

**TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
NOTICE OF PUBLIC HEARING**

The Planning and Zoning Commission will hold a public hearing on February 21, 2023, at 6:30 p.m. via Zoom and in-person at the Brooklyn Middle School Auditorium, 119 Gorman Road Brooklyn, CT on the following:

- **SD 22-004:** One lot Resubdivision including 2 acres on Allen Hill Road/Wauregan Road (Map 31, Lot 97C), Applicant: Wayne Jolley/Lori Pike.
- **SP 22-007:** Special Permit for an Events Facility at 459 Wolf Den Road, Applicants: Nicole and Greg Fisher.

Please publish February 8th and 15th



PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONNECTICUT

Received Date _____
By _____

Application # SD 22-004
Check # 6904

APPLICATION FOR SUBDIVISION/RESUBDIVISION

Name of Applicant WAYNE JOLLEY / LORI PUIE Phone 208 736 4
Mailing Address 524 WARREN RD
Applicants Interest in the Property DUNTON

Property Owner WAYNE JOLLEY Phone 208-7364
Mailing Address 524 WARREN RD Brooklyn

Name of Engineer/Surveyor ARTHUR SWANING LLC
Address 18 PROVIDENCE RD
Contact Person PAUL ANTON Phone 979-2280 Fax _____

Name of Attorney _____
Address _____
Phone _____ Fax _____

Subdivision _____ Re subdivision
Property location ACORN HILL RD / WARREN RD
Map # 31 Lot # 97C Zone RA Total Acres 5 +/- Acres to be Divided 2.1
Number of Proposed Lots 1 Length of New Road Proposed _____
Sewage Disposal: Private _____ Public _____

Note: Hydrological report required by Section 11.6.2

Length of new Sewer proposed: Sanitary _____ Storm _____
Water: Private _____ Public _____

Is parcel located within 500 feet of an adjoining Town? No

The following shall accompany the application when required:

- 4.2.2 Fee \$ _____ State (\$60.00) _____
- 4.2.3 Sanitary Report _____
- 4.2.5, 3 copies of plans _____
- 4.2.4 Application/ Report of Decision from the Inland Wetlands Com. & the Conservation Com.
- 4.2.6 Erosion & Sediment Control Plans
- 4.2.7 Certificate of Public Convenience and Necessity
- 4.2.8 Applications filed with other Agencies

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: Wayne Jolley Lori Puié Date 12-7-22
Owner: Wayne Jolley Lori Puié Date 12-7-22

*Note: All consulting fees shall be paid by the applicant

1 LOT RE SUBDIVISION

PREPARED FOR

Wayne Jolley & Lori Pike

Allen Hill Road
Brooklyn, Connecticut

Revised: November 28, 2022
November 3, 2022



PREPARED BY

A **ACHER Surveying LLC**
18 Providence Road, Brooklyn, CT
(860) 779-2240

KWP **associates**
SURVEYING ~ ENGINEERING ~ SITE PLANNING
18 Providence Road
Brooklyn, CT 06234

INDEX OF DRAWINGS

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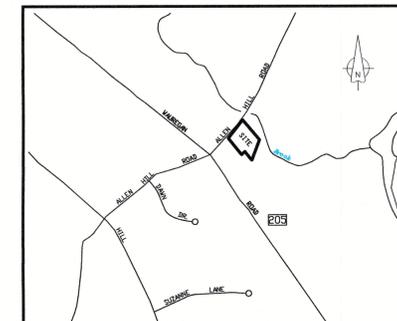


APPROVED BY THE BROOKLYN
INLAND WETLANDS COMMISSION

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: _____



Location Map

SCALE
1000 0 1000
1" = 1000 FT

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 26, 1996
 - This Survey conforms to a Class "A-2" Horizontal Accuracy Class "T-2" Vertical Accuracy
 - Survey Type: Site Development Plan
 - Boundary Determination: Resurvey on Existing Original on new Lot
 - Intent: Residential Development
- Parcels shown as 97C on Assessors Tax Map 31 of the Brooklyn Assessors Office
- Topographic information obtained from an actual field survey.
- Wetlands were delineated by Joseph Theroux and field located by Archer Surveying LLC.
- This Subdivision does include land areas within the Federal Emergency Management Agency's 100 year flood hazard area
- There are not Known endangered species or species of special concern on the subject property nor within 1 mile of the subject property per the December 2021 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.
- North orientation, bearings and coordinate values shown are based on Map Reference #1
- Passive Solar Energy techniques were considered in the design of the subdivision

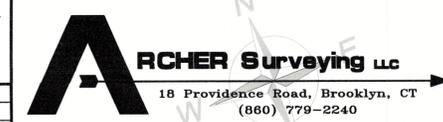
David A. Smith
DAVID A. SMITH, P.E. #14173 DATE 11/28/2022
NOT VALID UNLESS SEAL IS AFFIXED HERETO

To my knowledge and belief, this map is substantially correct, as noted hereon.
Paul M. Archer
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.

Site Development Plan

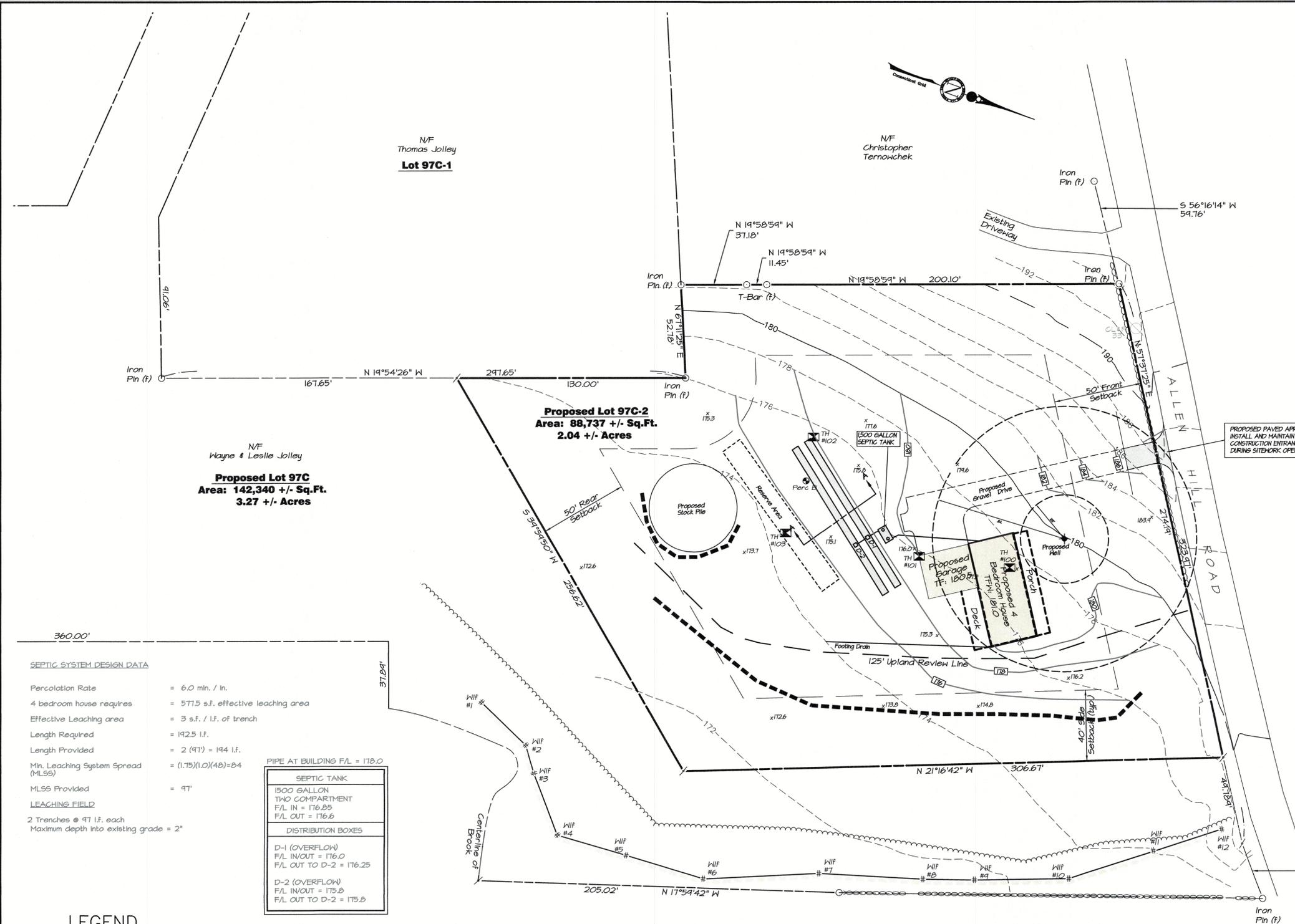
Prepared For:
Wayne Jolley & Lori Pike
Allen Hill Road
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'



18 Providence Road, Brooklyn, CT (860) 779-2240

Sheet No. 3 of 5 Project No. 2046 Date: November 3, 2022



SEPTIC SYSTEM DESIGN DATA

- Percolation Rate = 6.0 min. / in.
- 4 bedroom house requires = 571.5 s.f. effective leaching area
- Effective Leaching area = 3 s.f. / l.f. of trench
- Length Required = 192.5 l.f.
- Length Provided = 2 (97') = 194 l.f.
- Min. Leaching System Spread (MLSS) = (1.75)(1.0)(48)=84
- MLSS Provided = 97'
- LEACHING FIELD
2 Trenches @ 97 l.f. each
Maximum depth into existing grade = 2'

SEPTIC TANK	
1500 GALLON	
THO COMPARTMENT	
F/L IN = 176.25	
F/L OUT = 176.6	
DISTRIBUTION BOXES	
D-1 (OVERFLOW)	F/L IN/OUT = 176.0
	F/L OUT TO D-2 = 176.25
D-2 (OVERFLOW)	F/L IN/OUT = 175.8
	F/L OUT TO D-2 = 175.8

LEGEND

- PROPERTY LINE
- EASEMENT
- STONEWALL
- STONEWALL REMAINS
- EXISTING TREELINE
- SILT FENCE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS FLAG
- BUILDING SETBACK
- IRON PIN
- DRILL HOLE
- MONUMENT
- PERCOLATION TEST
- TEST PIT
- PROPERTY POINT
- UTILITY POLE

DEEP TEST PIT DATA / SOIL DESCRIPTIONS

PERFORMED BY:Maureen Marcoux
WITNESSED BY:NORTHEAST DISTRICT DEPARTMENT OF HEALTH DATE: 12/13/2021

TEST PIT: 100	TEST PIT: 101
0" - 15" Topsoil w/ Roots	0" - 12" Topsoil w/ Roots
15" - 40" Brown Fine Sandy Loam	12" - 21" Brown Fine Sandy Loam
40" - 72" Gray Silty Sand Band	21" - 24" Gray Silty Fine Sand Band
40" - 72" Sand & Gravel	24" - 35" Sand & Gravel
	35" - 84" Grey Very Fine Sandy Silt
MOTTLES: NO	MOTTLES: 21"
GROUNDWATER: NO	GROUNDWATER: NO
LEDGE: NO	LEDGE: NO
ROOTS: NO	ROOTS: NO
RESTRICTIVE: 38"	RESTRICTIVE: 21"

PERCOLATION DATA

PERFORMED BY:Maureen Marcoux
WITNESSED BY:NORTHEAST DISTRICT DEPARTMENT OF HEALTH DATE: 12/13/2021

TIME	DROP (INCHES)
12:00	2.0
12:10	5.5
12:15	6.75
12:20	7.75
12:25	Empty
PERCOLATION RATE > 5.0 MIN./IN.	
NOTES: PERCOLATION TEST PERFORMED ON 12/13/21 PERFORMED BY Maureen Marcoux	

DEEP TEST PIT DATA / SOIL DESCRIPTIONS

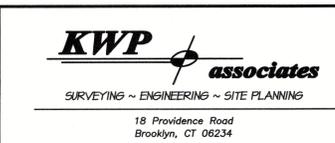
PERFORMED BY:Donovan Moe
WITNESSED BY:NORTHEAST DISTRICT DEPARTMENT OF HEALTH DATE: 9/9/2022

TEST PIT: 102	TEST PIT: 103
0" - 12" Topsoil	0" - 8" Topsoil
12" - 24" Brown Fine Sandy Loam	8" - 20" Brown Sandy Loam with Peddles
24" - 34" Tan Fine Sand	20" - 72" Gray Fine Silty Sandy Loam
34" - 42" Gray Silty Coarse Sand & Gravel	
42" - 80" Washed Coarse Sand & Gravel	
MOTTLES: 34"	MOTTLES: 20"
GROUNDWATER: NO	GROUNDWATER: NO
LEDGE: NO	LEDGE: NO
ROOTS: NO	ROOTS: NO
RESTRICTIVE: 34"	RESTRICTIVE: 20"

PERCOLATION DATA

PERFORMED BY:Donovan Moe
WITNESSED BY:NORTHEAST DISTRICT DEPARTMENT OF HEALTH DATE: 9/9/2022

TIME	DROP (INCHES)
9:00	14.0
9:06	17.0
9:12	18.0
9:18	19.0
9:24	20.0
9:30	21.0
9:36	22.0
PERCOLATION RATE > 6.0 MIN./IN.	
NOTES: PERCOLATION TEST PERFORMED ON 9/9/2021 PERFORMED BY Donovan Moe	



REVISIONS	
DATE	DESCRIPTION
11-28-22	New House Location & Septic System

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 Windham County Connecticut, U.S.D.A. Soil Conservation Service 1483.

DEVELOPMENT SCHEDULE (Individual Lots):

1. Prior to any work on site, the limits of disturbance shall be clearly flagged in the field by a Land Surveyor, licensed in the State of Connecticut. Once the limits of clearing are flagged, they shall be reviewed and approved by an agent of the Town.
2. Install and maintain erosion and sedimentation control devices as shown on these plans. All erosion control devices shall be inspected by an agent of the Town. Any additional erosion control devices required by the Town's Agent shall be installed and inspected prior to any construction on site. (See silt fence installation notes.)
3. Install construction entrance.
4. Construction will begin with clearing, grubbing and rough grading of the proposed site. The work will be confined to areas adjacent to the proposed building, septic system and driveway. Topsoil will be stockpiled on site and utilized during final grading.
5. Begin construction of the house, septic system and well.
6. Disturbed areas shall be seeded and stabilized as soon as possible to prevent erosion.
7. The site will be graded so that all possible trees on site will be saved to provide buffers to adjoining lots.

DEVELOPMENT CONTROL PLAN:

1. Development of the site will be performed by the individual lot owner, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town will be notified when sediment and erosion control structures are initially in place. Any additional soil erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water and if necessary, the application of calcium chloride.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
6. Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover", if necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

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 15 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 overlapped, 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 overlapped, 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 1000 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 45%-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.

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 minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, refill compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
6. 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.

SEPTIC SYSTEM CONSTRUCTION NOTES

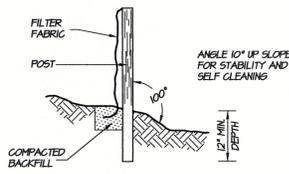
1. The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
2. Topsoil shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications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

GRADATION OF FILL (MINUS GRAVEL)

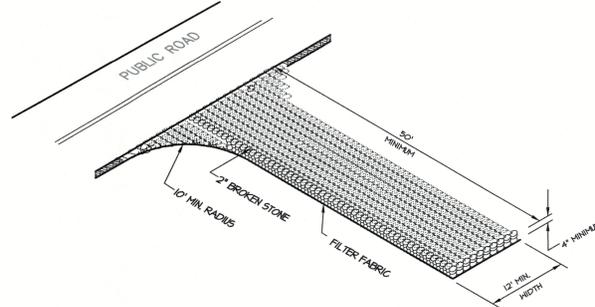
SIEVE SIZE (WET SIEVE)	PERCENT PASSING	PERCENT PASSING (DRY SIEVE)
No. 4	100%	100%
No. 10	10% - 100%	10% - 100%
No. 40	10% - 50%	10% - 75%
No. 100	0% - 20%	0% - 5%
No. 200	0% - 5%	0% - 2.5%

Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of ten feet (10') beyond the last leaching trench before tapering off.

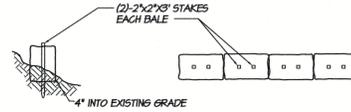
3. Septic tank shall be two compartment precast 1250 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.
4. Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.
5. All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.
6. 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 shall have a slope less than 0.125 inches per foot.
7. Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D-2124 or ASTM D-3350, 1500 lb. minimum crush.
8. Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1185. 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.
9. Force main pressure pipe from pump chamber to the leaching field shall be 2" diameter pvc meeting ASTM D 2241 SDR 21.
10. 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.



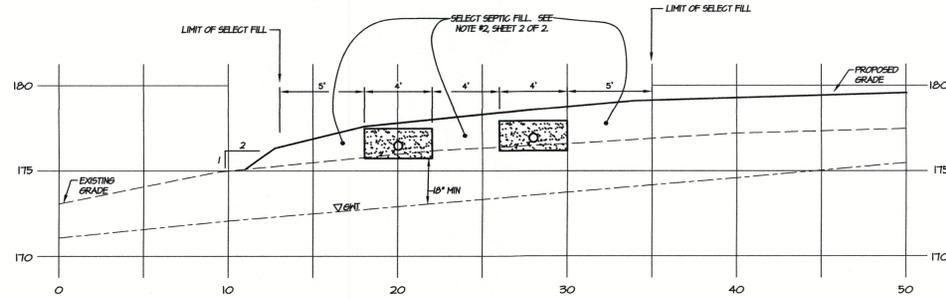
SILT FENCE
NOT TO SCALE



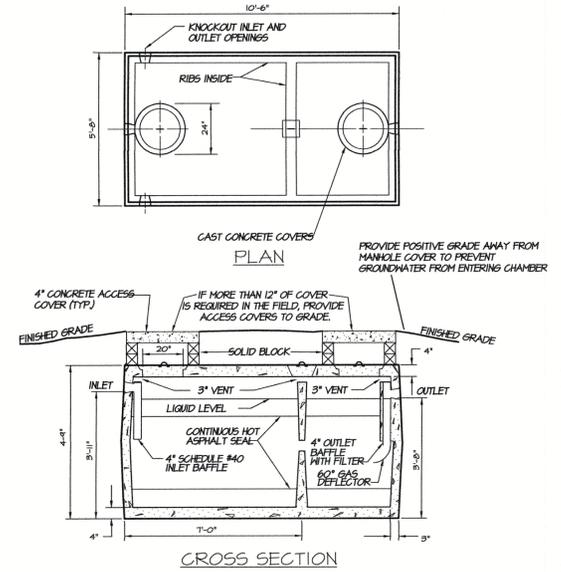
CONSTRUCTION ENTRANCE
NOT TO SCALE



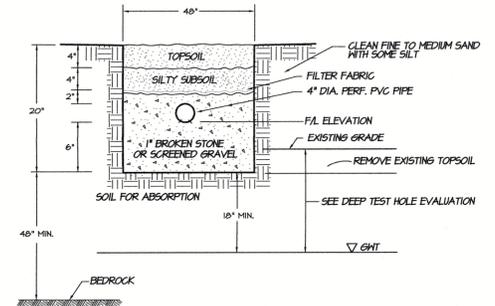
HAYBALE BARRIER
NOT TO SCALE



CROSS SECTION "A-A"
SCALE: 1" = 5'



1500 GALLON 2 COMPARTMENT SEPTIC TANK
NOT TO SCALE



TYPICAL LEACHING TRENCH SECTION
NOT TO SCALE

Site Development Plan "Detail Sheet"

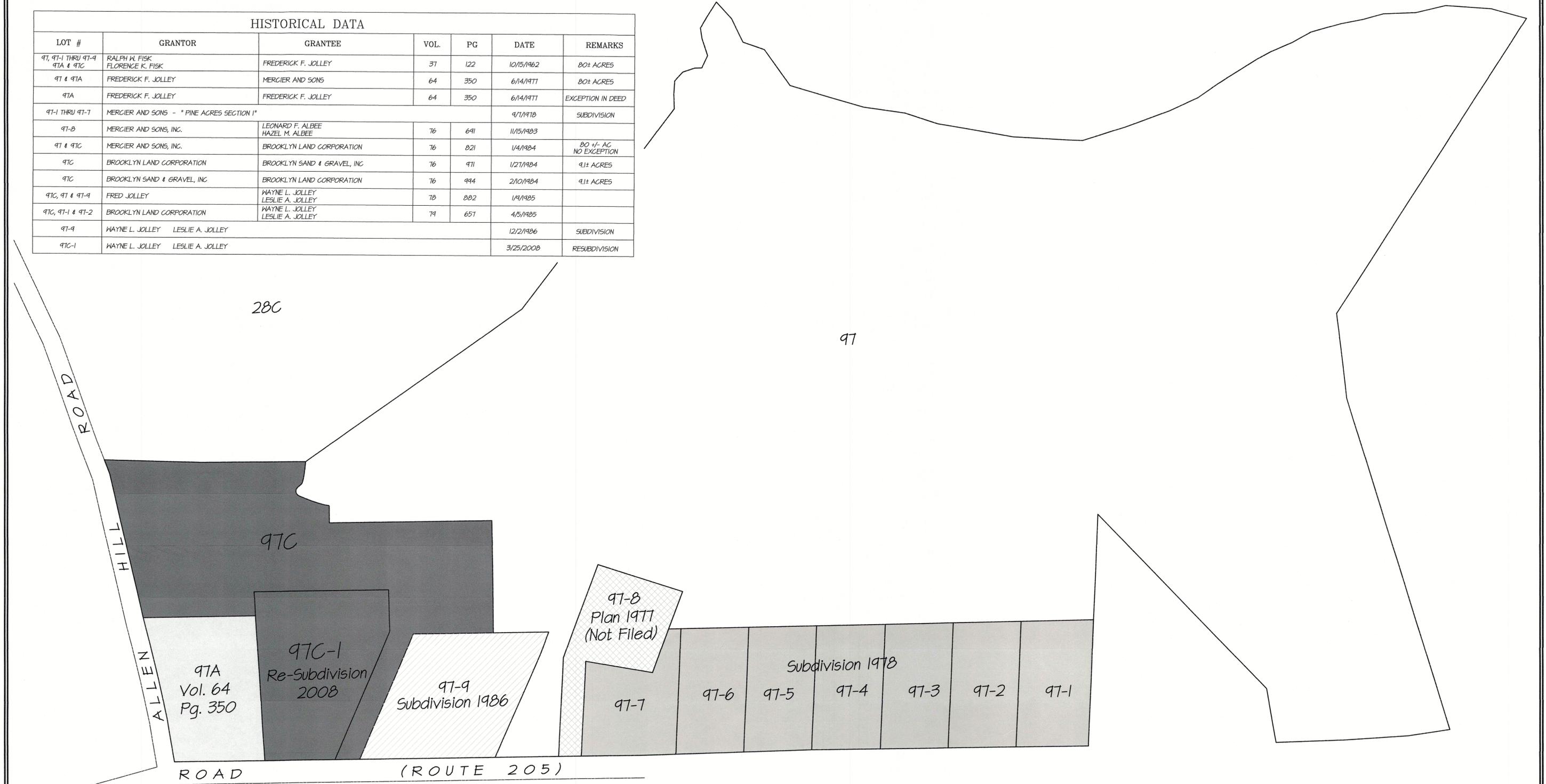
Prepared For:
Wayne Jollye & Lori Pike
Allen Hill Road
Brooklyn, Connecticut

KWP associates
SURVEYING ~ ENGINEERING ~ SITE PLANNING
18 Providence Road
Brooklyn, CT 06234

REVISIONS	
DATE	DESCRIPTION

ARCHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240

HISTORICAL DATA						
LOT #	GRANTOR	GRANTEE	VOL.	PG	DATE	REMARKS
97, 97-1 THRU 97-9 97A & 97C	RALPH W. FISK FLORENCE K. FISK	FREDERICK F. JOLLEY	37	122	10/15/1962	80± ACRES
97 & 97A	FREDERICK F. JOLLEY	MERCIER AND SONS	64	350	6/14/1977	80± ACRES
97A	FREDERICK F. JOLLEY	FREDERICK F. JOLLEY	64	350	6/14/1977	EXCEPTION IN DEED
97-1 THRU 97-7	MERCIER AND SONS - "PINE ACRES SECTION I"				9/7/1978	SUBDIVISION
97-B	MERCIER AND SONS, INC.	LEONARD F. ALBEE HAZEL M. ALBEE	76	691	11/15/1983	
97 & 97C	MERCIER AND SONS, INC.	BROOKLYN LAND CORPORATION	76	821	1/4/1984	80 ±- AC NO EXCEPTION
97C	BROOKLYN LAND CORPORATION	BROOKLYN SAND & GRAVEL, INC	76	971	1/27/1984	9.1± ACRES
97C	BROOKLYN SAND & GRAVEL, INC	BROOKLYN LAND CORPORATION	76	994	2/10/1984	9.1± ACRES
97C, 97 & 97-9	FRED JOLLEY	WAYNE L. JOLLEY LESLIE A. JOLLEY	78	882	1/9/1985	
97C, 97-1 & 97-2	BROOKLYN LAND CORPORATION	WAYNE L. JOLLEY LESLIE A. JOLLEY	79	657	4/5/1985	
97-9	WAYNE L. JOLLEY LESLIE A. JOLLEY				12/2/1986	SUBDIVISION
97C-1	WAYNE L. JOLLEY LESLIE A. JOLLEY				3/25/2008	RESUBDIVISION



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;

- This survey conforms to a Class "D" horizontal accuracy.
- Survey Type: Compilation Plan
- Intent: Parcel History

2. The boundary information on this plan was compiled from other maps, record research or other sources of information. It is not to be construed as having been obtained as the result of a field survey and is subject to such change as an accurate field survey may disclose.

3. The property lines depicted do not present a surveyor's property / boundary opinion.

To my knowledge and belief, this map is substantially correct as noted hereon.

[Signature]
 Paul M. Archer, Conn. L.S. #70013
 12/1/2022

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

KWP associates	
SURVEYING ~ ENGINEERING ~ SITE PLANNING	
18 Providence Road Brooklyn, CT 06234	
REVISIONS	
DATE	DESCRIPTION

History Plan

Prepared For:
Wayne Jolley & Lori Pike
 Allen Hill Road
 Brooklyn, Connecticut

DRAWING SCALE: 1"=100'

ARCHER Surveying LLC
 18 Providence Road, Brooklyn, CT
 (860) 779-2240

Sheet No.	5 OF 5	Project No.	2046	Date:	November 2, 2022
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PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONNECTICUT

Received Date 12/1/22

Application #SP 22-007

Check #



APPLICATION FOR SPECIAL PERMIT

By NICOLE + GREG FISHER Phone 617-955-7734 (N)

Mailing Address 53 BARNARD AVE, WATERTOWN, MA 02472 Phone

Name of Engineer/Surveyor DANIEL BLANCHETTE / J+D CIVIL ENGINEERS

Address 401 RAVENELLE RD, N. GROSVENORDALE, CT 06255

Contact Person DANIEL BLANCHETTE Phone 860-923-2920 Fax

Name of Attorney N/A

Address

Phone Fax

Property location/address 459 WOLF DEN RD

Map# 10 Lot# 18A/B Zone RA Total Acres 97

Sewage Disposal: Private Public Existing Proposed

Water: Private Public Existing Proposed

Proposed Activity SEE ATTACHMENT

Compliance with Article 4, Site Plan Requirements:

Is parcel located within 500 feet of an adjoining Town?

The following shall accompany the application when required:

Fee \$ 655 State Fee (\$60.00) 3 copies of plans Sanitary Report

4.5.5 Application/ Report of Decision from the Inland Wetlands Commission

4.5.5 Applications filed with other Agencies

12.1 Erosion and Sediment Control Plans

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: [Signature] Date 11/29/22

Owner: [Signature] Date 11/29/22

*Note: All consulting fees shall be paid by the applicant

**PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONNECTICUT**

Received Date _____
Action Date _____

Application # 588
Check # _____

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant: BUCKLE + GREG ELSNER Phone: 617-955-7784 (M)
Mailing Address: 53 BARNARD AVE, WATER TOWN, MA 02472 Phone: _____

Name of Owner: BUCKLE WINEYARD HOLDINGS INC Phone: 617-955-7784
Mailing Address: 53 BARNARD AVE, WATER TOWN, MA 02472 Phone: _____

Name of Engineer/Designer: J + D CIVIL ENGINEERS
Address: 401 STATE ROUTE RD, NURDINGBORO, CT 06255
Contact Person: _____ Phone: 860- Fax: _____
OPHEL BLANCHETTE 923-2926

Regulatory Information: 459 WINE TOWN RD
Map No. 18 Lot # 18A (Area) EA Total Acres: 97

Proposed Activity: PERMITS SEE ATTACHMENT

Change of Use: Yes _____ No _____ If Yes, Previous Use: _____
Area of Proposed Structure(s) or Expansion: _____

Utilities - Septic: On Site Municipal _____ Existing Proposed _____
Water: Private Public _____ Existing Proposed _____

Compliance with Article 4, Site Plan Requirements

The following shall accompany the application when required:

- Fee \$ 655 State Fee (\$60.00) _____ 3 copies of plans _____ Sanitary Report _____
- 4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
- 4.5.5 Applications Filed with other Agencies
- 12.1 Erosion and Sediment Control Plans
- See also Site Plan Review Worksheet

Variances obtained _____ Date _____

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: _____ Date 11/29/22

Owner: _____ Date 11/29/22

*Note: Any consulting fees will be paid by the applicant

To the town of Brooklyn Planning and Zoning Committee,

We, Nicole Wineland-Thomson Fisher and Gregory Fisher, are asking you to consider granting our request for a special permit to create an upscale wedding and event venue at 459 Wolf Den Road which we will name Willow Hill.

For the past two years we have been searching for a location that not only has the land, but also a wonderful town and community...a place where we can raise our family of six. When we found 459 Wolf Den Road and spoke with community members, we were convinced that Brooklyn was the perfect town for our dream to unfold.

Preserving the land is of the utmost importance to us. Our dream is to utilize the existing spaces and endless open fields predominantly as a wedding venue as well as a community center for corporate events, private events, town events, etc. The incredible Sigfridson barn that is already on site is to be utilized as is. We want to replace the smaller windows with larger, floor to ceiling windows, to enhance the view to the outdoor space, and rolling acres, but otherwise we want to leave it untouched. The same goes for the rest of the property.

We realize there are specific additions we need to incorporate, such as a parking lot, and handicap access, but we want to do these in the most minimally invasive way. Keeping the impact to the environment as low as possible is our goal and our promise to the community of Brooklyn. When we planned everything with our civil engineer and landscape architect we spent a lot of time thinking carefully about lighting and materials. For example, we want a sign and a driveway that echo the beautiful stone walls along Wolf Den and Bush Hill roads. For the parking lot, we plan to excavate into the hill side which will hide the parking lot from the road. We want to lay gravel, plant trees and shrubs, and encase the parking lot so it's not an eyesore. This speaks again to our goal to preserve what is currently there.

Our plan is to create a positive fiscal impact on the town of Brooklyn, not only by promoting local businesses, but also hiring local services ourselves. For example, we will need to hire cleaners to help keep the venue space clean and in immaculate condition between each event, landscapers to keep the lawn and plants healthy and neat, and to partner with a transportation company for our guests, etc. All of these services are necessary for our business, so they would not only create a positive impact for our venue but also a positive impact for the town as we would be hiring these local businesses directly.

Most importantly, speaking to the neighborhood and abutters that surround us at 459 Wolf Den Road, we want to be mindful of the community. Although we are fully aware that a wedding and event venue is allowed in any zone of town (with the approval of a special permit), we are taking extra measures when we consider noise and number of events. Our goal is to have no more than 70 events with amplified noise (community event with speakers or a wedding), and up to 30 events of non-amplified noise (think yoga retreats, for example) in a calendar year. We will have a strict noise ordinance of 10:00p for any and all events. Transportation services will be highly encouraged, as we want to minimize traffic by the use of buses from local hotels, and to

most importantly, keep our clients' guests and surrounding neighbors safe. These will be written into our contract with our clients. Lastly, we will require that each event has a full service catering team to dispose of trash at the end of the evening—consider this a "leave no trace" policy. With these requirements in place, the property will return to its typical state once the event is finished. Keep in mind, this is also our home, so we want it to remain as beautiful, if not more, than how we found it. We believe all of these things will help with the surrounding community.

We look forward to meeting you in person and answering any questions you may have.

Thank you,
Nicole and Greg

J & D CIVIL
ENGINEERS, LLC

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

November 30, 2022

Town of Brooklyn
Planning and Zoning Commission
4 Wolf Den Road (PO Box 356)
Brooklyn, CT 06234

RE: Job #22172
Project Summary for
Proposed Event Venue
At 459 Wolf Den Road

Dear Commissioners:

J&D Civil Engineers is pleased to submit this project summary for the above referenced project. J&D has been retained by Willow Hill LLC to assist with converting an existing house and barn into a rustic event venue. My client Nicole Wineland-Thomson Fisher recently purchased this property, and is proposing to hold weddings, banquets, yoga retreats, and other similar events at the site. No new buildings are proposed, the only construction will consist of a gravel parking lot and driveway, a drainage system, retaining walls, improving an existing driveway, and some landscaping. This project is located in the Residential-Agricultural (RA) Zone and will require a Special Permit and Public Hearing.

Project Location

The site is located at 459 Wolf Den Road in Brooklyn, approximately 2,000 feet south of the former Gold Lamb Buttery facility. The property is located on the west side of the street, and consists of two separate building lots. The original parcel Lot 18A is 4 acres in size, and contains the existing house and detached garage. The second parcel Lot 18B is 96 acres in size, and consists of several different portions acquired by the previous owner over a number of years. The larger Lot 18B extends all the way west to Blackwell Brook. The major portion of all events shall occur on Lot 18B, in the barn or tent.

Project Description

The historic 5 bedroom house, built in 1790, will not be a permanent residence. This house will be vacant most of the time and only used during events, primarily for the wedding party to stay overnight if preferred. The house will have a maximum occupancy of 10 persons.

The existing barn was built in 2008 and has a capacity of 110 persons. This barn will be used to hold smaller events, or events in inclement weather. A temporary tent will be constructed for larger events, with a maximum occupancy of 225 persons. The maximum numbers of persons on site shall not exceed 225 persons. A portable bathroom trailer will be rented for all events, and the existing septic system in the barn will not be used by guests. No food will be prepared on site, all events will be professionally catered.

My client intends to preserve the rustic and agricultural character of the site to the greatest extent possible. All proposed signage, landscaping, and lighting shall be in a rustic style. Only four residences are located within 1,000 feet of the event site, and no noise or light pollution is expected to impact these sites. The events will occur approximately 500 feet off the road, and 30-40 feet lower than the road elevation, providing a significant natural buffer. Please see the "activity description" and "owner's statement" attached to this application for more information.

Wetland Summary

The site contains a significant amount of wetland soils towards the western edge, where the property borders Blackwell Brook. However, these wetland soils are approximately 1,000 feet downhill of the proposed construction. The area of construction was investigated by licensed soil scientist Richard Zulick, and his report is included with this submission. He determined that no wetland soils exist near the area of construction. He did observe a small pocket of wetland soils at the southeast corner of the site. These wetland soils are at least 500 feet from any proposed construction. Therefore, it is our understanding that a wetland permit is not required for this project. There are no expected impacts to wetland soils as a result of this project.

Drainage Summary

According to the soil scientist, the soils on site appear to be Woodbridge fine sandy loams. This is corroborated by the soils listed on the NRCS website, they describe 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 existing land cover is primarily pasture or lawn, with very few trees and no impervious areas. The site is relatively steep, most of the property is between a 10% and 20% slope. The total drainage area towards the parking lot is approximately 3 acres.

Approximately a half-acre of gravel roads and parking lots will be constructed for this project. This will tend to cause a slight increase in the amount of runoff from the site. A drainage system has been designed to reduce peak flows and provide treatment of stormwater from the parking lot. A grass swale is proposed uphill of the parking lot, to capture clean runoff and direct it away from the parking lot. The parking lot itself will drain into two catch basins, which then discharge to a small stormwater basin across the driveway. This basin will provide a small amount of storage to attenuate peak flows. The basin will also act as a level spreader, to reduce the outlet flow velocity and encourage sheet flow. As runoff leaves the basin, it will flow across 400 feet of lawn, and then 900 feet of mature forest before entering Blackwell Brook. This will provide a significant amount of treatment for the runoff, removing pollutants and sediments before it enters any wetlands or watercourses.

The table below provides Peak Flows in cubic feet per second for various storm events:

	10 Year	25 Year	100 Year
Existing	4.05	5.57	8.00
Proposed	3.74	5.08	7.33

Please see the attached drainage model report, which was created using HydroCAD software to model the existing and proposed conditions on site.

Conclusion

This project has been designed to involve the smallest possible impact to the environment and neighborhood, while creating a valuable business opportunity that should benefit the whole community. The applicant is very interested in preserving the rural and agricultural character of northeast Connecticut, which we all value so highly. The applicant and I look forward to working with the town and P&Z Commission to get this project approved. Please let me know if you have any comments or questions.

Sincerely,

Daniel Blanchette, PE
J&D Civil Engineers LLC

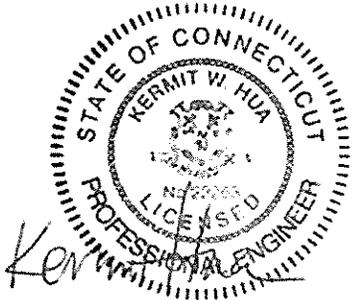


Traffic Impact Study

459 Wolf Den Road
Brooklyn, Connecticut

Prepared for:
J&D Civil Engineers, LLC

Prepared by:
KWH Enterprise, LLC
November 2022



**Traffic Impact Study
459 Wolf Den Road
Brooklyn, Connecticut
November 2022**

This study examines the traffic impact of a proposed event venue at 459 Wolf Den Road in Brooklyn, Connecticut. Peak-hour site trips generated by events, roadway traffic volumes, and traffic capacity at a site driveway were reviewed. For the purpose of this traffic study, 2023 was assumed to be the year during which improvements are built and events are held at this location.

I. Summary

- The proposed event venue is estimated to generate approximately 90 trips for both weekday afternoon and Saturday midday peak hours.
- The traffic impact of this site will be limited. All traffic approaches at a proposed event driveway will operate at favorable LOS (levels of service) A with short delays during the weekday afternoon and Saturday midday peak hours. The development will not create traffic hazards and will not block or hamper the circulation pattern of adjacent roadways.

II. Project Description

The site is located west of Wolf Den Road and about 1,800 feet south of the Bush Hill Road intersection. Proposed improvements will include a wider event driveway, entrance identification, new parking areas, and other site features for events. An existing narrower driveway will be maintained. Next to the site, Wolf Den Road measures about 19 feet in width for two-way traffic. The posted speed limit on Wolf Den Road is 25 mph.

III. Traffic Volumes

Automatic traffic count data were collected on Wolf Den Road on weekdays and on a Saturday in January 2022. Seasonal adjustment factors based on CTDOT data and an annual traffic growth rate of 0.7 percent recommended by CTDOT were applied to the traffic counts to generate 2023 peak-month traffic volumes for Wolf Den Road.

IV. Future Traffic Conditions

Peak-hour site trips in Table 1 were estimated by considering three traffic components during events. Guests will arrive and leave on a bus, which will result in about 20 bus trips (ten entry trips and ten exit trips). There will be about ten delivery vehicles, which will translate into 20 trips (ten entry trips and ten exit trips). Other vehicular trips will total about 100 trips for 50 vehicles. It was assumed that the site trips during the weekday afternoon and Saturday peak hours will consist of exit trips for the bus and delivery vehicles and all entry trips. This is likely to be a conservative assumption; in reality, guest arrivals and deliveries can last more than an hour. During the weekday afternoon peak hour and the Saturday midday peak hour, an event is estimated to generate 90 peak-hour trips (70 entry trips and 20 exit trips).

Table 1 Estimated Site Trips (vph)

Event Venue at 459 Wolf Den Road, Brooklyn, Connecticut			
	Entry	Exit	Entry & Exit
Weekday or Saturday Daily	70	70	140
Weekday Afternoon Peak Hour of Adjacent Road.	70	20	90
Saturday Midday Peak Hour	70	20	90

vph Vehicles per hour

Table 2 details the distribution of the site-generated trips along Wolf Den Road. The distribution takes into account the existing traffic volumes and the roadway network in this part of Brooklyn.

Table 2 Trip Distribution

To / From Route	Entry and Exit
North: Wolf Den Road	35%
South: Wolf Den Road	65%
Total	100%

V. Traffic Capacity Analysis

To assess the quality of traffic flow, intersection capacity analysis was conducted for the future traffic conditions. Capacity analysis provides an indication of how well roadway facilities serve the traffic demands placed upon them. Synchro 10, a software package that includes the evaluation criteria of the *Highway Capacity Manual, 6th Edition*, was used to analyze the intersections.

Level of service (LOS) is the term used to describe the different operating conditions that occur on a given roadway segment or intersection under various traffic conditions. It is a qualitative measure of the effects of a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Six levels of service can be defined for each type of facility. Each level of service (LOS) is given a letter designation from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

Table 3 that follows shows the capacity analysis results for the event driveway intersection under the 2023 build traffic conditions. During the two peak hours, all traffic movements at the event driveway intersection will operate at favorable LOS A with minimal traffic delays. The detailed output sheets are attached to this report.

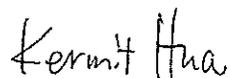
Table 3 Capacity Analyses for Build Conditions

Intersection	2023 Build Conditions			
	Weekday Afternoon Peak Hour of Adjacent Streets		Saturday Midday Peak Hour of Adjacent Streets	
	Delay (sec)	LOS	Delay (sec)	LOS
Wolf Den Road and Event Driveway (Unignalized)				
NB Wolf Den Road Left Turn	7.5	A	7.5	A
NB Wolf Den Road Through	0.0	A	0.0	A
EB Event Driveway	9.0	A	9.0	A

EB Eastbound
 WB Westbound
 NB Northbound
 SB Southbound
 LOS Level of Service

VI. Conclusions

Area traffic operation was analyzed for a proposed event venue at 459 Wolf Den Road under 2023 traffic conditions. When the improvements are built and the facility is in operation, the event driveway intersection will operate at favorable LOS A during peak hours. The traffic impact of future events at this site will be limited and will be adequately and safely accommodated by Wolf Den Road.



Kermit Hua, PE, PTOE
 Principal
 KWH Enterprise, LLC
 (203) 606-3525
 kermit.hua@kwhenterprise.com

Technical Appendices

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF POLICY & PLANNING - ROADWAY INFORMATION SYSTEMS
TRAFFIC DATA COLLECTION & VERIFICATION SECTION

FACTORS FOR EXPANDING 24-HOUR COUNTS TO
ANNUAL AVERAGE DAILY TRAFFIC VOLUMES
(BASED ON 2018 CONTINUOUS COUNT STATION DATA)

GROUP - 1 ** INTERSTATE **

STATION(S): 7, 12, 24, 30, 31, 32, 53, 54

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.08	1.03	1.21	1.41
FEBRUARY		1.04	0.96	1.13	1.45
MARCH		1.05	0.93	1.05	1.21
APRIL		0.99	0.91	1.03	1.17
MAY		0.94	0.83	0.98	1.10
JUNE		0.95	0.90	0.99	1.08
JULY		0.95	0.91	0.97	1.08
AUGUST		0.94	0.86	0.99	1.06
SEPTEMBER		0.99	0.89	0.99	1.08
OCTOBER		0.98	0.90	1.00	1.12
NOVEMBER		0.98	0.98	1.03	1.13
DECEMBER		1.00	0.96	1.04	1.22

GROUP - 2 ** RURAL **

STATION(S): 4, 10, 16, 20, 50, 51

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.12	1.08	1.17	1.48
FEBRUARY		1.12	1.05	1.16	1.55
MARCH		1.08	1.04	1.06	1.32
APRIL		1.05	0.95	0.94	1.29
MAY		0.95	0.89	0.95	1.04
JUNE		0.91	0.80	0.87	0.95
JULY		0.93	0.84	0.87	0.98
AUGUST		0.89	0.83	0.90	0.93
SEPTEMBER		0.97	0.88	0.91	1.02
OCTOBER		0.98	0.88	0.97	1.08
NOVEMBER		1.00	1.02	1.09	1.21
DECEMBER		1.08	1.09	1.11	1.29

GROUP - 3 ** INTERSTATE **

STATION(S): 27 (I-84 FROM ROUTE 195 TO MASS. STATE LINE)

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.02	1.10	1.25	0.99
FEBRUARY		0.86	0.81	1.02	1.22
MARCH		1.46	0.91	0.94	0.93
APRIL		1.22	0.96	1.00	1.00
MAY		1.07	0.73	0.99	0.90
JUNE		1.04	0.84	0.96	0.71
JULY		0.98	0.84	0.80	0.74
AUGUST		0.81	0.75	0.89	0.79
SEPTEMBER		1.11	1.09	1.13	0.81
OCTOBER		1.04	1.06	1.30	0.99
NOVEMBER		1.26	1.24	1.15	0.64
DECEMBER		1.14	0.33	0.43	0.79

CONNECTICUT DEPARTMENT OF TRANSPORTATION
 BUREAU OF POLICY & PLANNING - ROADWAY INFORMATION SYSTEMS
 TRAFFIC MONITORING & DATA ANALYSIS SECTION

FACTORS FOR EXPANDING 24-HOUR COUNTS TO
 ANNUAL AVERAGE DAILY TRAFFIC VOLUMES
 (BASED ON 2018 CONTINUOUS COUNT STATION DATA)

GROUP - 4 ** URBAN **

STATION(S): 8, 9, 11, 15, 17, 22, 23, 28, 47, 48, 52

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.03	1.00	1.18	1.46
FEBRUARY		1.03	0.95	1.14	1.49
MARCH		0.97	0.94	1.07	1.30
APRIL		0.98	0.90	1.03	1.26
MAY		0.92	0.83	1.01	1.21
JUNE		0.91	0.85	1.01	1.15
JULY		0.95	0.89	1.06	1.22
AUGUST		0.95	0.89	1.09	1.23
SEPTEMBER		0.96	0.88	1.03	1.20
OCTOBER		0.95	0.86	1.05	1.16
NOVEMBER		0.97	0.97	1.08	1.27
DECEMBER		0.99	0.96	1.06	1.24

GROUP - 5 ** NORTHWEST RECREATIONAL **

STATION(S): 1 (Station 18 not available on 2018)

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.29	1.18	1.05	1.21
FEBRUARY		1.24	1.10	1.02	1.34
MARCH		1.28	1.06	1.14	1.24
APRIL		1.04	0.88	0.96	0.85
MAY		1.00	0.83	0.78	0.80
JUNE		0.96	0.80	0.79	0.77
JULY		0.91	0.80	0.71	0.61
AUGUST		0.94	0.75	0.76	0.71
SEPTEMBER		0.99	0.85	0.69	0.73
OCTOBER		0.95	0.71	0.69	0.68
NOVEMBER		1.15	1.05	1.08	1.06
DECEMBER		1.13	1.11	1.09	1.25

GROUP - 6 ** SOUTHEAST RECREATIONAL **

STATION(S): 5, 33, 44, 46

	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY		1.24	1.08	1.05	1.22
FEBRUARY		1.17	1.00	0.98	1.21
MARCH		1.19	0.98	0.93	1.06
APRIL		1.13	0.91	0.86	1.00
MAY		1.04	0.85	0.84	0.92
JUNE		1.00	0.80	0.81	0.88
JULY		0.91	0.77	0.75	0.79
AUGUST		0.92	0.75	0.77	0.80
SEPTEMBER		1.07	0.89	0.84	0.92
OCTOBER		1.10	0.89	0.93	0.98
NOVEMBER		1.17	0.97	0.93	1.04
DECEMBER		1.16	1.00	0.97	1.15

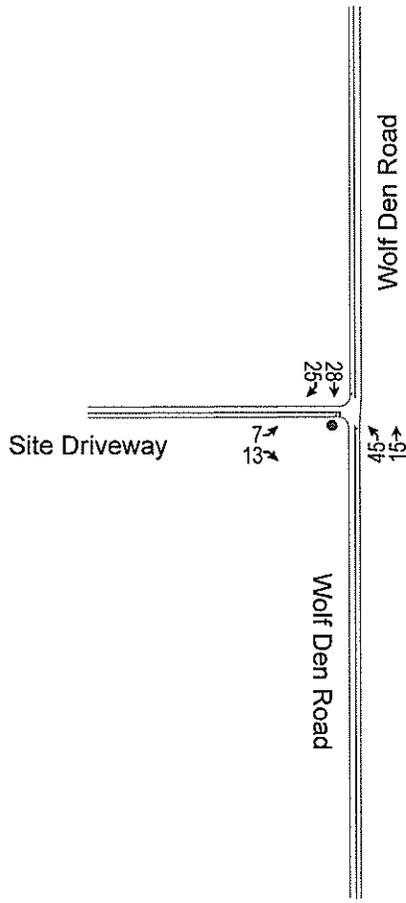


Figure 1 Weekday Afternoon Peak-Hour Traffic Volumes
2023 Build Traffic Conditions

HCM 6th TWSC
 3: Wolf Den Road & Site Driveway

11/29/2022

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	7	13	45	15	28	25
Future Vol, veh/h	7	13	45	15	28	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	8	14	49	16	30	27

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	158	44	57	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.5	6.3	4.2	-	-	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	2.29	-	-	-
Pot Cap-1 Maneuver	815	1004	1498	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	788	1004	1498	-	-	-
Mov Cap-2 Maneuver	788	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	916	-	-
HCM Lane V/C Ratio	0.033	-	0.024	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

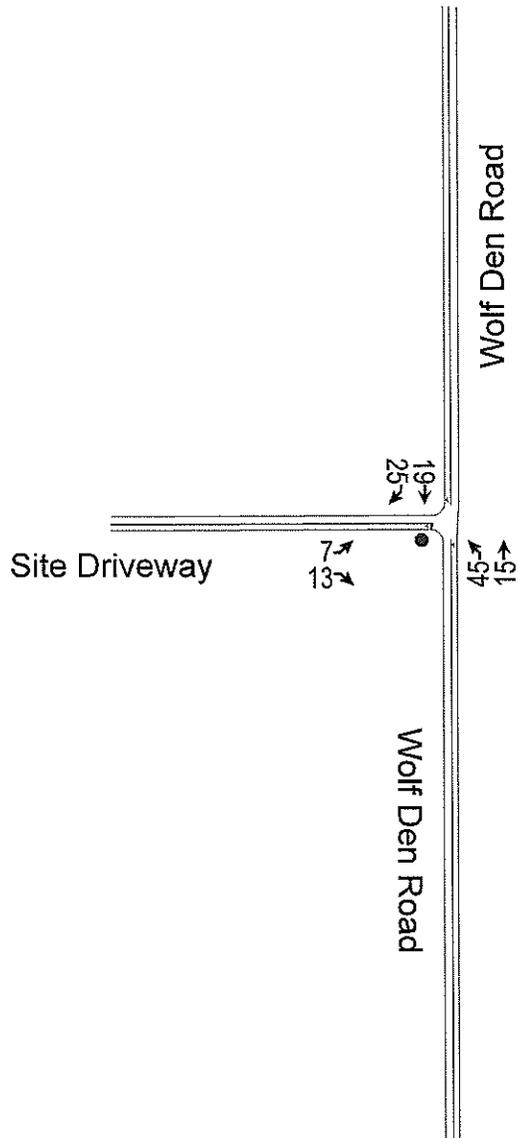


Figure 2 Saturday Midday Peak-Hour Traffic Volumes
2023 Build Traffic Conditions

HCM 6th TWSC
3: Wolf Den Road & Site Driveway

11/29/2022

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	7	13	45	15	19	25
Future Vol, veh/h	7	13	45	15	19	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	8	14	49	16	21	27

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	149	35	48	0	0
Stage 1	35	-	-	-	-
Stage 2	114	-	-	-	-
Critical Hdwy	6.5	6.3	4.2	-	-
Critical Hdwy Stg 1	5.5	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-
Follow-up Hdwy	3.59	3.39	2.29	-	-
Pot Cap-1 Maneuver	825	1015	1509	-	-
Stage 1	967	-	-	-	-
Stage 2	891	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	798	1015	1509	-	-
Mov Cap-2 Maneuver	798	-	-	-	-
Stage 1	935	-	-	-	-
Stage 2	891	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1509	-	927	-	-
HCM Lane V/C Ratio	0.032	-	0.023	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Datum Engineering & Surveying LLC.
Richard Zulick
Certified Forester / Soil Scientist
400 Nott Highway
Ashford, CT
06278
(860) 429-1918

November 10, 2022

Town of Brooklyn
Inland Wetlands and Watercourses Commission
Brooklyn, CT.

Wetland report for property located at :

459 Wolf Den Road, Brooklyn, CT

I have field checked the above referenced property for wetland soils. This parcel is located west of Wolf Den Road in the Town of Brooklyn, CT. No wetland soils or watercourses have been identified on this parcel in the area of proposed activity (between the large barn and Wolf Den Road).

A small pocket of wetlands was identified in the southeast corner of the property. This pocket exists near the stone wall at the southwestern perimeter of the existing field.

This field delineation has been done in accordance with the standards of the National Cooperative Soil Survey and the definition of wetlands as found in the Connecticut General Statutes, Chapter 440, Section 22A-38.

Soil observations pits have been conducted by me, the wetter upland soils on this property appear to primarily consist of the Woodbridge fine sandy loam soil series.

WOODBRIIDGE SERIES

The Woodbridge series consists of moderately well drained loamy soils formed in lodgment till. They are deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on hills, drumlins, till plains, and ground moraines.

TAXONOMIC CLASS: Coarse-loamy, mixed, active, mesic Aquic Dystrudepts

RIDGEBURY SERIES

The wetland soils identified within the southeast corner of the property consist of Ridgebury soil series.

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in lodgment till derived mainly from granite, gneiss and/or schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in depressions in uplands. They also occur in drainageways in uplands, in toeslope positions of hills, drumlins, and ground moraines, and in till plains.

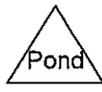
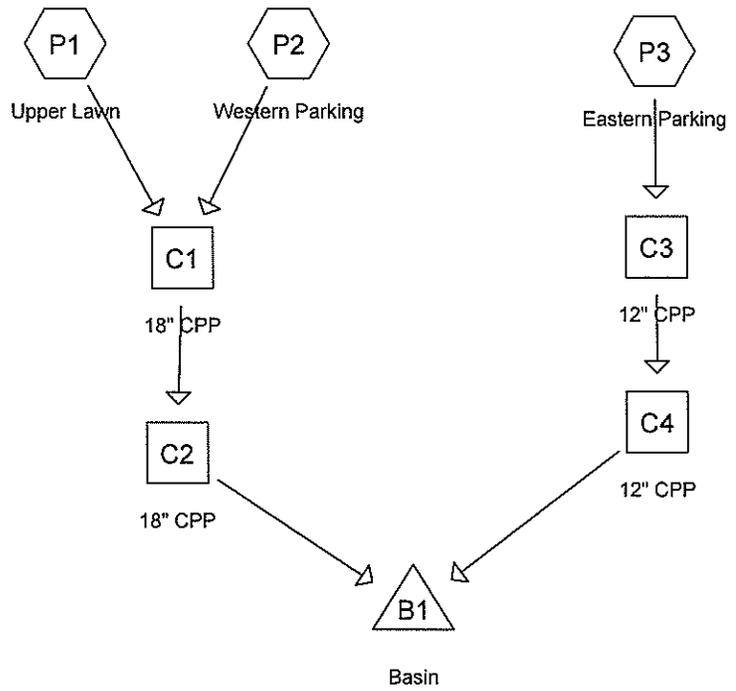
TAXONOMIC CLASS: Loamy, mixed, superactive, acid, mesic, shallow Aeric Endoaquepts

Please feel free to call me at the above phone number if you have any questions.

Sincerely,



Richard Zulick
Certified Forester and Soil Scientist
Member SSSSNE



Routing Diagram for 22172 Wineland - Drainage Modle 2022-11-28
Prepared by J&D Civil Engineers LLC, Printed 12/1/2022
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Summary for Subcatchment E1: Existing Site

Runoff = 4.05 cfs @ 12.61 hrs, Volume= 0.612 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 (sf)	CN	Description
127,071	74	Pasture/grassland/range, Good, HSG C
127,071		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.6	570	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
43.5	1,600	Total			

Summary for Subcatchment P1: Upper Lawn

Runoff = 3.50 cfs @ 12.64 hrs, Volume= 0.544 af, Depth= 2.52"
 Routed to Reach C1 : 18" CPP

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
112,971	74	Pasture/grassland/range, Good, HSG C
112,971		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.0	500	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
2.8	250	0.0100	1.50		Shallow Concentrated Flow, swale Grassed Waterway Kv= 15.0 fps
45.7	1,780	Total			

Summary for Subcatchment P2: Western Parking

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 0.051 af, Depth= 4.72"
 Routed to Reach C1 : 18" CPP

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
5,600	96	Gravel surface, HSG C
5,600		100.00% Pervious Area

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

Summary for Subcatchment P3: Eastern Parking

Runoff = 1.01 cfs @ 12.07 hrs, Volume= 0.077 af, Depth= 4.72"
 Routed to Reach C3 : 12" CPP

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
8,500	96	Gravel surface, HSG C
8,500		100.00% Pervious Area

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

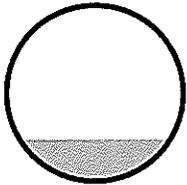
Summary for Reach C1: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 2.62" for CT 10-year event
 Inflow = 3.58 cfs @ 12.64 hrs, Volume= 0.594 af
 Outflow = 3.58 cfs @ 12.64 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach C2 : 18" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Max. Velocity= 11.15 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 3.98 fps, Avg. Travel Time= 0.3 min

Peak Storage= 24 cf @ 12.64 hrs
 Average Depth at Peak Storage= 0.36' , Surface Width= 1.28'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.97 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 75.0' Slope= 0.1800 '/'
Inlet Invert= 442.00', Outlet Invert= 428.50'



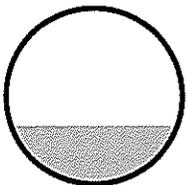
Summary for Reach C2: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 2.62" for CT 10-year event
Inflow = 3.58 cfs @ 12.64 hrs, Volume= 0.594 af
Outflow = 3.58 cfs @ 12.65 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.97 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.49 fps, Avg. Travel Time= 0.4 min

Peak Storage= 32 cf @ 12.65 hrs
Average Depth at Peak Storage= 0.50' , Surface Width= 1.41'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.02 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 62.0' Slope= 0.0484 '/'
Inlet Invert= 428.00', Outlet Invert= 425.00'



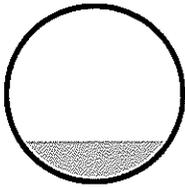
Summary for Reach C3: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 4.72" for CT 10-year event
Inflow = 1.01 cfs @ 12.07 hrs, Volume= 0.077 af
Outflow = 1.01 cfs @ 12.07 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C4 : 12" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.27 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.34 fps, Avg. Travel Time= 0.5 min

Peak Storage= 9 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 0.85'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.49 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 67.0' Slope= 0.1343 '/'
Inlet Invert= 444.00', Outlet Invert= 435.00'



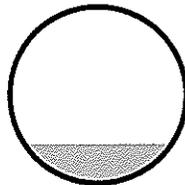
Summary for Reach C4: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 4.72" for CT 10-year event
Inflow = 1.01 cfs @ 12.07 hrs, Volume= 0.077 af
Outflow = 1.01 cfs @ 12.07 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.80 fps, Min. Travel Time= 0.1 min
Avg. Velocity= 2.51 fps, Avg. Travel Time= 0.4 min

Peak Storage= 8 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.22' , Surface Width= 0.83'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.37 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 58.0' Slope= 0.1638 '/'
Inlet Invert= 434.50', Outlet Invert= 425.00'



Summary for Pond B1: Basin

Inflow Area = 2.917 ac, 0.00% Impervious, Inflow Depth = 2.76" for CT 10-year event
Inflow = 3.69 cfs @ 12.64 hrs, Volume= 0.671 af
Outflow = 3.74 cfs @ 12.65 hrs, Volume= 0.653 af, Atten= 0%, Lag= 0.3 min
Primary = 3.74 cfs @ 12.65 hrs, Volume= 0.653 af

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

22172 Wineland - Drainage Modle 2022-11-28

Drainage Model for Spicer Plus Inc
 Type III 24-hr CT 10-year Rainfall=5.19"

Prepared by J&D Civil Engineers LLC

Printed 12/1/2022

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Page 6

Peak Elev= 424.09' @ 12.65 hrs Surf.Area= 820 sf Storage= 798 cf

Plug-Flow detention time= 26.4 min calculated for 0.653 af (97% of inflow)
 Center-of-Mass det. time= 10.4 min (862.1 - 851.7)

Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	798 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
422.00	96	99.0	0	0	96
424.00	820	140.0	798	798	912

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 @ 12.65 hrs HW=424.09' (Free Discharge)
 ↗1=Broad-Crested Rectangular Weir (Weir Controls 3.72 cfs @ 0.70 fps)

Summary for Subcatchment E1: Existing Site

Runoff = 8.00 cfs @ 12.61 hrs, Volume= 1.206 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 (sf)	CN	Description
127,071	74	Pasture/grassland/range, Good, HSG C
127,071		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.6	570	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
43.5	1,600	Total			

Summary for Subcatchment P1: Upper Lawn

Runoff = 6.93 cfs @ 12.64 hrs, Volume= 1.072 af, Depth= 4.96"
 Routed to Reach C1 : 18" CPP

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
112,971	74	Pasture/grassland/range, Good, HSG C
112,971		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.0	500	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
2.8	250	0.0100	1.50		Shallow Concentrated Flow, swale Grassed Waterway Kv= 15.0 fps
45.7	1,780	Total			

Summary for Subcatchment P2: Western Parking

Runoff = 1.04 cfs @ 12.07 hrs, Volume= 0.081 af, Depth= 7.56"
Routed to Reach C1 : 18" CPP

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
5,600	96	Gravel surface, HSG C
5,600		100.00% Pervious Area

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

Summary for Subcatchment P3: Eastern Parking

Runoff = 1.58 cfs @ 12.07 hrs, Volume= 0.123 af, Depth= 7.56"
Routed to Reach C3 : 12" CPP

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
8,500	96	Gravel surface, HSG C
8,500		100.00% Pervious Area

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

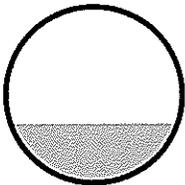
Summary for Reach C1: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 5.08" for CT 100-year event
Inflow = 7.05 cfs @ 12.64 hrs, Volume= 1.153 af
Outflow = 7.05 cfs @ 12.64 hrs, Volume= 1.153 af, Atten= 0%, Lag= 0.0 min
Routed to Reach C2 : 18" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.53 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.79 fps, Avg. Travel Time= 0.3 min

Peak Storage= 39 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.50' , Surface Width= 1.42'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.97 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 75.0' Slope= 0.1800 1/1
Inlet Invert= 442.00', Outlet Invert= 428.50'



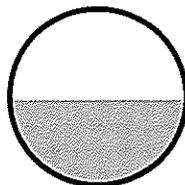
Summary for Reach C2: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 5.08" for CT 100-year event
Inflow = 7.05 cfs @ 12.64 hrs, Volume= 1.153 af
Outflow = 7.05 cfs @ 12.64 hrs, Volume= 1.153 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.36 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.99 fps, Avg. Travel Time= 0.3 min

Peak Storage= 52 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.02 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 62.0' Slope= 0.0484 1/1
Inlet Invert= 428.00', Outlet Invert= 425.00'



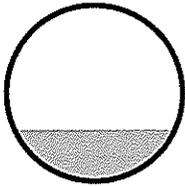
Summary for Reach C3: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 7.56" for CT 100-year event
Inflow = 1.58 cfs @ 12.07 hrs, Volume= 0.123 af
Outflow = 1.58 cfs @ 12.07 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C4 : 12" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.27 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.69 fps, Avg. Travel Time= 0.4 min

Peak Storage= 13 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.29' , Surface Width= 0.91'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.49 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 67.0' Slope= 0.1343 '/'
Inlet Invert= 444.00', Outlet Invert= 435.00'



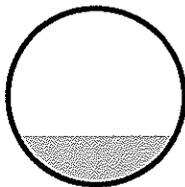
Summary for Reach C4: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 7.56" for CT 100-year event
Inflow = 1.58 cfs @ 12.07 hrs, Volume= 0.123 af
Outflow = 1.58 cfs @ 12.07 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.88 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.88 fps, Avg. Travel Time= 0.3 min

Peak Storage= 10 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.28' , Surface Width= 0.90'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.37 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 58.0' Slope= 0.1638 '/'
Inlet Invert= 434.50', Outlet Invert= 425.00'



Summary for Pond B1: Basin

Inflow Area = 2.917 ac, 0.00% Impervious, Inflow Depth = 5.25" for CT 100-year event
Inflow = 7.23 cfs @ 12.64 hrs, Volume= 1.276 af
Outflow = 7.33 cfs @ 12.64 hrs, Volume= 1.258 af, Atten= 0%, Lag= 0.2 min
Primary = 7.33 cfs @ 12.64 hrs, Volume= 1.258 af

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

22172 Wineland - Drainage Modle 2022-11-28

Drainage Model for Spicer Plus Inc
 Type III 24-hr CT 100-year Rainfall=8.04"

Prepared by J&D Civil Engineers LLC

Printed 12/1/2022

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Page 11

Peak Elev= 424.14' @ 12.64 hrs Surf.Area= 820 sf Storage= 798 cf

Plug-Flow detention time= 15.6 min calculated for 1.258 af (99% of inflow)
 Center-of-Mass det. time= 6.7 min (843.8 - 837.0)

Volume	Invert	Avail.Storage	Storage Description			
#1	422.00'	798 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
422.00	96	99.0	0	0	96	
424.00	820	140.0	798	798	912	

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=7.33 cfs @ 12.64 hrs HW=424.14' (Free Discharge)

↳1=Broad-Crested Rectangular Weir (Weir Controls 7.33 cfs @ 0.88 fps)

Summary for Subcatchment E1: Existing Site

Runoff = 5.57 cfs @ 12.61 hrs, Volume= 0.838 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 (sf)	CN	Description
127,071	74	Pasture/grassland/range, Good, HSG C
127,071		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.6	570	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
43.5	1,600	Total			

Summary for Subcatchment P1: Upper Lawn

Runoff = 4.82 cfs @ 12.64 hrs, Volume= 0.745 af, Depth= 3.45"
Routed to Reach C1 : 18" CPP

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
112,971	74	Pasture/grassland/range, Good, HSG C
112,971		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"
10.2	730	0.0290	1.19		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
4.0	500	0.0880	2.08		Shallow Concentrated Flow, Pasture - Steeper Short Grass Pasture Kv= 7.0 fps
2.8	250	0.0100	1.50		Shallow Concentrated Flow, swale Grassed Waterway Kv= 15.0 fps
45.7	1,780	Total			

Summary for Subcatchment P2: Western Parking

Runoff = 0.82 cfs @ 12.07 hrs, Volume= 0.063 af, Depth= 5.84"
Routed to Reach C1 : 18" CPP

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
5,600	96	Gravel surface, HSG C
5,600		100.00% Pervious Area

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

Summary for Subcatchment P3: Eastern Parking

Runoff = 1.24 cfs @ 12.07 hrs, Volume= 0.095 af, Depth= 5.84"
Routed to Reach C3 : 12" CPP

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
8,500	96	Gravel surface, HSG C
8,500		100.00% Pervious Area

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

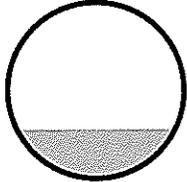
Summary for Reach C1: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 3.56" for CT 25-year event
Inflow = 4.92 cfs @ 12.64 hrs, Volume= 0.808 af
Outflow = 4.92 cfs @ 12.64 hrs, Volume= 0.808 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C2 : 18" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.21 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.32 fps, Avg. Travel Time= 0.3 min

Peak Storage= 30 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.42', Surface Width= 1.35'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.97 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 75.0' Slope= 0.1800 '/'
Inlet Invert= 442.00', Outlet Invert= 428.50'



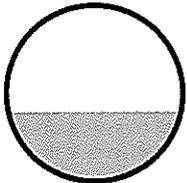
Summary for Reach C2: 18" CPP

Inflow Area = 2.722 ac, 0.00% Impervious, Inflow Depth = 3.56" for CT 25-year event
Inflow = 4.92 cfs @ 12.64 hrs, Volume= 0.808 af
Outflow = 4.91 cfs @ 12.64 hrs, Volume= 0.808 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.61 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.4 min

Peak Storage= 40 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 15.02 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 62.0' Slope= 0.0484 '/'
Inlet Invert= 428.00', Outlet Invert= 425.00'



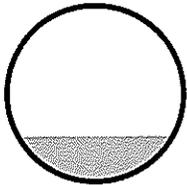
Summary for Reach C3: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 5.84" for CT 25-year event
Inflow = 1.24 cfs @ 12.07 hrs, Volume= 0.095 af
Outflow = 1.24 cfs @ 12.07 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.1 min
Routed to Reach C4 : 12" CPP

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.71 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.49 fps, Avg. Travel Time= 0.4 min

Peak Storage= 11 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 0.87'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.49 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 67.0' Slope= 0.1343 '/'
Inlet Invert= 444.00', Outlet Invert= 435.00'



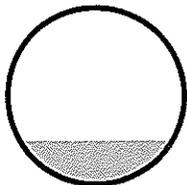
Summary for Reach C4: 12" CPP

Inflow Area = 0.195 ac, 0.00% Impervious, Inflow Depth = 5.84" for CT 25-year event
Inflow = 1.24 cfs @ 12.07 hrs, Volume= 0.095 af
Outflow = 1.24 cfs @ 12.07 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.1 min
Routed to Pond B1 : Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.27 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.67 fps, Avg. Travel Time= 0.4 min

Peak Storage= 9 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 0.86'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.37 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 58.0' Slope= 0.1638 '/'
Inlet Invert= 434.50', Outlet Invert= 425.00'



Summary for Pond B1: Basin

Inflow Area = 2.917 ac, 0.00% Impervious, Inflow Depth = 3.71" for CT 25-year event
Inflow = 5.06 cfs @ 12.64 hrs, Volume= 0.902 af
Outflow = 5.08 cfs @ 12.65 hrs, Volume= 0.884 af, Atten= 0%, Lag= 0.6 min
Primary = 5.08 cfs @ 12.65 hrs, Volume= 0.884 af

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

22172 Wineland - Drainage Modle 2022-11-28

Drainage Model for Spicer Plus Inc
 Type III 24-hr CT 25-year Rainfall=6.31"

Prepared by J&D Civil Engineers LLC

Printed 12/1/2022

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Page 16

Peak Elev= 424.11' @ 12.65 hrs Surf.Area= 820 sf Storage= 798 cf

Plug-Flow detention time= 20.7 min calculated for 0.884 af (98% of inflow)

Center-of-Mass det. time= 8.5 min (853.6 - 845.1)

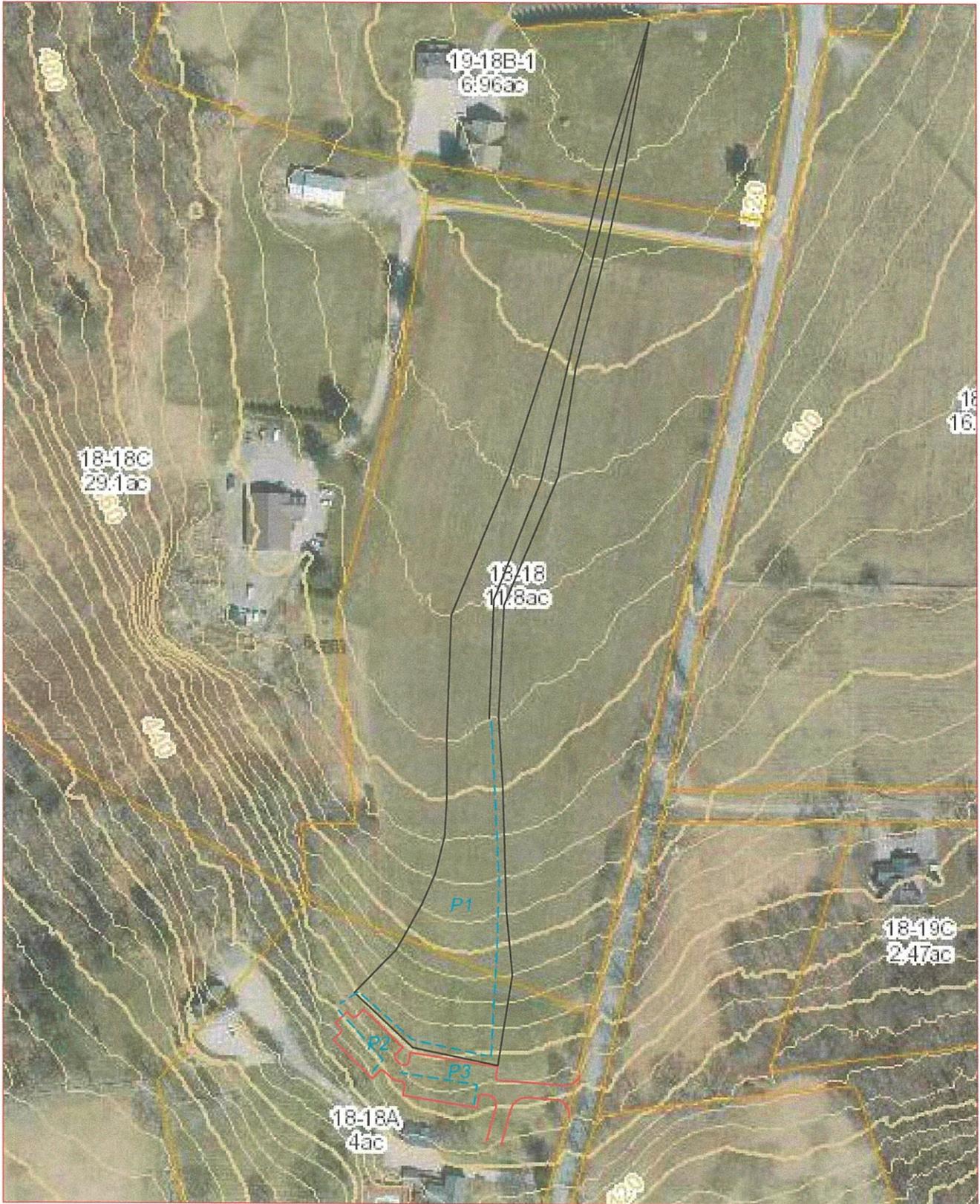
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	798 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
422.00	96	99.0	0	0	96
424.00	820	140.0	798	798	912

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=5.07 cfs @ 12.65 hrs HW=424.11' (Free Discharge)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.07 cfs @ 0.78 fps)



DRAINAGE AREA MAP
SCALE 1" = 200'

SPECIAL PERMIT APPLICATION FOR WEDDING/EVENT VENUE FOR WILLOW HILL LLC

**459 WOLF DEN ROAD
BROOKLYN, CONNECTICUT**

DATED: NOVEMBER 30, 2022

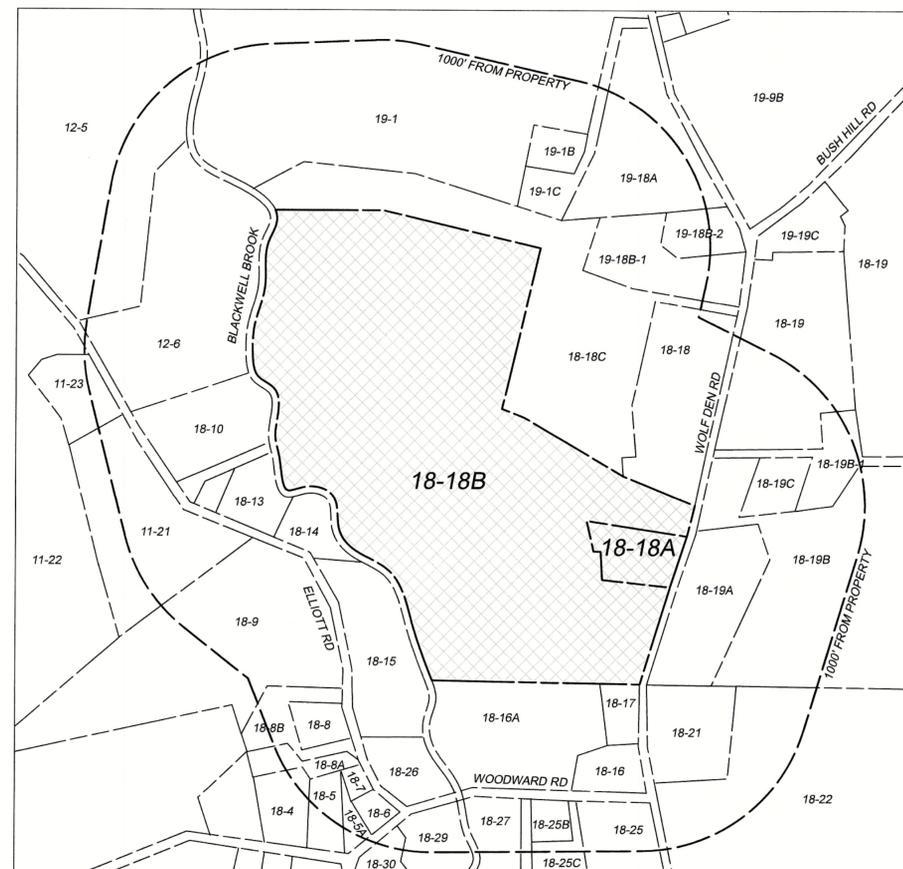
REVISED: N/A

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 BOUNDARY SURVEY
- 3 EXISTING CONDITIONS PLAN
- 4 PARKING LOT PLAN
- 5 EVENT AREA PLAN
- 6 NOTES AND DETAILS



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

*SEE VARIANCE NOTES ON SHEET 6

SPECIAL PERMIT APPROVAL BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

TOWN OF BROOKLYN
RECEIVED FOR RECORDING

J & D CIVIL ENGINEERS, LLC

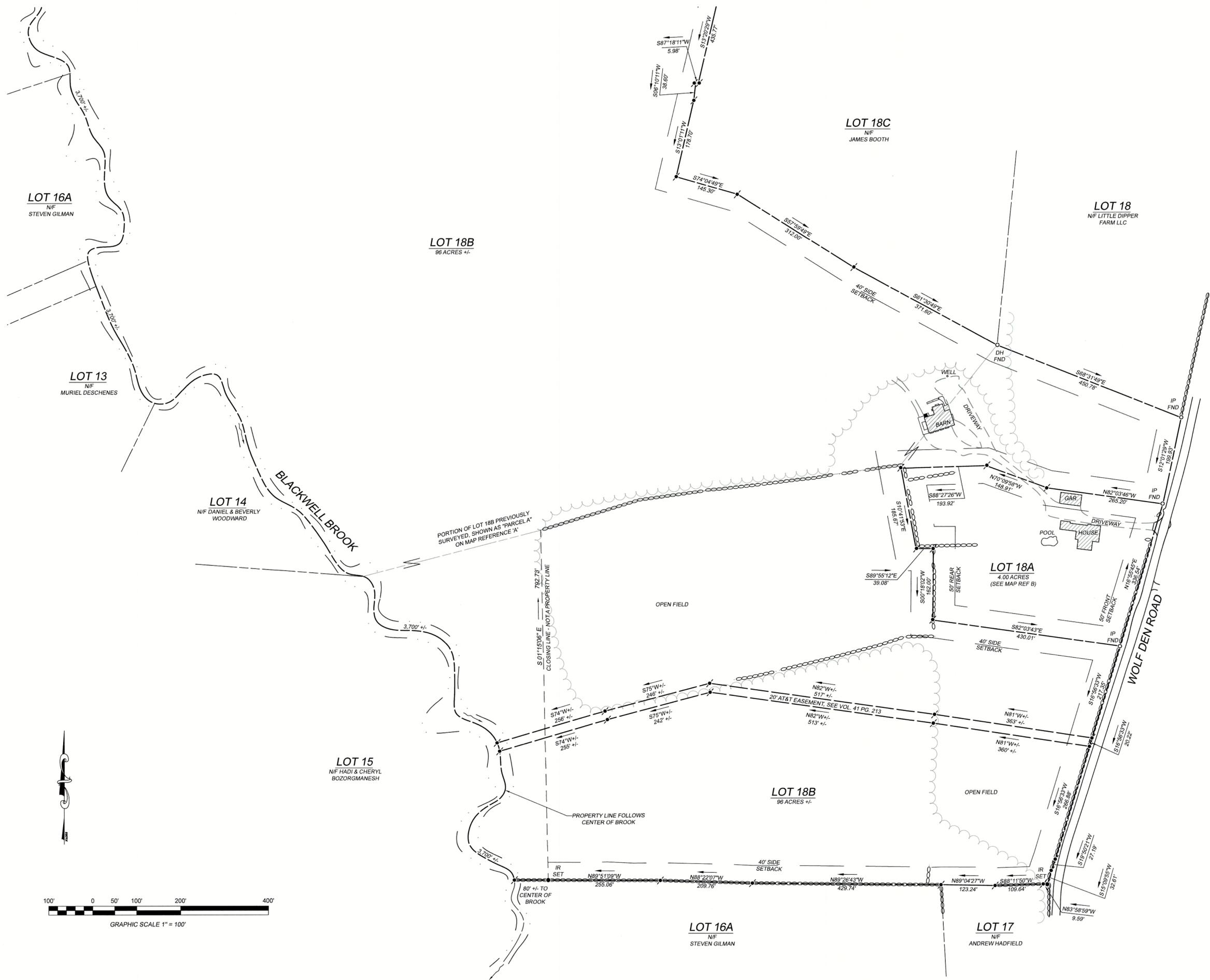
**401 RAVENELLE ROAD
THOMPSON, CT 06255**

JDCIVILENGINEERS.COM
860-923-2920



CHAIRMAN _____ DATE _____

TOWN CLERK _____ DATE _____ TIME _____ MAP # _____



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: PROPERTY SURVEY

BOUNDARY DETERMINATION CATEGORY: FIRST SURVEY / DEPENDENT RESURVEY

HORIZONTAL ACCURACY: CLASS A2

PURPOSE: TO DEPICT BOUNDARY LINES

2. REFERENCE PLANS:

(A) COMPILATION PLAN / PROPERTY SURVEY PREPARED FOR HILLDALE FAMILY LIMITED PARTNERSHIP, WOLF DEN ROAD BROOKLYN CONNECTICUT. SCALE: 1" = 160' DATE 3/7/2007 SHEET 1 OF 1 BY KWP ASSOCIATES

(B) PLAN OF LAND TO BE CONVEYED TO JUDITH C. TOLDORF OF WOLF DEN ROAD BROOKLYN, CONNECTICUT. SCALE: 1" = 40' DATE SEPT/1970 KIELTYKA & WOODS LAND SURVEYORS

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

John A. Bartolomei 11/30/2022 17244
 JOHN A. BARTOLOMEI DATE LICENSE #

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
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ZONING INFORMATION:
 ZONE: RESIDENTIAL AGRICULTURAL
 MINIMUM LOT AREA: 87,120 SF (2 ACRES)
 MINIMUM FRONTAGE: 150'
 MINIMUM FRONT YARD: 50'
 MINIMUM SIDE YARD: 40'
 MINIMUM REAR YARD: 50'

PROPERTY OWNER:
 NICOLE WINELAND-THOMSON FISHER
 AND WARWICK THOMSON

REFERENCE DEED:
 BROOKLYN LAND RECORDS
 VOL. 699 PG. 168

ASSESSORS REFERENCE:
 MAP 19 - BLOCK 18 - LOTS 18B AND 18A

LEGEND

●	IRON ROD SET
○	ANGLE POINT
○	EXISTING IRON ROD OR DRILL HOLE
---	EXISTING PROPERTY LINE
---	ABUTTING PROPERTY LINE
---	BUILDING SETBACK
---	EDGE OF EASEMENT
○-○-○-○	STONE WALL
~~~~~	TREELINE
~~~~~	EDGE OF WATER

PROPERTY SURVEY
 PREPARED FOR
WILLOW HILL LLC
 459 WOLF DEN ROAD, BROOKLYN, CT

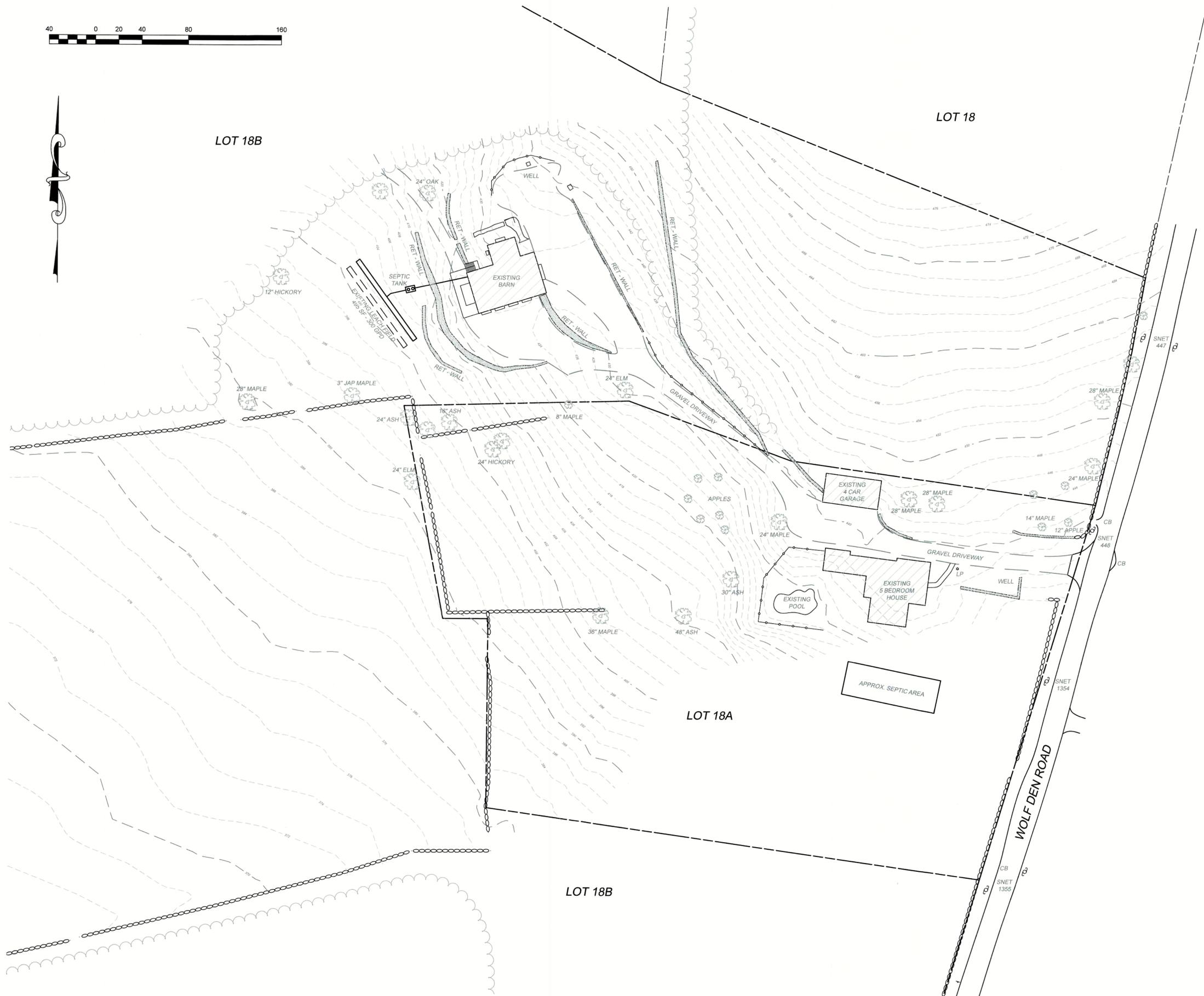
J&D CIVIL ENGINEERS, LLC
 401 RAVENELLE ROAD
 N. GROSVENORDALE, CT 06255
 860-923-2920

DESIGNED: APS
 CHECKED: JAB

REVISIONS:

JOB NO: 22172
 SCALE: 1" = 100'

DATE: NOVEMBER 30, 2022
 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 11/30/22 12107
 DENNIS R. BLANCHETTE DATE LICENSE NUMBER

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LEGEND

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

<p>EXISTING CONDITIONS PLAN PREPARED FOR WILLOW HILL EVENTS 459 WOLF DEN ROAD, BROOKLYN, CT MAP 18 - LOTS 18 & 18A</p>	
<p>J&D CIVIL ENGINEERS, LLC 401 RAVENELLE ROAD N. GROSVENORDALE, CT 06255 860-923-2920</p>	
<p>DESIGNED: DOB CHECKED: DRB</p>	<p>REVISIONS:</p>
<p>JOB NO: 22172 SCALE: 1" = 40'</p>	<p>DATE: NOVEMBER 30, 2022 SHEET: 3 OF 6</p>



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, 1998.

SURVEY TYPE: GENERAL LOCATION

PURPOSE: TO DEPICT EXISTING CONDITIONS

BOUNDARY DETERMINATION CATEGORY: NONE

HORIZONTAL ACCURACY: CLASS B

VERTICAL ACCURACY: CLASS T-2

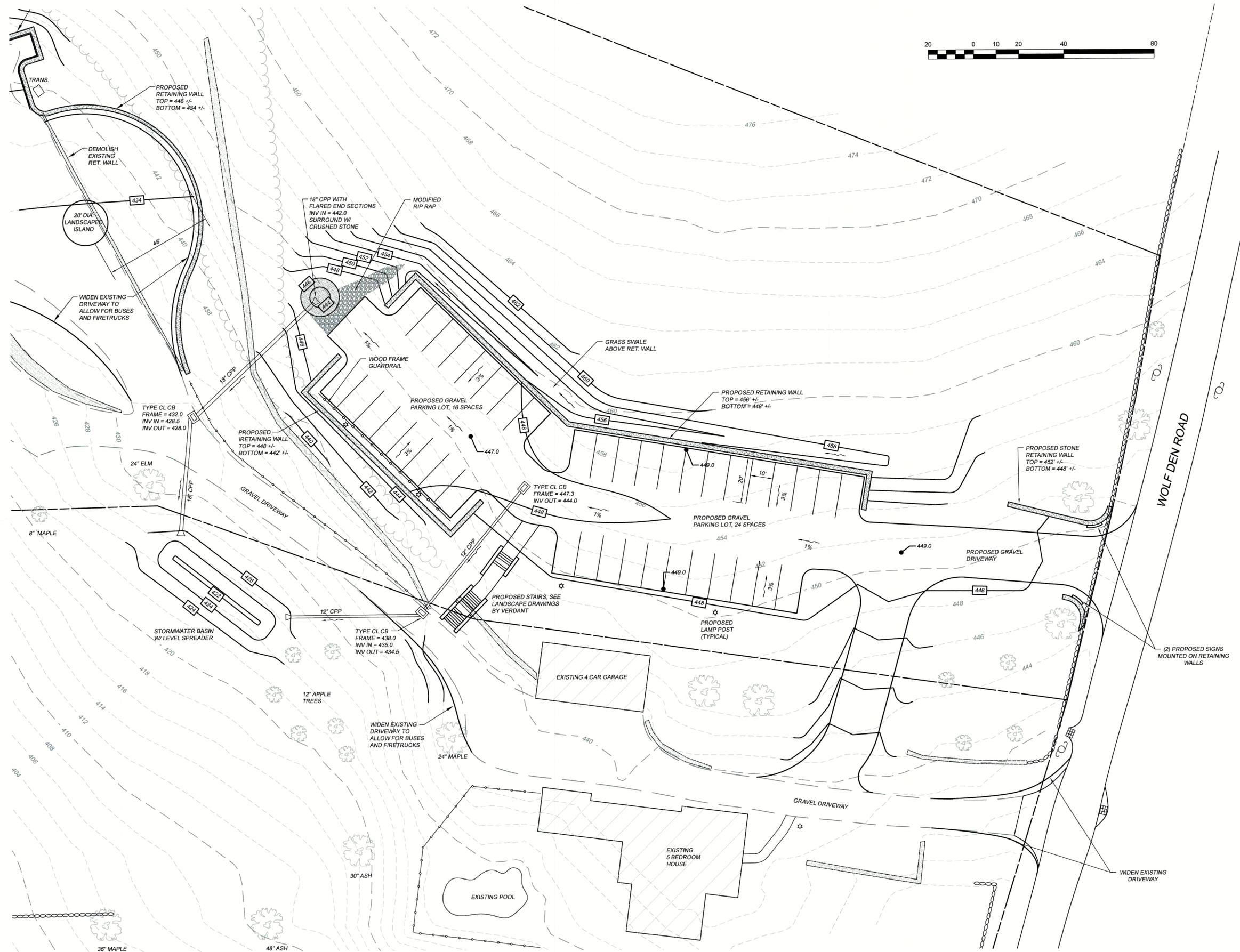
PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

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 11/30/22
 DENNIS R. BLANCHETTE DATE 12107 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
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LEGEND

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

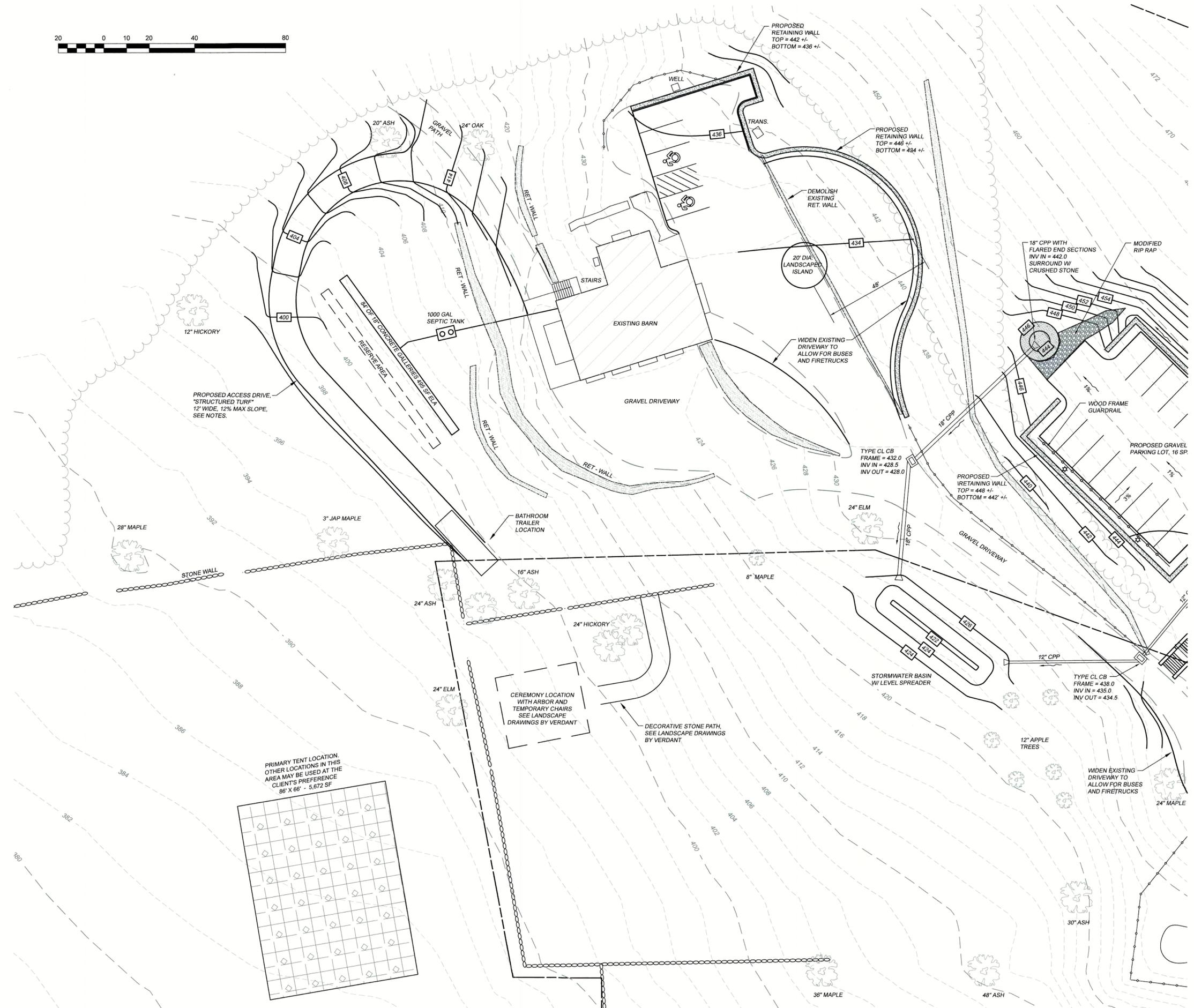
PARKING LOT PLAN
 PREPARED FOR
WILLOW HILL LLC
 459 WOLF DEN ROAD, BROOKLYN, CT
 MAP 18 - LOTS 18 & 19A

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

DESIGNED: DDB REVISIONS:
 CHECKED: DRB

JOB NO: 22172 DATE: NOVEMBER 30, 2022
 SCALE: 1" = 20' SHEET: 4 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 12/10/22 LICENSE NUMBER 31338

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE © 2022 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

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:	
JOB NO: 22172		DATE: NOVEMBER 30, 2022
SCALE: 1" = 20'		SHEET: 5 OF 6

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 LEFT VACANT, AND ONLY USED BY THE WEDDING PARTY DURING EVENTS. OCCUPANCY SHALL BE LIMITED TO 10 PERSONS.
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.

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. A LARGE 96" DIAMETER CIRCLE IS PROPOSED NEAR THE BARN, TO ALLOW FOR LARGE BUSES AND FIRETRUCKS TO TURN AROUND.
5. TWO ADDITIONAL PARKING SPACES ARE PROPOSED NEAR THE BARN, FOR DELIVERIES AND DROP-OFFS.
6. TWO HANDICAP ACCESSIBLE SPACES ARE PROPOSED NEAR THE BARN, FOR DISABLED GUESTS.
7. THE TOTAL NUMBER OF PROPOSED PARKING SPACES IS 59.

LANDSCAPING NOTES:

ALL LANDSCAPING ON SITE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED LANDSCAPING PLANS BY "VERDANT LANDSCAPE ARCHITECTURE". THESE PLANS HAVE BEEN INCLUDED WITH THE APPLICATION PACKAGE.

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.

ZONING NOTES:

1. THIS PROJECT WILL REQUIRE A VARIANCE FROM THE BROOKLYN ZONING BOARD OF APPEALS. THIS VARIANCE IS EXPECTED TO BE APPROVED ON DECEMBER 1, 2022.
2. SECTION 6 J.3 OF THE BROOKLYN ZONING REGULATIONS REQUIRE THAT ANY STRUCTURE USED FOR SPECIAL EVENTS MUST BE AT LEAST 200 FEET FROM ALL PROPERTY LINES.
3. THE EXISTING BARN IS 178 FEET FROM LOT 18C, NOW OR FORMERLY OWNED BY JAMES BOOTH.
4. THE EXISTING BARN IS 77 FEET FROM LOT 18A, WHICH IS UNDER THE SAME OWNERSHIP AS LOT 18B.

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.

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 CONDOT 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 AND TESTED 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 A 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 C/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

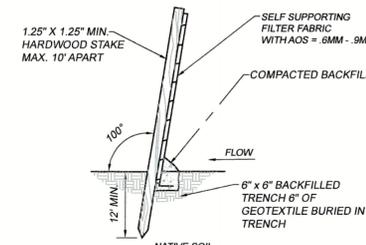
SEDIMENT AND EROSION CONTROL DEVICES WILL BE INSTALLED AS DETAILED ON THIS SHEET AND CHECKED REGULARLY FOR REPLACEMENT AND AFTER EVERY RAIN FOR REMOVAL OF DEPOSITED MATERIALS. RESPONSIBILITY FOR COMPLIANCE WITH THIS PLAN SHALL BELONG TO THE CONTRACTOR. THE CONTRACTOR SHALL BE THE DESIGNATED ON-SITE AGENT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

OPERATIONS AND MAINTENANCE

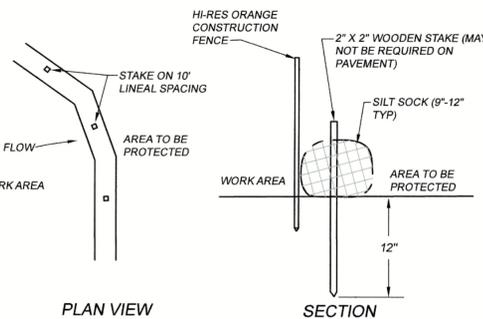
1. ALL PROPOSED WORK SHALL CONFORM TO "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL OF SOIL AND WATER CONSERVATION AND TOWN REGULATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE GOALS OF THIS EROSION CONTROL PLAN ARE MET BY WHATEVER MEANS 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.
3. LAMP POSTS SHALL BE OF A RURAL OR RUSTIC STYLE.
4. LAMPS SHALL BE INSTALLED ON POLES 10-12 FEET TALL.
5. LAMPS SHALL BE FULL CUTOFF, WITH LED BULBS.
6. LAMP INTENSITY SHALL BE IN THE RANGE OF 8,000 - 12,000 LUMENS, OR 80-120 WATTS.
7. LAMP TEMPERATURE SHALL BE APPROXIMATELY 5,000 K.
8. ALL LAMPS SHALL CONFORM WITH THE REQUIREMENTS IN SECTION 7.G OF THE BROOKLYN ZONING REGULATIONS.
9. ALL LAMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
10. SUFFICIENT EXTERIOR LIGHTING EXISTS ON ALL OTHER PORTIONS OF THE SITE, SUCH AS THE BUILDINGS AND DRIVEWAY.
11. THE PROPOSED LIGHTING IS EXPECTED TO PROVIDE LESS THAN 1 FOOT-CANDLE AT THE PROPERTY LINES.



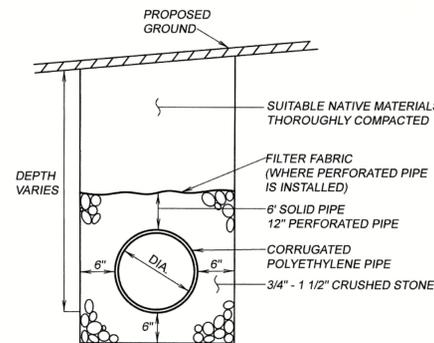
SILT FENCE INSTALLATION
NOT TO SCALE



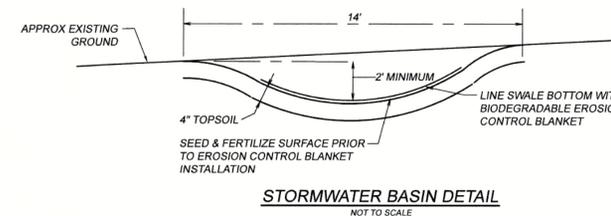
NOTES

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.

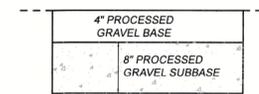
SILT SOCK DETAIL
NOT TO SCALE



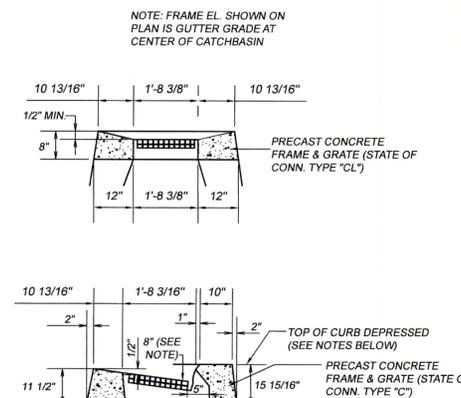
DRAINAGE PIPE INSTALLATION DETAIL
N.T.S.



STORMWATER BASIN DETAIL
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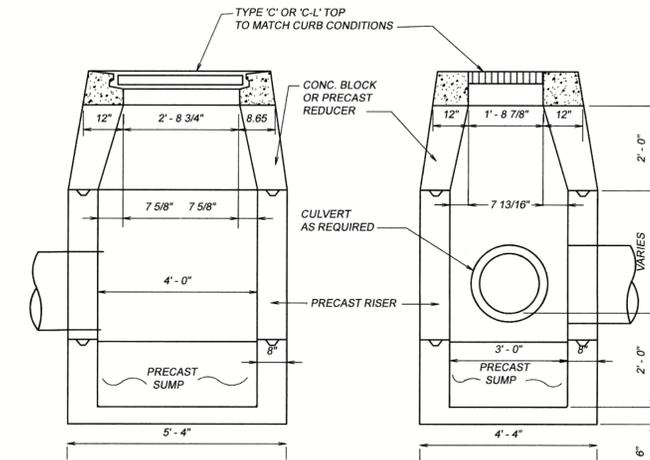


GRAVEL PARKING SECTION
NOT TO SCALE

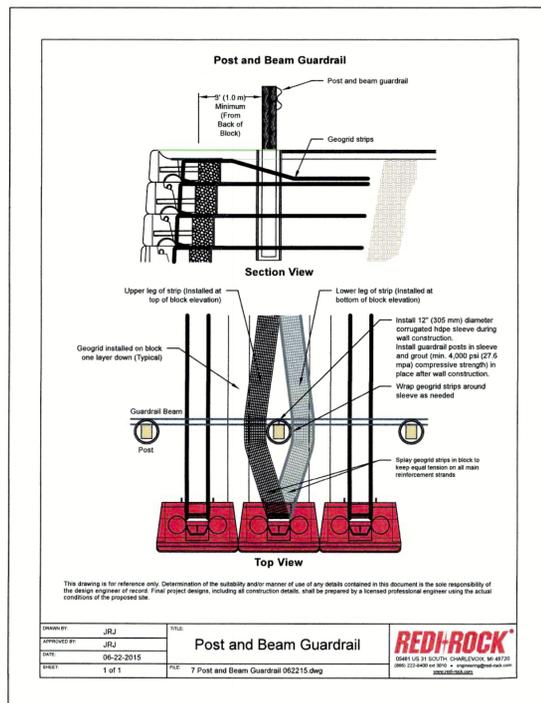


- NOTE: FRAME EL SHOWN ON PLAN IS GUTTER GRADE AT CENTER OF CATCHBASIN
1. 8" HEIGHT IS FOR BITUMINOUS CONCRETE LIP CURB
 2. 7" HEIGHT WILL BE USED FOR CONCRETE CURB.
 3. TRANSITION ELEVATION OF TOP OF CURB TO MATCH STANDARD GRADE 5' EACH SIDE OF CATCH BASIN.

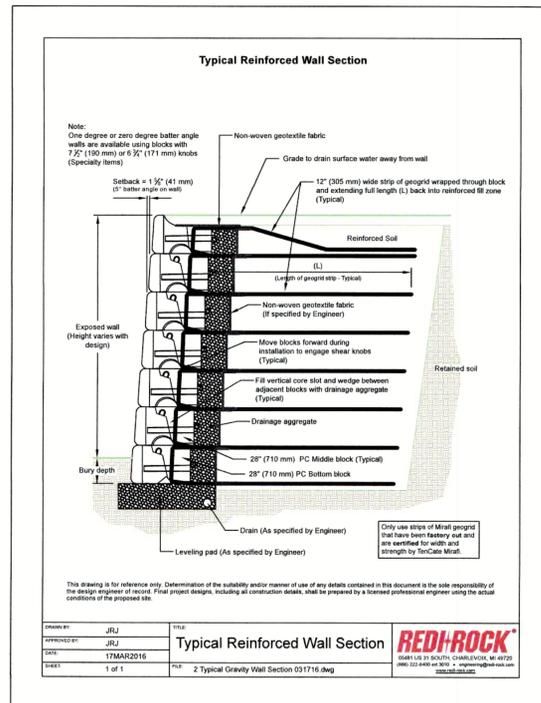
FRAME AND GRATE FOR TYPE "C" OR "CL" CATCH BASIN
N.T.S.



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



Post and Beam Guardrail



Typical Reinforced Wall Section

NOTES AND DETAILS PREPARED FOR WILLOW HILL EVENTS
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:

JOB NO: **22172**
SCALE: **1" = 20'**

DATE: **NOVEMBER 30, 2022**
SHEET: **6 OF 6**



REVISIONS	MARK	ISSUE	DATE

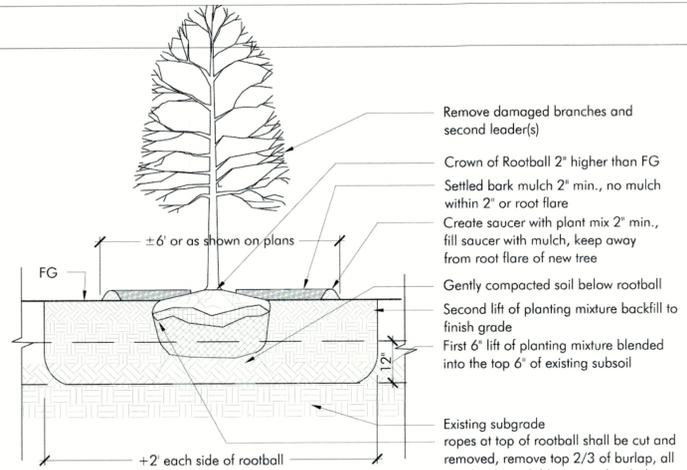
DRAWING INFORMATION
 ISSUE: _____
 DATE: 11/25/2022
 SCALE: _____

PROJECT NUMBER:
 DRAWN BY:
 CHECKED BY:

DRAWING TITLE
LANDSCAPE PLAN

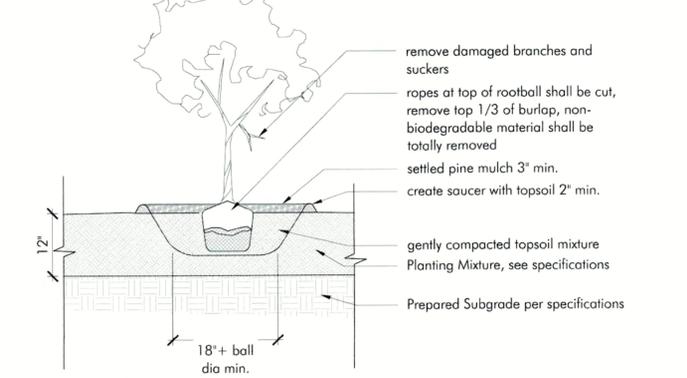
DRAWING NUMBER

LP1



NOTES:
 1. Gently remove excess soil around root flare which may have collected during tree spading/B+B operations
 2. Provide wooden stakes (3 per tree) and guy wire (rubber hose cover at trunk)
 3. Provide one slow release watering bag per tree

Tree Planting
 SCALE: 1/2" = 1' - 0"



NOTES:
 1. See Specifications

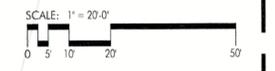
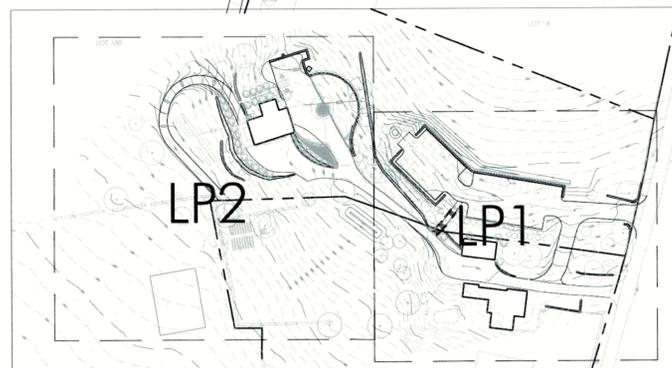
Shrub Planting
 SCALE: 3/4" = 1' - 0"

- PLANTING NOTES**
- The Landscape Subcontractor shall coordinate with the General Contractor and Site Subcontractor all the requirements for subsail testing and preparation and testing and placing of approved topsoil and planting soil mixes as described in the specifications. Failure of the site or General Contractor to perform required testing, subsail and topsoil preparation does not relieve the Landscape Contractor from the requirements of the work as set forth in the specifications.
 - All plant material shall be approved by the Landscape Architect prior to arrival on the site.
 - All plant material shall conform to the American Standard for Nursery Stock established by "American Hort" americanhort.org
 - No invasive plants as per the Connecticut Invasive Plant List shall be used on the site.
 - Plantings shall be installed in such a way that when mature they will remain at least 18 inches away from the structure of the building.
 - No substitution of plant species will be allowed without the written approval of the Landscape Architect. Any proposed substitutions of plant species shall be a plant of equivalent overall form, height and branching habit, flower, leaf and fruit, color and time of bloom.

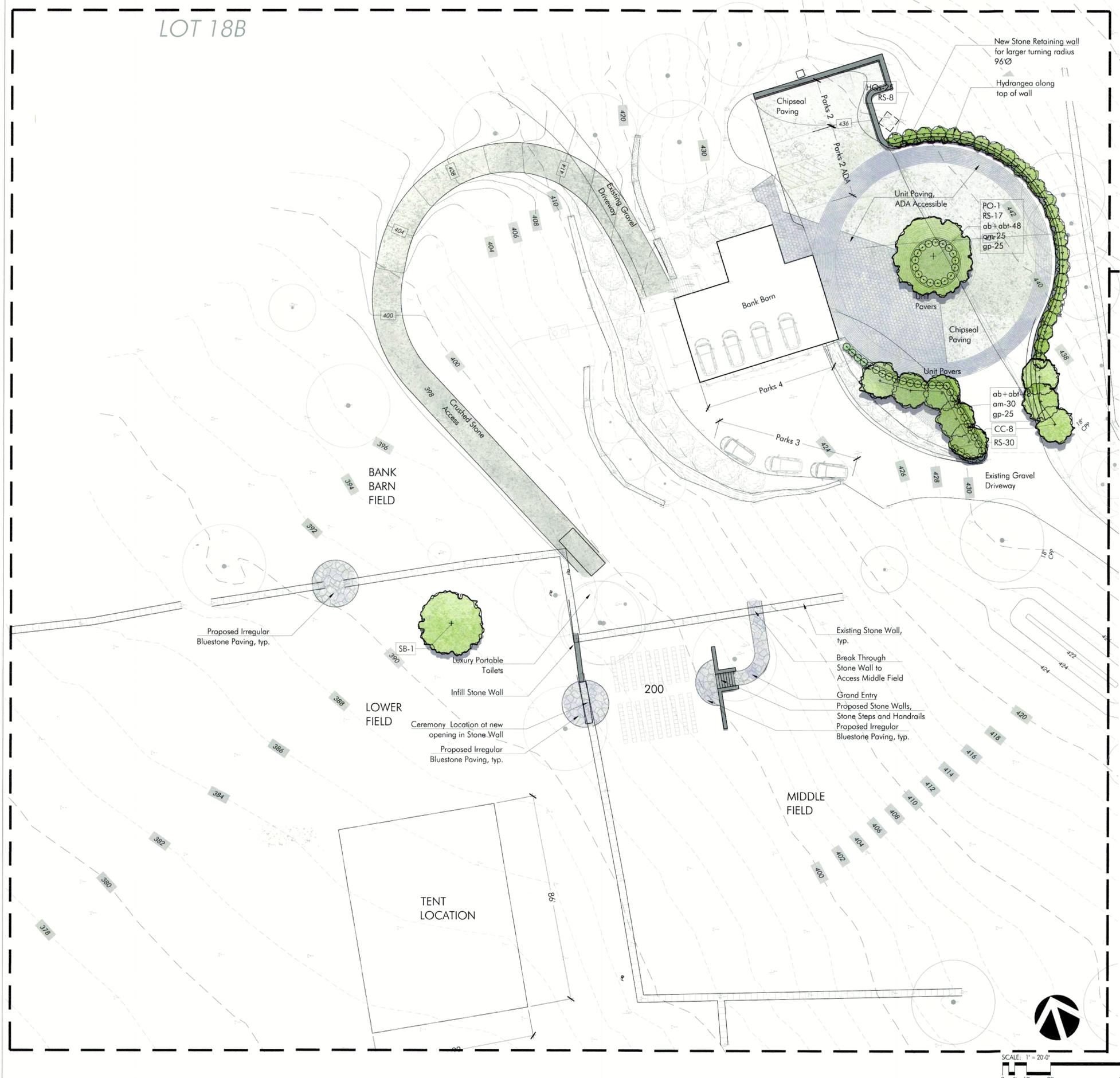
- The Contractor shall locate and verify all utility line locations prior to excavation for tree pits and report any conflicts to the Landscape Architect.
- All plants shall be placed in their approximate location by the Contractor. The Contractor shall adjust the locations as required by the Landscape Architect. Trees shall be placed first, then shrubs, then perennials and last, groundcovers. Final locations must be approved by the Landscape Architect prior to planting.
- The rootballs of trees shall be planted 2" above adjacent finished grade. The rootballs of shrubs shall be planted 1" above adjacent finished grade. The rootflare of perennials shall be set at the level at which the plant was growing.
- All planting to be done under the full time supervision of a certified arborist, nurseryman or licensed Landscape Architect.
- All plants are to be thoroughly watered after installation, at least twice within the first 24 hours.

LEGEND: SEE PLANT LIST

- DECIDUOUS TREE, typ.
- SHRUBS, typ.
- PERENNIALS + ORNAMENTAL GRASSES typ.
- LAWN, typ. See specifications
- EXISTING TREE + SHRUB, typ.

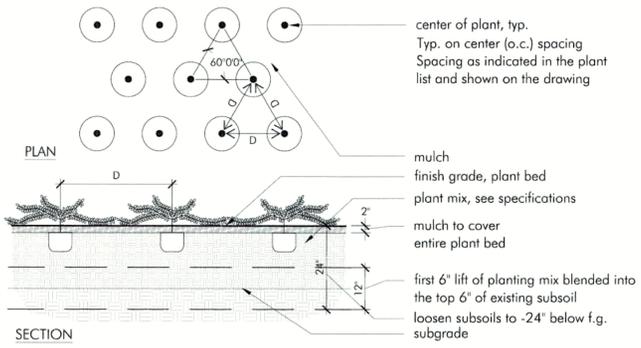
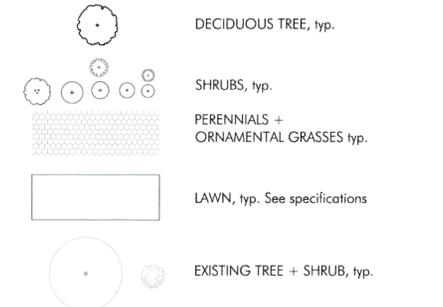


LOT 18B



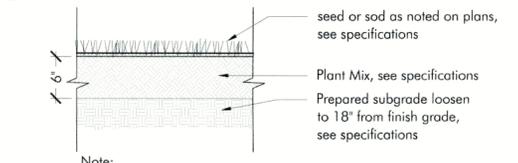
KEY	QTY	LATIN NAME	COMMON NAME	SIZE	NOTES
DECIDUOUS TREES					
AS	1	Acer saccharum	Sugar Maple	3-3.5' cal.	B&B
CC	16	Cercis canadensis 'Alba'	White Redbud	1.5' cal.	B&B
MD	12	Malus domestica	Granny Smith Apple	# 10 or available	Pot
PO	1	Platanus occidentalis	American Sycamore	3" cal.	B&B
SB	1	Salix x blanda	Wisconsin Weeping Willow	3" cal.	B&B
SM	4	Salix matsudana 'Tortuosa'	Corkscrew Willow	# 7	Pots
SHRUBS/VINES					
CAh	22	Corylus americana	American Hazelnut	5 gal.	Pots
HQs	25	Hydrangea quercifolia 'Sikes Dwarf'	Sikes Dwarf Hydrangea	3 gal.	Pots
RS	8	Rosa 'Sea Foam'	Sea Foam Groundcover Rose	3 gal.	Pots
SP	64	Spiraea 'Bridal Veil'	Bridal Veil Spirea	5 gal.	Pots
PERENNIALS/GRASSES					
ab	48	Allium Bulbs (Small White)	White Allium (Late Summer)	Ea.	Rose Garden
abt	48	Allium Bulbs (Tall White)	White Allium (Spring)	Ea.	Rose Garden
am	55	Alchemilla mollis	Lady's Mantle	2 gal.	Rose Garden
gp	50	Gypsophila paniculata 'Festival White'	White Baby's Breath	1 gal.	Rose Garden

LEGEND: SEE PLANT LIST



1 Perennials and Groundcovers

SCALE: 1/2" = 1' - 0"



Note: If seeding or sodding operations are completed too late in the fall for adequate growth of grass, then maintenance shall continue into the following spring, or until final acceptance, at no cost to the owner.

2 LAWN

SCALE: 1" = 1' - 0"



WILLOW HILL LLC
459 WOLF DEN ROAD
BROOKLYN, CT
LANDSCAPE PLAN



REVISIONS	MARK	ISSUE	DATE

DRAWING INFORMATION
ISSUE: _____
DATE: 11/25/2022
SCALE: _____

PROJECT NUMBER: _____
DRAWN BY: _____
CHECKED BY: _____

DRAWING TITLE
LANDSCAPE PLAN

DRAWING NUMBER

LP2

SECTION 32 30 00

SITE IMPROVEMENTS

PART 1 - GENERAL

GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

DESCRIPTION OF WORK

The work of this Section consists of all site improvement work as shown on Drawings, and as specified herein. Work Included but not limited to:

- 1. Unit Paving
2. Chipseal Paving
3. Irregular Bluestone Paving
4. Stone Walls
5. Stone Steps
6. Metal Hand Railings

DEFINITIONS

The following related items are included herein and shall mean:

- A. ASTM: American Society of Testing Materials
B. ASTM: American Society for Testing and Materials
C. A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Allow and High Strength Low-alloy with Improved Formability
D. A500-99 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
E. B-6-00 Standard Specification for Zinc
F. B-117-97 Standard Practice for Operating Salt Spray (Fog) Apparatus
G. F1083-97 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
H. AASHTO: American Association of State Highway and Transportation Officials
I. American Iron and Steel Institute, applicable standards.
J. American Institute for Steel Construction (AISC): Code of Standard Practice for Steel Buildings and Bridges: Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
K. Federal Specs: QQ_1_652A, Iron Gray Castings; QQ_S741a, Steel Plates, Shapes and Bars, Carbon, Structural: WW_P521 Malleable Iron.
L. American Welding Society Code: Standard Code for Arc and Gas Welding in Building Construction.

SUBMITTALS

- A. Contractor to submit shop drawings for review by Architect or Structural Engineer as required. Shop drawings shall show all fasteners, inserts and connections for all elements as outlined below. Complete Shop drawings for:
1. Handrails at Front Entry Granite Steps
B. Contractor to submit samples of the following items:
1. Unit Paving
2. Irregular Bluestone Paving
C. Mockup (maybe incorporated into finished product) of the following items:
1. Stone Wall at Barn
2. Unit Paving at Drop off
3. Stone Steps
4. Irregular Bluestone Paving

PART 2 - PRODUCTS AND INSTALLATION:

CHIPSEAL PAVING

- A. Finished stone to be slate grey or as approved by Owner.
B. Insure 8" Process Base, Fine grade and roll to compact. Add layer of 3/4" clean stone to be paved down and roll to compact. A layer of hot liquid asphalt will then be applied and covered by a layer of 1/2" or 3/8" clean stone. Roll to compact. A second layer of hot liquid asphalt will then be applied and covered with Owner's choice of finished stone. Roll and compact to finish surface.

IRREGULAR BLUESTONE PAVING

- 1. Irregular stone shall be irregular shaped angular natural bluestone, split face or other hard, durable natural stone approved by Owner
2. 80% of stone pavers shall be larger than 4 square feet - Random sizes and shapes
3. Up to 20% of the stones may be chinking stones of less than 1 sq. ft. each

INSTALLATION

- A. Establish compacted subgrade base to dimensions shown on plan and to an elevation no greater than 10" below finish grade.
B. Spread 8" Compacted Processed Gravel
C. Spread Sand Setting Bed
D. The Stone Paving shall be carefully placed by hand. The bedding material may need to be shaped or hollowed to accommodate the paving piece, which should be consolidated to the required level using a mallet or rubber hammer before moving on to the next piece. Each piece should be tested to make sure it isn't rocking or moving; if there is any movement, pack more of the bedding mix beneath the piece until it is firm. Individual bedding also requires constant checking of levels, either by using taut string lines or straight-edge timbers, to ensure no hollows or peaks are inadvertently formed.
E. There shall be no deviation from a true grade greater than one-quarter inch (1/4") in ten feet (10). Surface of adjoining finish grade shall be flush.

- F. Contractor is responsible for protecting newly laid Stone Paving at all times. All necessary precautions shall be taken in order to avoid depressions and protect stone alignment. It shall be the Contractor's responsibility to re-set any stones that fall out of alignment.
G. Prior to acceptance, paved areas shall be flooded with water to assure there are not depressions. Remove and reset paving stones as required until surface is true to line and grade.

STONE WALL

- A. Stone shall be reclaimed stone from on site or obtained from local sources: Weymouth Seamface-Granite available from Plymouth Quarries, Hingham, 781-335-3686 or approved equal. Size and weight of stones to range from 25 to 250 lbs. for wall stone to be consistent in color range and texture.
B. Top course of stones shall be large stones 18" wide by 18" min. length by 6" minimum depth-- typical top stone course shall be stones weighing from 200-500 lbs. 66% of top of wall shall consist of stones that extend from front to back of wall and extend at least 18" running with face of wall.

INSTALLATION STONE WALL

- A. Excavate to lines and grades shown on drawings and provide crushed stone foundation. Place stone courses with overlapping joints such that all joints are covered with stones above and no vertical joint between stones travels more than 1/2 of the way upward through the wall and crosses no more than two stones vertically. All stones shall be firmly placed and shimmed as required to be well locked together. Provide large stones as rowlocks which tie front and back of wall together.
B. Select stones so that large stones are evenly spread from bottom to the top course immediately below the top capping stones. No areas shall have excessive numbers of small stones. Select and evenly distribute split face and seamface stones throughout the wall. Stack and place stones in a generally ashlar pattern covering joints below a minimum of 4". All stones shall be placed in a generally horizontal format. No stacking of stones in a vertical format is acceptable.
C. Mortar shall be placed within the interior of the wall to secure and lock stones together and preclude their shifting. Mortar shall not be used as an alternative to the careful placement, overlapping of stones or used in place of rowlock stones to tie the front of the wall together with the back of the wall.
D. No mortar shall be visible at the front face of the wall. The Contractor shall carefully convey mortar such that the exposed faces of stones are not stained with mortar.
E. The top course of capping stones shall consist only of large stones neatly trimmed to meet the adjacent stones. Top course of stones shall be 18" wide by 18" min. length by 6" minimum depth. The depth of capping stones shall vary between 4" minimum and 10" maximum.
F. Carefully choose stones to weave corners with longer horizontal stones interlaced to front and to side such that these stones form a right angle with reasonably vertical faces. Corner stones shall be carefully woven into the stones to the sides and back such that the wall corners are strong and that corner stones do not slide or fall out of place.

STONE STEPS

GRANITE: Smokey Mountain Blue Granite Steps available from Plymouth Quarries, Hingham, MA 781-335-3686 or approved equal. Granite shall be sound, durable stone, free from imperfections such as knot formations, starts, cracks or seams which may impair its structural integrity. Granite shall be free of minerals that may cause objectionable staining under normal environments of use. Sizes shall be as indicated on the Drawings.

- C. Color shall be according to approved sample colors
D. GRANITE FINISHES [as defined by the National Building Quarries Association, Inc.
a. Top and side surfaces shall be steeled finished.
b. Face shall be split.

INSTALLATION

- A. At Dry Laid Installations: Place crushed stone base in accordance with Division 31 00 00 Earthwork, to bring base to the sections and elevations shown on the Drawings.
B. Set all steps accurately in strict accordance with the Drawings. Set each step level with a 1% "wash", true to line and grade.
A. For Steps set on concrete base: Concrete base for steps shall be accurately formed so that the steps accurately meet the design elevations shown on the plans and details. Set all steps accurately in strict accordance with the Drawings. Set each step level with a 1% "wash", true to line and grade. Unless otherwise indicated, set stones in full beds of mortar with all vertical joints slushed full, and all holes completely filled.
B. "Back Butter" steps with mortar slurry before setting on mortar setting bed. Tamp and beat stone to level and embed them in setting bed to full, solid and even bearing. Do not use pinch bar on exposed face of stone.
C. Stone Joints: Butter vertical joints for full width before setting. Fully fill vertical joints with mortar, unless otherwise indicated. Neatly point all vertical and horizontal joints approximately 1/8" recess.

METAL HANDRAILINGS

- A. Install according to approved Show Drawings
B. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
C. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
D. Uniform and concentrated loads need not be assumed to act concurrently.

Welding:

- A. All surfaces shall be clean, free of rust, paint, and foreign matter of any kind. Burned edges to be welded shall be chipped clean and wire brushed before welding.
B. Weld Metal: Weld metal shall be thoroughly fused with the base metal along surfaces and edges of the union. Penetration shall be 1/8 inch (4 mm) minimum and shall be into the root of the joint.
C. Weld Quality: Welds shall present a uniform surface, free of imperfections, without undercutting or overlapping, and free from excessive oxides, gas pockets, and nonmetallic inclusions. Welds shall be made with the proper number of beads or passes to secure sound, thoroughly fused joints. Provide backup bars, temporary backup bars, or backup welds for full-penetration butt welds. Each deposit shall not exceed 1/2 inch (12 mm) of weld for each pass of bead. Preceding layers shall be cleaned by wire brushing or preening to remove scale and slag before placing new weld material.
D. Faulty and Defective Welding: Welding showing cracks, slag inclusion, lack of fusion, bad undercut, or other defects ascertained by visual or other means of inspection, shall be chipped out and properly replaced.



WILLOW HILL LLC
459 WOLF DEN ROAD
BROOKLYN, CT
LANDSCAPE PLAN



Table with 3 columns: MARK, ISSUE, DATE

DRAWING INFORMATION
ISSUE:
DATE: 11/25/2022
SCALE:

PROJECT NUMBER:
DRAWN BY:
CHECKED BY:

DRAWING TITLE
LANDSCAPE SPEC
PAVING WALLS

DRAWING NUMBER

LS1

SECTION 32 92 00

LAWNS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
 - B. Examine Drawings and other Sections of the Specifications for requirements affecting work of this Section.
- 1.2 SCOPE
- A. Provide labor, materials, equipment, services and transportation required to complete lawn work as shown on Drawings and specified herein and includes, but is not limited to, the following:
 1. Preparation of subgrade in areas to receive topsoil for lawn areas.
 2. Place topsoil and finish grade for lawn areas.
 3. Seeding fine lawns.
 4. Sodding -
 5. Protecting and maintaining lawn areas until Final Acceptance.

1.3 EXAMINATION OF SITE AND DOCUMENTS

- A. Areas of lawn work shall be inspected before start of work and correct defects such as incorrect grading.
- B. Contractor shall be solely responsible for judging full extent of work requirements involved. By submitting bid, Contractor affirms he has carefully examined the site and conditions affecting work. No claim for additional costs will be allowed because of lack of knowledge of actual existing conditions.
- C. Drawings, surveys, measurements, and dimensions under which work is to be performed are believed to be correct, but Contractor examine them for himself during bidding period, as no additional compensation will be made for errors or inaccuracies found therein.

1.4 PERMITS AND CODES

- A. Work shall conform to Drawings and Specifications and shall comply with applicable codes and regulations.
- B. Comply with rules, regulations, laws and ordinances of the Town of Brooklyn, CT and other authorities having jurisdiction. Labor, materials, equipment and services necessary to make Work comply with such requirements shall be provided without additional cost to Owner.
- C. Arrange for and obtain permits and licenses required to complete Work. Fees not waived shall be paid for by Contractor.
- D. Conduct operations to minimize interference with use of roads, driveways, or other facilities near enough to Work to be affected.

1.5 DEFINITIONS

- A. The following related items are included herein and shall mean:
 1. ASTM: American Society of Testing Materials.
 2. AAN: American Hort.
 3. ANSI: American National Standards Institute.
 4. AOAC: Association of Official Agricultural Chemists.
 5. USDA: United States Department of Agriculture.

1.6 SAMPLES/SUBMITTALS

- A. Sample submissions and other submittals shall be in accordance with the requirements of the General Conditions, Supplementary Conditions and the Submittals Section.
- B. Prior to ordering materials listed below, submit representative samples to Architect for selections and approval as follows. Do not order material until Architect's approval has been obtained. Delivered materials shall closely match approved samples.
 1. Submit manufacturer's certificates of compliance listing analysis for the following:
 - a. Fertilizer
 - b. Lawn Seed
 2. Submit manufacturer's certificates of compliance with each shipment of each seed and sod type. Certificate from seed and sod supplier shall indicate seed is true to variety indicated on packaging. Certificates shall include guaranteed percentages of purity, weed content and germination of seed, net weight and date of shipment. No seed may be sown until certificates have been submitted.
- C. Submittal Schedule
 1. Before installation:
 - a. Manufacturer's Product data
 - b. Test Reports
 - c. Seed Certifications

1.7 QUALITY ASSURANCE

- A. Work under this Section shall be performed by workmen experienced in lawn installation under full time supervision of qualified foreman.

1.8 DELIVERY AND STORAGE

- A. Deliver material to site in original unopened packages, showing weight, manufacturer's name and guaranteed analysis.
- B. Store materials in such a manner that their effectiveness and usability will not be diminished or destroyed and shall be uniform in composition, dry, unfrozen and free flowing. The Architect reserves the right to reject material which has become caked or otherwise damaged or does not meet specified requirements.

PART 2 - PRODUCTS

2.1 TOPSOIL BORROW

- A. Topsoil borrow shall be as described in Section 329300 Planting.
- B. Deficiencies in Topsoil shall be corrected by Contractor as directed by testing agency.
- C. No Topsoil shall be delivered or handled in a frozen or muddy condition.

2.2 TOPSOIL ADDITIVES

- A. Organic Fertilizer shall be derived: complete fertilizer and a standard product complying with State and United States fertilizer laws. Fertilizer shall be delivered to site in original unopened containers which shall bear manufacturer's name and guaranteed statement of analysis. Fertilizer for incorporation into lawn areas prior to seeding shall contain 5 percent nitrogen, 10 percent phosphorus, and 5 percent potash by weight of ingredients or as otherwise indicated by soil test results. Fertilizer shall have its nitrogen in a water soluble form derived from urea, ammonium nitrate, or ammonium phosphate.
- B. Superphosphate: finely ground phosphate rock as commonly used for agricultural purposes and shall contain not less than 18 percent available phosphoric acid.
- C. Ground Limestone: dolomite limestone and contain not less than 85 percent of total carbonates and magnesium and shall be ground to such fineness that 50 percent will pass a 100 mesh sieve and 90 percent will pass through a 20 mesh sieve. Coarser material will be accepted provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

2.3 MAINTENANCE FERTILIZER

- A. Maintenance fertilizer: shall contain 4 percent nitrogen, 1 percent phosphorus, and 2 percent potash by weight of ingredients. Fertilizer shall have its nitrogen in water soluble form derived from urea, ammonium nitrate, or ammonium phosphate.

2.4 SEED

- A. Seed mixture: fresh, clean, new crop seed. Seed can be mixed by an approved method on site or can be mixed by dealer. If seed is mixed on site, each variety shall be delivered in original containers bearing dealer's guaranteed analysis. If seed is mixed by dealer, Seeding Contractor shall furnish to the Architect the dealer's guaranteed statement of composition of mixture and percentage of purity and germination of each variety.

B. Seed Mixture Seeded Lawn:

	Proportion of mix after purity	Minimum germination
Reliant Hard Fescue	40%	95%
Jamestown II Chewings Fescue	40%	95%
Palmer II perennial ryegrass	20%	95%

1. Chewings fescue, hard fescue, tall fescue and ryegrass shall contain *Acromonium* endophytes. Seed containing endophyte must be kept cool and dry at all times; do not stockpile in the sun.
2. If cultivars as listed are not available, others can be substituted with Architect's approval.

2.5 SOD

- A. Grade 1 Sod shall be a mixture of Kentucky Bluegrass varieties, with a minimum of 10% Red Fescue or Chewing Fescue. Sod shall be well rooted turf free from disease, insect pests, weeds and any other harmful matter.
- B. Sod shall be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement of thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads and torn or uneven ends will not be acceptable. Sod shall be at least one year old from time of original seeding.
- C. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section.
- D. Sod shall be harvested, delivered and installed within a period of 36 hours. Sod not transplanted within this period shall be inspected and approved by the Architect prior to its installation. Soil on sod pads shall be kept moist at all times.

2.6 COMPOST

- A. Shall be as described within Section 329000 Planting.

PART 3 - EXECUTION

3.1 LAWN WORK SCHEDULE

- A. Lawn work shall proceed on schedule in conformance with project phasing as indicated on phasing drawings and specified under General Conditions. These requirements will be strictly adhered to.
- B. The Contractor is responsible for maintenance work on installed lawn until an acceptable lawn is established for a minimum of 60 days.

3.2 INSTALLATION OF NEW LAWNS

- A. Preparation of subgrade
 1. Before beginning work of this Section, Lawns Subcontractor shall inspect the subgrade with the Architect to ensure that debris remaining from construction of building has been removed. Coordinate with General Contractor to remove remaining debris. Coordinate additional work to and adjustment of subgrade with General Contractor. Do not begin placing Topsoil on subgrade until receipt of Architect's approval.
 2. Prior to placing topsoil layer, cultivate subsoil with chisel plow or other approved method to 6" depth. Rake surface of subsoil to remove rocks in excess of 3". Grade subgrade to evenly file slopes parallel to final finished grade. Note that subgrade must pitch to drain. Architect shall inspect and approve subgrade before placing the topsoil.
 3. Place 2"-3" layer of topsoil and rake or rototill the topsoil into the top 2-3" of the subsoil. Place the remaining topsoil to meet the finish grade.
 4. Provide and set sufficient grade stakes, as determined by Architect, to ensure correct line and grade of finish grade.
- B. Placing Topsoil
 1. Place and spread Topsoil over approved areas to depth sufficiently greater than depth required so after natural settlement and light rolling, complete work conforms to lines, grades and elevations indicated, and ensures proper drainage in an uninterrupted pattern free of hollows and pockets. Topsoil depth after rolling shall be 6".
 2. Roll entire surface with roller weighing approximately one hundred pounds per foot of width. During rolling fill depressions caused by settlement with additional loam borrow and regrade and roll until surface presents smooth, even and uniform finish and is up to required grade. Obtain approval from Owner's Representative of finish grading and rolling of Topsoil borrow.
 4. Placing, tilling, rolling and finish grading of Topsoil borrow shall be performed with agricultural machinery designed for that purpose to prevent over compaction of seed bed. Heavy construction equipment shall not be permitted for these purposes.
 5. No subsoil or Topsoil borrow shall be handled if in a wet or frozen condition.
- C. Application of fertilizers
 1. Prior to seeding, apply uniform application of 5-10-5 fertilizer at rate of 440 pounds per acre. Work into soil with seed application described below.

3.3 SEEDING SEASON

- A. Seeding dates are as follows:
 1. April 15 to June 1, September 1 to October 15.
- B. Seeding other than within the above season shall be allowed only when ordered by Architect or when Contractor submits written request for permission to do so and permission is granted. Newly seeded areas, if seeded out of season, must be continuously watered according to good practice if seeding is done between June 1 and September 1. Seeding done outside dates established above shall be solely at Contractor's risk.

3.4 SOWING OF SEED

- A. Seeding: Seeding shall consist of soil preparation, seeding, raking, rolling, weeding, watering and otherwise providing labor and materials necessary to secure establishment of acceptable turf.
- B. Sowing of Seed: Immediately before seed is sown, ground shall be scarified or raked lightly until surface is smooth, friable, and of uniformly fine texture. No seeding shall be done during windy weather. Sow seed in two directions right angles to each other, applying 3 lbs. of seed per 1,000 sq. feet in each direction. Sow seed evenly using a cultipacker or approved seeding device (if cultipacker is not used, cover seed with thin layer of Topsoil borrow by dragging, light raking or other approved method). Roll in both directions with hand roller weighing approximately one hundred pounds per foot of width, and water with fine spray. Provide protective fencing where required to keep area undisturbed until grass is established.
- C. Hydroseeding is allowed as an alternative to seeding with a cultipacker. Hydroseeding shall provide an even and uniform coverage of seed at the rates described above. Incorporation of a starter fertilizer may be included in the hydroseed mixture. Note that spreading of required lime and fertilizer shall be done by mechanical means as described herein. Provide a cellulose mulch and include a tackifier on all sloped areas.

3.5 SODDING -

- A. Limit of sodding shall be as shown on the Drawings. All areas on the plan are to be sodded only after written approval of the placement of topsoil and finished grading or as directed by the Architect.
- B. Planting season for sod shall be from April 15 to June 1 and from August 15 to November 1. The actual planting of sod shall be done, however, only during periods within this season which are normal for such work as determined by weather conditions and by accepted practice in this locality. At his option and on his responsibility the Contractor, may plant sod under unseasonable conditions without additional compensation but subject to Architect's approval as to time and methods.
- C. Sodding of lawns shall be done only by experienced workmen under the supervision of a qualified foreman. Sodding shall consist of soil preparation, sodding, rolling, pegging, weeding, fertilizing, watering and watering and otherwise providing all labor and materials necessary to secure the establishment of acceptable turf.
- D. The soil on which the sod is laid shall be reasonable moist and shall be watered, if directed by the Architect. The sod shall be laid smoothly, edge to edge, and where continuous or solid sodding is called for on the plans sod shall be laid with the longest dimension parallel to the contours. Sodding shall start at the base of slopes and progress upward in continuous parallel rows. Vertical

joint between sods shall be staggered. Immediately after laying, sod shall be pressed firmly into contact with the sod bed by tamping, rolling, or by other approved methods so as to eliminate all air pockets, provide true and even surfaces, insure knitting and protect all exposed sod edges, but without displacement of the sod or deformation of the sod surface. The sodded areas shall be watered evenly and at a rate of five gallons per square yard, unless otherwise directed by the Architect.

- E. In all swales, on all slopes one on three or steeper and elsewhere where specified or as directed by the Architect, sods shall be held in place by stakes. Pegging shall be done immediately after tamping. At least one stake shall be driven through each sod to be pegged and the stakes shall be not more than two feet apart. Stakes shall have their flat sides against the slope and be driven.

3.6 WATERING

- A. Watering of Seeded Areas
 1. First Week: Provide labor and arrange for watering necessary to establish acceptable lawn. In absence of adequate rainfall, watering shall be performed daily and as necessary during first week and in sufficient quantities to maintain moist soil to two inch minimum depth.
 2. Second and Subsequent Weeks: Water lawn to maintain adequate moisture in upper 5 inches of soil, necessary for deep root growth promotion.
 3. Watering in a manner providing uniform coverage while preventing erosion due to application of excessive quantities over small areas, and prevent damage to finished surface by watering equipment. Provide sufficient watering equipment to apply one complete coverage to seeded areas in eight hour period.
 4. If Sodded lawn is included, provide additional watering to keep sod moist without creating muddy saturated conditions in topsoil below sod.

3.7 MAINTENANCE

- A. Maintenance begins immediately after lawn is installed and continues according to the following requirements:
 1. Lawns shall be maintained for a minimum of 60 days and as long as required to establish uniform, thick, well-developed stand of grass.
 2. Mowing: Mow lawns at seven day intervals or more frequently if required. First mowing when grass has reached 2 1/4"-2 1/2" height, and cut grass to 2" height. Subsequent mowings shall cut grass to 2" height. Mow in the fall until growth of grass ceases, and resume in spring when grass reaches 2 1/2" height.
 3. Apply uniform application of 4-1-2 soluble nitrogen (urea or ammonium nitrate) fertilizer at rate of 44 pounds nitrogen per acre throughout maintenance period. Initial application 3 to 4 weeks after seeding. Additional applications shall occur at four week intervals or as directed Owner's Representative.
 4. Lawn areas shall continue to be watered as described above.
 5. After grass has started, areas which fail to show uniform, thick, well-developed stand of grass shall be immediately re-seeded repeatedly until areas are covered with satisfactory growth of grass as determined by Architect.
 6. Repair damage from erosion, gullies, washouts, or other causes immediately by filling with loam borrow, tamping, re-fertilizing and re-seeding.

3.8 INSPECTION FOR ACCEPTANCE

- A. Conditions of Acceptance
 1. Lawn acceptance shall be given for entire lawn area. No partial acceptance shall be given.
 2. Lawns shall exhibit uniform, thick, well-developed stand of grass. Lawn areas shall have no bare spots in excess of four inches in diameter and bare spots shall comprise no more than two percent of total area of lawn.
 3. No lawn areas shall exhibit signs of damage from erosion, washouts, gullies, or other causes.
 4. Pavement surfaces and site improvements adjacent to lawn areas shall be clean and free of spills or overspray from placing or handling of loam borrow and seeding operations.
- B. Inspection and Acceptance
 1. Upon written request of the Contractor, the Architect shall inspect lawn areas to determine completion of Contract work. This request must be submitted a minimum of five days prior to anticipated inspection date.
 2. If lawn areas are not acceptable, the Architect shall indicate corrective measures to be taken, and extend maintenance period as necessary for completion of work. Contractor shall request a second inspection of lawns as described above. This process shall be repeated until total lawn area being inspected is acceptable.
 3. If the lawn areas are acceptable to Architect, he shall arrange meeting of Contractor and Owner to accept lawn work. Final inspection shall be part of this meeting to insure acceptability. At this meeting, Contractor shall be furnished with written acceptance of lawn approval. Contractor shall hand over maintenance of lawn to Owner at this meeting.
 4. Following the acceptance of lawns, Contractor shall provide Owner with access to lawn areas as required for the Owner's maintenance work.
- C. Cleanup
 1. Following lawn acceptance, Contractor shall immediately remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations which do not interfere with Owner's maintenance of accepted lawns or other construction operations.
 2. Contractor shall be responsible for keeping paving and building surfaces clean during placement of loam and seeding operations. Spills and oversprays shall be cleaned up immediately. Acceptance shall not be granted until this condition is met.

END OF SECTION



WILLOW HILL LLC
 459 WOLF DEN ROAD
 BROOKLYN, CT
 LANDSCAPE PLAN



REVISIONS		
MARK	ISSUE	DATE

DRAWING INFORMATION
 ISSUE: _____
 DATE: 11/25/2022
 SCALE: _____

PROJECT NUMBER:
 DRAWN BY:
 CHECKED BY:

DRAWING TITLE
**LANDSCAPE SPEC
 LAWN**

DRAWING NUMBER
LS2

SECTION 32 90 00

PLANTING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. The work of this Section consists of all Planting work and related items as indicated on the Drawings and/or as specified herein and includes, but is not limited to, the following:

- 1. Preparation of Planting Mixture
2. Planting of trees, shrubs, groundcover, and perennials on site.
3. Mulching of all plantings
4. Maintenance

B. Definitions

The following related items are included herein and shall mean:

- 1. AOAC: Association of Official Agricultural Chemists.

1.3 SUBMITTALS

A. All sample submissions and other submittals shall be in accordance with the requirements of the GENERAL CONDITION, SUPPLEMENTARY GENERAL CONDITIONS.

B. Prior to ordering the below listed materials, submit representative samples to Architect for selection and approval as follows. Do not order material until Architect's approval has been obtained. Delivered materials shall closely match the approved samples.

- 1. Compost: The Contractor shall provide a one (l) cubic foot representative sample from each proposed source for testing and approval as directed herein.
2. Topsoil: The Contractor shall provide a one (l) cubic foot representative sample from each proposed source for testing and approval as directed herein.
3. Sand: The Contractor shall provide a one (l) cubic foot representative sample from each proposed source for testing and approval as directed herein.
4. Prior to ordering the above listed materials, submit representative test samples of individual components for planting soil mixes.

After test results for components have been accepted, create sample mixes of each planting soil mix and perform tests described below.

D. Test Reports: Submit certified reports for tests as described in this Section to Architect. Contractor shall pay for costs of testing and review of test results by an independent source if it is deemed necessary by the Landscape Architect.

- 1. Mechanical gradation (sieve analysis) shall be performed and compared to the USDA Soil Classification System.
2. The silt and clay content shall be determined by a Hydrometer Test of soil passing the #270 sieve after destruction of organic matter by H2O2.
3. Chemical analysis shall be undertaken for Nitrate Nitrogen, Ammonium, Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Lead, Chromium, Aluminum, Soluble Salts, acidity (pH), buffer pH and micronutrients.
4. Tests shall be conducted in accordance with Recommended Soil Testing Procedures for the Northeastern United States, 2nd Edition, Northeastern Regional Publication No. 493;
5. Certified reports on analyses from producers of composted organic materials are required, particularly when sources are changed.
6. Density Tests: ASTM D1556 Density of soil and rock in place using Sand Cone Method* or with Nuclear Density (e.g. Troxler) equipment.
7. Antidesiccant: Submit manufacturer literature.
8. Fertilizer: Submit Certificate of Compliance listing analysis.
9. Unit prices for all plant materials, including installation and one year maintenance.
12. Manufacturer's certificates regarding fertilizers and lime.

1.4 CERTIFICATION OF ACCEPTANCE AND GUARANTEE

A. After the minimum sixty (60) day maintenance period, the Contractor shall request the Architect, in writing, for an inspection to determine whether the plant material is acceptable. If the plant material and workmanship are acceptable, written notice will be given by the Architect to the Contractor stating that the one year maintenance and guarantee period begins from the date of the Certificate of Acceptance.

B. If any plants are sickly and dead at the time of inspection, acceptance will not be granted, and the

Contractor's responsibility for maintenance of all the plants shall be extended until replacements are made. All plants unacceptable to the Architect shall be promptly removed from the project. Replacements shall conform in all respects to the specification for new plants and shall be planted in the same manner.

C. Plants shall be guaranteed for a period of one year after inspection and issuance of Certificate of Acceptance, and shall be alive and in satisfactory growth at the end of the guarantee period. The sum of 10% of the total cost of the planting contract shall be retained and paid to the Contractor after replacements have been made, one year from acceptance of original planting.

D. At the end of the guarantee period, inspection will be made again. Any plant required under this contract that is dead or unsatisfactory shall be removed from the site. Each plant shall show at least 75% healthy growth and shall have the natural character of a plant of its species in accordance with the American Hortis. These plants shall be replaced live during the normal planting season. A final inspection for acceptance will be made after the replacement plantings have lived through one year.

E. All replacements shall be plants of the same kind, size and quality as specified in the PLANT LIST. The cost shall be borne by the Contractor, except for possible replacements due to vandalism or neglect on the part of others.

PART 2 - PRODUCTS

2.1 COMPOST (Organic Amendment Materials)

A. Organic Matter (Compost) for amending planting media shall be a stable, humus-like material produced from the aerobic decomposition of organic residues. The residues, if biosolids, shall consist of compost meeting MA DEP Type 1 requirements or approved equal. Leaf or Yard Waste Compost, shall be composted for a minimum of one year (12 months). Compost shall be free of debris such as plastics, metal, concrete or other debris and stones larger than 3/8", larger branches and roots and wood chips over 3/8" in length or diameter. Compost shall be a dark brown to black color and be capable of supporting plant growth with appropriate management practices in conjunction with addition of fertilizer and other amendments as applicable, with no visible free water or dust, with no unpleasant odor, and meeting the following criteria as reported by laboratory tests.

- 1. The ratio of carbon to nitrogen shall be in the range of 12:1 to 25:1.
2. Stability shall be assessed by the Solvita procedure. Protocols are specified by the Solvita manual (version 4.0). The compost must achieve a maturity index of 6 or more as measured by the Solvita scale.
3. Organic Content shall be at least 20 percent (dry weight). One hundred percent of the material shall pass a 3/8-inch (or smaller) screen.
4. pH: The pH shall be between 6.5 to 7.2 as determined from a 1:1 soil-distilled water suspension using a glass electrode pH meter American Society of Agronomy Methods of Soil Analysis, Part 2, 1986.
5. Salinity: Electrical conductivity of a one to five soil to water ratio extract shall not exceed 2.0 mmhos/cm (ds/m).
6. The compost shall be screened to 3/8 inch maximum particle size and shall contain not more than 3 percent material finer than 0.002mm as determined by hydrometer test on ashed material.

2.2 TOPSOIL

A. Topsoil as required for the work shall be a fine sandy loam that has been thoroughly screened to remove stones larger than 1, roots or other objectionable, extraneous matter or debris. Topsoil shall be free of subsoil, earth clods, sticks, stumps, and clay lumps. Topsoil shall also be free of quack-grass rhizomes, Agropyron Repens, and the nut-like tubers of nutgrass, Cyperus Esculentus, and all other primary noxious weeds. Topsoil shall not be delivered or used for planting while in a frozen or muddy condition. Topsoil for mixing shall conform to the following grain size distribution for material passing the #10 sieve:

- B. The ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 6.5 or less. (D80/D30 < 6.5). Maximum size shall be one inch largest dimension.
C. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by H2O2.
D. The organic content shall be between 4.0 and 8.0 percent.

2.4 PLANTS

A. The Contractor shall furnish and plant all plants shown on the Drawings, as specified, and in quantities listed on the PLANT LIST. No substitutions will be permitted. In case of conflict between the Planting Plan and the Plant List, the Plant List shall prevail. All plants shall be nursery grown:

- 1. The Contractor is responsible for paying all shipment and shipment related costs for this Contract.
2. It shall be the Contractor's responsibility at the end of the guarantee period to replace any plant at no additional cost to the Owner that the Architect determines unacceptable.
B. Plants shall be in accordance with the American Standard Nursery Stock by American Hort, Latest edition.

C. All trees shall exhibit distinctive character and form and shall be well branched and fully covered with foliage. Trees shall meet the requirements for spread or height stated in the plant list. The measurements for height are to be taken from the ground level to the average height of the tree not to the highest branch. The thickness of each shrub shall correspond to the trade classification "No. 1" AAN standard. The side branches must be generous, well twigged, and the plant as a whole well-branched. The plants must be in a moist condition, free from dead wood, bruises or other root or branch injuries. Plants shall not be pruned prior to delivery.

D. All plants shall be healthy, free of insects and diseases.

E. Product Delivery, Storage and Handling

- 1. All plants shall be carefully handled so that the roots are adequately protected and moist at all times. Plants shall not be pruned prior to planting. The balls of balled and burlapped plants shall be well protected before, during and upon delivery and until planted.
G. The root system of each shall be well provided with fibrous roots. All parts shall be moist and show active green cambium when cut.
H. All plants must be moved with the root systems as solid units with balls of earth firmly wrapped with untreated eight ounce burlap, firmly held in place by a stout cord or may be placed in metal baskets and that are carefully tightened to firmly hold the roots and soil in place.

F. All Plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. Only plant stock within the hardiness Zone 1 through 5, as established by American Hort.

G. The root system of each shall be well provided with fibrous roots. All parts shall be moist and show active green cambium when cut. They shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae.

H. All plants must be moved with the root systems as solid units with balls of earth firmly wrapped with untreated eight ounce burlap, firmly held in place by a stout cord or may be placed in metal baskets and that are carefully tightened to firmly hold the roots and soil in place. No "burlap" made of synthetic fibers will be acceptable. The diameter and depth of the balls of earth must be sufficient to encompass the

fibrous and root feeding system necessary for the healthy development of the plant. No plant shall be accepted when the ball of earth surrounding its roots has been badly cracked or broken preparatory to or during the process of planting.

I. At least 75% of the plants furnished for each size range shown on the Plant List shall be at or above the average between the maximum and minimum size specified. If a nursery supplies material at a specific height (not a range), then the larger size of the specified range shall be furnished.

J. Plant material which is to be planted after the specified seasons for planting shall be dug during the normal season for digging of the particular plant material and be stored and maintained in good health until planting. The Contractor shall assume all costs for maintaining plant material while it is being stored.

K. The Contractor shall provide a list of suppliers in sufficient time to allow the Architect to inspect the plants prior to delivery.

- 1. The Contractor shall request, in writing, that the Landscape Architect provide representative to select and tag representative stock to be planted under this Section.
2. Plants shall be selected by the Landscape Architect at the place of growth for conformity to specification requirements as to quality, size, and variety.
L. Plants shall be dug with care and skill. Special precautions shall be taken to avoid any unnecessary injury to, or removal of fibrous roots.
M. Requests for plant substitutions shall be made at least 5 days before the plants are to be planted and such requests shall list at least 5 major nursery sources contacted for confirmation of unavailability.

2.6 WATERING

A. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner will furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor will be held responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.

2.7 ANTIDESICCANTS

A. Antidesiccants shall be emulsions or other materials which will provide a protective film over plant surfaces permeable enough to permit transpiration and specifically manufactured for that purpose. Manufacturer of Antidesiccant shall be subject to the Architect approval. Antidesiccant shall be delivered in containers of the manufacturer and shall be mixed according to the manufacturer's instructions.

2.8 BARK MULCH

A. Bark mulch shall be shredded bark averaging 1/2 to 2 inches in length and shall be no less than 6 months old nor more than 1 year old. It shall be free of sticks leaves twigs and other debris to the satisfaction of the Architect. It shall not contain ground up construction debris, shipping pallets, or any toxic materials. It shall not have been subject to anaerobic conditions.

PART 3 - EXECUTION

3.1 TOPSOIL BASED PLANTING MIXTURES

A. "Planting Mixture": The Planting Mixture shall consist of a blend of approximately equal parts by volume of Topsoil, Sand and Compost. Blending of the components shall be carried out with earth moving equipment to mix components and then the material shall be run through a screening plant to thoroughly mix together the components prior to placement. The components shall be blended to create a uniform mixture as determined by the Landscape Architect.

- 1. The final mix shall have an organic content between 5 and 8 percent and conform to the following gradation requirements for material passing a Number 10 sieve.
2. Maximum size shall be one inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
3. The ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 5.0 or less. (D80/D30 <5.0)

3.2 PREPARATION FOR PLANTING

A. Contractor shall carefully review details and specifications with Architect and Owners Representative before proceeding.

3.3 PLANTING ON SITE

A. Planting of any plant material includes: Coordination with the nursery, shipment from the nursery, the digging of the holes, provision of the soil additives and amendments, furnishing the plants of specified size with roots in the specified manner, the labor of planting and mulching, and the removal of all excess or debris material created as a result of the work.

B. Coordination with Existing Conditions: Prior to excavating for plants, the Contractor shall inform himself fully or existing conditions below grade. Specifically, the Contractor shall verify the location of underground utilities and, when working over the structure, the depth of waterproofing, drainage and other utility structures running below grade. The Contractor shall be liable for any damages resulting from his failure to ascertain subsurface conditions before proceeding with the work.

C. Planting on site:

- 1. All planting beds on the site shall have 12" of planting mix installed and graded prior to planting.
2. The Contractor shall place 4" of planting mix on top of the subgrade and rake this planting mix into the top 4" of the subgrade.
3. All shrubs and trees shall be set on the ground by the Contractor in their approximate location for approval by the Landscape Architect before any excavation.
4. Trees shall be planted such that the rootflare is 3" above the surrounding grade.
5. Shrubs shall be planted such that the rootflare is 1" above the surrounding grade.

D. Planting of Perennials and Groundcovers:

- 1. After all shrubs and trees have been planted, the planting beds shall be mulched. The Contractor shall then place all the perennials and groundcovers in locations for the Landscape Architect's approval and shall adjust the locations as directed to the satisfaction of the Landscape Architect.

E. All plant roots and earth balls must be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation and on the ground until the final planting. After

plant locations have been approved, and trees are backfilled to within 8" of the surface, remove burlap, rope, from the tops of root balls. Cut and remove the top of the wire cages for machine dug plants. Remove all non biodegradable twine. Untie or cut rope and twine that is tied around the root flare. Do not pull burlap out from under root balls.

F. The sides of rootballs of potted shrubs and perennials shall be scarified to cut or free encircling roots.

3.5 COMPLETION OF PLANTING OPERATIONS

A. After all trees, shrubs, perennials and groundcovers have been installed. All plants shall be flooded with water twice within the first 24 hours of the time of planting and all plants during the maintenance period shall be watered at least twice each week. At each watering the soil around all plants shall be thoroughly saturated. If sufficient moisture is retained in the soil, as determined by the Landscape Architect, the required watering may be reduced.

B. Shredded bark mulch shall be placed over entire planting areas to a settled depth of two inches, not later than one week after planting. No mulch shall be applied prior to the first watering of plant materials.

C. Pruning: All dead wood or suckers and all broken or badly bruises branches shall be removed back to a live bud, branch or stem. Never cut a leader and do not trim back the tips of branches.

D. Antidesiccant shall be applied to all evergreen plants before digging at the nursery or as directed by the Landscape Architect once the plants have been delivered to the site.

E. Absolutely no debris may be left on site. Excavated material shall be removed as directed by the Architect. Repair any damage to site or structures to restore them to their original condition as directed by the Architect, at no cost to the Owner.

F. The Contractor assumes responsibility for any damage caused to pavements, utilities and other elements of construction caused by planting operations. Provide all necessary materials and labor to protect any construction elements which may be endangered by planting installation or maintenance.

3.6 FERTILIZATION

A. Initial fertilization shall consist of the use of dry fertilizer, water-soluble fertilizer, or a combination of both.

B. Dry fertilizer, shall be incorporated in the planting mix, including fertilizer for acid-loving plants as appropriate.

C. Water-soluble fertilizer shall be dissolved in water at the rate recommended by the manufacturer. The thoroughly mixed solution shall be applied at the time of initial planting after the water used for back fill soaking has leached away.

D. Unless otherwise approved, refertilization shall be by a water-soluble fertilizer applied in conjunction with watering or by itself. No refertilization will be allowed after July 15th.

E. All plants shall be liquid-fertilized at least 3 times between May 15 and July 15th with water-soluble fertilizer mixed and applied as herein specified or as directed when applied with a watering.

F. The Contractor's guarantee period extends Spring to Spring, all plants shall receive an additional application of fertilizer in the Spring prior to final acceptance.

3.7 MAINTENANCE

A. Maintenance shall begin immediately after each plant is planted and shall continue until the issuance of the Certificate of Acceptance. The Contractor shall maintain all plants and plant beds for a period of one year after the issuance of the Certificate of Acceptance as part of the base contract. This maintenance includes providing supplemental watering to establish landscape plantings.

B. The Contractor shall furnish the Owner with a cost for one year of maintenance of all plantings along with the unit pricing for plants.

C. Maintenance shall consist of keeping the plants in a healthy growing condition and shall include watering, weeding, cultivating, mulching, removal of dead material, and resetting plants to proper grades or upright position.

D. If an irrigation system is part of the construction, the Contractor shall adjust the irrigation system to provide adequate water without overwatering any plantings. The Contractor shall reduce the time for irrigation to ensure that there are no soggy areas. Supplemental hand-watering of some plants may be required during the first year to preclude overwatering. Providing this supplemental hand watering is a requirement of the Contract. Ensuring that plantings are not overwatered is a requirement of the Contract.

E. If there is no automatic irrigation system, the Contractor shall water the plantings 3 times per week throughout the growing season during the one year guarantee period. At each watering, the soil around each tree or shrub shall be thoroughly saturated. If sufficient moisture is retained in the soil, as directed by the Architect, the required watering may be reduced. Trees will require a minimum of ten gallons of water each.

F. Planting beds shall be kept free of weeds and mulch shall be replaced as required to maintain a proper depth as specified.

G. Plants that die during the maintenance period shall be replaced as directed by the Architect.



WILLOW HILL LLC
459 WOLF DEN ROAD
BROOKLYN, CT
LANDSCAPE PLAN



REVISIONS

Table with columns: MARK, ISSUE, DATE

DRAWING INFORMATION

ISSUE:
DATE: 11/25/2022
SCALE:

PROJECT NUMBER:
DRAWN BY:
CHECKED BY:

DRAWING TITLE

LANDSCAPE SPEC
PLANTING

DRAWING NUMBER

LS3