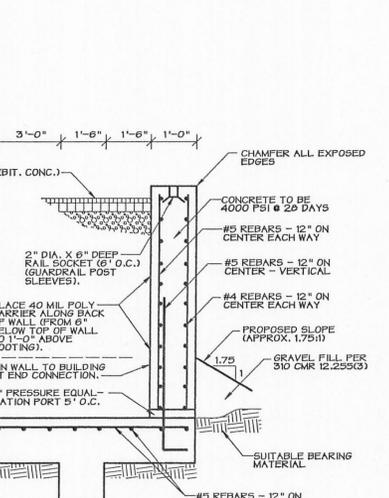
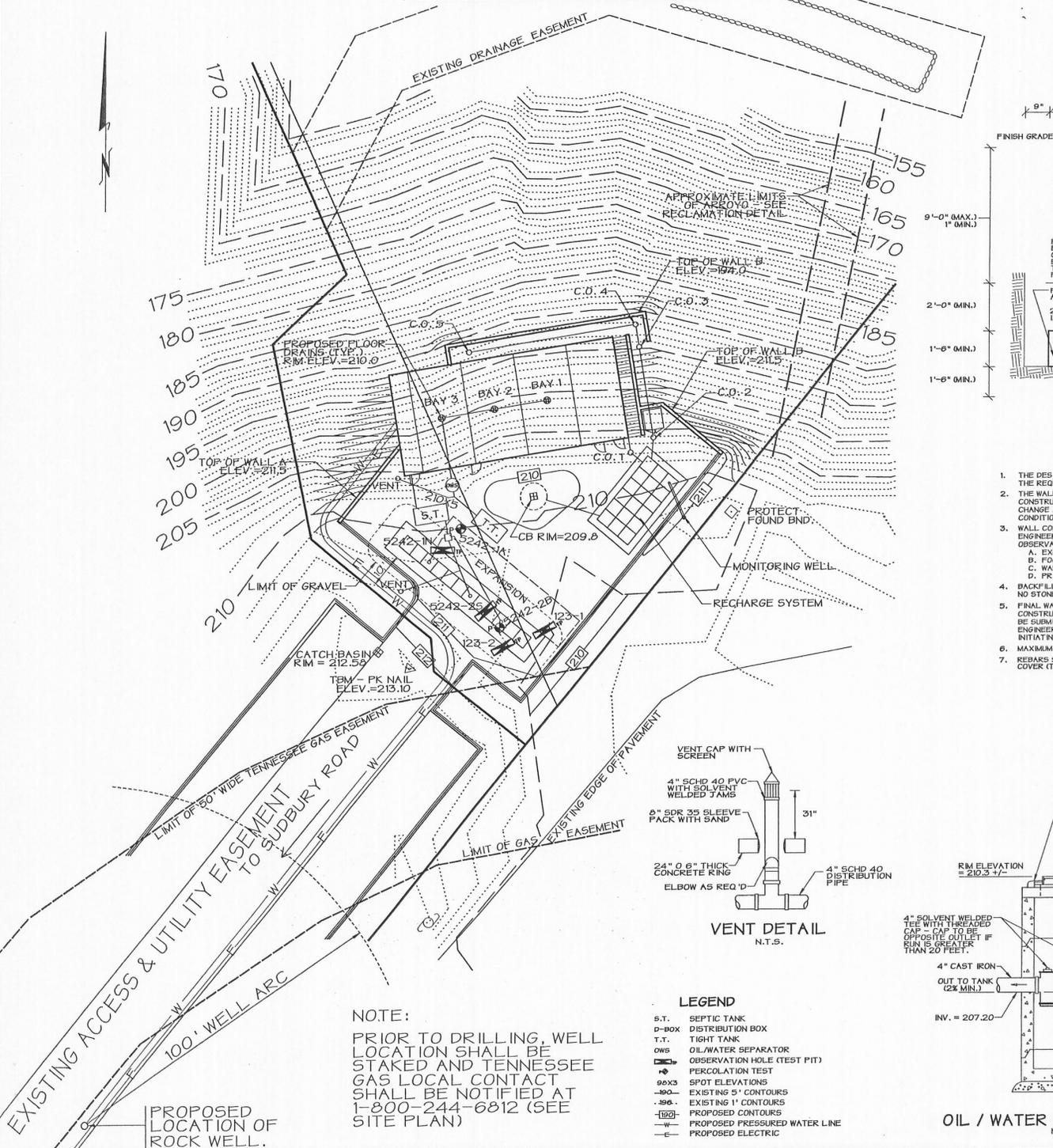
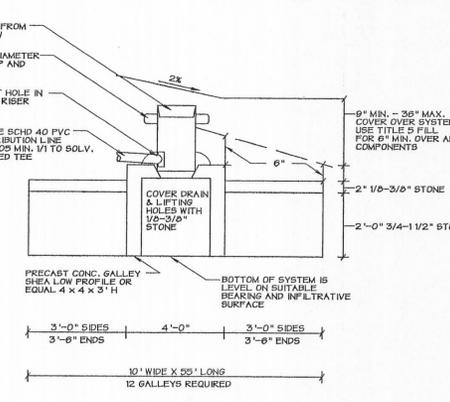
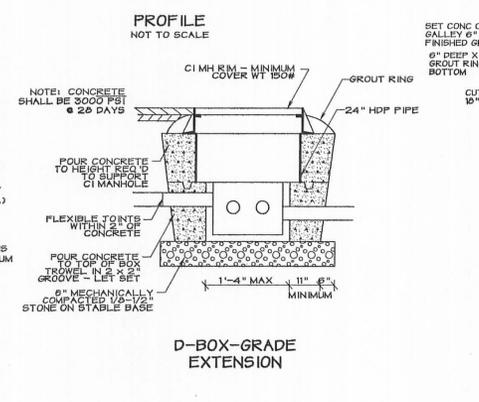
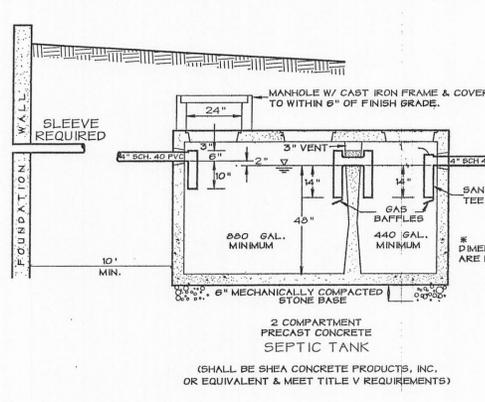
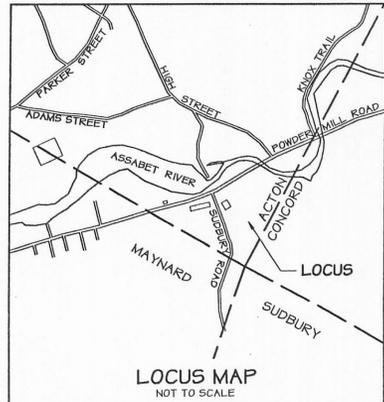


GENERAL NOTES

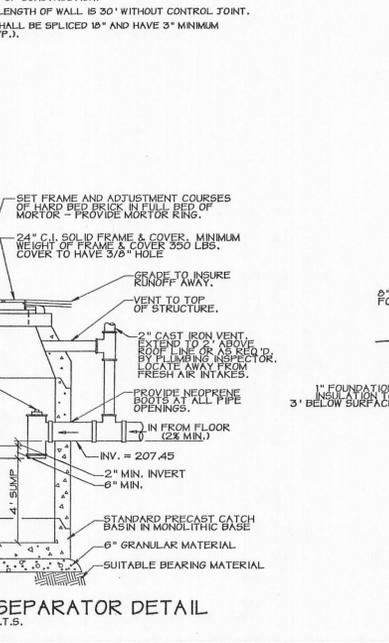
1. PLAN WAS PREPARED FOR NAMED CLIENT TO SHOW THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM IN ACCORDANCE WITH TITLE 5 AND ANY MORE RESTRICTIVE REGULATIONS OF THE BOARD OF HEALTH.
2. DESIGN IS BASED UPON A TOPOGRAPHIC PLAN SHOWING THE VISUALLY APPARENT FEATURES OF THE SITE IN THE ENVIRONS OF THE SYSTEM AND THE SUBSURFACE EXPLORATIONS LISTED ON THIS PLAN.
3. PROPERTY LINES ARE BASED ON THE PLAN REFERENCED AND SHALL BE CONFIRMED AS BEING MOST RECENT PRIOR TO CONSTRUCTION.
4. PRIOR TO CONSTRUCTION, CONTRACTOR/OWNER SHALL REVIEW CURRENT ZONING, WETLANDS, AND ALL OTHER REGULATIONS THAT MAY AFFECT THIS PLAN.
5. THE BUILDINGS, DRIVEWAY, AND SEPTIC TANK CONFIGURATION MAY BE ALTERED WITH THE APPROVAL OF THE ENGINEER.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PLAN DEFICIENCIES PRIOR TO INITIATION OF CONSTRUCTION AND ALL DEFICIENCIES FOUND DURING CONSTRUCTION SHALL BE REPORTED ON THE DAY DISCOVERED.
7. ALL KNOWN DRINKING WATER WELLS WITHIN 200 FEET OF THE SEWAGE DISPOSAL SYSTEM, AND ALL KNOWN SEWAGE DISPOSAL SYSTEMS WITHIN 200 FEET OF THE WELL, ARE SHOWN OR INDICATED.
8. THE SEWAGE DISPOSAL SYSTEM SHALL BE OFFSET A MINIMUM OF 10 FEET FROM ANY DRAIN OR PROPERTY LINE, 50 FEET FROM ANY SURFACE WATERS OR WETLANDS, 100 FEET FROM DRINKING WATER WELLS, OR AS OTHERWISE REQUIRED BY STATE AND LOCAL REGULATIONS.
9. ANY ALTERATIONS WITHIN 100' OF WETLANDS REQUIRE A FILING WITH THE CONSERVATION COMMISSION.
10. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE REASONABLE CARE TO PREVENT DISRUPTION OF SERVICES. LOCATIONS OF ALL UTILITIES TO BE CONFIRMED BY THE CONTRACTOR IN THE FIELD. CONTRACTOR SHALL NOTIFY DEP-SAFE & MUNICIPAL DEPARTMENTS TO LOCATE AND FIELD MARK UTILITIES.
11. ALL PAVING, CURBING, LAWN AREAS AND PLANT MATERIALS DISTURBED DURING CONSTRUCTION ARE TO BE RESTORED/REPLACED IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS.
12. CONTRACTOR TO PROVIDE FINAL ANCHOR CONFIGURATION AND MOUNTING DETAILS FOR ALL OIL/WATER SEPARATOR AND HOLDING TANK ASSEMBLY, CONFIGURATION AND COMPONENTS.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL CALL DIG SAFE (1-800-322-4044) PRIOR TO CONSTRUCTION.
2. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THESE PLANS, TITLE 5, BOARD OF HEALTH REGULATIONS, AND ALL OTHER APPLICABLE REGULATIONS UNLESS SPECIFIED OTHERWISE IN WRITING.
3. ALL STRUCTURES SHALL BE OF AN APPROVED DESIGN, SET LEVEL ON 4 INCHES OF COARSE STONE, AND BE MADE WATERTIGHT. SEPTIC TANK TEES SHALL BE OF LENGTH REQUIRED BY TITLE 5 (THOSE SHOWN ARE FOR FOUR FOOT LIQUID DEPTH).
4. ALL GRAVITY PIPING SHALL BE 4" AND LAID TRUE TO LINE AND GRADE WITH SECURE WATERTIGHT JOINTS AND BE BEDDED AND BACKFILLED AS REQUIRED BY MANUFACTURER:
 - A. THE BUILDING SEWER SHALL BE SCHEDULE 40 PVC, CAST OR DUCTILE IRON OR AN APPROVED EQUAL.
 - B. SOLID AND PERFORATED PIPES UNDER PAVEMENT SHALL BE SCHEDULE 40 PVC, OR THE APPROVED EQUIVALENT.
 - C. DISTRIBUTION LINES SHALL BE SCHEDULE 40 PVC/ABS, SOR 35 PVC, OR HDPE-ASTM D 3034.
5. GRAVITY LINES SHALL HAVE THE FOLLOWING MINIMUM SLOPES:
 - A. BUILDING TO SEPTIC TANK 0.02 FT/FT.
 - B. SEPTIC TANK TO DISTRIBUTION BOX 0.01 FT/FT.
 - C. DISTRIBUTION BOX TO LINES 0.005 FT/FT.
6. DISTRIBUTION BOX OUTLETS SHALL BE LEVEL FOR THE FIRST TWO FEET AND AN INLET TEE CUT OFF ONE INCH ABOVE OUTLETS SHALL BE INSTALLED IF INLET PIPE EXCEEDS 0.00 FT/FT OR IF PIPE IS A FORCE MAIN.
7. ALL LARGE Boulders, ROOTS AND OTHER UNSUITABLE MATERIALS ENCOUNTERED IN EXCAVATIONS SHALL BE REMOVED.
8. ALL SURFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF FILL OR STONE.
9. WHEN GRAVEL FILL IS REQUIRED, ALL ORGANIC MATERIALS SHALL BE REMOVED AND FILL CONFORMING TO REQUIREMENTS OF 300CR 15.255 SHALL BE PLACED IN A MANNER TO INSURE SUPPORT AND PERCOLATION.
10. DOUBLE WASHED STONE SHALL BE DURABLE AND FREE FROM IRON, FINES AND DUST.
11. ALL BACKFILL SHALL BE CLEAN EARTHEN MATERIALS FREE OF LARGE STONES AND FROZEN MATERIALS. BACKFILL SHALL BE PLACED TO SUPPORT THE SYSTEM, INSURE PROPER RUNOFF AND BE STABILIZED TO PREVENT EROSION.
12. COVER OVER STRUCTURES AND LEACHING WORKS SHALL BE A MINIMUM OF 9 INCHES AND A MAXIMUM OF 36 INCHES. STRUCTURES TO BE FOR H520 LOADING.



1. THE DESIGN ENGINEER CERTIFIES THE WALL MEETS THE REQUIREMENTS OF 310 CMR 12.25(2)(D).
2. THE WALL DESIGN SHALL BE REVIEWED PRIOR TO CONSTRUCTION IF PROPOSED SITE CONDITIONS CHANGE AND IF WHEN ADDITIONAL SUBSURFACE CONDITIONS IN THE AREA OF THE WALL ARE KNOWN.
3. WALL CONSTRUCTION MUST BE SUPERVISED BY ENGINEER AND AT A MINIMUM THE FOLLOWING OBSERVATIONS WILL BE REQUIRED:
 - A. EXCAVATION
 - B. FOOTING STEEL
 - C. WALL STEEL/FOOTING
 - D. PRIOR TO BACKFILLING
4. BACKFILL SHALL BE MADE TO APPLY EQUAL LOADING - NO STONES OVER 6" SHALL BE PLACED WITHIN 3' OF WALL.
5. FINAL WALL DESIGN INCLUDING PROFILE AND CONSTRUCTION AND CONTROL JOINT SPACING SHALL BE SUBMITTED TO THE ACTION BOARD OF HEALTH & ENGINEERING DEPARTMENT TWO (2) WEEKS, PRIOR TO INITIATING OF CONSTRUCTION.
6. MAXIMUM LENGTH OF WALL IS 30' WITHOUT CONTROL JOINT.
7. REBARS SHALL BE SPLICED 10" AND HAVE 3" MINIMUM COVER (TYP.).



SOIL TESTS

SOL EVALUATOR:
MARK T. DONOHUE
BOARD OF HEALTH AGENT
BRENT REAGOR

1. PERCOLATION RATES: (MIN/IN)

FW	RATE	DEPTH	DATE
5242-1A	<2 MIN/IN	52"	5/24/02
5242-2B	<2 MIN/IN	56"	5/24/02

2. OBSERVATION HOLE DATA

On-site Review DEEP HOLE # 5242-1N	On-site Review DEEP HOLE # 123-1
Date: 5/24/02 Time: AM Weather: 70'S FAIR	Date: 12/3/03 Time: AM Weather: CLEAR, COLD
SURFACE Elevation: 210.0+ Slope: 2-5% Stones: NONE	SURFACE Elevation: 210.2+ Slope: 5% Stones: NONE
Landuse: VACANT	Landuse: VACANT COMMERCIAL
Vegetation: GRASSY/BRUSH	Vegetation: PIONEER GRASS/BRUSH
Landform: KAME TERRACE	Landform: KAME DELTA
Parent Material: ABLATION TILL	Parent Material: LACUSTRINE

DEEP OBSERVATION HOLE LOG					DEEP OBSERVATION HOLE LOG						
Depth to	Horizon	Texture	Color	Soil Mottling	Other	Depth to	Horizon	Texture	Color	Soil Mottling	Other
0-42"	TOPSOIL FILL				AP BW INDISTINCT HORIZ COARSE SAND	0-14"	FILL				LOAM/SAND
42-107"	C1	L5	2.5Y5/6	NO MOTTLES DETECTED	HORIZ. BEDDING SAND 1" @ 20% GRAVEL	14-128"	C	C-M5	10YR5/6	NONE	STONES, COBBLES, FEW BOULDERS, 25% GRAVEL

DEPTH TO: Bedrock: NOT DETERMINED Standing Water: NONE Weeping Slides: NONE Seasonal High Ground Water: >17"

On-site Review DEEP HOLE # 5242-25	On-site Review DEEP HOLE # 123-2
Date: 5/24/02 Time: AM Weather: 70'S FAIR	Date: 12/3/03 Time: AM Weather: CLEAR, COLD
SURFACE Elevation: 211.1+ Slope: 2-5% Stones: NONE	SURFACE Elevation: 211.2+ Slope: 5% Stones: NONE
Landuse: VACANT	Landuse: VACANT COMMERCIAL
Vegetation: GRASSY/BRUSH	Vegetation: PIONEER GRASS/BRUSH
Landform: KAME TERRACE	Landform: KAME DELTA
Parent Material: ABLATION TILL	Parent Material: LACUSTRINE

DEEP OBSERVATION HOLE LOG					DEEP OBSERVATION HOLE LOG						
Depth to	Horizon	Texture	Color	Soil Mottling	Other	Depth to	Horizon	Texture	Color	Soil Mottling	Other
0-19"	TOPSOIL FILL				AP BW INDISTINCT HORIZ COARSE SAND	0-16"	FILL				LOAM/SAND
19-120"	C1	L5	10YR4/4	NO MOTTLES DETECTED	HORIZ. BEDDING SAND 1" @ 20% GRAVEL	16-136"	C	C-M5	10YR5/6	NONE	STONES, COBBLES, FEW BOULDERS, 25% GRAVEL

DEPTH TO: Bedrock: NOT DETERMINED Standing Water: NONE Weeping Slides: NONE Seasonal High Ground Water: >120"

DESIGN ELEVATIONS - SEPTIC

TOP OF FOUNDATIONS	210.0+/-
AT BUILDING	208.75
AT SEPTIC TANK INLET	208.50
AT SEPTIC TANK OUTLET	208.25
AT D-BOX INLET	208.15
AT D-BOX OUTLET	207.90
AT CHAMBER	207.85
TOP OF CHAMBER	207.75
TOP 1/8-1/2" STONE	208.92
TOP 3/4-1 1/2" STONE	208.75
BOTTOM OF CHAMBER	204.75

DESIGN CRITERIA - SEPTIC

1. SYSTEM IS DESIGNED TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH DOMESTIC USAGE CONSISTING OF RESIDENCE WASTE AND FOR THE FLOWS CALCULATED.
2. SYSTEM IS NOT DESIGNED FOR THE USE OF A GARBAGE GRINDER.
3. FLOWS: 2 BEDROOMS @ 110 GPD = 220 GPD COMMERCIAL SPACE FOR 15 EMPLOYEES @ 15 GPD = 225 GPD TOTAL = 445 GPD
4. SEPTIC TANK: 2 x FLOW, REQUIRED 1500 GALLON TWO COMPARTMENT TANK - MINIMUM SIZE
5. LEACHING AREA:
 - A. PERCOLATION RATE USED: 2 MIN/IN
 - B. SOIL CLASS: 1
 - C. APPLICATION RATE: 0.74 0.5
 - D. AREAS PROVIDED:
 1. BOTTOM AREA: 550 SF
 2. SIDEWALL: 260 SF
 3. TOTAL: 810 SF
 - F. CAPACITY PROVIDED: 467 GPD
 - E. MINIMUM GROUNDWATER OFFSET PROVIDED: 6" GWPD @ 3
 7. EXPANDED REQUIRED FOR LESS THAN 100' OFFSET BETWEEN SAS AND RECHARGE SYSTEM IS 100', A

DESIGN ELEVATIONS (FLOOR DRAINS)

1ST FLOOR DRAIN RIM (ALL)	210.00
INVERTS	
AT BAY 1 OUT	208.85
AT BAY 2 IN	208.35
AT BAY 2 OUT	208.25
AT BAY 3 IN	207.95
AT BAY 3 OUT	207.85
OIL/WATER SEPARATOR IN	207.45
OIL/WATER SEPARATOR OUT	207.20
HOLDING TANK IN	207.00

**SUBSURFACE SEWAGE DISPOSAL SYSTEM
POWDERMILL ROAD
ACTON, MASSACHUSETTS**

PREPARED FOR: POWDER RIDGE REALTY COMPANY
POWDERMILL ROAD ACTON, MASS.

SCALE: 1 INCH = 20 FEET

REV. DATE: DEC. 3, 2003
REV. DATE: NOV. 20, 2003
DATE: SEPTEMBER 2003

ACTON SURVEY & ENGINEERING, INC.
97 GREAT ROAD - P.O. BOX 666 - ACTON - MASS.
(978) 263-3666

(MWC):SDSKPROJ\6055B26.DWG\60555DS.D

