

CLA Engineers, Inc.

Civil • Structural • Survey

317 MAIN STREET

NORWICH, CT 06360

(860) 886-1966

(860) 886-9165 FAX

November 23, 2020

Margaret Washburn
ZEO/WEO/Blight Enforcement Officer
Town of Brooklyn
69 South Main Street
Suite 22
Brooklyn, CT 06234

RE: Proposed 4 Lot Subdivision – Square 1 Building Associates
Tripp Hollow Road
Brooklyn, CT
Beecher Rd
CLA 6503

Dear Margaret:

Attached are revised plans addressing engineering comments dated 9/5/20. Please note the following:

Sheet 2 of 8

- 1) Signatures provided
- 2) Corrected
- 3) Corrected
- 4) Corrected
- 5) Corrected
- 6) Provided
- 7) Provided

Sheet 3 of 8

- 1) Addressed previously
- 2) Corrected
- 3) The land surveyor has stated that the Town did not require this for the recent adjacent subdivision to the North on the same unimproved Town Road. Town to clarify the need for this as it relates to consistency with the adjacent property.
- 4) Addressed previously

Sheet 4 of 8

- 1) Hay Bale check dams have been added to plan in lieu of additional silt fence.
- 2) A pipe has been added under the driveway to lot 12-9.

Sheet 5 of 8

- 1) The area of wetland disturbed has been added to the plan.
- 2) Corrected

- 3) Hay bale check dams have been added to plan in lieu of additional silt fence. In addition, silt fence has been extended from wetland crossing to station 3+00 along shared driveway.
- 4) A pipe has been added under the driveway to lot 12-10.
- 5) Additional information has been added related to removing existing organic material and providing appropriate pipe bedding and backfill.
- 6) Per our Soil Scientist, unlike a larger culvert crossing (box culverts or 5'-6' diameter pipes) on a heavily traveled road, the increased height (due to the proposed 15" pipe) of a single driveway will not impede wildlife passage. Therefore, we feel gravel pipe bottoms are unnecessary and would potentially be a future maintenance concern with pipes of this size.
- 7) There was no evidence of channelized drainage flow near the crossing. In addition, multiple pipes and porous backfill material are proposed to spread out the flow. Multiple pipe crossings were a request of the Commission after the wetland walk. Therefore, we feel the need for flared end sections is unnecessary.
- 8) This comment is no longer applicable due to the redesign of the crossing.
- 9) Underground utilities have been relocated around pipe crossings.

Sheet 6 of 8

- 1) Corrected
- 2) Corrected

Drainage Calculations

Calculations have been revised to account for 25-year storm.

Please contact me if you have any questions.

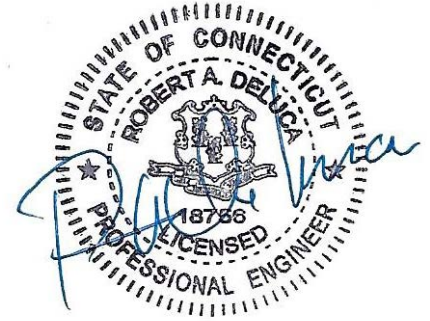
Sincerely,

A handwritten signature in blue ink, appearing to read "R. DeLuca", is written over a faint rectangular stamp.

Robert A. DeLuca, P.E.

DRAINAGE NARRATIVE

4-Lot Subdivision
Tripp Hollow Road, Brooklyn, CT
Prepared for
Square 1 Building Associates, LLC



The existing site consists of approximately 23.3 acres of undeveloped woodlands located to the west of Tripp Hollow Road in Brooklyn Connecticut. There are inland wetlands running in a north/south direction through the center of the site.

The proposed subdivision consists of 4 residential building lots served by approximately 1,000 L.F. of new shared driveway access from Tripp Hollow Road. Presently, storm water in the proposed development area drains west and north, exiting the site via the wetlands and eventually discharging to Tatnic Brook.

The driveway for the western most building lot is required to cross the wetland. The crossing location has been determined to minimize impact to the wetland (see CLA Wetland Letter to Inland Wetlands Commission 09/03/20). The crossing length is approximately 100 feet.

The following determines the size of the drainage culvert required to pass the 25-year storm event with inlet control, without submerging the culvert.

Methodology:

In accordance with the Town of Brooklyn's Public Improvement Specifications, the site's watershed was analyzed using the Rational method for the 25-year storm. The Rational method predicts the peak runoff according to the formula: $Q=CiA$, where C is a runoff coefficient, i is the rainfall intensity, and A is the sub-catchment area.

Rainfall intensities used in the calculations were taken from the Brooklyn (06-0918) weather station readings accessed via the NOAA Atlas 14 Point Precipitation Frequency website.

The proposed watershed contributing to the driveway crossing was determined to be 5.77 acres using local DEEP watershed basin boundaries and Connecticut Elevation (Lidar) Data (See Fig. 1).

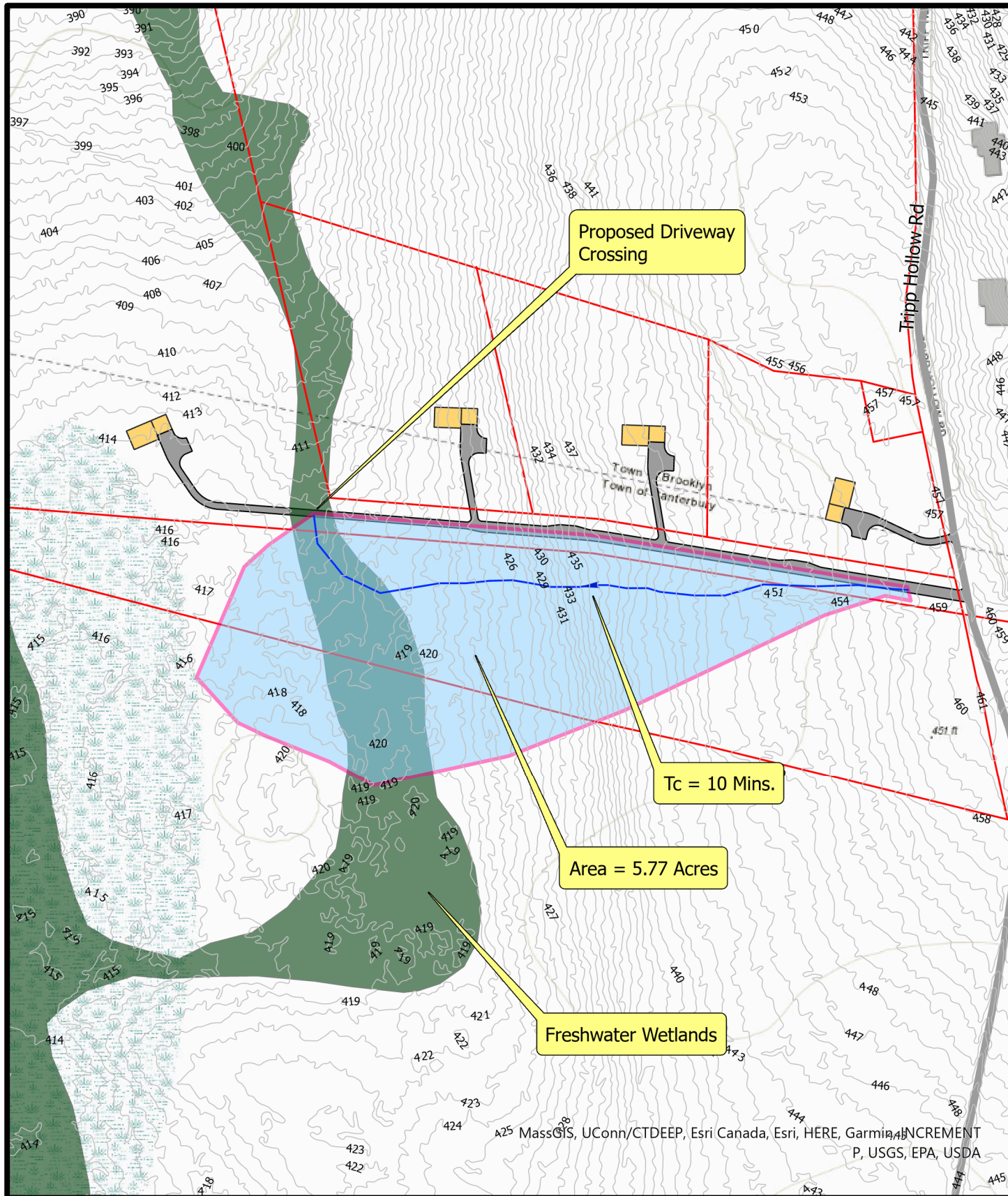
The site consists primarily undeveloped woodlands. A run-off coefficient (C) of 0.2 (Unimproved Surface) was utilized. The Time of Concentration was determined as approximately 10 minutes using the TR-55 method.

The peak discharge (Q) for the 25-year storm event was calculated as follows:

$$\text{Peak Volume (Q)} = C_i A = 0.2 \times 6.11 \text{ in/hr} \times 5.77 \text{ acres} = \underline{7.05 \text{ c.f.s. (See Appendix 1)}}$$

Analysis of the culvert crossing was performed using Hydraflow Express culvert modeler (used in HDS-5 Hydraulic Design of Highway Culverts).

The resultant analysis determined that three 15" diameter pipes, installed at a grade consistent with the existing wetland, are able to convey approximately 12 c.f.s without submerging the pipes (See Appendix 2).



CLA Engineers, Inc.

CIVIL • STRUCTURAL • SURVEYING

317 Main Street Norwich, Connecticut
 (860) 886-1966 Fax (860) 886-9165
 e-mail: cla@claengineers.com

PROPOSED WATERSHED

SQUARE 1 BUILDING ASSOCIATES, LLC
 4 LOT SUBDIVISION
 TRIPP HOLLOW ROAD, BROOKLYN, CT

DATE: 9/7/20

SCALE: 1:2,400

FIGURE

1

Hyd. No. 1

Watershed 1

Hydrograph type = Rational
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 5.770 ac
 Intensity = 6.111 in/hr
 IDF Curve = 6503 Pollock.IDF

Peak discharge = 7.052 cfs
 Time to peak = 10 min
 Hyd. volume = 0.097 acft
 Runoff coeff. = 0.2
 Tc by TR55 = 10.00 min
 Asc/Rec limb fact = 1/1



Culvert Report

Appendix 2

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc.

Monday, Nov 23 2020

Wetland Crossing

Invert Elev Dn (ft) = 417.10
Pipe Length (ft) = 24.00
Slope (%) = 1.25
Invert Elev Up (ft) = 417.40
Rise (in) = 15.0
Shape = Cir
Span (in) = 15.0
No. Barrels = 3
n-Value = 0.012
Inlet Edge = Projecting
Coeff. K,M,c,Y,k = 0.0045, 2, 0.0317, 0.69, 0.5

Embankment

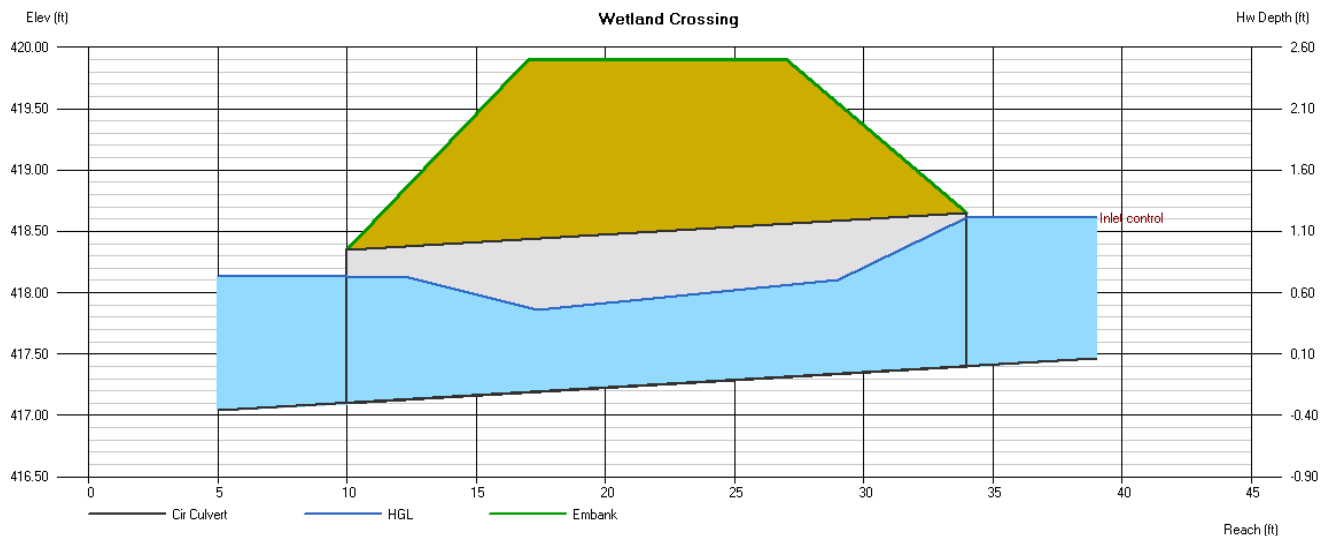
Top Elevation (ft) = 419.90
Top Width (ft) = 10.00
Crest Width (ft) = 50.00

Calculations

Qmin (cfs) = 1.00
Qmax (cfs) = 20.00
Tailwater Elev (ft) = (dc+D)/2

Highlighted

Qtotal (cfs) = 12.00
Qpipe (cfs) = 12.00
Qovertop (cfs) = 0.00
Veloc Dn (ft/s) = 3.69
Veloc Up (ft/s) = 4.74
HGL Dn (ft) = 418.13
HGL Up (ft) = 418.21
Hw Elev (ft) = 418.61
Hw/D (ft) = 0.97
Flow Regime = Inlet Control



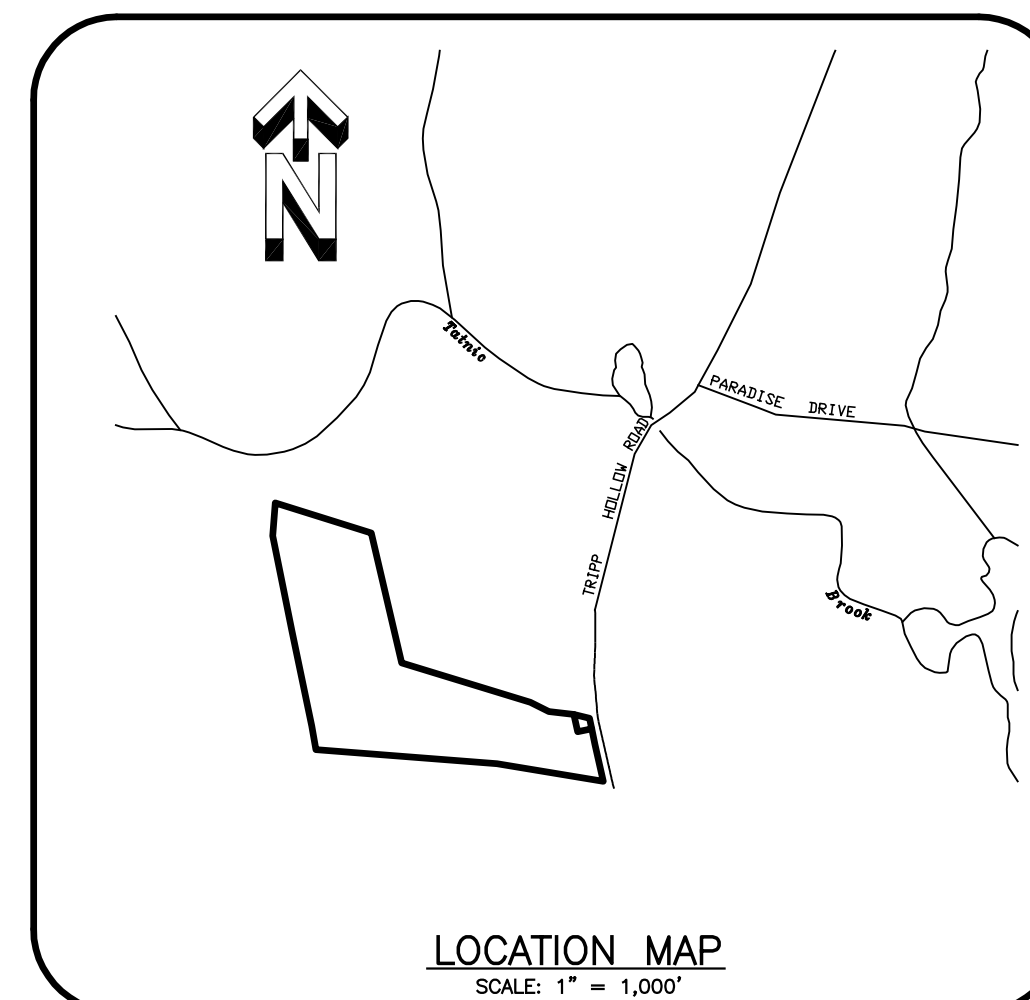
SUBDIVISION APPLICATION

PROPOSED 4 LOT SUBDIVISION

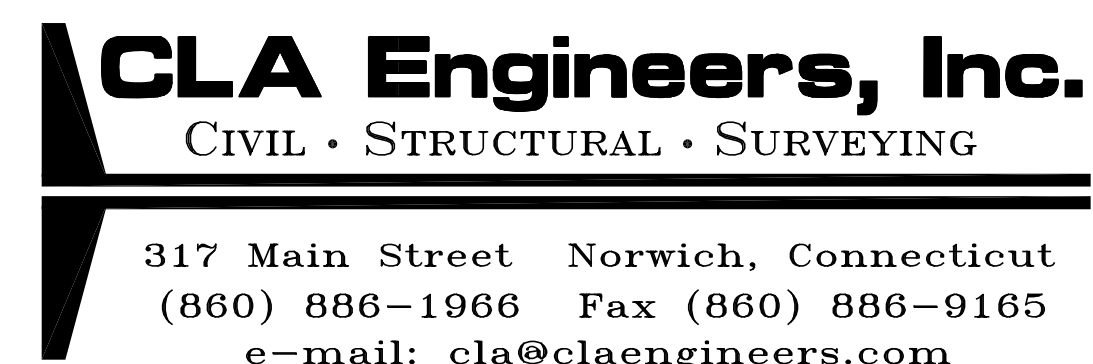
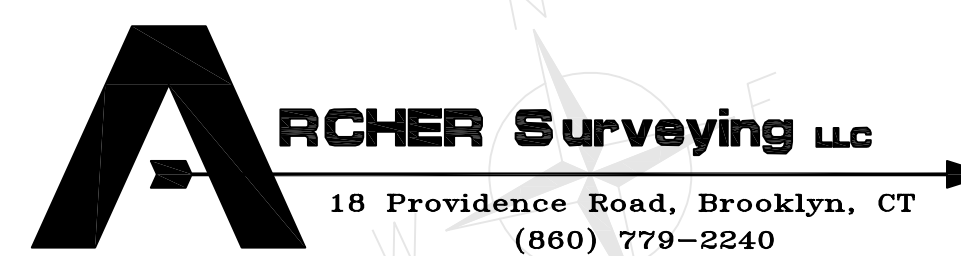
TRIPP HOLLOW ROAD
BROOKLYN, CONNECTICUT

PROPERTY OWNER/APPLICANT:
SQUARE 1 BUILDING ASSOCIATES

September 1, 2020



PREPARED BY:



INDEX OF DRAWINGS

COVER SHEET	SHEET 1 OF 8
EXISTING CONDITION PLAN	SHEET 2 OF 8
SUBDIVISION	SHEET 3 OF 8
SITE DEVELOPMENT PLAN 1	SHEET 4 OF 8
SITE DEVELOPMENT PLAN 2	SHEET 5 OF 8
DETAIL SHEET	SHEET 6 OF 8
PARCEL HISTORY PLAN	SHEET 7 OF 8
SITE ANALYSIS	SHEET 8 OF 8

APPROVED BY THE BROOKLYN
INLAND WETLANDS COMMISSION

CHAIRMAN _____ DATE _____
Expiration date per section 22A-42A of the Connecticut
General Statutes. Date: _____

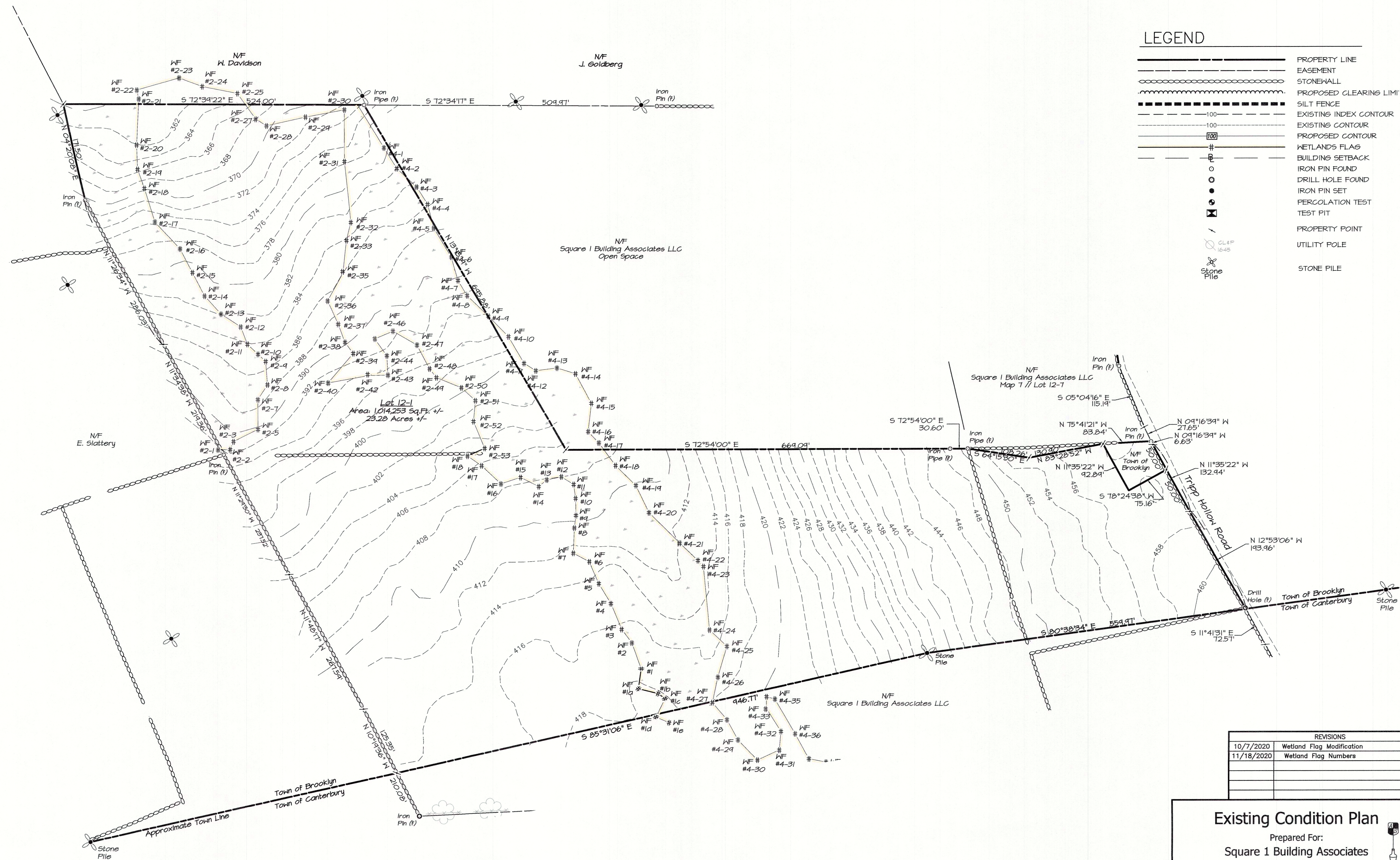
APPROVED BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____
Expiration date per section 8-26C of the Connecticut
General Statutes. Date: _____



LEGEND

	PROPERTY LINE
	EASEMENT
	STONENALL
	PROPOSED CLEARING LIMIT
	SILT FENCE
	EXISTING INDEX CONTOUR
	EXISTING CONTOUR
	PROPOSED CONTOUR
	WETLANDS FLAG
	BUILDING SETBACK
	IRON PIN FOUND
	DRILL HOLE FOUND
	IRON PIN SET
	PERCOLATION TEST
	TEST PIT
	PROPERTY POINT
	UTILITY POLE
	STONE PILE



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 "IT-2" Vertical Accuracy
 - Survey Type: Existing Condition Plan
 - Boundary Determination: Resurvey
 - Intent: 4 Lot Subdivision
- Parcels shown as 12-1 on Assessors Tax Map 7 of the Brooklyn Assessors Office
- Wetlands were flagged by Joseph Theroux in the field and Re-flagged/verified by Bob Russo of CLA Engineers. Field located by Archer Surveying LLC

Map References

- Perimeter Survey - First Time Split, Prepared for Shane Pollock, Tripp Hollow Road, Brooklyn/Canterbury, Connecticut, Dated: September 2016, Scaled: 1"=80', Prepared by Archer Surveying LLC
- 6 Lot Conservation Subdivision Prepared for Square 1 Building Associates, Tripp Hollow Road, Brooklyn, Connecticut, Dated: December 2016, Scaled: 1"=50', Prepared by Archer Surveying LLC
- Boundary Line Modification Prepared for Square 1 Building Associates, Tripp Hollow Road, Brooklyn, Connecticut, Dated: January 2020, Scaled: 1"=40', Prepared by Archer Surveying LLC

I have reviewed the Inland-Wetlands shown on this plan and they appear to be substantially the same as those which I delineated in the field.

Certified Soil Scientist

To My Knowledge and Belief this Map is substantially Correct as noted hereon.

Paul M. Archer LL5 #T0013

Date

Existing Condition Plan

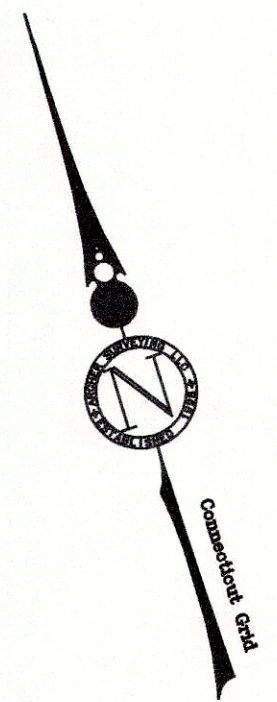
Prepared For:
Square 1 Building Associates
Tripp Hollow Road
Brooklyn, Connecticut

DRAWING SCALE: 1"=80'

0 80 160

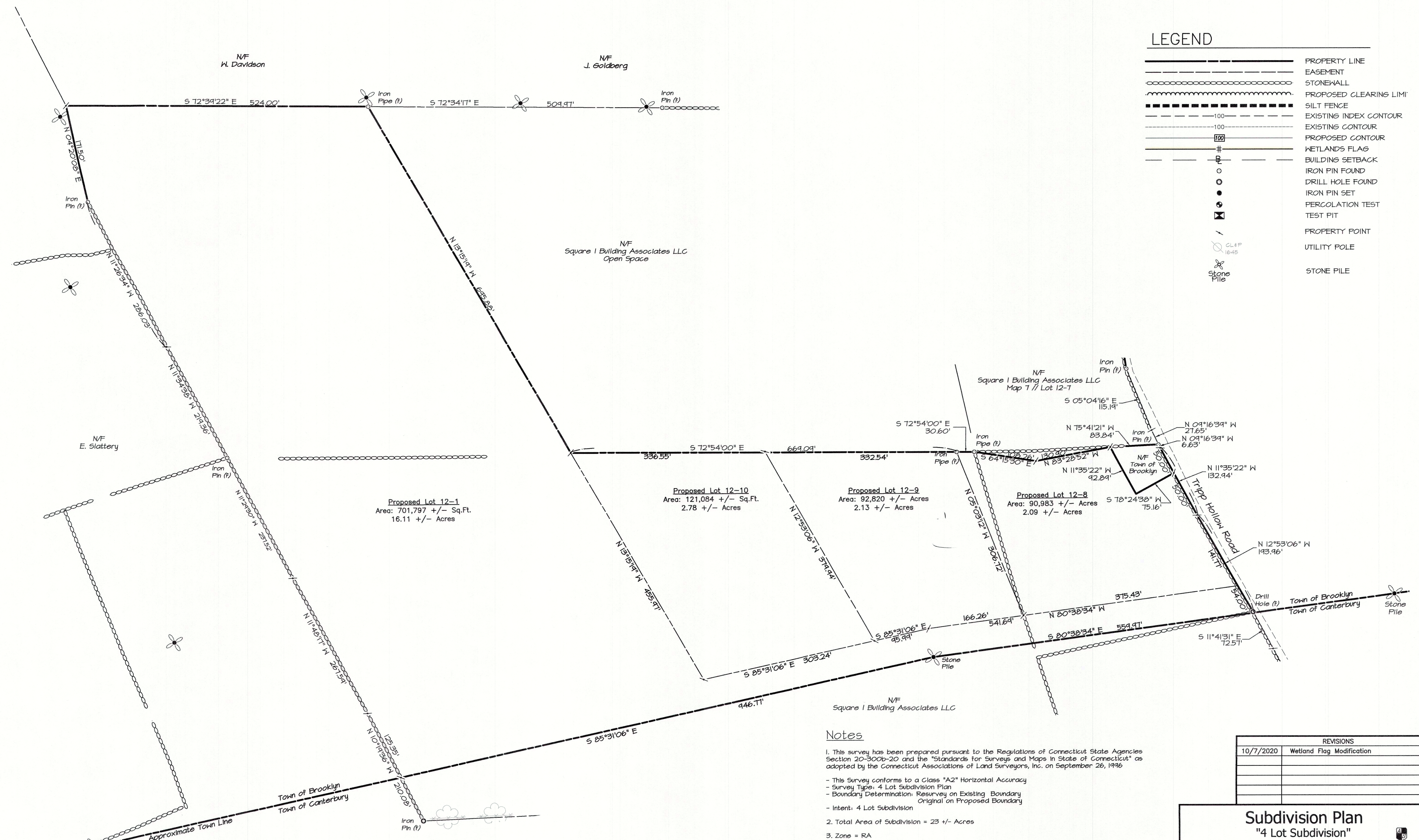
ARCHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240

Sheet No. 2 of 8 Project No. 1783 Date: September 3, 2020



LEGEND

- PROPERTY LINE
- EASEMENT
- STONEWALL
- PROPOSED CLEARING LIMIT
- SILT FENCE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS FLAG
- BUILDING SETBACK
- IRON PIN FOUND
- DRILL HOLE FOUND
- IRON PIN SET
- PERCOLATION TEST
- TEST PIT
- PROPERTY POINT
- UTILITY POLE
- STONE PILE



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 Association of Land Surveyors, Inc. on September 28, 1996.
 - This Survey conforms to a Class "A2" Horizontal Accuracy
 - Survey Type: 4 Lot Subdivision Plan
 - Boundary Determination: Resurvey on Existing Boundary
 - Intent: 4 Lot Subdivision
- Total Area of Subdivision = 23 +/- Acres
- Zone = RA
- Owner / Applicant = Shane Pollock
101 Mackin Drive
Griswold, CT 06351
- Parcel is shown as Lot #12-1 on Assessor's Map #7
- Parcel is within 500 feet of a Town line
- There are not known endangered species or species of special concern on the subject property nor within 2 miles of the subject property per the December 2006 Natural Diversity Data Base Mapping
- Parcel does not lie within an aquifer protection area
- 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 North American Datum of 1983 (NAD83)
- Passive Solar Energy techniques were considered in the design of the subdivision

Map References

- Perimeter Survey - First Time Split, Prepared for Shane Pollock, Tripp Hollow Road, Brooklyn/Canterbury, Connecticut, Dated: September 2016, Scaled: 1"=80', Prepared by Archer Surveying LLC
- 6 Lot Conservation Subdivision Prepared for Square 1 Building Associates, Tripp Hollow Road, Brooklyn, Connecticut, Dated: December 2016, Scaled: 1"=50', Prepared by Archer Surveying LLC
- Boundary Line Modification Prepared for Square 1 Building Associates, Tripp Hollow Road, Brooklyn, Connecticut, Dated: January 2020, Scaled: 1"=40', Prepared by Archer Surveying LLC

To My Knowledge and Belief this Map is substantially Correct as noted hereon.

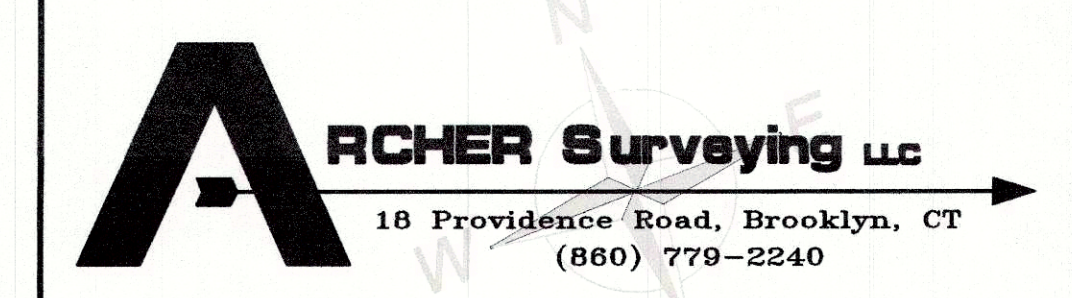
Paul M. Archer LL5 #10013 _____ Date _____

REVISIONS	
10/7/2020	Wetland Flag Modification

Subdivision Plan "4 Lot Subdivision"

Prepared For:
Square 1 Building Associates
Tripp Hollow Road
Brooklyn, Connecticut

DRAWING SCALE: 1"=80' 0 80 160



Sheet No. 3 OF 8 Project No. 1783 Date: September 3, 2020

SELECT FILL SPECIFICATION

SELECT FILL PLACED WITHIN AND ADJACENT TO LEACHING SYSTEM AREAS SHALL BE COMPRISED OF CLEAN SAND, OR SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE SELECT FILL SHALL MEET THE FOLLOWING REQUIREMENTS PER THE CONNECTICUT PUBLIC HEALTH CODE FOR USE WITHIN THE LEACHING AREA:

1. THE SELECT FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THE THREE (3) INCH SLEEVE.
2. UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SLEEVE (THIS IS THE GRAVEL PORTION OF THE SAMPLE).
3. THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN REWEIGHED AND THE SIEVE ANALYSIS STARTED.
4. THE REMAINING SAMPLE SHALL MEET THE FOLLOWING CRITERIA:

SIEVE SIZE	PERCENT PASSING WET SIEVE	DRY SIEVE
#4	100	100
#10	70-100	70-100
#40	10-50*	10-75
#100	0-20	0-5
#200	0-5	0-2.5

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

SEPTIC NOTES

1. PROPOSED SEPTIC SYSTEM TO BE STAKED IN THE FIELD BY A LAND SURVEYOR LICENSED IN THE STATE OF CONNECTICUT.
2. A BENCHMARK SHALL BE SET WITHIN 10'-15' OF THE PROPOSED SEPTIC SYSTEM PRIOR TO CONSTRUCTION.
3. ALL WORK AND MATERIAL (SEPTIC TANK, DISTRIBUTION BOX, PIPE) SHALL CONFORM TO THE CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEM.
4. SEWER LINE FROM FOUNDATION WALL TO SEPTIC TANK SHALL BE 4" SCHEDULE 40 PVC - ASTM D 1785 AND JOINTS PER HEALTH DEPT. CODE.
5. PIPE FROM SEPTIC TANK TO DISTRIBUTION LINES SHALL BE 4" SOLID PVC CONFORMING TO STD-3034 AND SDR-35.
6. SYSTEMS SHALL BE SET LEVEL FOR ENTIRE LENGTH AND HAVE A CENTER TO CENTER SPACING AS CALLED FOR IN THE CONNECTICUT PUBLIC HEALTH CODE. THERE ARE PRESENTLY NO KNOWN WATER WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEMS.
7. CLEAR AND GRUB THE AREA WHERE THE SEPTIC SYSTEMS AND HOUSES ARE TO BE CONSTRUCTED. ALL TOPSOIL IS TO BE STRIPPED AND STOCKPILED FOR FUTURE USE.
8. ALL FILL MATERIAL SHALL BE CLEAN EARTH FREE OF STUMPS, ORGANICS, CONSTRUCTION DEBRIS AND TOPSOIL.
9. TOPSOIL SHALL BE RE-APPLIED OVER ALL FILL AREAS AND ALL DISTURBED AREAS TO PROVIDE A MINIMUM DEPTH OF FOUR INCHES IN ACCORDANCE WITH THE SLOPE STABILIZATION DETAILS..

CONCEPT SEPTIC SYSTEM DESIGN

LOT 12-B
PRIMARY LEACHING AREA
3 BEDROOM RESIDENCE
PERCOLATION RATE: 13.3 MIN./INCH (NDDH FILE #21000003)
LEACHING AREA REQUIRED: 675 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 675 SF / 3 SF/LF = 225 LF

MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 28"
SLOPE = 4.0%
HYDRAULIC FACTOR (HF) = 34
FLOW FACTOR (FF) = 1.5
PERCOLATION FACTOR (PF) = 1.25 (10.1 TO 20.0 MIN./INCH)
MLSS REQUIRED: 34 x 1.5 x 1.25 = 63.75 LF

PROPOSED SYSTEM
USE 3 ROWS OF 75 LF
LEACHING AREA PROVIDED = 675 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM

LOT 12-9
PRIMARY LEACHING AREA
3 BEDROOM RESIDENCE
PERCOLATION RATE: 10 MIN./INCH (NDDH FILE #21000003)
LEACHING AREA REQUIRED: 495 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 495 SF / 3 SF/LF = 165 LF

MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 24"
SLOPE = 10.5%
HYDRAULIC FACTOR (HF) = 26
FLOW FACTOR (FF) = 1.5
PERCOLATION FACTOR (PF) = 1.00 (UP TO 10.0 MIN./INCH)
MLSS REQUIRED: 26 x 1.5 x 1.00 = 39 LF

PROPOSED SYSTEM
USE 3 ROWS OF 55 LF
LEACHING AREA PROVIDED = 495 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM

Soil Test Data (NDDH File #21000003)
Soil Testing Conducted on 8/26/20 by Sherry McGann, R.S. & Sherry Vallone, E.H.S.

Lot 12-8

TP 1-A
Mottles: 28"
Ground Water: N/O
Roots: 28"
Ledge: N/O
0-11" Topsoil
11-28" OB Very Fine Sandy Loam
28-86" GR Mottled Sandy Loam Till

TP 1-B
Mottles: 28"
Ground Water: N/O
Roots: 28"
Ledge: N/O
0-10" Topsoil
10-28" OB Very Fine Sandy Loam
28-91" GR Mottled Sandy Loam Till

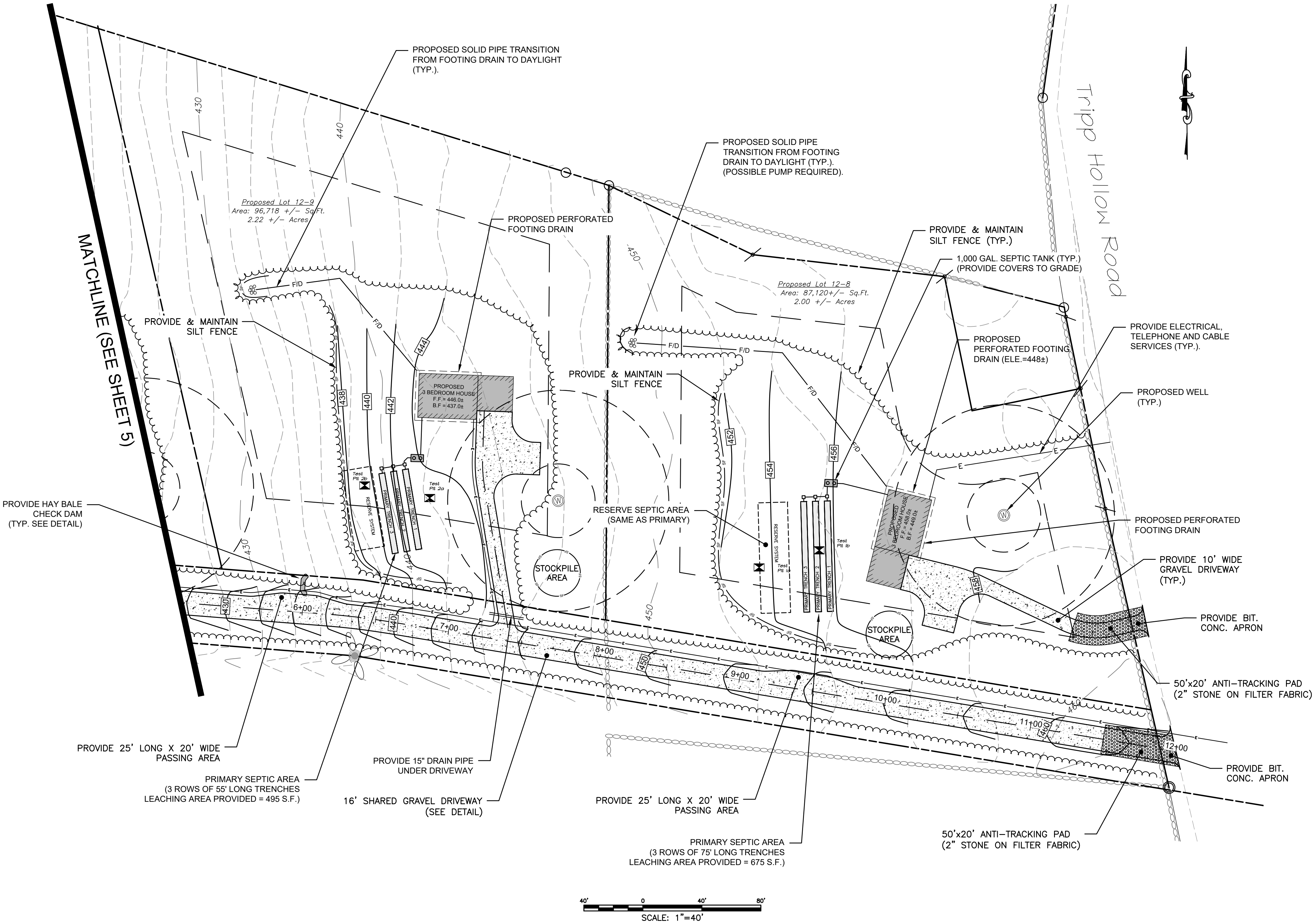
Perc 1A
10:36 3"
10:46 5"
10:56 7 1/2"
11:05 8 1/2"
11:15 9 1/2"
11:25 10 1/4"
13.33 minutes/inch

Lot 12-9

TP 2-A
Mottles: 24"
Ground Water: N/O
Roots: 24"
Ledge: N/O
0-8" Topsoil
8-24" OB Fine Sandy Loam
24-92" GR Mottled Sandy Loam Till

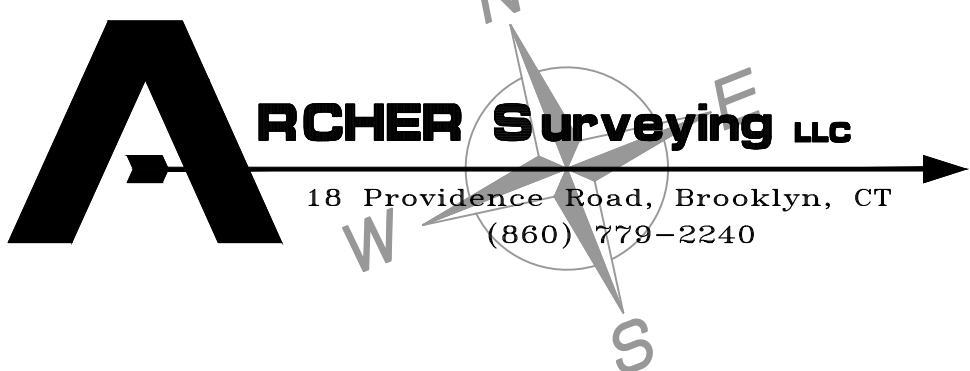
TP 2-B
Mottles: 26"
Ground Water: N/O
Roots: 26"
Ledge: N/O
0-9" Topsoil
9-26" OB Fine Sandy Loam
26-91" GR Mottled Sandy Loam Till

Perc 2A
1:38 2"
1:48 5 1/4"
1:58 7 1/4"
2:08 9"
2:18 10"
10.0 minutes/inch



LEGEND

	PROPERTY LINE
	EASEMENT
	STONE WALL
	BOUNDARY STONE WALL
	STONE WALL REMAINS
	100 YEAR FLOOD LIMIT
	EXISTING TREELINE
	PROPOSED CLEARING LIMITS
	SILT FENCE
	STAKED HAYBALES
	EXISTING INDEX CONTOUR
	PROPOSED CONTOUR
	WETLANDS FLAG
	BUILDING SETBACK
	IRON PIN FOUND
	DRILL HOLE FOUND
	MONUMENT FOUND
	IRON PIN SET
	DRILL HOLE SET
	MONUMENT SET
	PERCOLATION TEST
	TEST PIT
	PROPERTY POINT
	UTILITY POLE



CLA Engineers, Inc. CIVIL • STRUCTURAL • SURVEYING			317 Main Street Norwich, CT 06360 (860) 886-1966 Fax (860) 886-9165		Project No. CLA-6503
3	11/23/20	NCCG COMMENTS ADDRESSED	SQUARE 1 BUILDING ASSOCIATES, LLC		Proj. Engineer D.H.
2	09/28/20	WETLAND FLAGS CALLOUTS ADDED			Date: 08/24/20
1	09/20/20	VARIOUS MODIFICATIONS			Sheet No.
No. DATE REVISION			4-LOT SUBDIVISION BROOKLYN, CT		4 of 8
			GRADING & CONCEPT SITE DESIGN		

SELECT FILL PLACED WITHIN AND ADJACENT TO LEACHING SYSTEM AREAS SHALL BE COMPRISED OF CLEAN SAND, OR SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE SELECT FILL SHALL MEET THE FOLLOWING REQUIREMENTS PER THE CONNECTICUT PUBLIC HEALTH CODE FOR USE WITHIN THE LEACHING AREA:

1. THE SELECT FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THE THREE (3) INCH SLEEVE.
2. UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SLEEVE (THIS IS THE GRAVEL PORTION OF THE SAMPLE).
3. THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN REWEIGHED AND THE SIEVE ANALYSIS STARTED.
4. THE REMAINING SAMPLE SHALL MEET THE FOLLOWING CRITERIA:

SIEVE SIZE	PERCENT PASSING	
	WET SIEVE	DRY SIEVE
#4	100	100
#10	70-100	70-100
#40	10-50*	10-75
#100	0-20	0-5
#200	0-5	0-2.5

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

1. PROPOSED SEPTIC SYSTEM TO BE STAKED IN THE FIELD BY A LAND SURVEYOR LICENSED IN THE STATE OF CONNECTICUT.
2. A BENCHMARK SHALL BE SET WITHIN 10'-15' OF THE PROPOSED SEPTIC SYSTEM PRIOR TO CONSTRUCTION.
3. ALL WORK AND MATERIAL (SEPTIC TANK, DISTRIBUTION BOX, PIPE) SHALL CONFORM TO THE CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEM.
4. SEPTIC TANKS FROM FORTIFICATION WALL SHALL BE 4" SCHEDULE 40 PVC ASTM D 1785 AND JOINTS PER HEALTH DEPT. CODE.
5. PIPE FROM SEPTIC TANK TO DISTRIBUTION LINES SHALL BE 4" SOLID PVC CONFORMING TO STD-3034 AND SDR-35.
6. SYSTEMS SHALL BE SET LEVEL FOR ENTIRE LENGTH AND HAVE A CENTER TO CENTER SPACING AS CALLED FOR IN THE CONNECTICUT PUBLIC HEALTH CODE. THERE ARE PRESENTLY NO KNOWN WATER WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEMS.
7. ALL GRUB AND TREE REMOVAL AREAS WHERE THE SEPTIC SYSTEMS AND HOUSES ARE TO BE CONSTRUCTED, ALL TOPSOIL IS TO BE STRIPPED AND STOCKPILED FOR FUTURE USE.
8. ALL FILL MATERIAL SHALL BE CLEAN EARTH FREE OF STUMPS, ORGANICS, CONSTRUCTION DEBRIS AND TOPSOIL.
9. TOPSOIL SHALL BE RE-APPLIED OVER ALL AREAS AND ALL DISTURBED AREAS TO PROVIDE A MINIMUM DEPTH OF FOUR INCHES IN CONFORMANCE WITH THE SLOPE GRADUATION DETAILS.
10. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SLOPE GRADUATION DETAILS.

LOT 12-1
PRIMARY LEACHING AREA
3 BEDROOM RESIDENCE
PERCOLATION RATE: 5.7 MIN./INCH (NDDH FILE #21000003)
LEACHING AREA REQUIRED: 495 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 495 SF / 3 SF/LF = 165 LF

MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 24" (POSSIBLE LEDGE)
SLOPE = 2.7%
HYDRAULIC FACTOR (HF) = 48
FLOW FACTOR (FF) = 1.5
PERCOLATION FACTOR (PF) = 1.00 (UP TO 10.0 MIN./INCH)
MLSS REQUIRED: $48 \times 1.5 \times 1.00 = 72 \text{ LF}$

PROPOSED SYSTEM
USE 2 ROWS OF 84 LF
LEACHING AREA PROVIDED = 504 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM

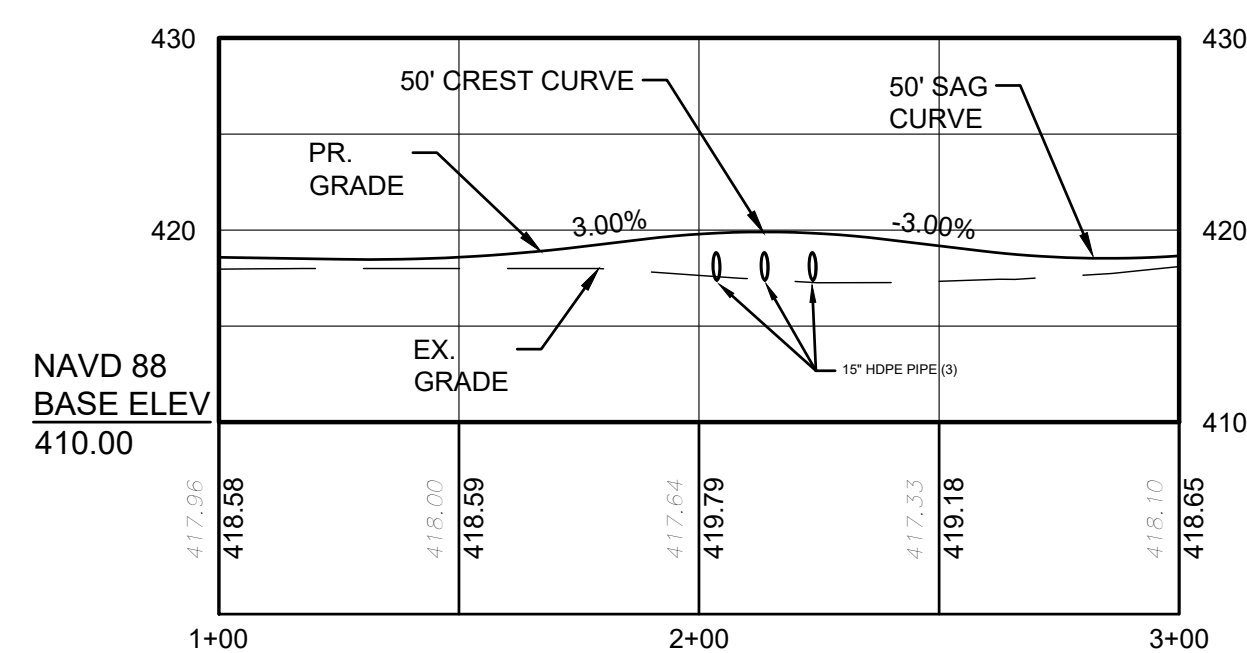
LOT 12-10
PRIMARY LEACHING AREA
3 BEDROOM RESIDENCE
PERCOLATION RATE: 10.0 MIN./INCH (NDDH FILE #21000003)
LEACHING AREA REQUIRED: 495 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 495 SF / 3 SF/LF = 165 LF

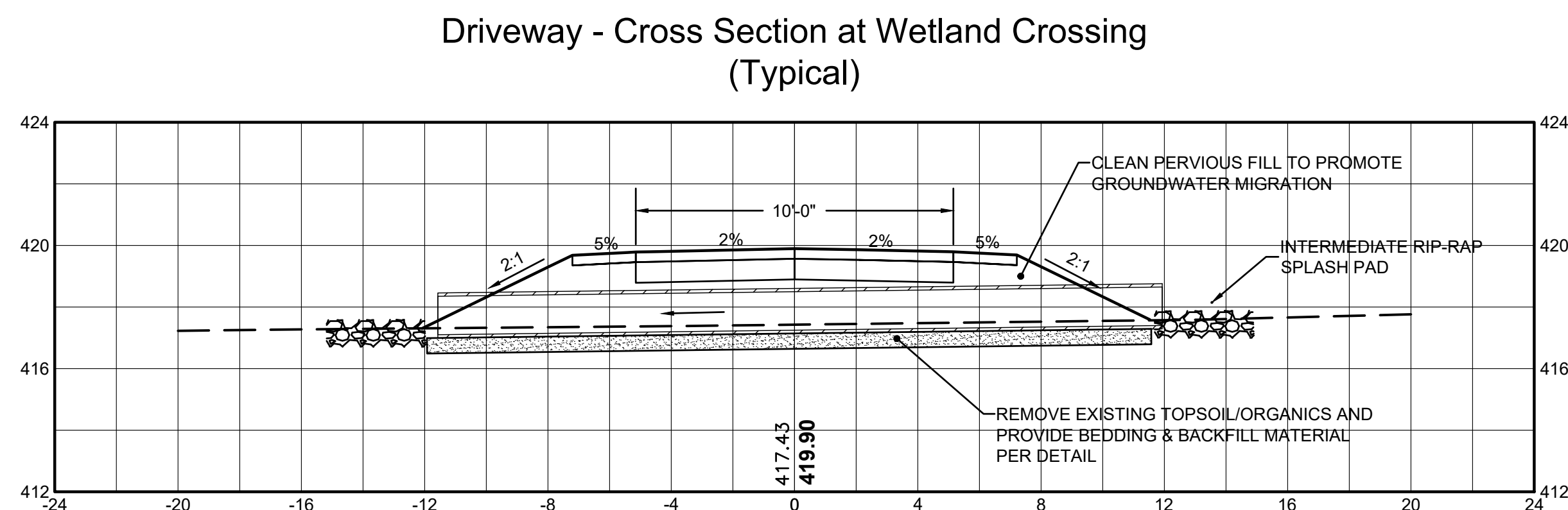
MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 24" (MOTTLES)
SLOPE = 5.5%
HYDRAULIC FACTOR (HF) = 34
FLOW FACTOR (FF) = 1.5
PERCOLATION FACTOR (PF) = 1.0 (UP TO 10.0 MIN./INCH)
MLSS REQUIRED: $34 \times 1.5 \times 1.0 = 51.0$ LF

PROPOSED SYSTEM
USE 3 ROWS OF 55 LF
LEACHING AREA PROVIDED = 495 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM



2+00
DRIVEWAY - PROFILE
STA 1+00 TO STA 3+00
Horiz. Scale: 1" = 20'
Vert. Scale: 1" = 5'



Soil Test Data (NDDH File #21000003)
Soil Testing Conducted on 8/26/20 by Sherry McGann, R.S. & Sherry Vallone, E.H.S.

Lot 12-10

TP-3A
Mottles: 24"
Ground Water: N/O
Roots: 24"
Ledge: N/O
0-6" Topsoil
6-24" OB Fine Sandy Loam
24-82" GR Mottled Sandy Loam Till

TP-3B
Mottles: 25"
Ground Water: N/O
Roots: 25"
Ledge: N/O
0-8" Topsoil
8-25" OB Fine Sandy Loam
25-84" GR Mottled Sandy Loam Till

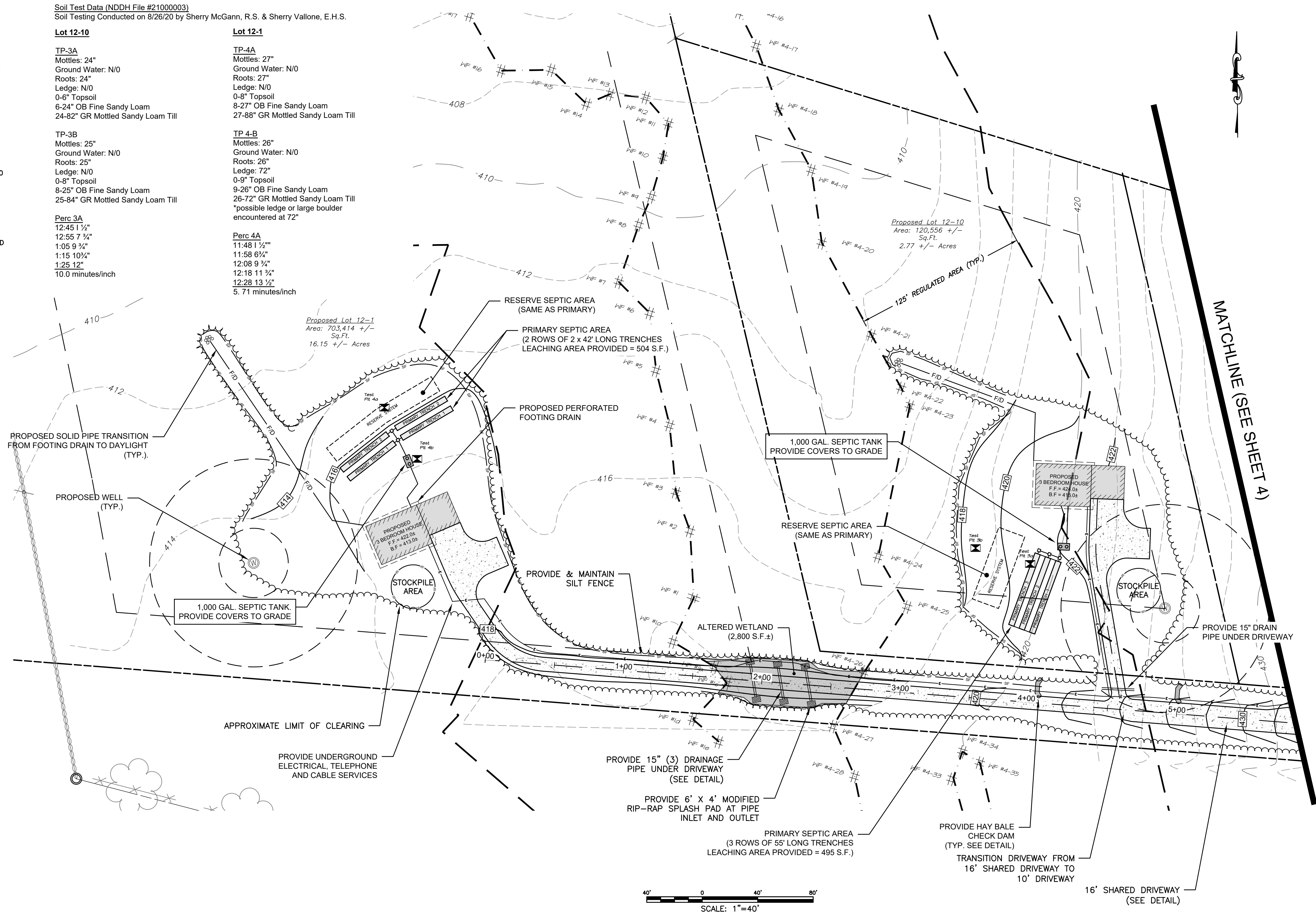
Perc 3A
12:45 1 1/2"
12:55 7 3/4"
1:05 9 3/4"
1:15 10 3/4"
1:25 12"
10.0 minutes/inch

Lot 12-1

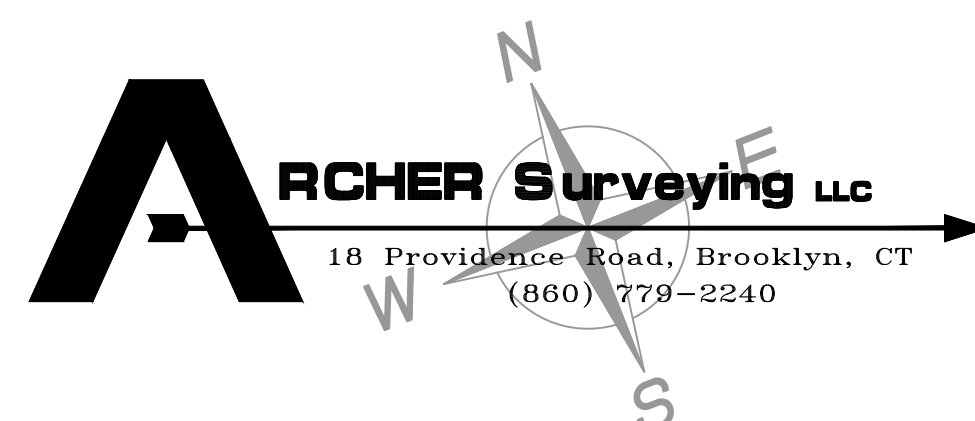
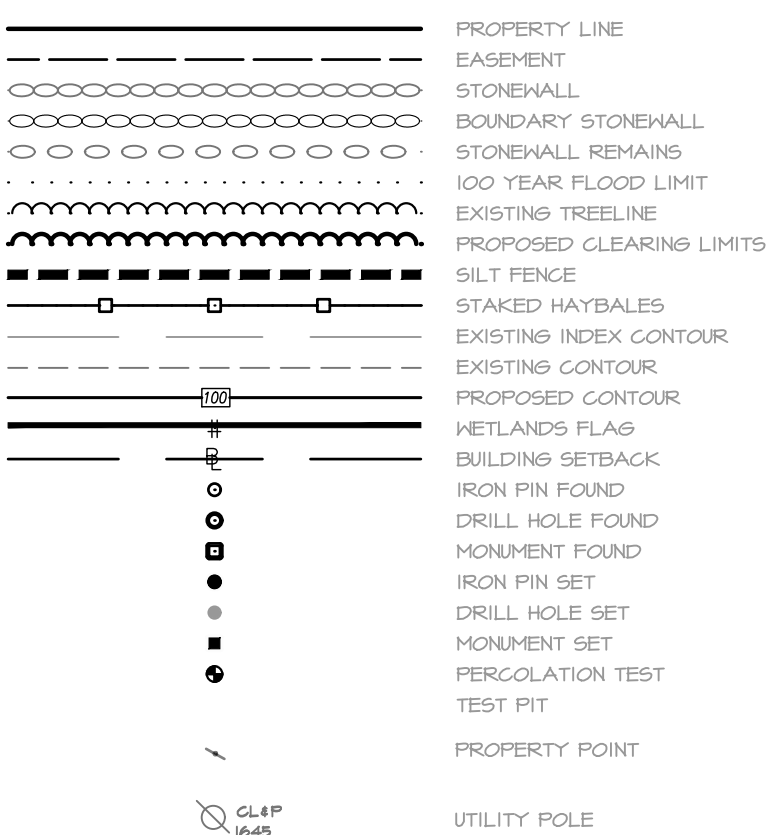
TP-4A
Mottles: 27"
Ground Water: N/O
Roots: 27"
Ledge: N/O
0-8" Topsoil
8-27" OB Fine Sandy Loam
27-88" GR Mottled Sandy Loam Till


TP 4-B
Mottles: 26"
Ground Water: N/O
Roots: 26"
Ledge: 72"
0-9" Topsoil
9-26" OB Fine Sandy Loam
26-72" GR Mottled Sandy Loam Till
*possible ledge or large boulder
encountered at 72"

Perc 4A
11:48 1 1/2"
11:58 6 3/4"
12:08 9 3/4"
12:18 11 3/4"
12:28 13 1/2"
5.71 minutes/inch



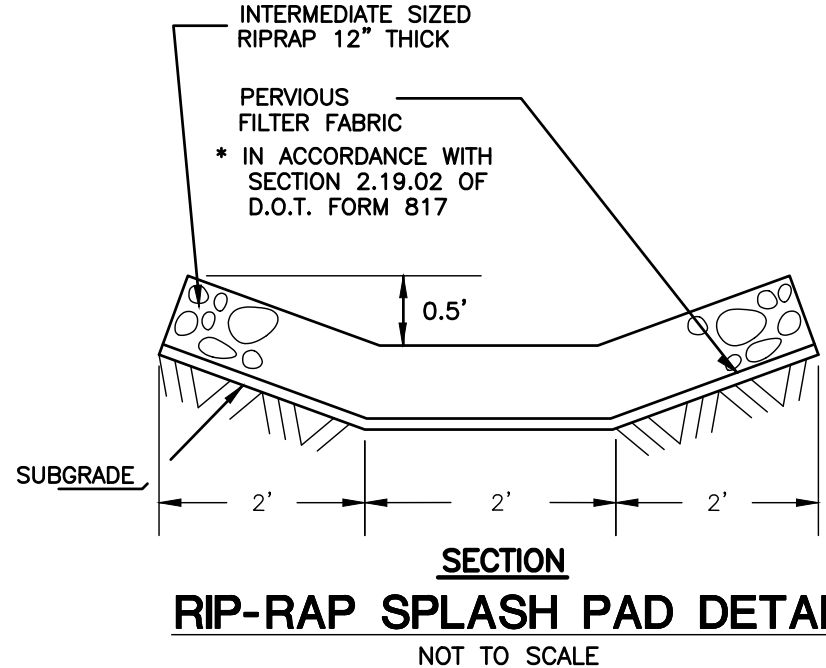
LEGEND



				<div><div>CLA Engineers, Inc.</div><div>CIVIL • STRUCTURAL • SURVEYING</div><div>317 Main Street Norwich, CT 06360</div><div>(860) 886-1966 Fax (860) 886-9165</div></div>
3	11/23/20	NCCG COMMENTS ADDRESSED		
2	09/28/20	WETLAND FLAGS, CALLOUTS ADDED		
1	09/20/20	VARIOUS MODIFICATIONS		
No.	DATE	REVISION		
<div></div>				Project No. CLA-6503
				Proj. Engineer D.H.
				Date: 08/24/20
				Sheet No.
SQUARE 1 BUILDING ASSOCIATES, LLC				4-LOT SUBDIVISION BROOKLYN, CT
GRADING & CONCEPT SITE DESIGN				
5 of 8				

1. THE EROSION & SEDIMENTATION CONTROL PLAN AND DETAILS HAVE BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
2. THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL MEASURES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDED SILT FENCE, STONE CHECK DAMS AND/OR OTHER EROSION CONTROL MEASURES AS NEEDED OR DIRECTED BY THE ENGINEER OR TOWN STAFF TO ADEQUATELY PREVENT SEDIMENT TRANSPORT.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE.
4. THE CONTRACTOR SHALL INSPECT, REPAIR AND/OR REPLACE EROSION CONTROL MEASURES EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
5. STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. TEMPORARY VEGETATIVE COVER MAY BE REQUIRED (SEE NOTE).
6. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED UNDER THE GRATES OF ALL NEW CATCH BASINS AT THE TIME OF INSTALLATION, AND UNDER THE GRATES OF EXISTING CATCH BASINS IN THE CONSTRUCTION AREA.
7. CONTINUOUS DUST CONTROL USING WATER, CALCIUM CHLORIDE OR APPROVED EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS, SURFACES OF BACKFILLED TRENCHES AND GRAVEL DRIVEWAYS.
8. IF DEWATERING IS NECESSARY DURING ANY PART OF CONSTRUCTION A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS SHOWN IN THE HAY-BALE BARRIER DEWATERING DETAIL OR ALTERNATE METHOD PROPOSED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
9. ALL DISTURBED AREAS SHALL BE RESTORED PER THE SLOPE STABILIZATION AND PERMANENT VEGETATION DETAILS. ALL DISTURBED AREAS THAT ARE SLOPED LESS THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) SHALL BE RESEED, SEEDED, FERTILIZED AND MULCHED PER THE PERMANENT VEGETATIVE COVER SPECIFICATIONS. EROSION CONTROL MATTING SHALL BE PROVIDED ON ALL DISTURBED AREAS THAT ARE SLOPED MORE THAN THREE HORIZONTAL TO ONE VERTICAL (3:1).
10. IF FINAL SEEDING OF DISTURBED AREAS IS NOT TO BE COMPLETED BEFORE OCTOBER 15, THE CONTRACTOR SHALL PROVIDE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING.
11. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISHED GRADING SHALL BE COMPLETED BY OCTOBER 15.
12. ANY EROSION WHICH OCCURS WITHIN THE DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE RETURNED TO THE SITE. POST SEEDING, INTERCEPTED SEDIMENT, IF ANY, SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE TOWN AND ENGINEER.
13. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED OR SLOPES ARE STABILIZED AND REMOVAL IS APPROVED BY THE TOWN.
14. UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
15. THE CONTRACTOR SHALL PROVIDE THE NAME AND EMERGENCY CONTACT INFORMATION FOR THE PROJECT PERSONNEL RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS PRIOR TO THE START OF CONSTRUCTION.

- * 100 LF OF SILT FENCE
- * 10 HAY BALES
- * 10 CY OF WOOD CHIPS OR CRUSHED STONE



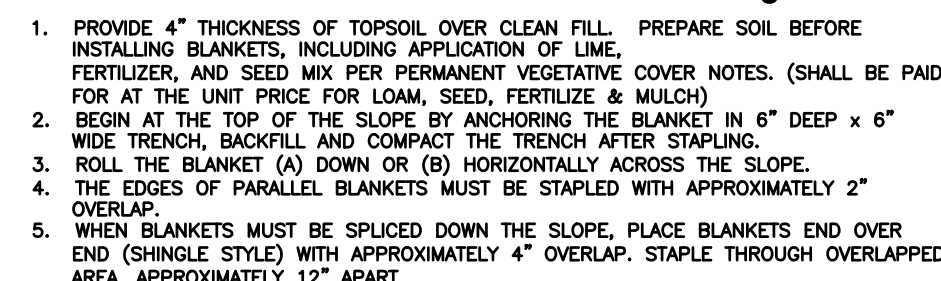
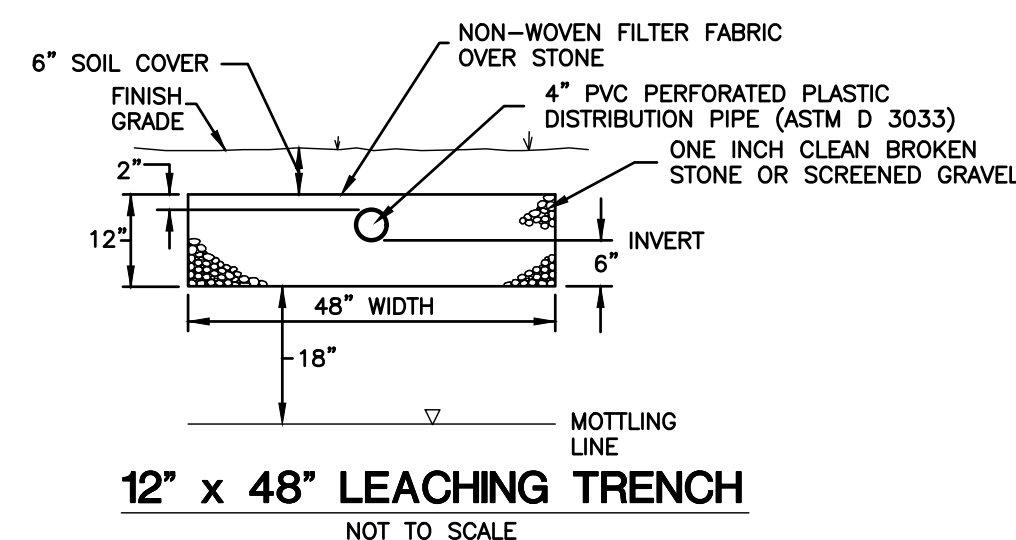
A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL IN THE STOCKPILES HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. LIMESTONE AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW FREE FROM WEEDS AND COARSE MATTER OF THE BLANKET OF 1000 S.F. OF 1000 S.F. AS A TEMPORARY MULCH. APPLY MULCH AND DRIVE TRACKED EQUIPMENT UP AND DOWN SLOPE OVER ENTIRE SURFACE SO CLEAR MARKS ARE PARALLEL TO THE CONTOURS.

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATIONS HAVE BEEN COMPLETED AND THE SLOPES ARE GRADED AS SHOWN ON THE PLANS. PROVIDE SLOPE PROTECTION AS CALLED FOR ON THE PLANS AND DETAILS. TOPSOIL SHALL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL IS HIGHLY COMPACTED, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS.

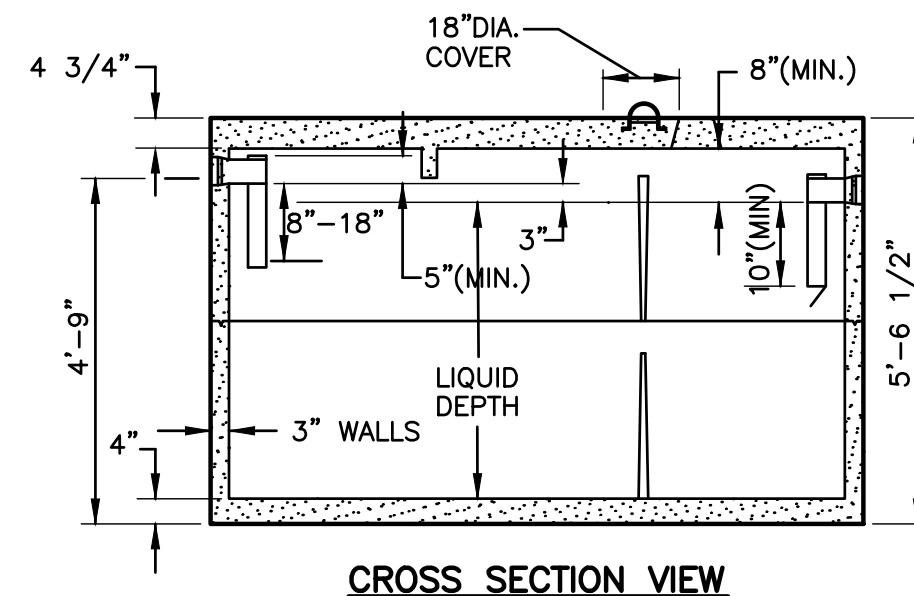
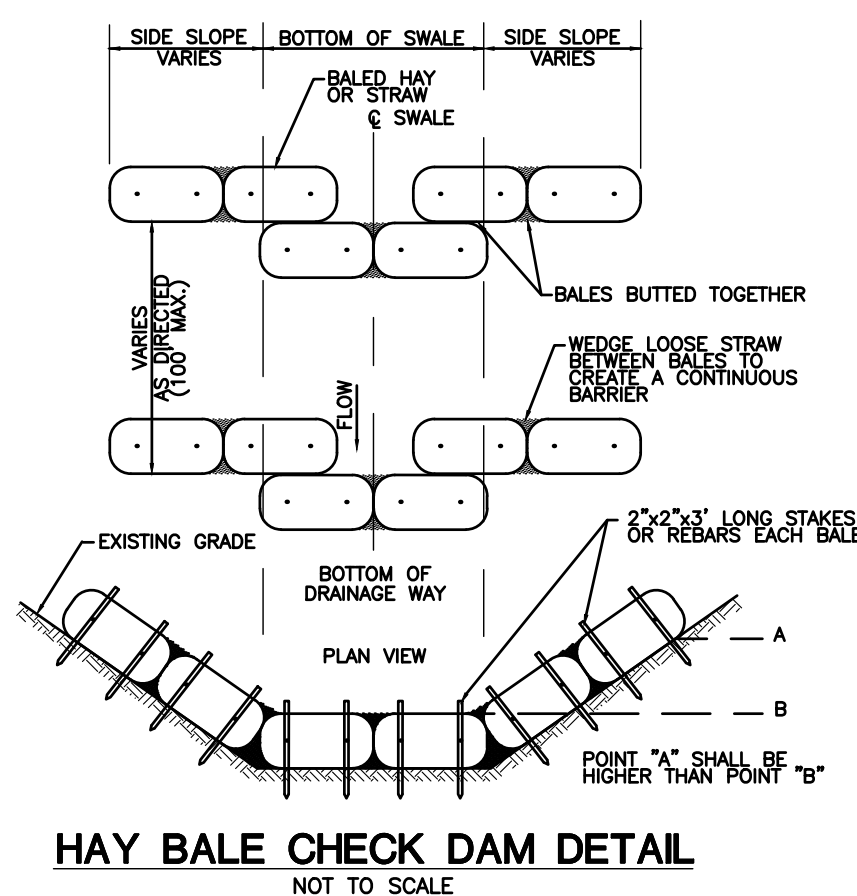
- APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F.
- APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER 1000 S.F.
- WORK LIMESTONE AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4 INCHES.
- INSPECT SEEDBED BEFORE SEEDING.
- IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS.
- APPLY THE FOLLOWING GRASS SEED MIX:

KENTUCKY BLUEGRASS
CREEPING RED FESCUE
PERENNIAL RYEGRASS

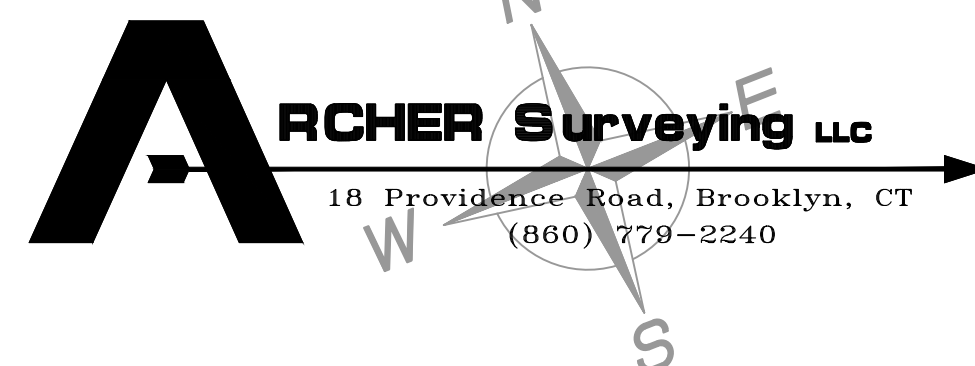
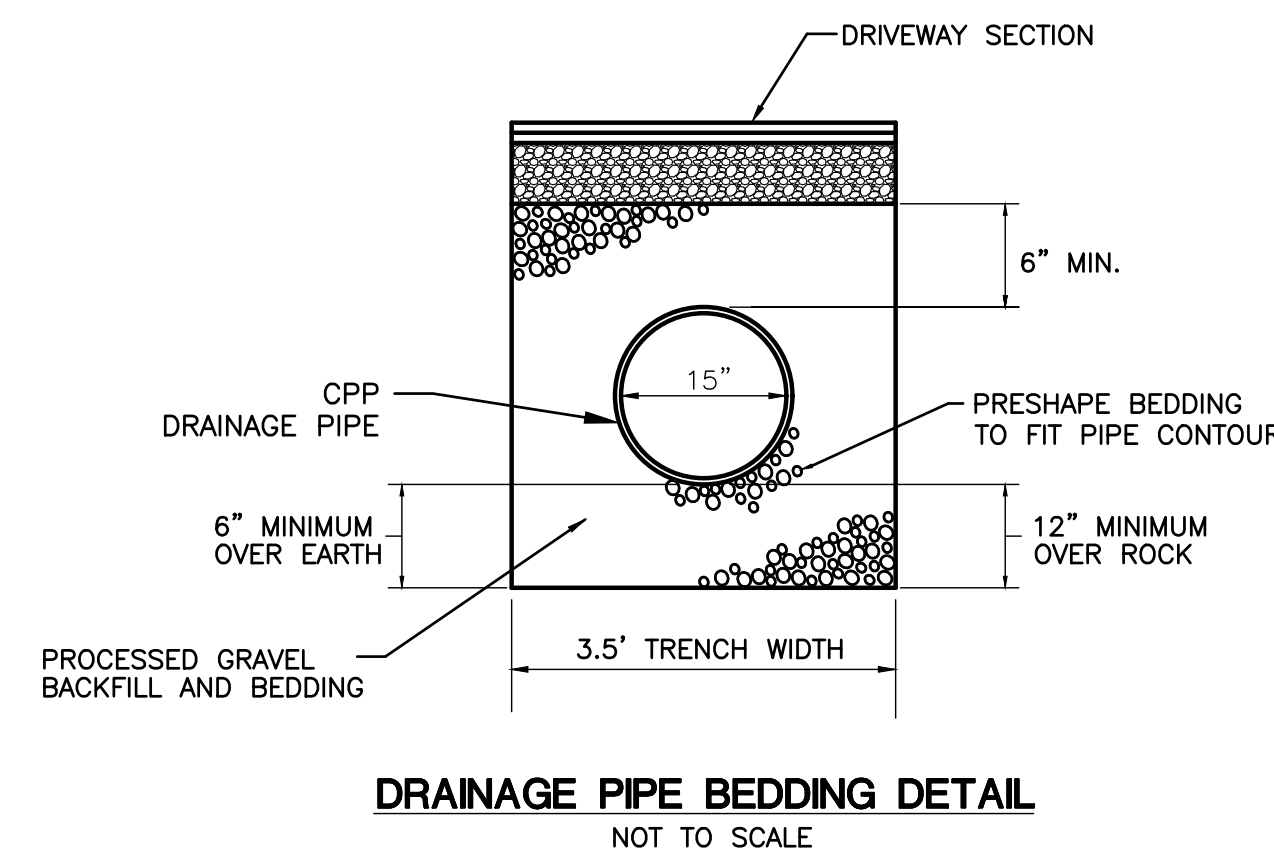
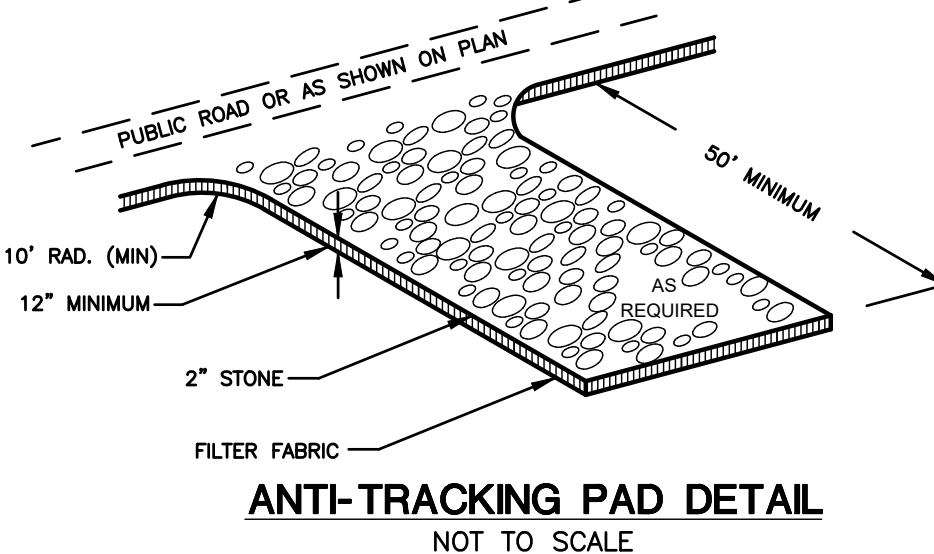
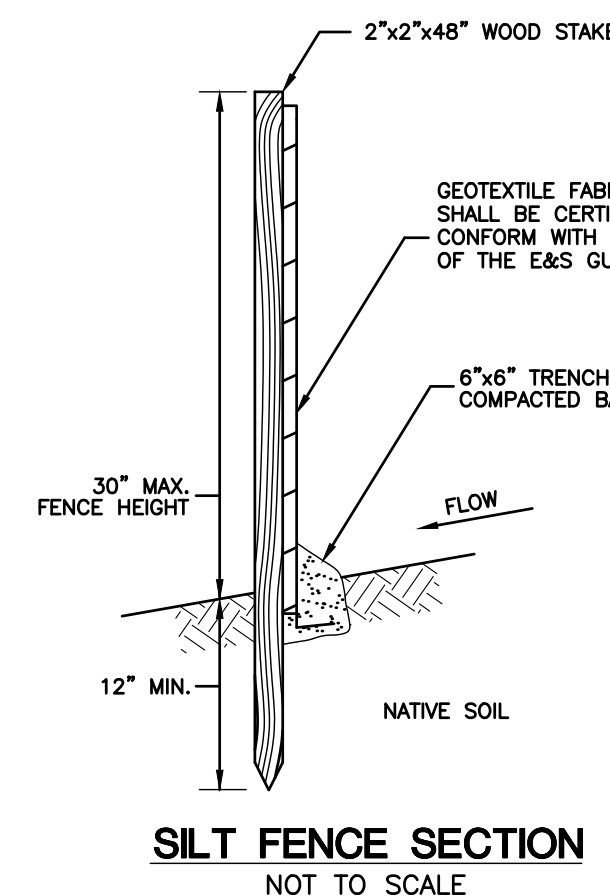
<u>LBS./ACRE</u>	<u>LBS./1000 S.F.</u>
20	0.45
20	0.45
5	0.10
<u>45</u>	<u>1.00</u>




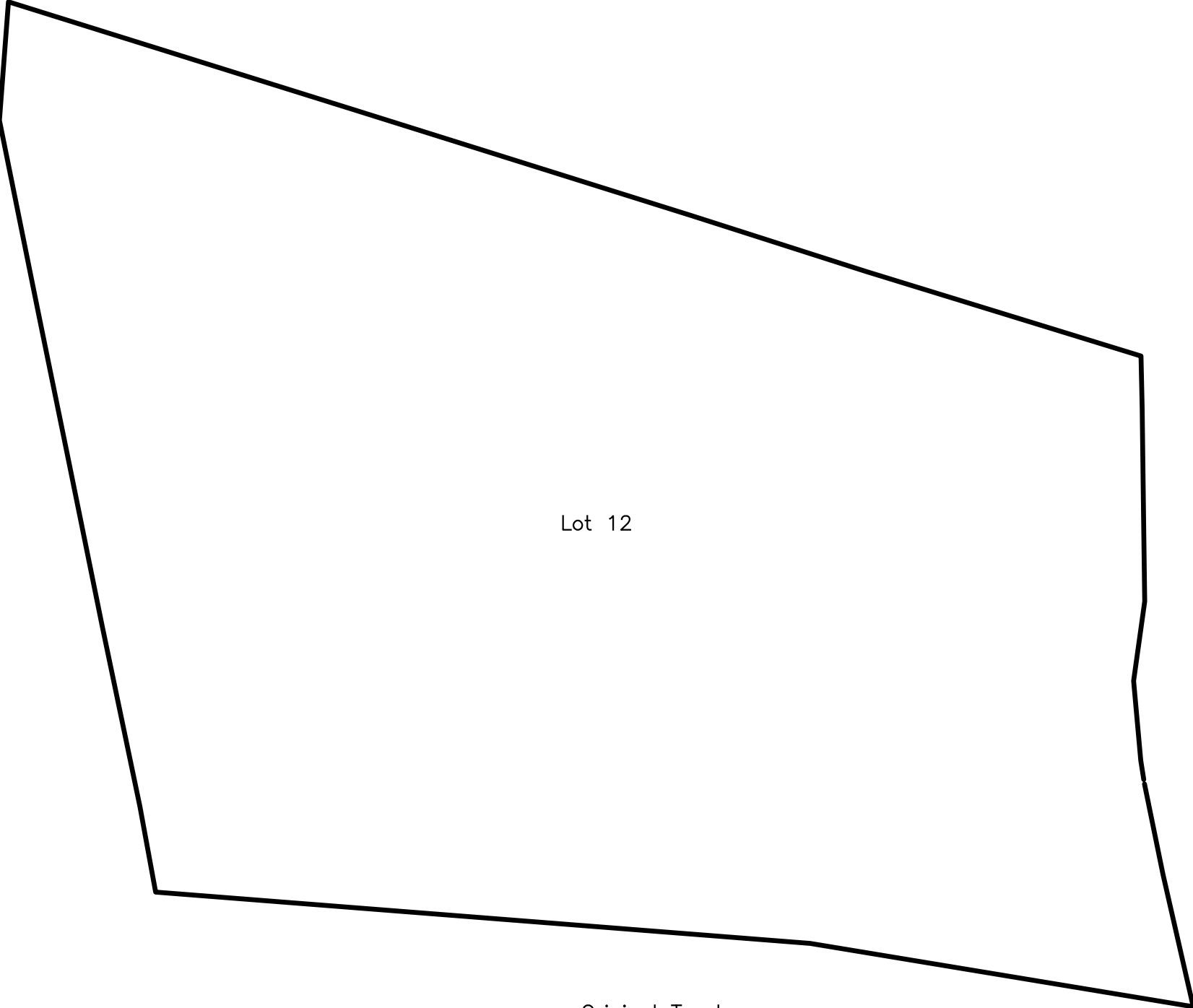
NOTE: ALL PERMANENT EROSION CONTROL BLANKETS ARE TO BE NORTH AMERICAN GREEN BIONET C125BN OR APPROVED EQUAL.



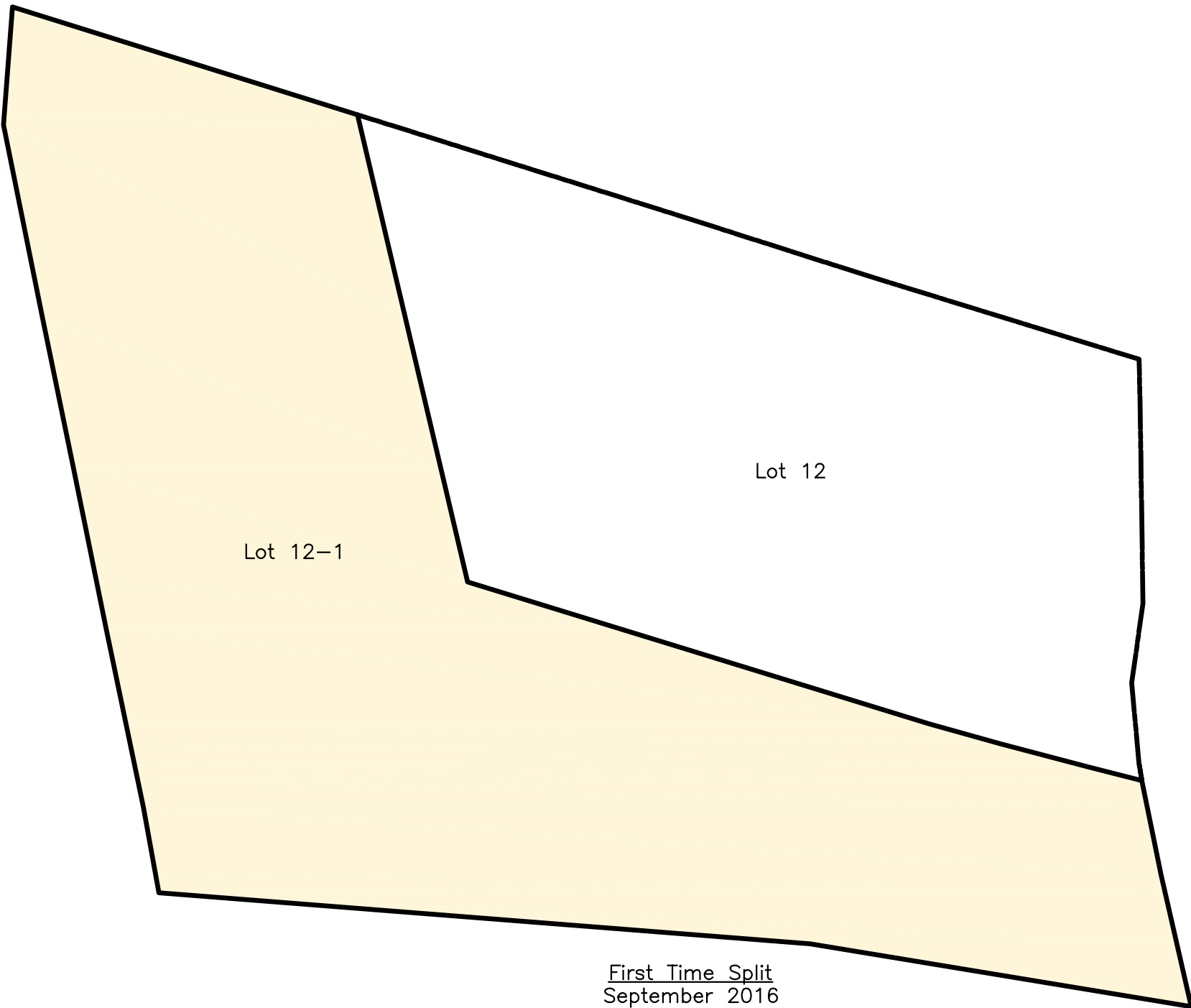
NOT TO SCALE



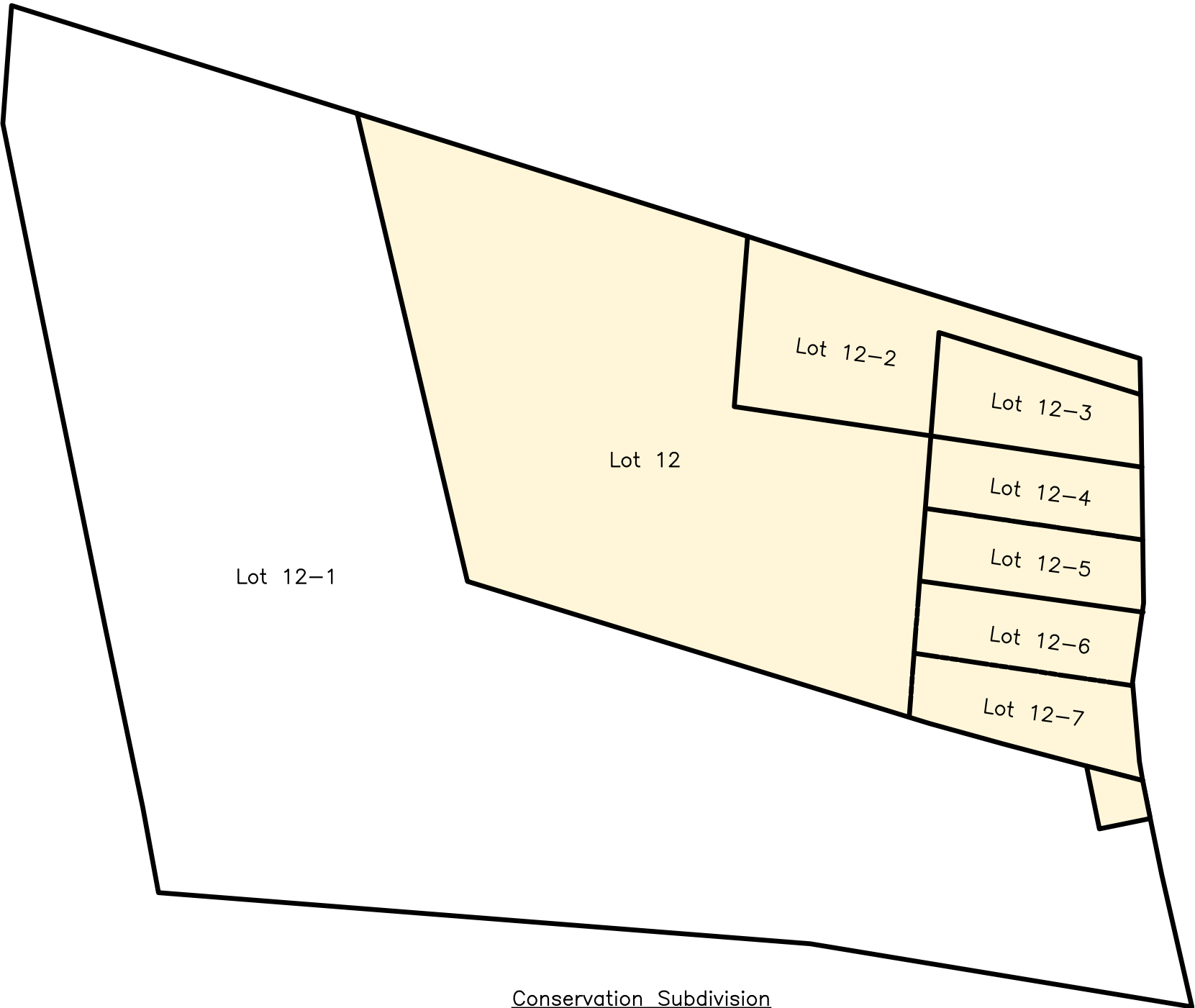
				<div>CLA Engineers, Inc.</div> <div>CIVIL • STRUCTURAL • SURVEYING</div> <div>317 Main Street Norwich, CT 06360</div> <div>(860) 886-1966 Fax (860) 886-9165</div>
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<div></div>				<div>SQUARE 1 BUILDING ASSOCIATES, LLC</div>
				<div>4-LOT SUBDIVISION</div> <div>BROOKLYN, CT</div>
				<div>CONSTRUCTION DETAILS</div>
				<div>Project No. CLA-6503</div> <div>Proj. Engineer D.H.</div> <div>Date: 08/24/20</div> <div>Sheet No.</div>
				<div>6 of 8</div>



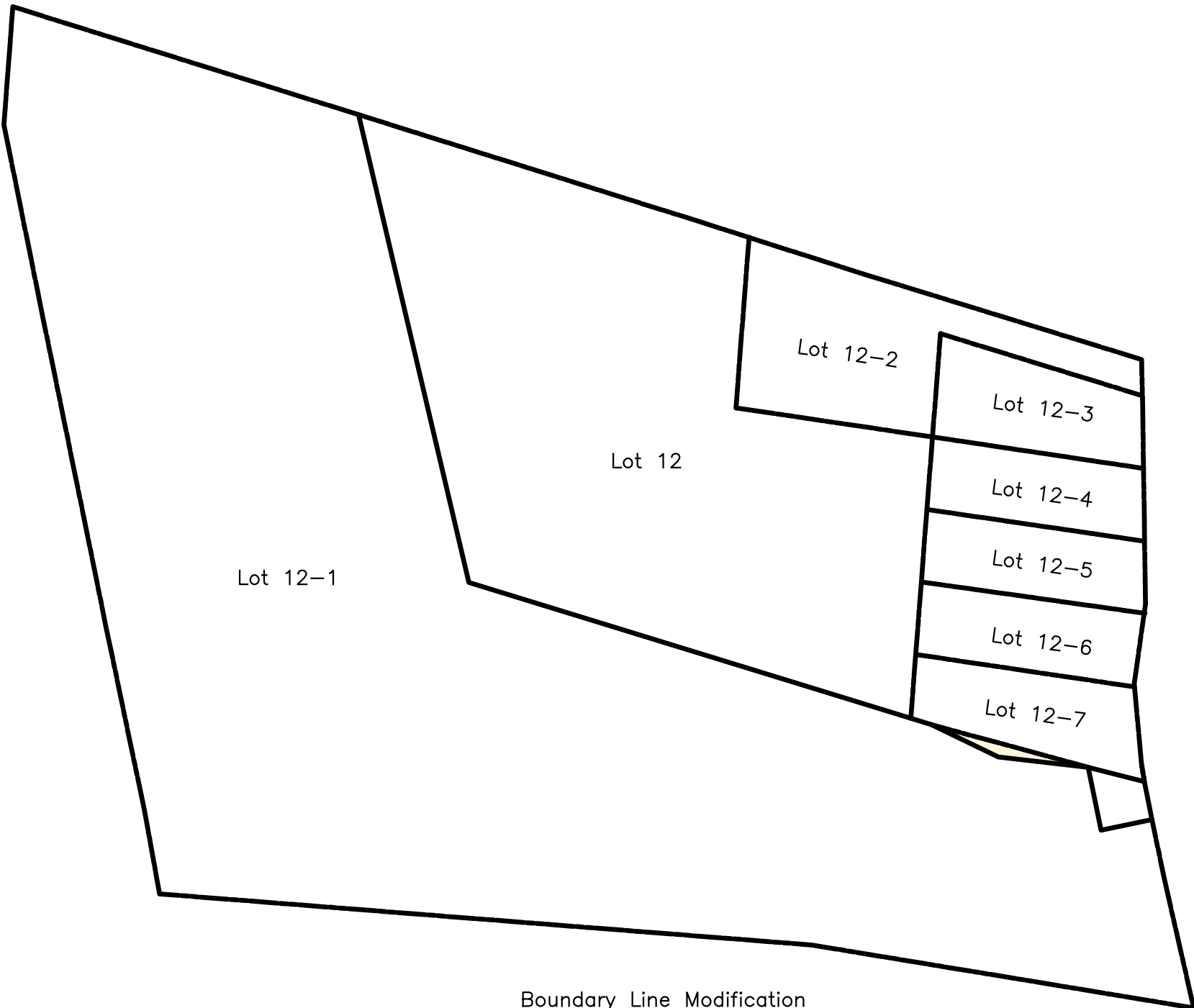
Original Tract



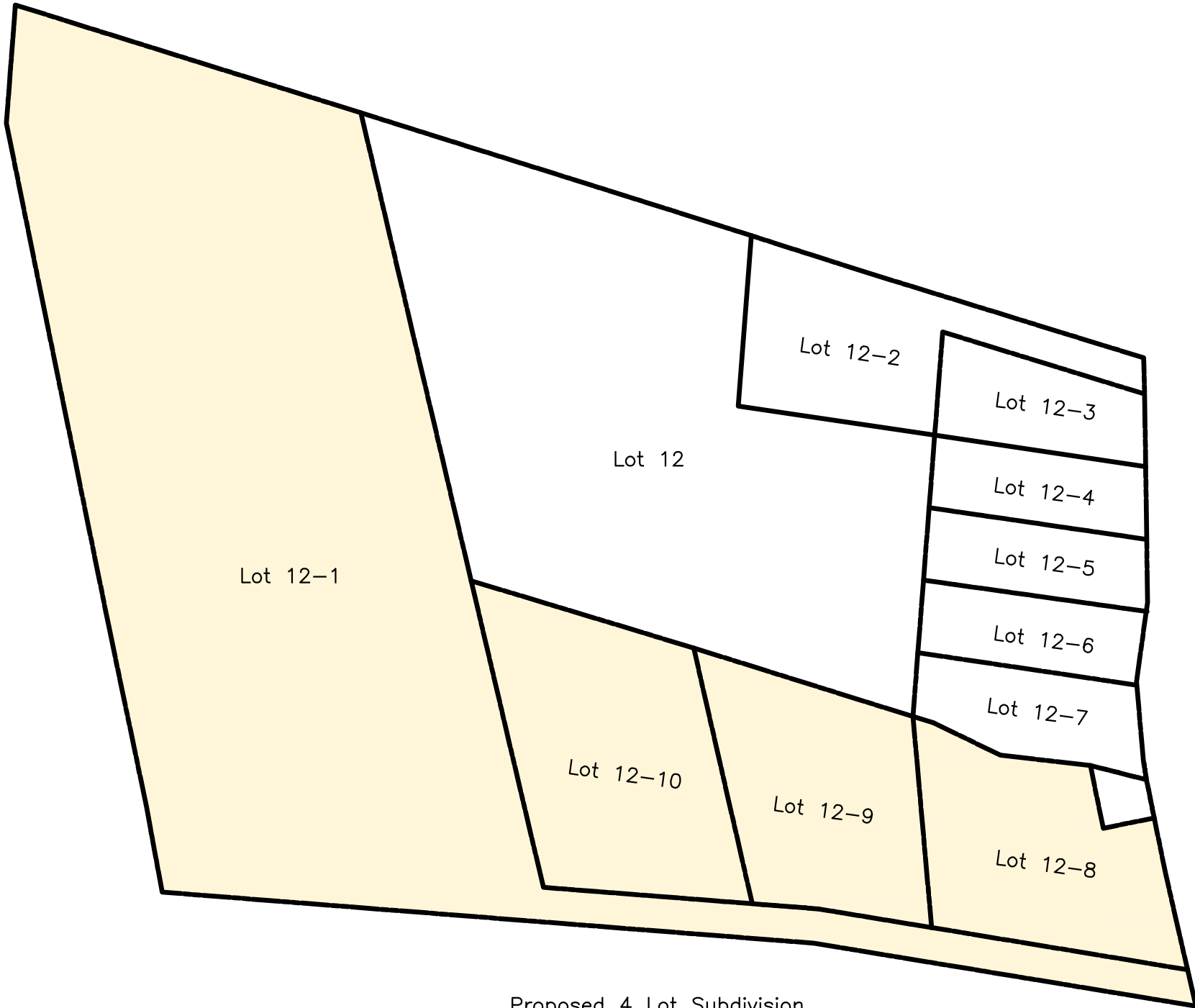
First Time Split
September 2016



Conservation Subdivision
December 2016



Boundary Line Modification
January 2020



Proposed 4 Lot Subdivision

Parcel History Plan

Prepared For:

Square 1 Building Associates

Tripp Hollow Road, Brooklyn, Connecticut

DRAWING SCALE: 1"=80'

080160

A

ARCHER Surveying LLC

18 Providence Road, Brooklyn, CT

(860) 779-2240

N

E

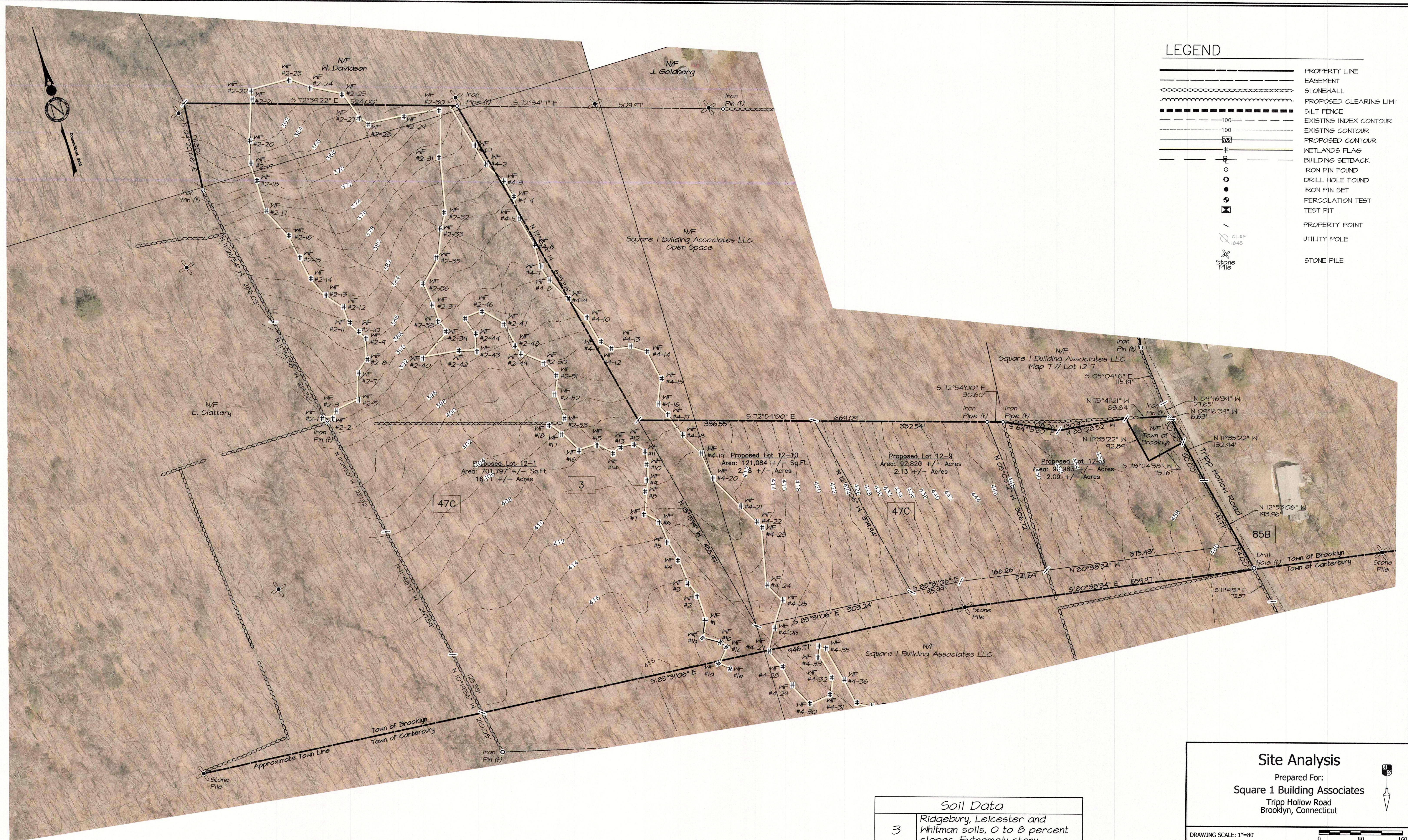
S

W

Sheet No.7 OF 8

Project No.1783

Date:September 3, 2020



LEGEND

- PROPERTY LINE
- EASEMENT
- STONENALL
- PROPOSED CLEARING LIMIT
- SILT FENCE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS FLAG
- BUILDING SETBACK
- IRON PIN FOUND
- DRILL HOLE FOUND
- IRON PIN SET
- PERCOLATION TEST
- TEST PIT
- PROPERTY POINT
- UTILITY POLE
- STONE PILE

Soil Data	
3	Ridgebury, Leicester and Whitman soils, 0 to 8 percent slopes, Extremely stony
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony

Site Analysis

Prepared For:
Square 1 Building Associates
Tripp Hollow Road
Brooklyn, Connecticut

DRAWING SCALE: 1"=80'

0 80 160

