

DESIGN CRITERIA

- PEAK FLOW = 3 BEDROOM 115 GALLONS PER DAY / BEDROOM = 345 GPD
- CATEGORY 1 SYSTEM & SOIL CATEGORY 6* = 2.3 GAL/SF/DAY
- SIZE OF BOTTOMLESS SAND FILTER (BSF):
 - 345 GPD / 2.3 GAL/SF/DAY = 150 S.F.
 - USE A 9.0' X 17.0' BOTTOMLESS SAND FILTER = 153.0 S.F.
 - PER SOIL EVALUATION REPORT

BSF DOSE/CYCLE TIME (SEE ATTACHED CALCULATIONS)

- TOTAL DAILY FLOW = 345 GAL. ORIFICES = 45 PUMP Q = 27.8 GPM
- GAL. DOSE NEEDED = 10.72 GALLONS
- GAL./VERTICAL FOOT = 23.50 GALLONS
- DISTANCE BETWEEN ON AND OFF FLOAT = 0.5 FT
- RUN TIME = 0.14 HRS/DAY
- TIME PUMP RUNS DURING DRAWDOWN = 0.39 MIN./DOSE
- TIME PUMP IS OFF AFTER DRAWDOWN = 55.96 MIN.
- TOTAL CYCLES PER DAY = 23.56

SCHEDULE OF PVC PIPE SIZES

- BUILDING TO SEPTIC TANK → 4" SCH 35
- TREATMENT TANK PIPING → 2" SCH 40 OR EQUAL
- SEPTIC TANK TO PUMP BASIN → 4" SCH 40 OR EQUAL
- PUMP BASIN TO DRAINFIELD (BSF) → 2" SCH 40
- DRAINFIELD (BSF) MANIFOLD → 1-1/4" SCH 40 OR EQUAL
- DRAINFIELD (BSF) LATERALS → 1" SCH 40 OR EQUAL

INVERT SCHEDULE

LOCATION	ELEVATION
INVERT OUT OF HOUSE	71.75± (GRAVITY)
INVERT INTO SEPTIC TANK	71.50± (GRAVITY)
INVERT OUT OF SEPTIC TANK	71.25± (GRAVITY)
INVERT INTO PUMP BASIN	71.00± (GRAVITY)
INVERT OUT OF PUMP BASIN	71.00± (PRESSURE)
INVERT DRAINFIELD LATERALS (BSF)	74.00± (PRESSURE)

LIST OF COMPONENTS

- 3,000 GALLON 3-COMPARTMENT CONCRETE SEPTIC TANK
 - 1,000 GAL. SETTLING COMPARTMENT
 - 1,000 GAL. ANOXIC TREATMENT COMPARTMENT
 - 1,000 GAL. AEROBIC TREATMENT WITH FILTRATE PUMP & BLOWER (PROVIDED BY BIOBARRIER)
- 4x4x4' CONCRETE PUMP CHAMBER (486 GALLONS TOTAL CAPACITY) WITH AN OSI PKP350 PUMP.
- 9.0' WIDE X 17.0' LONG BOTTOMLESS SAND FILTER WITH SIX (6) 1.0-INCH LATERALS AND 18 INCH ORIFICE AND LATERAL SPACING (66 ORIFICES)
- ORENCO SYSTEMS, INC. VERICOMM CONTROL PANEL.
- ORENCO SYSTEMS, INC. CONTROL PANEL.

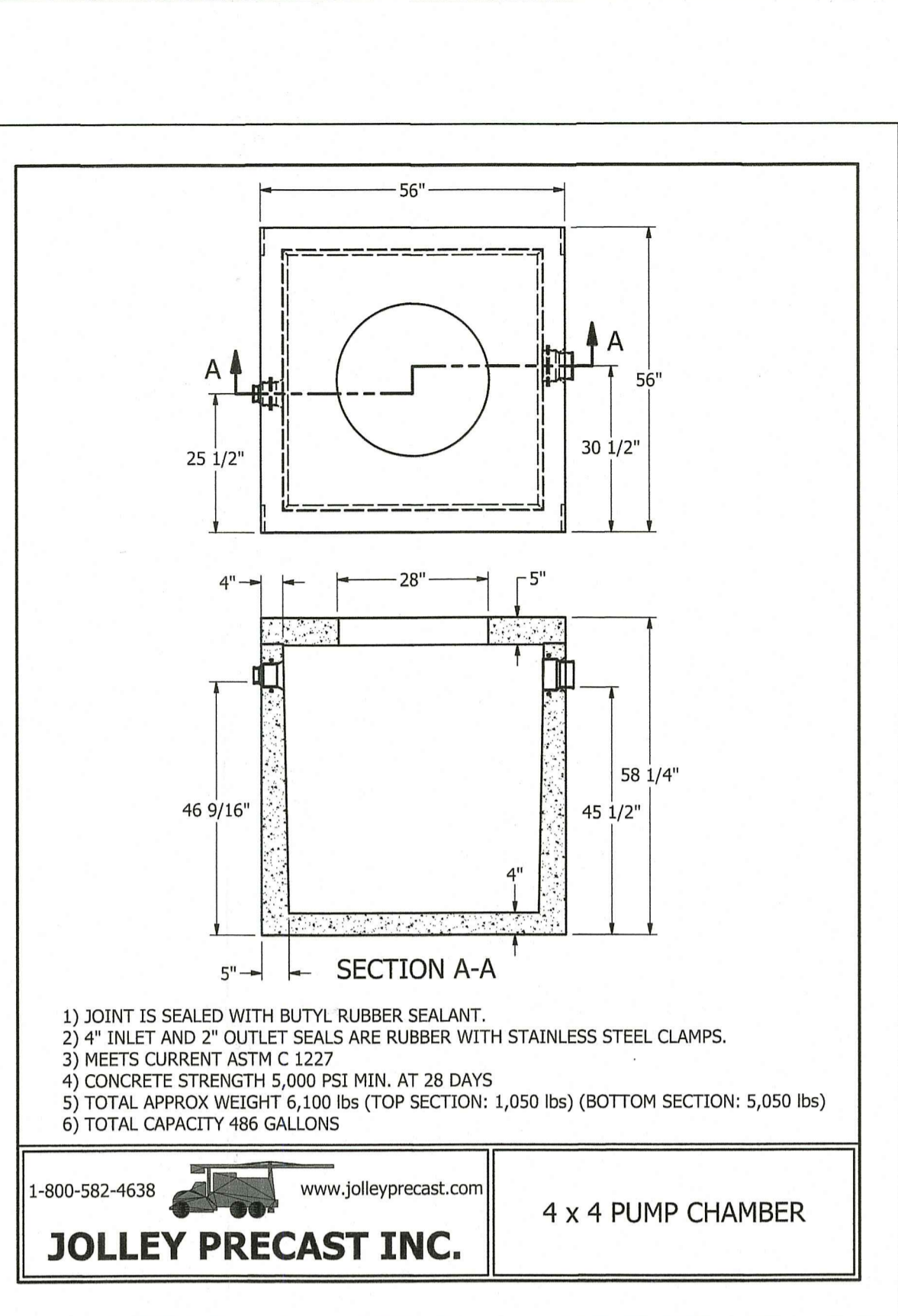
SOIL DESCRIPTION*

SEV TH 22-01 ESWHT = 30" TOTAL DEPTH OF TH = 96"	HORIZON	DEPTH	TEXTURE	SOIL CATEGORY
AB	0-6"	FSL	4	
BW1	6-16"	FSL	4	
BW2	16-26"	CBSL	3	
BC	26-36"	CBCSL	3	
C	36-96"	CBCSL	GM	

* SOIL EVALUATION PERFORMED ON 1/04/22 BY RIDEM SOIL EVALUATOR D-4028 (RIDEM APPLICATION NO. 2103-1823)

BSF DETAIL NOTES:

- This drawing is for a 9.0' x 17.0' bottomless sand filter (66 orifices). Loaded at 2.3 gpd/sf, this filter can polish up to 345 gallons per day. The dosing pump shall be an PKP350.
- Soil Category 6 (2.3 gpd/sf) USED FOR DESIGN is the limiting soil horizon, the soil horizon within 1.5 ft below the proposed base of BSF.
- Two (2) orifices in each lateral shall be drilled pointing up (12 o'clock position), all other orifices shall be drilled pointing down (6 o'clock position). The up-pointing orifices shall be located approximately 1/3 and 2/3, respectively, along the length of each lateral. Orifice shields shall be placed over each orifice (above or below the lateral, as required).
- BSF system should be bottled brushed and laterals thoroughly cleaned on a yearly basis, preferably prior to the winter season.



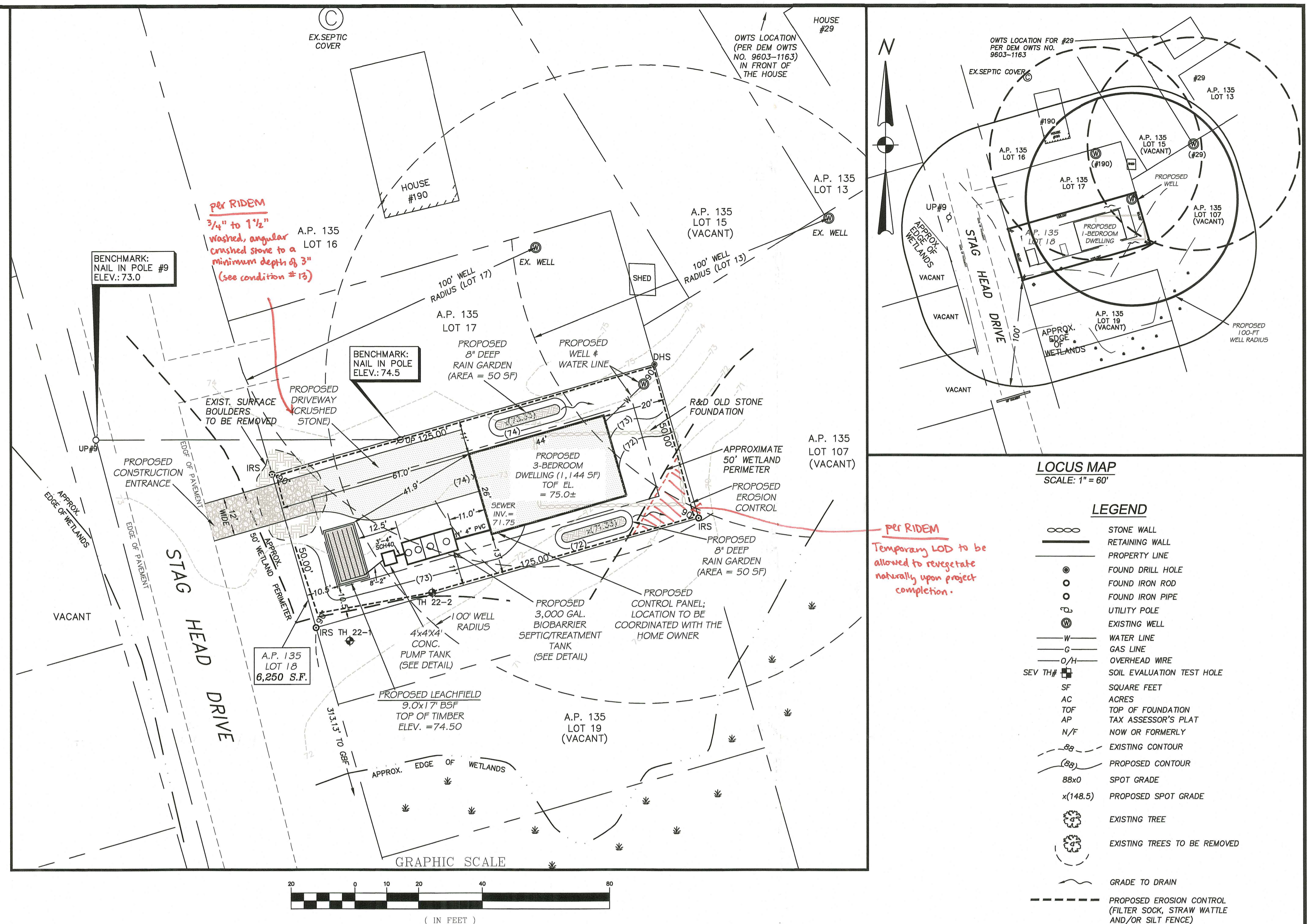
- JOINT IS SEALED WITH BUTYL RUBBER SEALANT.
- 4" INLET AND 2" OUTLET SEALS ARE RUBBER WITH STAINLESS STEEL CLAMPS.
- MEETS CURRENT ASTM C 1227
- CONCRETE STRENGTH 5,000 PSI MIN. AT 28 DAYS
- TOTAL APPROX WEIGHT 6,100 LBS (TOP SECTION: 1,050 LBS) (BOTTOM SECTION: 5,050 LBS)
- TOTAL CAPACITY 486 GALLONS

1-800-582-4638 www.jolleyprecast.com

JOLLEY PRECAST INC.

PUMP FLOAT SETTINGS

- DOSE VOLUME = 4" DIA PIPE X LENGTH
V = 0.25 GALS. PER ORIFICE = 0.25 GALS. X 66 = 16.5 GALS.
- TRANSPOUR LINE VOLUME
V = 3.14 X R X R X L
V = 3.14 X (1.0/12)(1.0/12) X 8' = 0.17 CF = 1.3 GAL
- TOTAL DOSE VOLUME
16.5 GAL + 1.3 GAL = 17.8 GAL
- PUMP DRAW DOWN (4"x4" CHAMBER)
GAL PER INCH TANK HEIGHT
GAL/IN = (4' X 4' X 1/12) ÷ 7.48 GAL/FT = 9.9 GAL/IN
17.8 GALS / 9.9 GAL/IN = 1.8 IN
- PUMP CYCLE TIME
17.8/31.3 GPM = 0.57 MIN. = 34 SEC



LOCUS MAP
SCALE: 1" = 60'

LEGEND

- STONE WALL
- RETAINING WALL
- PROPERTY LINE
- FOUND DRILL HOLE
- FOUND IRON ROD
- FOUND IRON PIPE
- UTILITY POLE
- EXISTING WELL
- WATER LINE
- GAS LINE
- OVERHEAD WIRE
- SEV TH #
- SOIL EVALUATION TEST HOLE
- SQUARE FOOT
- ACRES
- TOP OF FOUNDATION
- TAX ASSESSOR'S PLAT
- N/F
- NOW OR FORMERLY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- 88x0
- SPOT GRADE
- x(148.5)
- PROPOSED SPOT GRADE
- EXISTING TREE
- EXISTING TREES TO BE REMOVED
- GRADE TO DRAIN
- PROPOSED EROSION CONTROL (FILTER SOCK, STRAW WATTLE AND/OR SILT FENCE)

SURVEY NOTE:

PROPERTY LINE & TOPOGRAPHY SURVEY PERFORMED BY ATALS LAND SURVEYING
PLAN NAME: ELAN OF LAND
ASSESSOR'S PLAT 135 - LOT 18
STAG HEAD DRIVE - BURRILLVILLE, RI
PREPARED FOR: MARK BRIZARD
DATE: JANUARY 27, 2022

WETLAND NOTE:
FRESHWATER WETLANDS PRESENT JUST OFF SITE TO THE SOUTH AND WEST OF LOT WERE OBSERVED BY NATURAL RESOURCE SERVICES, INC. ON 5/4/2021 AND HAS AN ASSOCIATED 50-FOOT PERIMETER WETLAND THAT CROSSES THE SOUTHEAST CORNER OF THE LOT; SEE ATTACHED REPORT.

OWNER/APPLICANT:
MARK BRIZARD
571 VICTORY HIGHWAY
MAPLEVILLE, RI 02839

SUSAN B. CAPASSO
No. 7443

REGISTERED PROFESSIONAL ENGINEER (CIVIL)

RIDEM APPLICATION NO. 2103-1823

PROPOSED OWTS PLAN

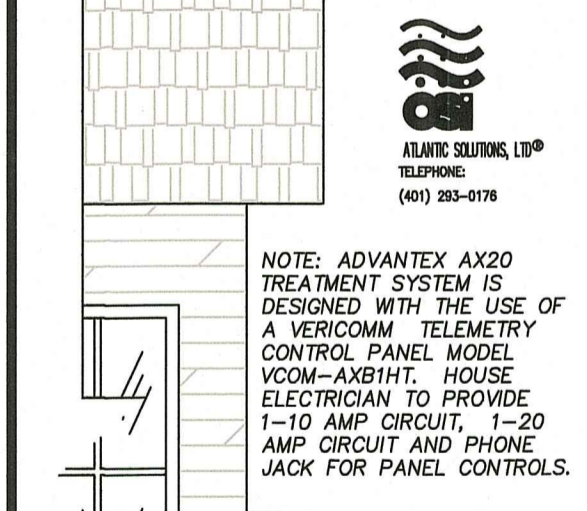
Project:
MARK BRIZARD
STAG HEAD DRIVE
A.P. 135 LOT 18
BURRILLVILLE, RHODE ISLAND

Prepared By:
SUSAN B. CAPASSO, P.E.
PO BOX 621
NORTH SCITUATE, RHODE ISLAND 02857
401-261-8870
MARCH 28, 2022

REVISIONS:
REVISED 3/23/23 PER RIDEM COMMENTS
REVISED 10/16/22 PER RIDEM COMMENTS
REVISED 8/8/22 PER RIDEM COMMENTS
REVISED 7/20/22 PER RIDEM COMMENTS
REVISED 6/22/22 PER RIDEM COMMENTS

PROJECT NO.: 22-02 SHEET 1/3

PARTS AVAILABLE FROM:

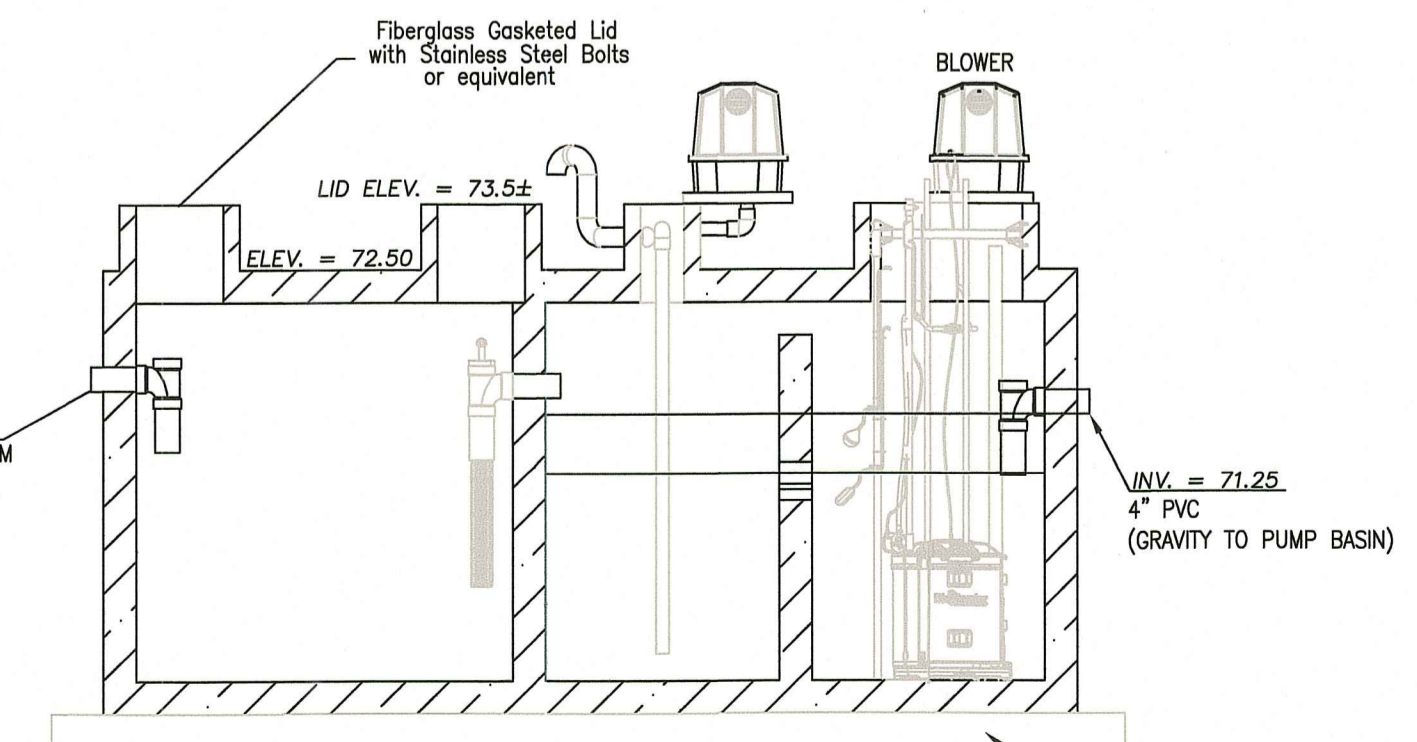
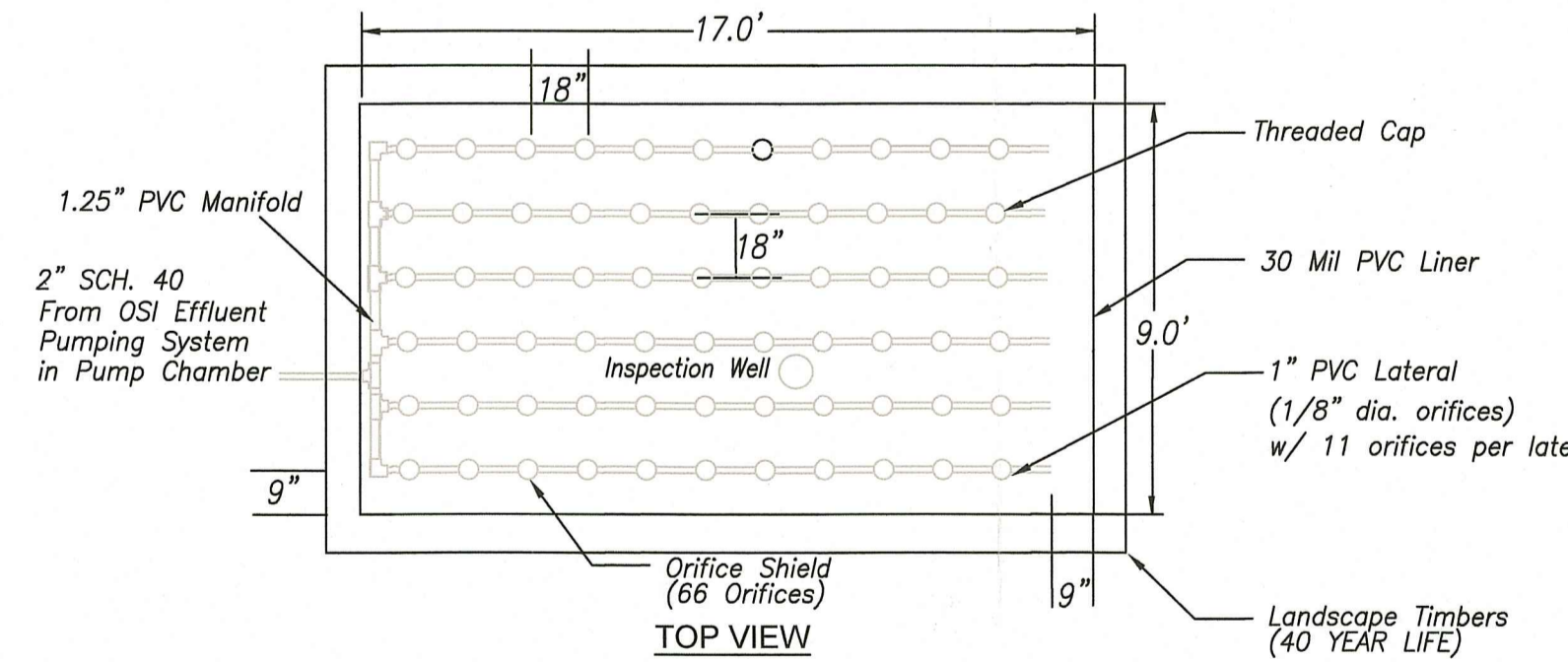
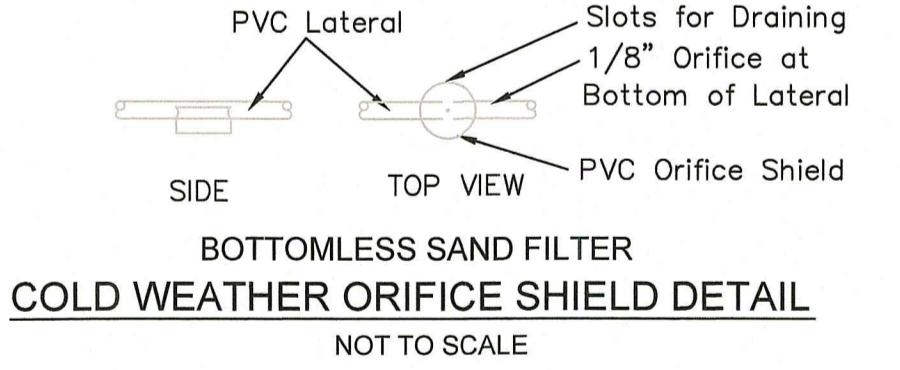
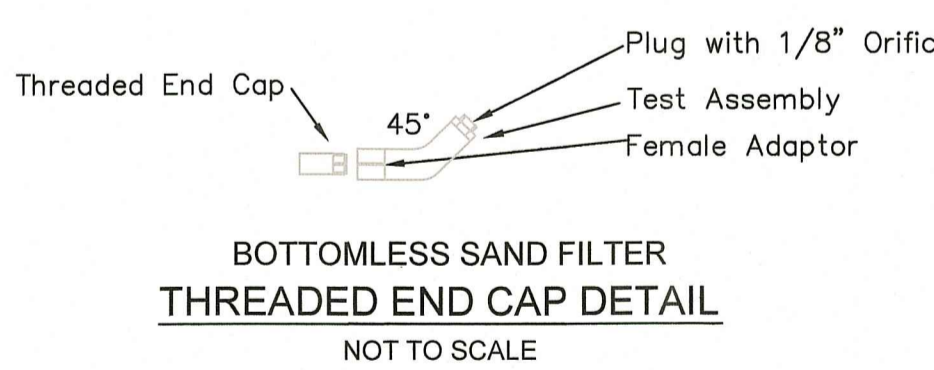


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
OWTS & FRESHWATER WETLANDS
JOINT PERMIT APPROVAL

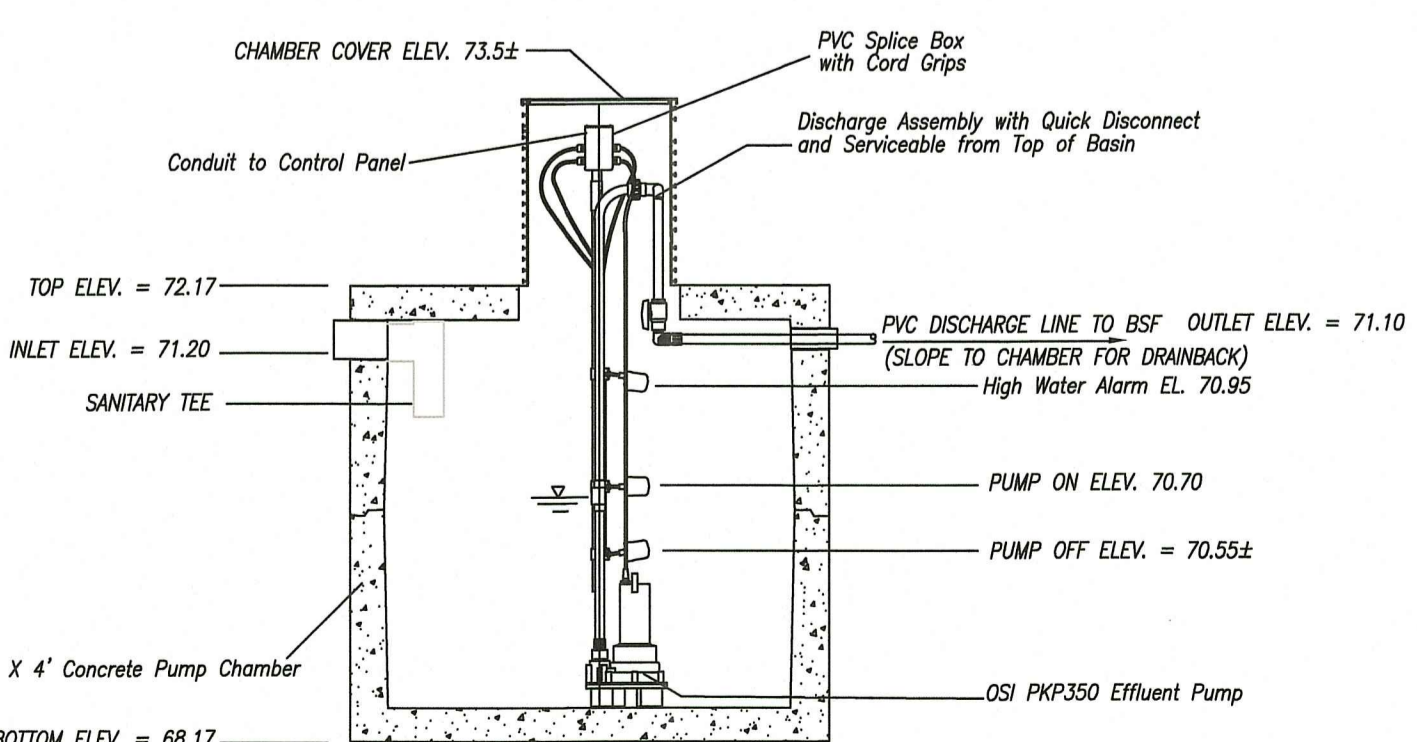
OWTS# 2103-1823 PERMIT # 22-0113
APPROVED DATE 4/8/23

(Signature)

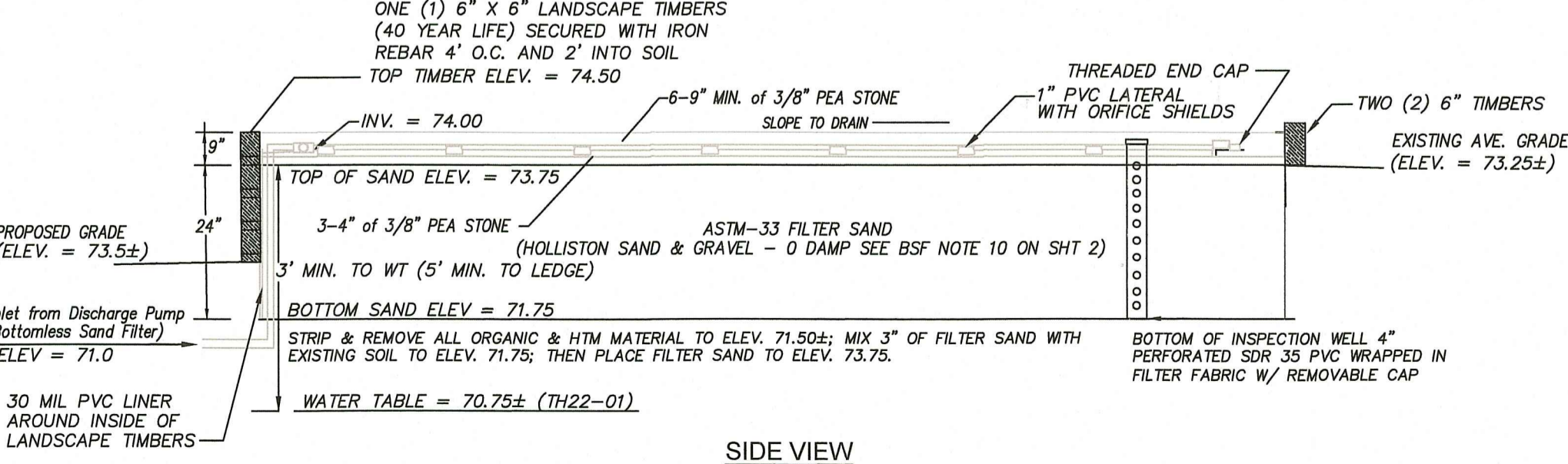
NO COPIES ALLOWED WITHOUT RIDEM APPROVAL
Approved Plans/Permit Must Be Kept at Construction Site



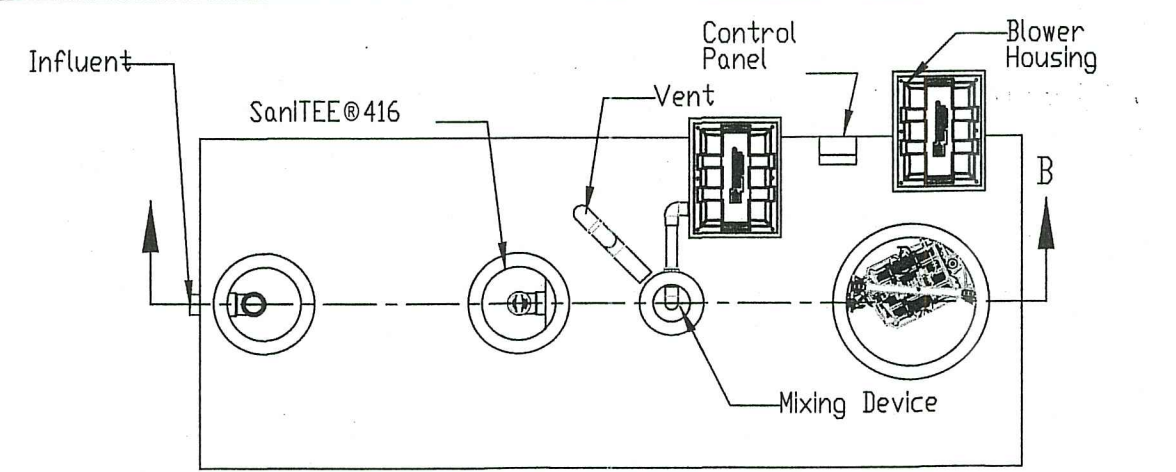
BIO-BARRIER 0.5N
3,000 GALLON 3-COMPARTMENT SEPTIC/TREATMENT TANK
NOT TO SCALE



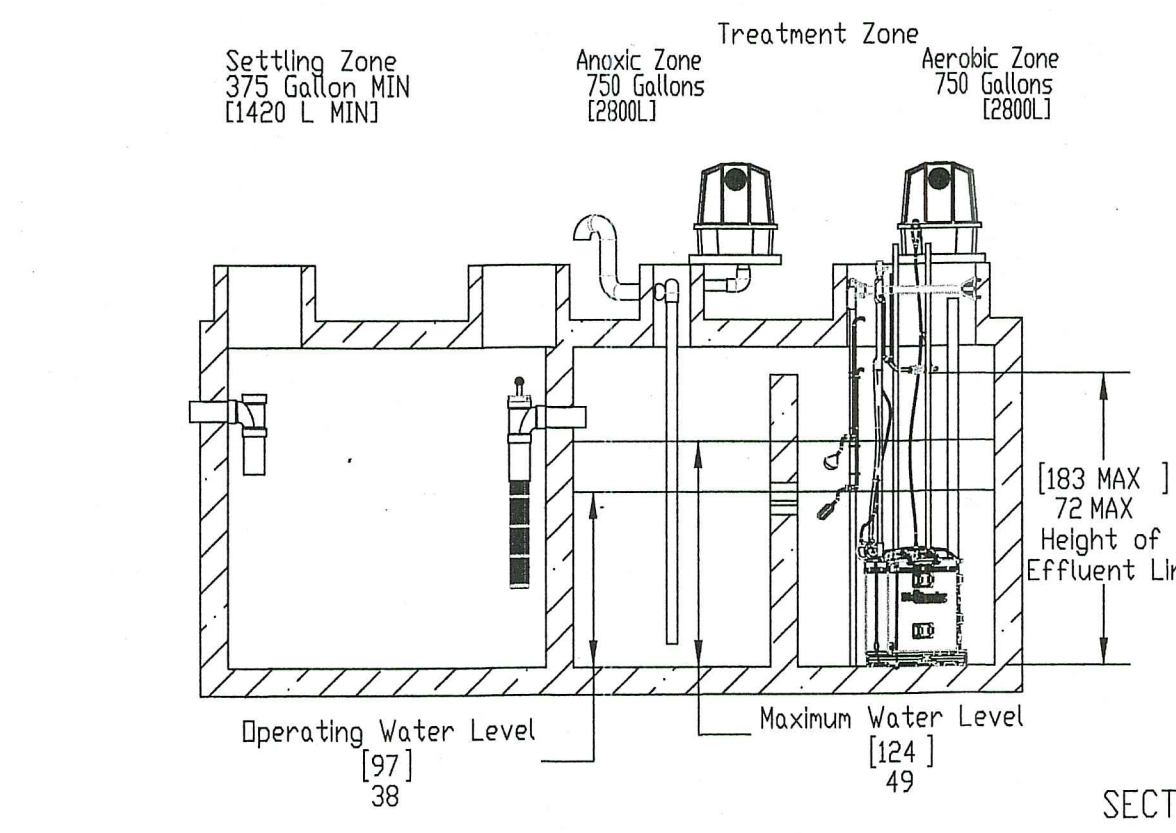
BSF CONCRETE PUMP CHAMBER (4'X4'X4')
WITH EFFLUENT PUMPING ASSEMBLY
NOT TO SCALE



BOTTOMLESS SAND FILTER (9.0'X17.0')
NOT TO SCALE



- NOTES**
- Blower piping to BioBarrier@MBR may not exceed 40 FT (12 m) total length and use 4 elbows maximum per train. For distances greater than 40 FT (12 m) - consult factory. Blowers must be located above flood/standing water levels on concrete bases 26" X 20" X2" (65 X 50 X 5cm) minimum.
 - Run vent(s) to desired location above finish grade and cover opening(s) w/ at least 12 sq in. (77 sq. cm) of total open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
 - All appurtenances to BioBarrier (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes.
 - The BioBarrier@MBR control systems are provided by Bio-Microbics, Inc.
 - The primary compartments may be a separate tank. The baffle separating the settling and the treatment chambers shall be sealed to the top of the tank, as shown on the drawing. Ventilation for the settling zone shall be provided for in the same manner as a traditional septic tank.
 - All inspection, viewing, access, and pump out ports must be secured, to prevent accidental or unauthorized access. Tank, anchors, piping, conduit, blower housing pads and vents are provided by others.
 - All piping and ancillary equipment installed after BioBarrier@MBR, must not impede or restrict filtrate pump.
 - BioBarrier@MBR assemblies must be secured to the tanks to prevent movement or flotation (see installation instructions for details).
 - If less than any of the specified minimums is considered necessary, consult factory for guidance.
 - For enhanced nitrogen removal.
 - Anoxic Zone Baffle wall should evenly distribute the volume in the Treatment Zone between the anoxic and aerobic zone. Mixing device is required.

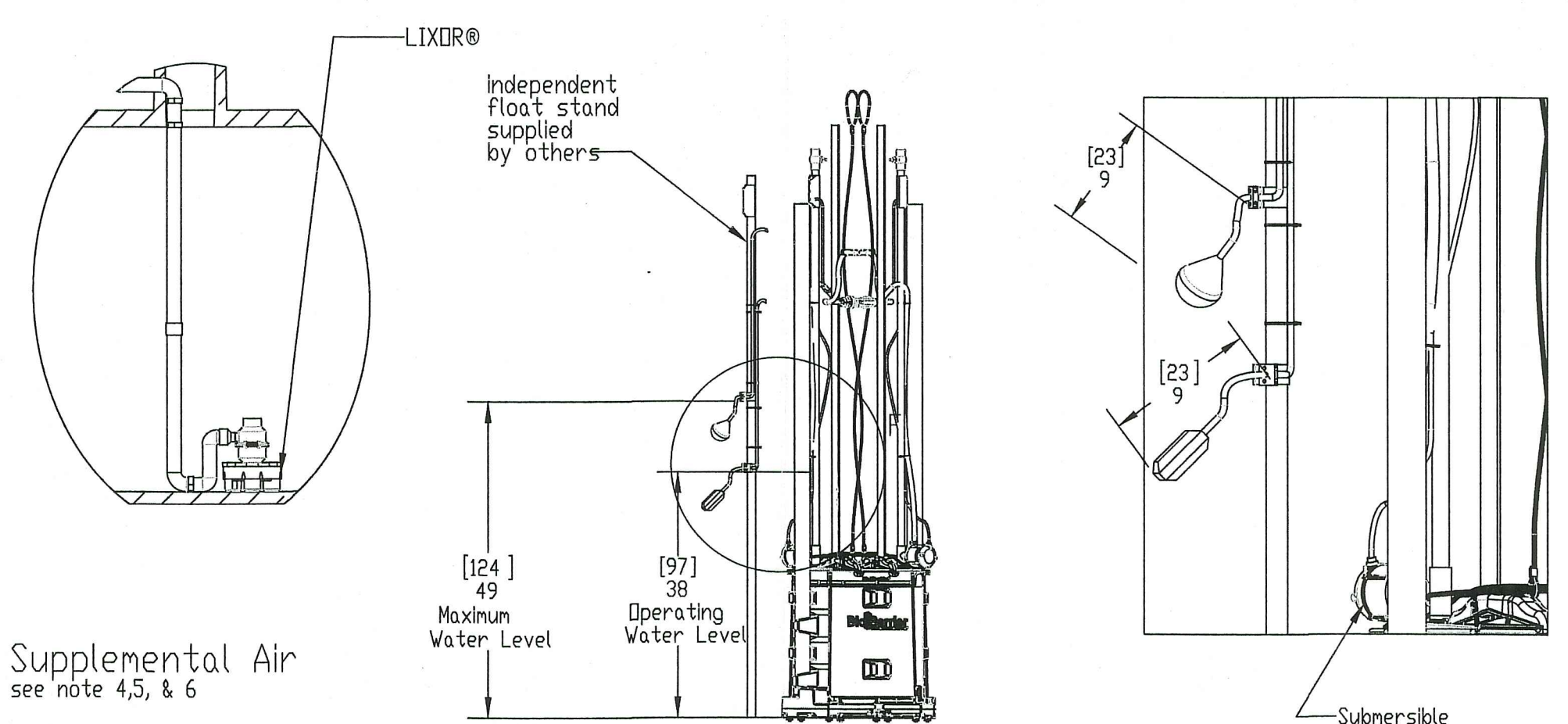


SECTION B-B

BIO MICROBICS
BETTER WATER. BETTER WORLD.
MBR 0.5

DO NOT SCALE	UNLESS NOTED DIMENSIONS ARE IN INCHES (CENTIMETERS) TOLERANCES ± 0.02 IN/IN (± 0.05 CM/CM)
WEIGHT	IB SIZE DRAWING NUMBER
BRNWN	DATE A MBR@0.5-N
CHEKED	REVISED 10/14/2019 REV. INE-05-1

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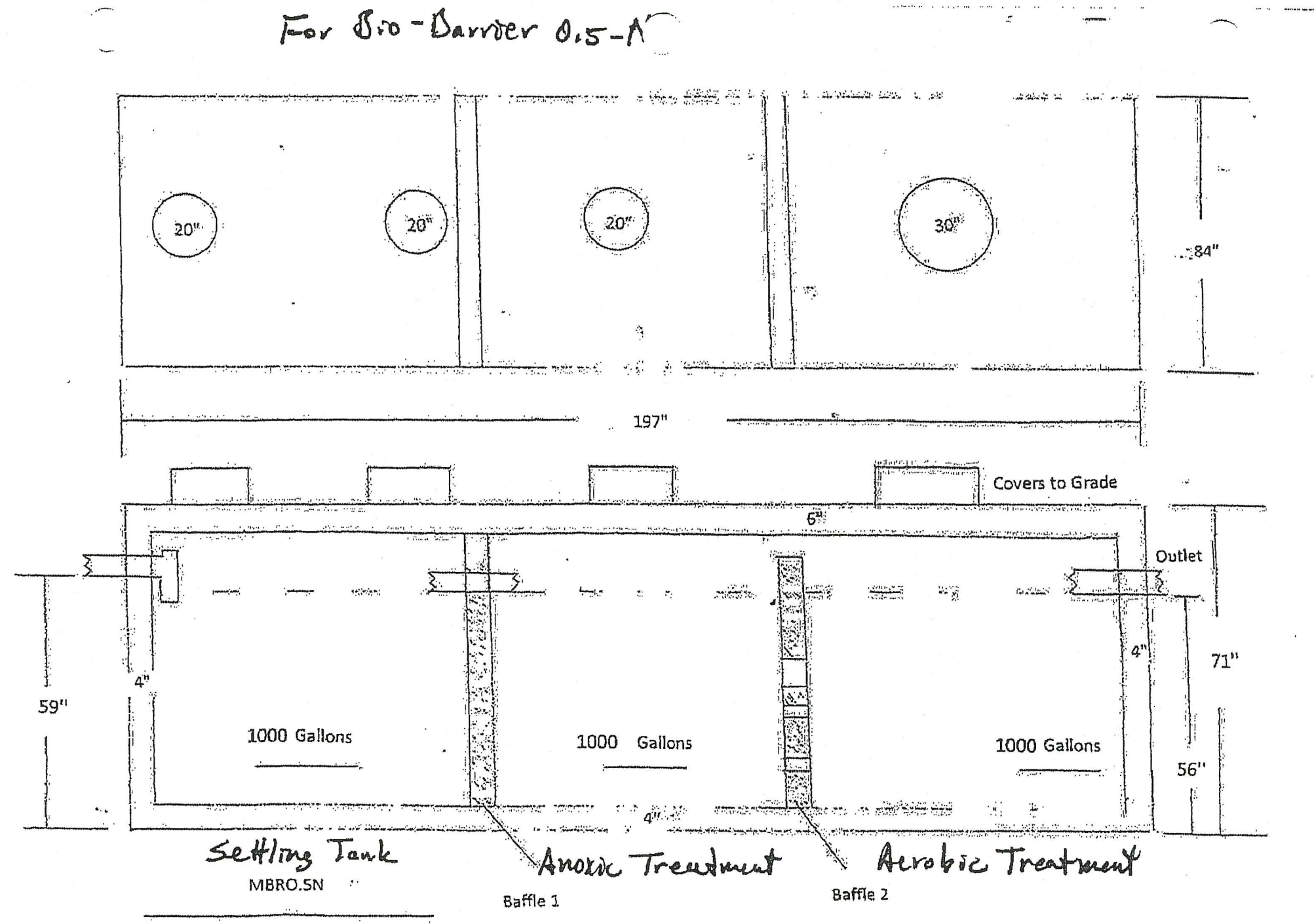
Supplemental Air see note 4, 5, & 6

- Notes:**
- Filtrate Pump must be secured in a dry vault and not be exposed to freezing temperatures.
 - Float stand should be located away from the MBR modules within the treatment zone to prevent float chatter.
 - Utilize SS lifting cable to remove the MBR module.
 - Supplemental aeration with LIXIDOR will be required for wastewater with higher than 300mg/L BOD.
 - See LIXIDOR Drawings for more details.
 - Provide additional ventilation as required per LIXIDOR specifications.

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WEIGHT	IB SIZE DRAWING NUMBER
BRNWN	DATE A MBR@Details
CHEKED	REVISED 10/14/2019 REV. INE-05-U

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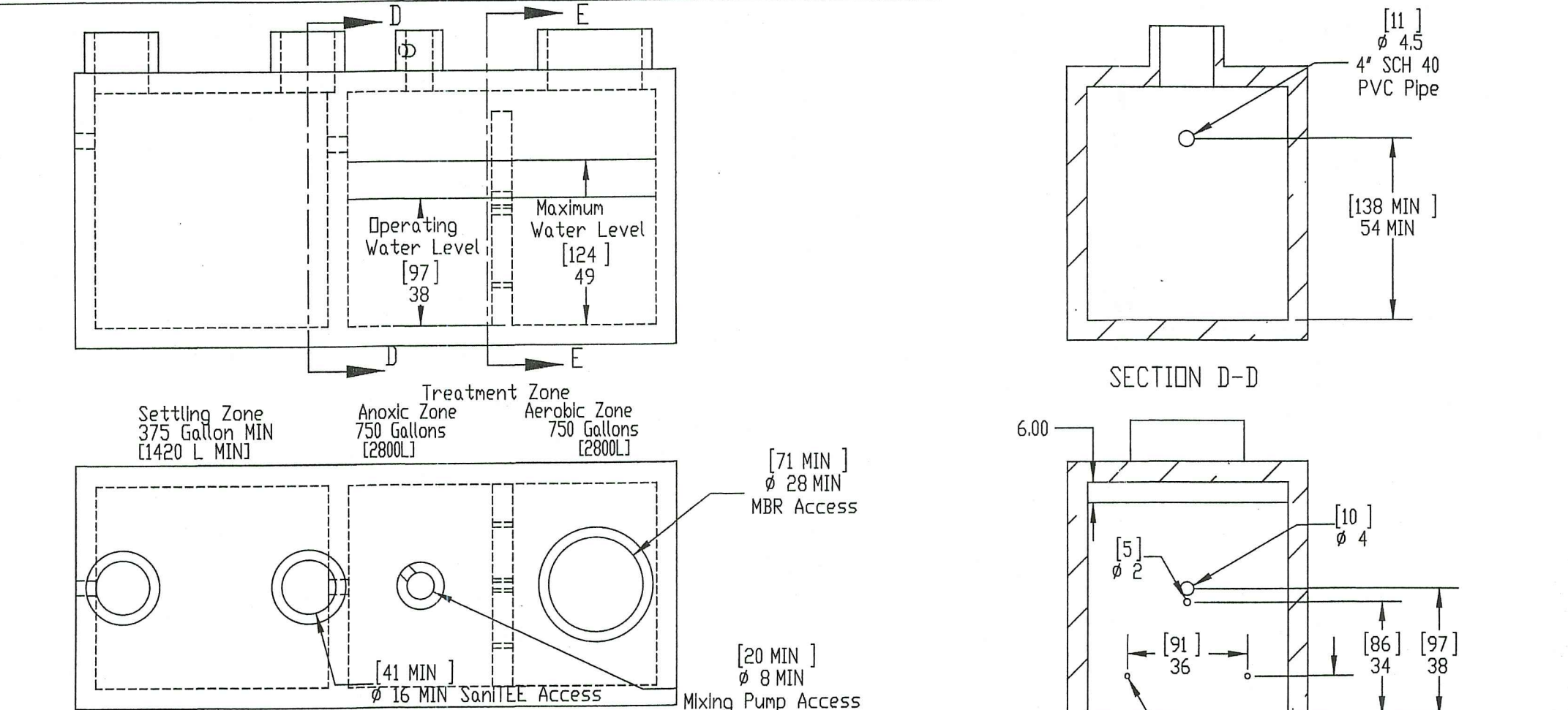


BIO MICROBICS
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MBR 0.5

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CHEKED	REVISED 10/14/2019 REV. INE-05-U

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23 Alberto Dr. Westport, MA 02790
Phone (508)678-4666



SECTION D-D

- NOTES**
- All appurtenances to BioBarrier (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes.
 - The primary compartment may be a separate tank.
 - The baffle separating the settling and treatment chambers shall extend to the top of the tank locating discharge port above the maximum water level as shown on the drawing. Ventilation for the settling zone shall be provided through a house vent line or a vent in the tank itself.
 - All inspection, viewing, access, and pump out ports must be secured, to prevent accidental or unauthorized access.
 - Tank, anchors, piping, conduit, blower concrete base and vents are provided by others.
 - All piping and ancillary equipment installed after BioBarrier@ must not impede or restrict free flow of effluent.
 - BioBarrier@ module must be secured to the tank to prevent movement or flotation (see installation manual).
 - Min Volume is determined based on the frequency of sludge wasting. For a reduced pump out schedule, tank volume should be increased, consult factory for guidance.
 - If less than any of the specified minimums is considered necessary, consult factory for guidance.
 - For enhanced nitrogen removal.
 - Anoxic Zone Baffle wall should evenly distribute the volume in the Treatment Zone between the anoxic and aerobic zone. Mixing device is required.

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MBR 0.5

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WEIGHT	IB SIZE DRAWING NUMBER
BRNWN	DATE A Tank Details MBR 0.5-N
CHEKED	REVISED 10/14/2019 REV. INE-04-2

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Specifications for BioBarrier@MBR0.5 Wastewater Treatment System

The contractor shall furnish and install (1) BioBarrier@MBR0.5 treatment system as manufactured by Bio-Microbics, Inc. The treatment system shall be complete with all needed equipment as shown on the drawings and specified herein. The principal items of equipment supplied by Bio-Microbics, Inc. shall include (1) BioBarrier@MBR assembly, all control (filtrate pump), blower, access, and a SanITEE pre-screen device. The BioBarrier@MBR0.5 system shall be supplied with a mixing device provided by Bio-Microbics, Inc. (other items will be provided by others). The BioBarrier@MBR0.5 unit shall be situated within a 1500 gallon (5,680 L) minimum single compartment tank or in a 1,875 gallon (7,080 L) minimum multiple compartment tank with or without the optional mixing pump. Suggested Maximum settling zone is (2) X the daily flow. Tank(s) must provide adequate pump out access and conform to local, state, and all other applicable codes. The contractor shall provide coordination with tank supplier with regards to fabrication of the tank, installation of the BioBarrier@ unit and delivery to the job site.

OPERATING CONDITIONS

The BioBarrier@MBR0.5 treatment system shall be capable of treating up to 500 gpd wastewater from all facilities producing appropriate waste to develop and sustain a viable biomass. Waste containing inhibitory substances for the biological processes or membrane filtration operation is not recommended for treatment in the BioBarrier@MBR system. Consult factory for proper sizing and usage.

MEMBRANE

The membrane is a combination of ultrafiltration and microfiltration using PVDF and PES cast material. The membrane sheet is supported by HDPE or ABS and laser welded to the plate. The BioBarrier@MBR membrane module shall consist of flat sheet membranes arranged in a cartridge which is secured via submerging air grid. The BioBarrier@MBR membrane assembly shall be fixed in position and shall use non-corrosive parts. The membrane system shall be designed and installed to ensure that adequate turbulence is provided by the aeration system to insure easy movement of biomass within the membrane system.

BLOWERS

The BioBarrier@MBR0.5 system shall come equipped with a one (1) blower capable of delivering 10-40 CFM (28-603/1hr). The blower assembly shall include an inlet filter with metal filter element. Blowers shall be mounted, up to 40 feet (12 meters) maximum, from the BioBarrier@MBR assembly on a contractor supplied concrete base. Blowers must not be set in standing water and their elevation must be higher than the normal flood level. A two-piece, rectangular housing shall be provided. The discharge air line from the blower to the BioBarrier@MBR assembly shall be provided and installed by the contractor.

SUBMERSIBLE FILTRATE PUMP

The submersible pump must be secured to the MBR housing to prevent damage to the treatment system. The discharge line must not exceed four feet above the pump during operations. The installation downstream of the Bio-Microbics supplied effluent line must not create any backpressure on the pump. The submersible pump is not intended as dosing pump for final disposal of the effluent.

ELECTRICAL

The electrical source should be within 150 feet (45.7 meters) of the blower. Consult local codes for longer wiring distances. All wiring must conform to all applicable codes (IEC, NEC, etc.). Wiring distances must prevent significant voltage loss. Input power on 60Hz electrical system is 110/220 VAC, single phase, 15/20 Amps. Input power on 50Hz electrical systems 127/230 VAC, single phase 15/20 Amps. All conduit and wiring shall be supplied by contractor.

CONTROLS

The BioBarrier@MBR0.5 system shall come equipped with one (1) control panel. The control panel provides power to the blower, the filtrate pump, the optional mixing device, and the water level floats with visual and audible alarms capable of signaling blower circuit failure and high water conditions. The control panel is equipped with SFR® (Sequencing Fixed Reactor) timed control feature. A manual silence button is included.

INSTALLATION AND OPERATING INSTRUCTIONS

All installation and connections work of the BioBarrier@MBR0.5 shall be done in accordance with the written instructions provided by the manufacturer and in accordance with all applicable local codes and regulations. Operations manuals shall be furnished which include a description of installation, operation, and system maintenance procedures.

FLDW AND BIASING

BioBarrier@MBR systems have been successfully designed, tested and certified receiving gravity, demand-based influent flow. When influent flow is controlled by pump or other means to help with highly variable flow conditions, then multiple dosing events should be used to help ensure even flow.

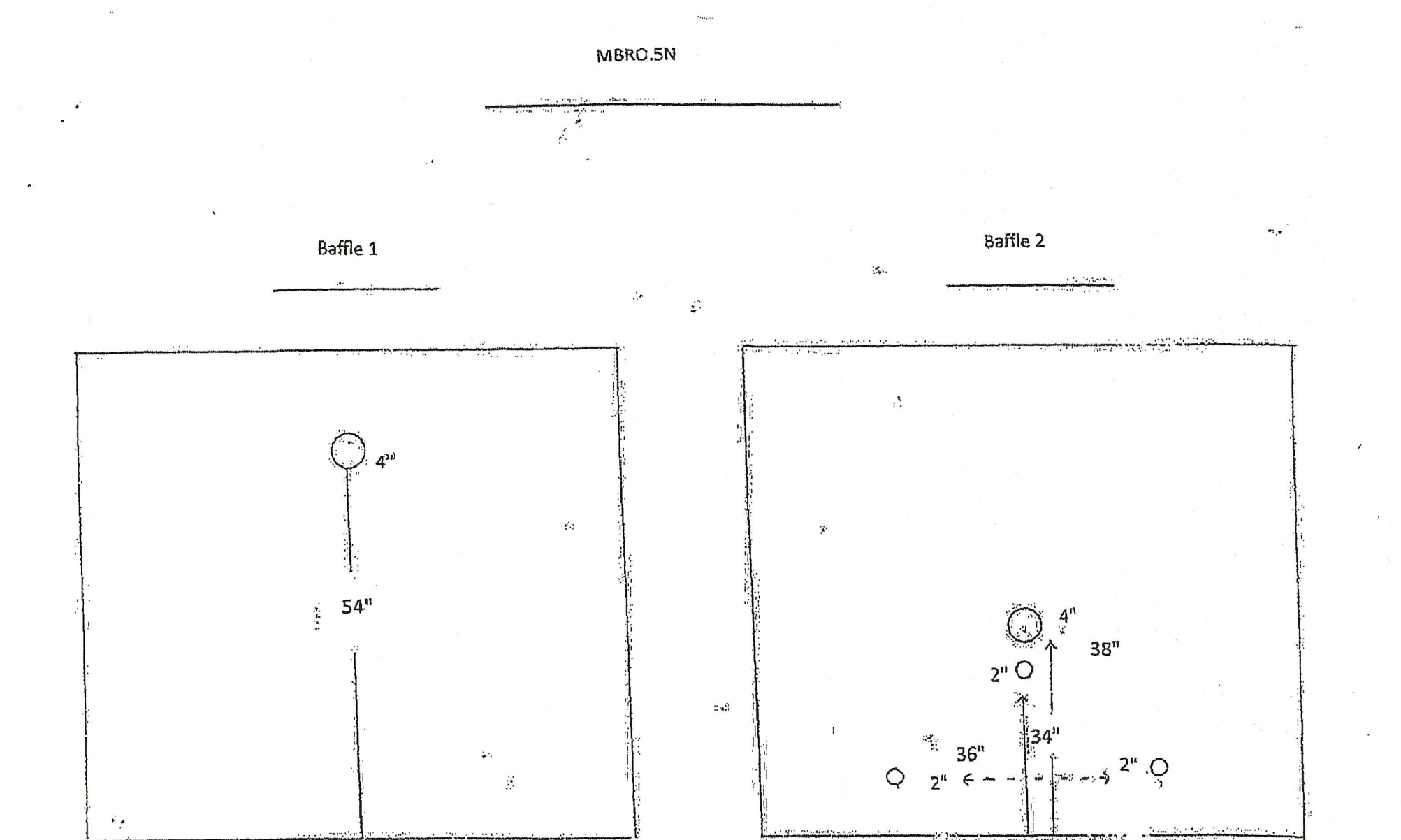
WARRANTY

Bio-Microbics, Inc. warrants all new residential BioBarrier@models (BioBarrier@0.50, 1.0, and 1.5) against defects in materials and workmanship for a period of two years after installation or three years from date of shipment which ever occurs first, subject to the following terms and conditions, (all other BioBarrier@ system models are warranted for a period of one year after installation or eighteen months from date of shipment, whichever occurs first, subject to the following terms and conditions). During the warranty period, if any part is defective or fails to perform as specified when operating at design conditions, and if the equipment has been installed and is being operated and maintained in accordance with the written instructions provided by Bio-Microbics, Inc., Bio-Microbics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to Bio-Microbics, Inc.'s factory postage paid, if so requested. The cost of labor and all other expenses resulting from replacement of the defective parts and from installation of parts furnished under this warranty and regular maintenance items such as filters or tubes shall be borne by the owner. This warranty does not cover general system misuse, operator components which have been damaged by flooding or any components that have been disassembled by unauthorized persons, improperly installed or damaged due to altered or improper wiring or overload protection. This warranty applies only to the treatment plant and does not include any of the structure wiring, plumbing, drainage, septic tank or disposal system. Bio-Microbics, Inc. is not responsible for consequential or incidental damages of any nature resulting from such things as, but not limited to, defect in design, material, or workmanship, or delays in delivery, replacements or repairs. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. BIO-MICROBICS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO REPRESENTATIVE OR PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR BIO-MICROBICS, INC., ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. Contact your local distributor for parts and service.

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MBR 0.5

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23 Alberto Dr. Westport, MA 02790
Phone (508)678-4666

NITROGEN REMOVAL DESIGN REQUIREMENTS
IN ORDER TO MEET THE NITROGEN REMOVAL REQUIREMENTS PER RULE 6.45, NITROGEN LOADINGS IN AREAS OF ONSITE DRINKING WATER WELLS, ADDITIONAL TREATMENT FOR IS REQUIRED. BASED ON THE TABLE IN RULE 6.45.D, 75% NITROGEN REMOVAL (EFFLUENT NITROGEN CONCENTRATION OF 10MG/L) WILL BE REQUIRED FOR THE 6,250 SF LOT.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
OWTS & FRESHWATER WETLANDS
JOINT PERMIT APPROVAL

OWTS# 2103-1823 PERM# 22-0113
APPROVED [Signature] DATE 6/6/23
No Changes Allowed Without RIDEM Approval
Approved Plans/Permit Must Be Kept at Construction Site

BIOBARRIER 0.5-N TREATMENT SYSTEM

- DESIGN, CONSTRUCTION AND MAINTENANCE REQUIREMENTS SHALL COMPLY WITH THE BIO-MICROBICS BIOBARRIER MBR 0.5-N REQUIREMENTS AND ADHERE TO THE RIDEM ALTERNATIVE/EXPERIMENTAL OWTS TECHNOLOGY PROGRAM CERTIFICATION DATED JULY 23, 2020.
- BIOBARRIER 0.5-N TREATMENT SYSTEM ACHIEVES EFFLUENT CONCENTRATIONS OF LESS THAN 10MG/L TOTAL NITROGEN (SEE CERTIFICATION).
- VENDOR CONTACT INFORMATION:
BIO-MICROBICS
16002 WEST 110TH STREET
LENEXA, KS 66219
913-422-0707
WEB: WWW.BIOMICROBICS.COM
- LOCAL DEALER CONTACTS INFORMATION AND SET-UP:
LAURA USLTON
J&R SALES AND SERVICES, INC./
WASTEWATER TREATMENT SERVICES, INC.
44 COMMERCIAL STREET
RAYNHAM, MA 02767
508-823-9566
WEB: WWW.JRSALISINC.COM

SUSAN B. CAPASSO
No. 7443
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

RIDEM OWTS APPLICATION NO. 0613-1057

BIOBARRIER 0.5-N DETAILS
Project:
MARK BRIZARD
STAG HEAD DRIVE
A.P. 135 LOT 18
BURRILLVILLE, RHODE ISLAND
Prepared By:
SUSAN B. CAPASSO, P.E.
PO BOX 621
NORTH SCITUATE, RHODE ISLAND 02857
508-261-8870
OCTOBER 16, 2022

BIORETENTION AREA PLANTING NOTES:

THE FOLLOWING IS A LIST OF POTENTIAL BIORETENTION AREA PLANTINGS. A FULL PLANTING DETAIL WILL BE PROVIDED FOR FINAL DEVELOPMENT PLAN REVIEW.

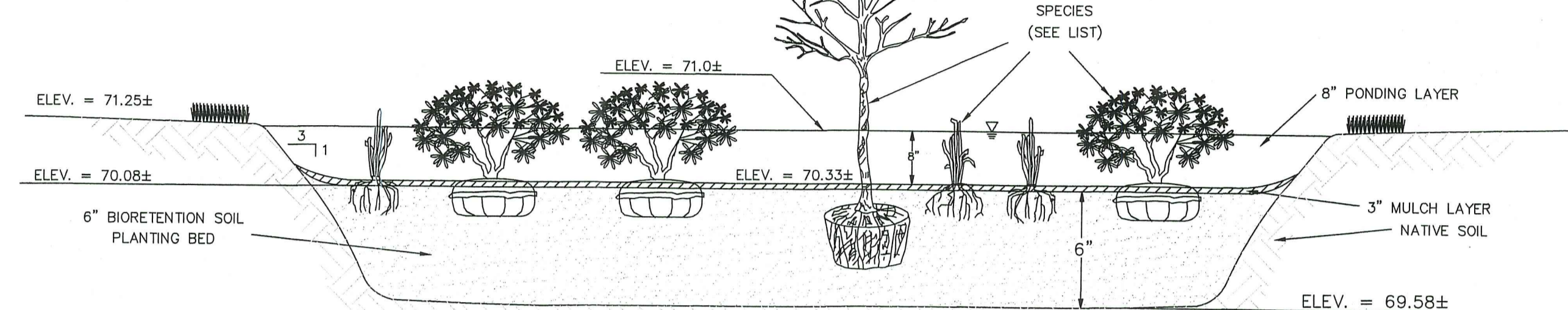
PLANT SPECIES WERE SELECTED FROM THE RHODE ISLAND COASTAL PLANT GUIDE PUBLISHED BY THE URI CELLS AND CRIM. ONLY THOSE NATIVE PLANTS THAT ARE SUITABLE FOR RAIN GARDENS AND ARE TOLERANT OF WET SITES AND SHADE ARE SHOWN HERE.

SPECIES	COMMON NAME	PLANT TYPE
<i>Ilex opaca</i>	AMERICAN HOLLY	TREE
<i>Iris versicolor</i>	BLUE FLAG	PERENNIAL
<i>Carex stricta</i>	TUSSOCK SEDGE	GRASS
<i>Cephalanthus occidentalis</i>	COMMON BUTTONBUSH	SHRUB
<i>Comptonia peregrina</i>	SWEET FERN	SHRUB
<i>Cornus rostrata</i>	GRAY DOGWOOD	SHRUB
<i>Ilex glabra</i>	INKBERRY HOLLY	SHRUB
<i>Ilex verticillata</i>	WINTERBERRY HOLLY	SHRUB
<i>Lindera benzoin</i>	SPICEBUSH	SHRUB
<i>Phlox melanocarpa</i>	BLACK CHOKEBERRY	SHRUB
<i>Phlox divaricata</i>	RED CHOKEBERRY	SHRUB
<i>Rhododendron viscosum</i>	SWAMP AZALEA	SHRUB
<i>Vaccinium corymbosum</i>	HIGHBUSH BLUEBERRY	SHRUB
<i>Viburnum dentatum</i>	ARROWWOOD	SHRUB

TREES SHALL BE PLANTED WITH A DENSITY OF NO MORE THAN ONE PER 250 SF, SPACED 15 FT ON CENTER. SHRUBS SHALL BE PLANTED 5-10 FT ON CENTER AND HERBACEOUS VEGETATION PLANTED 2.5 FT ON-CENTER.

BIORETENTION AREA LOCATED AT LEAST 10 FT FROM BUILDING FOUNDATION, 15 FT FROM EXIST. OWTS AND 25 FT FROM ANY WELL OR WATER SUPPLY.

ROOF GUTTER DOWNSPOUTS SHALL DIRECT WATER TO BIORETENTION AREA VIA UNDERGROUND PIPING OR OVERLAND WHERE UNDERGROUND PIPING IS UNFEASIBLE OR NOT PERMISSIBLE.



BIORETENTION AREA (RAIN GARDEN) - TYPICAL CROSS-SECTION
NOT TO SCALE

STORMWATER MANAGEMENT DESIGN CALCULATIONS*

AREAS REQUIRED FOR WATER QUALITY VOLUME (WV):
HOUSE ROOF AREA = 1,144 SF

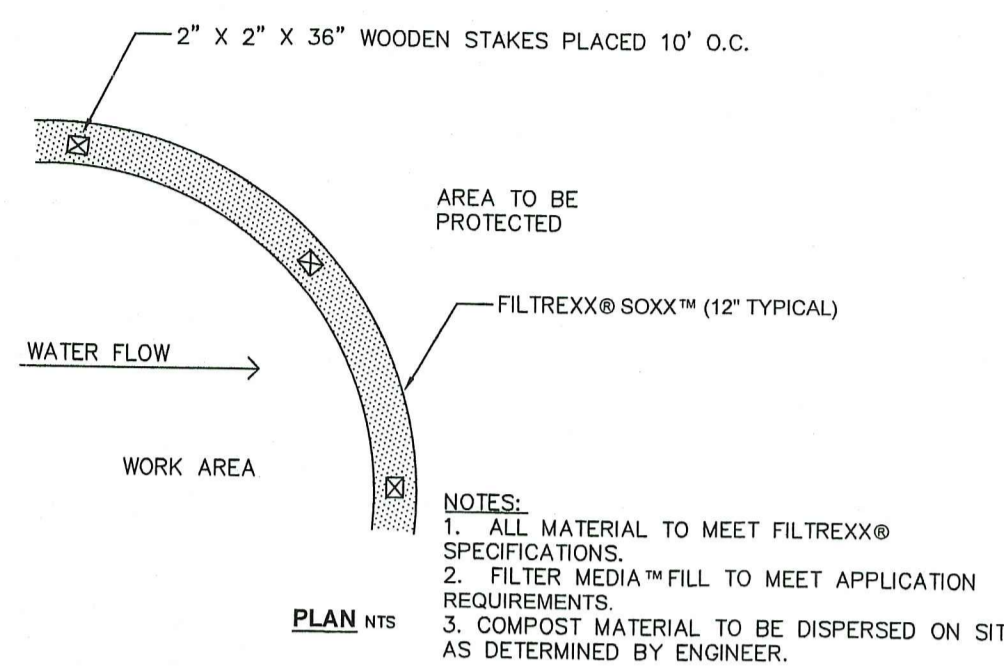
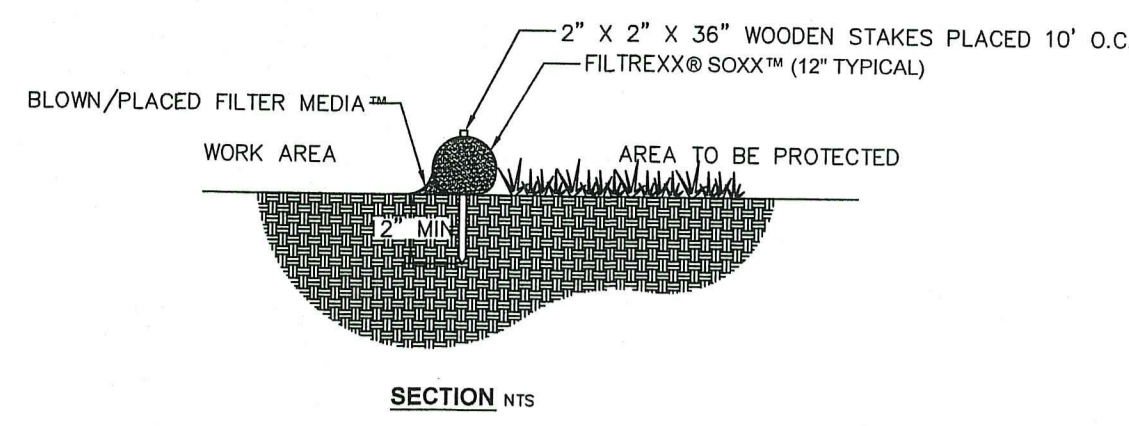
PROPOSED RAIN GARDEN

USING AN 8" DEEP RAIN GARDEN:
80 SF SURFACE AREA/1000 SF OF IMPERVIOUS SURFACE AREA OF GARDEN AREA REQUIRED AND
16 SF SURFACE AREA/200 SF OF IMPERVIOUS SURFACE AREA OF GARDEN AREA REQUIRED;
100 SF PROVIDED

* RAIN GARDEN SIZING BASED THE STATE OF RHODE ISLAND STORMWATER MANAGEMENT GUIDANCE FOR INDIVIDUAL SINGLE-FAMILY RESIDENTIAL LOT DEVELOPMENT SECTION 500.6 OF THE RI COASTAL RESOURCES MANAGEMENT PROGRAM (RICRMP) DOCUMENT; SECTION C, RAIN GARDENS AND TABLE B, RAIN GARDEN SIZING GUIDANCE FOR SANDY SOILS. SANDY SOILS DETERMINED BY RIDEM SOIL EVALUATION APPLICATION NO.: 2103-1823.

THE WATER QUALITY DESIGN IS BASED ON RECOMMENDATIONS AND PROCEDURES AS DEFINED AND AS REQUIRED IN MINIMUM STANDARD 11, IN THE LATEST RHODE ISLAND STORMWATER DESIGN AND INSTALLATION MANUAL (RISDM)

THE RECOMMENDATIONS AND GUIDELINES OF THE RISDM AND THE LATEST RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK SHALL BE INCORPORATED INTO THE CONSTRUCTION PRACTICES ON SITE.



FILTREXX® SEDIMENT CONTROL

FILTER SOCK NOTES

- Soxx™ shall meet Filtrexx Soxx™ Specifications and use Filtrexx GrowingMedia™.
- Contractor is required to be a Filtrexx Certified™ Installer.
- Soxx™ must be installed and stabilized before flow is allowed from culverts and storm outlets.
- Land surface shall be cleared of debris, including rocks, roots, large clods, and stumps prior to Soxx™ installation.
- Channel bed shall be made smooth prior to installation of Soxx™.
- Soil bed may be compacted and graded prior to installation.
- The upslope end of the Soxx™ shall be installed under the lip of the culvert or outlet drain to ensure initial storm flow contact is on top of the Soxx™, not under or in front of the system.
- Soxx™ shall be placed parallel to water flow, where socks are tightly abutted to prevent water seepage between and underneath the Soxx™.
- Once in place, Soxx™ shall be lightly compacted and abutting edges leveled to tighten seal between socks and encourage even water flow over Soxx™ system.
- Stakes shall be installed through the middle of the Soxx™ on 10 ft (3m) centers, using 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes. Top of stakes should be cut off, leaving 3 in (75mm) above the top of the Soxx™.
- Soxx™ may be seeded at the time of application, seed selection will be determined by the Engineer.

EROSION AND SEDIMENTATION CONTROL CONSTRUCTION NOTES:

- EROSION AND SEDIMENTATION (E&S) CONTROLS WILL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORK ALONG THE LIMITS OF DISTURBANCE (LOD) AS SHOWN ON THE SITE PLAN AND DETAILS.
- CRITICAL AREAS SUCH AS WETLANDS, SLOPED AND STREAMS SHALL BE PROTECTED AS PER PLAN AND, IN THE PRESENCE OF WETLANDS, PER THE CONDITIONS OF THE CRMC ASSENT ORDER AND/OR RIDEM PERMIT.
- ALL E&S CONTROLS SHALL BE FULLY MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL VEGETATIVE STABILIZATION HAS BEEN ACHIEVED. E&S CONTROLS ARE TO BE INSPECTED WEEKLY AND IMMEDIATELY FOLLOWING ALL PRECIPITATION EVENTS THAT INCLUDE RAINFALL OF 1.0" OR MORE OR WHICH PRODUCES STORMWATER RUNOFF. UNDER NO CIRCUMSTANCES SHALL THE E&S CONTROLS BE COVERED WITH FILL MATERIAL. ANY FILL MATERIAL THAT IS PLACED ON OR AGAINST E&S CONTROLS SHALL BE IMMEDIATELY REMOVED.
- ALL FILTER SOCK (OR SILT FENCE AND/OR STRAW WATTLES) SHALL BE INSTALLED IN ACCORDANCE WITH THE RIDOT STANDARD DETAILS. ALL REFERENCED SOIL EROSION AND SEDIMENTATION CONTROLS, INCLUDING MATERIALS USED, APPLICATION RATES AND THE INSTALLATION PROCEDURES SHALL BE PERFORMED PER THE MOST CURRENT VERSION OF THE RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK AND THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION MANUAL, AS APPROPRIATE.
- ALL EXPOSED SLOPES, INCLUDING STOCKPILES OF MATERIAL, SHALL RECEIVE TEMPORARY SEDIMENTATION AND EROSION CONTROLS. THIS WILL INCLUDE LOAMING AND SEEDING, MULCHING, HYMATMS, ETC., TO STABILIZE THE AREA. DO NOT EVAPORATE STRUCTURES SHALL BE SURROUNDED BY HYMATMS TO PREVENT INFILTRATION OF SEDIMENTS.
- SHOULD SEDIMENTS ENTER A CRITICAL AREA (WETLAND, BUFFER AREA OR ABUTTING PROPERTY), THE CONTRACTOR SHALL IMMEDIATELY CLEAN AND RESTORE THE AFFECTED AREA.
- ALL DISTURBED SOILS, EITHER NEWLY CREATED, OR EXPOSED, PRIOR TO OCTOBER 15 OF ANY CALENDAR YEAR SHALL BE SEEDED OR PROTECTED BY THAT DATE. ANY AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15 OF THE SAME YEAR MUST BE STABILIZED BY INSTALLING EROSION CONTROL MATTING, HAY MULCH OR EQUIVALENT.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPER EROSION CONTROL BOTH ON AND OFF-SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE CONTROLS ARE SPECIFIED ON THE SITE PLAN.
- TEMPORARY CONSTRUCTION ACCESS, CHECK DAMS AND STAGING AREAS WILL BE INSTALLED, THEN DEWATERING BASIN WILL BE EXCAVATED.
- FONDS SHALL BE EXCAVATED AND BANK STABILIZATION INSTALLED ONCE EXCAVATED MATERIALS HAVE BEEN REMOVED.
- TEMPORARY CONSTRUCTION ACCESS, CHECK DAMS AND STAGING AREAS WILL BE REMOVED, THE AREAS OF DISTURBANCE WILL BE RESTORED IF NECESSARY. ONCE STABILIZED, EROSION CONTROL MATERIALS SHALL BE REMOVED FOR OFF-SITE DISPOSAL.

GENERAL CONSTRUCTION NOTES:

- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY THE STATE AND THE MUNICIPALITY IN WHICH WORK IS BEING PERFORMED PRIOR TO START OF ANY WORK.
- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE SAME, ANY DAMAGE TO AND THE COST OF REPAIR OF UTILITIES, ROADWAYS, STRUCTURES AND SURROUNDING PROPERTY SHALL BE FULLY BORNE BY THE CONTRACTOR.
- ALL WORKMANSHIP AND MATERIALS SHALL MEET OR EXCEED THE LATEST STANDARDS OF THE MUNICIPALITY, AND THE LATEST STATE STANDARDS AND SPECIFICATIONS PUBLISHED FOR ROAD AND BRIDGE CONSTRUCTION.
- CONTACT DIG-SAFE AND UTILITY COMPANIES FOR EXACT ON-SITE LOCATION OF EXISTING UNDERGROUND UTILITIES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL OBTAIN REQUIRED INSPECTION SCHEDULE OF THE MUNICIPALITY. UTILITY COMPANIES AND ALL OTHER REQUIRED PARTIES AND SHALL STRICTLY ADHERE TO THOSE REQUIREMENTS.
- ALL CONTRACTORS SHALL ADHERE TO ALL CONDITIONS OF CONSTRUCTION APPROVALS AND SHALL KEEP A COPY OF ALL APPROVALS ON-SITE DURING CONSTRUCTION. CONTRACTOR SHALL READ ALL APPROVALS PRIOR TO START OF CONSTRUCTION AND SHALL CLARIFY ANY QUESTIONS BEFOREHAND.
- DO NOT EVAPORATE. OIL ABSORBING PILLOWS OR OTHER MEANS SHALL BE USED TO REMOVE ACCUMULATIONS OF HYDROCARBONS (OIL, GREASE) THAT ARE REGULARLY OBSERVED TO CONTAIN HYDROCARBONS, THAT ARE ANY REFUELING, GREASING OR EQUIPMENT OF CONSTRUCTION VEHICLES OR EQUIPMENT SHALL TAKE PLACE AT LEAST 100 FEET FROM WETLAND AREAS.
- ANY ON-SITE DISPOSAL OF SOLID WASTE, INCLUDING EARTH MATERIALS, SHALL OCCUR UNDER RIDEM/RICRMP JURISDICTIONAL WETLANDS AND OUTSIDE OF THE CONSTRUCTION AREAS (UNLESS OTHERWISE DESIGNATED). ANY MATERIAL NOT RE-USED ON-SITE SHALL BE HAULLED OFF-SITE TO AN AUTHORIZED, LEGAL LOCATION.
- ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE INFORMED THAT THE CLEANING OF EQUIPMENT IS PROHIBITED IN AREAS WHERE THE WASH-WATER WILL DRAIN DIRECTLY TO WETLANDS.
- THE LOCATION AND DEPTH OF EXISTING UTILITIES HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATION OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND THE CONTRACTOR MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) ALL MATERIALS TO INCLUDE, BUT NOT BE LIMITED TO, TREE STUMPS, UNSUITABLE MATERIAL, BITUMINOUS PAVEMENT, ETC.
- MATING AS SPECIFIED BY ENGINEER OR ENVIRONMENTAL CONSULTANT IS TO BE PLACED ALONG ACCESS ROUTE FROM PAVED DRIVEWAY TO STAGING AREA FOR ANY EQUIPMENT MOVEMENT.
- ALL STORMWATER FACILITIES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MOST CURRENT VERSION OF RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL.

SOIL STABILIZATION & PLANTING PROGRAM

ACCEPTABLE PLANTING MATERIALS: LOAM - THE MATERIAL TO BE FURNISHED SHALL CONSIST OF LOOSE, FRABLE, SANDY LOAM OR LOAM TOPSOIL FREE OF A MIXTURE OF SUBSOIL, REFUSE, STUMPS, ROOTS, BRUSH, WEEDS AND OTHER MATERIAL WHICH WILL PREVENT THE FORMATION OF A SUITABLE SEED BED.

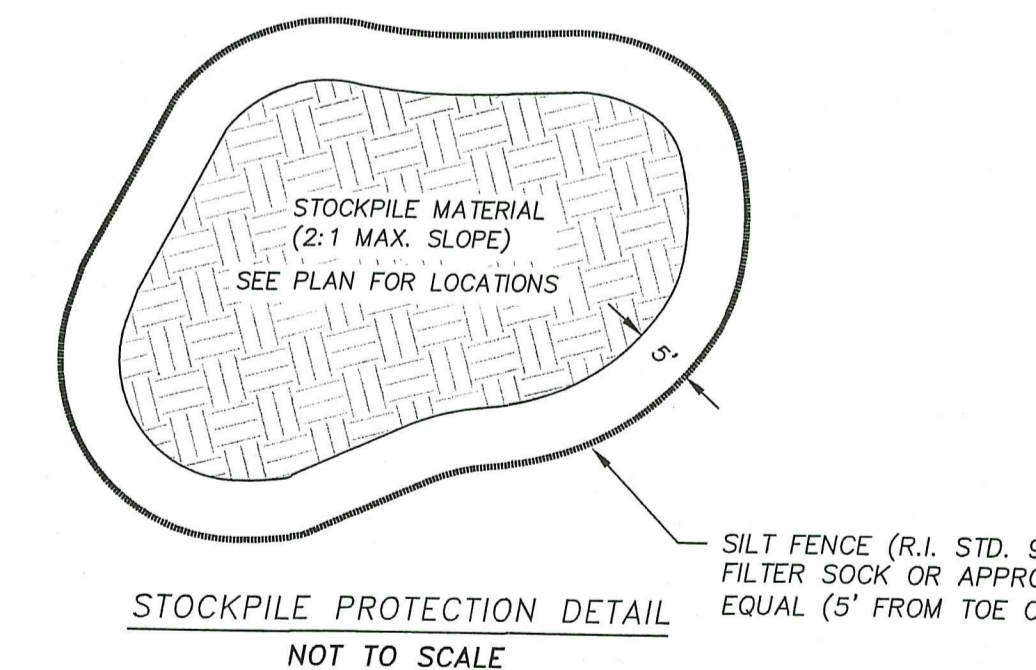
SEED MIXTURES - ALL LEGUME SEED SHALL BE INOCULATED WITHIN 24 HOURS BEFORE MIXING AND PLANTING WITH THE APPROPRIATE INOCULUM FOR EACH VARIETY. ALL INOCULA SHALL BE FRESH AND SHALL BE USED WITHIN THE DATE LIMIT PRESCRIBED BY THE MANUFACTURER.

FOR RELATIVELY FLAT SLOPES:

MIX	% BY WEIGHT
RED FESCUE - CHEWING'S PENNLAWN OR CREEPING	70
KENTUCKY BLUEGRASS	15
COLONIAL BENTGRASS - ASTORIA OR EXETER	5
PERENNIAL RYEGRASS	10
- SEEDING RATE = 100 LBS. PER ACRE	
FOR STEEP SLOPES 3:1 OR GREATER	
MIX	% BY WEIGHT
RED FESCUE - PENNLAWN OR CREEPING	75
PERENNIAL RYEGRASS	50
COLONIAL BENTGRASS - ASTORIA OR EXETER	5
BIRDSFOOT TREFOIL - EMPIRE	15
- SEEDING RATE: 100 LBS. PER ACRE	
MIX	% BY WEIGHT
CREEPING RED FESCUE	50
TALL FESCUE OR REED CANARYGRASS*	50
* USE REED CANARYGRASS WHERE MOWING IS NOT REQUIRED.	

THE ACCEPTED PLANTING SEASON SHALL BE BETWEEN APRIL 1ST AND OCTOBER 15TH. CONTRACTOR SHOULD COORDINATE ON ALL DISTURBED AREAS. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF FOUR (4) INCHES OF LOAM ON AREAS UP TO 10% IN GRADE. ALL AREAS OVER 10% SHALL RECEIVE A MIN-IMUM OF SIX (6) INCHES.

REFERENCE IS HEREBY MADE TO THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, REVISED AUGUST 2014. THE SOIL CONSERVATION SERVICE, THE GUIDELINES SHOWN THEREIN SHOULD BE INCORPORATED INTO THE CONSTRUCTION PRACTICES ON SITE.

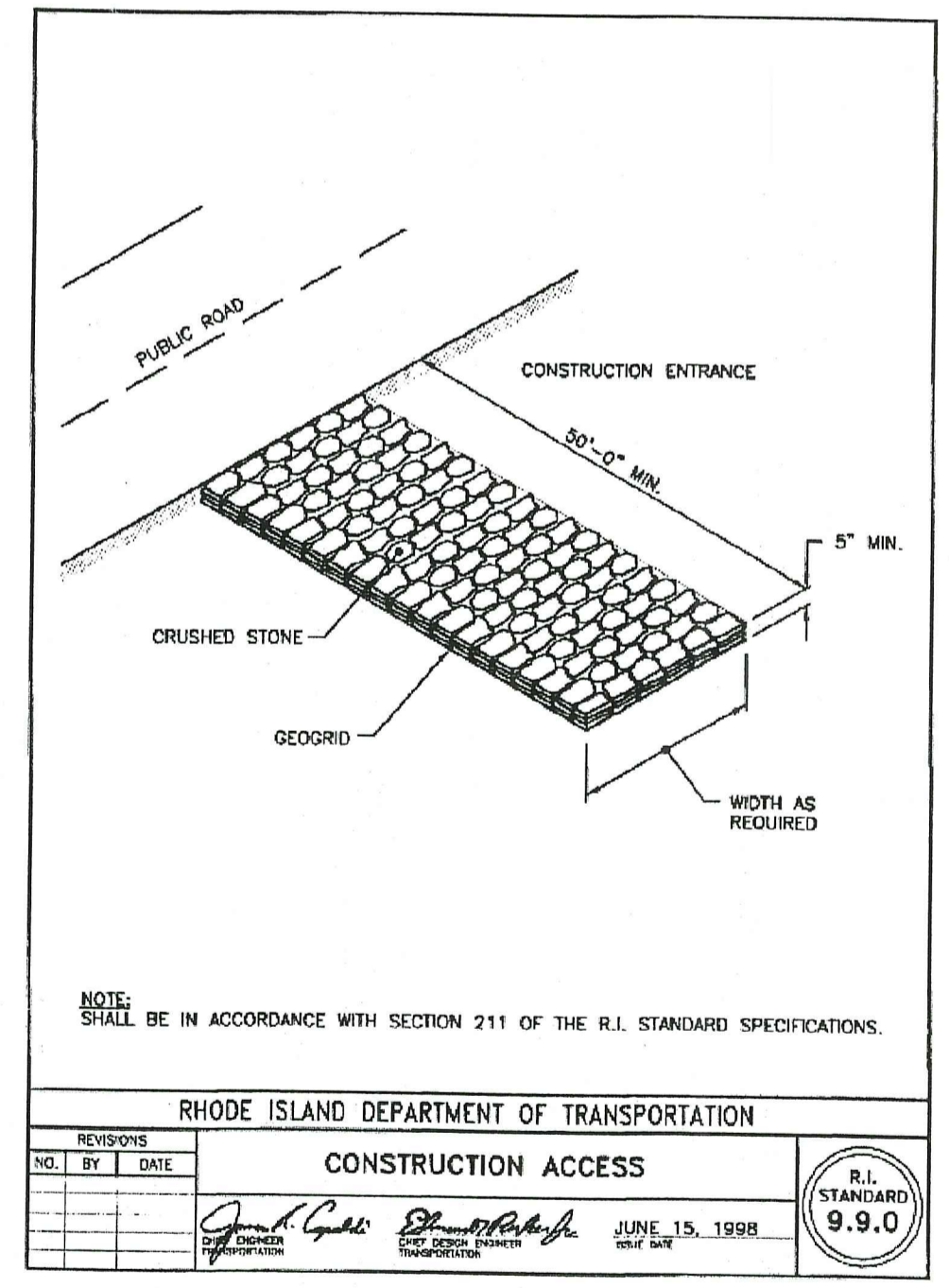


GENERAL OWTS CONSTRUCTION NOTES

- ALL OTHER DESIGN, CONSTRUCTION AND MAINTENANCE REQUIREMENTS WHETHER NOTED HEREON, OR NOT, SHALL BE IN CONFORMANCE WITH THE RIDEM OFFICE OF WATER RESOURCES, RULES ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF ON-SITE WASTEWATER TREATMENT SYSTEMS, AS AMENDED.
- THE CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED PLAN ON-SITE AT ALL TIMES.
- THE CONTRACTOR MUST FOLLOW ALL ITEMS CIRCLED IN THE LOWER RIGHT HAND AREA OF THE OWTS APPLICATION LABELLED--IMPORTANT AND NOTIFY ENGINEER DURING THE DIFFERENT STAGES OF CONSTRUCTION TO ALLOW THE ENGINEER TO OBSERVE COMPLIANCE WITH THE APPROVED PLANS, AS REQUIRED BY RIDEM.
- THE CONTRACTOR SHALL COMPLY WITH ALL ADDITIONAL TERMS OF APPROVAL, AS MAY BE REQUIRED BY RIDEM.
- THE CONTRACTOR MUST NOTIFY LICENSED DESIGNER 48 HOURS PRIOR TO START OF CONSTRUCTION WITH VALID INSTALLER'S LICENSE NUMBER. DESIGNER MUST NOTIFY RIDEM 24 HOURS PRIOR TO START OF CONSTRUCTION IN ACCORDANCE WITH RIDEM RULE 6.47.
- THE LICENSED DESIGNER SHALL WITNESS AND INSPECT ALL ASPECTS OF THE INSTALLATION, KEEP RECORDS, PREPARE THE CERTIFICATE OF COMPLETION AND PROVIDE O & M INFORMATION AND RECOMMENDATIONS TO THE OWNER, IN ACCORDANCE WITH RIDEM RULE 6.47.
- PROPERTY LINE & TOPOGRAPHICAL SURVEY DEPICTED ON THIS PLAN WAS OBTAINED FROM THE EXISTING CONDITIONS PLAN PREPARED BY ATLAS LAND SURVEYING. THE CONTRACTOR SHALL VERIFY PROPERTY LINE LOCATION, BENCHMARK ELEVATIONS AND ALL FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING SEWER INVERTS PRIOR TO CONSTRUCTION (BUILDING, SEPTIC TANK, GREASE TANK, D-BOX & FIELD).
- IF FIELD CONDITIONS VARY FROM PLANS OR IF CONTRACTOR ENCOUNTERS UNANTICIPATED CONDITIONS DURING CONSTRUCTION WHICH INDICATE THAT THE SYSTEM CANNOT BE INSTALLED IN ACCORDANCE WITH THE APPROVED DESIGN, INSTALLER SHALL STOP CONSTRUCTION AND NOTIFY THE LICENSED DESIGNER RESPONSIBLE FOR WITNESSING AND INSPECTING THE INSTALLATION IN ACCORDANCE WITH RIDEM RULE 6.47.
- THERE ARE NO EXISTING OR PROPOSED PRIVATE DRINKING WATER WELLS WITHIN 200' OF THE PROPOSED OWTS EXCEPT AS SHOWN.
- THERE ARE NO EXISTING OR PROPOSED PUBLIC WATER SUPPLY WELLS WITHIN 500' OF THE PROPOSED OWTS AREA EXCEPT AS SHOWN.
- ALL KNOWN OWTS'S WITHIN 100' OF EXISTING OR PROPOSED WELLS ARE SHOWN.
- ALL KNOWN OWTS'S AND WATER SUPPLIES WITHIN 100' OF ADJACENT PROPERTY LINES ARE SHOWN.
- THERE ARE NO KNOWN EXISTING OR PROPOSED SUBSURFACE DRAINS WITHIN 50 FEET OF THE PROPOSED OWTS.
- THE CONTRACTOR SHALL CALL "DIG-SAFE" AND VERIFY THE LOCATION OF ALL THE UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO START OF LAND DISTURBING ACTIVITIES.
- CLEAR ALL TREES, BRUSH AND STUMPS WITHIN 10' OF SYSTEM.
- STRIP LEACHING AREA PERIMETER 5' IF INVERT OF LEACHFIELD IS AT OR ABOVE EXISTING GRADE OR IF FILL OR OTHER ITEM IS FOUND. EXCAVATE DOWN TO ELEVATION AS SHOWN ON PLAN, REMOVING ALL TREES, BRUSH, TOPSOIL, UNDESIRABLE MATERIAL, AND SOIL CONTAINING FINES. REPLACE WITH SEPTIC GRAVEL AS REQUIRED AND RECOMPLY WITH RIDEM REGULATIONS.
- INSTALLER MUST ASSURE THAT BOTTOM AND SIDES OF EXCAVATION FOR THE LEACHFIELD ARE NOT COMPACTED OR SMEARED.
- NO VEHICULAR TRAFFIC IS ALLOWED OVER THE LEACHFIELD.
- ALL PVC PIPE SHALL BE 4" DIA. SDR 35 OR EQUIVALENT, UNLESS OTHERWISE NOTED.
- DISTRIBUTION LINES MUST BE INTERCONNECTED AT ALL ENDS AND AT INTERVALS NOT EXCEEDING 25'.
- MAINTAIN INVERT ELEVATION (FULL PERIMETER) FOR 10 FEET AROUND SYSTEM AS SHOWN.
- EXISTING SEPTIC TANKS TO REMAIN IN SERVICE SHALL BE PUMPED AND INSPECTED. EXISTING TANK(S) SHALL BE REPLACED IF CONDITION IS FOUND TO BE INADEQUATE. PROPOSED SEPTIC TANKS SHALL CONFORM TO ALL STANDARDS SET FORTH IN THE RIDEM OWTS REGULATIONS AS STATED IN NOTE NO. 1.
- ALL MANHOLES SHALL BE SET TO GRADE, GRADE TO DIVERT SURFACE RUNOFF.
- THE DESIGNER IS NOT RESPONSIBLE FOR ANY NEGLIGENT ACT OF OMISSION OF A USER OF AN OWTS, INCLUDING BUT NOT LIMITED TO, FAILURE TO PROPERLY USE AND MAINTAIN THE SYSTEM, WHICH CAUSES DAMAGE TO THE OWTS.
- THIS SYSTEM IS NOT DESIGNED TO HANDLE A CARBIDE DISPOSAL, OTHER HIGH WATER USE UNITS AND/OR ANY DISCHARGE FROM ANY WATER TREATMENT SYSTEMS OR WATER SOFTENERS.
- THE CONTRACTOR SHALL PROVIDE DESIGNER WITH MATERIAL RECEIPTS FOR ALL CONSTRUCTION MATERIALS PRIOR TO DESIGNER ISSUING CERTIFICATE OF CONSTRUCTION.
- ALL CURBING, PAVEMENT, LANDSCAPING AND OTHER EXISTING SITE CONDITIONS DISTURBED DURING THE CONSTRUCTION WORK SHALL BE RESTORED PER THE OWNER'S SPECIFICATION BY CONTRACTOR.
- CONTRACTOR TO COORDINATE CONSTRUCTION SCHEDULE WITH THE OWNER.
- GROUNDWATER TABLE FLUCTUATES ANNUALLY. NO GUARANTEE OF A DRY BASEMENT IS EXPRESSED OR IMPLIED.
- GROUNDWATER TABLE BASED ON SOIL EVALUATION TEST HOLES, RIDEM APPLICATION NO. 2103-1823.
- ALL APPLICANTS OBTAINING AN OWTS PERMIT FOR A RIDEM APPROVED ALTERNATIVE OR EXPERIMENTAL TECHNOLOGY REQUIRING SPECIAL OPERATION AND MAINTENANCE PROCEDURES SHALL: A) FILE A COPY OF THE INITIALLY EXECUTED CONTRACT FOR THE OWTS'S OPERATION AND MAINTENANCE WITH THE LAND EVIDENCE RECORDS OF THE MUNICIPALITY IN WHICH THE OWTS IS LOCATED AND B) SUBMIT TO THE DEPARTMENT A CERTIFIED COPY OF THE RECORDED PERMIT SETTING FORTH THE DATE OF THE RECORDATION AND THE BOOK.

ADVANTEX/BSF CONSTRUCTION NOTES

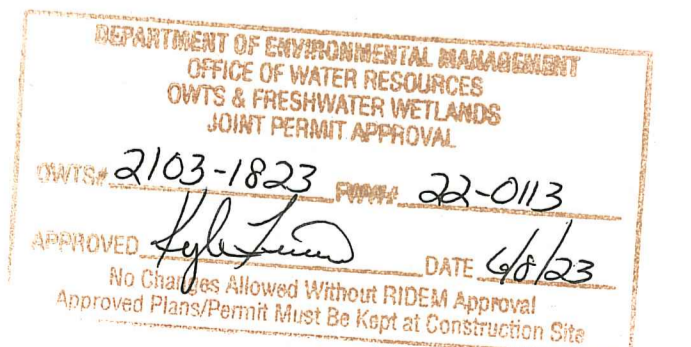
- THE PROPOSED SEPTIC TANK SHALL BE PROVIDED WITH A PVC INLET TEE AND A SCREENED PUMP VAULT IN THE OUTLET END. AN ACCESS RISER SHALL BE INSTALLED DIRECTLY ABOVE THE INLET TEE AND BALL VALVE, AND THE SCREENED PUMP VAULT.
- ALL SEPTIC TANKS SHALL BE A WATERTIGHT WITH 24" DIAMETER INLET AND OUTLET ACCESS RISERS. RISERS SHALL BE PVC WITH SECURED FIBERGLASS LID. IF CONCRETE TANK IS USED, ABS TANK ADAPTOR SHALL BE CAST INTO PLACE. TANK SHALL BE VACUUM TESTED WHEN CONSTRUCTED OR SEAMS SHALL BE WRAPPED WITH 6" x 6" BUTYL MASTIC.
- THE PROPOSED SEPTIC TANK SHALL BE SEALED TO ENSURE WATER TIGHTNESS AND CAN BE PURCHASED FROM JOLLEY PRECAST, INC. 860-74-9066.
- ALL TANKS AND APPURTENANCES SHALL BE CONSTRUCTED SUCH THAT ALL ELEMENTS ACT AS A SINGLE WATERTIGHT UNIT & SHALL BE CONSTRUCTED ACCORDING TO ASTM STANDARD C-1227-97A OR ANY SUPERSEDING UPGRADING OF THIS STANDARD. ALL RISER ADAPTERS SHALL BE CAST IN PLACE DURING TANK MANUFACTURING. ALL INLETS AND OUTLETS SHALL BE CAST IN PLACE WITH CAST-A-SEAL.
- THE ADVANTEX SYSTEM CONSISTS OF A PACKED BED FILTER THAT USES SPECIALLY DESIGNED TEXTILE MATERIALS WITHIN A PRE-ASSEMBLED UNIT.
- PUMPS SHALL BE AS MANUFACTURED BY GRENCO SYSTEMS, INC. OR APPROVED. EQUAL SEPTIC TANK PUMP TO ADVANTEX FILTER. (SEE EXISTING PUMP CHARGER PUMP TO DRAINFIELD - SEE EXISTING).
- ALL PUMPS SHALL BE EQUIPPED WITH A HIGH WATER LEVEL VISIBLE AND AUDIBLE ALARM POWERED BY A CIRCUIT BREAKER FROM THE PUMP POWER. THE ALARM SHALL BE LOCATED IN A NORMALLY OCCUPIED AREA OF THE FACILITY OR SHALL BE INSTALLED AS SHOWN ON THE SITE PLAN.
- SMALL DIAMETER, PRESSURIZED PVC PIPE SHALL BE SCH 40 OR EQUAL, WITH SOLVENT WELDED CONNECTIONS.
- ALL ORGANIC MATERIAL AND FILL BELOW THE PROPOSED BOTTOMLESS SAND FILTER SHALL BE STRIPPED AND BACK FILLED WITH FILTER SAND ASTM-33 OR SEPTIC GRAVEL. IF REQUIRED, AS SHOWN ON THE PLAN. PRIOR TO PLACING THE FILTER SAND, REMOVE 3" OF SUBSOIL BELOW THE AREA OF THE PROPOSED BOTTOMLESS SAND FILTER AND MIX WITH FILTER SAND.
- BOTTOMLESS SAND FILTER MEDIA: SHALL BE HOLLISTON SAND & GRAVEL ASTM-33 SAND, LESS THAN 1% PASSING THE #200 SIEVE WITH AN EFFECTIVE SIZE OF 0.30mm AND WITH A UNIFORMITY COEFFICIENT OF 3.02-4.02. (HOLLISTON SAND & GRAVELS 401-766-9010) CONTRACTOR TO SUPPLY ENGINEER W/SAMPLES OF MEDIA TO BE USED IN THE SAND FILTER. CONTRACTOR SHALL ALSO SUPPLY ENGINEER WITH SIEVE ANALYSIS SHOWING THAT THE FILTER MEDIA MEETS THE CRITERIA AS SHOWN ON THE PLAN.
- CONTRACTOR TO CONTACT SOIL BENEATH ALL PRESSURE AND GRAVITY LINES.
- CONTRACTOR TO COORDINATE STARTUP WITH MAINTENANCE CONTRACTOR, ELECTRICIAN, AND ENGINEER PRIOR TO COMPLETION.
- MAINTAIN ELEVATION OF 202.50 (MINIMUM) FOR 5' AROUND BOTTOM OF BOTTOMLESS SAND FILTER SYSTEM.
- CONSTRUCTION OF SAND FILTER SYSTEM AFTER OCTOBER 31ST, SHALL REQUIRE SYSTEM TO BE COVERED AND/OR INSULATED PER MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR WINTER CONDITIONS.



CONSTRUCTION ENTRANCE DETAIL NOTES:

- CONSTRUCTION ENTRANCE DEPTH SHALL BE A MINIMUM OF 5" THICK.
- CONSTRUCTION ENTRANCE WIDTH SHALL BE THE AT LEAST THE FULL WIDTH OF THE INGRESS/EGRESS ACCESS POINT.
- CONSTRUCTION ENTRANCE LENGTH SHALL BE A MINIMUM OF 50'.
- AGGREGATE SIZE SHALL BE RIDOT 2" CRUSHED STONE OR GRAVEL.
- DETAIL BASED ON RHODE DEPARTMENT OF TRANSPORTATION DETAIL, R.I. STANDARD 9.9.0 CONSTRUCTION ACCESS AND RIDOT STANDARD STANDARD SPECIFICATIONS, SECTION 211, CONSTRUCTION ACCESS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION		
CONSTRUCTION ACCESS		
NO.	BY	DATE
1	J. Capasso	JUNE 15, 1998



RIDEM OWTS APPLICATION NO. 0613-1057
PROPOSED NOTES & DETAILS
Project:
MARK BRIZARD
STAG HEAD DRIVE
A.P. 135 LOT 18
BURRILLVILLE, RHODE ISLAND

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