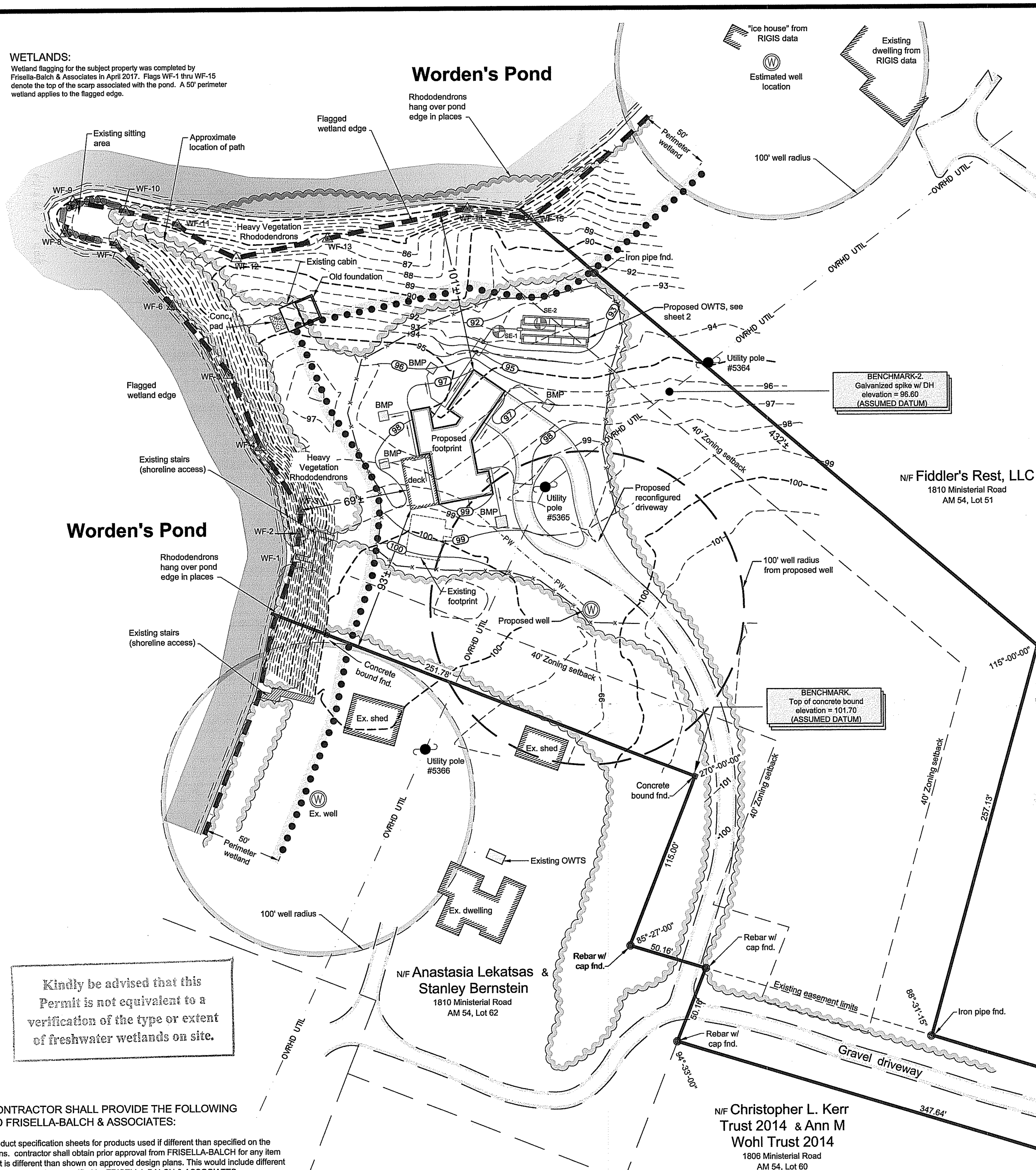
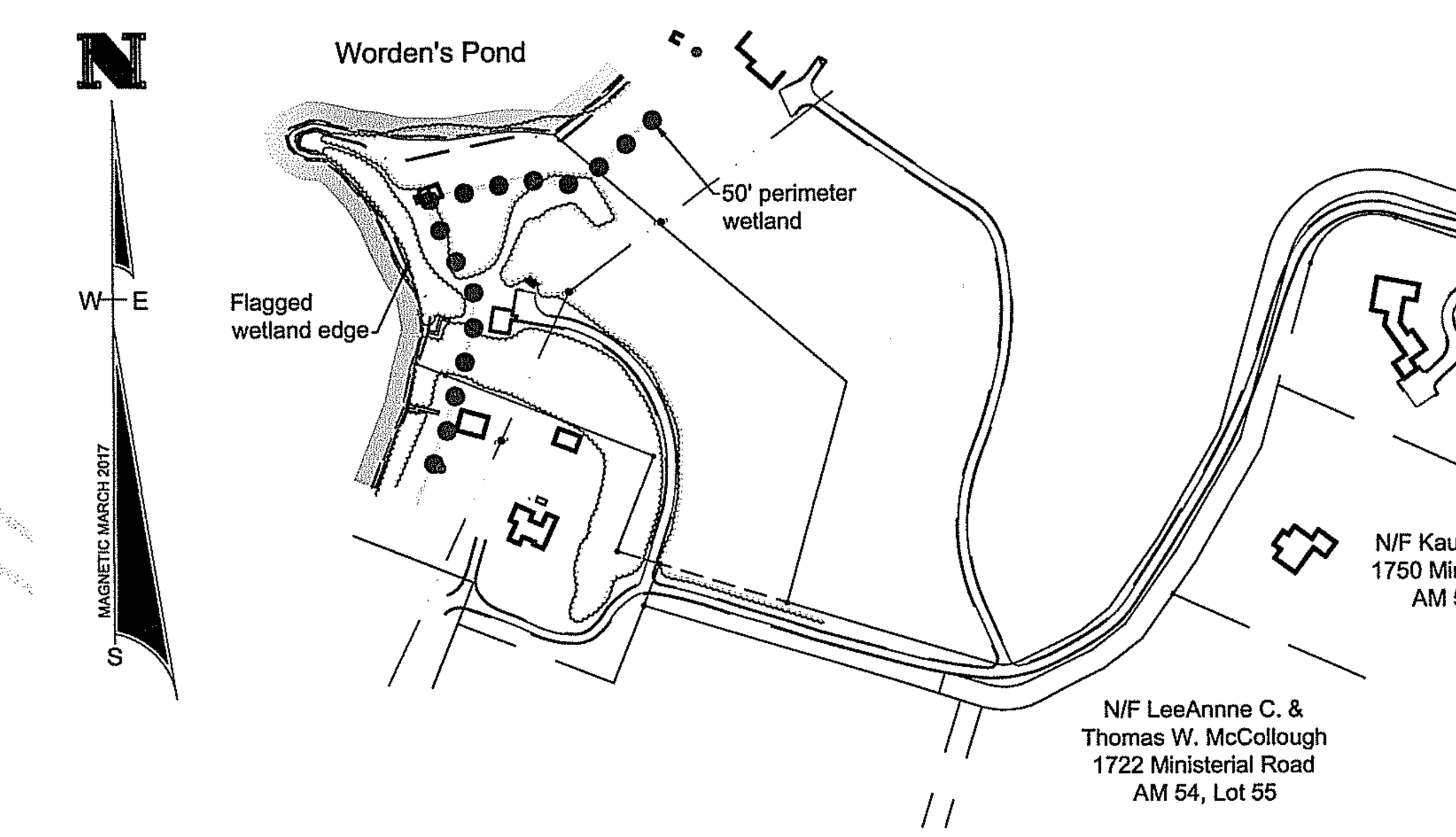
WETLANDS:
Wetland flagging for the subject property was completed by Frisella-Balch & Associates in April 2017. Flags WF-1 thru WF-15 denote the top of the scarp associated with the pond. A 50' perimeter wetland applies to the flagged edge.



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

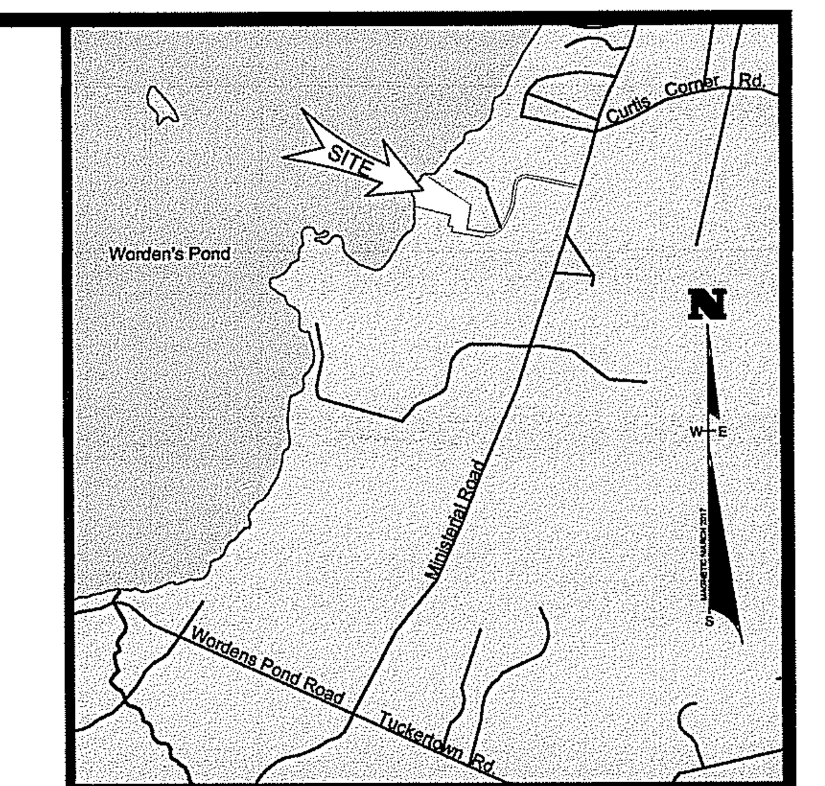
Proposed Site Plan

Scale: 1" = 40'



Detail Overall Property

Scale: 1" = 200'



LOCATION PLAN

SCALE: 1" = 2000'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN APPLICATION NO.: 17-0091
DATED MAY 12 2017
SEE LETTER OF SAME DATE.
Martin D. Wencek

SITE INFORMATION

LOT:	63
A.M.:	54
AREA:	4.75 acres
ZONING DISTRICT:	R-80

REQUIRED SETBACKS

FRONT:	50 FEET
REAR:	50 FEET
SIDE:	40 FEET
BUILDING COVERAGE:	20 %
BUILDING HEIGHT:	35 FEET

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 pond 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.
Unless shown there are no existing or proposed onsite wastewater treatment systems within 100' of the proposed well.

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.

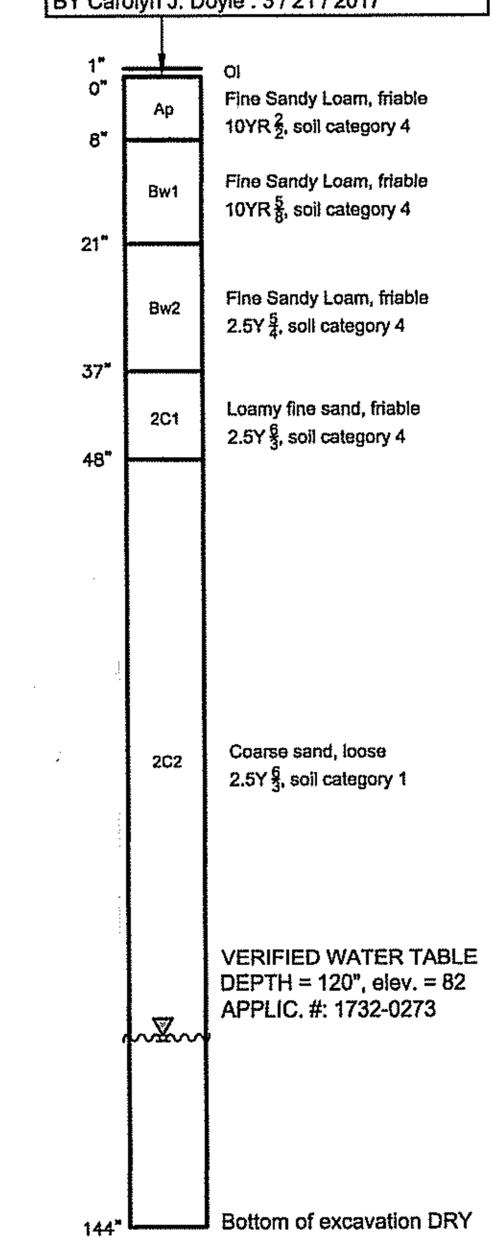
LEDGE OR BOULDER REMOVAL:
The contractor shall provide a unit price cost for ledge and/or boulder removal.
Unit price cost will use cubic yard measure.
Ledge and/or boulders less than 1 cubic yard in size based on average dimensions will not be considered payable rock.
Unit price shall be given for both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

FEMA DESIGNATIONS:
The subject property depicted hereon appears within zone (X) of FEMA Flood Insurance Rate Map 44009C0185H, dated October 19, 2010.

EXISTING OWTS:
The existing owts (cesspool) is to be abandoned. The cesspool shall be pumped dry filled with clean material. Unsuitable material from the existing owts encountered during construction it is to be removed from the site and disposed of both properly and legally. Alternatively, material encountered which is suitable for fill shall be permitted to be buried onsite provided such suitable area exists on-site. If material is required to be disposed of at a licensed solid waste facility, copies of all tipping slips shall be provided to the engineer for review. Any additional quantities of fill material that is required to be brought on-site shall be verified for quantities by the engineer.

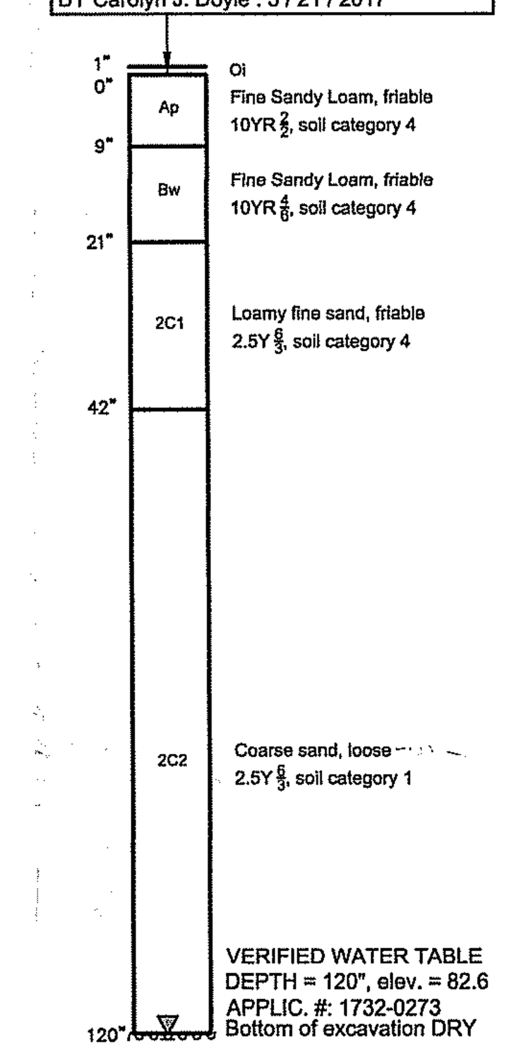
SOIL STRATA "1"

GROUND ELEVATION = 92.0
BY Carolyn J. Doyle : 3 / 21 / 2017



SOIL STRATA "2"

GROUND ELEVATION = 92.6
BY Carolyn J. Doyle : 3 / 21 / 2017



CERTIFICATION

This survey has been conducted in March 2017 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 on November 25, 2015, as follows:

Type of Boundary Survey:	Measurement Specification:
Not a Boundary Survey	
Other Type of Survey:	
Data Accumulation Survey	III
Vertical Control Standard:	V-3
Topographic Standard:	T-2

The purpose for the conduct of the survey and for the preparation of the plan is as as follows:
The plan is intended to show the location of existing and proposed improvements for regulatory and municipal applications.

By: Jeffrey K Balch Date: 4/17/17
Jeffrey K. Balch, RI Professional Land Surveyor #1839
Certificate of Authorization #A535.

CALCULATION OF WATER TABLE ELEVATIONS:

GRADE AT TEST PIT "1"	= 92.0
GROUND WATER DEPTH	= 10'
WATER TABLE ELEVATION	= 82.0
GRADE AT TEST PIT "2"	= 92.6
GROUND WATER DEPTH	= 10'
WATER TABLE ELEVATION	= 82.6
AVERAGE GRADE IN THE AREA OF THE PROPOSED L.F.	= 93
GROUND WATER DEPTH	= 10'
DESIGN WATER TABLE ELEV.	= 83

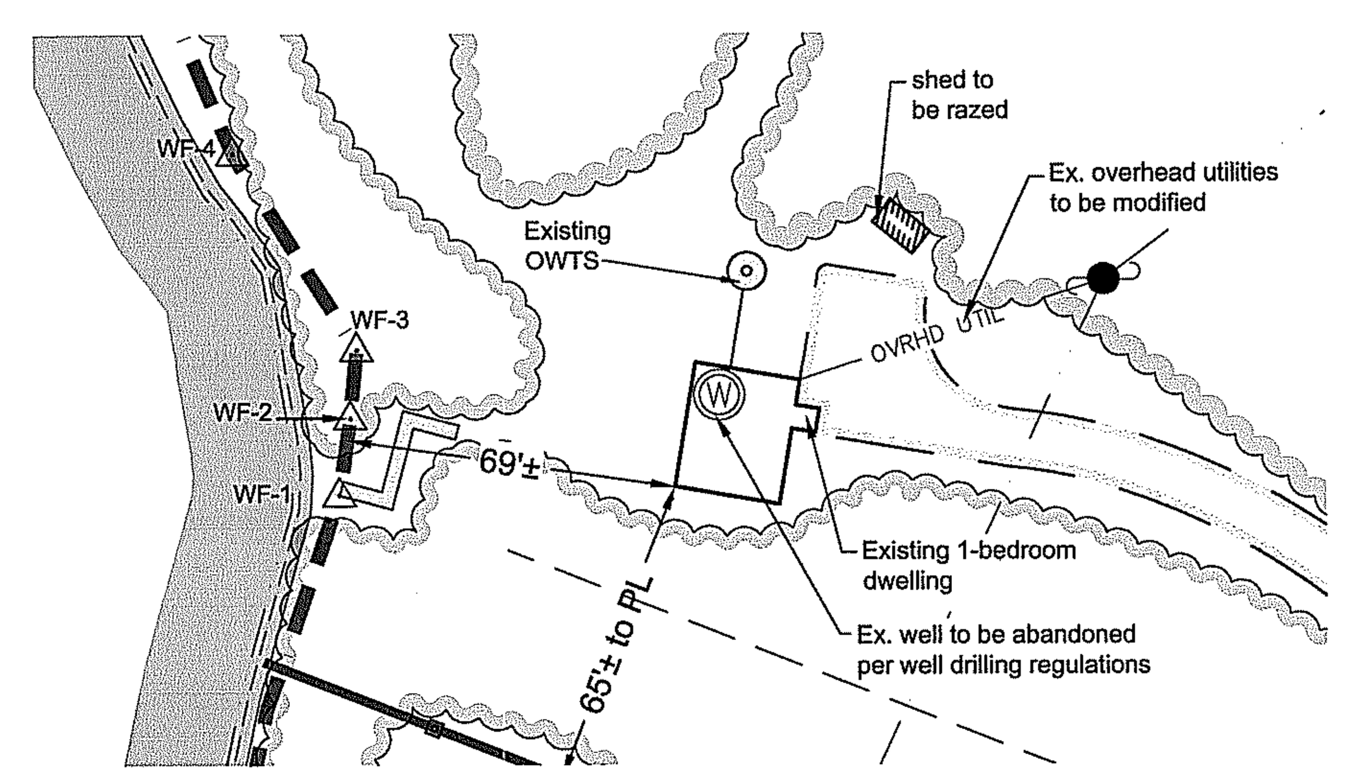
DESIGN CRITERIA:
Total number of bedrooms proposed - 4
Design soil category - 1
Soils loading rate: 0.70 gal/sf/day

115 gpd / BR x 4 BR = 460 gpd

460 gpd / 0.70 gal/sf/day = 657.1 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 = 6... 64 x 6 =384 sq. ft.
total sq. ft. provided = 312 + 384 = 696 sq. ft.



Existing Site Plan

Scale: 1" = 40'

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.

LOT COVERAGE CALCULATIONS - TOWN

EXISTING

DESCRIPTION	AREA (sf)
Existing House footprint	604
Existing cottage and conc pad	255
Existing shed	64
Total Existing Coverage	923
923sf / 206,910 sf (lot area) x 100 =	0.5%

PROPOSED

DESCRIPTION	AREA (sf)
Proposed Building footprint	2,479
Proposed deck	611
Existing cottage and conc pad	255
Total Proposed Coverage	3,345
3,345sf / 206,910 sf (lot area) x 100 =	1.6%

STORMWATER MANGEMENT:
Stormwater requirements for town: Net increase in stormwater runoff and volume associated with 10-year, 24-hour storm event. Total rainfall = 4.9 inches.

Stormwater requirements for RIDEM: Treatment of water quality volume for any new impervious area.

Existing impervious area:	923 sf
Proposed impervious area:	2,734 sf
Net increase impervious area:	1,811 sf

1,811 sf x 4.9" x 1ft / 12" = 739.5 cf of runoff
Water quality volume (new roof) 2,479 = sf x 1 ft / 12" =207 cf.

BMP provided: 1,069 cubic feet of storage (see sheet 2).
Reference RI Stormwater Management Guidance for Individual Single-Family Residential Lot Development.

LEGEND

PROPERTY LINE	SILT FENCE/ LIMIT OF DISTURBANCE
UTILITY POLE	EXISTING WATER LINE
102 PROPOSED CONTOUR	WELL
97.5 PROPOSED SPOT GRADE	WATER SHUT-OFF
102 EXISTING CONTOUR	WATER VALVE
TEST PIPE	EXISTING EDGE OF BRUSH

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 Onsite Wastewater Treatment System

Environmental Management
APR 18 2017
Office of Water Resources

LOCATED ON:
Lot 63 Of Assessor's Map 54

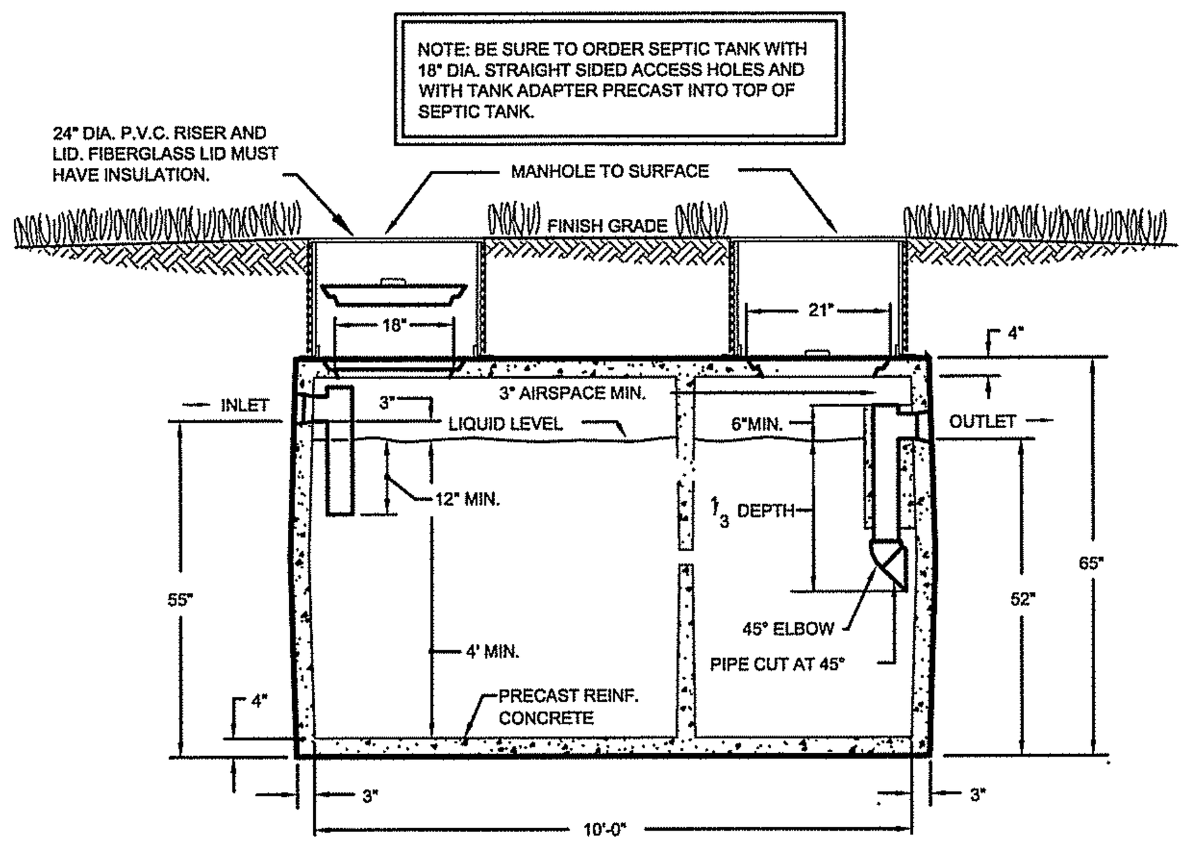
OWNED BY:
William Smith

ADDRESS:
1808A Ministerial Road
IN THE TOWN OF **South Kingstown, RI**

April 2017
DESIGNED BY: JEFFREY K. BALCH, P.L.S.
SCALE: 1" = 40'
DRAWN BY: JK CHECKED BY: JKB
DRAWING No.
SHEET 1 OF 2

JEFFREY K. BALCH
STATE OF RHODE ISLAND
No. 1839
HOPE
PROFESSIONAL LAND SURVEYOR

OWTS APPLICATION #:



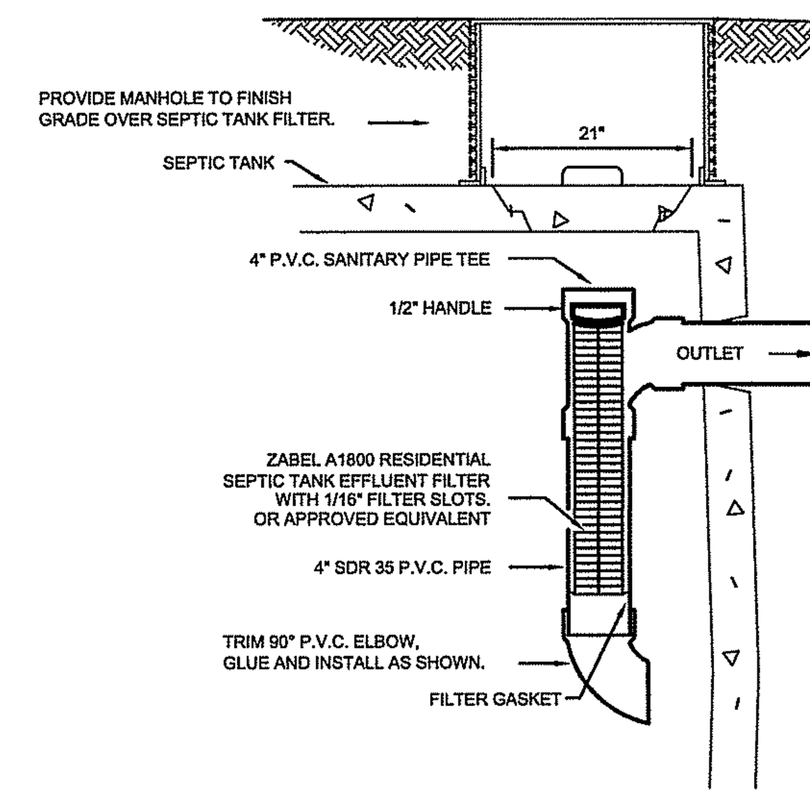
CROSS SECTION

1,500 GALLON

TWO COMPARTMENT SEPTIC TANK

NO SCALE

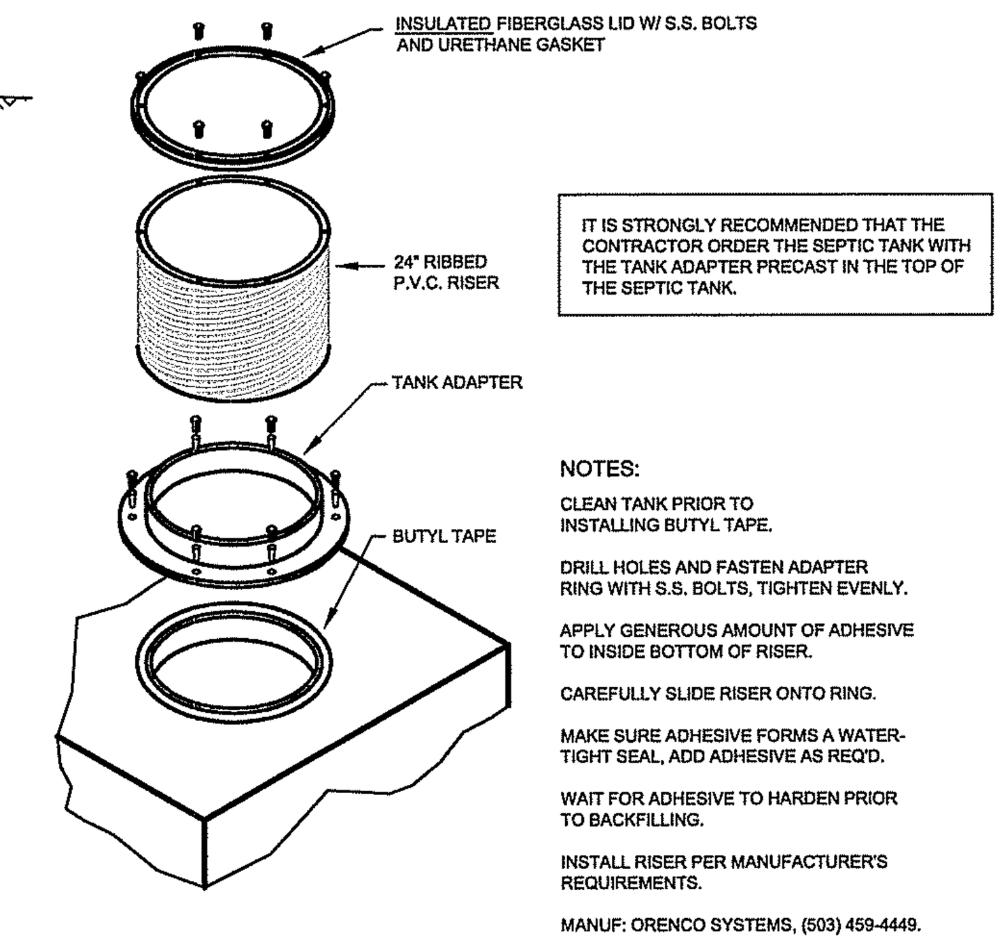
TANK SPECIFICATION TAKEN FROM JOLLEY PRECAST , INC.
DANIELSON , CONNECTICUT . 1 800-582-4638
OR APPROVED EQUAL



CROSS SECTION

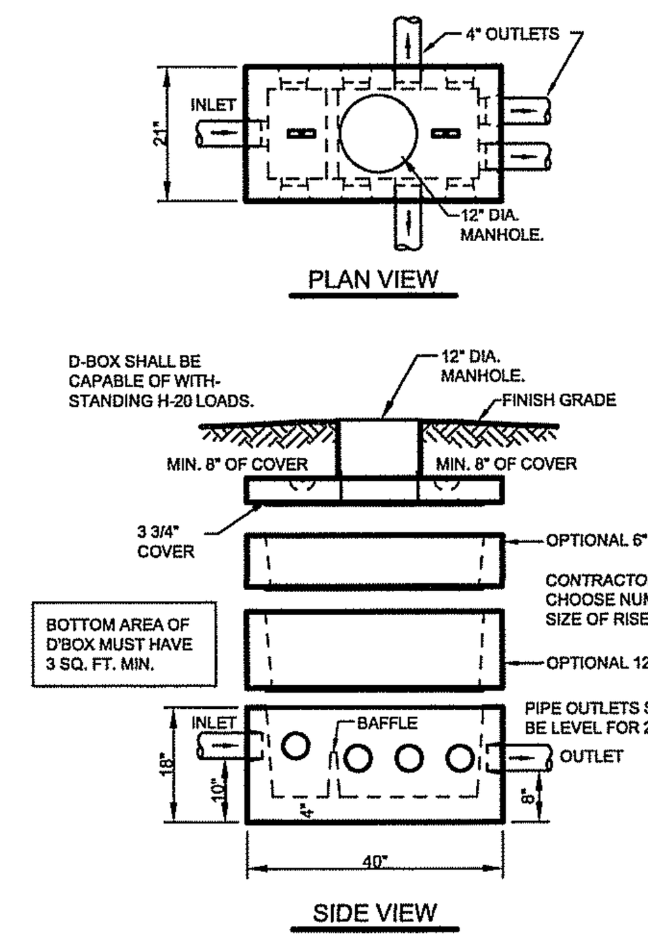
SEPTIC TANK FILTER

NO SCALE



MANHOLE RISER DETAIL

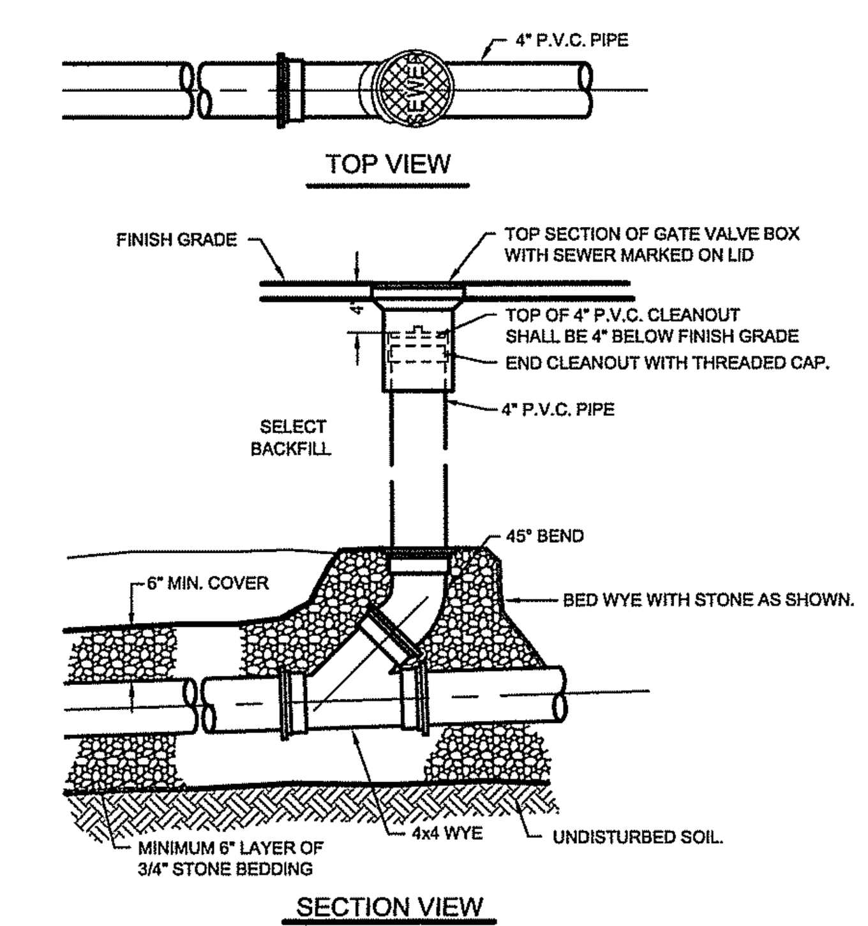
NOT TO SCALE



DISTRIBUTION BOX

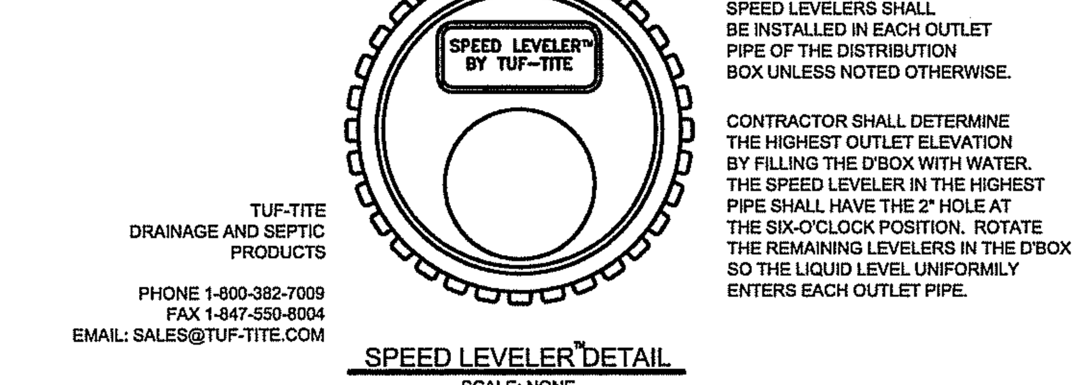
NO SCALE

SEE MAIN PLAN AND NOTES FOR NUMBER OF OUTLETS.
D-BOX SPECIFICATION TAKEN FROM JOLLEY PRECAST , INC.
DANIELSON , CONNECTICUT . 1-800-582-4638
OR APPROVED EQUAL



4" GRAVITY SEWER LINE CLEANOUT

SCALE: NONE



SPEED LEVELER™ DETAIL

SCALE: NONE

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.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

SCHEDULE OF INVERTS		
INVERT No.	LOCATION OF INVERT	INVERT ELEV.
1	BUILDING SEWER @ EX. COTTAGE	93.75
2	BUILDING SEWER @CLEAN-OUT	92.50
3	SEPTIC TANK - IN	91.49
4	SEPTIC TANK - OUT	91.24
5	D-BOX - IN	90.84
6	D-BOX - OUT	90.67
7	SHALLOW CHAMBER - INVERT	90.50

Onsite Stormwater Best Management Practices (BMP)

Stormwater calculations have been designed in accordance with the State of Rhode Island Stormwater Management Guidance for Individual Single-Family Residential Lot Development. The sizing of the drywells is based on Table 10. The soils data was extrapolated from the site soil evaluations performed for the proposed OWTS. Test holes were excavated to a 12' depth (dry) with an estimated SHWT of 10' below ground surface. Water tables are likely close to the pond elevation, el. 80±. All drywells proposed shall have a minimum 12" of cover and a stone depth of 36".
Infiltration of stormwater was calculated using the bottom areas only and is based on a conservative infiltration rate of 0.2' per hour (loamy sand). The site soil evaluations indicated a coarse sandy soil at around 4' below ground surface. Infiltration for this soil type would be much higher (0.7' per hour) For calculations, a "fill" time of 2 hours was used.
Additional storage is provided in the 4" piping to the drywells. 260 linear feet of pipe provides an additional 22.7 cf of storage.

ROOF CONTRIBUTING AREAS

DESCRIPTION	AREA (sf)	Drywell size (ft)	Top of stone (el)	Dist to SHWT (ft)	Total storage volume	Volume infiltrated
Roof Area (A)	409	5.5 x 5.5	95.0	7	36.3	132
Roof Area (B)	503	6 x 6	95.5	5.5	43.2	158
Roof Area (C)	630	7 x 7	97.5	5.5	58.8	216
Roof Area (D1)	476	6 x 6	96.5	7.5	43.2	158
Roof Area (D2)	462	6 x 6	97.0	7	43.2	158
Total Storage Volume					224.7	822

Total Storage Volume Provided:

224.7 + 22.7 + 822 = 1,069 cubic feet

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.

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%

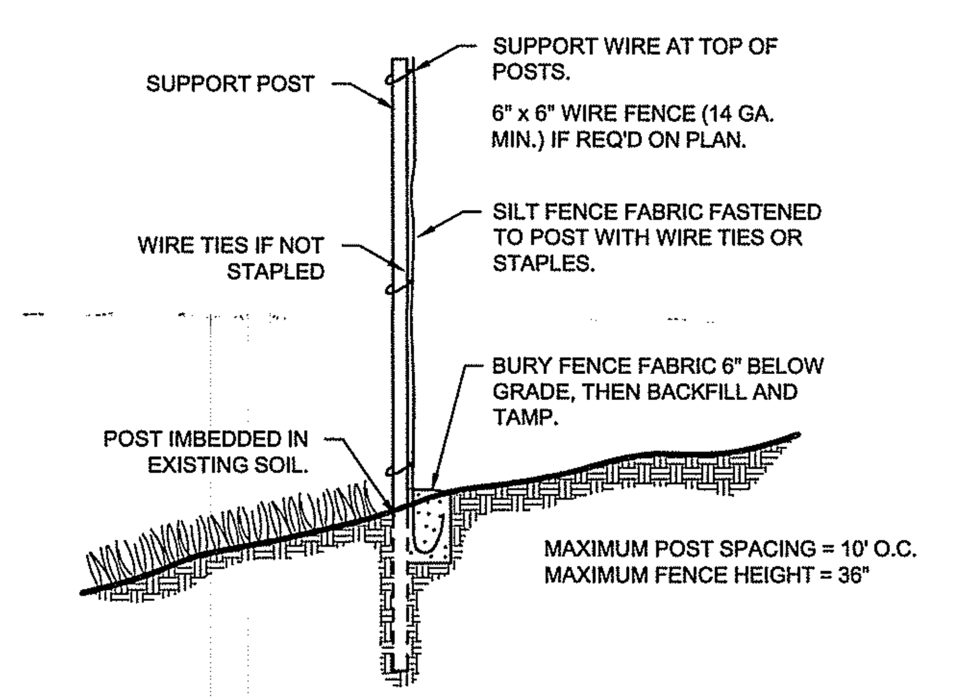
Gravel shall be placed in shallow lifts (6") and properly compacted. the surface of the gravel shall be level and scarified.

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.

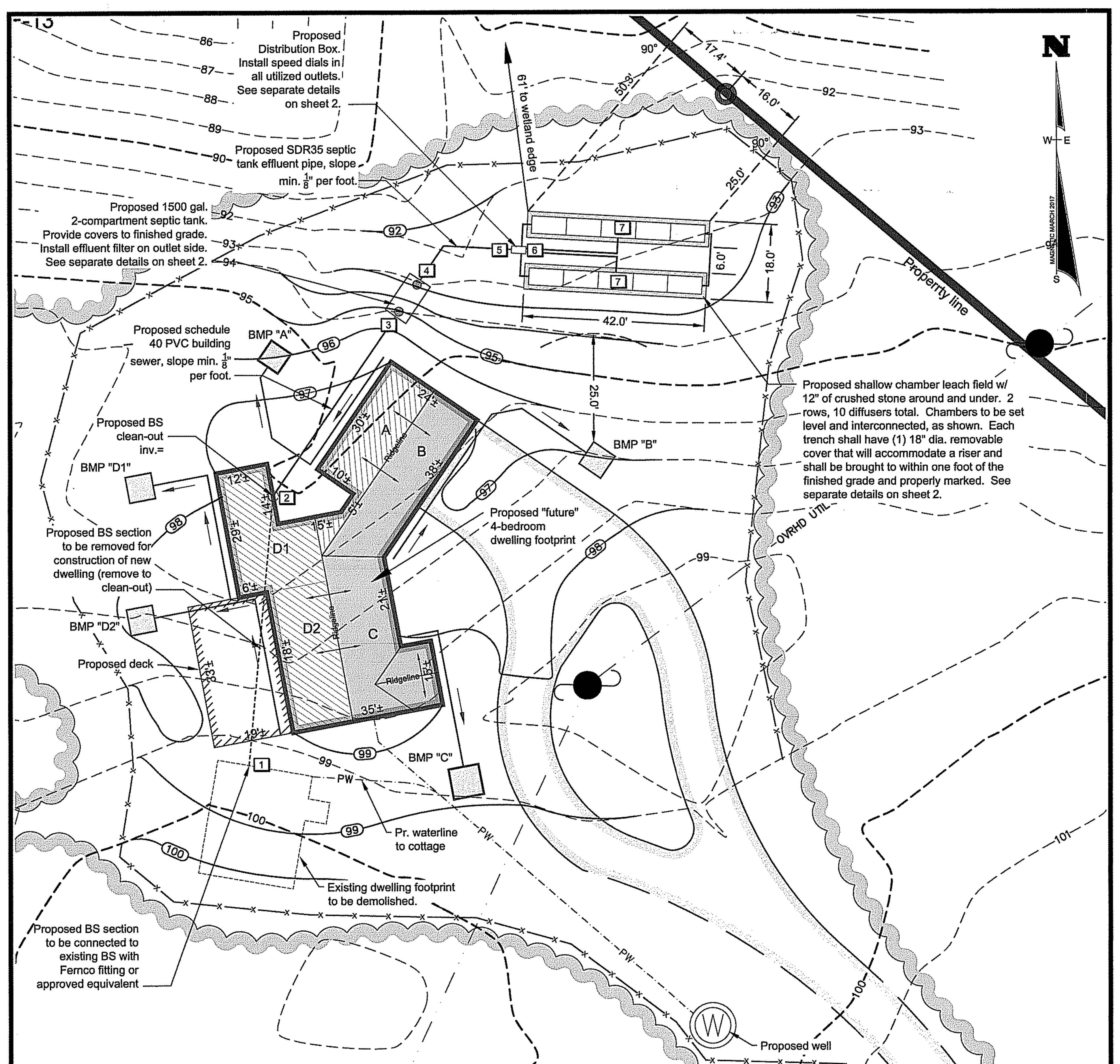
EXCAVATION:

The area beneath the proposed leach field shall be excavated down to the 2C1 soil strata (coarse sand...), approximately 44" below the existing grade. Bottom of excavation shall be scarified and level prior to placement of stone.



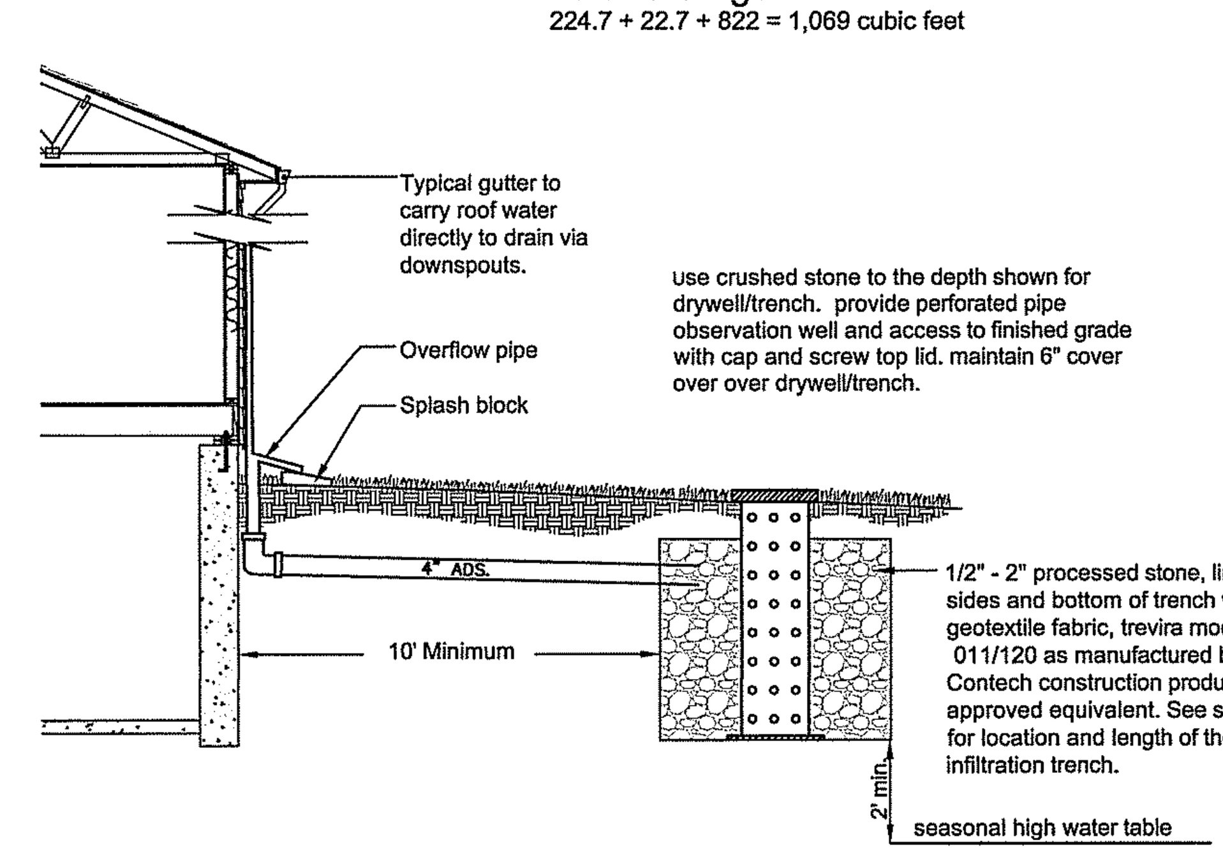
SILT FENCE DETAIL

NOT TO SCALE



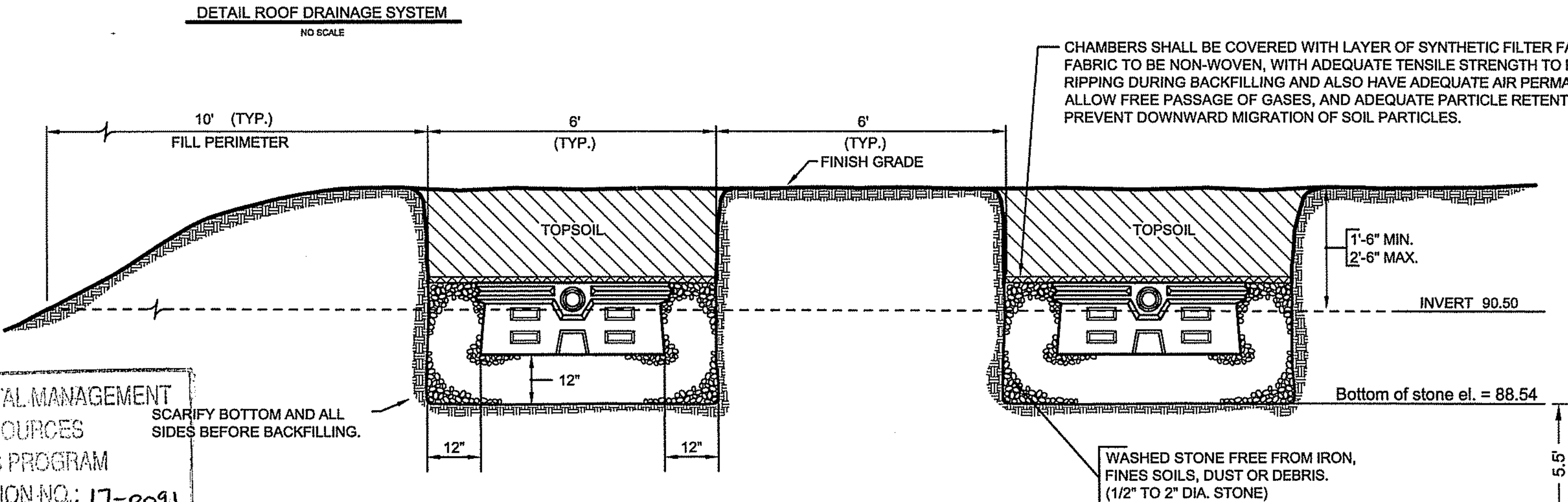
Detail Proposed OWTS Layout

Scale: 1" = 20'



DETAIL ROOF DRAINAGE SYSTEM

NO SCALE



TYPICAL FLOW DIFFUSERS CROSS-SECTION

NO SCALE

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

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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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:
Detail Sheet

LOCATED ON:
Lot 63 **Of Assessor's Map 54**

APR 18 2017
Office of Water Resources

OWNED BY:
William Smith

ADDRESS:
1808A Ministerial Road
IN THE TOWN OF **South Kingstown, RI**

April 17, 2017
DESIGNED BY: JEFFREY K. BALCH, P.L.S.
SCALE: As noted
DRAWN BY: JK
CHECKED BY: JKB
DRAWING No.: SHEET 2 OF 2

JEFFREY K. BALCH
4/17/17
STATE OF RHODE ISLAND
No. 1839
HOPE
PROFESSIONAL LAND SURVEYOR

OWTS APPLICATION #: 1732–0273