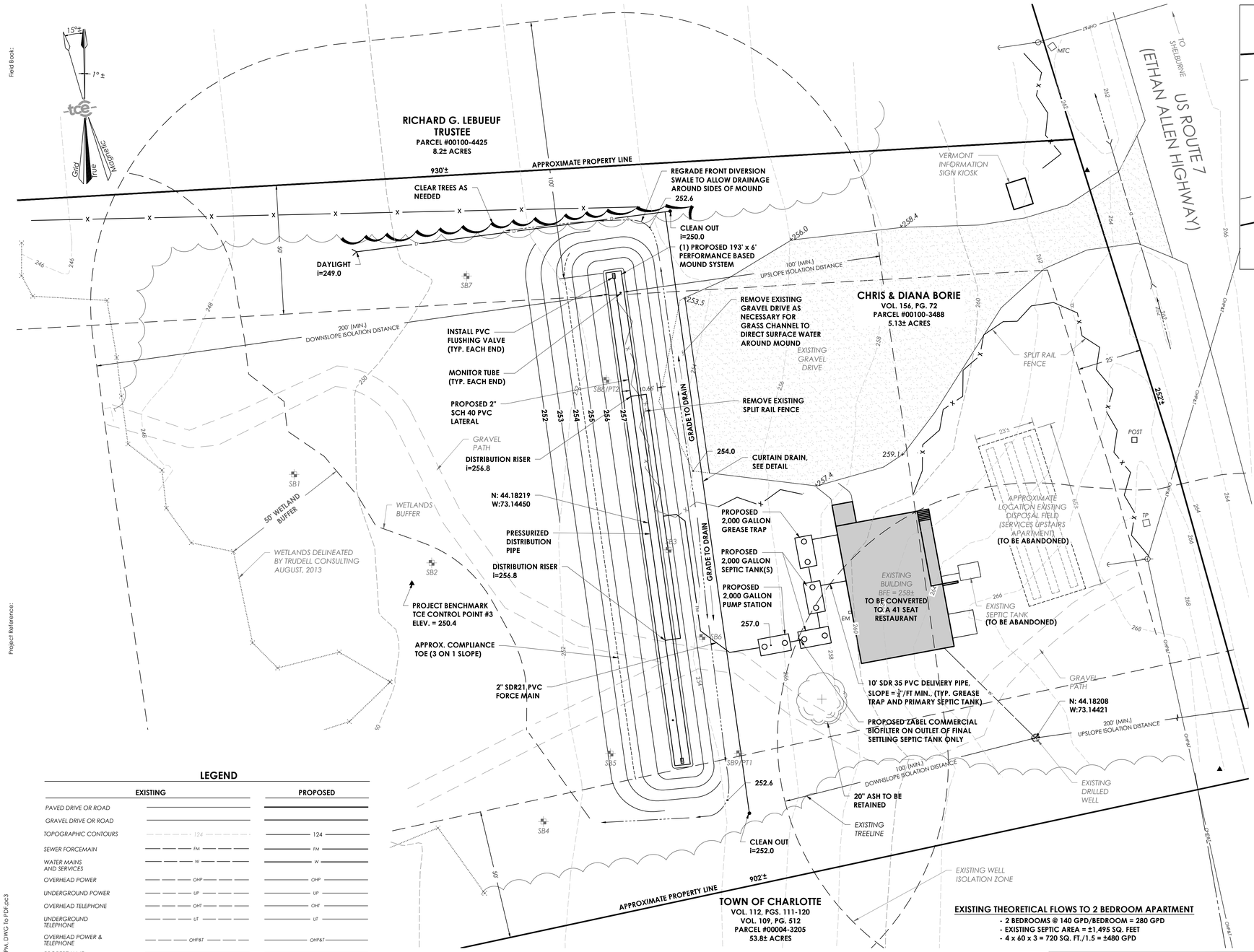
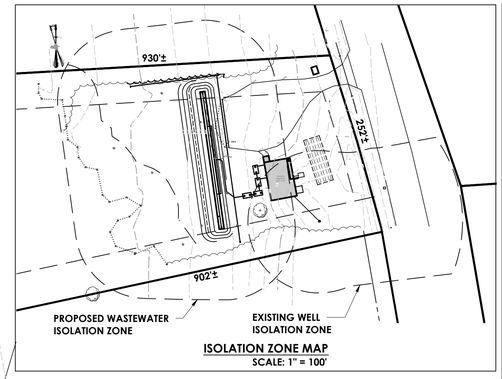




ISOLATION ZONE MAP
SCALE: 1" = 100'

SOIL TEST PIT INFORMATION:

SOIL PROFILES WERE CONDUCTED ON 08/18/13 BY ANDRE LAMBERT, LICENSED DESIGNER #406 AND STEPHEN REVELL, CPG. WITNESSED BY SPENCER HARRIS FOR TOWN OF CHARLOTTE

SB-1 0/10" MEDIUM BROWN FINE SANDY LOAM, PERMEABLE, CRUMBLY, ROOTS
10/50" DARK TAN & BROWN CLAY LOAM, FIRM W/ DISTINCT MOTTLES AND REDOX FEATURES, SHWT = 10"

SB-2 0/9" SAME AS SB 1
9/50" SAME AS SB 1, WITH STICKY, BLOCKY & PLATY COMPOSITION, SHWT = 9'

SB-3 0/11" SAME AS SB 1, W/ ALTERNATE LOAMY LENSES
11/50" SAME AS SB 1, SHWT = 11"

SB-4 0/9" SAME AS SB 1
9/50" SAME AS SB 1, SHWT = 9"

SB-5 0/11" LOOSE SANDY LOAM W/ STONES
11/50" SAME CLAY AS SB 1, SHWT = 11"

SB- 6 0/9" SAME CRUMBLY FINE SANDY LOAM AS SB 1
9/50" SAME CLAY AS SB1, DENSE W/ ROOTS, SHWT = 9"

SB -7 0/10" SAME AS SB 6
10/50" SAME CLAY AS SB 1, SHWT = 10"

SB-8 0/10" SAME LOOSE SANDY LOAM AS SB 1
10/50" SAME CLAY LOAM AS SB 1, SHWT 10"

SB-9 0/11" SAME LOOSE SANDY LOAM AS SB 1
11/50" SAME CLAY LOAM AS SB 1, SHWT = 11"

*** SOIL PROFILER NOTE: SOIL BORING HAND DUG TO 15", THEN BORED TO A DEPTH OF 50" TO PROVE DEPTH TO LEDGE. NO LEDGE ENCOUNTERED IN ANY OF THE SAMPLE HOLES TO A DEPTH OF AT LEAST 50".**

*** NOTE: SOIL TEXTURE RESULTS CONFIRMED BY HYDRO-ANALYSIS FROM KNIGHT CONSULTING ENGINEERS (SEE SIEVE ANALYSIS ATTACHMENT IN WASTEWATER APPLICATION TO TOWN OF CHARLOTTE)**

PERCOLATION TESTS:

PT#1 @ SB#9 = 45 MIN./INCH
PT#2 @ SB#8 = 52 MIN/INCH

ELEVATION KEY

FINISHED FLOOR ELEVATION FFE	= 258±
BUILDING INV. OUT	= 255.0'
2,000 GAL. GREASE TRAP IN	= 255.05'
2,000 GAL. GREASE TRAP OUT	= 254.8'
2,000 GAL. SEPTIC TANK INV. IN	= 254.8'
2,000 GAL. SEPTIC TANK INV. OUT	= 254.55'
2,000 GAL. SETTLING SEPTIC TANK INV. IN	= 254.45'
2,000 GAL. SETTLING SEPTIC TANK INV. OUT	= 254.30'
2,000 GAL. PUMP STATION INV. IN	= 254.2'
2" FORCE MAIN OUT	= 251.7'
DISCHARGE ELEVATION	= 256.8'
TOP RISER	= 257.0'

EXISTING THEORETICAL FLOWS TO 2 BEDROOM APARTMENT

- 2 BEDROOMS @ 140 GPD/BEDROOM = 280 GPD
- EXISTING SEPTIC AREA = ±1,495 SQ. FEET
- 4 x 60 x 3 = 720 SQ. FT./1.5 = ±480 GPD

BASIS OF DESIGN

NOTE: THE HYDROLOGICAL STUDY PERFORMED BY STEPHEN REVELL, CPG SUPERCEDES THE DESKTOP MOUNDING ANALYSIS FOR CALCULATING THE LINEAR LOADING RATE. THE HYDROLOGICAL STUDY STATES THE LLR AT 1.0 GPD/LF.

1. **SEWAGE FLOWS: 1,000 GPD RESTAURANT AT 24 GPD/SEAT = 41 SEATS**
2. **LOADING RATE: 1.0 GPD / SQUARE FOOT**
3. **REQUIRED DISPOSAL FIELD AREA: 1,000 GPD / 1.0 GPD/SF = 1,000 SF**
4. **DISPOSAL AREA PROVIDED: A MOUND SYSTEM WITH ONE TRENCH THAT IS 6.0 FT. WIDE AND 193 FT. LONG = 1,158 SQ. FT. TO MEET SQUARE FOOTAGE AND LENGTH REQUIREMENTS**
5. **BASAL AREA PROVIDED = 32'x193' = 6,176 SQUARE FEET**

REQUIRED ORIFICE SPACING FOR 1 - 193 FT. LONG BY 6 FT. WIDE TRENCH:
1 HOLE / 25 SF OF SEEPAGE AREA IS REQUIRED
1,000 SF / 25 SF = 46 ORIFICES REQUIRED
USE 46 HOLES 1/4" DIAMETER PER TRENCH
MINIMUM FLOW RATE: 46 ORIFICES x 1.10 GPM / ORIFICE = 51 GPM

THIS DISPOSAL SYSTEM DESIGN INCORPORATES THE "PERFORMANCE BASED APPROACH", WHERE A DETAILED AND SITE SPECIFIC ANALYSIS DEMONSTATES THAT THE SYSTEM WILL FUNCTION DURING ALL PORTIONS OF THE YEAR WHILE MAINTAINING AT LEAST 6 INCHES OF NATURALLY OCCURING UNSATURATED SOILS ABOVE THE CALCULATED LEVEL OF THE EFFLUENT PLUME.

ADDITION TO DESIGN BRIEF

USING A PERFORMANCE BASED SYSTEM, WITH ULTRA LOW FLOW FIXTURES IN THE PROPOSED RESTAURANT, RESULTS IN A REDUCTION IN THE GALLONS REQUIRED PER SEAT. THUS, 30 GPD/SEAT x 0.8 (FOR 20% REDUCTION) = 24 GPD/SEAT. THEREFORE, 1,000 GPD / 24 GPD/SEAT = 41 SEATS

BASIS OF DESIGN FOR WATER SUPPLY FOR RESTAURANT W/ FLOWS OF 1000 GPD

DESIGN FLOW = 1000 GPD (193 FOOT TRENCH X 6 FOOT WIDE = 1158 SQ. FT. MAX DAY DEMAND IS CALCULATED BY DIVIDING THE AVERAGE DAY DEMAND BY NOT MORE THAN 720 (12 HR DELIVERY) MINUTES. 1000 GPD/720 = 1.39 GPM. THE INSTANTANEOUS PEAK DEMAND (IPD) IS BASED ON THE NUMBER OF FIXTURE UNITS. THUS, ASSUMING 32 FIXTURE UNITS FOR THE NEW RESTAURANT THE RESULTANT I.P.D. = 42 GPM.

EXISTING WELL INFORMATION

DEPTH:	162
CASING:	11'
STATIC LEVEL:	14'
FLOW:	20 GPM
PUMP:	1/2 HP @ 100' w/3 Hp BOOSTER TEAT PUMP & GENERATOR, 4" YARD HYDRANT (INFORMATION FROM SPAFFORD 10/2007)
STORAGE:	222 GALLONS
D.D.TEST	180 MINUTES @ 20 GPM SUSTAINED
ADD	= 41 SEATS@ 24 = 984 OR 1,000 GPD
MDD	= 1,000 GPD/720 MIN. = 1.39 GPM
IPD	= 42 GPM, SEE CALCULTION THIS SHEET.

1. **OWNER:**
CHRIS & DIANA BORIE
VERMONT WILDFLOWER FARM
3488 ETHAN ALLEN HIGHWAY (U.S. ROUTE 7)
P.O. BOX 96
CHARLOTTE, VT.
2. **TOTAL PARCEL AREA: 5.13 ± ACRES**
3. **ZONING: VILLAGE COMMERCIAL**
SETBACKS: FRONT -25 FT FROM R/W
REAR - 50 FT
SIDE - 50 FT
MAX HT. - 35'
MIN. FRONTAGE - 200'

LEGEND

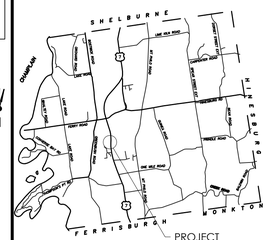
	EXISTING	PROPOSED
PAVED DRIVE OR ROAD		
GRAVEL DRIVE OR ROAD		
TOPOGRAPHIC CONTOURS	124	124
SEWER FORCEMAIN	FM	FM
WATER MAINS AND SERVICES	W	W
OVERHEAD POWER	OHP	OHP
UNDERGROUND POWER	UP	UP
OVERHEAD TELEPHONE	OHT	OHT
UNDERGROUND TELEPHONE	UT	UT
OVERHEAD POWER & TELEPHONE	OHP&T	OHP&T
PROPERTY LINE		
RIGHT-OF-WAY LINE		
EASEMENTS		
BUILDING SETBACKS		
EDGE OF WOODS		
WATER SUPPLY WELL	WELL	
UTILITY POLE		
TELEPHONE PEDESTAL	TP	
ELECTRICAL CABINET	MTC	
TCE CONTROL POINT STEEL REBAR		
PERCOLATION TEST		
SOIL TEST PIT		
BENCHMARK		

Graphic Scale
20 0 20 40 60 80 Feet

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6531 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By
1	PER TOWN REVIEW	10/31/13	AAL



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

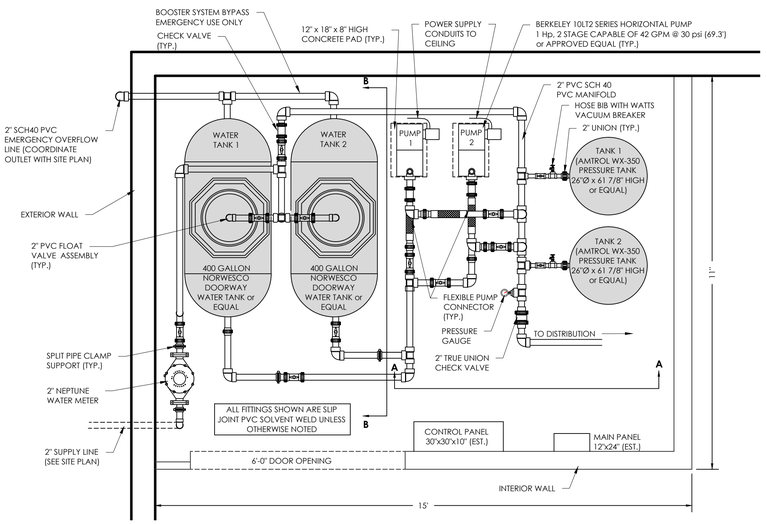
Wastewater Site Plan

Date:	10/18/2013
Scale:	1" = 20'
Project Number:	2013067
Drawn By:	PJM
Project Engineer:	
Approved By:	

C3-01

Field Book:
Project Reference:
S:_TCE DRAWINGS\2013\067 Fallon - Borie\2013067-Site Plan.dwg, 10/31/2013 2:28:04 PM, DWG To PDF.pc3

Field Book:



SCHEMATIC WATER LAYOUT
1/2" = 1'-0"

PIPING SHOWN SCHEMATICALLY PLUMBING INSTALLER TO SUBMIT SHOP DRAWINGS FOR ANY CHANGES PROPOSED

ALL INTERIOR PLUMBING APPURTENANCES TO COMPLY WITH CURRENT VERMONT "NO-LEAD" REGULATIONS

SECTION A - A
1/2" = 1'-0"

SECTION B - B
1/2" = 1'-0"

CONTROL SPECIFICATION:
- Duplex booster control panel.
- 230 VAC, 1 phase power.
- NEMA 12 enclosure with controls on door.
- HOA switch, run light, ETMs
- Lead, lag and low pressure inputs - three (3) Square D remote mount pressure switches (30-60 PSI setting)
- Circuit breakers, overloads, and motor starters for each pump
- Surge arrestor
- Remote alarm light and peizo horn
- Primex Controls model JC1113

Project Reference:

S:_TCE DRAWINGS\2013\067 Fallon - Borie\2013067 - Water Design.dwg, 11/18/2013 10:54:59 AM, DWG To PDF.pc3

1. CONTRACT DOCUMENTS: THESE PLANS WERE PREPARED BY TRUDELL CONSULTING ENGINEERS (TCE) AND ARE INTENDED TO BE USED IN CONJUNCTION WITH THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, #C-700 PREPARED BY THE ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE (EJCDC), LATEST EDITION. COPIES ARE AVAILABLE AT WWW.NSPE.ORG/EJCDC

2. UNDERGROUND IMPROVEMENTS: THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS SHOWN ARE ASSUMED BASED ON RESEARCH, UTILITY PLANS PROVIDED BY OTHERS, AND/OR SURFACE EVIDENCE AVAILABLE AND WERE OBTAINED IN A MANNER CONSISTENT WITH THE ORDINARY STANDARD OF PROFESSIONAL CARE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE DESIGN ENGINEER.

3. DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS: IF CONTRACTOR BELIEVES THAT ANY SUBSURFACE OR PHYSICAL CONDITION AT OR CONTIGUOUS TO THE SITE THAT IS UNCOVERED OR REVEALED EITHER: (1) IS OF SUCH A NATURE AS TO ESTABLISH THAT ANY "TECHNICAL DATA" ON WHICH CONTRACTOR RELIED IS MATERIALLY INACCURATE; OR (2) IS OF SUCH A NATURE AS TO REQUIRE A CHANGE IN THE PLANS/ CONTRACT DOCUMENTS; OR (3) DIFFERS MATERIALLY FROM THAT SHOWN OR INDICATED IN THE PLANS/CONTRACT DOCUMENTS; OR (4) IS OF AN UNUSUAL NATURE, AND DIFFERS MATERIALLY FROM CONDITIONS ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLANS/CONTRACT DOCUMENTS; THEN CONTRACTOR SHALL, PROMPTLY AFTER BECOMING AWARE THEREOF AND BEFORE FURTHER DISTURBING THE SUBSURFACE OR PHYSICAL CONDITIONS OR PERFORMING ANY WORK IN CONNECTION THEREWITH (EXCEPT IN AN EMERGENCY), NOTIFY OWNER AND ENGINEER ABOUT SUCH CONDITION. CONTRACTOR SHALL NOT FURTHER DISTURB SUCH CONDITION OR PERFORM ANY WORK IN CONNECTION THEREWITH (EXCEPT AS AFORESAID) UNTIL RECEIPT OF WRITTEN ORDER TO DO SO.

4. UTILITIES: PRIVATE AND PUBLIC UTILITIES SUCH AS ELECTRIC, TELEPHONE, GAS, CABLE, FIBER OPTIC ETC., ARE THE RESPONSIBILITY OF THE RESPECTIVE UTILITY COMPANY. ANY INFORMATION SHOWN BY TCE SHOULD BE CONSIDERED PRELIMINARY (USUALLY TO ASSIST WITH PERMITTING). FINAL DESIGN, CONSTRUCTION AND MAINTENANCE ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANIES. COMPLIANCE WITH EASEMENTS AND REGULATIONS (STATE AND LOCAL) ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANY.

5. DIGSAFE: IN ACCORDANCE WITH VERMONT STATE LAW (VSA TITLE 30 CHAPTER 86 AND PSB RULE 3.800) THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT DIGSAFE SYSTEMS, INC. "DIGSAFE" AT 1-888-344-7233 AT LEAST 48 HOURS , EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, BUT NOT MORE THAN 30 DAYS BEFORE COMMENCING EXCAVATION ACTIVITIES, EXCEPT IN AN EMERGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRE-MARKING THE SITE AND MAINTAINING DESIGNATED MARKINGS. FOR MORE INFORMATION ON DIGSAFE REQUIREMENTS SEE WWW.DIGSAFE.COM.

6. JOBSITE SAFETY: NEITHER THE PROFESSIONAL ACTIVITIES OF TRUDELL CONSULTING ENGINEERS (TCE), NOR THE PRESENCE OF TCE OR ITS EMPLOYEES AND SUB CONSULTANTS AT A CONSTRUCTION SITE, SHALL RELIVE THE GENERAL CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. TCE AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CLIENT AGREES THAT THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY, AND WARRANTS THAT THIS INTENT SHALL BE MADE EVIDENT IN THE CLIENT'S AGREEMENT WITH THE GENERAL CONTRACTOR. THE CLIENT ALSO AGREES THAT THE CLIENT, TCE AND TCE'S CONSULTANTS SHALL BE INDEMNIFIED AND SHALL BE MADE ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.

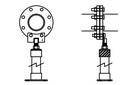
7. CODES AND STANDARDS COMPLIANCE: TCE SHALL EXERCISE USUAL AND CUSTOMARY PROFESSIONAL CARE IN ITS EFFORTS TO COMPLY WITH CODES, STANDARDS, REGULATIONS, AND ORDINANCES IN EFFECT. THE OWNER ACKNOWLEDGES THAT SUCH REQUIREMENTS MAY BE SUBJECT TO VARIOUS AND CONTRADICTORY INTERPRETATIONS. TCE, THEREFORE, WILL MAKE REASONABLE PROFESSIONAL EFFORTS AND JUDGMENT TO INTERPRET APPLICABLE REQUIREMENTS AS THEY APPLY TO THE PROJECT. TCE, HOWEVER, CANNOT AND DOES NOT WARRANT OR GUARANTEE THAT THE PROJECT WILL COMPLY WITH ALL INTERPRETATIONS OF SUCH REQUIREMENTS.

8. CONSTRUCTION OBSERVATION: TCE MAY VISIT THE PROJECT AT APPROPRIATE INTERVALS DURING CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PROCEEDING IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE OWNER HAS NOT RETAINED TCE TO MAKE DETAILED INSPECTIONS OR TO PROVIDE EXHAUSTIVE OR CONTINUOUS PROJECT REVIEW AND OBSERVATION SERVICES. TCE DOES NOT GUARANTEE THE PERFORMANCE OF, AND SHALL NOT HAVE RESPONSIBILITY FOR, THE ACTS OR OMISSIONS OF ANY CONTRACTOR, SUB-CONTRACTOR, SUPPLIER OR ANY OTHER ENTITY FURNISHING MATERIALS OR PERFORMING ANY WORK ON THE PROJECT. TCE SHALL NOT SUPERVISE, DIRECT OR HAVE CONTROL OVER THE CONTRACTOR'S WORK NOR HAVE ANY RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF THE CONTRACTOR. IF THE OWNER DESIRES MORE EXTENSIVE PROJECT OBSERVATION OR FULL-TIME PROJECT REPRESENTATION, THE OWNER SHALL REQUEST SUCH SERVICES BE PROVIDED BY TCE AS ADDITIONAL SERVICES.

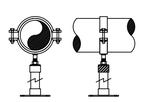
CONSTRUCTION NOTES

 LAST REVISED 06/17/2013 SDN-002

FLANGE SUPPORTS ARE TO BE FACTORY FABRICATED UNITS. NO CONTRACTOR FABRICATED SUPPORTS ARE ALLOWED. MATERIAL TO BE A36 STEEL WITH A GALVANIZED FINISH UNLESS INDICATED OTHERWISE IN SPECIFICATIONS. SUPPORT DESIGN SHALL HAVE BEEN TESTED TO WITHSTAND A MINIMUM OF 10,000 POUNDS COMPRESSIVE LOAD. TEST CERTIFICATION MUST BE AVAILABLE. SUPPORTS SHALL BE STANDON MODEL S89 AS MANUFACTURED BY -MATERIAL RESOURCES INC., HILLSBORO, OR.503-693-0727 P, 503-693-0636 F



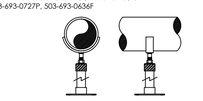
FLANGE SUPPORT DETAIL



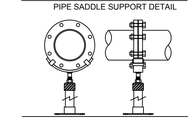
FULL CIRCLE SUPPORT DETAIL

FULL CIRCLE CLAMP SUPPORTS ARE TO BE FACTORY FABRICATED UNITS. NO CONTRACTOR FABRICATED SUPPORTS ARE ALLOWED. MATERIAL TO BE A36 STEEL WITH A GALVANIZED FINISH UNLESS INDICATED OTHERWISE IN SPECIFICATIONS. UPPER AND LOWER MATCHING SADDLES ARE EACH TO ENCOMPASS 170° OF PIPE, AND ARE TO BE FORMED TO ACTUAL PIPE DIAMETER. BASE IS TO BE ANCHORED TO FLOOR, AND INSTALLER IS TO WELD EXTENSION PIPE TO BASE AND COLLAR AFTER INSTALLATION. A NEOPRENE LINER IS REQUIRED WHEN SUPPORTING STEEL OR PVC PIPE. SUPPORT DESIGN SHALL HAVE BEEN TESTED TO WITHSTAND A MINIMUM OF 10,000 POUNDS COMPRESSIVE LOAD. TEST CERTIFICATION MUST BE AVAILABLE. SUPPORTS SHALL BE STANDON MODEL C92 AS MANUFACTURED BY -MATERIAL RESOURCES INC., HILLSBORO, OR. 503-693-0727P, 503-693-0636F

SADDLE SUPPORTS ARE TO BE FACTORY FABRICATED UNITS. NO CONTRACTOR FABRICATED SUPPORTS ARE ALLOWED. MATERIAL TO BE A36 STEEL WITH A GALVANIZED FINISH UNLESS INDICATED OTHERWISE IN SPECIFICATIONS. SADDLE TO ENCOMPASS 170° OF PIPE SIZES UP TO 24", AND 120° FOR LARGER DIAMETERS. SADDLE IS TO BE FORMED TO ACTUAL PIPE DIAMETER. A NEOPRENE LINER IS REQUIRED WHEN SUPPORTING STEEL OR PVC PIPE. SUPPORT DESIGN SHALL HAVE BEEN TESTED TO WITHSTAND A MINIMUM OF 10,000 POUNDS COMPRESSIVE LOAD. TEST CERTIFICATION MUST BE AVAILABLE. SUPPORTS SHALL BE STANDON MODEL 592 AS MANUFACTURED BY - MATERIAL RESOURCES INC., HILLSBORO, OR. 503-693-0727P, 503-693-0636F



PIPE SADDLE SUPPORT DETAIL



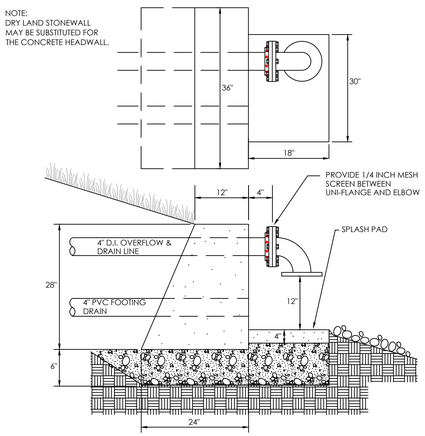
FLANGE SADDLE SUPPORT DETAIL

SADDLE SUPPORTS ARE TO BE FACTORY FABRICATED UNITS. NO CONTRACTOR FABRICATED SUPPORTS ARE ALLOWED. MATERIAL TO BE A36 STEEL WITH A GALVANIZED FINISH UNLESS INDICATED OTHERWISE IN SPECIFICATIONS. SADDLE TO ENCOMPASS 120° OF PIPE CIRCUMFERRENCE. SADDLE IS TO BE FORMED TO ACTUAL PIPE DIAMETER AND INCLUDE TWO CENTERING TABS. A NEOPRENE LINER IS REQUIRED WHEN SUPPORTING STEEL OR PVC PIPE. SUPPORT DESIGN SHALL HAVE BEEN TESTED TO WITHSTAND A MINIMUM OF 10,000 POUNDS COMPRESSIVE LOAD. TEST CERTIFICATION MUST BE AVAILABLE. SUPPORTS SHALL BE STANDON MODEL S96 AS MANUFACTURED BY - MATERIAL RESOURCES INC., HILLSBORO, OR. 503-693-0727P, 503-693-0636F

PIPE SUPPORT

 LAST REVISED 11/15/2013 W-026

NOTE:
DRY LAND STONEWALL MAY BE SUBSTITUTED FOR THE CONCRETE HEADWALL.



RESERVOIR OVERFLOW OUTLET

 LAST REVISED 11/15/2013 W-027

TESTING WATER MAINS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT IF APPLICABLE OR PRIVATE OWNER/OPERATOR AND PROJECT ENGINEER (AS DESIGNATED BY OWNER). CONTRACTOR SHALL PRE-TEST SUCCESSFULLY PRIOR TO CONTACTING PROJECT ENGINEER. THE PRE-TEST IS TO ENSURE PASSING RESULTS PRIOR TO OFFICIAL TESTING OBSERVATION.

A. AFTER THE PIPE HAS BEEN LAID AND 7 DAYS AFTER THE CONCRETE THRUST BLOCKS AND ANCHORS HAVE BEEN PLACED, THE WATER MAIN SHALL BE HYDROSTATICALLY TESTED ACCORDING TO THE LATEST EDITION OF THE AWWA SPECIFICATION C-600.

B. CONTRACTOR SHALL SUPPLY ALL NECESSARY APPARATUS TO PERFORM THE HYDROSTATIC TEST.

C. TEST PRESSURE SHALL BE 200 POUNDS PER SQUARE INCH OR 1.5 TIMES THE WORKING PRESSURE MEASURED AT OR NEAR THE HIGH POINT IN THE SYSTEM, WHICHEVER IS GREATER. TEST SHALL BE A MINIMUM OF 2 HOURS IN DURATION. TESTING ALLOWANCE SHALL BE DEFINED AS THE QUANTITY OF MAKEUP WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF TO MAINTAIN PRESSURE WITHIN 5 PSI (34.5 kPa) OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED. TESTING ALLOWANCE SHALL NOT BE MEASURED BY A DROP IN PRESSURE IN A TEST SECTION OVER A PERIOD OF TIME. REFER TO PIPE MANUFACTURERS RECOMMENDED TESTING PROCEDURE INCLUDING PIPE STABILIZATION PRIOR TO START OF TEST.

D. THE PROJECT ENGINEER AND THE MUNICIPALITY SHALL BE CONTACTED 48 HOURS PRIOR TO TESTING.

E. ALL VALVES SHOULD BE VERIFIED AS BEING OPEN OR CLOSED AS APPROPRIATE FOR THE PORTION OF THE WATER MAIN BEING TESTED.

F. ALLOWABLE LEAKAGE SHALL BE COMPUTED BY THE FORMULA: L=(S x D x √P)/148,000 WHERE L IS LEAKAGE IN GALLONS PER HOUR, S THE LENGTH OF PIPE TESTED IN FEET, D IS THE NOMINAL DIAMETER OF THE PIPE IN INCHES AND P IS THE AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH DURING THE TEST.

G. REPLACE AND RETEST ANY WORK FOUND TO BE DEFECTIVE AT NO EXPENSE TO OWNER.

TESTING HYDRANTS (IF APPLICABLE)

A. AFTER TESTING THE WATER MAINS, OPEN THE HYDRANT FULLY AND FILL WITH WATER. TO PREVENT CAPS FROM BEING BLOWN OFF, VENT AIR FROM ONE OF THE CAPS WHILE IT IS BEING FILLED. WHEN ALL THE AIR HAS ESCAPED, TIGHTEN THE CAP.

B. ALLOW THE PRESSURE TO BUILD UP TO MAIN LINE PRESSURE AND CHECK FOR LEAKAGE AT FLANGES, NOZZLES AND THE OPERATING STEM.

C. CLOSE THE HYDRANT, REMOVE ONE NOZZLE CAP AND PLACE THE PALM OF YOUR HAND OVER THE OPENING. DRAINAGE SHOULD CREATE A NOTICEABLE SUCTION. IF NO SUCTION OR HYDRANT DOESN'T HAVE DRAIN, MANUALLY PUMP WATER OUT OF BARREL.

D. AT PROJECT ENGINEER DISCRETION ASSIST WITH FLOW TESTING. ENGINEER TO RECORD STATUS AND RESIDUAL PRESSURE AS WELL AS FLOW RATE.

TESTING WATER MAINS AND HYDRANTS

 LAST REVISED 11/08/2013 WN-001

DISINFECTING WATER MAINS AND SYSTEMS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND PROJECT ENGINEER (AS DESIGNATED BY OWNER).

A. PRIOR TO BEING PUT INTO SERVICE, WATER MAINS SHALL BE DISINFECTED ACCORDING TO THE LATEST EDITION OF AWWA SPECIFICATION C-651. THE TABLET METHOD IN AWWA STANDARD 651 IS NOT ACCEPTABLE.

B. THE NEW LINE SHALL BE FLUSHED AT A VELOCITY OF NOT LESS THAN 2.5 FEET PER SECOND (OPEN 2-1/2 INCH HYDRANT CONNECTION). FLUSH FOR A PERIOD DETERMINED BY THE PROJECT ENGINEER FOR THE LENGTH OF MAIN TO BE DISINFECTED.

C. CHLORINATION SHALL BE ACCOMPLISHED BY INTRODUCING A SODIUM HYPOCHLORITE SOLUTION FOR A RESULTANT CONCENTRATION OF GREATER THAN 25 PARTS PER MILLION OF FREE CHLORINE.

D. USING A NOZZLE AT EACH END HYDRANT, CONTROL THE RATE OF FLOW INTO THE NEW MAIN AND PROPORTIONALLY FEED THE SODIUM HYPOCHLORITE SOLUTION INTO THE MAIN. AFTER THE SOLUTION HAS REACHED ALL POINTS IN THE SYSTEM, CLOSE THE VALVE SUPPLYING WATER FROM THE EXISTING MAIN AND THE END HYDRANTS. MAINTAIN THE HEAVILY CHLORINATED WATER IN THE MAIN FOR 24 HOURS DURING WHICH TIME ALL MAIN LINE VALVES SHOULD BE OPERATED. AFTER 24 HOURS THE MINIMUM CHLORINE RESIDUAL MUST BE AT LEAST 10 PARTS PER MILLION.

E. FLUSH HEAVILY CHLORINATED WATER FROM THE LINE AND REFILL THE LINE FOR SERVICE (USE CHLORINE DIFFUSER). TAKE AND SUBMIT TWO BACTERIOLOGICAL SAMPLES (TAKEN 24 HOURS APART) OF THE WATER TO THE STATE OF VERMONT OR A STATE APPROVED TESTING LABORATORY. IF THE RESULTS ARE UNSATISFACTORY, THE DISINFECTION PROCEDURE WILL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

F. FINISHED WATER STORAGE STRUCTURES SHALL BE DISINFECTED IF APPLICABLE, IN ACCORDANCE WITH CURRENT AWWA STANDARD C652. TWO OR MORE SUCCESSIVE SETS OF SAMPLES, TAKEN AT 24 HOUR INTERVALS, SHALL INDICATE MICROBIOLOGICALLY SATISFACTORY WATER BEFORE THE FACILITY IS PLACES INTO OPERATION.

G. DISPOSAL OF HEAVILY CHLORINATED WATER FROM THE DISINFECTION PROCESS SHALL BE DE-CHLORINATED OR OTHERWISE HANDLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VERMONT AGENCY OF NATURAL RESOURCES.

H. THE DISINFECTION PROCEDURE (AWWA CHLORINATION METHOD 3, SECTION 4.3 C652) WHICH ALLOWS USE OF THE CHLORINATED WATER HELD IN THE STORAGE TANK FOR DISINFECTION PURPOSES IS NOT RECOMMENDED. WHEN THAT PROCEDURE IS USED, IT IS REQUIRED THAT THE INITIAL HEAVILY CHLORINATED WATER BE PROPERLY DISPOSED IN ORDER TO PREVENT RELEASE OF WATER WHICH MAY CONTAIN VARIOUS CHLORINATED ORGANIC COMPOUNDS INTO THE DISTRIBUTION SYSTEM.

DISINFECTION OF WATER SYSTEM

 LAST REVISED 7/12/2013 WN-003

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6531 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

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STATE OF VERMONT · CHRISTOPHER J. PITKOFF · No. 8104 CIVIL · LICENSED PROFESSIONAL ENGINEER

Project Title

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

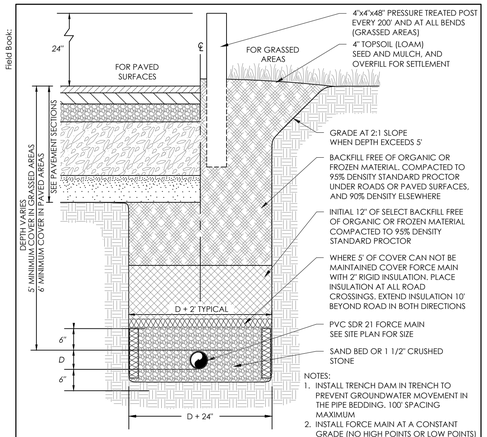
Sheet Title

Water Design

Date:	11/18/2013
Scale:	AS SHOWN
Project Number:	2013067
Drawn By:	PJM
Project Engineer:	JPP
Approved By:	

C8-04

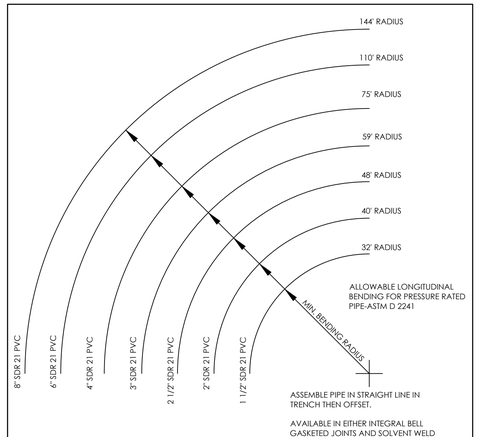
Field Book:



TYPICAL FORCE MAIN TRENCH

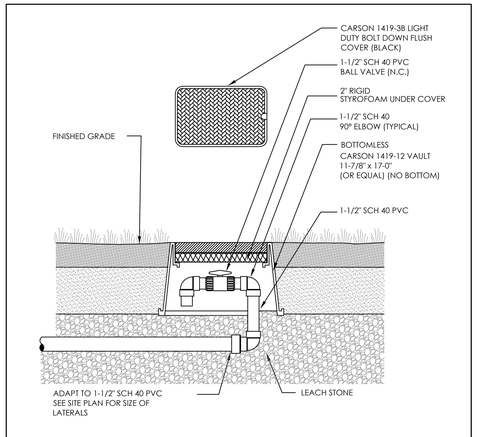
3/4" = 1'-0"

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 9/5/2013 5-002



ALLOWABLE BENDING FOR SDR 21 PVC PIPE

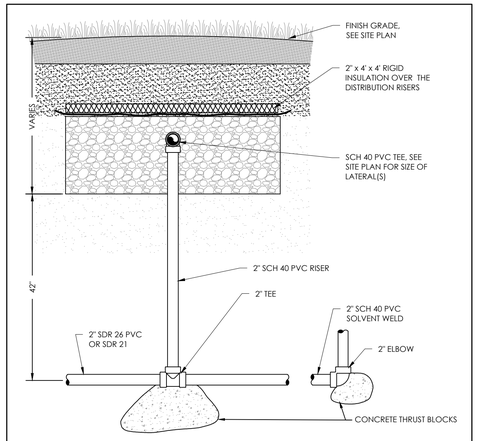
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/5/2013 5-006



FLUSHING VALVE DETAIL

NOTE: FITTINGS TO BE SOLVENT WELD

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED xx/xx/2013 5-016

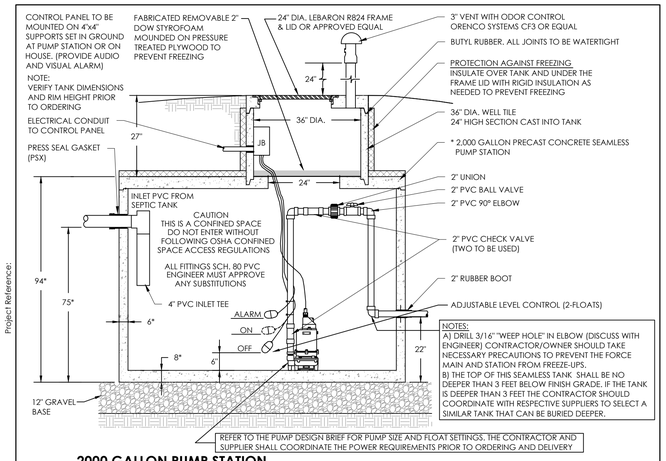


DISTRIBUTION RISER (FOR 2" FORCEMAIN)

3/4"=1'-0"

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/15/2013 5-017

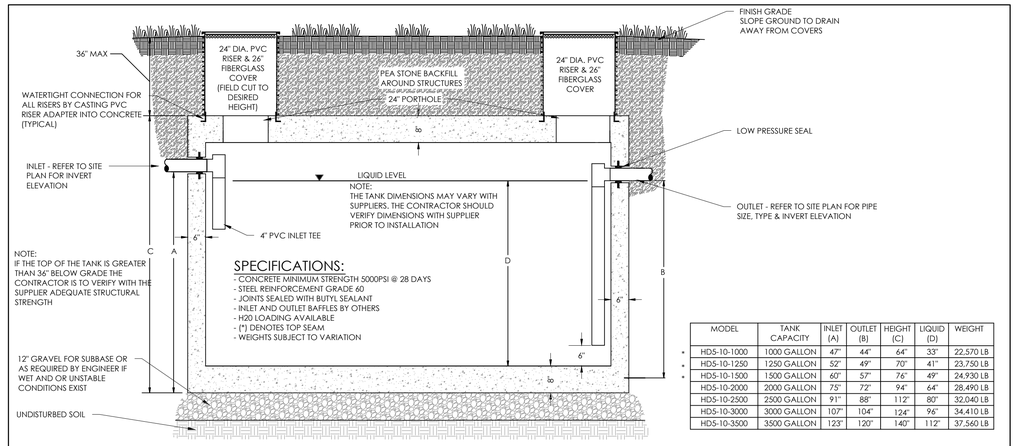
Project Reference:



2000 GALLON PUMP STATION

* COORDINATE TANK DIMENSIONS WITH MANUFACTURER

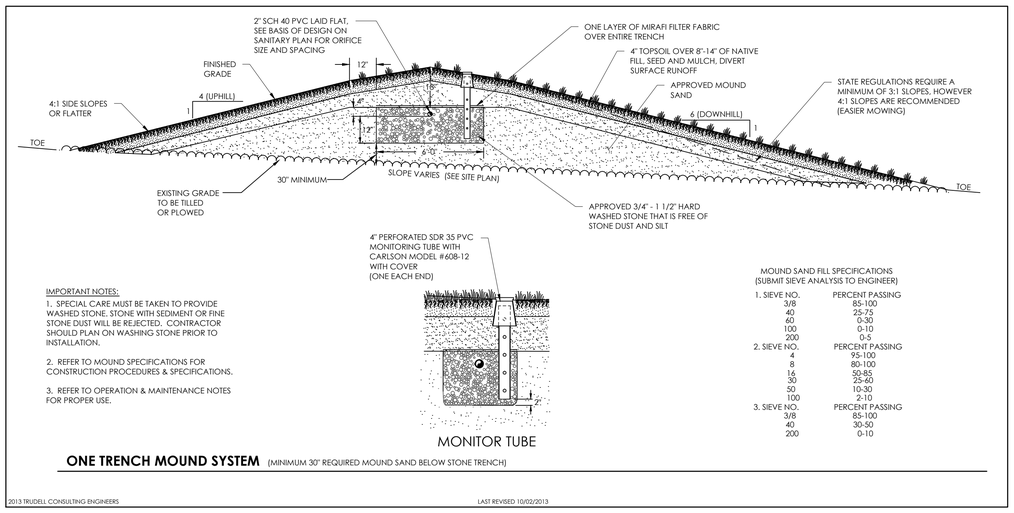
2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 03/08/2013



MODEL	TANK CAPACITY	INLET (A)	OUTLET (B)	HEIGHT (C)	LIQUID (D)	WEIGHT
HDS-10-1000	1000 GALLON	47"	44"	64"	33"	22,570 LB
HDS-10-1250	1250 GALLON	52"	49"	70"	41"	23,750 LB
HDS-10-1500	1500 GALLON	60"	57"	76"	49"	24,930 LB
HDS-10-2000	2000 GALLON	75"	72"	94"	64"	28,490 LB
HDS-10-2500	2500 GALLON	91"	88"	112"	80"	32,040 LB
HDS-10-3000	3000 GALLON	107"	104"	124"	96"	34,410 LB
HDS-10-3500	3500 GALLON	123"	120"	140"	112"	37,560 LB

5'x10' HEAVY DUTY GREASE TRAP
1000-3500 GALLON (HD5-10)

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/15/2013 5-040



IMPORTANT NOTES:

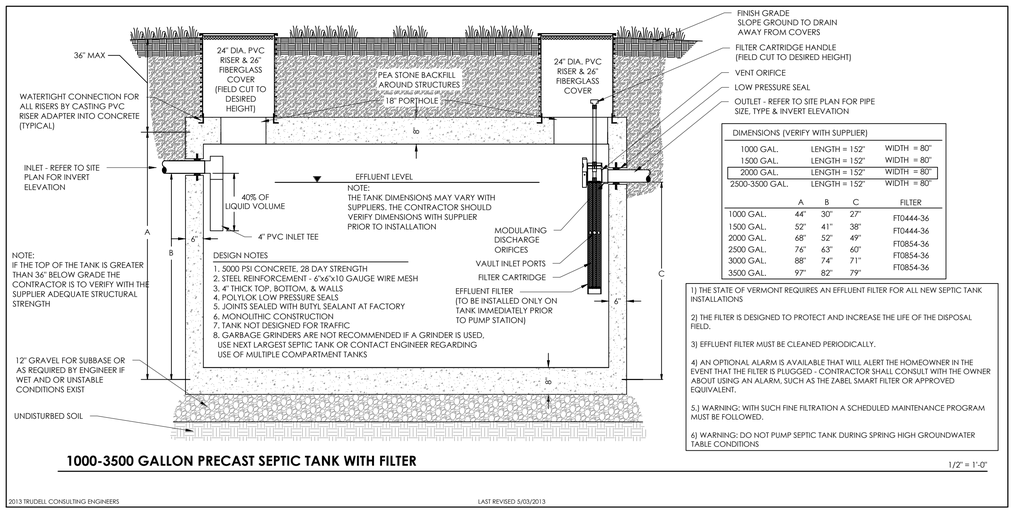
1. SPECIAL CARE MUST BE TAKEN TO PROVIDE WASHED STONE, STONE WITH SEDIMENT OR FINE STONE DUST WILL BE REJECTED. CONTRACTOR SHOULD PLAN ON WASHING STONE PRIOR TO INSTALLATION.
2. REFER TO MOUND SPECIFICATIONS FOR CONSTRUCTION PROCEDURES & SPECIFICATIONS.
3. REFER TO OPERATION & MAINTENANCE NOTES FOR PROPER USE.

MOUND SAND FILL SPECIFICATIONS (SUBMIT SIEVE ANALYSIS TO ENGINEER)

1. SIEVE NO.	PERCENT PASSING
3/8	85-100
40	25-75
60	0-30
100	0-10
200	0-5
2. SIEVE NO.	PERCENT PASSING
4	95-100
8	80-100
16	50-85
30	25-60
50	10-30
100	2-10
3. SIEVE NO.	PERCENT PASSING
3/8	85-100
40	30-50
200	0-10

ONE TRENCH MOUND SYSTEM (MINIMUM 30" REQUIRED MOUND SAND BELOW STONE TRENCH)

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 10/02/2013



DIMENSIONS (VERIFY WITH SUPPLIER)			
1000 GAL.	LENGTH = 152"	WIDTH = 80"	
1500 GAL.	LENGTH = 152"	WIDTH = 80"	
2000 GAL.	LENGTH = 152"	WIDTH = 80"	
2500-3500 GAL.	LENGTH = 152"	WIDTH = 80"	

	A	B	C	FILTER
1000 GAL.	44"	30"	27"	FT0444-36
1500 GAL.	52"	41"	38"	FT0444-36
2000 GAL.	68"	52"	49"	FT0854-36
2500 GAL.	76"	63"	60"	FT0854-36
3000 GAL.	88"	74"	71"	FT0854-36
3500 GAL.	97"	82"	79"	FT0854-36

1) THE STATE OF VERMONT REQUIRES AN EFFLUENT FILTER FOR ALL NEW SEPTIC TANK INSTALLATIONS

2) THE FILTER IS DESIGNED TO PROTECT AND INCREASE THE LIFE OF THE DISPOSAL FIELD.

3) EFFLUENT FILTER MUST BE CLEANED PERIODICALLY.

4) AN OPTIONAL ALARM IS AVAILABLE THAT WILL ALERT THE HOMEOWNER IN THE EVENT THAT THE FILTER IS PLUGGED - CONTRACTOR SHALL CONSULT WITH THE OWNER ABOUT USING AN ALARM, SUCH AS THE ZABEL SMART FILTER OR APPROVED EQUIVALENT.

5.) WARNING: WITH SUCH FINE FILTRATION A SCHEDULED MAINTENANCE PROGRAM MUST BE FOLLOWED.

6) WARNING: DO NOT PUMP SEPTIC TANK DURING SPRING HIGH GROUNDWATER TABLE CONDITIONS

1000-3500 GALLON PRECAST SEPTIC TANK WITH FILTER

1/2" = 1'-0"

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 5/03/2013

S:_TCE DRAWINGS\2013\067 Fallon - Borie\2013067-Site Plan.dwg, 10/15/2013 3:10:24 PM, DWG To PDF.pc3

TRUDELL CONSULTING ENGINEERS
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802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

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STATE OF VERMONT · JOHN F. PITKIN · No. 8104 CIVIL · LICENSED PROFESSIONAL ENGINEER

Project Title

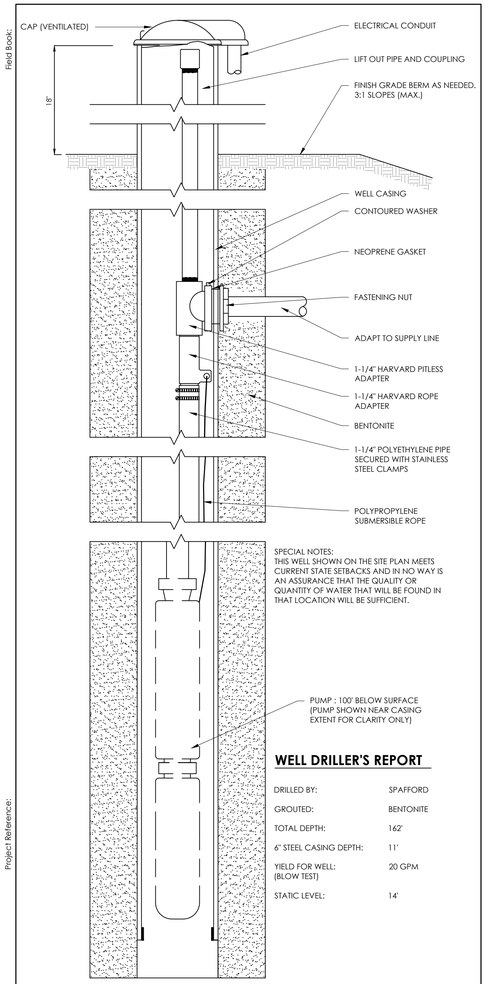
Chris & Diana Borie
VT Wildflower Farm
3488 Ethan Allen Highway
Charlotte, VT

Sheet Title

Sanitary Details

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

C8-01



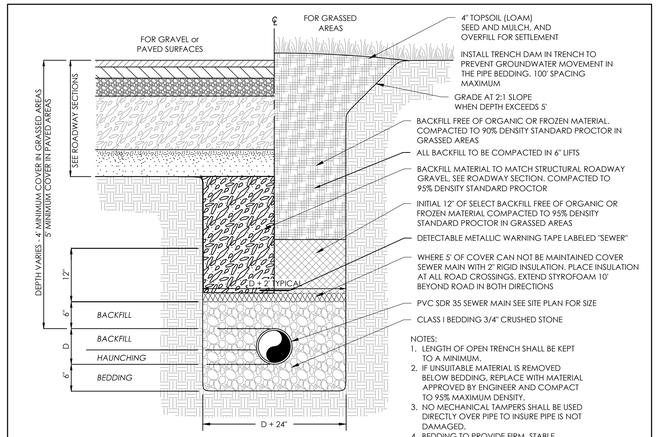
SPECIAL NOTES:
THIS WELL SHOWN ON THE SITE PLAN MEETS CURRENT STATE SETBACKS AND IN NO WAY IS AN ASSURANCE THAT THE QUALITY OR QUANTITY OF WATER THAT WILL BE FOUND IN THAT LOCATION WILL BE SUFFICIENT.

WELL DRILLER'S REPORT

DRILLED BY:	SPAFFORD
GROUTED:	BENTONITE
TOTAL DEPTH:	162'
6" STEEL CASING DEPTH:	11'
YIELD FOR WELL: (BLOW TEST)	20 GPM
STATIC LEVEL:	14'

EXISTING WELL DETAIL

2013 TRUDELL CONSULTING ENGINEERS | LAST REVISED 10/15/2013 | W-011



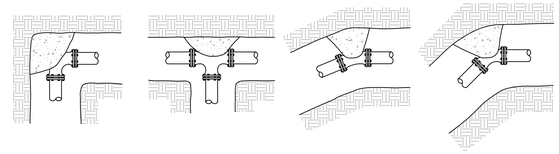
NOTES:
1. LENGTH OF OPEN TRENCH SHALL BE KEPT TO A MINIMUM.
2. IF UNSUITABLE MATERIAL IS REMOVED BELOW BEDDING, REPLACE WITH MATERIAL APPROVED BY ENGINEER AND COMPACT TO 95% MAXIMUM DENSITY.
3. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
4. BEDDING TO PROVIDE FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.

TYPICAL SEWER TRENCH

3/4" = 1'-0"

2013 TRUDELL CONSULTING ENGINEERS | LAST REVISED 10/4/2013 | S-001

USE CLASS D (2500 PSI) CONCRETE FOR THRUST BLOCKS. PLACE 4 MIL. POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK. PLACE THRUST BLOCK AGAINST UNDISTURBED TRENCH WALL - CONCRETE BEARING AREA ON FITTING TO BE A MINIMUM OF 1/2 SQUARE FOOT. THRUST BLOCKS BASED ON 50 PSI TEST PRESSURE IF CHANGE IN ELEVATION BETWEEN ANY 2 POINTS IN THE LINE IS GREATER THAN 110' THRUST BLOCKS WILL HAVE TO BE ENLARGED.



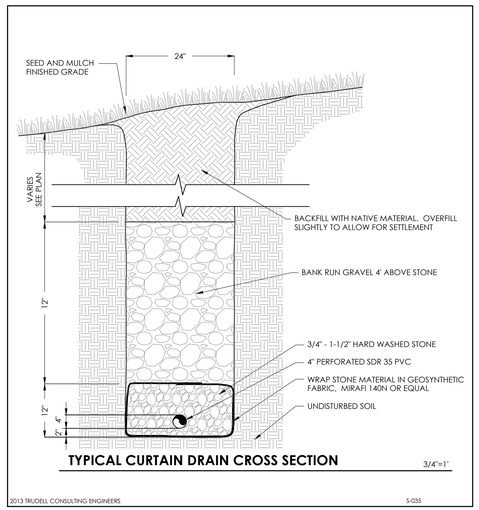
MINIMUM BEARING AREA IN SQUARE FEET ON UNDISTURBED TRENCH WALL

SOIL TYPE	SAFE BEARING LOAD LBS/FT. 2	2"				2 1/2"				3"				4"				6"			
		TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	TEE	90°	45°	22.5°
CLAY	1000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.9	0.7	0.5	1.8	2.0	1.5	0.8
SAND	2000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.9	1.0	0.8	0.5
GRAVEL	3000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TILL	4000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SHALE	10000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

NOTE : ENGINEER TO OBSERVE ALL THRUST BLOCKS PRIOR TO BACKFILL.

FORCE MAIN THRUST BLOCK SPECIFICATIONS

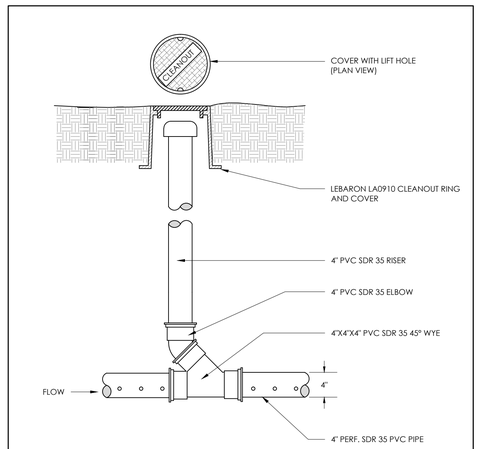
2013 TRUDELL CONSULTING ENGINEERS | LAST REVISED 03/08/2013 | S-015



TYPICAL CURTAIN DRAIN CROSS SECTION

3/4"=1'

2013 TRUDELL CONSULTING ENGINEERS | S-035



TYPICAL CURTAIN DRAIN CLEANOUT

1"=1'

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:

_____

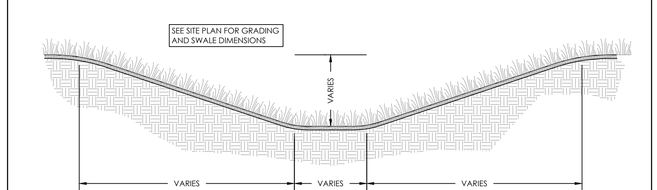
_____

_____

_____

CONTRACTOR'S CERTIFICATION FOR POTABLE WATER SYSTEMS

2013 TRUDELL CONSULTING ENGINEERS | LAST REVISED 3/4/2013 | WN-002



CONSTRUCTION SPECIFICATIONS:
1. SIDE SLOPES FOR SWALES SHALL NOT EXCEED 3:1. IN AREAS WHERE SIDE SLOPES WILL EXCEED 3:1, APPLY EROSION CONTROL BLANKETS TO STABILZE GROUND.
2. SEED & MULCH ALL AREAS OF GRASSED SWALES, PERFORM ALL SEEDING PRIOR TO APPLYING EROSION CONTROL BLANKETS.

DIVERSION & DELIVERY SWALE

1/2" = 1'

2013 TRUDELL CONSULTING ENGINEERS | LAST REVISED 10/15/2013 | S-0XX

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

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No.	Description	Date	By

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Project Title

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

Sheet Title

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:
Project Reference:
S:_TCE DRAWINGS\2013\067 Fallon - Borie\2013067-Site Plan.dwg, 10/18/2013 8:06:25 AM, DWG To PDF.pc3

Field Book:

1. 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.

2. 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 DOSING 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.

3. THE AREA SHALL THEN BE PLOWED TO A DEPTH OF 7 TO 8 INCHES PARALLEL TO THE LAND CONTOUR PLOWING THE SOIL UP SLOPE TO PROVIDE A PROPER INTERFACE BETWEEN THE FILL AND THE NATURAL SOILS. ONCE PLOWING OF THE ENTIRE MOUND AREA IS COMPLETED, THE AREA SHALL BE FENCED TO PREVENT VEHICLES AND EQUIPMENT FROM ENTERING THE PLOWED AREA.

4. THE AREA SURROUNDING THE MOUND SHALL BE GRADED TO PROVIDE DIVERSION OF SURFACE RUN-OFF WATERS.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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, HOSING THE STONE UNTIL THE WATER EXITING THE TRUCK IS CLEAR. CONTACT THE DESIGN ENGINEER FOR INSPECTION OF THE WASHED STONE PRIOR TO PLACEMENT.

10. 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.

11. 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.

12. CONTACT THE DESIGN ENGINEER PRIOR TO BACKFILLING FOR INSPECTION OF THE DISTRIBUTION PIPING.

13. FINISH BY PLACING 2 INCHES OF STONE OVER THE DISTRIBUTION PIPE.

14. 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.

15. LANDSCAPE THE MOUND BY PLANTING GRASSES ON THE SURFACE. A MIXTURE OF 90 PERCENT BIRDSFOOT TREFOIL AND 10 PERCENT TIMOTHY MAY BE DESIRABLE IF THE MOUND WILL NOT BE MANICURED. IF MANICURING 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.

16. 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

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 SUBJECTED TO A HYDROSTATIC PRESSURE OF AT LEAST 1.5 X THE HIGHEST WORKING PRESSURE IN THE SECTION.

1. TEST PRESSURE RESTRICTIONS. TEST PRESSURES SHALL:
   - A. NOT BE LESS THAN 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION.
   - B. NOT EXCEED PIPE OR THRUST RESTRAINT DESIGN PRESSURES.
   - C. BE OF AT LEAST 2 (TWO) HOUR DURATION.
   - D. NOT VARY BY MORE THAN ± 5 PSI.
   - E. NOT EXCEED TWICE THE RATED PRESSURE OF THE VALVES WHEN THE PRESSURE BOUNDARY OF THE TEST SECTION INCLUDES CLOSED GATE VALVES.
2. PRESSURIZATION.
   - A. 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.
   - B. AIR REMOVAL. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, AIR SHALL BE EXPELLED COMPLETELY FROM THE PIPE VALVES.
   - C. 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.

1. 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.
2. 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 GAGE.

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 CH1, EFFECTIVE 9/29/07 SECTION 1-A-05(g))

1. 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.
2. 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.
3. THE OWNER IS RESPONSIBLE FOR OPERATING THE DISPOSAL SYSTEM IN A MANNER WHICH WILL PROTECT THE PUBLIC HEALTH AND PREVENT POLLUTION.
4. 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.
5. 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.
6. 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, SPA'S, 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.
7. 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.
8. WARNING: WITH SUCH FINE FILTRATION (SEPTIC TANK EFFLUENT FILTER) A SCHEDULED MAINTENANCE PROGRAM MUST BE FOLLOWED.
9. 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 DOESN'T 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.
10. IF THE SYSTEM IS DESIGNED USING THE PERFORMANCE BASED DESIGN ACCORDING TO PREVIOUS STATE PERMITS THE SYSTEM SHALL BE INSPECTED EACH SPRING FOR THREE CONSECUTIVE YEARS BY A LICENSED ENGINEER TO DEMONSTRATE THAT THE SYSTEM IS WORKING AS DESIGNED.

MOUND DISPOSAL FIELD - OPERATION AND MAINTENANCE

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:

CONTRACTOR CERTIFICATION FOR WASTEWATER SYSTEM

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 (a)	25 [2]	10	10
TREES	10	10	10
OTHER DISPOSAL FIELD OR REPLACEMENT SYSTEM	10 [3]	--	--
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.

GENERAL CRITERIA REGARDING ISOLATION DISTANCES

a. ISOLATION DISTANCES APPLY REGARDLESS OF PROPERTY LINE LOCATION AND OWNERSHIP.
b. 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.
c. SEWERS UNDER ROADS, DRIVEWAYS, OR PARKING LOTS MAY REQUIRE PROTECTIVE CONDUITS OR SLEEVES.
d. 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.
e. THIS REFERS TO PUBLIC COMMUNITY WATER SYSTEMS, AS DEFINED IN THE VERMONT WATER SUPPLY RULE.
f. CONTACT THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S WATER SUPPLY DIVISION, 103 SOUTH MAIN STREET, WATERBURY, VERMONT.

SPECIFIC CRITERIA FOR ISOLATION DISTANCES

2. 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.
3. 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).
4. 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.

ISOLATION DISTANCES

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

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

Project Reference:

S:_TCE DRAWINGS\2013\067 Fallon - Borie\2013067-Site Plan.dwg, 10/15/2013 3:11:12 PM, DWG To PDF.pc3

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Revisions

No.	Description	Date	By

STATE OF VERMONT · JOHN E. PITKOWITZ · No. 8104 CIVIL · PROFESSIONAL LICENSED ENGINEER

Project Title

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

Sheet Title

Sanitary and Water Notes

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

C8-03