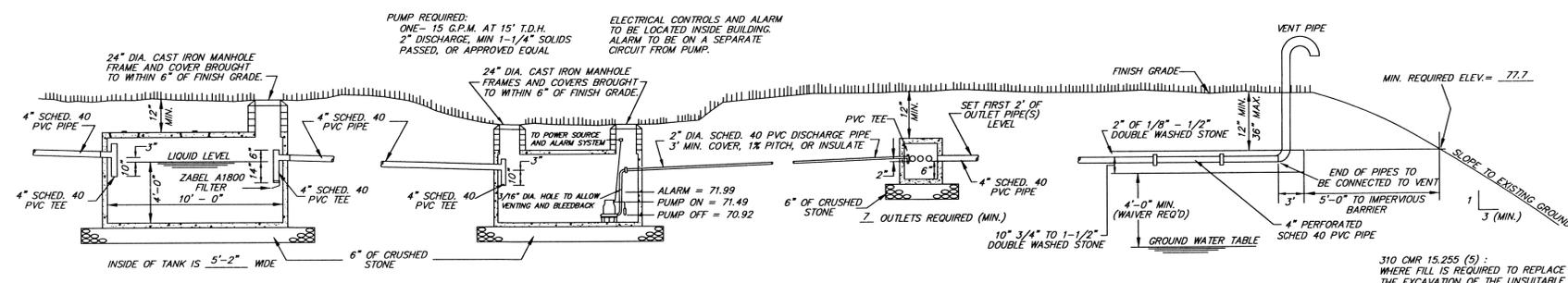


NOTICE TO INSTALLING CONTRACTOR:

- THIS SANITARY DISPOSAL FACILITY SHALL BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS OF THE LOCAL BOARD OF HEALTH AND TITLE 5 OF THE STATE ENVIRONMENTAL CODE. NO VARIATIONS FROM THIS PLAN SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THIS OFFICE.
- SOIL CONDITIONS CAN VARY - WATER TABLE ELEVATION AND THE LIMITS OF ACCEPTABLE SOIL MUST BE VERIFIED PRIOR TO INSTALLATION OF THE ABSORPTION SYSTEM.
- THE LOCATION OF UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM THE BEST AVAILABLE INFORMATION. HOWEVER, IT IS NOT WARRANTED THAT THE LOCATIONS ARE CORRECT, NOR THAT ALL UTILITIES ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY DIG SAFE FOR THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
- AN AS-BUILT SURVEY OF THE SYSTEM IS REQUIRED. THIS OFFICE SHALL BE NOTIFIED PRIOR TO BACKFILLING THE SYSTEM COMPONENTS FOR OUR INSPECTION AND FIELD LOCATION.
- ALL BENCHMARKS SHOWN ON THIS PLAN ARE TO BE CHECKED FOR CONSISTENCY BY THE CONTRACTOR. ANY DISCREPANCIES MUST BE RESOLVED BY THIS OFFICE PRIOR TO CONSTRUCTION.



1500 GALLON SEPTIC TANK

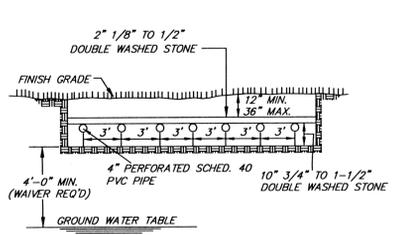
PUMP CHAMBER DETAIL (1000 GALLON SEPTIC TANK) NOT TO SCALE

DISTRIBUTION BOX (WITH PVC TEE)

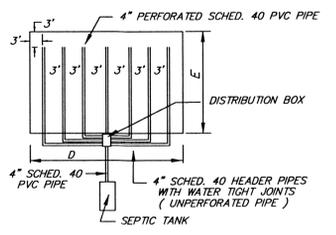
LEACHING FIELD

FOR PROPER PERFORMANCE, SEPTIC TANK SHOULD BE INSPECTED ANNUALLY. WHEN THE TOTAL DEPTH OF SCUM AND SOLIDS EXCEEDS 1/3 THE LIQUID DEPTH OF THE TANK, THE TANK SHOULD BE PUMPED.

PROFILE



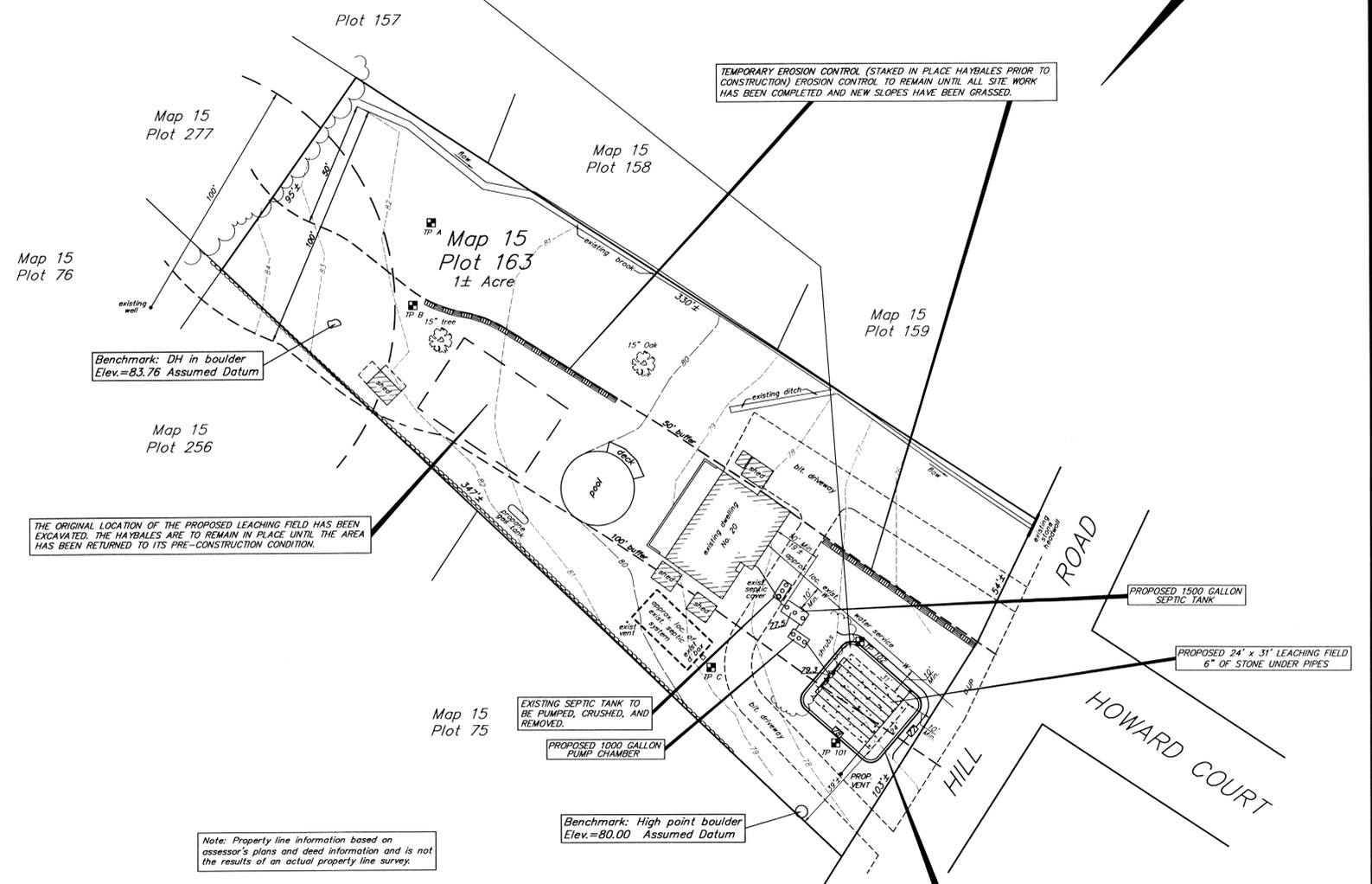
LEACHING FIELD - X - SECTION



LEACHING FIELD

NO. OF REQUIRED LEACHING LINES	7
REQUIRED DIMENSIONS OF LEACHING FIELD	24' X 31'
STONE UNDER PIPES	6"

310 CMR 15.255 (5): WHERE FILL IS REQUIRED TO REPLACE UNSUITABLE OR IMPERMEABLE SOILS, THE EXCAVATION OF THE UNSUITABLE MATERIAL SHALL EXTEND A MINIMUM OF FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL AS REQUIRED BY 310 CMR 15.240 (SOIL ABSORPTION SYSTEMS) AND REPLACED WITH FILL MATERIAL MEETING THE SPECIFICATIONS OF 310 CMR 15.255 (3).



PUMP CALCULATIONS:
 550 GPD/4 DOSES PER DAY = 137.5 GAL PER DOSE
 137.5/7.48 = 18.38 C.F.
 INSIDE OF PUMP CHAMBER = 4' x 8' = 32 S.F.
 18.38/32 = 0.57 FT
 BOTTOM OF PUMP CHAMBER = 70.25
 PUMP OFF = 70.25 + 8" = 70.92
 PUMP ON = 70.92 + 0.57 = 71.49
 ALARM = 71.49 + 6" = 71.99
 EMERGENCY STORAGE = 74.50 - 71.49 = 3.01
 3.01 x 32 S.F. x 7.48 = 720 GAL

PUMP CHAMBER BUOYANCY CALCS:
 UPWARD FORCE = (72.70 - 70.00) x 38.25 (AREA) x 62.4 LBS/FT³ = 6,445 LBS
 WEIGHT OF TANK = 4.5' x 8.5' x 2 x 0.25' (TOP & BOTTOM) + 4' x 5' x 2 x 0.25' (SIDES) + 4' x 5' x 2 x 0.25' (ENDS) = 49.1 CU.F.T. x 150 LB/CU.F.T. = 7,365 LBS
 SOIL WEIGHT = 38.25 x 1 FT. x 100 LB/CU.F.T. = 3,825 LB
 WEIGHT OF TANK + SOIL WEIGHT (11,190 LBS) > BUOYANCY FORCE (6,445 LBS)
 PUMP CHAMBER WILL NOT FLOAT.

SEPTIC TANK BUOYANCY CALCS:
 UPWARD FORCE = (72.70 - 70.36) x 56.65 (AREA) x 62.4 LBS/FT³ = 8,272 LBS
 WEIGHT OF TANK = 5.5' x 10.3' x 2 x 0.25' (TOP & BOTTOM) + 9.8' x 5' x 2 x 0.25' (SIDES) + 5' x 5' x 2 x 0.25' (ENDS) = 65.3 CU.F.T. x 150 LB/CU.F.T. = 9,800 LBS
 SOIL WEIGHT = 56.65 x 1 FT. x 100 LB/CU.F.T. = 5,665 LB
 WEIGHT OF TANK + SOIL WEIGHT (15,465 LBS) > BUOYANCY FORCE (8,272 LBS)
 SEPTIC TANK WILL NOT FLOAT.

ELEVATION SCHEDULE	DESIGN ELEVATION
SLAB (EXISTING)	78.67
SEWER INVERT AT FOUNDATION	EXISTING
SEWER INVERT INTO SEPTIC TANK	74.97
SEWER INVERT OUT OF SEPTIC TANK	74.61
SEWER INVERT INTO PUMP CHAMBER	74.50
BOTTOM OF PUMP CHAMBER	70.25
PUMP OFF	70.92
PUMP ON	71.49
ALARM	71.99
SEWER INVERT OUT OF PUMP CHAMBER	74.25
SEWER INVERT INTO DISTRIBUTION BOX	77.55
SEWER INVERT OUT OF DISTRIBUTION BOX	77.38
SEWER INVERT AT END OF LEACHING FIELD	77.20
BOTTOM OF STONE ELEVATION	76.7
ELEVATION OF GROUND WATER TABLE (TAKEN FROM TEST PIT NUMBER 101 & 102)	72.7

DESIGN ANALYSIS

REQUIRED: 5 BEDROOMS 110 GPD/BR 550 GPD TOTAL EFFLUENT

LEACHING AREA DESIGN:
 DESIGN PERC. RATE 2 MIN./INCH CLASS I SOIL
 EFFECTIVE LOADING RATE 0.24 GPD/SF
 BOTTOM AREA = 744 SF
 TOTAL AREA = 744 SF x 0.24 GPD/SF = 551 GPD

SEPTIC TANK DESIGN:
 DESIGN VOLUME = 2 x 550 GPD = 1100 GALLONS
 REQUIRED: 1 COMPARTMENT 1500 GALLON TANK

SOIL EXAMINATION REPORT
 EXAMINATIONS TAKEN BY TODD M. PILLING, P.E. (CERTIFIED SOIL EVALUATOR)
 AND WITNESSED BY HAROLD CHEMEVERT, JR., BOARD OF HEALTH AGENT ON SEPT. 8, 2003.

TEST PIT #	DEEP OBSERVATION HOLE LOG	TEST PIT # 101						
		GROUND SURFACE ELEVATION: 77.7	PERC. TEST TAKEN AT: 32-50 IN. RATE = 2 MIN./IN. OBSERVED DEPTH TO GROUND WATER: 94 IN. DESIGN DEPTH TO GROUND WATER: 60 IN.					
TEST PIT # 101	DEPTH FROM SURFACE (INCHES)	0-15	SOIL HORIZON: A _p SANDY LOAM	SOIL TEXTURE (USDA): 10YR 3/2	SOIL COLOR (MUNSELL): NONE	SOIL MOTTLING: NONE	OTHER (STRUCTURE, STONE CONSISTENCY): REMOVE AND REPLACE	
	15-29	B	SANDY LOAM	10YR 5/6	NONE	NONE		
	29-120	C	COARSE SAND	2.5Y 5/4	60" m _{3p}	30% GRAVEL, 10% COBBLES, 20% BOULDERS		
	TEST PIT # 102							
	DEEP OBSERVATION HOLE LOG							
TEST PIT # 102	DEPTH FROM SURFACE (INCHES)	0-18	SOIL HORIZON: A _p SANDY LOAM	SOIL TEXTURE (USDA): 10YR 3/2	SOIL COLOR (MUNSELL): NONE	SOIL MOTTLING: NONE	OTHER (STRUCTURE, STONE CONSISTENCY): REMOVE AND REPLACE	
	18-36	B	SANDY LOAM	10YR 5/6	NONE	NONE		
	36-48	C	COARSE SAND	2.5Y 5/4	NONE	NONE		
	48-66	C _{2d}	SANDY LOAM	2.5Y 5/3	48" m _{3p}			
	66-116	C ₃	COARSE SAND	2.5Y 5/4				

- NOTES:**
- IF ANY PORTION OF THE EXISTING SEPTIC SYSTEM IS ENCOUNTERED DURING CONSTRUCTION, THAT PORTION OF THE SYSTEM IS TO BE REMOVED ALONG WITH ANY CONTAMINATED MATERIAL AND DISPOSED OF PROPERLY.
 - LEACHING AREA REQUIREMENT IS NOT INCREASED BY 50% THEREFORE THE DESIGN OF THIS SYSTEM DOES NOT PERMIT THE USE OF GARBAGE DISPOSAL UNITS.
 - LOCAL BOARD OF HEALTH UPGRADE WAIVER REQUEST: 15.405(1)(i) SEPARATION TO WATER TABLE FROM 5' TO 4'
 - EXISTING SEPTIC TANK IS NOT WATERTIGHT. IT IS TO BE REPLACED WITH A NEW WATERTIGHT 1500 GALLON SEPTIC TANK.
 - ALL BUILDING SEWERS TO BE CONNECTED TO SEPTIC TANK.
 - ZABEL A1800 FILTER TO BE INSTALLED AT OUTLET TEE OF SEPTIC TANK.

I CERTIFY THAT THE SEWAGE DISPOSAL FACILITY SHOWN HEREON HAS BEEN DESIGNED IN ACCORDANCE WITH THE REGULATIONS OF THE LOCAL BOARD OF HEALTH AND TITLE 5 OF THE STATE ENVIRONMENTAL CODE.

9.2.03 Todd M. Pilling
 DATE PROFESSIONAL ENGINEER



PLAN
 SCALE: 1" = 30'

" TOPOGRAPHY BY ELECTRONIC TOTAL STATION "

Gary Duffey
 20 Hill Road
 Seekonk, MA. 02771 69-519

ON-SITE SANITARY DISPOSAL SYSTEM
 "REPAIR"
 20 HILL ROAD
 SEEKONK, MA.

Pilling Engineering Group, Inc.
 Civil Engineers & Land Surveyors
 1135 Pearl Street, Brockton MA 02301
 Office (508) 580-1145

DESIGNED BY: TMP
 DRAWN BY: MAL
 CHECKED BY: TMP / BRP
 APPROVED BY: TMP / BRP

DATE: JANUARY 16, 2003
 REV. SEPT. 9, 2003

LOT HAS NOT BEEN STAKED
 TYPE OF BUILDING: EXISTING DWELLING
 ASSESSOR'S PLAN NO. 15
 PLOT: 163
 ZONING CLASSIFICATION: N/A
 MIN. SETBACKS: F. --- S. --- R. ---

LEGEND
 --- 100 --- EXISTING CONTOURS
 --- 1000 --- PROPOSED CONTOURS
 --- 100X0 --- EXISTING ELEVATION
 --- 100.0 --- PROPOSED ELEVATION
 TP2 TEST PIT LOCATION
 AND NUMBER

Sheet 1 of 1
 JN 1268