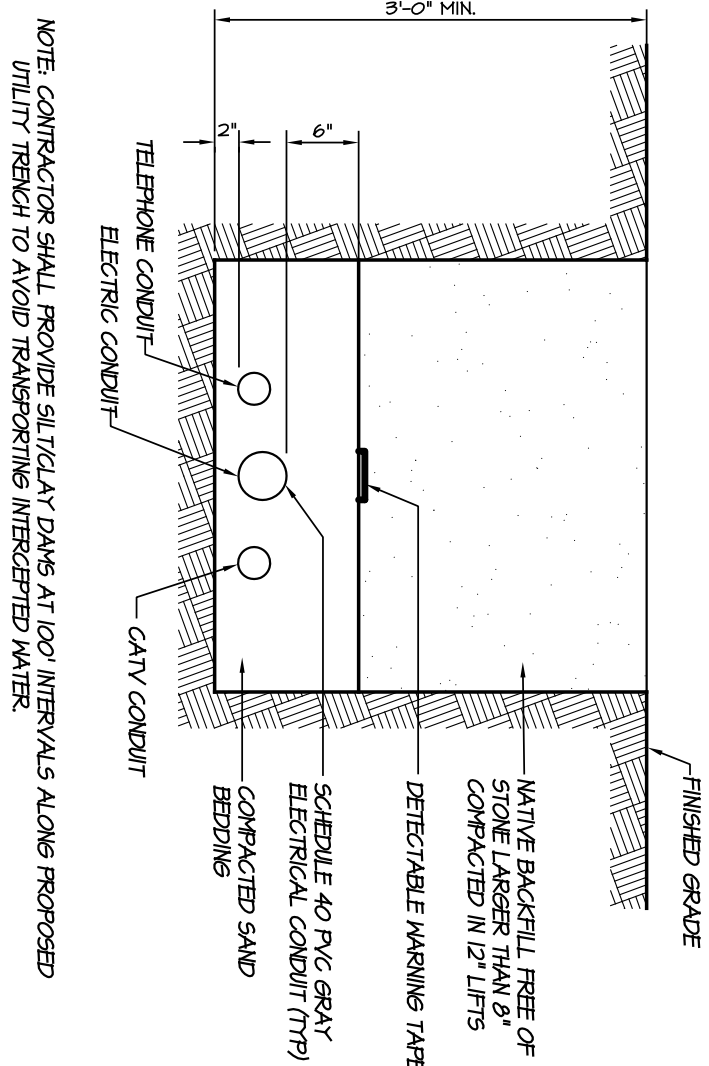
DRAWING SCALE: 1"=30'

0 15 30 60

Archer Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921

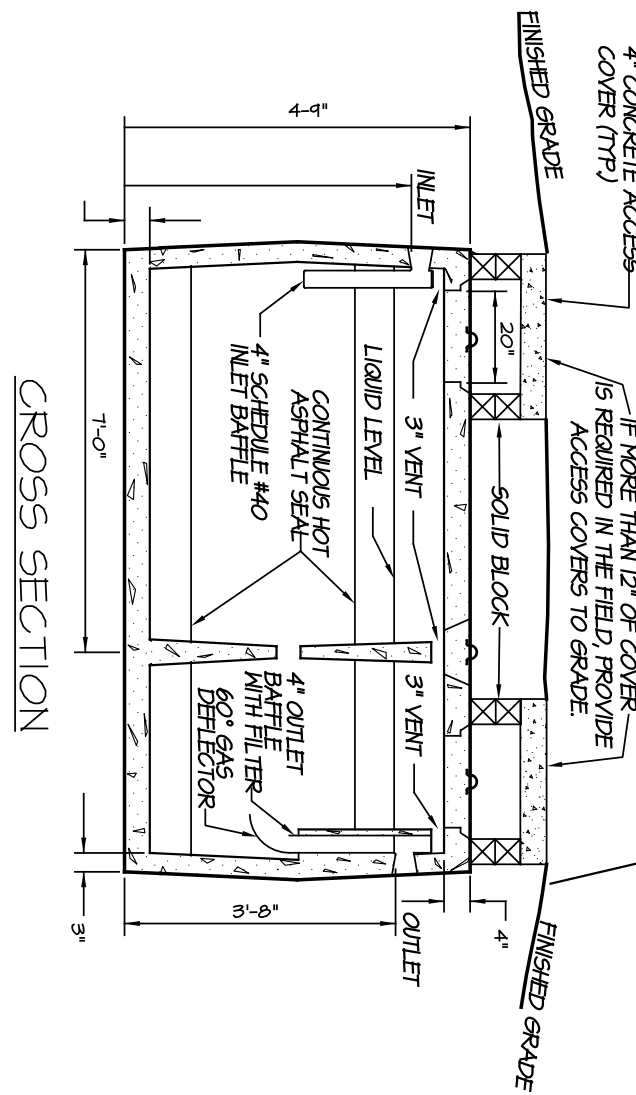
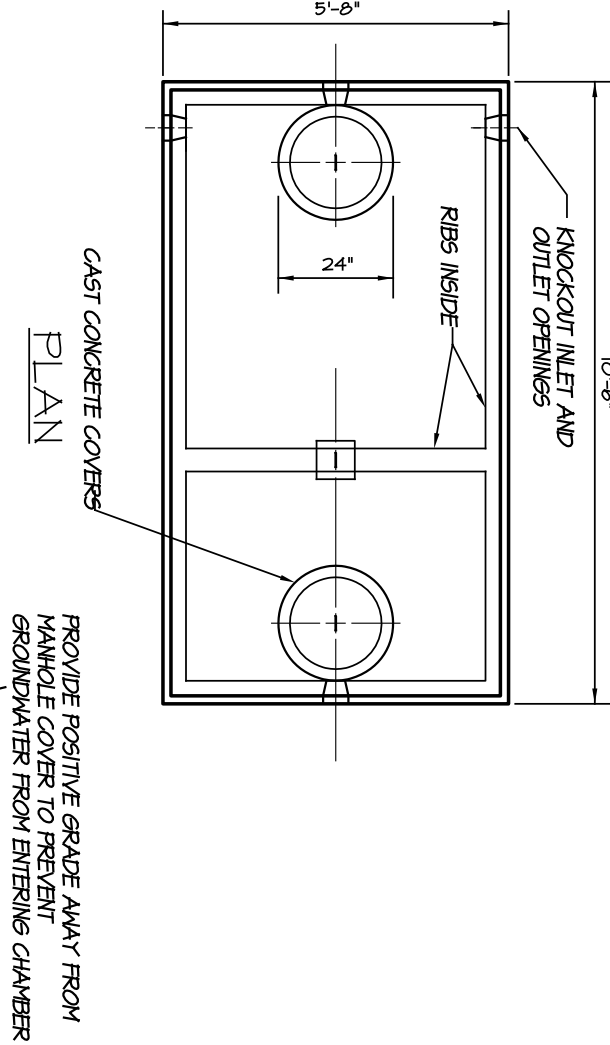
KWP
Kurt W. Proulx
LOUIS J. SOJA, JR.
LJS ARCHITECTURAL DESIGN

Sheet No. 30 of 6 Project No. AS 2223 Date: October 27, 2023



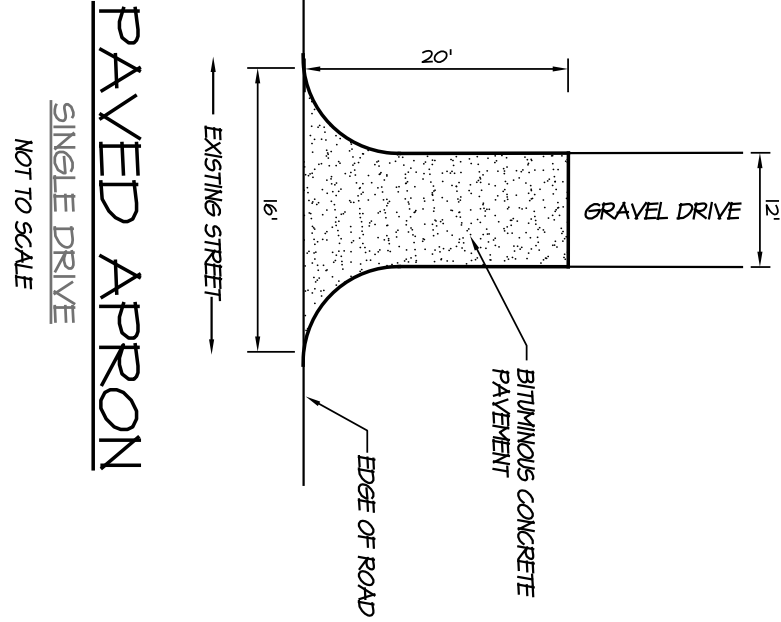
UNDERGROUND UTILITY TRENCH

NOT TO SCALE



1000 GALLON 2 COMPARTMENT SEPTIC TANK

1

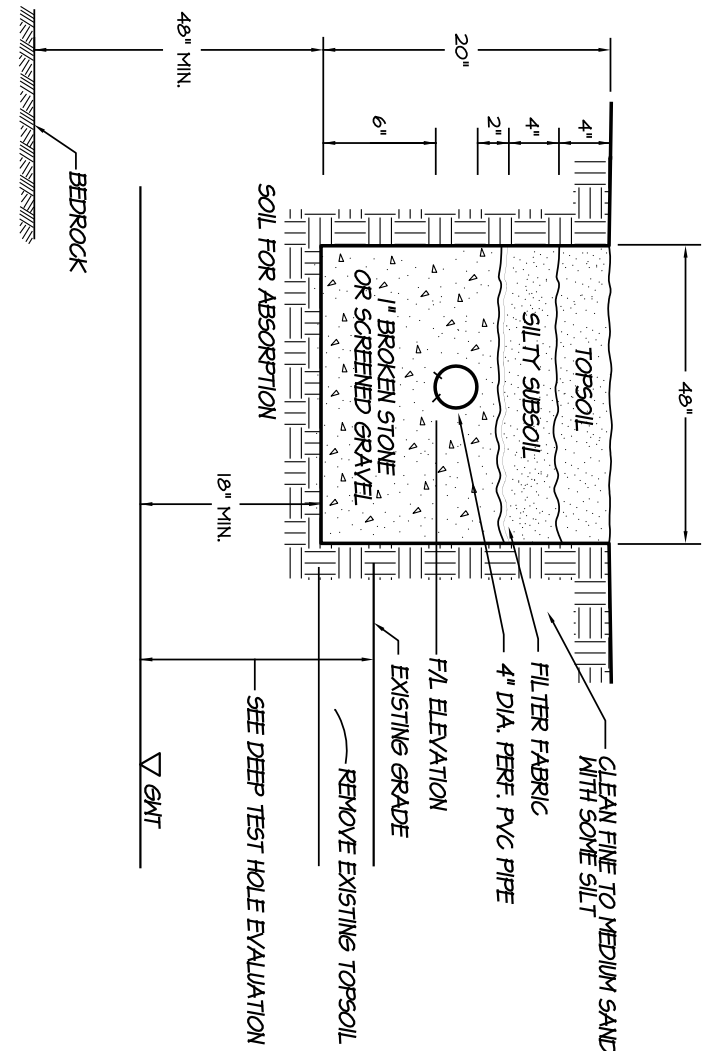
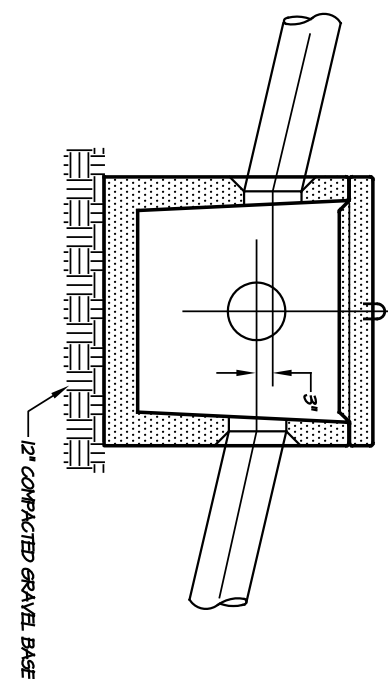


SINGLE DRIVE

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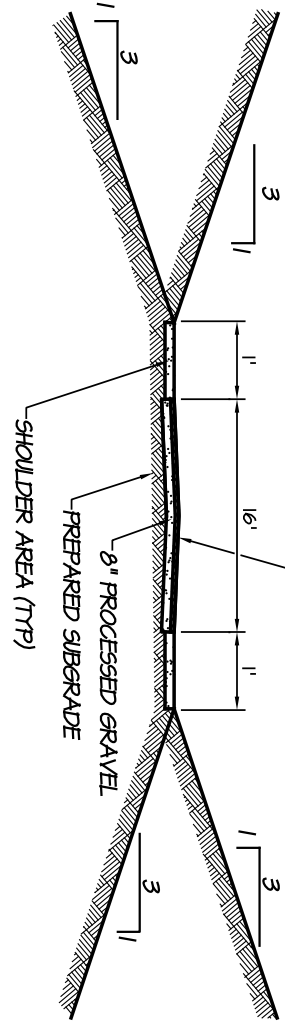
DISTRIBUTION BOX DETAIL

NOT TO SCALE



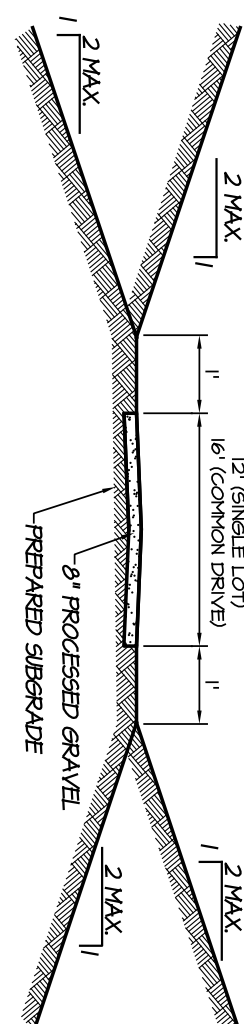
TYPICAL LEACHING TRENCH SECTION

NOT TO SCALE



PAVED COMMON DRIVE DETAIL

NOT TO SCALE

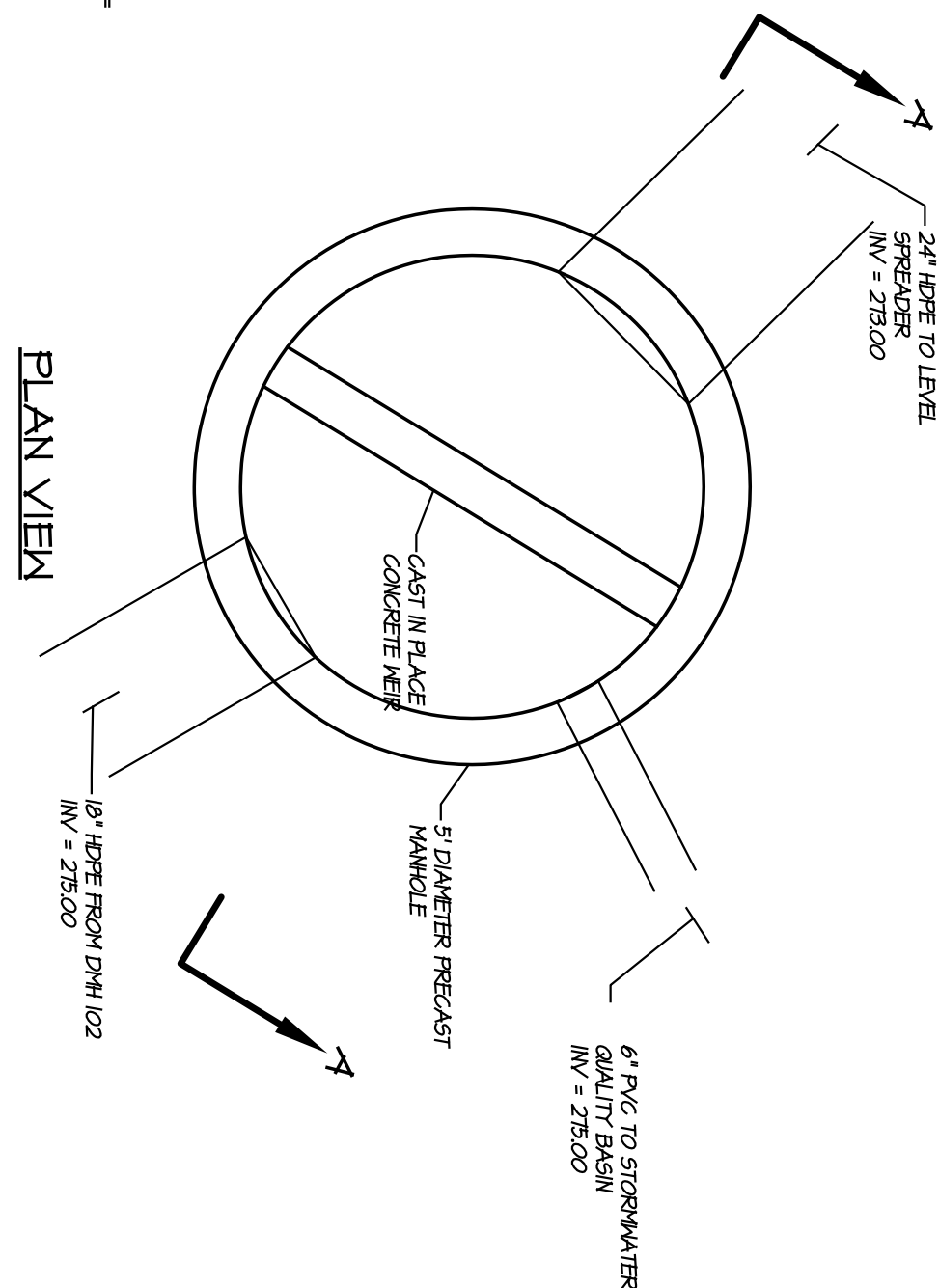


GRAVEL DRIVE DETAIL

NOT TO SCALE

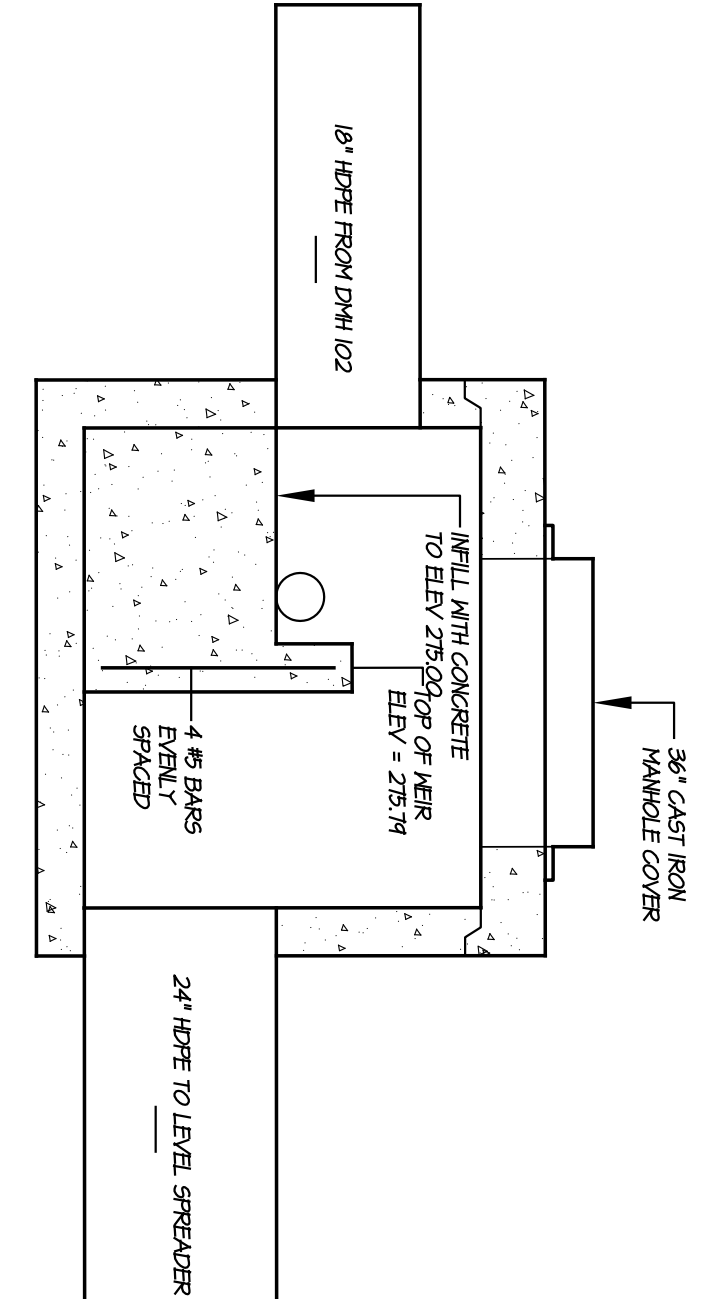
SANITARY SEWER / STORM DRAIN PIPE IN TRENCH DETAIL

NOT TO SCALE



PLAN VIEW

NOT TO SCALE

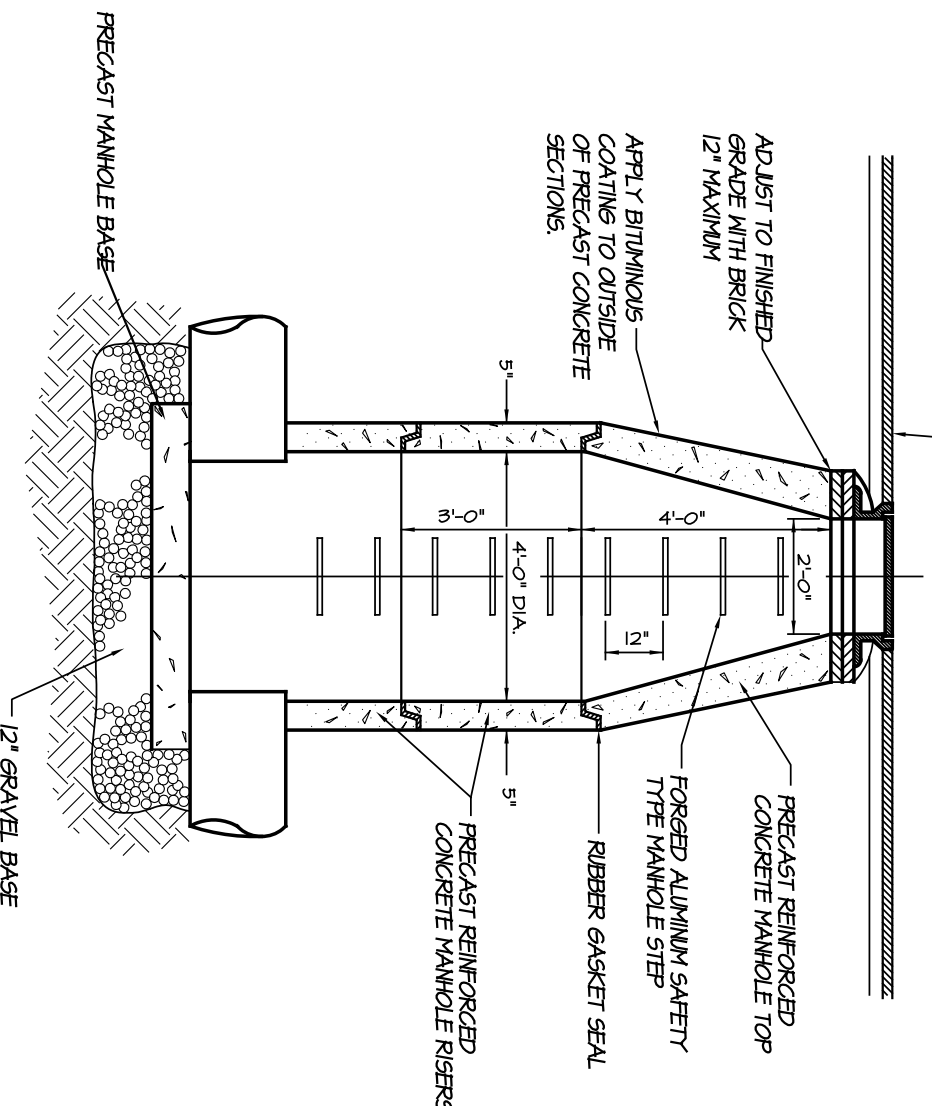


CONSTRUCTION ENTRANCE

NOT TO SCALE

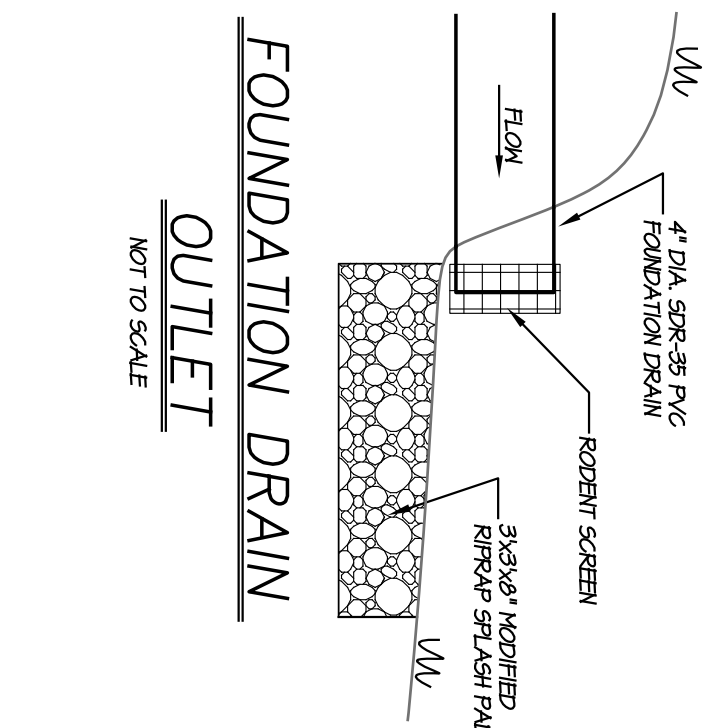
DNH 101 WEIR MANHOLE DETAIL

NOT TO SCALE

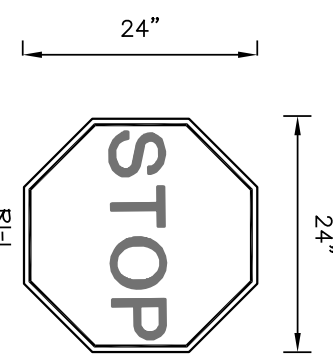


TYPICAL MANHOLE CROSS SECTION

NOT TO SCALE



NOT TO SCALE

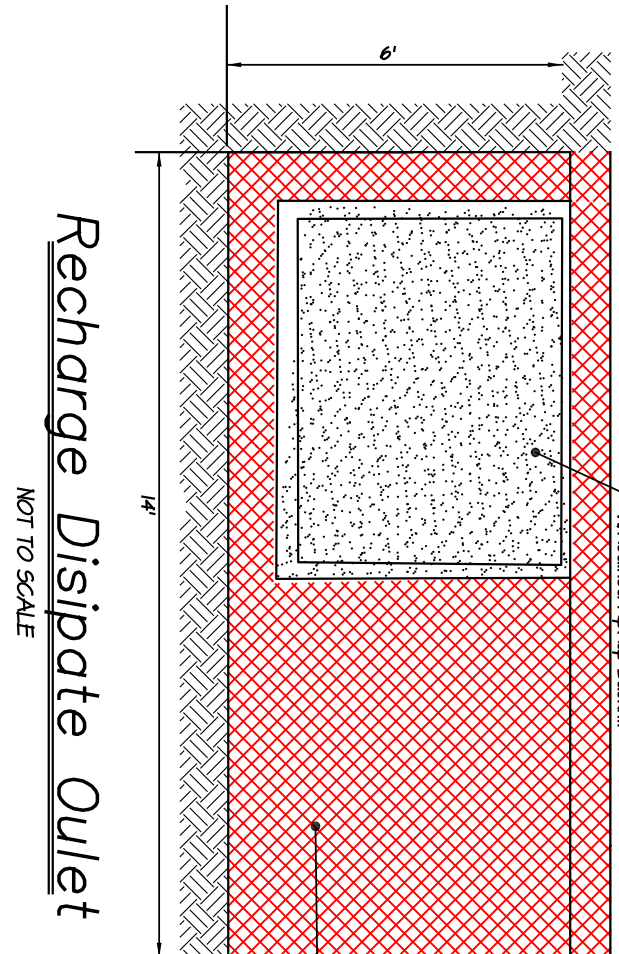
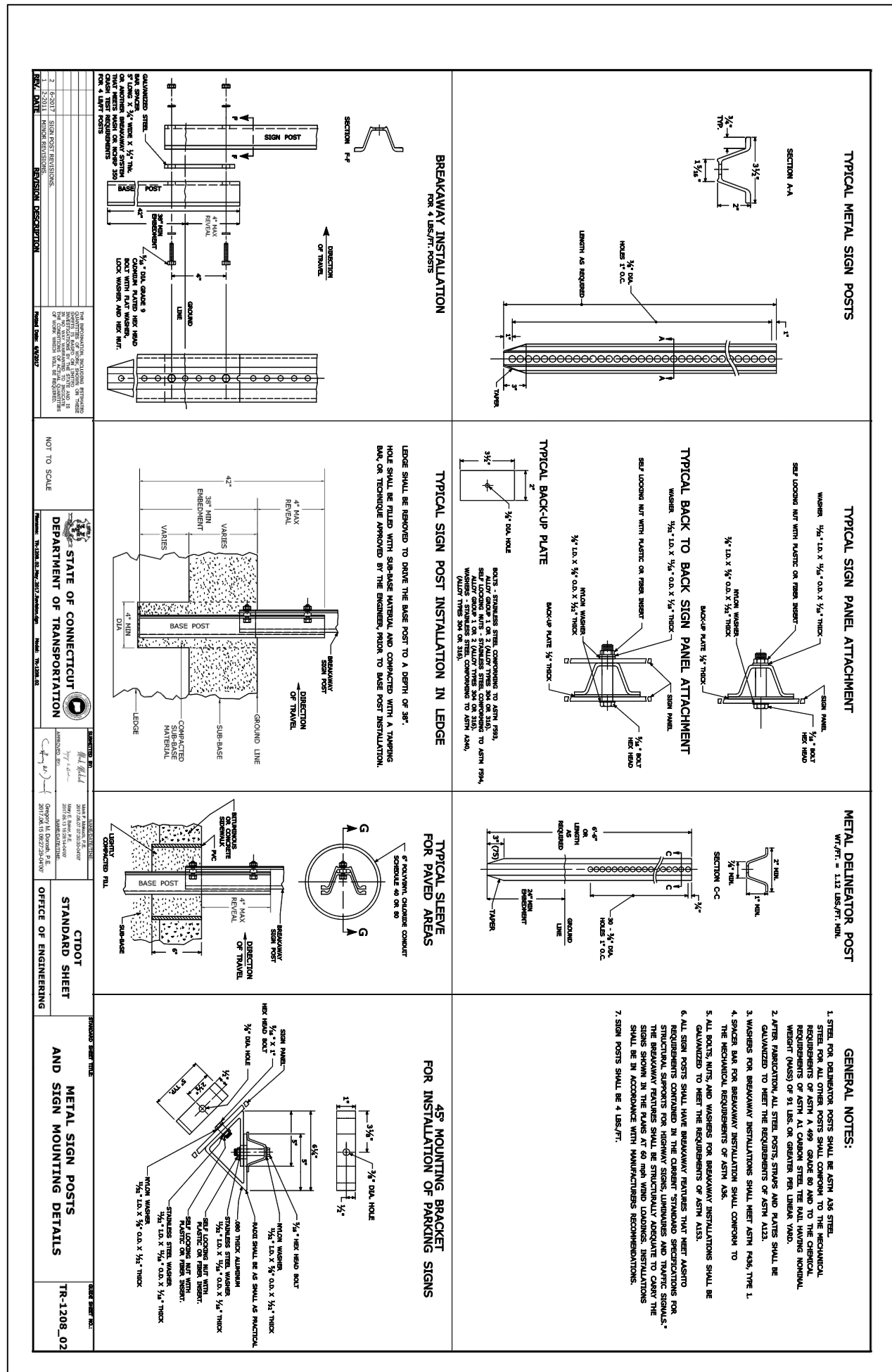
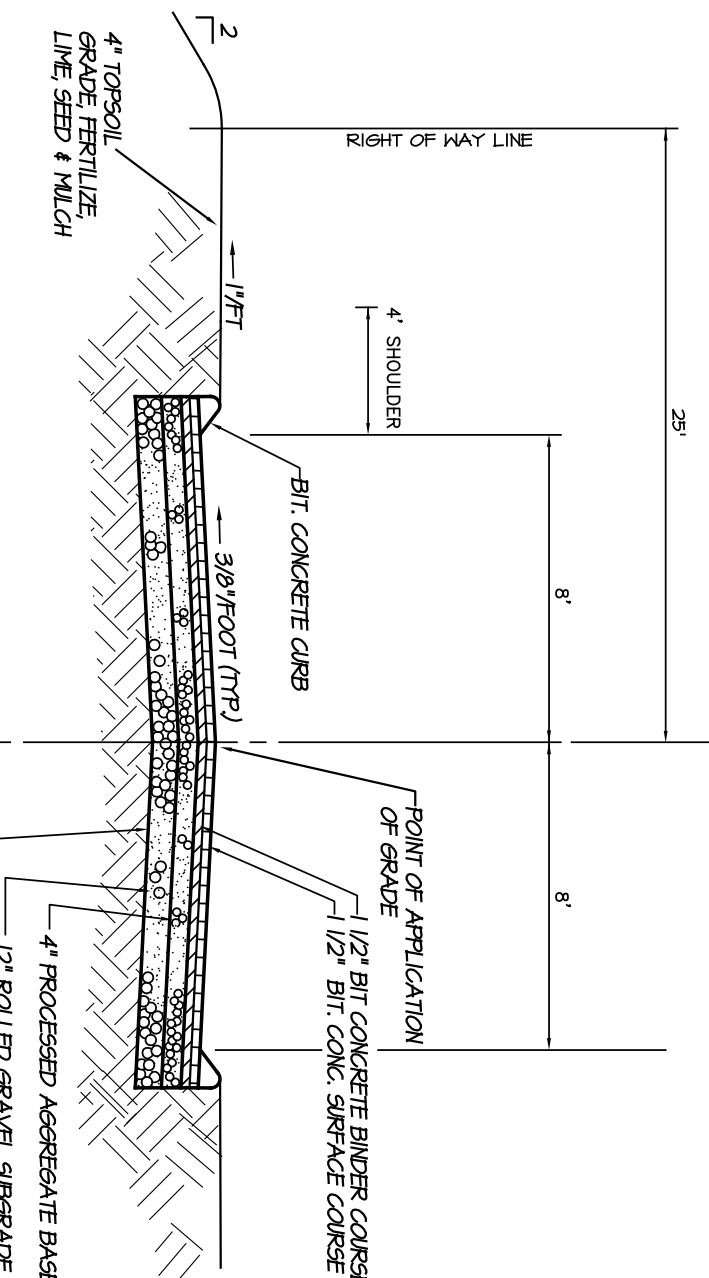


STOP SIGN DETAIL

NOT TO SCALE

ROADWAY CROSS SECTION

NOT TO SCALE



NOT TO SCALE

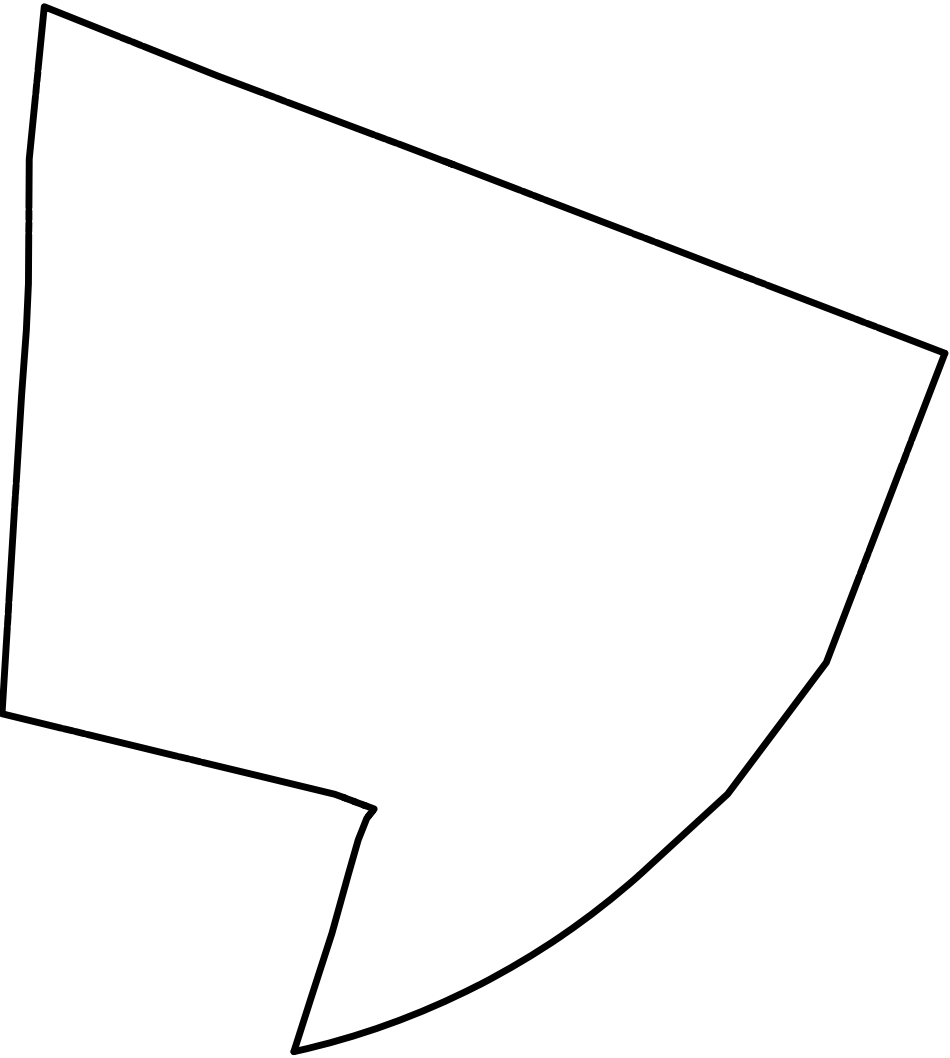
Detail Sheet #2

"7 Lot Subdivision"

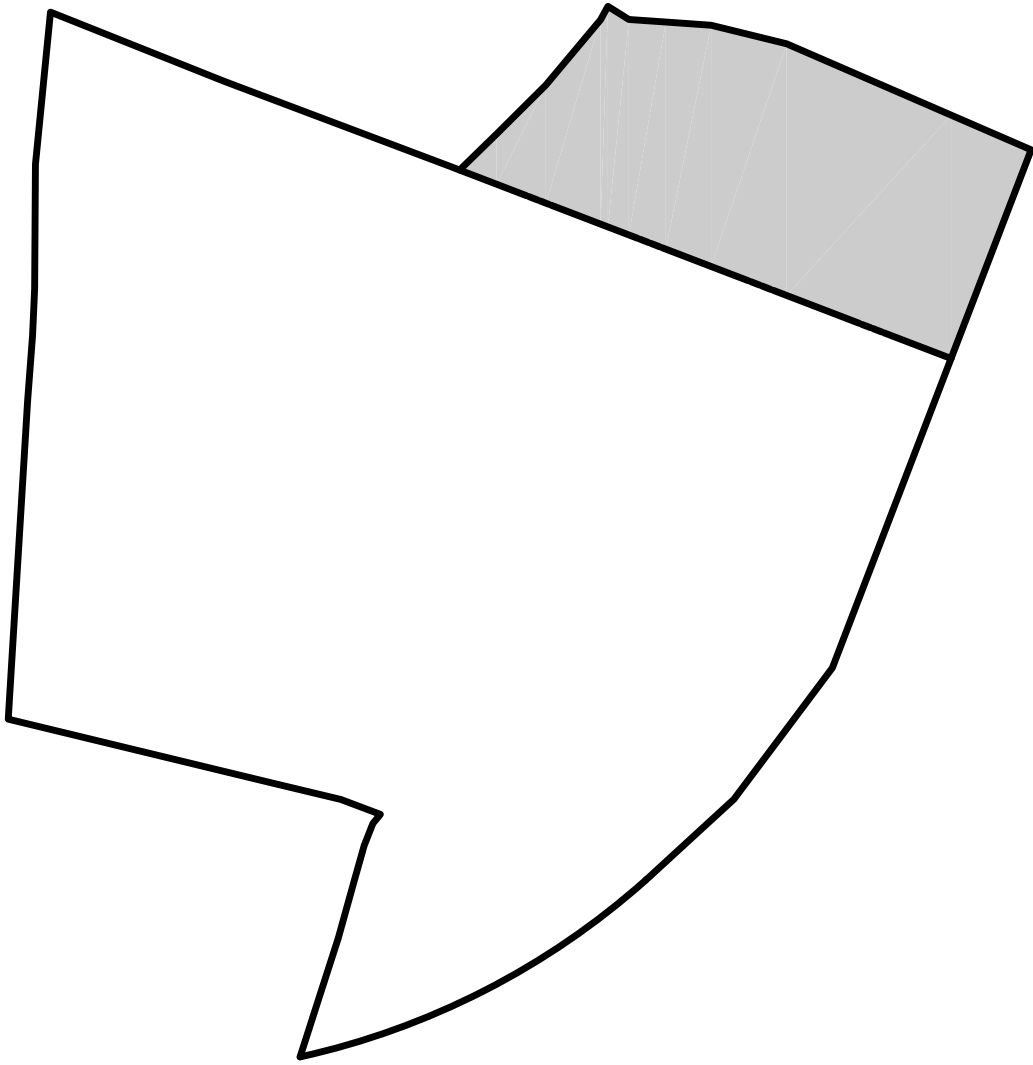
Prepared For:
Tetreault Building Company
Wauregan Road - Route #205
Brooklyn, Connecticut



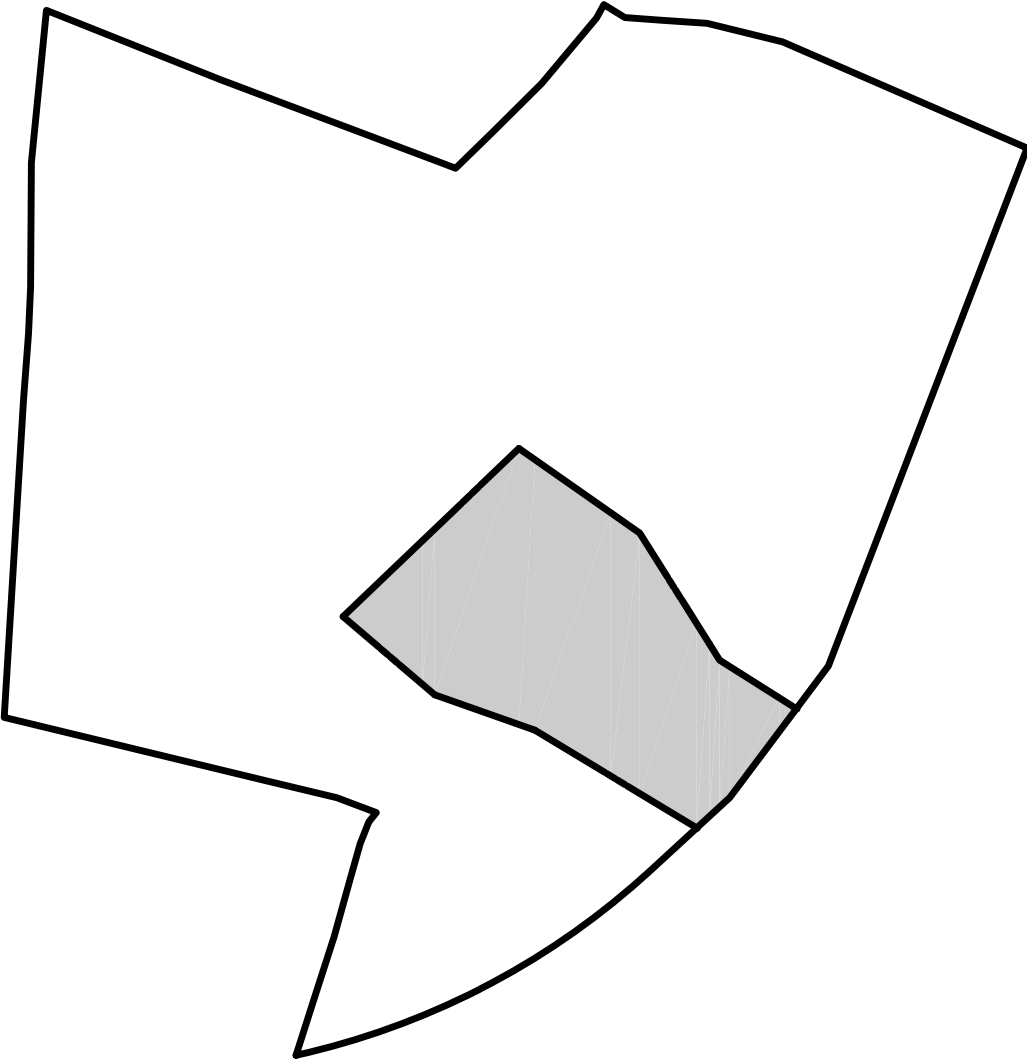
DATE	DESCRIPTION	REVISIONS
12-7-23	Additional Details	



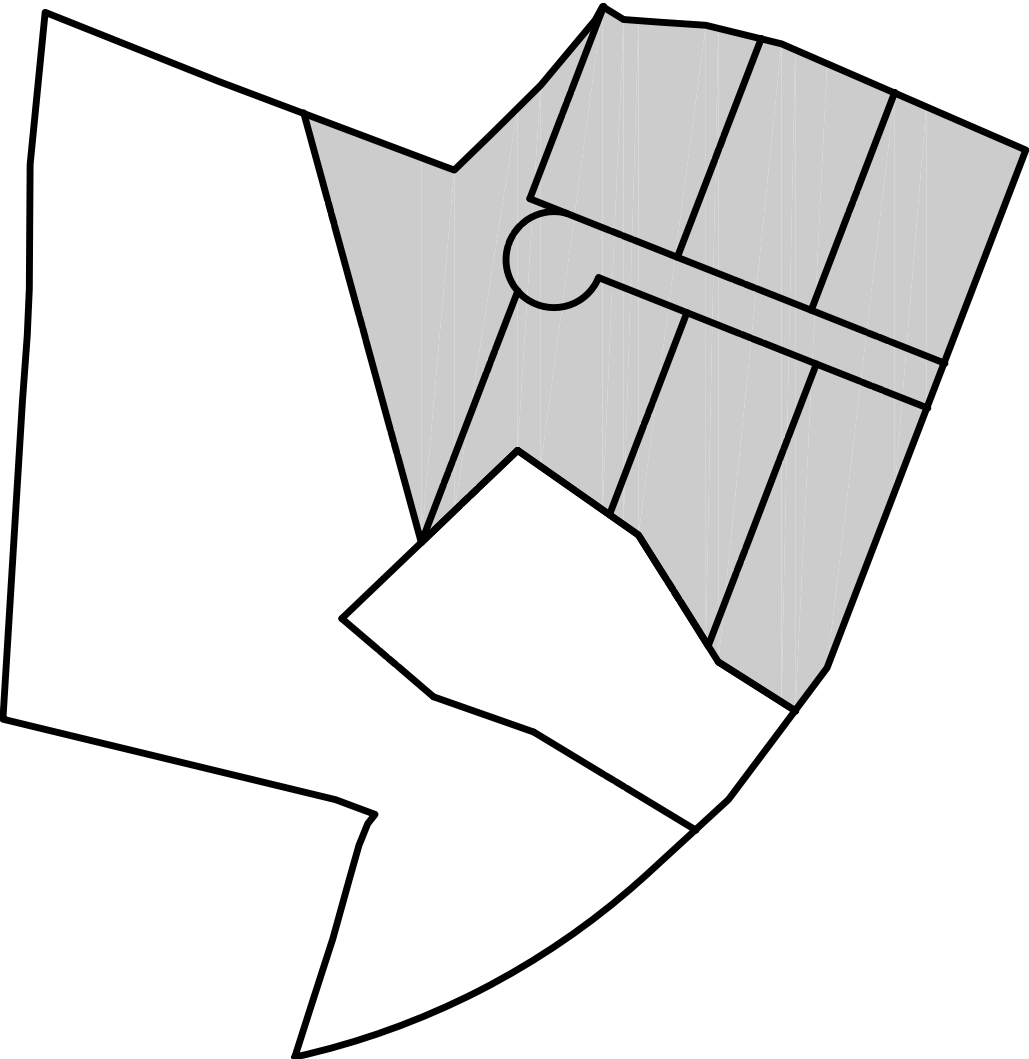
Original Tract
May 1927
Vol. 21 / Pg524



Land Acquisition
June 2006
Vol. 393 / Pg229



First Time Split
June 2023
Vol. 23 / Pg181



Proposed 7 Lot Subdivision

Grantor	Grantee	Date	Vol. / Pg.
Augustus Pabulis	Erik & Ida Maki	5/14/1927	21 / 524
Ida Maki (aka Anna Maki)	Arent & Heta Oskar	3/6/1956	33 / 1
Arent & Heta Oskar	Paul & Rita Manso	8/21/1957	33 / 449
Paul & Rita Manso	Rene & Jeanne Gervais	6/6/1960	35 / 254
Rene & Jeanne Gervais	Louis & Forrestine Lizotte	11/13/1962	37 / 147
Louis & Forrestine Lizotte	Daniel & Teresa Masse	8/20/1965	34 / 411
Teresa Masse	Michael Masse	4/24/2005	362 / 278
Estate of Michael Masse	Teresa Masse	4/14/2023	710 / 154
Estate of Teresa Masse	Tetrealite Building Company	4/14/2023	710 / 140

To my knowledge and belief, this map is substantially correct as noted herein.

Louis J. Soja, Jr.

11/29/2023

Paul A. Archer, Conn. L.S. #70013

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears herein.

REVISIONS	
DATE	DESCRIPTION

Parcel History Plan
"7 Lot Subdivision"

Prepared For:
Tetrealite Building Company
Wauggan Road - Route #205
Brooklyn, Connecticut

RICHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921

KWP
ARCHITECT - INTERIOR - SITE PLANNING

LOUIS J. SOJA, JR.
LAND SURVEYOR

DRAWING SCALE: 1"=200'

0 100 200 400

Sheet No. 6 OF 6

Project No. AS 223

Date: October 27, 2023



18 Providence Road, Brooklyn CT 06234
Phone: 860-779-2240 / 860-928-1921 Fax: 860-779-2240



Tetreault Building Company
Proposed Subdivision and Private Road
Drainage Calculations

Description –

The current proposal proposes to provide a 480' long private road for access to 7 proposed lots on Wauregan Road, CT Rte. 205 in Brooklyn, CT. The proposed road generally follows the "fall-line" of the existing terrain, but in doing so, has been graded to provide a localized sag at station 2+10. Two catch basin are proposed in each gutter, created by a 3/8" per foot crown specified for the proposed road's cross section.

A shallow rise at station 2+80 separates this upper catchment area from the lower. The remainder of the road will drain to a single catch basin at the end of the cul-de-sac. Both the upper system and the lower system will come together in a drainage manhole and the advance to an outlet structure label as recharge/energy dissipater. This feature consists of 9 – 4x4x4 Concrete Leaching Galleys place side by side, in a bed of modified rip rap approximate 6' deep, 14' wide and 40' long. Twelve inches of the stone bed will be under the concrete units, with an addition 12" over the tops. This stone surface will extend to the final grade and will provide a less aggressive means of discharging storm water than a rip-rap outlet or simple level spreader. It is expected that during less intense storm events, this configuration will provide recharge to the ground water system rather than fill to the point of overflow. During more intense storm events the up welling waters will seep onto the surrounding grass surface and ultimately recharge the downstream wetlands.

CT DOT Gutter Flow and Storm Sewer System Design worksheets are attached to this memo and indicate that the proposed 15" ADS drainage piping is adequate to accommodate a 25-year storm for this proposed road, with little or no headwater conditions in the respective inlet structures.

A handwritten signature in blue ink, appearing to be 'D. H. P.', is located in the bottom right corner of the page.

Rt 205 Private Rd

-41-

GUTTER FLOW ANALYSIS

[illegible]

Tetreault Builders
Route 205 Private Rd

-42-

ADS
0.012

STORM SEWER SYSTEM DESIGN

'N'	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
HEADWATER															
FULL CAPACITY			7			15	15"	2.7	5.5	0.4	0.4	10		10	1-2
AVERAGE VELOCITY						235	15"	2.8	6.5	0.51	0.11	19.1	0.1	5	2-DM
SLOPE															
LENGTH OF PIPE															
PIPE SIZE															
Q IN SYSTEM															
RAINFALL INTENSITY															
SUM OF AI IN SYSTEM															
AI ENTERING CATCH BASIN															
ACCUMULATED TIME															
TIME IN PIPE															
TIME TO INLET															
LINE SEGMENT															

**TOWN OF BROOKLYN
INLAND WETLANDS AND WATERCOURSES COMMISSION
69 SOUTH MAIN STREET
BROOKLYN, CT 06234
(860) 779-3411 EXT. 31 AND EXT. 12
M.Washburn@BrooklynCT.org**

**ORDER TO REMEDIATE
Inland Wetlands and Watercourses Violations**

CERTIFIED#

9489 0090 0027 6215 8997 70

To: Edward L. Branciforte
36 Paradise Drive
Brooklyn, CT 06234

April 5, 2021

Location of Violation:
36 Paradise Drive
Brooklyn, CT 06234
Assessors Map 14 Lot 3-8

Facts

The following activities have been observed to have occurred on your property without an Inland Wetlands and Watercourses Permit: Vegetation has been removed and material has been deposited in the Upland Review Area and Wetlands, beyond the approved limit of work shown on the approved Septic System Design Plan Prepared For Jeff Weaver, Lot 3 Paradise Drive, Brooklyn Connecticut. Dated October 24, 2013. Your activities, conducted without a permit from the regulatory authority are in violation of the Brooklyn Inland Wetlands and Watercourses Regulations.

Applicable Laws and Regulations

The Brooklyn Inland Wetlands and Watercourses Regulations define, in part, a "regulated activity" as "any operation within or use of a wetland or watercourse involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of such wetlands or watercourses....". "Material" is defined to include "means any substance, solid or liquid, organic or inorganic, including but not limited to soil, sediment, aggregate, land, gravel, clay, bog, mud, debris, sand, refuse or waste". The term "pollution" is defined to include "harmful thermal effect or the contamination or rendering unclean or impure of any waters of the state by reason of any waste or other materials discharged or deposited therein by any public or private sewer or otherwise so as directly or indirectly to come in contact with any waters. This includes, but is not limited to, erosion and sedimentation resulting from any filling, land clearing or excavation activity".

The phrase "rendering unclean or impure" is further defined as "any alteration of the physical, chemical or biological properties of any waters of the state, including, but not limited to, change in odor, color, turbidity or taste".

Furthermore, a "significant impact" is defined as "any activity, including, but not limited to, the following activities which may have a major effect:

1. Any activity involving deposition or removal of material which will or may have a substantial effect on the wetland or watercourse or on wetlands or watercourses outside the area for which the activity is proposed.
2. Any activity which substantially changes the natural channel or may inhibit the natural dynamics of a watercourse system.
3. Any activity which substantially diminishes the natural capacity of an inland wetland or watercourse to: support aquatic, plant or animal life and habitats; prevent flooding; supply water; assimilate waste; facilitate drainage; provide recreation or open space; or perform other functions.
4. Any activity which is likely to cause or has the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.
5. Any activity which causes substantial diminution of flow of a natural watercourse or groundwater levels of the wetland or watercourse.
6. Any activity which is likely to cause or has the potential to cause pollution of a wetland or watercourse.
7. Any activity which damages or destroys unique wetland or watercourse areas or such areas having demonstrable scientific or educational value."

"Upland Review Area" means "non-wetland or non-watercourse areas where activities are likely to impact or affect wetlands or continuous watercourses".

Section 4 of the Regulations addresses exemptions, and Section 6.1 provides that any regulated activity requires a permit.

Section 6.2 states "Any person found to be conducting or maintaining a regulated activity without the prior authorization of the Commission, or violating any other provision of these regulations, shall be subject to the enforcement proceedings and penalties prescribed in section 14 of these regulations and any other remedies as provided by law".

The deposition of material within the upland review area and wetlands without a permit constitutes both a "regulated activity" and a "significant impact" under the Regulations and fall within no allowable exception. Therefore, said activities constitute a violation of the Brooklyn Inland Wetlands and Watercourses Regulations because of, at a minimum, the following condition:

- a. The "deposition or removal of material which will or may have a substantial effect on the wetland or watercourse".

Order

You are hereby ordered to do the following:

Remediate the disturbed areas within regulated areas or within one hundred and twenty-five (125) feet of a regulated area, specifically including, but not limited to, the removal of the material deposited by the owner of 36 Paradise Drive, Brooklyn, CT involved in the work beyond the sediment controls shown on the approved Septic System Design Plan Prepared For Jeff Weaver, Lot 3 Paradise Drive, Brooklyn Connecticut. Dated October 24, 2013 (the "approved plan").

Double-staked hay bales shall be installed at the toe of the material that has been deposited in wetlands for the linear length of the remediation activities in order to act as sediment controls to prevent material from entering further into wetlands or the stream during the remediation project. These double-staked hay bales must be installed prior to any remediation activity occurring and will remain in place until native vegetation has sufficiently stabilized the exposed soil. You are hereby ordered to install the double-staked hay bales ties on or before 4/26/2021.

The locations of the wetlands flags shown on the approved plan must be staked in the field with visible markings by a Land Surveyor licensed to work in Connecticut on or before 5/3/2021.

Restoration Plan

You shall obtain a remediation plan prepared by a licensed professional which addresses the following: Show the location of the wetlands flags shown on the approved plan. Show the 125-foot upland review area projected by the wetlands flags shown on the approved plan. Quantify and show the number of square feet of upland review area and wetlands that have been altered beyond the limit of sediment controls shown on the approved plan. Show a stockpiling area outside the upland review area where material excavated from the altered upland review area and wetlands will be temporarily stockpiled. Show properly entrenched silt fence between the stockpiling area and the upland review area. Indicate the final destination of the excavated material outside any upland review area or wetlands in the Town of Brooklyn. Include a native species remediation planting plan to replace the vegetation removed from the upland review area and wetlands beyond the sediment controls shown on the approved plan. Only native plant species shall be included in the remediation planting plan. No invasive species shall be planted. The restoration plan prepared and certified by a licensed professional must be submitted to the Commission on or before 5/31/21.

The restoration plan must be approved by the Commission prior to starting any work except for installing hay bales at the toe of the slope of the material that has been deposited in wetlands.

A cash bond in an amount sufficient to cover the work in the remediation plan (the amount to be estimated by the licensed professional retained by you and submitted in writing) approved by the Commission upon the approval of the remediation plan shall be submitted within ten (10) days following Commission approval of the remediation plan.

The removal of deposited material from the upland review area and wetlands beyond the sediment controls shown on the approved plan must be supervised by a soils scientist or other licensed professional A written, signed contract for the supervising licensed professional to

oversee the removal of deposited material from the upland review area and wetlands beyond the sediment controls shown on the approved plan must be submitted to the Commission on or before 6/30/21.

The deposited material must be removed from the upland review area and wetlands beyond the sediment controls shown on the approved plan, under the supervision of a licensed professional, on or before 8/31/21.

The remediation plantings shall be completed as per the remediation plan, and a written report prepared, certified and signed by the supervising licensed professional shall be submitted to the Commission by 10/31/21.

If all remediation work is to be done under the timeline outlined above and as established by the Commission cannot be completed on time, you must appear before the commission to explain the delay and to request an extension. Be advised that if the Commission is not satisfied with your explanation for the delay in completion, the Commission may call the bond and use the funds to complete the restoration plan.

The Commission members or its duly authorized agent may make regular inspections of the required remediation work during reasonable hours.

Failure to meet any of the deadlines in this Order may result in the issuance of citations as well as the calling of the bond.

Show Cause Hearing

In accordance with Section 15.7 of the Regulations, a Show Cause Hearing will be held on this Order on Tuesday, April 13, 2021 at 6:00 p.m. via Webex. At this hearing, you will be given an opportunity to be heard and to show cause why this Order should not remain in effect.

Depending on the decision of the Agency, a copy of this Order, or a modified version of it, may be filed on the Brooklyn Land Records. To attend this hearing follow the instructions on the attached draft meeting agenda.

Dated at Brooklyn, this 5th day of April 2021.

Margaret Washburn

Margaret Washburn, Enforcement Officer of the Brooklyn
Inland Wetlands and Watercourses Commission



TOWN OF BROOKLYN

69 South Main Street • Suite 22
BROOKLYN, CONNECTICUT 06234
860-779-3411 Ext. 12

The Brooklyn Inland Wetlands and Watercourses Commission regular meeting schedule for 2024 will be held at 6:00 p.m. on the following dates:

2024 MEETING DATES:

January 9, 2024

February 13, 2024

March 12, 2024

April 9, 2024

May 14, 2024

June 11, 2024

July 9, 2024

August 13, 2024

September 10, 2024

October 8, 2024

November 12, 2024

December 10, 2024

Town of Brooklyn

Inland Wetlands Budget FY24

From Date: 11/1/2023

To Date: 11/30/2023

Fiscal Year: 2023-2024

☐ Subtotal by Collapse Mask

☐ Include pre encumbrance

☒ Print accounts with zero balance

☒ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.41.4163.51900	Inland Wetlands-Wages-Recordin	\$1,000.00	\$87.50	\$525.00	\$475.00	\$0.00	\$475.00	47.50%
1005.41.4163.53020	Inland Wetlands-Legal Fees	\$3,500.00	\$0.00	\$0.00	\$3,500.00	\$0.00	\$3,500.00	100.00%
1005.41.4163.53200	Inland Wetlands-Professional A	\$65.00	\$0.00	\$0.00	\$65.00	\$0.00	\$65.00	100.00%
1005.41.4163.53400	Inland Wetlands-Professional S	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55400	Inland Wetlands-Advertising &	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55500	Inland Wetlands-Printing & Pub	\$120.00	\$0.00	\$0.00	\$120.00	\$45.00	\$75.00	62.50%
1005.41.4163.56900	Inland Wetlands-Other Supplies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%
Grand Total:		\$5,685.00	\$87.50	\$525.00	\$5,160.00	\$45.00	\$5,115.00	89.97%

End of Report