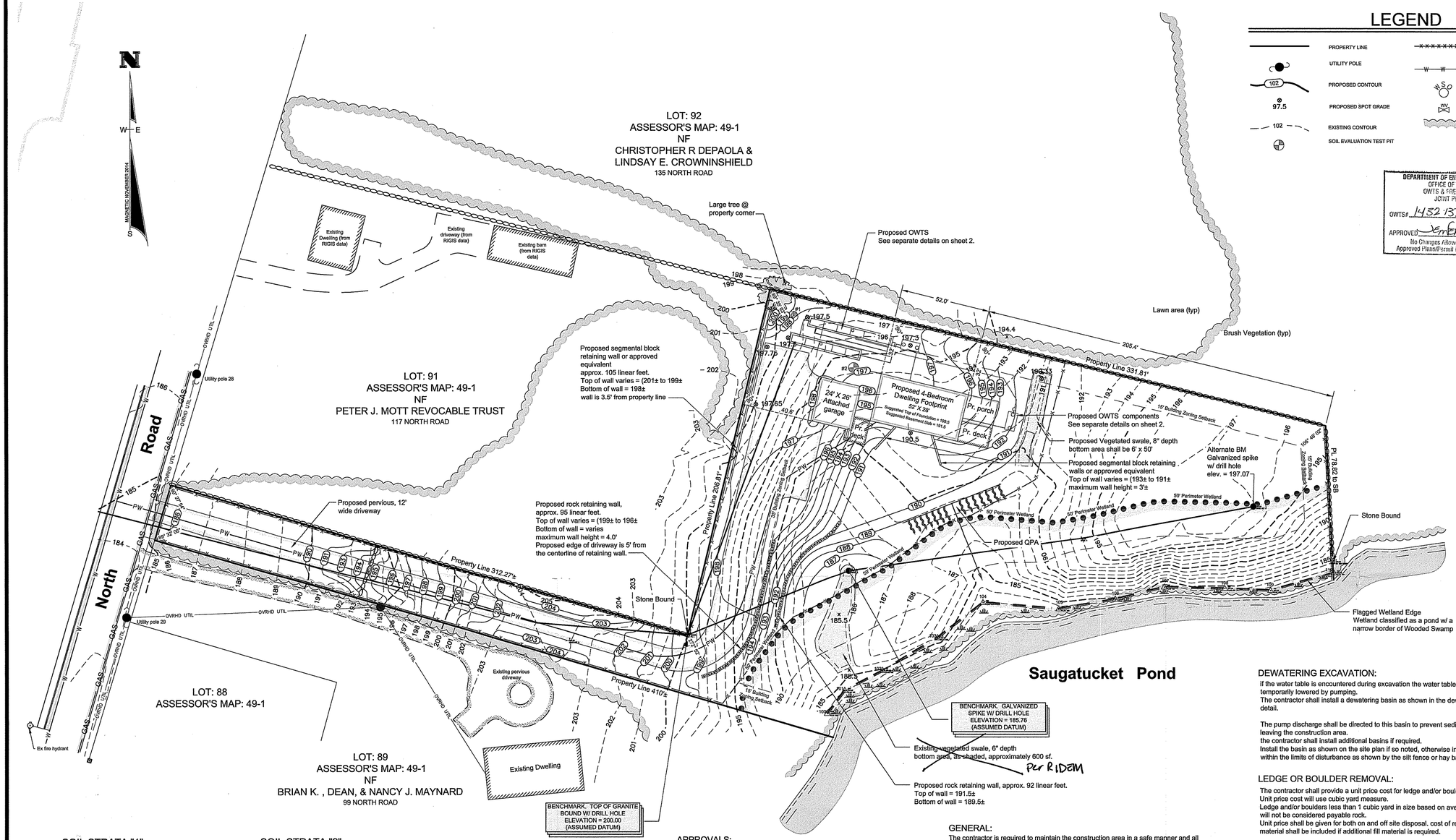
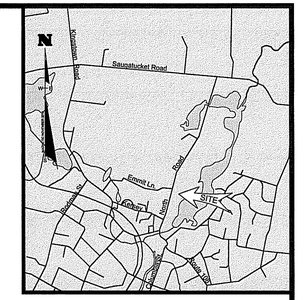


LEGEND

- PROPERTY LINE
- UTILITY POLE
- PROPOSED CONTOUR (102)
- PROPOSED SPOT GRADE (97.5)
- EXISTING CONTOUR (102)
- SOIL EVALUATION TEST PIT
- SILT FENCE/ LIMIT OF DISTURBANCE
- EXISTING WATER LINE (W W W)
- WATER SHUT-OFF (WS)
- WATER VALVE (WV)
- EXISTING EDGE OF BRUSH

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
OWTS & FRESHWATER WETLANDS
JOINT PERMIT APPROVAL
OWTS# 1432 1379 FWW# 160024
APPROVED Jeffrey Booth DATE 2/16/16
No Changes Allowed Without RIDEM Approval
Approved Plans/Permit Must Be Kept at Construction Site



LOCATION PLAN

SCALE: 1" = 2000'

SITE INFORMATION

LOT:	90
A.M.:	49-1
AREA:	1.6 ACRES
ROAD FRONTAGE:	33.06'
ZONING DISTRICT:	R-20

REQUIRED SETBACKS

FRONT:	35 FEET
REAR:	35 FEET
SIDE:	15 FEET
BUILDING COVERAGE:	25 %
BUILDING HEIGHT:	35 FEET

CERTIFICATION

This survey has been conducted in November 2014 and the plan has been prepared to substantially conform to Section 9 of the Rules and Regulations adopted by the Rhode Island State Board of Registration for Professional Land Surveyors, as follows:

Type of Boundary Survey: Not a Boundary Survey — Measurement Specification: -

Other Type of Survey: Data Accumulation Survey — III

Topographic Standard: T-2

The purpose for the conduct of the survey and for the preparation of the plan is as as follows:

This plan is intended for the design and permitting of an Onsite Wastewater Treatment System for the subject parcel.
The plan is intended to show the location of existing and proposed improvements for regulatory and municipal applications.

By: Jeffrey K. Balch Date: 1/29/2016

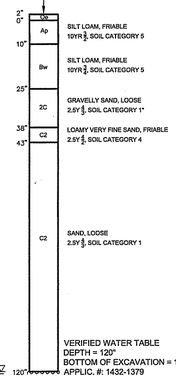
Jeffrey K. Balch, RI Professional Land Surveyor #1839
Certificate of Authorization #A535.

GRAPHICAL SCALE: 1" = 30'

0' 30' 60' 90' 120'

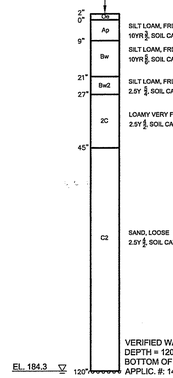
SOIL STRATA "1"

GROUND ELEVATION = 199
BY CAROLYN J. DOYLE : 10-22-2014



SOIL STRATA "2"

GROUND ELEVATION = 194.3
BY CAROLYN J. DOYLE : 10-22-2014



CALCULATION OF WATER TABLE ELEVATIONS:

GRADE AT TEST PIT "1"	= 199.0
GROUND WATER DEPTH	= 10.0
WATER TABLE ELEVATION	= 189.0
GRADE AT TEST PIT "2"	= 194.3
GROUND WATER DEPTH	= 10.0
WATER TABLE ELEVATION	= 184.3
AVERAGE GRADE IN THE AREA OF THE PROPOSED L.F.	= 197 (HIGH GRD = 199, LOW GRD = 195)
GROUND WATER DEPTH	= 10.0
DESIGN WATER TABLE ELEV.	= 187

APPROVALS:

RIDEM OWTS Permit # 1432-1379
RIDEM Freshwater wetlands Permit # 14-0212

WETLANDS:

Wetland flagging for subject property performed by Applied Bio-Systems, Inc. on September 22, 2014. Flag series 100- 110 depicts the limit of a Wooded Swamp which borders the edge of Saugatucket pond. The Wooded Swamp is greater than 3 acres in size, therefore, the wetland edge is subject to a 50' perimeter wetland, as noted.

FEMA DESIGNATIONS:

The proposed dwelling footprint depicted hereon appears within Zone X, Areas determined to be outside the 0.2% annual chance floodplain, reference FEMA FLOOD INSURANCE RATE MAP 44009C0203J, dated October 16, 2013

DESIGN CRITERIA:

- TOTAL NUMBER OF BEDROOMS PROPOSED - 4
- DESIGN SOIL CATEGORY - 4
- DESIGN LOADING RATE: 0.61 GAL/SF/DAY
- 4 BEDROOMS x 115 GPD/BR = 460 GPD
- 460 GPD / 0.61 G/SF/DAY = 754.1 SF REQUIRED

USE PRECAST CONCRETE FLOW DIFFUSERS W/ 12" OF CRUSHED STONE AROUND AND UNDERNEATH

- END UNIT CREDIT: 78 SQ. FT.
- INTERIOR UNIT CREDIT: 64 SQ. FT.
- TOTAL END UNITS = 4... 78 x 4 =312 SQ. FT.
- TOTAL INTERIOR UNITS = 7... 64 x 7 =448 SQ. FT.
- TOTAL SQ. FT. PROVIDED = 312 + 448 = 760 SQ. FT.

GENERAL:

The contractor is required to maintain the construction area in a safe manner and all construction activity on the site in accordance with all applicable local, state and federal regulations.

System shall be installed as per the current 'RULES AND REGULATIONS ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ONSITE WASTEWATER TREATMENT SYSTEMS...'.

Garbage disposals are not allowed.

D.E.M. requires the removal of all trees and brush within 10 feet of the proposed leach field
No vehicular traffic is permitted over the proposed leach field.
No drains, including foundation drains, shall be within 25' of the proposed leach field.
Unless, shown there are no known drains within 200' of the proposed leach field.
This site is not located in a CRITICAL RESOURCE AREA S.D. 19.00.
There are no coastal pond shoreline features and tributaries including storm and subsurface drains directly discharging thereto within 200' of the proposed O.W.T.S.
There is a shoreline within 200' of the proposed O.W.T.S.
there is a wetland within 200' of the proposed O.W.T.S.

WATER SUPPLY:

All water supply lines shall not come within 25' of the proposed leach field and 10' of the proposed septic tank.
Unless shown there are no known existing or proposed wells within 200 feet of the proposed leach field.
There are no known existing or proposed public wells within 500' of the proposed leach field.

UTILITIES:

The location of existing utilities shown on this plan are approximate only and have been shown using the best available data.

The contractor shall contact 'dig-safe' and/or other appropriate utility companies to ascertain the exact location of the respective utility prior to construction.
Utilities include but are not limited to gas, electric, water, telephone cable tv, etc.

DEWATERING EXCAVATION:

if the water table is encountered during excavation the water table shall be temporarily lowered by pumping.
The contractor shall install a dewatering basin as shown in the dewatering basin detail.

The pump discharge shall be directed to this basin to prevent sediments from leaving the construction area.
the contractor shall install additional basins if required.
Install the basin as shown on the site plan if so noted, otherwise install the basin(s) within the limits of disturbance as shown by the silt fence or hay bales.

LEDGE OR BOULDER REMOVAL:

The contractor shall provide a unit price cost for ledge and/or boulder removal.
Unit price cost will use cubic yard measure.
Ledge and/or boulders less than 1 cubic yard in size based on average dimensions will not be considered payable rock.
Unit price shall be given for both on and off site disposal. cost of replacement material shall be included if additional fill material is required.

CONTRACTOR SHALL PROVIDE THE FOLLOWING TO FRISELLA-BALCH & ASSOCIATES:

Product specification sheets for products used if different than specified on the plans. contractor shall obtain prior approval from FRISELLA-BALCH for any item that is different than shown on approved design plans. This would include different manufacturers than specified by FRISELLA-BALCH & ASSOCIATES.

Copy of delivery slips for all materials delivered to site.

SCHEDULE OF INSPECTIONS:

- 3-business days notice shall be given to FRISELLA-BALCH & ASSOCIATES prior to the start of construction.
- All inspections shall require at least 1 business days notice to FRISELLA-BALCH & ASSOCIATES
- The following inspections are required bY FRISELLA-BALCH & ASSOCIATES:

1. pre-construction meeting with FRISELLA-BALCH & ASSOCIATES at this meeting the start of construction will be called in to RIDEM.
2. Bottom of excavation for leach field.
3. Prior to covering any component or piping.
4. prior to covering the waterline from the well or the municipal water service. The line must be completely installed and exposed from source to final destination.
5. Final grading and 10' fill perimeters.
6. Checking of pump(s), control panel and float elevations (where appropriate). supplier of ORENCO products to perform the start-up in the presence of a FRISELLA-BALCH & ASSOCIATES representative.

Received Office of Water Resources FEB 1 2016 Environmental Management

FRISELLA -BALCH & ASSOCIATES
LAND SURVEYORS

33 NORTH RD. SUITE C-201 ☐PEACE DALE, RI
PHONE (401) 783-5949 ☐FAX (401) 783-5997
www.frisella.com

NO.	DATE	DESCRIPTION	BY

DRAWING TITLED:

PLAN OF A PROPOSED REDESIGN TO AN ONSITE ONSITE WASTEWATER TREATMENT SYSTEM

LOCATED ON:

LOT 90 OF ASSESSOR'S MAP 49-1

OWNED BY:

CRAIG H. MAYNARD

ADDRESS:

103 NORTH ROAD

IN THE TOWN OF SOUTH KINGSTOWN, RI

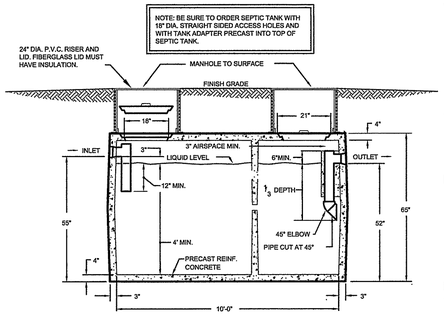
JANUARY 2016
DESIGNED BY: JEFFREY K. BALCH, P.L.S.
SCALE: 1" = 30'
DRAWN BY: JK | CHECKED BY: JKB
DRAWING No. SHEET 1 OF 2

JEFFREY K. BALCH
No. 1839
PROFESSIONAL LAND SURVEYOR

OWTS APPLICATION #: 1432-1379

© JEFFREY K. BALCH 2014

H:\Land Projects\Maynard, Craig - 135 North Road, Peace Dale\DWG\Maynard 135 North Rd. Site Plan 12-15-2015.dwg 1/5/2016 8:39:51 AM



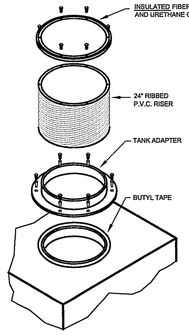
TANK WIDTH IS 5'-8" EXTERIOR

CROSS SECTION

1,500 GALLON TWO COMPARTMENT SEPTIC TANK

NO SCALE

TANK SPECIFICATION TAKEN FROM JOLLEY PRECAST , INC. DANIELSON , CONNECTICUT . 1 800-582-4638 OR APPROVED EQUAL



IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR ORDER THE SEPTIC TANK WITH THE TANK ADAPTER PRECAST IN THE TOP OF THE SEPTIC TANK.

NOTES:

CLEAN TANK PRIOR TO INSTALLING BUTYL TAPE.

DRILL HOLES AND FASTEN ADAPTER RING WITH S.S. BOLTS, TIGHTEN EVENLY.

APPLY GENEROUS AMOUNT OF ADHESIVE TO INSIDE BOTTOM OF RISER.

CAREFULLY SLIDE RISER ONTO RING.

MAKE SURE ADHESIVE FORMS A WATER-TIGHT SEAL. ADD ADHESIVE AS REQ'D.

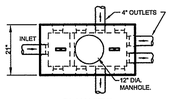
WAIT FOR ADHESIVE TO HARDEN PRIOR TO BACKFILLING.

INSTALL RISER PER MANUFACTURER'S REQUIREMENTS.

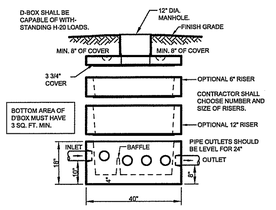
MANUF: ORENCO SYSTEMS, (503) 459-4449.

MANHOLE RISER DETAIL

NOT TO SCALE



PLAN VIEW



SIDE VIEW

DISTRIBUTION BOX

NO SCALE

SEE MAIN PLAN AND NOTES FOR NUMBER OF OUTLETS.
D-BOX SPECIFICATION TAKEN FROM JOLLEY PRECAST , INC. DANIELSON , CONNECTICUT . 1-800-982-4638 OR APPROVED EQUAL

WATER-TIGHTNESS:

Contractor shall test the septic tank(s) for water tightness (in the presence of FRISELLA-BALCH & ASSOCIATES) prior to back filling the excavation. Testing may include: filling the tank full of water and let stand for 24 hours, (side of tank must be exposed), or on-site vacuum testing, or a certification of water tightness by manufacturer is acceptable when vacuum tested as per ASTM C 1227-93.
All inlets and outlets shall have press seals precasted.

CONFINED SPACE SIGNS:

permanent durable corrosion resistant signs indicating "CONFINED SPACE - ENTRY BY PERMIT ONLY" shall be placed at each tank and pump chamber sidewall of riser. Signs shall meet O.S.H.A. requirements for size, markings and location.

ELECTRICAL:

All wiring required for pumps, alarms etc. shall be installed in strict accordance with all applicable codes, regulations, and manufacturers instructions.
Conduits entering the pump chambers shall be properly installed with conduit seals to prevent sewage gases from leaving the basin.
Conduits entering the fan chamber shall be properly installed with conduit seals to prevent water from accessing the chamber.

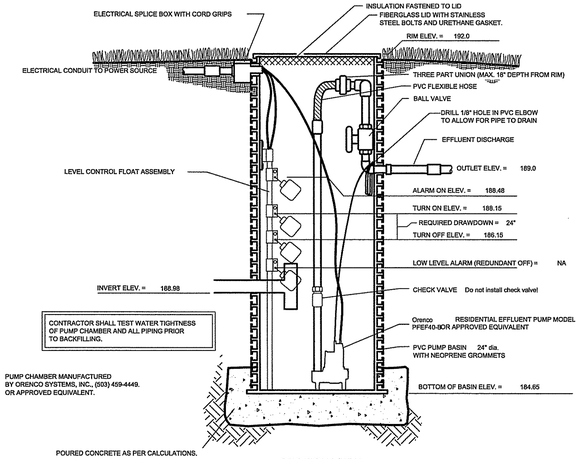
EXTERNAL PUMP CHAMBER:

The pump chamber shall house an effluent pump manufactured by Orenco Systems, inc. model PFEF40-B (or approved equivalent) and shall be installed according to details provided and to manufacturer's specifications. See typical pump chamber detail.

CONTROL PANEL:

The control panel shall be manufactured by Orenco systems, Inc. model VERICOMM AXB.
The programmable timer for the recirculating tank pump shall be set to the default settings as supplied by the manufacturer.

The external pump chamber shall be demand dosed and have:
The floats set as shown in the pump chamber detail
The high and/or low level alarms shall be in the control panel.



SECTION VIEW

TYPICAL PUMP BASIN DETAIL

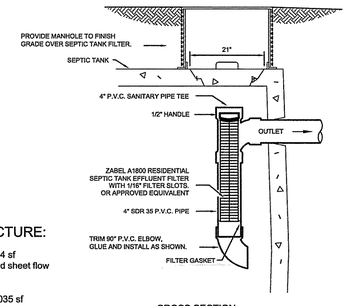
NO SCALE

GRAVEL SPECIFICATIONS:

The gravel base material shall consist of clean sand and gravel free from organic matter and foreign substances. The gravel shall not contain any material larger than 3 inches and up to 10% may be sized between ¾" and 3". the gravel shall meet the following criteria:

SIEVE SIZE	PERCENT PASSING
¾"	100%
#4	55% - 100%
#10	40% - 100%
#40	10% - 50%
#100	0% - 20%
#200	0% - 5%

Gravel shall be placed in shallow lifts (6") and properly compacted. the surface of the gravel shall be level and scarified.



CROSS SECTION

SEPTIC TANK FILTER

NO SCALE

QUALIFYING PERVIOUS AREAS:

The width of the QPA shall be equal to or greater than the length of the contributing rooftop area.

- The length of the contributing roof area = 61.5'
- Contributing rooftop area: 862 SF / 13.3' = 64.8' = Length of flow path through QPA.

DRAINAGE AREAS FOR STRUCTURE:

Garage (solid blue hatch): Area = 624 sf
conveyed to existing vegetated swale via overland sheet flow

North roof face (main)
& Roofed porch (solid blue hatch) Area = 1,035 sf
conveyed to proposed vegetated swale via overland sheet flow

South roof face (main)
(blue cross-hatch) Area = 862 sf
conveyed to QPA overland sheet flow

SWALE NOTES:

SIZING CRITERIA (PROPOSED SWALE):

DRAINAGE AREA: 1,035± SF.
SOIL TYPE: SILT LOAM

Bottom surface area (sf) for an 8" deep swale: 160 sf, required per 1000 sf.

Bottom length of proposed swale is 50', width is 6', 300 sf of bottom area provided.

Maximum ponding depth of 1ft should be maintained at the longitudinal midpoint of the swale and a maximum depth of 18" at the end point.

The average surface ponding depth shall be no more than 8" deep.

Amended soil layer should be a 85/20 mixture of the excavated native soils and mature organic compost.

**REFERENCE TABLE 5., page 7 of 15, State of RI Stormwater Guidance for Individual Single-family Residential Lot Development

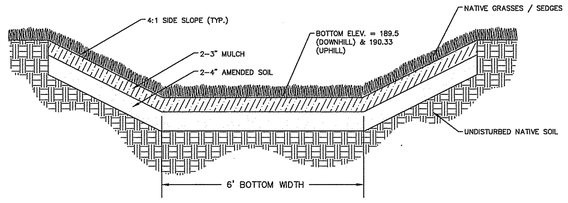
SWALE NOTES:

SIZING CRITERIA (EXISTING SWALE):

DRAINAGE AREA: 624± SF.
SOIL TYPE: SILT LOAM

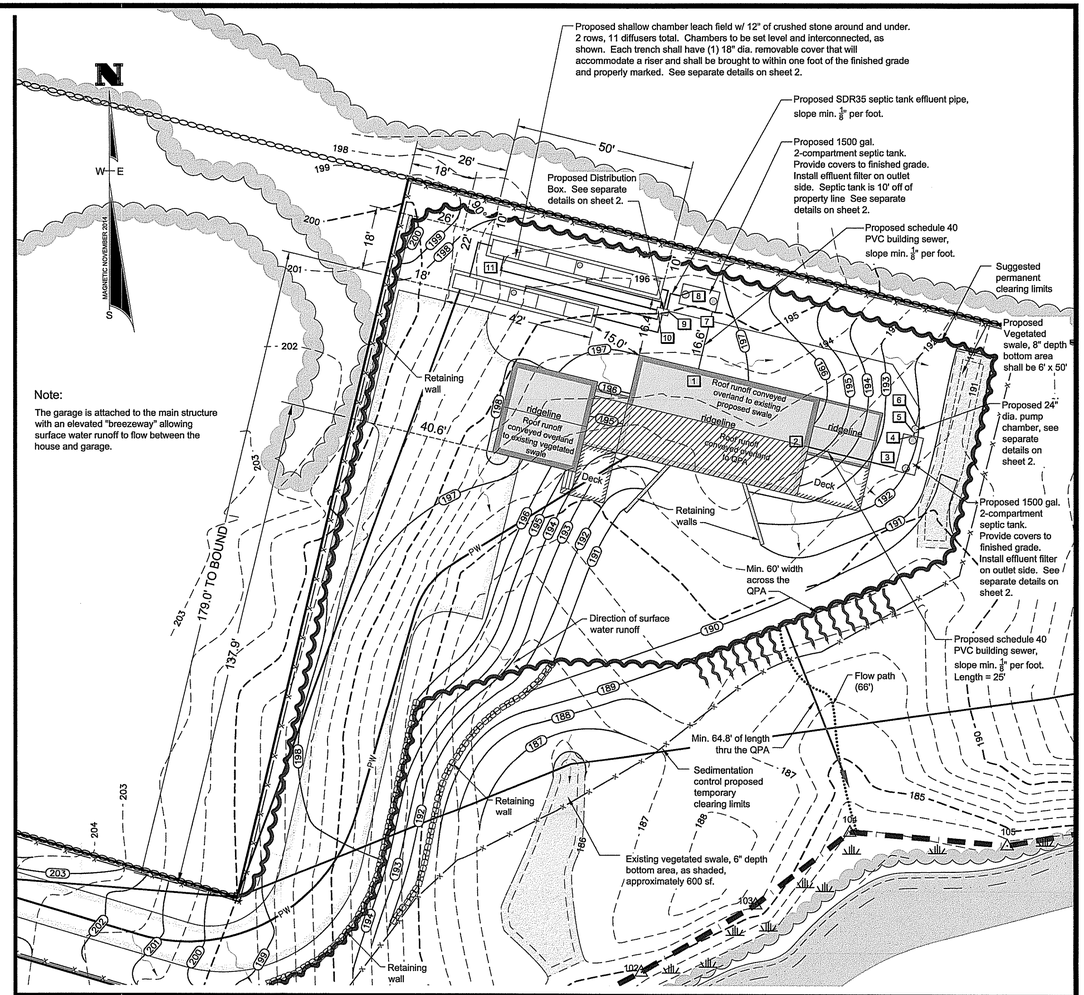
Bottom surface area (sf) for an 8" deep swale: 160 sf, required per 1000 sf.

Existing swale is irregular in shape with approxiamtely, 600 sf of bottom area with an average depth of 6"



DETAIL VEGETATED SWALE, TYPICAL CROSS-SECTION

NOT TO SCALE



Note:

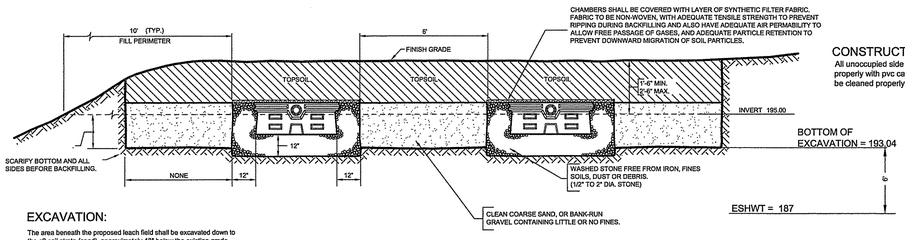
The garage is attached to the main structure with an elevated "breezeway" allowing surface water runoff to flow between the house and garage.

DETAIL PROPOSED OWTS LAYOUT

inset scale: 1" = 20'

0' 20' 40' 60' 80'

SCHEDULE OF INVERTS		
INVERT No.	LOCATION OF INVERT	INVERT ELEV.
1	BUILDING SEWER #1	195.85
2	BUILDING SEWER #2	189.51
3	SEPTIC TANK - IN	189.25
4	SEPTIC TANK - OUT	189.00
5	PUMP CHAMBER - IN	188.98
6	PUMP CHAMBER - OUT	189.0
7	SEPTIC TANK - IN	195.67
8	SEPTIC TANK - OUT	195.42
9	D-BOX - IN	195.34
10	D-BOX - OUT	195.17
11	SHALLOW CHAMBER - INVERT	195.00



EXCAVATION:

The area beneath the proposed leach field shall be excavated down to the c2 soil strata (sand), approximately 48" below the existing grade.

Back fill the excavation with clean Indrain sand or bank run gravel compacted in 6" lifts.

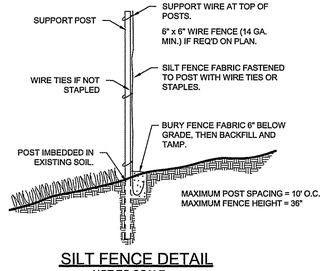
TYPICAL FLOWDIFFUSOR CROSS-SECTION

NO SCALE

SEE MAIN PLAN FOR LOCATION AND NUMBER OF FLOWDIFFUSORS AND TRENCH LINES.

CONSTRUCTION NOTE:

All unoccupied side inlets of flow diffusers are to be capped off properly with pvc cap or cement. Also, flow diffusers trough must be cleaned properly of all cement fragments and loose stone.



SILT FENCE DETAIL

NOT TO SCALE

EROSION AND SEDIMENTATION CONTROL NOTES:

Temporary and/or permanent erosion control devices such as baled hay, silt fencing, etc. shall be installed prior to any clearing or excavation. Hay bales or silt fencing shall be placed immediately down slope and adjoining areas of soil disturbance and stockpiles. installation of all erosion control devices shall be conducted in accordance to detail specifications.

Clearing of existing vegetation shall be done in a controlled manner so as to avoid extensive areas of defoliated terrain subject to erosion. Areas so disturbed shall be brought to final grades and stabilized as soon as possible.

During construction the contractor shall be responsible for maintaining drainage and runoff flow during storms and periods of rainfall.

All erosion control devices shall be inspected and maintained on a regular basis during construction, especially after each rainfall.

Due to changing characteristics of the site caused by and during construction additional erosion control measures may be required as site conditions warrant.

If construction is suspended, all disturbed areas shall be seeded and all necessary erosion control devices shall be in place and in good working order. if seeding is not possible then erosion control mats shall be placed over all disturbed soil.
Erosion control blankets (mats) shall be installed according to the manufacturers recommendations. Erosion control blankets (mats) shall be manufactured by north american green) or approved equivalent and installed according to the manufacturer's recommendations.

All erosion control methods, materials and maintenance shall be done in accordance with the "Rhode Island Soil Erosion and Sediment Control Handbook".

All areas which are disturbed during construction are to be brought to finished grade with at least 6" minimum depth of good quality loam and all soil amendments deemed necessary. The area shall be seeded with a quick germinating grass seed such as uri #2 or approved equivalent.

The contractor shall provide for all seeded areas to be watered and in good condition until a good healthy and uniform growth is established over the entire area.

FRISELLA -BALCH & ASSOCIATES
LAND SURVEYORS
33 NORTH RD. SUITE C-201 ▯PEACE DALE, RI
PHONE (401) 783-5949 ▯FAX (401) 783-5997
www.frisella.com

NO.	DATE	DESCRIPTION	BY

DRAWING TITLED:

DETAILS FOR A PROPOSED REDESIGN TO AN ONSITE WASTEWATER TREATMENT SYSTEM

LOCATED ON:

LOT 90 **OF ASSESSOR'S MAP 49-1**

OWNED BY:

CRAIG H. MAYNARD

ADDRESS:

103 NORTH ROAD

IN THE TOWN OF SOUTH KINGSTOWN, RI

JANUARY 2016

DESIGNED BY: JEFFREY K. BALCH, P.L.S.

SCALE: AS SHOWN

DRAWN BY: JK | CHECKED BY: JKB

DRAWING No. SHEET 2 OF 2

JEFFREY K. BALCH No. 7839 PROFESSIONAL LAND SURVEYOR

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OWTS APPLICATION #: 1432--1379

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