

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802.939.4331 | WWW.TCEVT.COM

| Revisions | No. | Description | Date | By |
|-----------|-----|-------------|------|----|
| | | | | |

Use of These Drawings
1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.



Project Title

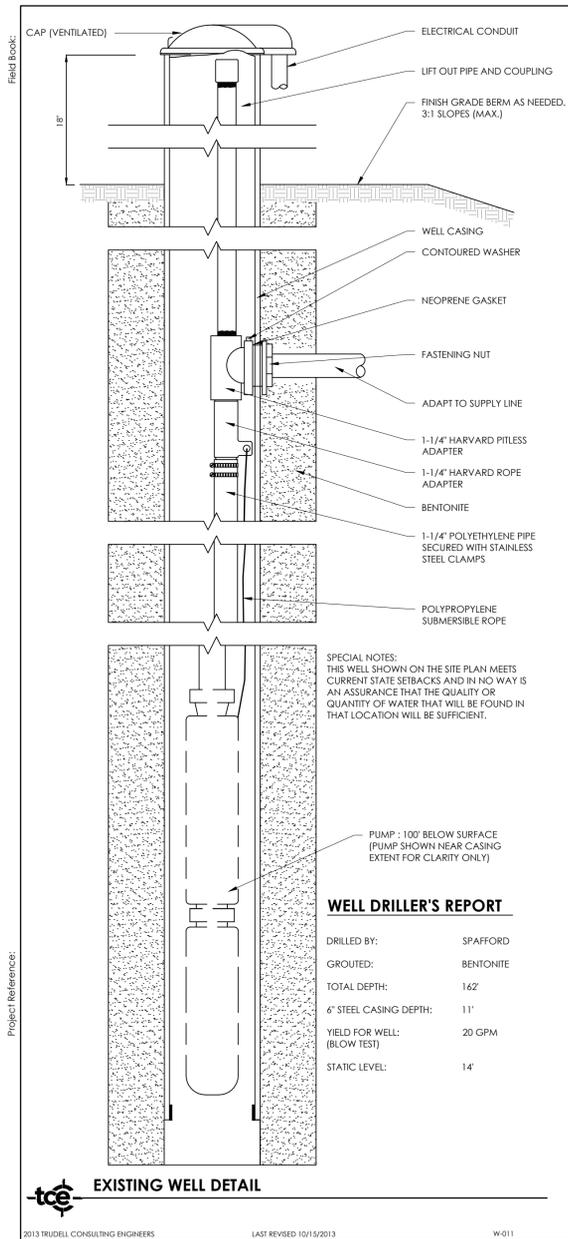
Chris & Diana Borie
VT Wildflower Farm
3488 Ethan Allen Highway
Charlotte, VT

Sheet Title

Sanitary Details

Date: 10/18/2013
Scale: AS SHOWN
Project Number: 2013067
Drawn By: PJM
Project Engineer:
Approved By:

C8-01



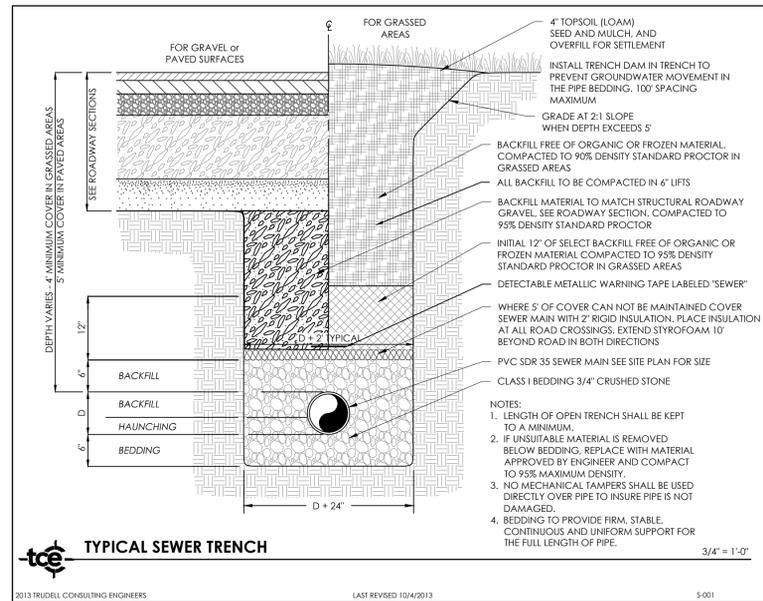
SPECIAL NOTES:
THIS WELL SHOWN ON THE SITE PLAN MEETS CURRENT STATE SETBACKS AND IN NO WAY IS AN ASSURANCE THAT THE QUALITY OR QUANTITY OF WATER THAT WILL BE FOUND IN THAT LOCATION WILL BE SUFFICIENT.

PUMP - 10' BELOW SURFACE (PUMP SHOWN NEAR CASING EXTENT FOR CLARITY ONLY)

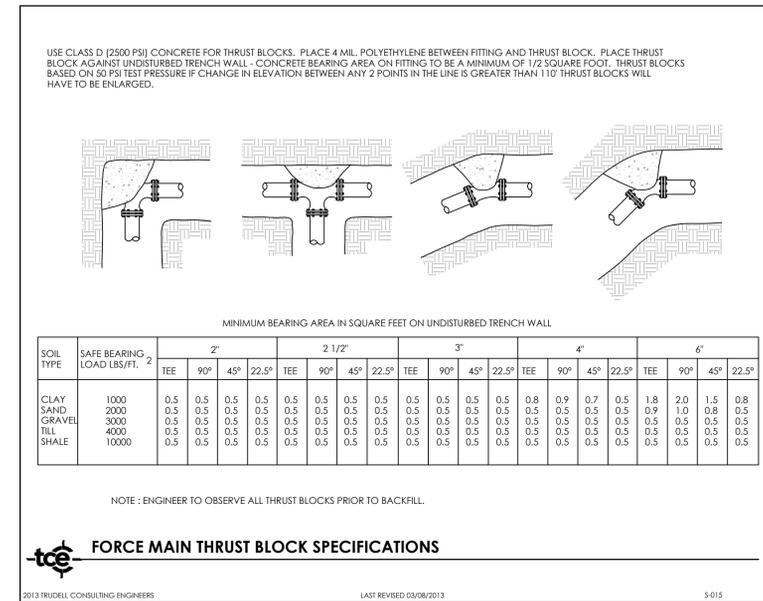
WELL DRILLER'S REPORT

DRILLED BY: SPAFFORD
GROUTED: BENTONITE
TOTAL DEPTH: 162
6\"/>

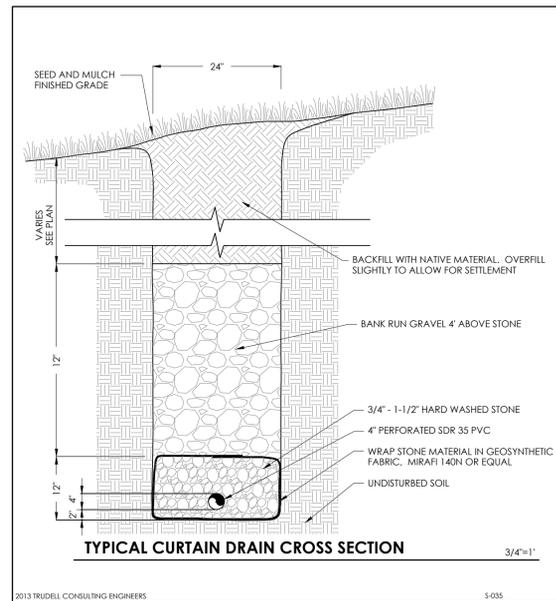
EXISTING WELL DETAIL
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/15/2013 W-011



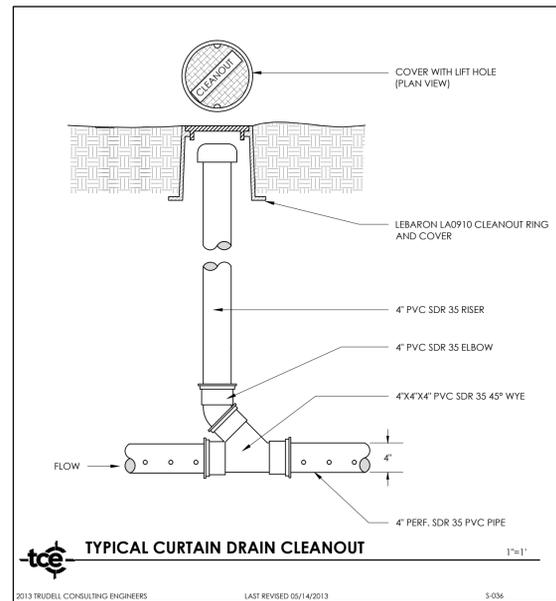
TYPICAL SEWER TRENCH
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/14/2013 S-001



FORCE MAIN THRUST BLOCK SPECIFICATIONS
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 03/08/2013 S-015



TYPICAL CURTAIN DRAIN CROSS SECTION
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 05/14/2013 S-035



TYPICAL CURTAIN DRAIN CLEANOUT
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 05/14/2013 S-036

CONTRACTOR'S CERTIFICATION REQUIRED

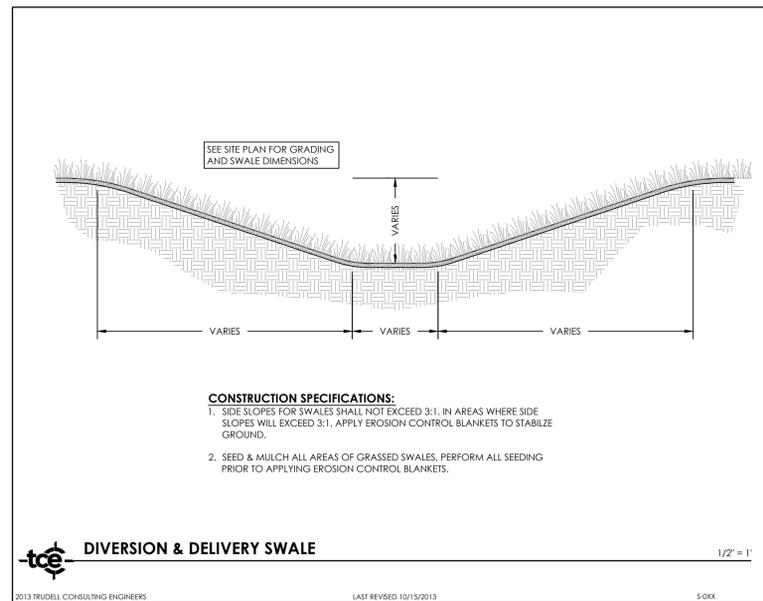
PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WATER SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME: _____
 AUTHORIZED AGENTS NAME: _____
 SIGNATURE: _____ DATE: _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE:

CONTRACTOR'S CERTIFICATION FOR POTABLE WATER SYSTEMS
 2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/4/2013 WH-002



DIVERSION & DELIVERY SWALE
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/15/2013 S-00X



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Revisions
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Chris & Diana Borie
VT Wildflower Farm
3488 Ethan Allen Highway
Charlotte, VT

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Site Details and Notes

Date: 10/18/2013
 Scale: AS SHOWN
 Project Number: 2013067
 Drawn By: PJM
 Project Engineer: _____
 Approved By: _____

C8-02

Field Book:

- CONTACT THE DESIGN ENGINEER PRIOR TO CONSTRUCTION FOR AN ON-SITE MEETING WITH THE CONTRACTOR TO DISCUSS THE CONSTRUCTION AND TO STAKE OUT THE SITE WITH THE PROPER ORIENTATION OF THE MOUND ACCORDING TO THE APPROVED PLAN.
- ABOVEGROUND VEGETATION SHALL BE CLOSELY CUT AND REMOVED FROM THE GROUND SURFACE THROUGHOUT THE AREA TO BE UTILIZED FOR THE PLACEMENT OF THE FILL MATERIAL. PRIOR TO PLOWING, THE LOSING PUMP DISCHARGE LINE FROM THE PUMP CHAMBER TO THE POINT OF CONNECTION WITH THE DISTRIBUTION PIPING HEADER SHALL BE INSTALLED. CONTACT THE DESIGN ENGINEER TO OBSERVE TESTING OF THE SEWER FORCEMAIN.
- THE AREA SURROUNDING THE MOUND SHALL BE GRADED TO PROVIDE DIVERSION OF SURFACE RUN-OFF WATERS.
- ONCE THE PLOWING IS COMPLETED, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER FOR AN INSPECTION OF THE SITE PRIOR TO THE PLACEMENT OF SAND FILL.
- PLACE THE APPROVED SAND FILL AROUND THE EDGE OF THE PLOWED AREA KEEPING THE WHEELS OF THE DUMP TRUCK FROM PLOWED AREA. WHEEL TRACKS IN THE AREA WILL LEAD TO COMPACTION. THE EFFLUENT WILL FLOW WITHIN THE RUTS AND SEEP FROM THE MOUND.
- USING A CRAWLER TRACTOR WITH A BLADE, MOVE THE SAND AROUND INTO PLACE. KEEP AT LEAST 6 INCHES OF SAND UNDER THE TRACKS TO MINIMIZE COMPACTION OF THE PLOWED SURFACE. SHAPE THE SIDES TO THE REQUIRED SLOPES AS SHOWN ON THE SITE PLAN.
- WITH THE BLADE OF THE CRAWLER, FORM THE BED (OR TRENCH) BY MOVING ALONG ITS LENGTH. MAKE SURE THE BOTTOM OF THE BED (OR TRENCH) IS LEVEL. SOME HAND SHOVEL LEVELING WILL BE REQUIRED.
- PRIOR TO THE PLACEMENT OF STONE IN THE BED (OR TRENCH) THE STONE SHALL BE WASHED FREE OF ALL STONE DUST OR SEDIMENT. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE WASHING OF THE STONE. WASHING SHALL BE DONE BY TILTING THE BODY OF THE DUMP TRUCK AND, WITH A FIRE HOSE, HOISING THE STONE UNTIL THE WATER EXITING THE TRUCK IS CLEAR. CONTACT THE DESIGN ENGINEER FOR INSPECTION OF THE WASHED STONE PRIOR TO PLACEMENT.
- UPON ACCEPTANCE, USE A BUCKET ON THE CRAWLER TO PLACE THE STONE IN THE BED (OR EACH TRENCH) BY TRAVELING UP THE SIDE SLOPE. LEVEL THE STONES OFF TO THE DESIRED ELEVATION.
- THE PRESSURE DISTRIBUTION PIPE SHALL BE PLACED IN CRUSHED STONE WITH THE ORIFICES UPWARD. THE HOLES SHALL BE COVERED WITH AN ORIFICE SHIELD. ONE ORIFICE MAY BE FACED DOWNWARD TO ALLOW DRAINAGE OF THE PIPING AND TO HELP PREVENT FREEZING. THE MATERIAL USED TO COVER THE TOP OF THE STONE SHALL BE ONE LAYER OF FILTER FABRIC AND ONE LAYER OF INSULATION.
- CONTACT THE DESIGN ENGINEER PRIOR TO BACKFILLING FOR INSPECTION OF THE DISTRIBUTION PIPING.
- FINISH BY PLACING 2 INCHES OF STONE OVER THE DISTRIBUTION PIPE.
- PLACE ONE LAYER OF FILTER FABRIC OVER STONES. THE ENTIRE MOUND SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF TOPSOIL (18 INCHES AT THE CREST) SHAPING THE MOUND SURFACE AS SHOWN ON THE PLAN.
- LANDSCAPE THE MOUND BY PLANTING GRASSES ON THE SURFACE. A MIXTURE OF 90 PERCENT BIRDSFOOT TREFLOID AND 10 PERCENT TIMOTHY MAY BE DESIRABLE IF THE MOUND WILL NOT BE MAINTAINED. IF MAINTAINING IS DESIRED, A COMBINATION OF 60 PERCENT BLUEGRASS, 30 PERCENT CREEPING RED FESCUE AND 10 PERCENT ANNUAL RYE GRASS MAY BE THE DESIRED VEGETATIVE COVER. SHRUBS PLACED ALONG THE SIDE SLOPES AND TOE ARE RECOMMENDED. DO NOT PLACE SHRUBS OR TREES DIRECTLY ON TOP OF THE MOUND AS ROOTS WILL INTERFERE WITH THE DISTRIBUTION SYSTEM.
- UPON COMPLETION OF THE CONSTRUCTION, CONTACT THE DESIGN ENGINEER. IF THE MOUND CONSTRUCTION IS SATISFACTORY, THE DESIGN ENGINEER WILL PROVIDE WRITTEN CERTIFICATION THAT THE CONSTRUCTION WAS DONE IN ACCORDANCE WITH THE APPROVED PLANS.

PRESSURIZED MOUND CONSTRUCTION SPECIFICATIONS

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/29/2013 SH-009

PRESSURE TEST

UPON COMPLETION OF CONSTRUCTION OF A FORCE MAIN, THE LINE SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

AFter THE PIPE HAS BEEN LAID, ALL NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE OF AT LEAST 1.5 X THE HIGHEST WORKING PRESSURE IN THE SECTION.

- TEST PRESSURE RESTRICTIONS. TEST PRESSURES SHALL:
 - NOT BE LESS THAN 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION.
 - NOT EXCEED PIPE OR THRUST RESTRAINT DESIGN PRESSURES.
 - BE OF AT LEAST 2 (TWO) HOUR DURATION.
 - NOT VARY BY MORE THAN 4.5 PSI.
 - NOT EXCEED TWICE THE RATED PRESSURE OF THE VALVES WHEN THE PRESSURE BOUNDARY OF THE TEST SECTION INCLUDES CLOSED GATE VALVES.
- PRESSURIZATION.
 - EACH VALVED SECTION OF PIPE SHALL BE FILLED WITH WATER SLOWLY AND THE SPECIFIED TEST PRESSURE, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE LINE OR SECTION UNDER TEST AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE, SHALL BE APPLIED BY MEANS OF A PUMP CONNECTED TO THE PIPE.
 - AIR REMOVAL. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, AIR SHALL BE EXPELLED COMPLETELY FROM THE PIPE VALVES.
 - EXAMINATION. ALL EXPOSED PIPE, FITTINGS, VALVES, AND JOINTS SHALL BE EXAMINED CAREFULLY DURING THE TEST. ANY DAMAGED OR DEFECTIVE PIPE, FITTINGS, OR VALVES THAT ARE DISCOVERED FOLLOWING THE PRESSURE TEST SHALL BE REPAIRED OR REPLACED WITH SOUND MATERIAL AND THE TEST SHALL BE REPEATED AT NO EXPENSE TO OWNER.

LEAKAGE TEST

A LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH THE PRESSURE TESTS.

- LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED AND THE PIPE HAS BEEN FILLED WITH WATER.
- ALLOWABLE LEAKAGE. NO PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{ND\sqrt{P}}{7400}$$

WHERE:
 L IS THE ALLOWABLE LEAKAGE, IN GALLONS PER HOUR;
 N IS THE NUMBER OF JOINTS IN THE LENGTH OF PIPELINE TESTED;
 D IS THE NOMINAL DIAMETER OF THE PIPE, IN INCHES; AND
 P IS THE AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH GAUGE.

NOTE: IN THE EVENT THAT THE FORCE MAIN IS RELATIVELY SHORT (100 FEET OR LESS), THE PROJECT ENGINEER CAN UTILIZE DISCRETION IN TEST REQUIREMENTS.

TESTING FORCE MAINS

(ENVIRONMENTAL PROTECTION RULES CH.1, EFFECTIVE 9/29/07 SECTION 1-A-05(g))

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/4/2013 SH-001

- THIS SITE DOES NOT MEET THE MINIMUM REQUIREMENTS FOR A CONVENTIONAL SANITARY DISPOSAL SYSTEM. THE DESIGN OF A MOUND TYPE DISPOSAL SYSTEM WILL BRING THE SITE INTO CONFORMANCE WITH THE MINIMUM REQUIREMENTS.
- THE ENGINEER HAS DETERMINED A LOCATION FOR SANITARY DISPOSAL ON THE PROPERTY. BASED ON SITE INVESTIGATION AND SOIL TESTS, THE REQUIRED DISPOSAL AREA AND SYSTEM DESIGN WERE DETERMINED BY CODE REQUIREMENTS AND SUBMITTED TO APPROVING AUTHORITIES. UPON APPROVAL, THE OWNER ASSUMES RESPONSIBILITY FOR PROPER CONSTRUCTION AND CONTINUED OPERATION OF THE SYSTEM.
- THE OWNER IS RESPONSIBLE FOR OPERATING THE DISPOSAL SYSTEM IN A MANNER WHICH WILL PROTECT THE PUBLIC HEALTH AND PREVENT POLLUTION.
- NEW DISPOSAL SYSTEMS REQUIRE ADJUSTMENTS OR MODIFICATIONS DURING START UP, AND DURING THE LIFE OF THE SYSTEM. THESE ADJUSTMENTS INCLUDE LEVELING THE SEPTIC TANK, PUMP STATION OR SIPHON, DUE TO SETTLEMENT OR FROST ACTION. FILL MAY BE ADDED TO REPAIR EROSION OR LEVEL SETTLED AREAS.
- ON SITE SANITARY DISPOSAL SYSTEMS REQUIRE REGULAR INSPECTION AND MAINTENANCE. THE SEPTIC TANK, BIO-FILTER AND PUMP STATION OR SIPHON CHAMBER, IF APPLICABLE, SHOULD BE INSPECTED ANNUALLY AND PUMPED OUT AND CLEANED EVERY 3 YEARS. THE PLUMBING AND ELECTRICAL SYSTEMS, IF APPLICABLE, SHOULD BE CHECKED FOR PROPER OPERATION AND LEAKS.
- THE LIFE OF THE DISPOSAL SYSTEM CAN BE AFFECTED BY A VARIETY OF OPERATIONAL AND ENVIRONMENTAL FACTORS. THE PRESENCE OF EXCESS GROUNDWATER, RAINWATER, INTRODUCTION OF MATERIAL OTHER THAN HUMAN WASTES (INCLUDING BUT NOT LIMITED TO, BACKWASH FROM WATER SOFTENERS, POOLS, SPAS, AND/OR SIMILAR EQUIPMENT), OR EXCESSIVE SEWAGE FLOWS WILL ADVERSELY AFFECT OPERATION OF ANY DISPOSAL SYSTEM. SOIL SETTLEMENT, FREEZING OF COMPONENTS, AND CLOGGING DUE TO ORGANIC SOLIDS ACCUMULATION WILL REQUIRE REPAIRS.
- THE OWNER IS RESPONSIBLE FOR COMPLIANCE WITH STATE AND LOCAL OPERATION AND MAINTENANCE REQUIREMENTS. THE ENGINEER AND CONTRACTOR ASSUMES NO RESPONSIBILITY FOR THE IMPROPER USE AND/OR MAINTENANCE OF THE SYSTEM.
- WARNING: WITH SUCH FINE FILTRATION (SEPTIC TANK EFFLUENT FILTER) A SCHEDULED MAINTENANCE PROGRAM MUST BE FOLLOWED.
- THE OWNER IS RESPONSIBLE FOR ALL STATE AND LOCAL PERMITS AND REQUIRED CONDITIONS OF SAID PERMITS. THIS INCLUDES BUT IS NOT LIMITED TO ANNUAL INSPECTIONS AND REPORTING. THE OWNER IS ALSO RESPONSIBLE FOR RECORDING PERMITS IN THE TOWN LAND RECORDS OFFICE. IF CONSTRUCTION DOES NOT OCCUR IN THE TIME FRAMES ESTABLISHED BY SAID PERMITS THEN THE OWNER IS RESPONSIBLE FOR REVISING DESIGN PLANS AS NEEDED AND RE-PERMITTING. IF CHANGES IN THE REGULATIONS OCCUR ONCE THE PERMITS HAVE EXPIRED, TRUDELL CONSULTING ENGINEERS DOES NOT OFFER ANY GUARANTEES THAT THE PERMIT WILL BE RE-ISSUED. CHANGING REQUIREMENT MAY PREVENT COMPLIANCE AND CAUSE CERTAIN PROPERTIES TO BE UN-DEVELOPABLE.
- IF THE SYSTEM IS DESIGNED USING THE PERFORMANCE BASED DESIGN ACCORDING TO PREVIOUS STATE PERMITS THE SYSTEM SHALL BE TESTED FOR THREE CONSECUTIVE YEARS BY A LICENSED ENGINEER TO DEMONSTRATE THAT THE SYSTEM IS WORKING AS DESIGNED.

MOUND DISPOSAL FIELD - OPERATION AND MAINTENANCE

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/6/2013 SH-004

CONTRACTOR'S CERTIFICATION REQUIRED

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WASTEWATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WASTEWATER DISPOSAL AND COLLECTION SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME _____

AUTHORIZED AGENTS NAME _____

SIGNATURE _____ DATE _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE: _____

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/6/2013 SH-002

IMPORTANT NOTE

CHECK WITH STATE OR ENGINEER TO VERIFY SETBACK DISTANCES. SETBACK DISTANCES CAN VARY FROM WHAT IS SHOWN HEREON BASED ON THE SIZE AND SCOPE OF THE PROJECT OR NEWLY PUBLISHED RULES FROM OTHER STATE AGENCIES.

| ITEM | HORIZONTAL DISTANCE (FEET) * | | |
|---|------------------------------|-------------|-------|
| | DISPOSAL FIELD | SEPTIC TANK | SEWER |
| DRILLED WELL | b | 50 | 50 |
| GRAVEL PACK WELL, SHALLOW WELL OR SPRING | b | 75 | 75 |
| LAKES, PONDS, IMPOUNDMENTS | 50 | 25 | 25 |
| RIVERS AND STREAMS | 50 | 25 | 10 |
| DRAINAGE SWALES, ROADWAY DITCHES | 25 | -- | -- |
| MAIN OR MUNICIPAL WATER LINES | 50 | 50 | d |
| ATMOSPHERIC WATER STORAGE TANKS | 50 | 50 | 50 |
| SERVICE WATER LINES | 25 | 25 | d |
| ROADWAYS, DRIVEWAYS, PARKING LOTS | 10 | 5 | c |
| TOP OF EMBANKMENT OR SLOPE GRATER THAN 30% | 25 | 10 | -- |
| PROPERTY LINE (e) | 2 ² | 10 | 10 |
| TREES | 10 | 10 | 10 |
| OTHER DISPOSAL FIELD OR REPLACEMENT SYSTEM | 10 | -- | -- |
| FOUNDATION DRAINS, FOOTING DRAINS, CURTAIN DRAINS | 35 ⁴ | 10 | -- |
| PUBLIC WATER SUPPLY (e) | f | f | f |
| SUCTION WATER LINE | 100 | 50 | 50 |

* THESE DISTANCES MAY BE REDUCED WHEN EVIDENT THAT THE DISTANCE IS UNNECESSARY TO PROTECT AN ITEM, OR INCREASED IF NECESSARY TO PROVIDE ADEQUATE PROTECTION.
 * INDIRECT DISCHARGE REQUIREMENTS SUPERSEDE THIS IF DIFFERENT.
 * WATER SUPPLY RULES SUPERSEDE THIS IF DIFFERENT.

ISOLATION DISTANCES

ENVIRONMENTAL PROTECTION RULES, CHAPTER 21, EFFECTIVE 9/29/07 SECTION 1-807

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/6/2013 SH-003

GENERAL CRITERIA REGARDING ISOLATION DISTANCES

- ISOLATION DISTANCES APPLY REGARDLESS OF PROPERTY LINE LOCATION AND OWNERSHIP.
- SEPARATION BETWEEN POTABLE WATER SUPPLIES AND LEACHFIELDS SHALL BE DETERMINED BY THE METHODS IN THE VERMONT WATER SUPPLY RULE, APPENDIX A, PART 11, SECTION 11.4.
- SEWERS UNDER ROADS, DRIVEWAYS, OR PARKING LOTS MAY REQUIRE PROTECTIVE CONDUITS OR SLEEVES.
- SEPARATION OF PRESSURE WATER LINES CONSIDERED AS "SERVICE CONNECTIONS" AND SEWER LINES SHALL ADHERE TO THE VERMONT PLUMBING RULES. SEPARATION OF PRESSURE WATER LINES (CONSIDERED TO BE PART OF A PUBLIC WATER SYSTEM AS DEFINED BY THE VERMONT WATER SUPPLY RULE) AND SEWER LINES SHALL ADHERE TO THE REQUIREMENTS OF THE VERMONT WATER SUPPLY RULE.
- THIS REFERS TO PUBLIC COMMUNITY WATER SYSTEMS, AS DEFINED IN THE VERMONT WATER SUPPLY RULE.
- CONTACT THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S WATER SUPPLY DIVISION, 105 SOUTH MAIN STREET, WATERBURY, VERMONT.

SPECIFIC CRITERIA FOR ISOLATION DISTANCES

- FOR MOUND WASTEWATER DISPOSAL SYSTEMS, THE LIMIT OF FILL MUST BE 25 FEET FROM ANY DOWNHILL PROPERTY LINE AND 10 FEET FROM ALL PROPERTY LINES ON THE SIDE OR UPHILL.
- NO DISPOSAL FIELD OR REPLACEMENT AREA SHALL BE CLOSER THAN 10 FEET TO ONE ANOTHER EXCEPT AS ALLOWED FOR TRENCH SYSTEMS IN SECTION 1-907(M).
- IF A CURTAIN OR FOUNDATION DRAIN IS DOWNSLOPE OF THE DISPOSAL FIELD, THE DISPOSAL FIELD CANNOT BE CLOSER THAN 75 FEET TO THE DRAIN. IF THE CURTAIN OR FOUNDATION DRAIN IS UPSLOPE OF THE DISPOSAL FIELD, IT SHALL BE 35 IF POSSIBLE, AND A MINIMUM OF 20 FEET TO THE DISPOSAL FIELD. THE ISOLATION DISTANCES FOR MOUND SYSTEMS SHALL BE FROM THE EDGE OF THE MINIMUM BASAL AREA OR THE EDGE OF THE ABSORPTION TRENCH OR BED WHICHEVER IS CLOSER. THIS DISTANCE MAY BE REDUCED IF THE CONSULTANT PROVIDES ADEQUATE DATA AND ANALYSIS TO SHOW THAT EFFLUENT FROM THIS SOIL BASED SYSTEM WILL NOT ENTER THE DRAIN OR INCREASED IF EFFLUENT WILL ENTER THE DRAIN.

WATER PRESSURE TEST

UPON COMPLETION OF INSTALLATION ALL TANKAGE SHALL BE TESTED WITH CLEAN WATER TO DEMONSTRATE THAT THE STRUCTURES ARE WATERTIGHT. THE TESTING SHALL BE CONDUCTED BEFORE THE TANKAGE AND STRUCTURES ARE BACKFILLED. THE TEST SHALL BE CONDUCTED BY COMPLETELY FILLING THE TANKAGE TO THE TOP OF THE STRUCTURES AND PROVIDING A HYDROSTATIC HEAD OF AT LEAST TWO FEET ABOVE THE SURROUNDING GROUNDWATER LEVEL AT THE TIME OF TESTING. THE TEST SHALL BE AT LEAST 24 HOURS, WITH NO LEAKAGE RESULTING. IF ANY LEAKAGE OCCURS DURING THE TEST PERIOD THE TANKS SHALL BE REPAIRED AND RETESTED (PER ASTM C1227-9.2.2 STANDARDS).

VACUUM TEST

UPON COMPLETION OF INSTALLATION ALL TANKAGE SHALL BE TESTED TO DEMONSTRATE THAT THE STRUCTURES ARE WATERTIGHT. THE TESTING SHALL BE CONDUCTED BEFORE THE TANKAGE AND STRUCTURES ARE BACKFILLED. THE TEST SHALL BE CONDUCTED BY SEALING THE EMPTY TANK AND APPLYING A VACUUM TO 2 INCHES (50MM) OF MERCURY. THE TANK IS APPROVED IF 90% OF THE VACUUM IS HELD FOR A MINIMUM OF 2 MINUTES (PER ASTM C1227-9.2.1 STANDARDS).

TANK LEAKAGE TESTING

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/4/2013 WH-004

CONTRACTOR CERTIFICATION FOR WASTEWATER SYSTEM

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WASTEWATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

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| | | | |

- Use of These Drawings
- Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.
 - Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect. If applicable, these Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.
 - These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.
 - By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.
 - It is the User's responsibility to ensure this copy contains the most current revisions.



Project Title

**Chris & Diana Borie
VT Wildflower Farm**
3488 Ethan Allen Highway
Charlotte, VT

Sheet Title

**Sanitary and Water
Notes**

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|-------------------|------------|
| Date: | 10/18/2013 |
| Scale: | AS SHOWN |
| Project Number: | 2013067 |
| Drawn By: | PJM |
| Project Engineer: | _____ |
| Approved By: | _____ |

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