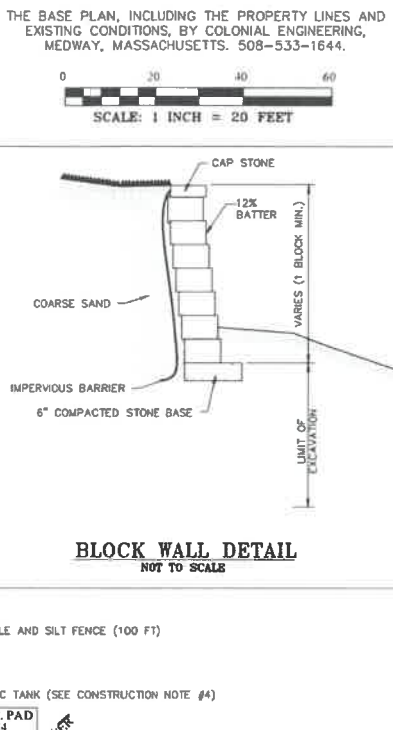
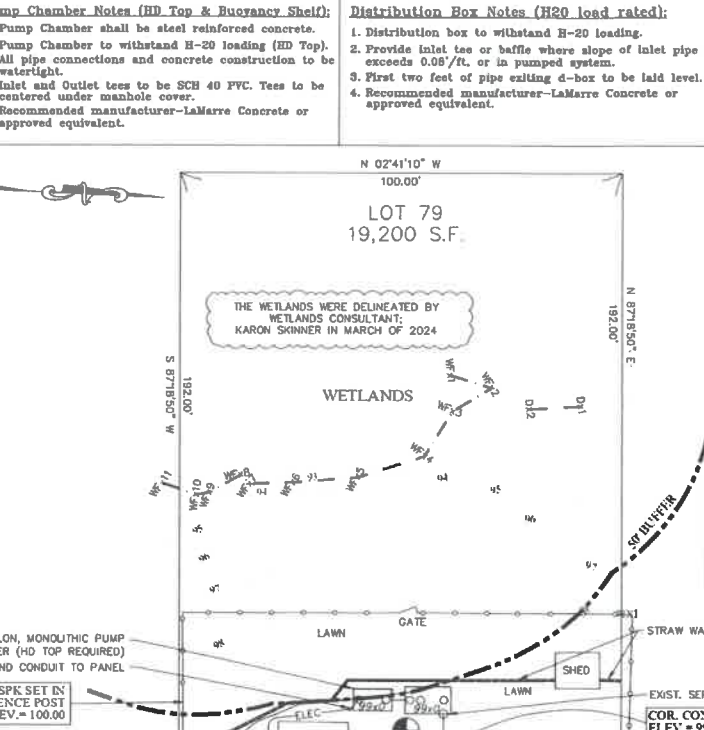
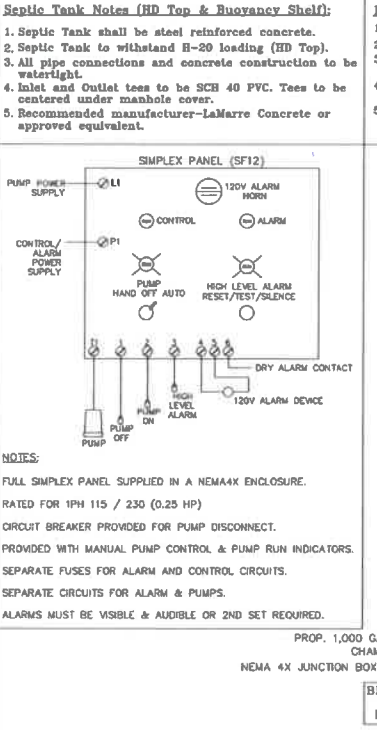
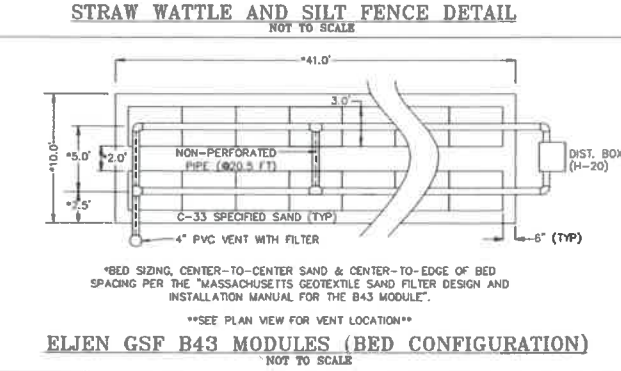
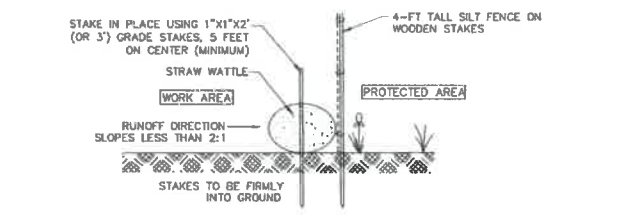


- ### General Notes:
- This plan is for the construction of the sewage disposal facility ONLY.
 - All pipes shall be SCH 40 PVC or equivalent, unless otherwise noted.
 - Contractor shall call for inspections and approvals from the Board of Health and the Engineer after:
 - excavation
 - installation of system components
 - backfilling and final grading
 - Engineer shall certify installation and final grades on "As-built" plan. Contractor shall certify that installation conforms to approved As-built plan.
 - Prior to final backfill inspection, the contractor shall submit to B.O.H. a sketch with dimensions to system components from building corners and depth to access covers.
 - Contractor shall keep vehicles and materials off of the S.A.S. at all times.
 - No industrial wastes or categories are applicable.
 - Fill shall not be placed during rain or snow.
 - Excavation to be dry and scarified. Dewatering is required if fill is to be placed below groundwater.
 - No existing or proposed wells are within 200' of S.A.S., except as shown.
 - There are no known public wells or surface water supplies within 400 feet; private wells within 200 feet; inland banks or wetlands within 100 feet; no surface or subsurface drains of any kind except as shown, and no foundation drains. The work area is outside the regulatory floodway and the 100-year floodplain.
 - Area is not Nitrogen Sensitive.
 - All system components shall be marked with magnetic marking tape.



- ### NOTES:
- THE WATER SERVICE LOCATION SHOWN IS APPROXIMATE. IF ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION.
 - ANY SUBSTITUTIONS OF MANUFACTURERS BY THE CONTRACTOR OF THE SEPTIC TANK, DISTRIBUTION BOX, ETC. SHOWN ON THIS PLAN MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. PRODUCT CUT SHEETS MUST BE PROVIDED FOR REVIEW.
 - THE CONTRACTOR SHALL CONSULT WITH THE HOMEOWNER PRIOR TO THE REMOVAL OF ANY VEGETATION (TREES, SHRUBS, ETC).
 - A GARBAGE GRINDER PROHIBITED BY DESIGN.
 - ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE.
 - IF ENCOUNTERED, THE EXISTING SOIL ABSORPTION SYSTEM SHALL BE REMOVED.



ASTM C33 SAND SPECIFICATION

Sieve Size	Sieve Square opening size	Specification percent passing (wet sieve)
3/8 inch	9.52 mm	100
No. 4	4.76 mm	95-100
No. 8	2.38 mm	80-100
No. 16	1.19 mm	50-85
No. 30	590 um	25-80
No. 50	297 um	10-30
No. 100	149 um	0-10
No. 200	75 um	0-5

Fill material shall be comprised of clean granular sand, free from organic matter and deleterious substances. Mixtures and layers of different classes of soils shall not be used. The fill shall not contain any material larger than two inches. A sieve analysis, using a #4 sieve, shall be performed on a representative sample of the fill delivered to the site, up to 45% by weight of the fill sample may be retained on the #4 sieve. Sieve analysis also shall be performed on the fraction of the fill sample passing the #4 sieve, such analysis must demonstrate that the material meets each of the following specifications:

sieve size	effective particle size	% that must pass sieve
4	4.75 mm	100%
5	0.30 mm	100%
100	0.15 mm	0% - 20%
200	0.075 mm	0% - 5%

Buoyancy Checks:

Septic Tank (HD Top and Buoyancy Shelf Req'd):
 Wgt. of Tank+Soil = 14,000+(10.25x5.2)(1.0)(100)+2(100(6.18x17.48))+2(100(0.68x17.48))=43,713g
 Wgt. of Water Displaced = (10.25x5.2)(4.7)(62.4)=29,898g (X)
Pump Chamber (HD Top and Buoyancy Shelf Req'd):
 Wgt. of Tank+Soil = 11,600+(6.8x5.0)(1.3)(100)+2(100(5.0x1x5.0))=32,705g
 Wgt. of Water Displaced = (6.8x5.0)(4.9)(62.4)=11,638g (X)

CONSERVATION NOTES:

SOIL STOCKPILING ALLOWED OUTSIDE OF 100-FT BUFFERS.
 NO OVERNIGHT STORAGE OF EQUIPMENT WITHIN A 100- FEET OF THE B.V.M.

AREAS OF TEMPORARY DISTURBANCE

WITHIN THE 50-FOOT BUFFER - 50 SF
 WITHIN THE 50 TO 100-FOOT BUFFER - 1,118 SF
 THE TOTAL AREA OF TEMPORARY DISTURBANCE IS 1,168 SF

DESIGNED: E. Dickinson, RS	CHECKED: ED	SCALE: 1"=20'	DATE: January 23, 2024
PREPARED BY: CIVILized Solutions 31 Smith Road Hopkinton, MA 01748 P: 508.308.1924			

LEGEND

- New Meets Existing (N.M.E.)
- L.O.E. Limit of Excavation
- N.I.C. Not In Contract
- Test Pit
- Perc Hole
- Section A-A
- Spot Elevation
- Existing Contour Elevation
- Proposed Contour Elevation
- Groundwater
- Seasonal High Groundwater
- Below Grade
- Tree to be removed

DESIGN CRITERIA

DESIGN FLOW: Single-Family Residence
 8 Total Rooms/4 Bedrooms

4 Bedrooms @ 110 GPD/Br = 440 GPD
 *GARBAGE GRINDER IS PROHIBITED

SEPTIC TANK:
 Required 440 x 3 = 1,320 Gal
 Provided: 1,500 Gal
 (Use a 2-Compartment, Monolithic Tank)

LEACHING FACILITY:
 Design Perc Rate <= 2 Min./Inch
 Soil Class I
 Loading Rate 0.74 Gal/Day/SF
 Assume: Eljen GSF B43 Modules (Bed)

REQUIRED:
 440 GPD = 595 SF=357 SF (PER ELJEN MANUAL)
 0.74 GPD/SF (MINIMUM 20 UNITS REQUIRED)

PROVIDED: BED CONFIGURATION-20 UNITS
 USE 2 ROWS OF 10 UNITS
 SAND AREA = 10.0'W x 41.0'L
 = 410 SF (o.k.)

SCHEDULE OF INVERT ELEVATIONS:

4" Septic Tank (IN)	97.5±
4" Septic Tank (OUT)	97.0
4" Pump Chamber (IN)	98.75
2" Pump Chamber (OUT)	96.9
2" Distribution Box (IN)	101.6
4" Distribution Box (OUT)	101.4
4" Leaching Pipe	101.3
Elev. at Bottom of Eljen	100.7
Elev. at Bottom of C-33 Sand	100.2
Observed Groundwater Elev.	84" B.G.
High Groundwater Elev.	24" B.G.
Determination Method	Soil Morphology
B.O.H. Correction Factor	None

SEPTIC SYSTEM CONSTRUCTION

42 Westfield Drive
 Holliston, Massachusetts

OWNER(S): Ralyane Alves 42 Westfield Drive Holliston, MA 01748 Phone: 774-204-3804	ASSESSOR'S: MAP 11.0 BLOCK 8.0 LOT 79.0
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