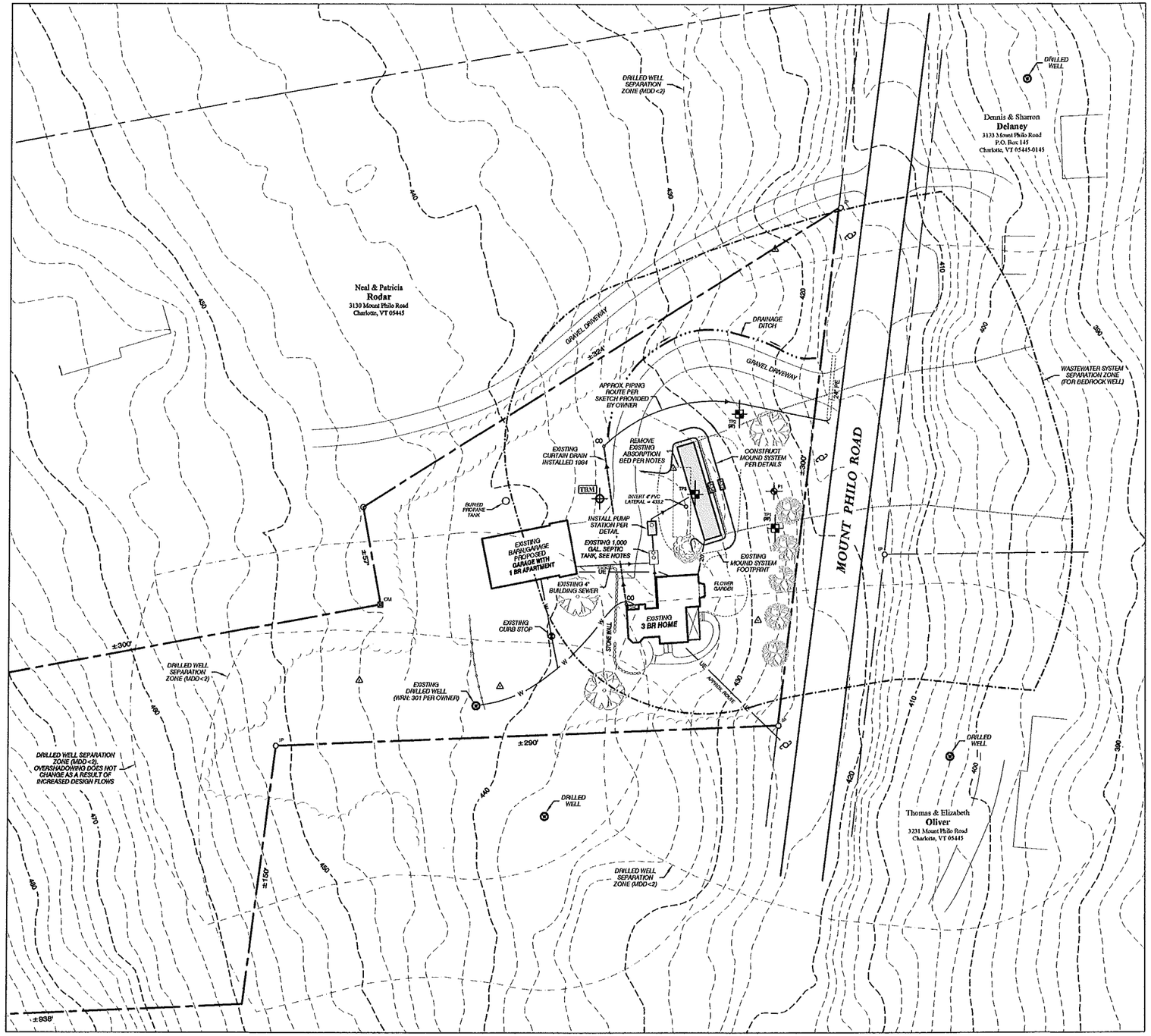
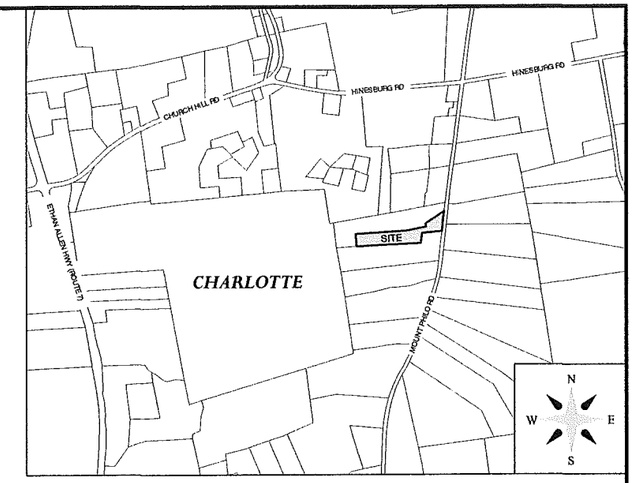



## SITE PLAN

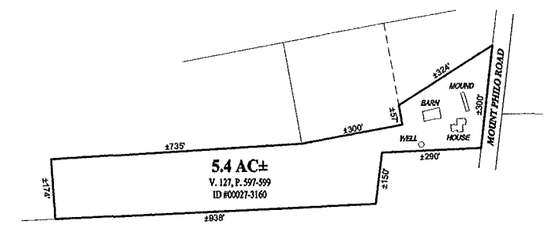
1" = 30'

0 30 60 90 120 FT




## LOCATION MAP

NTS




## PLOT PLAN

1" = 200'

## LEGEND

- TEST PIT (DEPTH TO ESHWT)
- PERCOLATION TEST
- CONTROL POINT (SPIKENAIL IN GROUND)
- UTILITY POLE
- DRILLED WELL
- WATER VALVE
- IRON PIPE
- CONC. MONUMENT
- EXISTING CONTOURS
- APPROX. BOUNDARY
- TREE LINE
- WOOD FENCE
- FM — FORCE MAIN
- W — WATER LINE
- UE — U/G UTILITIES

**- BOUNDARY NOTE -**

THIS IS NOT A BOUNDARY SURVEY. APPROXIMATE BOUNDARIES ARE DEPICTED PER OWNER, DEED DESCRIPTION AND PLAT OF RECORD.

**- EXISTING SYSTEM NOTE -**

PORTIONS OF THE EXISTING WASTEWATER SYSTEM THAT INTERFERE WITH CONSTRUCTION SHALL BE DISPOSED OF IN ACCORDANCE WITH §1-924 OF THE 2007 VT ENVIRONMENTAL PROTECTION RULES.

**- MOUND NOTE -**

THE LAND AREA 3:1 DOWNGRADIENT OF THE ELEVATED SAND MOUND IS THE EFFLUENT DISPERSAL AREA AND SOIL IN THIS AREA MAY NOT BE REMOVED OR DISTURBED (TO EXTEND OF OWNERSHIP). DO NOT DISTURB SOIL WITHIN 10' OF ALL OTHER TOES.

NO CONSTRUCTION, VEHICULAR TRAFFIC OR PARKING IS PERMITTED ON TOP OF THE MOUND OR SUBSURFACE TANKS. CONTACT THE DESIGNER AS NECESSARY FOR MORE INFORMATION.

TBM
TEMPORARY BENCHMARK
- NAVD 88 -
NAIL IN BASE 18" TREE
ELEVATION = 436.7

CALL DIG SAFE
PRIOR TO ANY EXCAVATION
DIAL "811" (OR 1-888-DIG-SAFE)

STATE OF VERMONT
JUSTIN T. WILLIS
NO. 344-B
LICENSED DESIGNER

| NO. | DATE | REVISION | BY |
|---|---|---|---|

WILLIS DESIGN ASSOC., INC.
P.O. BOX 1001, JERICHO, VERMONT 05465 (802) 858-9228

**SITE PLAN**
**WASTEWATER SYSTEM & WATER SUPPLY**

**MARY M. VOLK**
**REVOCABLE TRUST**
3160 MOUNT PHILO ROAD
**CHARLOTTE - VERMONT**

| | |
|---|---|
| DRAWN: JTW | SCALE: NOTED |
| DESIGN: JTW | |
| DATE: 6/9/15 | SHEET: S1 |
| PROJECT: 15-032 | |
| DRAWING: 15032-1 | |

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## WELL DETAILS

| | |
|---|---|
| Date Well Was Completed: | 03-23-1984 |
| Date Report Received: | 05-04-1984 |
| Well Driller License Number: | 198 = Thomas Williams , Spafford & Sons of Williston VT Inc |
| Well Report Number: | 301 |
| Well Number/Tag Number: | |
| Comments: | CASING: DRIVE SHOE 6" HOLE 12' IN BEDROCK |
| Town: Charlotte | |
| Map Cell: | 13B2 |
| Tax Map: | |
| E-911 Address: | |
| Sub Division: | |
| Lot Number: | |
| Owner's First Name: | ROD |
| Owner's Last Name: | MURRAY |
| Purchaser's First Name: | |
| Purchaser's Last Name: | |
| Well Use Code: | 01 = Domestic |
| Reason for Well Code: | |
| Drilling Equipment Code: | 2 = Rotary (AP) |
| Total Depth of Well (in feet): | 400.00 |
| Yield (in GPM): | 6.00 |
| Yield Test Tested For (in hours): | 0.00 |
| Static Water Level (in feet): | 0.00 |
| Well Is Overflowing: | N |
| Depth To Bedrock: | 25 |
| Total Casing Length (in feet): | 37.00 |
| Casing Diameter (in inches): | 6.00 |
| Casing Length Below Land Surface (in feet): | 0.00 |
| Casing Length Exposed (in feet): | 0.00 |
| Casing Material: | |
| Casing Weight (in lbs/foot): | 0.00 |
| Casing Finish Code: | 1 = Above ground, finished |
| Length of Liner used (in feet): | 0.00 |
| Liner Diameter (in inches): | 0.00 |
| Liner Material: | |
| Liner Weight (in lbs/foot): | 0.00 |
| Grout Type: | 0 |
| Seal Type: | |
| Diameter Drilled In Bedrock (in inches): | 0.00 |
| Depth Drilled In Bedrock (in feet): | 0.00 |
| Screen Make and Type: | |
| Screen Material: | |
| Screen Length (in feet): | 0.00 |
| Screen Diameter (in inches): | 0.00 |
| Screen Slot Size (in inches): | 0.000 |
| Depth to top of Screen below land surface (in feet): | 0.00 |
| Gravel Size or Type: | |
| Method of Sealing Casing Code: | 1 = Drive shoe only |
| Yield Test Method Code: | 3 = Compressed air |
| Well Development Code: | |
| Not Steel Casing: | N |
| Has Water Been Analyzed: | N |
| Well Has Screen: | N |
| AW Partial: | N |
| Unique GIS Name: | CI301 |
| Lat Degree: | 44 |
| Lat Minutes: | 18 |
| Lat Seconds: | 39.2220 |
| Long Degree: | 73 |
| Long Minutes: | 13 |
| Long Seconds: | 36.1080 |
| Location Determination Method: | 4 = screen digitized |
| Well Type: | |
| Depth To Liner Top (in feet): | 0.00 |
| HydroFractured: | N |
| Hydro Fractured Resulting Flow (GPM): | 0.00 |
| Well Location Submitted As A Dot On A Map: | N |
| RecordStatus: | A |
| UOE: | |
| DOE: | |
| UOC: | GISLatLongUpdater |
| DOC: | 4/10/2008 12:00:00 AM |
| WellReportID: | 10730 |

| Starting Depth | Ending Depth | Water Bearing | Lithology Code | Code Description | Lithology Description |
|---|---|---|---|---|---|
| 0.00 | 25.00 | | H | Hardpan | hardpan |
| 25.00 | 400.00 | | R | Rock, bedrock, ledge, etc | red dolomite |

**- NOTE -**
RESULTS OF WATER ANALYSIS ATTACHED (TABLE A11-5 & A11-7)

## WATER SYSTEM DEMAND (11.3)

EXISTING WELL TO SERVE EXISTING 3 BR SINGLE FAMILY HOME WITH NEW 1 BR DETACHED APARTMENT.

AVERAGE DAY DEMAND (11.3.0)

| | | |
|---|---|---|
| EXISTING 3 BR HOME: | 2 BRx140 GPD | = 420 GPD |
| PROPOSED 1 BR APARTMENT | | = 140 GPD |
| ADD TOTAL | | = 560 GPD |

MAXIMUM DAY DEMAND (11.3.1)

MDD = 560 GPD/720 MIN. = 0.78 GPM

INSTANTANEOUS PEAK DEMAND (11.3.2)

IPD = 5 GPM x 2 UNITS = 10 GPM

LONG TERM YIELD (LTY) PER WELL DRILLER LOG = 6 GPM
6 GPM/2 = 3 GPM.

STORAGE VOLUME (11.8.2.3)

REQUIRED STORAGE:

WHEN LTY>MDD, STORAGE = 55% x ADD, 0.55 x 560 = 308 GALS.

CASING STORAGE (11.8.2.3.1)

WELL DEPTH = 400.0'
STATIC LEVEL = 380.0' (–20')
PUMP ELEVATION = 20.0 (±20' FROM BOTTOM)
TOTAL AVAILABLE HEAD = STATIC LEVEL – PUMP DEPTH = 360.0 FT

PREDICTED DRAWDOWN: DD = SE + (TAH (MDD/Y))

WHERE: DD = DEPTH TO PREDICTED DRAWDOWN (FT)
SE = DEPTH TO STATIC WATER LEVEL (FT)
TAH = TOTAL AVAILABLE HEAD (FT)
MDD = MAXIMUM DAY DEMAND (GPM)
Y = LONG TERM YIELD (GPM) USE ½ OF DRILLER LOG
DD = 20 + (360 (0.78/3.0)) = 113.6'

TAH – DD = AVAILABLE STORAGE = 360.0 – 113.6 = 246.4'

CASING DIAMETER = 6" (1.5 GAL/FT)

STORAGE IN CASING = 246.4 FT x 1.5 GAL/FT = 369.6 GAL.

ADDITIONAL REQUIRED STORAGE: 308 GAL. – 369.6 GAL. = 61.6 GAL. SURPLUS (NO STORAGE NEEDED).

*WHEN APARTMENT IS CONSTRUCTED THE PRESSURE TANK, WATER SERVICE AND PUMP SHALL BE CAPABLE OF DISCHARGING 10 GPM @50 PSI. A NEW PUMP WILL BE REQUIRED IF THE THIS DISCHARGE RATE CANNOT BE MET. REPORT THE RESULTS OF PUMP TEST OR PUMP REPLACEMENT TO THE DESIGNER. THIS REQUIREMENT SHALL BE ADDRESSED IN A SUBSEQUENT INSTALLATION CERTIFICATION (PRIOR TO OCCUPANCY OF APARTMENT).

RESULTS OF TABLE A11-5 & A11-7 WATER ANALYSIS ATTACHED.

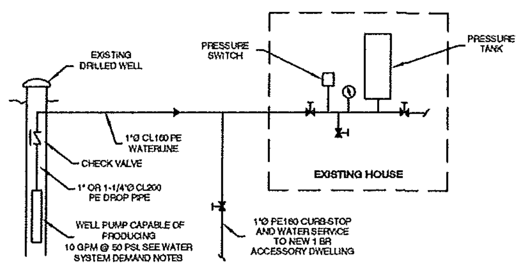
## DRILLED WELL ISOLATION DISTANCES (CH. 21)

| CONTAMINATION SOURCES | MINIMUM |
|---|---|
| ROADWAY/PARKING LOT (EDGE OF SHOULDER) | 25 FT |
| DRIVEWAY (LESS THAN 3 RESIDENCES) | 15 FT |
| DISPOSAL FIELD/BASAL AREA OF MOUND | 100–200 FT (1) |
| SUBSURFACE WASTEWATER PIPING/TANKS | 50 FT |
| PROPERTY LINE | 10 FT (2) |
| LIMIT OF HERBICIDE APPLICATION (UTILITY R.O.W.) | 100 FT (3) |
| BUILDINGS | 10 FT |
| CONCENTRATED LIVESTOCK HOLDING AREA AND MANURE STORAGE SYSTEMS | 200 FT |

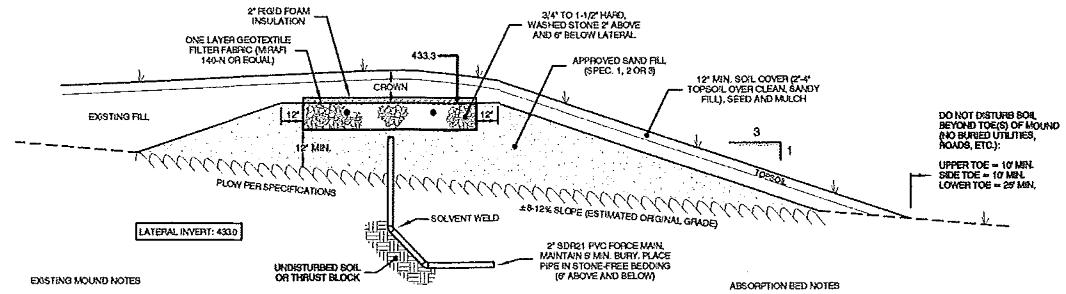
1. AS DEPICTED BY WELLHEAD PROTECTION ZONE.
2. INCREASE TO 50 FT ADJACENT TO AGRICULTURAL CROPLAND.
3. APPLICATION IN LAST 12 MO. OR IN FUTURE.

* WELLHEAD PROTECTION ZONE DEPICTED ON PLAN.
** NO WELL PERMITTED WITHIN FLOODWAY.

NOTES:
1. DRILLED WELL(S) SHALL BE INSTALLED WHERE SHOWN (LOCATION TO BE STAKED BY DESIGNER). A PERMIT AMENDMENT WILL BE REQUIRED IF CONSTRUCTED IN ANY OTHER LOCATION.
2. WELL LOCATION(S) HAVE BEEN SELECTED ONLY ON THE BASIS OF SEWAGE DISPOSAL ISOLATION DISTANCES. NO HYDROGEOLOGIC INFORMATION WAS GATHERED OR ANALYZED TO ESTABLISH THAT THESE LOCATIONS WILL SUPPLY POTABLE WATER OF SUFFICIENT QUALITY AND QUANTITY.
3. WATER SERVICE(S) TO BE 1"ø PE OR APPROVED EQUAL. MAINTAIN 25' MIN. ISOLATION FROM WATER SERVICE TO DISPOSAL FIELD OR SEPTIC TANK AND 10' MIN. TO SEWER PIPING.




**WATER SYSTEM SCHEMATIC**
NTS




EXISTING MOUND NOTES

THE LATERALS WITHIN THE EXISTING GRAVITY-FED SYSTEM ARE PLUGGED BY SOIL THAT HAS INFILTRATED THE STONE. THE SURROUNDING STONE IS DRY. REMOVE "FAILED" SYSTEM COMPONENTS PER NOTES (SHEET S1).

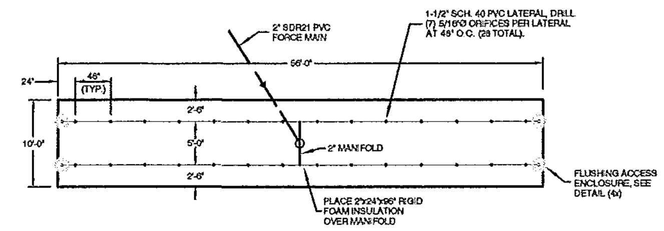
REMOVE THE EXISTING MOUND TO ORIGINAL GRADE (WITHOUT DISTURBING PLOWED HORIZON) AND RECONSTRUCT PER DETAILS. SOME SOIL REMOVED FROM OLD MOUND MAY BE USED TO CAP THE NEW SYSTEM.

PROPOSED LATERAL INVERTS ARE BASED ON INVERTS OF EXISTING LATERAL PIPING. ORIGINAL GRADE BELOW EXISTING LATERALS = ±431.7. ELEVATION LOWERED ±0.2' (NEW SYSTEM LOWER ON SLOPE) = ±431.5 TO ORIGINAL GRADE).

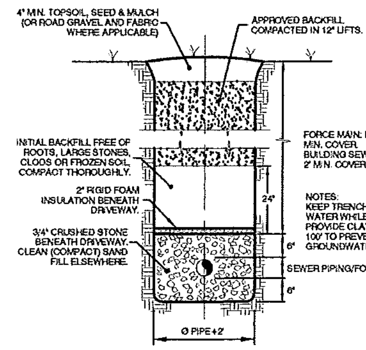
- SECTION -
**MOUND SYSTEM**
NTS

ABSORPTION BED NOTES

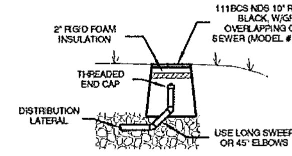
1. EXCAVATE BED BOTTOM LEVEL. RAKE TO SCARIFY SURFACE.
2. PRIME AND SOLVENT WELD ALL CONNECTIONS.
3. ORIFICES SHALL POINT DOWNWARDS WITH A "SIM-TECH" ORIFICE SHIELD (OR APPROVED EQUAL) COVERING EACH HOLE (28 TOTAL).
4. DISTRIBUTION: 56'x10' = 560 SF, 560 SF/28 ORIFICES = 20.0 SF/ORIFICE.



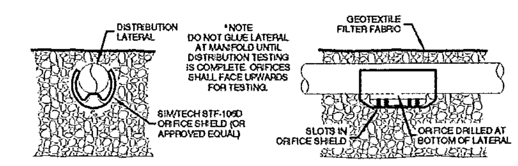

- PLAN VIEW -
**ABSORPTION BED**




TYPICAL
**SEWER TRENCH**
NTS




**FLUSHING ENCLOSURE**
NTS




**ORIFICE SHIELD**
NTS

## §1-913(c) SAND FILL SPECIFICATIONS

(1)

| SIEVE NO. | OPENING (MM) | % PASSING (BY WGT) |
|---|---|---|
| 3/8 | 9.500 | 85 - 100 |
| 40 | 0.420 | 25 - 75 |
| 60 | 0.240 | 0 - 30 |
| 100 | 0.149 | 0 - 10 |
| 200 | 0.074 | 0 - 5 |

(2)

| SIEVE NO. | OPENING (MM) | % PASSING (BY WGT) |
|---|---|---|
| 4 | 4.750 | 95 - 100 |
| 8 | 2.360 | 80 - 100 |
| 16 | 1.190 | 50 - 85 |
| 30 | 0.590 | 25 - 60 |
| 50 | 0.297 | 10 - 30 |
| 100 | 0.149 | 2 - 10 |

ASTM SPECIFICATION C-33, INTENDED FOR MANUFACTURED MATERIAL.

(3)

| SIEVE NO. | OPENING (MM) | % PASSING (BY WGT) |
|---|---|---|
| 3/8 | 9.500 | 85 - 100 |
| 40 | 0.420 | 30 - 50 |
| 200 | 0.074 | 0 - 5 |

THE FILL MATERIAL MUST MEET SPECIFICATIONS (1), (2), OR (3) ABOVE. INTERPOLATION OF ANALYSIS IS NOT PERMITTED.

## TEST PIT LOGS

DATE 8/10/15
METHOD EXCAVATOR (DENTON EXCAVATING)
PRESENT J. WILLIS, L.D.
T. VOLK, LANDOWNER

TP–1
0"–9": 10YR 3/3 (DARK BROWN) VERY FINE SANDY LOAM, LOOSE, MANY ROOTS.
9"–26": 10YR 4/4 (DARK YELLOWISH-BROWN) FINE SANDY LOAM, VERY FRIABLE, FEW ROOTS.
26"–48": 10YR 4/4 (DARK YELLOWISH-BROWN) VERY FINE SANDY LOAM, FRIABLE TO FIRM, FAINT REDOX. FEATURES.

ESTIMATED SEASONAL HIGH WATER TABLE (ESHWT) 26"
BEDROCK NONE TO DEPTH

TP–2
0"–11": 10YR 3/3 (DARK BROWN) VERY FINE SANDY LOAM, LOOSE, MANY ROOTS.
11"–26": 10YR 4/4 (DARK YELLOWISH-BROWN) FINE SANDY LOAM, VERY FRIABLE, MANY ROOTS.
26"–38": 10YR 3/3 (DARK BROWN) VERY FINE SANDY LOAM, FIRM, FAINT REDOX. FEATURES.

ESHWT 26"
BEDROCK NONE TO DEPTH

TP–3 (CONDUCTED WITHIN MOUND TO DETERMINE DEPTH TO ORIGINAL GRADE).
0"–12": DENSE FINE SANDY LOAM.
12"–38": MOUND SAND FILL.
38"–48" TILLED "A" HORIZON, WET (WASTEWATER).

## PERCOLATION TEST RESULTS

CONDUCTED 8/20/15

| NUMBER | DEPTH | DROP | RUNS | RATE (EXTRAPOLATED) |
|---|---|---|---|---|
| P1 | 18" | 1.0" | 7 | 6.3 MPI* |

*DESIGN PERC. RATE

## WASTEWATER SYSTEM BASIS OF DESIGN

PROPOSED REPLACEMENT MOUND SYSTEM TO SERVE EXISTING 3 BR SINGLE FAMILY HOME WITH NEW 1 BR DETACHED APARTMENT.

| | | | |
|---|---|---|---|
| DESIGN FLOWS: | EXISTING HOUSE: | (3 BRx140 GPD/BR) | = 420 GPD |
| | PROPOSED APARTMENT: | (1 BRx140 GPD/BR) | = 140 GPD |
| | | | = 560 GPD |

APPLICATION RATE: (0.8)(3÷√6.3) = 0.96 GDSF (USE 1.0 MAX. RATE)
560 GPD÷1.0 GDSF = 560 SF REQUIRED ABSORPTION AREA.

CONSTRUCT A 10'W X 56'L ABSORPTION BED = 560 SF AREA.
BASAL AREA: 560 GPD/0.74 GDSF = 756.8 SF = 56'Lx13.5'W.

## HEAD LOSS CALCULATIONS

REQUIRED GPM:

| | | |
|---|---|---|
| (28) 5/16"ø ORIFICES = 1.82 GPM/ORIF. @2.5' | = | 50.1 GPM |
| 1/4"ø WEEP HOLE = ±1.7 GPM @±5.5' | = | 1.7 |
| TOTAL DISCHARGE RATE ........................ | = | 51.8 GPM |

FRICTION LOSS:

| | | |
|---|---|---|
| BASED UPON 50 FT EQUIVALENT LENGTH OF 2" FM | = ± | 2.4 FT |
| ELEVATION LOSS = 433.0 (LATERAL)–±430 (P-OFF) | = | 3.0 |
| NETWORK LOSS = 1.31 X 2.5' | = | 3.3 |
| TOTAL LOSS ........................ | = ± | 8.7 FT |

## SEPTIC TANK NOTES

THE EXISTING SEPTIC TANK MAY BE UTILIZED UNTIL THE APARTMENT IS CONSTRUCTED (SEE DETAIL). A NEW, 1,500 GALLON TANK SHALL BE INSTALLED IN ITS PLACE PRIOR TO OCCUPANCY OF THE APARTMENT. THE INSTALLATION SHALL BE INSPECTED BY THE DESIGNER.

1. INSPECT EXISTING SEPTIC TANK FOR LEAKS AND/OR STRUCTURAL DAMAGE (I.E. MISSING BAFFLES, FRACTURES, ETC.). THE SEPTIC TANK MAY REQUIRE REPLACEMENT IF DAMAGED OR LEAKING. IDENTIFY AND CONNECT (AS NECESSARY) ALL WASTEWATER PIPING FROM HOUSE TO SEPTIC TANK. PIPING SHALL BE 4" SCH. 40 PVC @1/4" PER FT.
2. INSTALL A "POLYLOK P–122" EFFLUENT FILTER (OR APPROVED EQUAL) IN OUTLET END OF TANK OR IN EXTERNAL BASIN. PROVIDE ALARM KIT IF DESIRED BY OWNER.
3. INSTALL RISER TO GRADE OVER CENTER COVER (AND OUTLET COVER IF EFFLUENT FILTER INSTALLED INSIDE TANK).

## MOUND CONSTRUCTION SPECIFICATIONS

1. CONTACT THE DESIGNER PRIOR TO ANY CONSTRUCTION FOR AN ONSITE MEETING WITH THE CONTRACTOR TO STAKE-OUT THE MOUND SYSTEM AND TO DISCUSS CONSTRUCTION REQUIREMENTS. ALL ELEVATIONS OF FEATURES SUCH AS FLOOR, SEPTIC TANK AND PUMP STATION TO BE FIELD VERIFIED. CONTACT DESIGNER TO VERIFY PUMP SIZE IF ELEVATIONS DEVIATE FROM THOSE NOTED ON THE PLAN. REPORT ANY PROPOSED CHANGES IN THE LOCATIONS OF THE HOUSE, SUB-GRADE TANKS, DRIVEWAY, ETC.
2. THE CONTRACTOR SHALL SUBMIT A RECENT SIEVE ANALYSIS (<6 MONTHS) OF THE SAND FILL. GRAIN SIZE DISTRIBUTION SHALL COMPLY WITH EITHER SPECIFICATION (1, 2 OR 3) NOTED ON PLAN.
3. ABOVE GROUND VEGETATION SHALL BE CLOSELY CUT AND REMOVED FROM THE MOUND AREA AND 10 FEET FROM EDGE OF THE SYSTEM AS MEASURED FROM THE TOE(S). PRIOR TO PLOWING, THE PUMP DISCHARGE LINE FROM THE PUMP STATION TO THE DISTRIBUTION PIPING HEADER SHALL BE INSTALLED.
4. THE FORCE MAIN SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH ENVIRONMENTAL PROTECTION RULES, SECTION A–04. THE MINIMUM TEST PRESSURE SHALL BE 50 PSI AT THE HIGHEST POINT IN THE LINE. CONTRACTOR TO FURNISH WATER AND EQUIPMENT TO PERFORM TEST AND NOTIFY DESIGNER 48 HOURS PRIOR TO TEST.
5. PLOW THE MOUND AREA TO A DEPTH OF 7" TO 8" PARALLEL TO THE LAND CONTOUR WITH THE PLOW THROWING THE SOIL UPSLOPE TO PROVIDE A PROPER INTERFACE BETWEEN THE FILL AND NATURAL SOIL. TREE STUMPS SHOULD NOT BE PULLED. PLOW WITH A MOLD-BOARD PLOW OR A CHISEL POINT ADAPTED TO A BACKHOE BUCKET (USED IN WOODED AREAS ONLY).
6. THE MOUND PERIMETER SHALL BE GRADED TO ENSURE DIVERSION OF SURFACE WATER RUN-OFF (DIVERSION DITCH OR SWALE AS SHOWN).
7. ONCE PLOWING IS COMPLETE, CONTACT THE DESIGNER FOR AN INSPECTION OF THE SITE PRIOR TO PLACEMENT OF FILL.
8. DUMP THE APPROVED SAND FILL AROUND THE EDGE OF THE PLOWED AREA WHILE KEEPING THE TRUCK WHEELS OFF THE PLOWED AREA. WHEEL TRACKS IN THE PLOWED AREA WILL LEAD TO COMPACTION AND RUTS, ADVERSELY AFFECTING THE OPERATION OF THE SYSTEM.
9. MOVE THE SAND AROUND INTO PLACE WHILE MAINTAINING AT LEAST 12" OF SAND UNDER THE EQUIPMENT TO MINIMIZE COMPACTION OF PLOWED LAYER. SHAPE THE SIDES TO THE REQUIRED SLOPES.
10. FORM THE TRENCH/BED BY MOVING ALONG ITS LENGTH. BOTTOM OF TRENCH/BED MUST BE LEVEL. HAND WORK WILL BE NECESSARY.
11. DUMP THE STONE IN THE TRENCH/BED BY MOVING UP THE SIDE SLOPE. LEVEL THE STONE TO REQUIRED ELEVATION.
12. CHANNEL STONE FOR LATERALS. LAY PIPE LEVEL WITH ORIFICES POINTING UPWARDS (WITHOUT ORIFICE SHIELDS INSTALLED UNTIL PRESSURE TESTING IS COMPLETE).
13. CONTACT THE DESIGNER PRIOR TO BACKFILLING THE LATERALS TO TEST FOR COMPLETE AND EQUAL DISTRIBUTION. DISCHARGE RATES SHOULD NOT EXCEED 10% BETWEEN ORIFICES IN A SINGLE TRENCH/BED (OR PER SQUARE FOOT LOADING RATE IF STEPPED TRENCHES). TANKS AND FORCE MAIN SHALL NOT BE BACKFILLED UNTIL INSPECTED AS WELL.
14. FILL REMAINING 2" OF STONE OVER LATERALS AFTER TEST IS COMPLETE.
15. COVER ENTIRE TRENCH/BED WITH "MIRAFI 140-N" GEO-TEXTILE FILTER FABRIC (OR EQUAL).
16. PLACE A MINIMUM OF 4" OF TOPSOIL OVER 8" OF NATIVE SOIL OVER THE ENTIRE MOUND. CROWN 18" TOTAL IN CENTER AND SHAPE SURFACE AS SHOWN.
17. LANDSCAPE THE MOUND BY PLANTING GRASSES ON THE SURFACE. SHRUBS PLACED AT THE FOOT AND UP THE SLOPE ON THE SIDES AND ENDS ARE OPTIONAL. SHRUBS PLACED ON TOP OF THE MOUND MAY INTERFERE WITH THE DISTRIBUTION SYSTEM. UPON COMPLETION OF CONSTRUCTION, CONTACT THE DESIGNER.

## OPERATION AND MAINTENANCE NOTES

1. THE DISPOSAL SYSTEM MAY REQUIRE ADJUSTMENTS OR MODIFICATIONS DURING STARTUP AS WELL AS DURING THE LIFETIME OF THE SYSTEM. THESE ADJUSTMENTS INCLUDE RE-LEVELING SUBSURFACE TANKS OR DISTRIBUTION BOXES DUE TO FROST ACTION OR SETTLEMENT. FILL MAY BE ADDED TO REPAIR EROSION OR LEVEL SETTLED AREAS.
2. IN GENERAL, SEPTIC TANKS MUST BE PUMPED EVERY 2 TO 3 YEARS (OR MORE FREQUENTLY DEPENDING UPON USAGE). AT LEAST ONCE A YEAR, THE DEPTH OF SLUDGE AND SCUM IN THE SEPTIC TANK BE MEASURED. THE TANK SHOULD BE PUMPED IF:

(A) THE SLUDGE IS CLOSER THAN TWELVE INCHES TO THE OUTLET BAFFLE,
(B) THE SCUM LAYER IS CLOSER THAN THREE INCHES TO THE SEPTIC TANK BAFFLE.
(C) FOLLOWING SEPTIC TANK CLEANING IN UNITS OVER 5,000 GALLONS, SURFACES OF THE TANK SHOULD BE INSPECTED FOR LEAKS AND CRACKS).

3. AT LEAST ONCE A YEAR, DOSING TANKS AND DISTRIBUTION BOXES SHOULD BE OPENED AND SETTLED SOLIDS REMOVED AS NECESSARY AND THE DOSING TANK OR DISTRIBUTION BOX CHECKED FOR LEVELNESS.
4. PLUMBING AND ELECTRICAL COMPONENTS ASSOCIATED WITH PUMP STATIONS OR ADVANCED TREATMENT UNITS MUST BE CHECKED REGULARLY FOR OPERATION AND LEAKS.
5. TOXIC OR HAZARDOUS SUBSTANCES SHOULD IN GENERAL NOT BE DISPOSED OF IN SEPTIC SYSTEMS. THESE SUBSTANCES MAY PASS THROUGH THE SYSTEM IN AN UNALTERED STATE AND CONTAMINATE GROUNDWATER OR REMAIN IN THE SEPTAGE AND SUBSEQUENTLY CONTAMINATE THE SOIL OR CROPS AT THE SITE OF ULTIMATE DISPOSAL.
6. FLOW ADJUSTMENT DIALS WITHIN DISTRIBUTION BOXES SHOULD BE CHECKED AND ADJUSTED AS NECESSARY TO ENSURE EQUAL FLOW TO EACH LATERAL. ADJUSTMENT MUST BE PERFORMED WITHIN ONE YEAR OF INSTALLATION AND WHENEVER THE SEPTIC TANK IS PUMPED. FAILURE TO DO SO MAY OVERLOAD AND CAUSE THE PREMATURE FAILURE OF AN ABSORPTION TRENCH OR BED SYSTEM.
7. THE EFFLUENT FILTER IN THE SEPTIC TANK OUTLET BAFFLE SHOULD BE CLEANED (HOSED-OFF) EVERY 3–6 MONTHS OR MORE FREQUENTLY DEPENDING ON USAGE. THE EFFLUENT FILTER MUST BE CLEANED IF SEWAGE BEGINS TO DRAIN SLOWLY FROM THE HOUSE. THE SEPTIC TANK MAY REQUIRE PUMPING IF THE FILTER BECOMES PLUGGED.
8. IMPROPER MAINTENANCE OF THE PRETREATMENT UNIT (SEPTIC TANK) AND RELATED COMPONENTS MAY RESULT IN PLUGGING WITHIN THE DISTRIBUTION NETWORK. THE LIFE OF THE DISPOSAL SYSTEM CANNOT BE ESTIMATED DUE TO A VARIETY OF OPERATIONAL AND ENVIRONMENTAL FACTORS. INTRODUCTION OF MATERIAL OTHER THAN HUMAN WASTES (E.G. USE OF NON–BIODEGRADABLE DETERGENTS, CHEMICALS AND USE OF A GARBAGE DISPOSAL). EXCESSIVE SEWAGE FLOWS OR RAINFALL WILL ADVERSELY AFFECT THE OPERATION OF THE DISPOSAL SYSTEM. SOIL SETTLEMENT, FREEZING OF COMPONENTS AND CLOGGING DUE TO ORGANIC SOLIDS ACCUMULATION WILL REQUIRE REPAIRS.

- USE OF GARBAGE DISPOSALS IS PROHIBITED UNLESS SPECIFIED OTHERWISE.
- IMPROPERLY OPERATING WATER SOFTENERS CAN ADVERSELY AFFECT THE OPERATION OF THE SYSTEM. DEMAND–DOSED SYSTEMS ARE RECOMMENDED VERSUS TIME–DOSED. CONNECTION TO A WASTEWATER DISPOSAL SYSTEM SHOULD BE AVOIDED IF POSSIBLE.

9. THE OWNER ASSUMES FULL RESPONSIBILITY FOR THE CONTINUED PROPER USE AND MAINTENANCE OF THE SYSTEM.

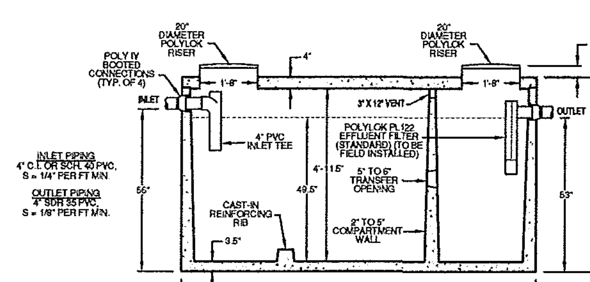
SUBSURFACE TANK NOTE

**THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AN AREA WHICH CONTAINS SUFFICIENT SOIL DEPTH FOR TANK PLACEMENT. ALTERNATE LOCATIONS MAY BE REQUIRED TO ACHIEVE DESIRED ELEVATIONS AND PROPER SOIL COVER OVER TANK. SOIL DEPTH SHOULD VERIFIED PRIOR TO ORDERING OR DELIVERY OF TANK(S).**

**KEEP EXCAVATION FREE OF WATER DURING INSTALLATION. PLACE 3"–6" CRUSHED STONE BED BENEATH TANK.**

**- CAUTION -**
GAS WITHIN SEPTIC TANKS AND PUMP STATIONS CAN CAUSE DEATH IF ENTERED WITHOUT PROPER RESPIRATORY EQUIPMENT. SUCH SPACES ARE SUBJECT TO CONFINED-SPACE ENTRY REGULATIONS PUBLISHED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA STANDARD CFR 1910.146).

| MINIMUM ISOLATION REQUIREMENTS | |
|---|---|
| FOUNDATION/FOOTING DRAIN | 10' |
| WATER SERVICE | 25' |
| DRILLED WELL | 50' |
| DRIVEWAY | 5' |



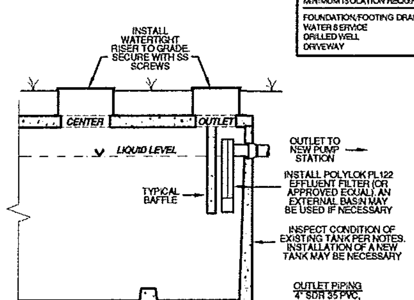

SPECIFICATIONS:
- CONCRETE MINIMUM STRENGTH 5000PSI @ 28 DAYS.
- STEEL REINFORCEMENT GRADE 60.
- EFFLUENT FILTER TO BE FIELD INSTALLED BY CONTRACTOR.
- TOP SEAM CONSTRUCTION.
- WATER TIGHT TO TOP OF CONCRETE.
- BOOTED PIPE CONNECTIONS.
- EFFLUENT FILTER ALARM AVAILABLE.
- WEIGHTS SUBJECT TO VARIATION.

SECTION

1,500 GAL.
2 COMPARTMENT
**SEPTIC TANK***
CAMP PRECAST #1500STL2CW
NTS

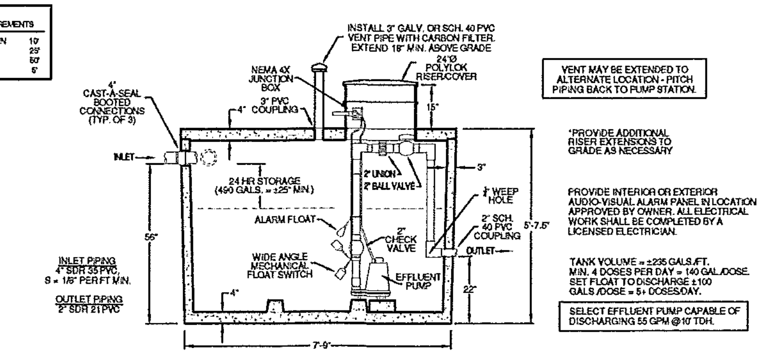
OUTSIDE TANK DIMENSIONS: 10'-2.5"L x 6'-41.5" x 5'-7"H

*THIS TANK TO BE INSTALLED WHEN APARTMENT IS CONSTRUCTED, SEE SEPTIC TANK NOTES.




EXISTING 1,000 GAL.
**SEPTIC TANK**
NTS

***NOTE***
PUMP TANK PRIOR TO OPERATION OF NEW SYSTEM




VENT MAY BE EXTENDED TO ALTERNATE LOCATION - PITCH PIPING BACK TO PUMP STATION.

*PROVIDE ADDITIONAL RISER EXTENSIONS TO GRADE AS NECESSARY

PROVIDE INTERIOR OR EXTERIOR AUDIO-VISUAL ALARM PANEL IN LOCATION APPROVED BY OWNER. ALL ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN.

TANK VOLUME = ±235 GALS./FT.
MIN. 4 DOSES PER DAY = 140 GAL./DOSE.
SET FLOAT TO DISCHARGE ±100 GALS./DOSE = 5+ DOSES/DAY.

SELECT EFFLUENT PUMP CAPABLE OF DISCHARGING 55 GPM @10' TDH.

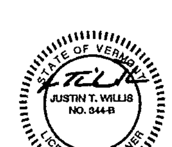
SPECIFICATIONS:
- CONCRETE MINIMUM STRENGTH 5000PSI @ 28 DAYS.
- STEEL REINFORCEMENT GRADE 60.
- TOP SEAM CONSTRUCTION.
- WATER TIGHT TO TOP OF CONCRETE.
- 4" CAST-A-SEAL BOOTED CONNECTIONS.
- WEIGHTS SUBJECT TO VARIATION.

SECTION

1,000 GAL.
**PUMP STATION**
CAMP PRECAST #1000PS
NTS

OUTSIDE TANK DIMENSIONS: 7'-9"L x 5'-4"W x 5'-7.5"H

**CALL DIG SAFE**
PRIOR TO ANY EXCAVATION
*DIAL "811" (OR 1-888-DIG-SAFE)*




| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

WILLIS DESIGN ASSOC., INC.
P.O. BOX 1001, JERICHO, VERMONT 05465 (802) 858-9228

**DETAILS**
**WASTEWATER SYSTEM & WATER SUPPLY**

**MARY M. VOLK**
**REVOCABLE TRUST**
3160 MOUNT PHILO ROAD
**CHARLOTTE - VERMONT**

| | |
|---|---|
| DRAWN: JTW | SCALE: NOTED |
| DESIGN: JTW | |
| DATE: 9/9/15 | SHEET: D1 |
| PROJECT: 15-032 | |
| DRAWING: 15032-1 | |

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