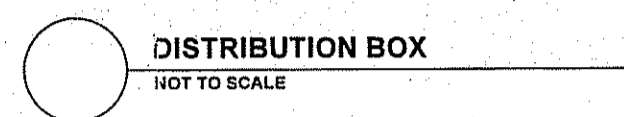
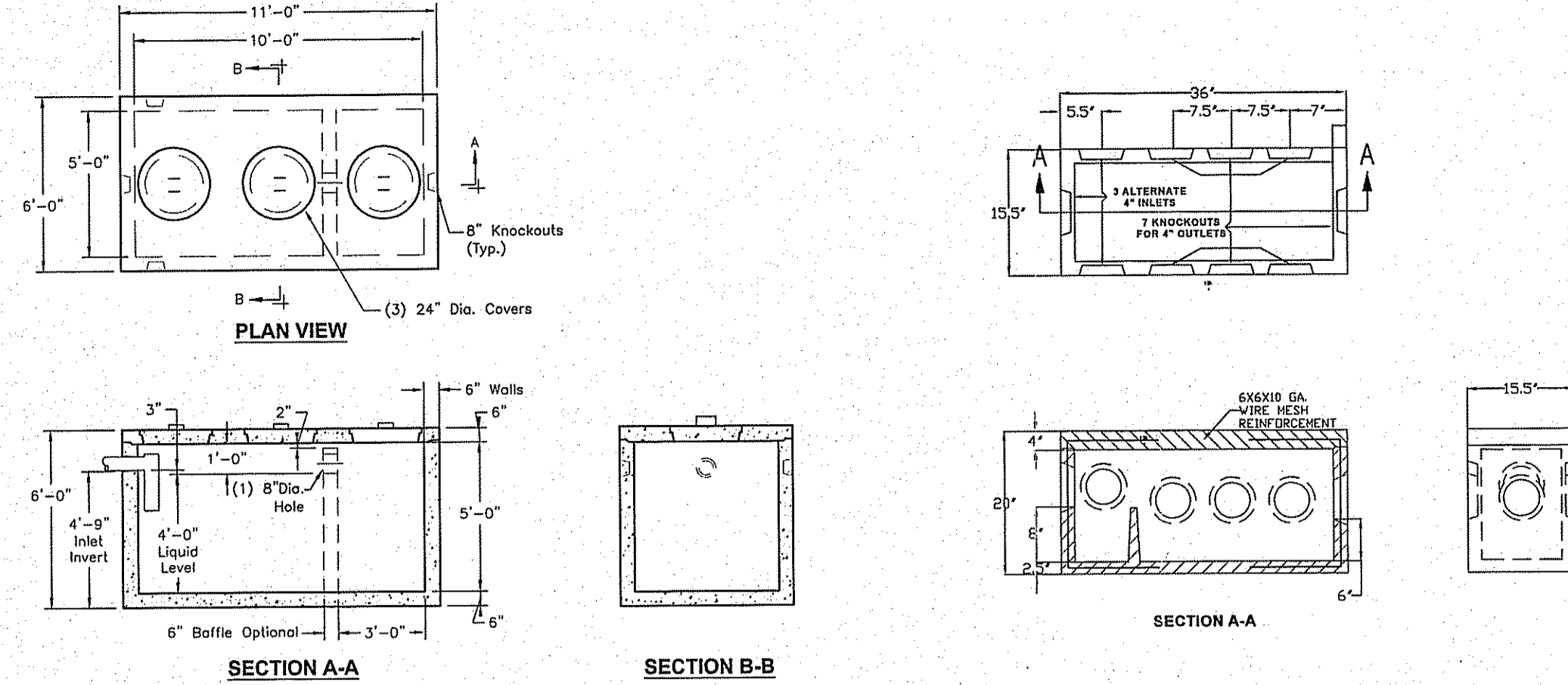
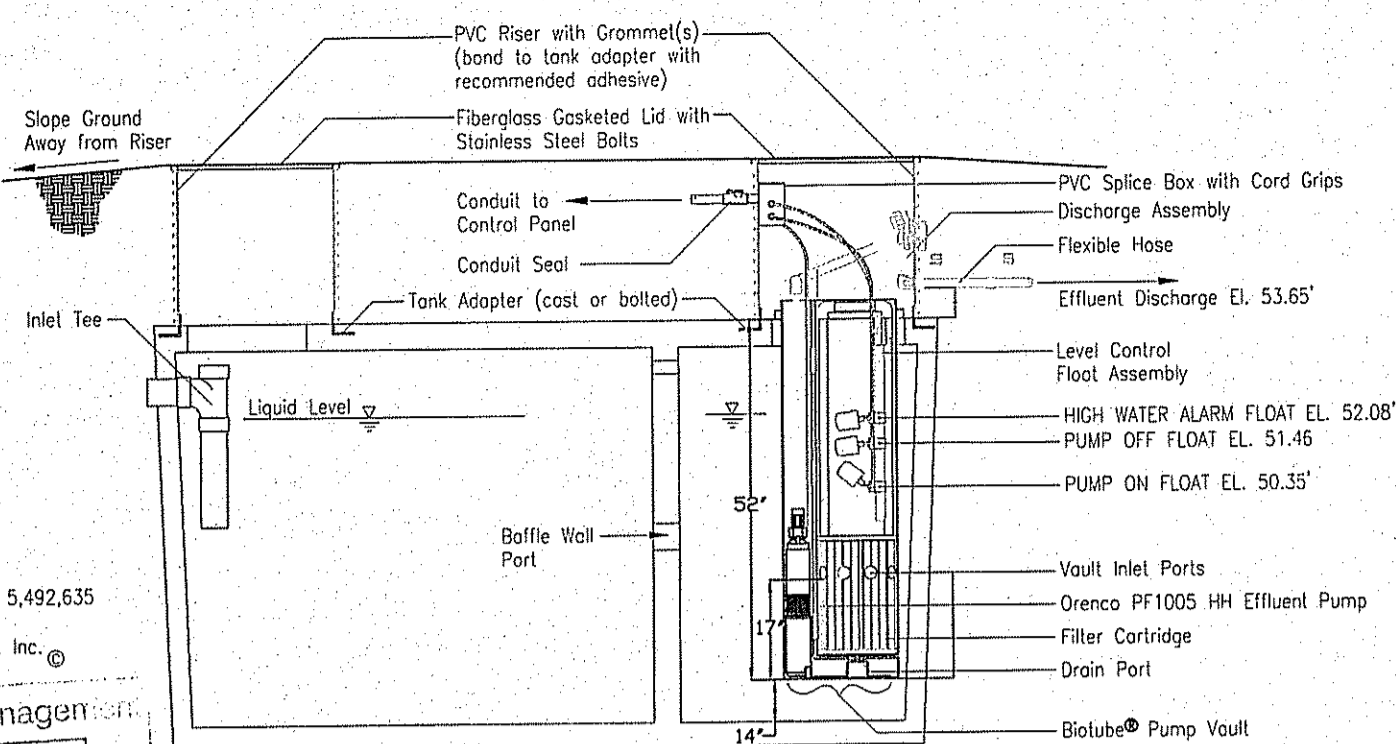
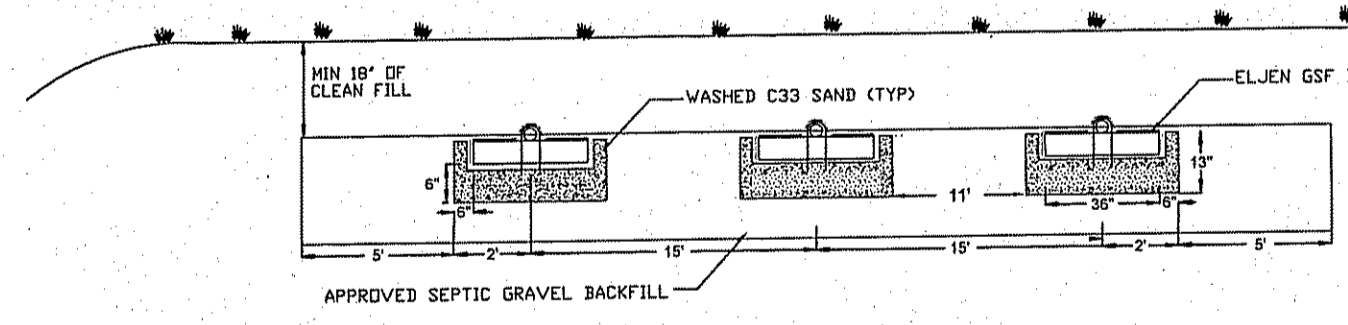
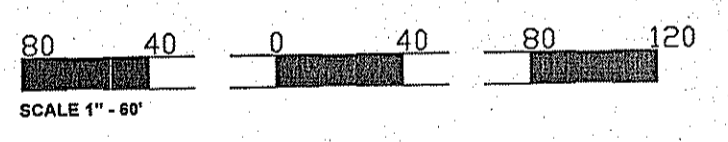
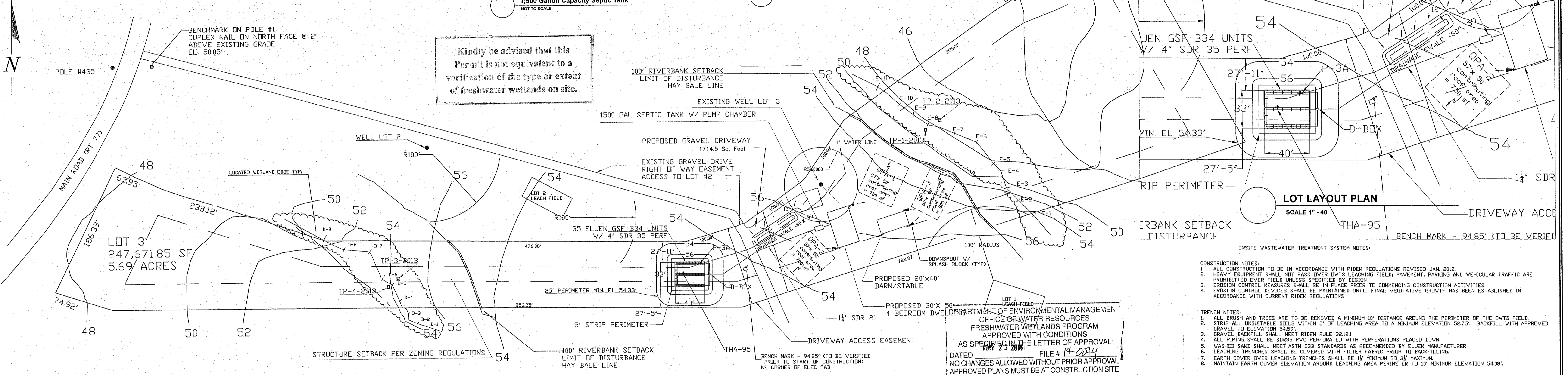


Oreco Systems
 814 ADMIN AVENUE
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 97479-8012
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 (541) 459-4449
 FACSIMILE:
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Patents # 4,459,323 & 5,492,635
 Foreign Patents Pending
 2002, Oreco Systems, Inc.
 Environmental Management
 NOW TB-04 2014
 Rev. MAY 17 2014
 Office of Water Resources



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



SOIL DATA
 PERC RATE 23 MP
 DVTS DETERMINATION 533-9811

DEPTH	THA-95	THB-95
0'	LH DK BRN LC	LH DK BRN LC
28"	2-ST, 2-FS, 1-HS DK BRN HC	2-ST, 2-FS, 1-HS DK BRN HC
46"	3-ST, 2-FS, 1-HS 1-SB BLK HC	3-ST, 2-FS, 1-HS 1-SB BLK HC
96"		

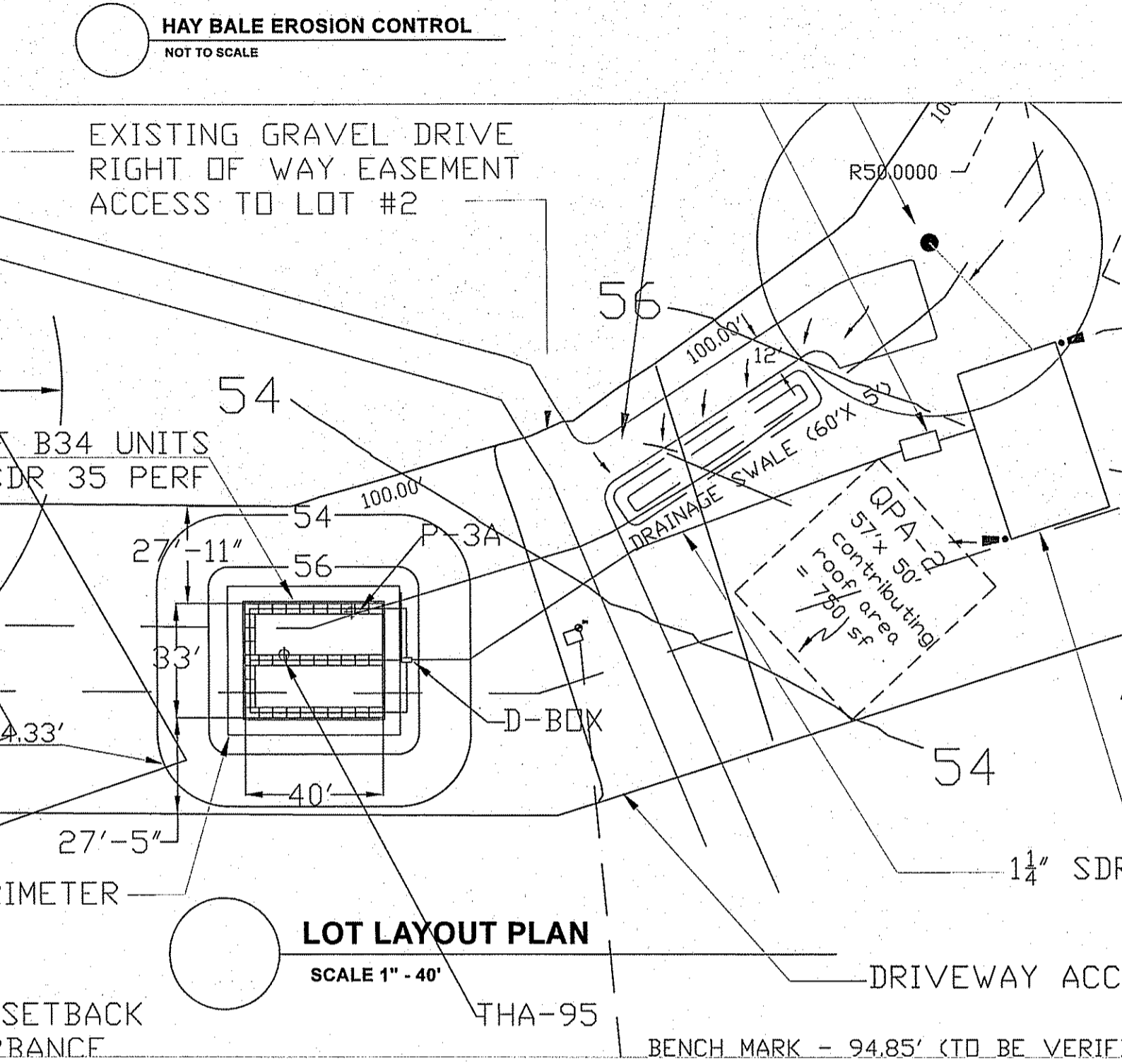
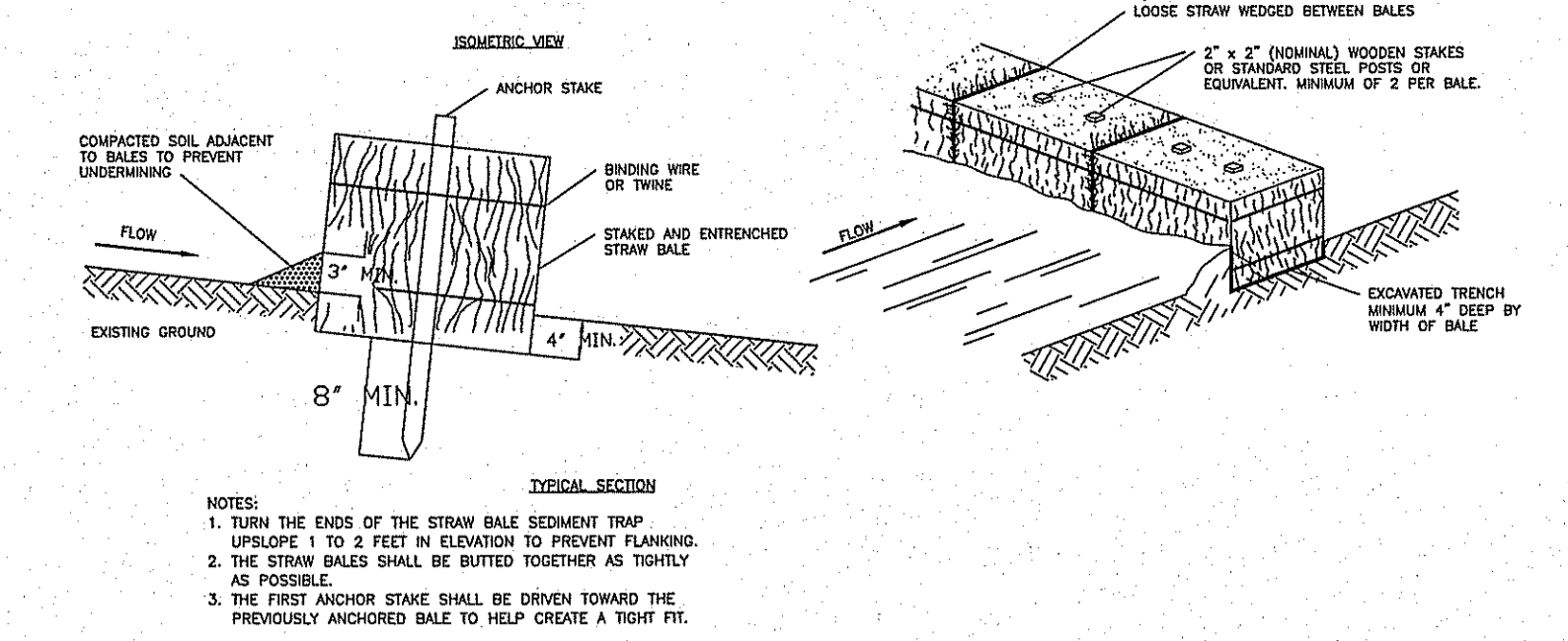
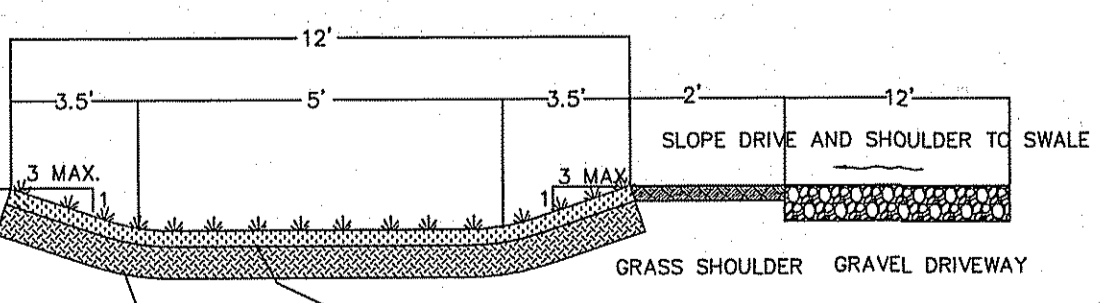
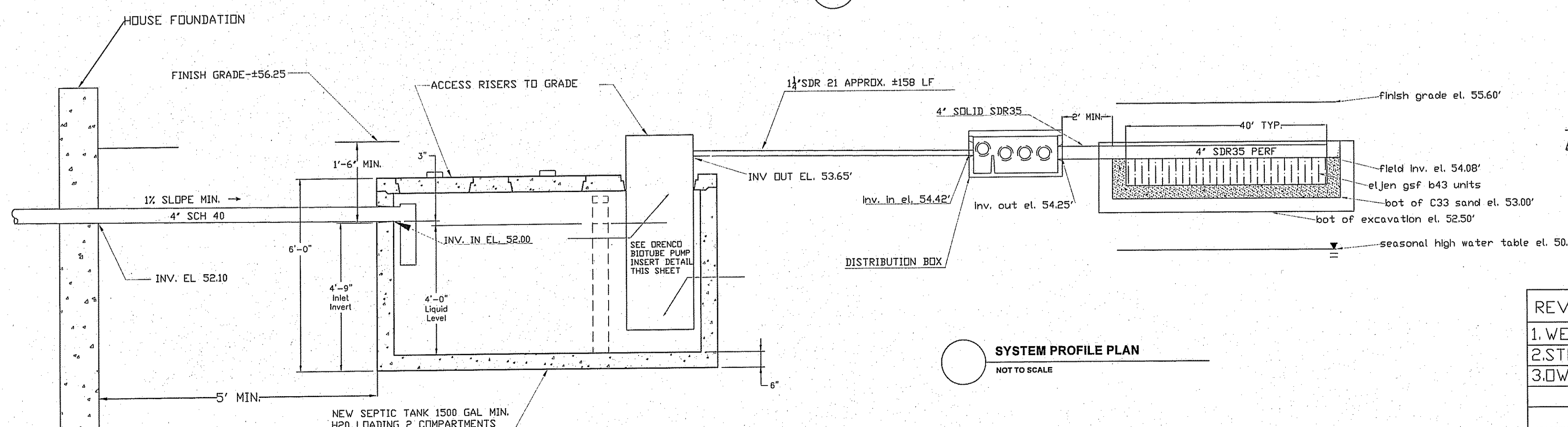
QUALITY PERVIOUS AREAS TABLE

OPA	IMPERVIOUS STRUCTURE	IMPERVIOUS DIMENSIONS (FT)	IMPERVIOUS AREA (SF)	OPA DIMENSIONS	OPA AREA (SF)	SIZING METHOD
1	HOUSE - EAST ROOF	50'x 15'	750	57'x 50'	2850	4.6.1.1 - RISDISM
2	HOUSE - WEST ROOF	50'x 15'	750	57'x 50'	2850	4.6.1.1 - RISDISM
3	BARN ROOF	40'x 20'	800	61'x 40'	2440	4.6.1.1 - RISDISM

VEGETATIVE SWALE TABLE:

LOCATION	IMPERVIOUS AREA (SF)	SWALE DIMENSIONS	SWALE AREA (SF)	SIZING METHOD
GRAVEL DRIVEWAY	1720	5'X 60'	300	TABLE 5 - RISMG

- QUALITY PERVIOUS AREA NOTES:
1. FLOW PATH TO OPA'S SHALL BE GRADED TO MAINTAIN SHEET FLOW CHARACTERISTICS
 2. SLOPE ACROSS OPA FLOW PATH SHALL BE < 5%
 3. CONSTRUCTION VEHICLES SHALL NOT TRAVEL OVER OPA'S
 4. SHOULD OPA SOIL BECOME COMPACTED, AFFECTED AREAS SHALL BE SUITABLY AMENDED, TILLED AND RESEED TO RESTORE INFILTRATION CAPACITY
 5. FERTILIZER USE ON OPA'S SHALL BE LIMITED IN USE.
 6. NATIVE VEGETATION SHALL BE USED IN OPA'S AS RECOMMENDED IN RI COASTAL PLANT GUIDE
 7. OPA'S MUST BE INSPECTED AND MAINTAINED YEARLY TO REMOVE SEDIMENT AND ADDRESS PONDING AND EROSION, REPAIRED AREAS SHALL BE RESEED, REPLANTED
- VEGETATIVE SWALE NOTES:
1. MAXIMUM SWALE SIDE SLOPES < 3:1
 2. MAXIMUM LONGITUDINAL SLOPE ALONG SWALE < 4%
 3. AMENDED SOIL SHALL CONSIST OF 50% EXCAVATED NATIVE SOILS AND 50% MATURE ORGANIC COMPOST
 4. PLANTINGS AND GRASSES USED IN SWALE SHALL BE AS RECOMMENDED IN THE RI COASTAL PLANT GUIDE
 5. SWALES SHALL BE INSPECTED ANNUALLY AND AFTER LARGE STORM EVENTS
 6. ERODED AREAS SHALL BE REPAIRED AND RESEED
 7. IF STANDING WATER IS REMAINS 48 HOURS AFTER A STORM EVENT THE SWALE BOTTOM SHALL BE ROTOTILLED OR CULTIVATED AND RESEED
 8. EVERY FIVE YEARS THE ACCUMULATED SEDIMENT SHALL BE REMOVED TO RESTORE THE ORIGINAL CROSS SECTIONAL AREA AND RESEED



- CONSTRUCTION NOTES:
1. ALL BRUSH AND TREES ARE TO BE REMOVED A MINIMUM 10' DISTANCE AROUND THE PERIMETER OF THE DVTS FIELD.
 2. STRIP ALL UNSUITABLE SOILS WITHIN 5' OF LEACHING AREA TO A MINIMUM ELEVATION 52.75'. BACKFILL WITH APPROVED GRAVEL TO ELEVATION 54.59'.
 3. GRAVEL BACKFILL SHALL MEET RIDEM RULE 32(2)(1)
 4. ALL PIPING SHALL BE SDR35 PVC PERFORATED WITH PERFORATIONS PLACED DOWN.
 5. WASHED SAND SHALL MEET ASTM C33 STANDARDS AS RECOMMENDED BY ELJEN MANUFACTURER
 6. LEACHING TRENCHES SHALL BE COVERED WITH FILTER FABRIC PRIOR TO BACKFILLING.
 7. EARTH COVER OVER LEACHING TRENCHES SHALL BE 18" MINIMUM TO 36" MAXIMUM
 8. MAINTAIN EARTH COVER ELEVATION AROUND LEACHING AREA PERIMETER TO 10' MINIMUM ELEVATION 54.08'.
- TANK & DISTRIBUTION BOX NOTES:
1. PRE-CAST SEPTIC TANK SHALL MEET ASTM C-1227-02 STRENGTH REQUIREMENTS AS WELL AS ANY UPDATES TO THE STANDARD
 2. SEPTIC TANK SHALL BE 2-COMPARTMENT TYPE ABLE TO RECEIVE ORENCO PUMP CHAMBER INSERT AS DETAILED.
 3. PIPING FROM HOUSE TO TANK SHALL BE SCH40 WITH A TEE Baffle.
 4. ACCESS RISERS SHALL BE SET TO FINISH GRADE.
 5. PRE-CAST D-BOX SHALL MEET H20 LOADING REQUIREMENTS
 6. D-BOX SHALL HAVE A PRECAST Baffle BETWEEN INLET AND OUTLET CHAMBERS.
 7. D-BOX SHALL HAVE AN ACCESS COVER SET TO GRADE.
- DVTS NOTES & CONDITIONS:
1. THIS LOT DOES NOT FALL WITHIN A CRITICAL RESOURCE AREA.
 2. THERE ARE NO PUBLIC DRINKING WATER WELLS WITHIN 100' OF LEACHING AREA.
 3. THERE ARE NO PUBLIC DRINKING WATER WELLS WITHIN 400' OF LEACHING AREA.
 4. THERE ARE NO SUBSURFACE DRAINS WITHIN 25' OF LEACHING AREA.
 5. THERE ARE NO RIVERS, STREAMS OR OPEN BODIES OF WATER WITHIN 75' OF DVTS.
 6. MAINTAIN A MINIMUM SEPARATION DISTANCE OF 10' BETWEEN THE WATER SERVICE LINE AND SEWER LINE OR SEAL LINES IN ACCORDANCE WITH REGULATIONS.
 7. DESIGNER IN NO WAY GUARANTEES SOIL CONDITIONS BEYOND TEST HOLE LOCATIONS AS SHOWN. SHOULD CONDITIONS ENCOUNTERED DIFFER SUBSTANTIALLY FROM DATA SHOWN, DISCREPANCIES SHOULD BE REPORTED TO THE DESIGNER OF RECORD AND RIDEM DVTS DIVISION IN WRITING PRIOR TO COMMENCING WITH CONSTRUCTION.
 8. THE INSTALLER SHALL NOTIFY THE DESIGNER OF RECORD AND RIDEM PRIOR TO COMMENCING CONSTRUCTION AS NOTED ON THE APPROVED APPLICATION.
 9. ALL MATERIAL RECEIPTS AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE DESIGNER OF RECORD PRIOR TO FINAL CERTIFICATE OF CONSTRUCTION.
 10. PLAN BASED ON INITIAL SURVEY PERFORMED BY JACOBS ASSOCIATES.
- HISTORY OF PREVIOUS RIDEM DVTS DOCUMENTS AND PERMITS RELATED TO THIS APPLICATION:
1. SUBDIVISION SUITABILITY 533-9811
 2. WATER TABLE DETERMINATION APPLICATION 9533-1671
 3. WETLAND PERMIT 95-0563 (WORK COMPLETED)
 4. 333S APPLICATION 9533-3369 (EXPIRED)
 5. WETLAND APPLICATION 014-0074
- TRENCH CALCULATIONS:
- | | |
|-------------------------------------|------------------|
| 1. DAILY DESIGN FLOW: | 460 GPD |
| 2. DESIGN SOIL PERC. RATE: | 25 MP |
| 3. SOIL LOAD RATE: | 0.48 G/50' / DAY |
| 4. REQUIRED LEACHING AREA: | 988.3 SF |
| 5. DEPTH OF SAND BELOW ELJEN UNITS: | 6 INCHES |
| 6. ELJEN B43 GSF CREDIT: | 7 SF / LF |
| 7. TOTAL LINEAL FEET OF TRENCH: | 140 LF |
| 8. TOTAL SF OF LEACHING AREA: | 980 SF |

C.P. CROWSHAW
 ENGINEERING & CONSULTING
 WAKEFIELD, RI (401) 439-2201

TITLE: PROPOSED SEPTIC SYSTEM

OWNER: SHERRI BORRENSON
 35 NORTFIELD RD.
 LUNENBURG, MA 01462

PROJECT LOCATION: ASSESSORS PLAT 2-3 LOT 10
 SUBDIVISION LOT#3
 TIVERTON, RI 02878

DATE: JUNE 4, 2011

REVISION: JULY 30, 2011
 SCALE: AS NOTED

- REVISIONS:
1. WETLANDS DELINEATION MARCH 14, 2012
 2. STORMWATER MANAGEMENT MAY 2014
 3. DVTS REVIEW MODIFICATIONS MAY 2014

CHRISTOPHER P. CROWSHAW
 No. 9233
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 5-20-14