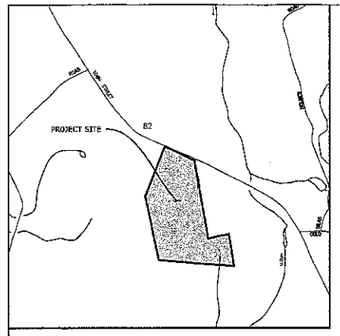
DATE	REVISION	CK.

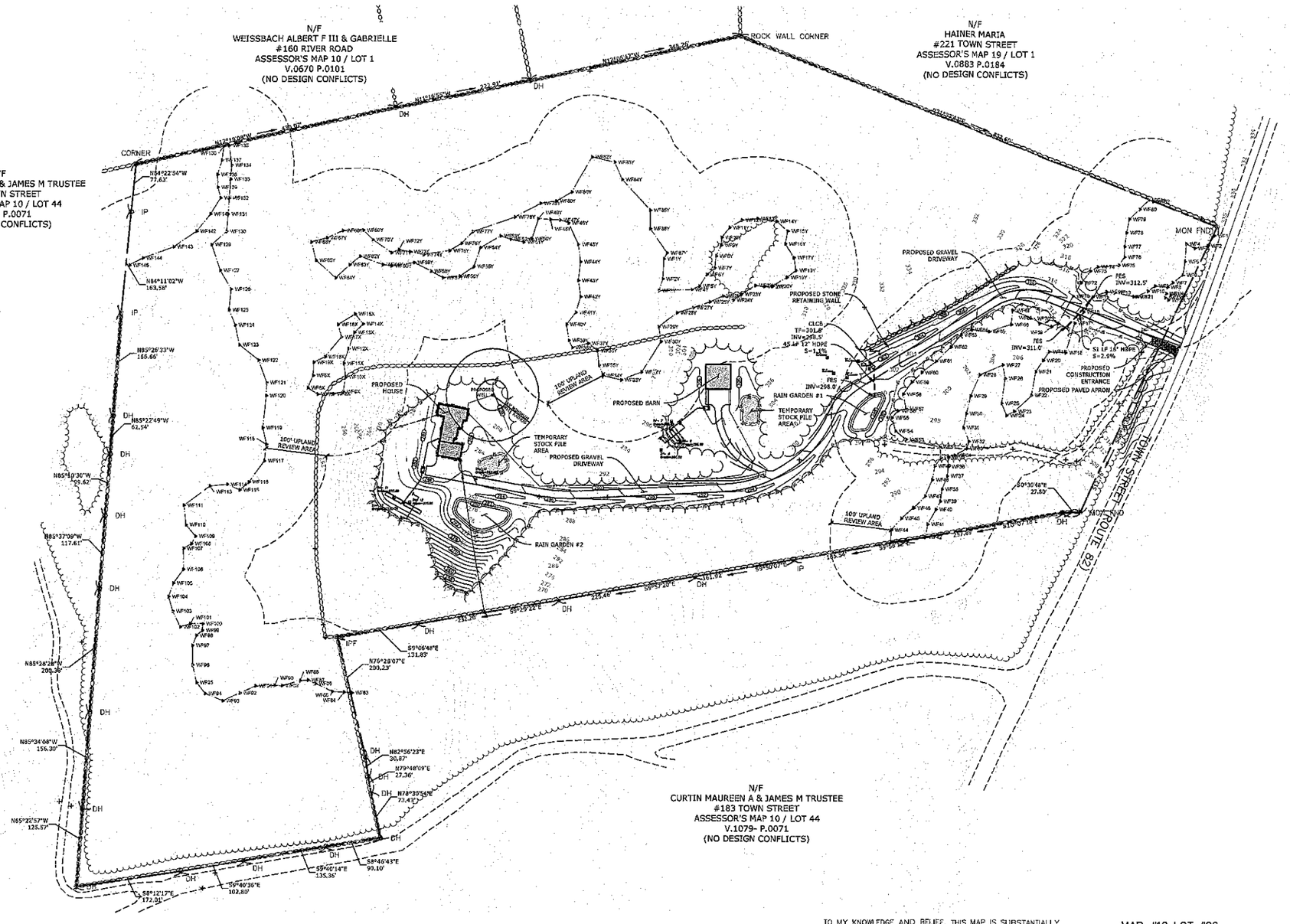


LOCATION MAP
SCALE: 1"=1000'±

N/F
WEISSBACH ALBERT F III & GABRIELLE
#160 RIVER ROAD
ASSESSOR'S MAP 10 / LOT 1
V.0670 P.0101
(NO DESIGN CONFLICTS)

N/F
HAINER MARIA
#221 TOWN STREET
ASSESSOR'S MAP 19 / LOT 1
V.0883 P.0184
(NO DESIGN CONFLICTS)

N/F
CURTIN MAUREEN A & JAMES M TRUSTEE
#183 TOWN STREET
ASSESSOR'S MAP 10 / LOT 44
V.1079- P.0071
(NO DESIGN CONFLICTS)



N/F
CURTIN MAUREEN A & JAMES M TRUSTEE
#183 TOWN STREET
ASSESSOR'S MAP 10 / LOT 44
V.1079- P.0071
(NO DESIGN CONFLICTS)

Water Quality Volume Rain Garden 1

WQV, Water Quality Volume (AC-FT)
RCV, Runoff Capture Volume (AC-FT)
R, Volumetric Runoff Coefficient
I, Percent Impervious Cover
A, Site Area (AC)

I= 10
R= 0.05+0.009(10) = 0.14
A= 2

$$WQV = \frac{1.3" \times R \times A}{12} = \frac{1.3 \quad 0.14 \quad 2}{12} = 0.0303 \text{ AC-FT}$$

= 1321.3 CF

WQV=1,322 CF

RAIN GARDEN STROAGE VOLUME:

Elevation (ft)	Surface Area (ft2)	Volume (ft3)	Volume (ac-ft)	Cumulative Volume (ac-ft)
298.0	1,349	0.0	0.000	0.000
299.0	1,853	1,601.0	0.037	0.037
300.0	2,414	2,133.5	0.049	0.086

SUMMARY:
Water Quality Volume= 1,322 CF
Total Storage Provided= 2,133 CF

Water Quality Volume Rain Garden 2

WQV, Water Quality Volume (AC-FT)
RCV, Runoff Capture Volume (AC-FT)
R, Volumetric Runoff Coefficient
I, Percent Impervious Cover
A, Site Area (AC)

I= 6.83
R= 0.05+0.009(6.8) = 0.111
A= 6.3

$$WQV = \frac{1.3" \times R \times A}{12} = \frac{1.3 \quad 0.1115 \quad 6.3}{12} = 0.0761 \text{ AC-FT}$$

= 3314 CF

WQV=3,314 CF

RAIN GARDEN STROAGE VOLUME:

Elevation (ft)	Surface Area (ft2)	Volume (ft3)	Volume (ac-ft)	Cumulative Volume (ac-ft)
280.0	2,387	0.0	0.000	0.000
281.0	3,031	2,709.0	0.062	0.062
282.0	3,732	3,381.5	0.078	0.140

SUMMARY:
Water Quality Volume= 3,314 CF
Total Storage Provided= 3,381 CF

LEGEND

●	IRON PIPE/ROD TO BE SET	FND	FOUND
MON ⊡	MONUMENT	FF	FINISHED FLOOR
IP ○	IRON PIPE/ROD	EXIST.	EXISTING
DH ⊙	IRON PIPE/ROD	TW	TOP OF WALL
CONC.	CONCRETE	CL&P# 1196	EXISTING UTILITY POLE
GTD	GRADE TO DRAIN	PT ▲	PERC TEST
DTP1 ◆	TEST HOLE		
230	PROPOSED SPOT ELEVATION		
100	EXISTING CONTOURS		
SF	SILT FENCE		
W	PROPOSED WATERLINE		

ZONING DATA TABLE TOWN OF EAST HADDAM		
ZONE: R-2		
ZONING REGULATION	REQUIRED	PROPOSED
MINIMUM LOT AREA	2.0 ACRES	1,453,273 SF 33.36 AC
MINIMUM LOT WIDTH	200 FT	512 FT
MINIMUM FRONT YARD	40 FT	>40 FT
MINIMUM SIDE YARD	40 FT	251.1 FT
MINIMUM REAR YARD	40 FT	>40 FT
MAXIMUM LOT COVERAGE	5%	0.3% (4,350 SF)
LOT SURFACE IMPERVIOUS COVERAGE	10%	2.2% (31,800 SF)

CONN_COORDS

GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

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

ROBERT L. DOANE, JR.
CONN. P.E. & L.S. LIC. NO. 11463

STATE OF CONNECTION ROBERT L. DOANE, JR. NO. 11463 REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTION ROBERT L. DOANE, JR. NO. 11463 LICENSED LAND SURVEYOR

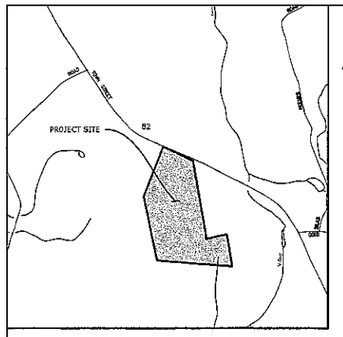
MAP #10 LOT #26

DOANE ENGINEERING
CIVIL ENGINEERING AND LAND SURVEYING
P.O. BOX 113 CENTERBROOK, CONNECTICUT 06409
TEL: (860)767-0138, FAX: (860)767-9104

OVERALL SITE PLAN
PREPARED FOR
JEFF RANAUDO
215 TOWN STREET, EAST HADDAM, CONNECTICUT

SCALE:	DATE:	SHEET NO.:	IDENT. NO.:
1"=80"	05/07/2025	1 OF 3	

DATE	REVISION	CK.



LOCATION MAP
SCALE: 1"=1000'±

PROPOSED SANITARY SYSTEM DESIGN HOUSE:

PROPOSED 4 BEDROOM HOUSE
DESIGN PERCOLATION RATE = 1.0-10.0 MIN/IN
REQUIRED EFFECTIVE LEACHING AREA = 578 SF
PROVIDE 1 LINE 70 LF OF GST 6212
1 X 60 LF X 10.0 SF/LF = 600 SF PROVIDED

PROVIDE 1,250 GALLON SEPTIC TANK

MINIMUM LENGTH SYSTEM SPREAD
(MLSS)

DEPTH TO RESTRICTION > 60"
MLSS NEED NOT BE CONSIDERED

PROVIDE 100% RESERVE AREA

PROPOSED SANITARY SYSTEM DESIGN GARAGE:

PROPOSED 1 BEDROOM HOUSE
DESIGN PERCOLATION RATE = 1.0-10.0 MIN/IN
REQUIRED EFFECTIVE LEACHING AREA = 188 SF
PROVIDE 1 LINE 20 LF OF GST 6212
1 X 20 LF X 10.0 SF/LF = 200 SF PROVIDED

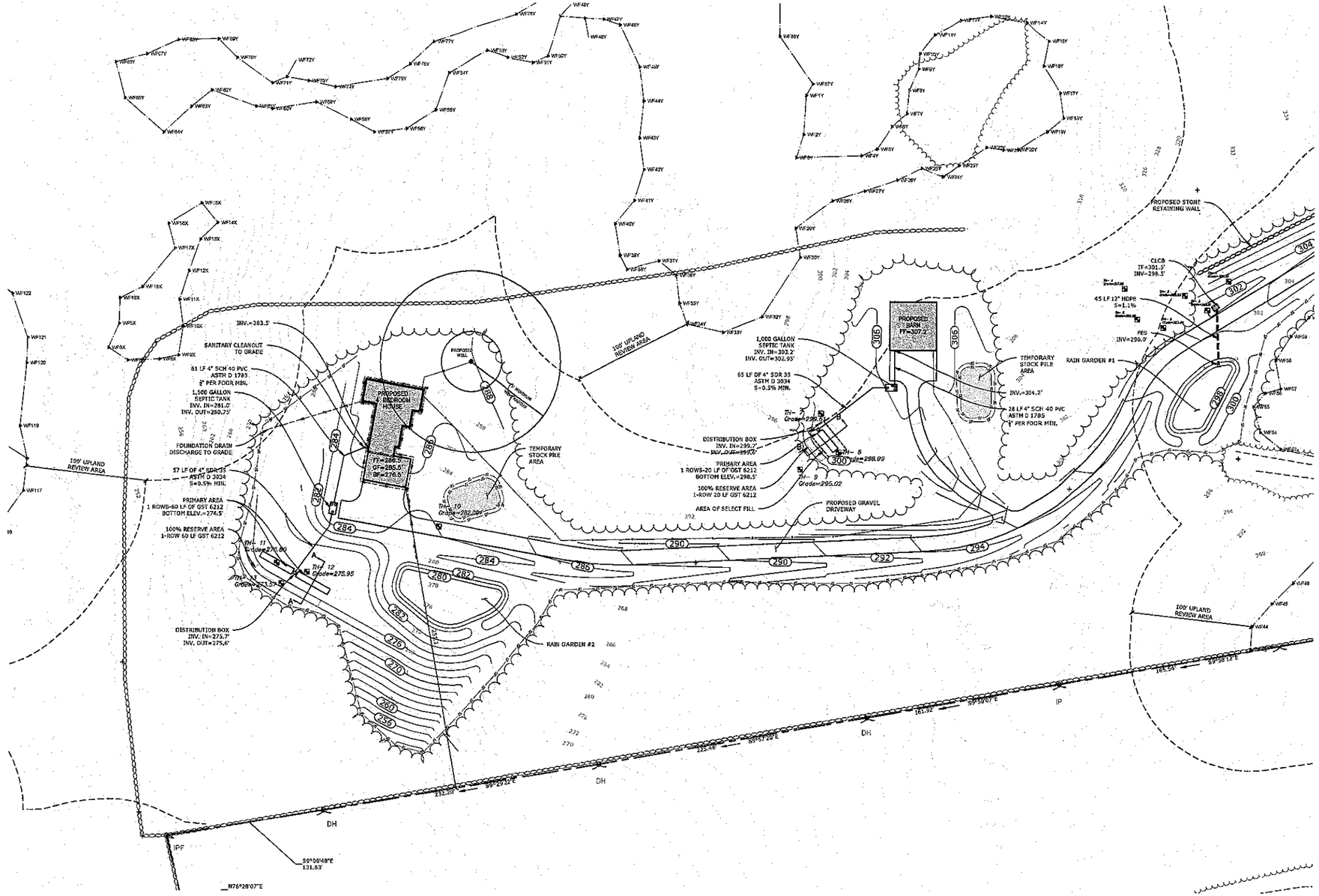
PROVIDE 1,000 GALLON SEPTIC TANK

MINIMUM LENGTH SYSTEM SPREAD
(MLSS)

DEPTH TO RESTRICTION =44"
SLOPE = 10.0 PERCENT

HF = 18
FF = 0.5
PF = 1.0

MLSS REQUIRED = 18 X 0.5 X 1.0 = 9 LF
MLSS PROVIDED = 20 LF OF GST6212
PROVIDE 100% RESERVE AREA



GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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

ROBERT L. DOANE, JR.
CONN. P.E. & L.S. LIC. NO. 11463

MAP #10 LOT #26

DOANE ENGINEERING
CIVIL ENGINEERING AND LAND SURVEYING
P.O. BOX 113 CENTERBROOK, CONNECTICUT 06409
TEL: (860)767-0138, FAX: (860)767-9104

DETAILED SITE PLAN
PREPARED FOR
JEFF RANAUDO
215 TOWN STREET, EAST HADDAM, CONNECTICUT

SCALE:	DATE:	SHEET NO.:	IDENT. NO.:
1"=40'	05/07/2025	2 OF 3	

CONSTRUCTION SEQUENCE
(SANITARY SYSTEM)

1. NOTIFY TOWN HEALTH DEPARTMENT AND THE ENGINEER 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.NO PORTION OF THE SYSTEM WILL BE COVERED WITHOUT INSPECTION AND APPROVAL BY THE ENGINEER OR THE SANITARIAN.
2. PLACE SILT FENCE AS SHOWN ON THE DRAWING AND IN THE DETAIL.
3. REMOVE ALL TREES, STUMPS AND DELETERIOUS MATERIAL FROM SYSTEM AREA.
4. STOCKPILE TOPSOIL FOR REUSE.
   A. DO NOT STOCKPILE TOPSOIL IN SANITARY SYSTEM AREA.
   B. DO NOT REMOVE SUBSOIL.
5. ENGINEER AND SURVEYOR SHALL FIELD STAKE THE PROPOSED SYSTEM PRIOR TO INSTALLATION. ADDITIONAL A BENCH MARK SHOULD BE SET AT THE TIME OF STAKEOUT.
6. INSTALL SEPTIC SYSTEM AS SHOWN.
   A. IF SOIL CONDITIONS OTHER THAN THOSE SHOWN IN THE SOIL LOGS ARE ENCOUNTERED DURING THE INSTALLATION OF THE SANITARY SYSTEM, THE DESIGN ENGINEER OR THE SANITARIAN SHALL BE NOTIFIED AND THE WORK WILL BE HALTED PENDING REVIEW OF THOSE CONDITIONS. IF NECESSARY THE SANITARY SYSTEM SHALL BE REVISED.
   B. A MINIMUM OF 4 FEET MUST BE MAINTAINED BETWEEN THE BOTTOM OF THE SYSTEM AND LEDGE.A MINIMUM OF 1.5 FEET MUST BE MAINTAINED BETWEEN THE BOTTOM OF THE SYSTEM AND SEASONAL HIGH GROUNDWATER.
7. DO NOT BACKFILL ANY PORTION OF THE SANITARY SYSTEM UNTIL INSPECTED BY THE SANITARIAN AND UNTIL A "RECORD" SURVEY HAS BEEN COMPLETED.
8. REPLACE TOPSOIL, GRADE, SEED AND MULCH ALL DISTURBED AREAS.
9. MAINTAIN SYNTHETIC FILTER BARRIER UNTIL ALL DISTURBED AREAS ARE STABILIZED.

SANITARY SYSTEM NOTES.

1. NO LARGE CAPACITY TUBS (> 100 GALLON CAPACITY) ARE PLANNED AND WILL NOT BE PERMITTED IN THE PROPOSED RESIDENCE.
2. NO WATER TREATMENT SYSTEM WASTE WATER SHOULD BE DISCHARGED TO THE SEPTIC SYSTEM.
3. A GARBAGE GRINDER (DISPOSAL) IS PROPOSED AND THE SEPTIC TANK HAS BEEN INCREASED IN SIZE TO A 1,500 GALLON TANK.
4. WATER SUPPLY SHALL BE BY INDIVIDUAL WELL.
5. ALL SOLID PIPING AFTER THE SEPTIC TANK TO BE 4" PVC ASTM D 3034, SDR 35.
6. FILTER FABRIC SHALL BE SELECTED FROM THE FOLLOWING TABLE:

APPROVED FILTER FABRICS FOR COVERING STONE AGGREGATE

MANUFACTURE	DESIGNATION NUMBER
AMERICAN ENGINEERING FABRICS	AEF-140
BRADLEY INDUSTRIAL TEXTILE	PHENOIX LIFOMA
CARTHAGE MILLS	M35
CULLEC	410
DUPONT	SF20
ENGINEERED SYNTHETIC PRODUCTS	TNS R020
GEO FABRICS	GF 150
L&M SUPPLY COMPANY	L&M 231
MIRAFI	GS304 (4' WIDE), 6S303 (3' WIDE)
SKAPS INDUSTRIES	SKAPS GT 120
SRW PRODUCTS	SRW PRODUCTS DF1, SRW PRODUCTS DF2
TERRA TEX	S01.5, F01.5
TYPAR	3151, 3201
US FABRIC INC.	US 1.5 CT

7. NO DEVIATION FROM THIS PLAN WILL BE ALLOWED WITHOUT THE APPROVAL OF THE ENGINEER AND SANITARIAN.
8. SEPTIC TANK CONSTRUCTION JOINTS SHALL BE SEALED WITH ASPHALT CEMENT. ALL PIPE CONNECTIONS TO THE SEPTIC TANK AND DISTRIBUTION BOXES SHALL BE SEALED WITH A POLYETHYLENE GASKET (FOSTA-VALVE OR APPROVED EQUAL)
9. SEPTIC TANK AND BAFFLES SHALL CONFORM TO SECTION V.A.1 TECHNICAL STANDARDS OF THE STATE HEALTH CODE.
10. SEPTIC TANK SHALL BE TWO COMPARTMENT TANK WITH HEAVY DUTY STEEL HANDLES FOR MANHOLE ACCESS COVERS AND GAS BAFFLES INSTALLED ON OUTLET PIPING. SEPTIC TANK TO BE EQUIPPED WITH AN APPROVED NON-BY-PASS EFFLUENT FILTER AT THE OUTLET. SEE TABLE BELOW:

APPROVED SEPTIC TANK EFFLUENT FILTERS

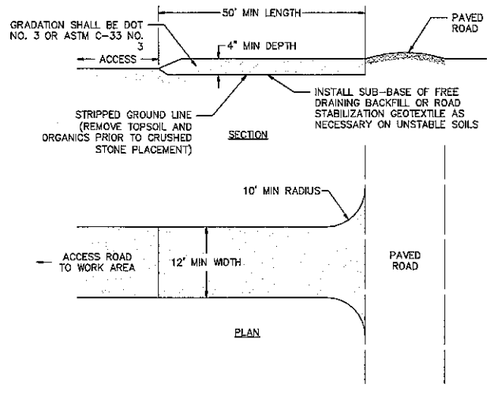
MANUFACTURER	MODEL
BEAR ONSITE	ML2-416, ML3-920, ML3-910, ML3-916, ML3-925, ML3-932
BIO-MICROBICS	Stratos Series, ST 416, ST 418, ST 816, ST 836, ST 1618, ST 1638
BONCO INDUSTRIES	EF-235
GAO-SEPTECH	STF-110, STF-110-7R, STF-110-6U, STF-110-8B
NORWECO	BIO-KINETIC BK2000
ORENCO SYSTEMS	FT0414-36, FT0854-36, FT1254-36, FT1554-36, FT3041E
POLYLOK	PL-68, PL-122, PL-525, PL-625, GF 10-8, GF 10-16
PREMIER TECH	EFT-0809
RISSY PLASTICS	45 - CLIK N STICK
TUF-TITE	EF-4, EF-6
ZABEL	A100, A300, A1800, A1801, A100-HP, A300-HP, A1800-HP, A1801-HP, A600-12, A600-8
ZOELLER/CLARUS	WW1 (170-0078), WW4 (5000-0007)

11. STONE AGGREGATE MEANS BROKEN STONE, CRUSHED STONE, OR SCREENED GRAVEL MEETING DEPARTMENT OF TRANSPORTATION FORM 816 SPECIFICATION M.01.01 FOR NO. 4 OR NO. 6 STONE (AS SHOWN BELOW OR LATEST SPECIFICATION). STONE AGGREGATE SHALL BE FREE OF SILT, DIRT OR DEBRIS AND SHALL SHOW A LOSS OF ABRASION OF NOT MORE THAN 50 PERCENT USING AASHTO METHOD T-96.

SIEVE SIZE	NO. 4 STONE AGGREGATE (A.K.A. 1 & 3" STONE) PERCENT PASSING (by weight)	NO. 6 STONE AGGREGATE (A.K.A. 3/4" STONE) PERCENT PASSING (by weight)
2 - INCH	100	N/A
1.5 INCH	90-100	N/A
1 INCH	20-55	100
3/4 INCH	0-15	90-100
1/2 INCH	N/A	20-55
3/8 INCH	0-5	0-15
#4	N/A	0-5
#40	0-3	0-3
#200	0-15	0-15

12. ALL TANKS REQUIRING RISERS SHALL MAINTAIN THE ORIGINAL COVERS ON THE TANKS. HAVE RISER COVERS THAT WEIGHS AT LEAST 59 LBS. AND/OR INSTALL A SAFETY DEVICE BELOW THE RISER TO PREVENT INDIVIDUALS FROM FALLING INTO THE TANK. ALL BELOW GRADE TANK OR RISER COVER HANDLES SHALL CONTAIN OR BE FITTED WITH A MATERIAL THAT CAN BE LOCATED WITH A METAL DETECTOR.

CONSTRUCTION ENTRANCE DETAIL
N.T.S



Test Hole Data
Performed by
Doane Engineering &
Chatham Health District
5/2/24

TH 1

0 - 8" (Forest litter & surface rocks some shale)
8 - 30" Brown fine sandy loam
30 - 70" Brown fine sand trace silt with rock
(Roots through subsoil)
Ledge observed at 70"
No groundwater observed
No mottling observed

TH 2

0 - 9" (Forest litter & surface rocks some shale)
9 - 32" Brown fine sandy loam
32 - 53" Brown fine sand trace silt with rock
(Roots through subsoil)
Ledge observed at 53" on north
No groundwater observed
No mottling observed

TH 3

0 - 6" Topsoil
6 - 23" Brown fine sandy subsoil
23 - 57" Light brown fine/medium sand (wet)
(Roots through subsoil)
Ledge observed at 57"
Groundwater observed at 45"
No mottling observed

TH 4

0 - 6" (Forest litter & surface rocks some shale)
6 - 32" Brown fine sandy loam
32 - 43" Brown fine sand trace silt with rock
(Roots through subsoil)
Ledge observed at 43"
No groundwater observed
No mottling observed

TH 5

Ledge observed at 32"

TH 6

0 - 8" Topsoil
8 - 33" Brown fine sandy subsoil
33 - 45" Light brown fine/medium sand (wet)
(Roots through subsoil)
Ledge observed at 45"
Groundwater observed at 45"
No mottling observed

TH 7

0 - 7" Topsoil
7 - 26" Brown fine silty sand subsoil
26 - 66" Brown fine/medium sand with gravel & stones
(Roots through subsoil)
Ledge observed at 66"
No groundwater observed
Mottling observed at 44"

TH 8

0 - 7" Topsoil
7 - 26" Brown fine silty sand subsoil
26 - 66" Brown fine/medium sand with gravel & stones
(Roots through subsoil)
Ledge observed at 66"
No groundwater observed
Mottling observed at 44"

TH 9

0 - 7" Topsoil
7 - 24" Subsoil
24 - 67" Gray/brown fine sand & gravel with silt & stone
Roots observed to 49"
Ledge observed at 67"
Groundwater observed at 60"
Mottling observed at 45"

TH 10

Groundwater observed at 7"

TH 11

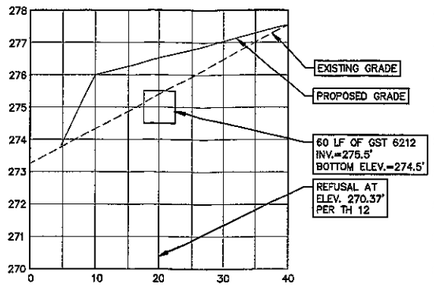
0 - 9" Topsoil
9 - 26" Brown fine sandy loam
26 - 34" Yellowbrown fine sand & silt
34 - 76" Gray medium sand with flat stone
Roots observed to 37"
Ledge observed at 76"
No Groundwater observed
No mottling observed

TH 12

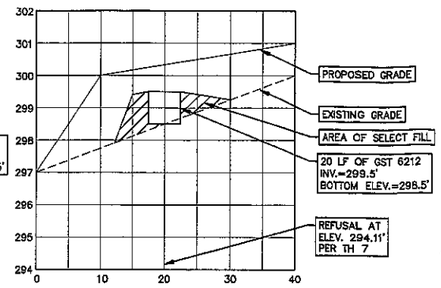
0 - 9" Topsoil
9 - 24" Brown fine sandy loam
24 - 35" Yellowbrown fine sand & silt
35 - 67" Gray medium sand with flat stone
Roots observed to 46"
Ledge observed at 67"
No Groundwater observed
No mottling observed

TH 13

0 - 12" Topsoil
12 - 33" Brown fine sandy loam
33 - 50" Yellowbrown fine sand & silt
50 - 62" Gray medium sand with flat stone
Roots observed to 47"
Ledge observed at 62"
No Groundwater observed
No mottling observed

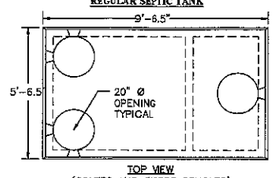


SECTION A–A
SANITARY SYSTEM X-SECTION
HORZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 1'

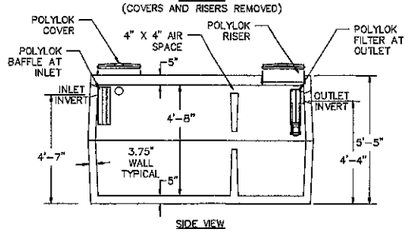


SECTION B–B
SANITARY SYSTEM X-SECTION
HORZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 1'

UNITED CONCRETE 1250 GALLON REGULAR SEPTIC TANK

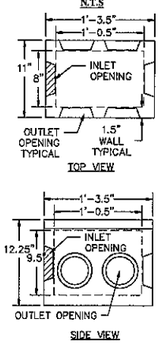


TOP VIEW
(COVERS AND RISERS REMOVED)

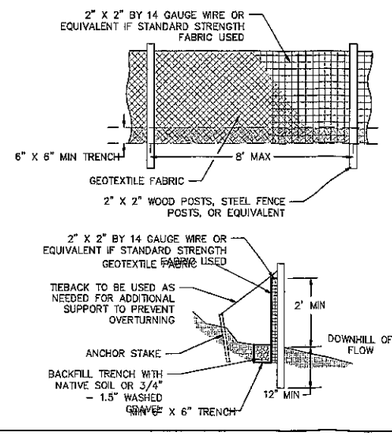


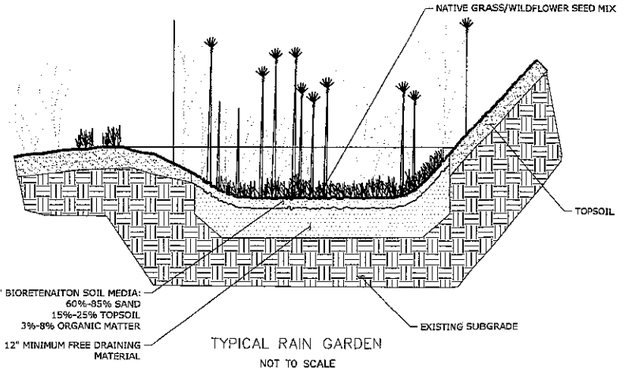
SIDE VIEW

UNITED CONCRETE 5 OUTLET DISTRIBUTION BOX (D-BOX) DETAIL
N.T.S



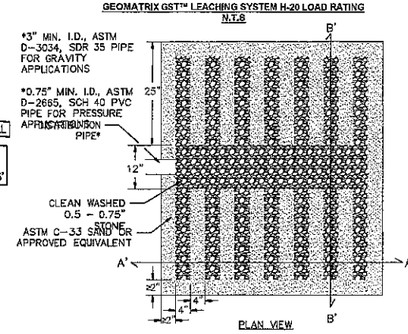
SILT FENCE DETAIL
N.T.S



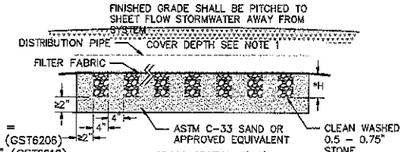


TYPICAL RAIN GARDEN
NOT TO SCALE

GEOMATRIX GST™ LEACHING SYSTEM H-20 LOAD RATING
N.T.S

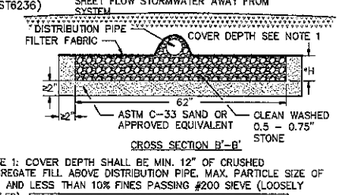


PLAN VIEW



*H =
6" (GST6206)
12" (GST6212)
18" (GST6218)
24" (GST6224)
30" (GST6230)
36" (GST6236)

CROSS SECTION A'-A'



CROSS SECTION B'-B'

NOTE 1: COVER DEPTH SHALL BE MIN. 12" OF CRUSHED AGGREGATE FILL ABOVE DISTRIBUTION PIPE. MAX. PARTICLE SIZE OF 1.5" AND LESS THAN 10% FINES PASSING #200 SIEVE (LOOSELY ROLLED)

CRUSHED AGGREGATE FILL GRADATION	
SIZE	% PASSING
1 1/2 IN.	100
3/4 IN.	50 – 100
#4	25 – 50
#40	10 – 20
#100	5 – 15
#200	LESS THAN 10

DATE	REVISION	CK.

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

ROBERT L. DOANE, JR.
CONN. P.E. & L.S. LIC. NO. 11463

STATE OF CONNECTION — ROBERT L. DOANE, JR. — NO. 11463 — REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTION — ROBERT L. DOANE — NO. 11463 — LICENSED LAND SURVEYOR

MAP #10 LOT #26

DOANE ENGINEERING
CIVIL ENGINEERING AND LAND SURVEYING
P.O. BOX 113 CENTERBROOK, CONNECTICUT 06409
TEL: (860)767-0138, FAX: (860)767-9104

SITE PLAN DETAILS
PREPARED FOR
JEFF RANAUDO
215 TOWN STREET, EAST HADDAM, CONNECTICUT

SCALE:	DATE:	SHEET NO.:	IDENT. NO.:
1"=20'	05/07/2025	3 OF 3	