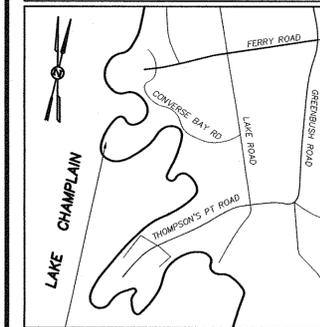


THESE PLANS ARE SUITABLE FOR THE PURPOSE OF:

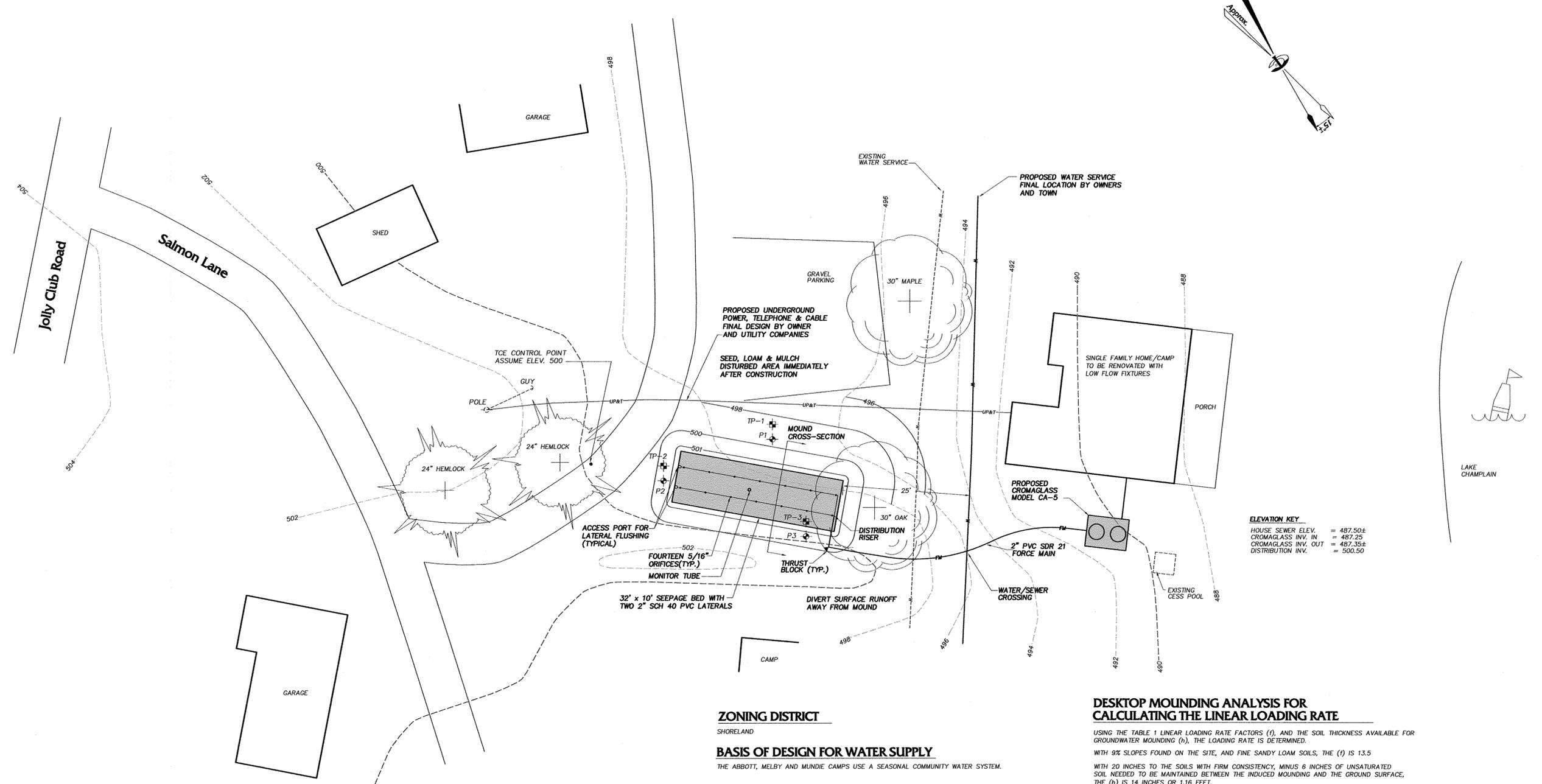
<input type="checkbox"/>	CONCEPTUAL APPROVAL SUBMISSION
<input type="checkbox"/>	PRELIMINARY APPROVAL SUBMISSION
<input type="checkbox"/>	ACT 250 SUBMISSION IF APPLICABLE
<input type="checkbox"/>	FINAL APPROVAL SUBMISSION
<input checked="" type="checkbox"/>	CONSTRUCTION DRAWINGS

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- As instruments of service these drawings and copies thereof furnished by the Engineer are his property. Changes to the drawings may only be made by the Engineer.
- It is the User's responsibility to ensure this copy contains the most current revisions.



Project Location



**ELEVATION KEY**

HOUSE SEWER ELEV.	= 487.50±
CROMAGLASS INV. IN	= 487.25
CROMAGLASS INV. OUT	= 487.35±
DISTRIBUTION INV.	= 500.50

**ZONING DISTRICT**

SHORELAND

**BASIS OF DESIGN FOR WATER SUPPLY**

THE ABBOTT, MELBY AND MUNDIE CAMPS USE A SEASONAL COMMUNITY WATER SYSTEM.

**SOILS TESTING RESULTS 08/16/10**

TEST PIT EXCAVATIONS AND SOILS PROFILING WAS CONDUCTED BY DOUG BICKNELL, DESIGNER LICENSE # 153.

- TP 1**
- 0 - 7" 10YR 3/2 GRAY-BROWN, FINE SANDY LOAM, FEW WOODY ROOTS, GRANULAR STRUCTURE, FRIABLE CONSISTENCY, CLEAR BOUNDARY.
  - 7" - 20" 10YR 4/4 DARK BROWN, SILT LOAM, GRANULAR STRUCTURE, FRIABLY, CRUMBLY CONSISTENCY, FEW WOODY ROOTS AND COARSE FRAGMENTS.
  - 20" - 26" 10YR 4/4 DARK BROWN, SILT LOAM, GRANULAR STRUCTURE, FRIABLY, CRUMBLY CONSISTENCY, MANY COARSE FRAGMENTS.
- TP 2**
- 0 - 7" 10YR 3/2 GRAY-BROWN, FINE SANDY LOAM, FEW WOODY ROOTS, GRANULAR STRUCTURE, FRIABLE CONSISTENCY, CLEAR BOUNDARY.
  - 7" - 20" 10YR 4/4 DARK BROWN, SILT LOAM, GRANULAR STRUCTURE, FRIABLY, CRUMBLY CONSISTENCY, FEW WOODY ROOTS AND MANY COARSE FRAGMENTS AT 20 INCHES.
- TP 3**
- 0 - 5" 10YR 3/2 GRAY-BROWN, FINE SANDY LOAM, FEW WOODY ROOTS, GRANULAR STRUCTURE, FRIABLE CONSISTENCY, CLEAR BOUNDARY.
  - 5" - 17" 10YR 4/4 DARK BROWN, SILT LOAM, GRANULAR STRUCTURE, FRIABLY, CRUMBLY CONSISTENCY, FEW WOODY ROOTS AND COARSE FRAGMENTS.
  - 17" - 23" 10YR 4/4 DARK BROWN, SILT LOAM, GRANULAR STRUCTURE, FRIABLY, CRUMBLY CONSISTENCY, MANY COARSE FRAGMENTS AT 23 INCHES.

THE CONTENT OF THE COARSE FRAGMENT VARIES IN THESE TEST PITS AND THERE IS SOME ANOMALY, HOWEVER, THERE DOES APPEAR TO BE ENOUGH SOIL ON THIS SITE, WITH A LIMITING LAYER AT 20 INCHES, TO SUPPORT A SEASONAL HOME FILTRATE DISPOSAL SYSTEM.

**PERCOLATION TESTS CONDUCTED ON 8/16/10**

P1 = 8 MIN/IN P2 = 5 MIN/IN P3 = 8 MIN/IN

**DESKTOP MOUNDING ANALYSIS FOR CALCULATING THE LINEAR LOADING RATE**

USING THE TABLE 1 LINEAR LOADING RATE FACTORS (f), AND THE SOIL THICKNESS AVAILABLE FOR GROUNDWATER MOUNDING (h), THE LOADING RATE IS DETERMINED.

WITH 9% SLOPES FOUND ON THE SITE, AND FINE SANDY LOAM SOILS, THE (f) IS 13.5  
WITH 20 INCHES TO THE SOILS WITH FIRM CONSISTENCY, MINUS 6 INCHES OF UNSATURATED SOIL NEEDED TO BE MAINTAINED BETWEEN THE INDUCED MOUNDING AND THE GROUND SURFACE, THE (h) IS 14 INCHES OR 1.16 FEET.

THE LINEAR LOADING RATE (LLR) = (h) (f)  
LLR = (13.5) (1.16)

LLR = 15.66 GPD / LF  
LINEAR LENGTH IS DESIGN FLOW DIVIDED BY THE LLR  
MINIMUM SYSTEM LENGTH = 490 GPD / 15.66 GPD / LF = 32 LF

**BASIS OF DESIGN FOR PRE-TREATMENT (FILTRATE) SYSTEM**

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

SYSTEM DESIGN INCLUDES A MOUND WITH 1.0 FEET OF SAND BENEATH THE DISPOSAL AREA FOR FILTRATE EFFLUENT.

- SEWAGE FLOWS: PROPOSED FOUR BEDROOM HOUSE/CAMP AT 490 GALLONS / DAY
- LOADING RATE: .80 GPD / SF (8 MIN/IN = 3/8" x .8)
- REQUIRED DISPOSAL FIELD AREA: 490 GPD / .80 GPD/SF = 613 SF (TWICE THE PERMITTED RATE WOULD BE 307 SF)
- LINEAR LOADING RATE: 15.66 GPD/SF (SEE SYSTEM SIZE ABOVE)
- SYSTEM LENGTH: 490 GPD / 15.66 GPD/LF = 32 LF
- DISPOSAL AREA PROVIDED: A MOUND SYSTEM WITH PRE-TREATED EFFLUENT IS REQUIRED. ONE SEEPAGE BED 10 FEET WIDE AND 32 FEET LONG PROVIDES 320 SQ. FT.

REQUIRED ORIFICE SPACING FOR 32 FT. LONG BY 10 FT. WIDE TRENCH:  
1 HOLE / 25 SF OF SEEPAGE AREA IS REQUIRED  
320 SF / 25 SF = 13 ORIFICES NEEDED  
USE 14 HOLES 5/16" DIAMETER  
MINIMUM FLOW RATE: 14 ORIFICES x 1.82 GPM / ORIFICE = 26 GPM

**PURPOSE OF DESIGN & NOTES**

THIS "BEST FIX" DISPOSAL FIELD PROPOSAL, FOR A FOUR BEDROOM SEASONAL CAMP/HOME, IS PART OF THE UPGRADE ALONG THIS SHORE LINE AND WILL BE INCORPORATED INTO THE PROPOSED CAMP RENOVATION.

THIS PROPOSED FILTRATE SEEPAGE BED MOUND SYSTEM WILL REPLACE THE EXISTING CESS POOL DISPOSAL.

THIS MOUND DESIGN IS NOT THE REQUIRED 75' UPHILL OF THE FOOTING DRAIN, BUT A FULL FOUNDATION AND FOOTING DRAIN DO NOT EXIST AND ARE NOT INTENDED FOR THE NEW CONSTRUCTION.

ALTHOUGH THE GROUNDWATER FLOW APPEARS TO BE IN THE DIRECTION OF THE LAKE WE DO NOT ANTICIPATE THAT FILTRATE EFFLUENT, DISPERSED IN A SEEPAGE BED MOUND SYSTEM, WILL ADVERSELY INFLUENCE THE GROUNDWATER OR LAKE.

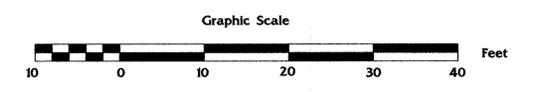
THE WATER SERVICE SERVES MORE THAN ONE HOME AND THE SETBACK IS INCREASED TO 50'. AS BEST FIX WE ARE SHOWING 25'.

CONTRACTOR TO ESTABLISH ROCK RETAINING WALLS AS NEEDED TO PROTECT 30" OAK, ROAD AND PARKING AREA.

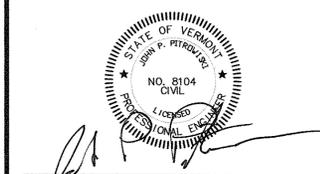
SPACE IS LIMITED AND THE SIZE OF THE SYSTEM IS DICTATED BY AVAILABLE SPACE. DURING PEAK USE THE HOMEOWNER SHOULD MONITOR THE SYSTEM (VIA THE MONITOR TUBE) FOR HYDRAULIC OVERLOADING. IF THE SYSTEM IS BEING OVERLOADED ACTION SHOULD BE TAKEN TO REDUCE FLOW UNTIL EFFLUENT CAN SEEP INTO THE GROUND.

**LEGEND**

	TEST PIT
	PERCOLATION TEST
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING OVERHEAD POWER & TELEPHONE
	PROPOSED UNDERGROUND POWER, TELEPHONE & CABLE



No.	Description	Date	By
Revisions			



Project Title  
**J.C. Small & Company**  
**Abbott, Melby, Mundie**  
**Camp Project**  
**29 Salmon Lane**  
**Charlotte, Vermont**

Sheet Title  
**Sanitary Plan**

Drawing Number:	2010056-50	Extension:	1
Project manager:	DPB	Drawn:	DPB
Date:	08/16/10	F.B.:	298
Project reference:	XXX	X-Ref:	XXX
Bench File:	XXX		

Approved  
  
**SP1**



**TRUDELLE  
CONSULTING  
ENGINEERS (TCE)**

478 Blair Park Road  
Box 308 Williston, Vermont 05495 (802) 879-6331

THESE PLANS ARE SUITABLE FOR THE PURPOSE OF:

- CONCEPTUAL APPROVAL SUBMISSION
- PRELIMINARY APPROVAL SUBMISSION
- ACT 250 SUBMISSION
- FINAL APPROVAL SUBMISSION
- CONSTRUCTION DRAWINGS

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

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 FLOWING 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 FACING EITHER UPWARD OR DOWNWARD. THE HOLES SHALL BE COVERED WITH AN ORIFICE SHIELD. IF THE ORIFICES ARE FACING UPWARD, ONE ORIFICE MUST BE FACED DOWNWARD IN EACH TRENCH TO ALLOW DRAINAGE OF THE LATERAL AND TO HELP PREVENT FREEZING. 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 4" OF TOPSOIL AND 6" OF NATIVE MATERIAL (8 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 TREFLE 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 TOP ARE RECOMMENDED. DO NOT PLACE SHRUBS OR TREES DIRECTLY ON TOP OF THE MOUND AS ROOTS WILL INTERFERE WITH THE DISTRIBUTION SYSTEM.

16. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL CONSTRUCTION, THE DESIGN ENGINEER WILL REQUIRE THE CONTRACTOR TO CERTIFY THEY BUILT AND TESTED THE SYSTEM PER THE DESIGN PLANS AND PERMIT CONDITIONS.

17. 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.

**1 PRESSURIZED MOUND CONSTRUCTION SPECIFICATIONS**

2008 TRUDELLE CONSULTING ENGINEERS LAST REVISED 01/06/08 SWR-035M

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, OR 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, BACKFLOW 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 CLOSING 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 (SUCH AS PERMITS HAVE EXPIRED, TRUDELLE 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 RE-INSPECTED EACH SPRING FOR THREE CONSECUTIVE YEARS BY A LICENSED ENGINEER TO DEMONSTRATE THAT THE SYSTEM IS WORKING AS DESIGNED.

**2 MOUND DISPOSAL FIELD OPERATION AND MAINTENANCE**

2010 TRUDELLE CONSULTING ENGINEERS LAST REVISED 06/21/2010 SWR-034S

**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: \_\_\_\_\_

**3 CONTRACTOR'S CERTIFICATION FOR WASTEWATER SYSTEM**

TRUDELLE CONSULTING ENGINEERS LAST REVISED 10/25/06 SWR-196S

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 10" THRUST BLOCKS WILL HAVE TO BE ENLARGED.

MINIMUM BEARING AREA IN SQUARE FEET ON UNDISTURBED TRENCH WALL

SOIL TYPE	SAFE BEARING LOAD LBS/FT <sup>2</sup>	2"			2 1/2"			3"			4"			6"		
		TEE	90°	45°	TEE	90°	45°	TEE	90°	45°	TEE	90°	45°	TEE	90°	45°
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	0.5	0.5	0.5
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
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
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
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

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

**4 FORCE MAIN THRUST BLOCK SPECIFICATIONS**

2010 TRUDELLE CONSULTING ENGINEERS LAST REVISED 01/06/10 SWR-052M

**CONSTRUCTION NOTES:**

1. CONTRACT DOCUMENTS: THESE PLANS WERE PREPARED BY TRUDELLE CONSULTING ENGINEERS (TCE) AND ARE INTENDED TO BE USED IN CONJUNCTION WITH THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, JC-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. DISSAFE: IN ACCORDANCE WITH VERMONT STATE LAW (VSA TITLE 30 CHAPTER 86 AND PSB RULE 3,800) THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT DISSAFE SYSTEMS, INC. "DISSAFE" 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 DISSAFE REQUIREMENTS SEE [WWW.DISSAFE.COM](http://WWW.DISSAFE.COM)
6. JOBSITE SAFETY: NEITHER THE PROFESSIONAL ACTIVITIES OF TRUDELLE CONSULTING ENGINEERS (TCE), NOR THE PRESENCE OF TCE OR ITS EMPLOYEES AND SUB CONSULTANTS AT A CONSTRUCTION SITE, SHALL RELIEVE 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 THE CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PRECEDING 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.

No.	Description	Date	By
Revisions			



Project Title  
**J.C. Small & Company**  
**Abbott, Melby, Mundie**  
**Camp Project**

29 Salmon Lane  
Charlotte, Vermont

Sheet Title  
**Details**

Drawing Number : 2010056-71 Extension : 00  
Project manager : DPB Drawn : DPB  
Date : 08/25/30 Scale : SHOWN  
Approved

**D2**



**TRUDELL  
CONSULTING  
ENGINEERS (TCE)**

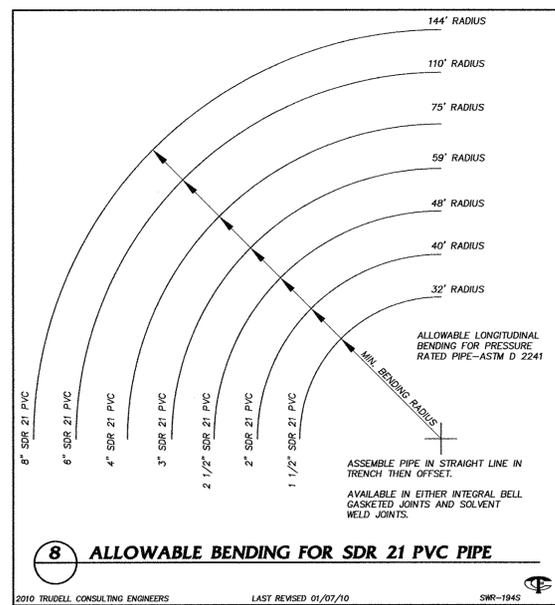
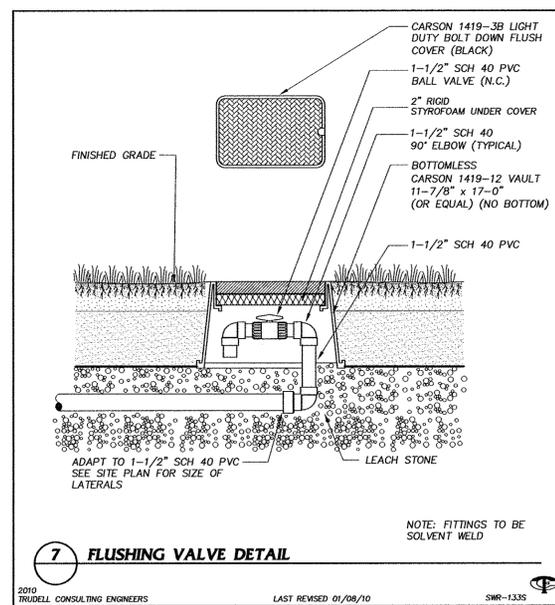
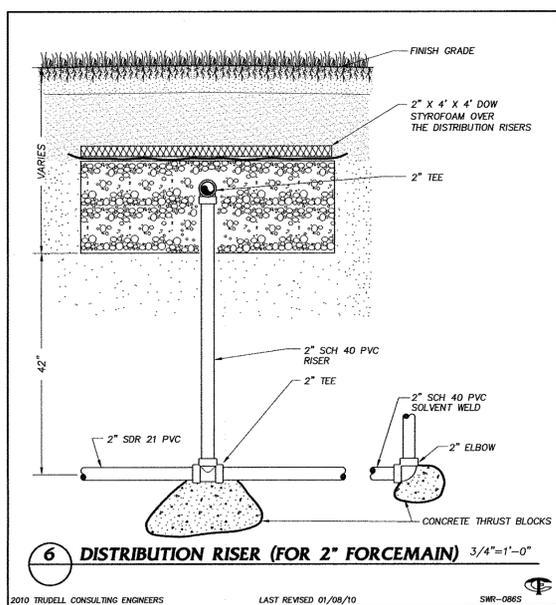
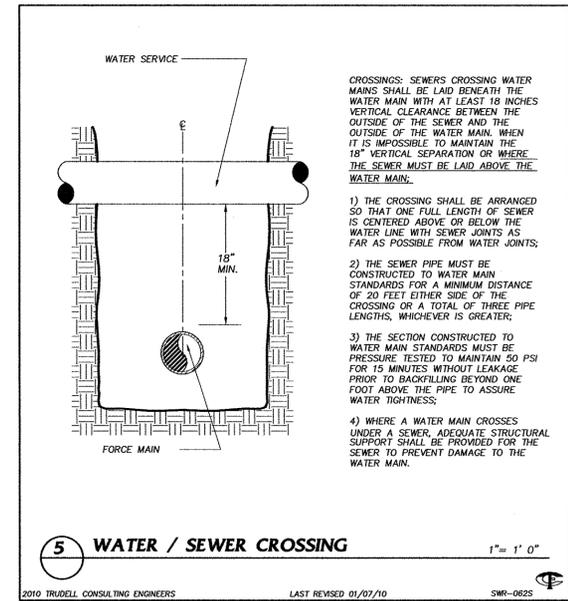
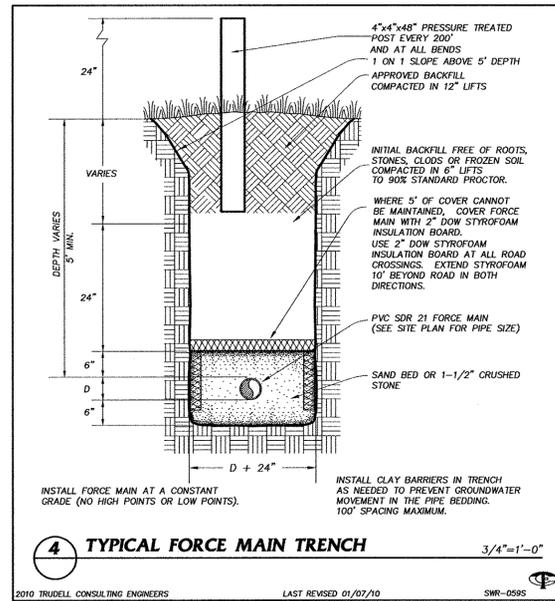
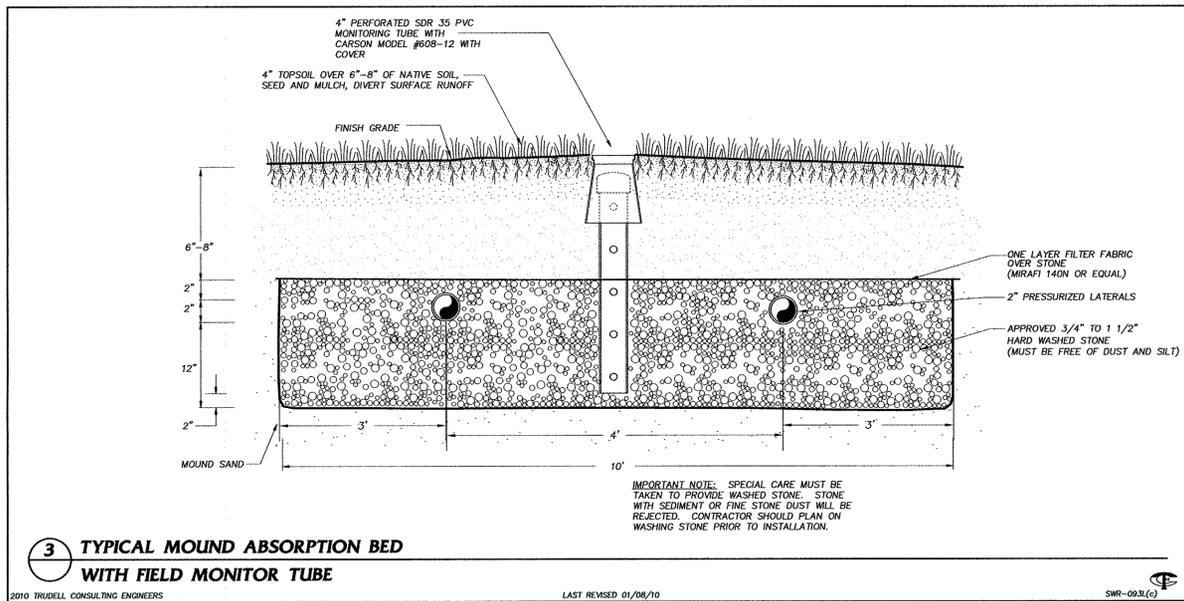
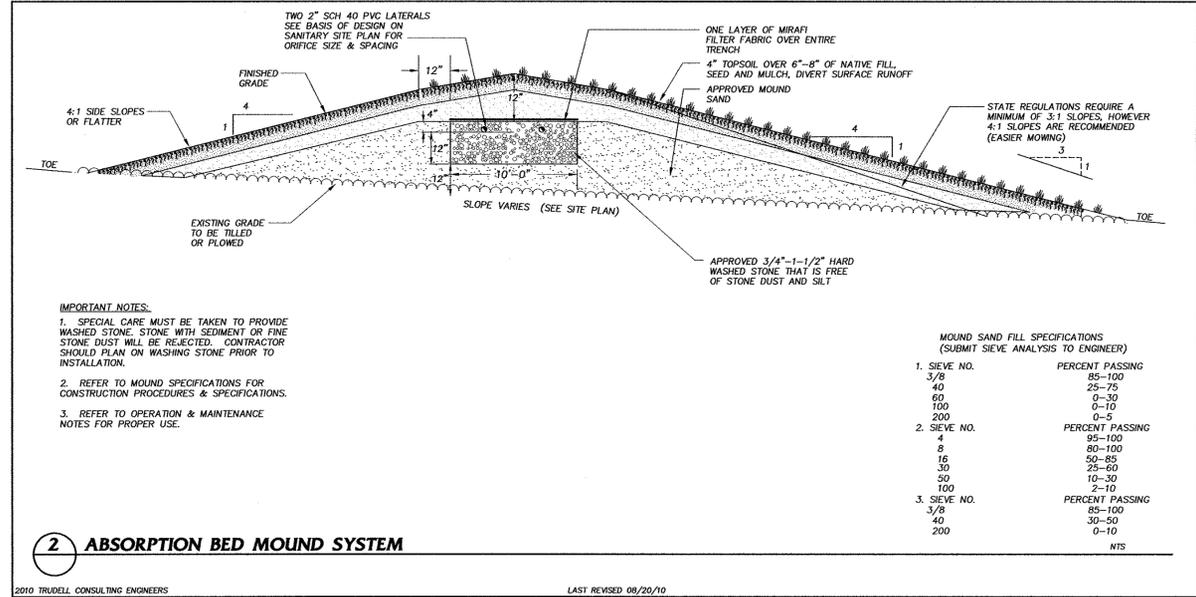
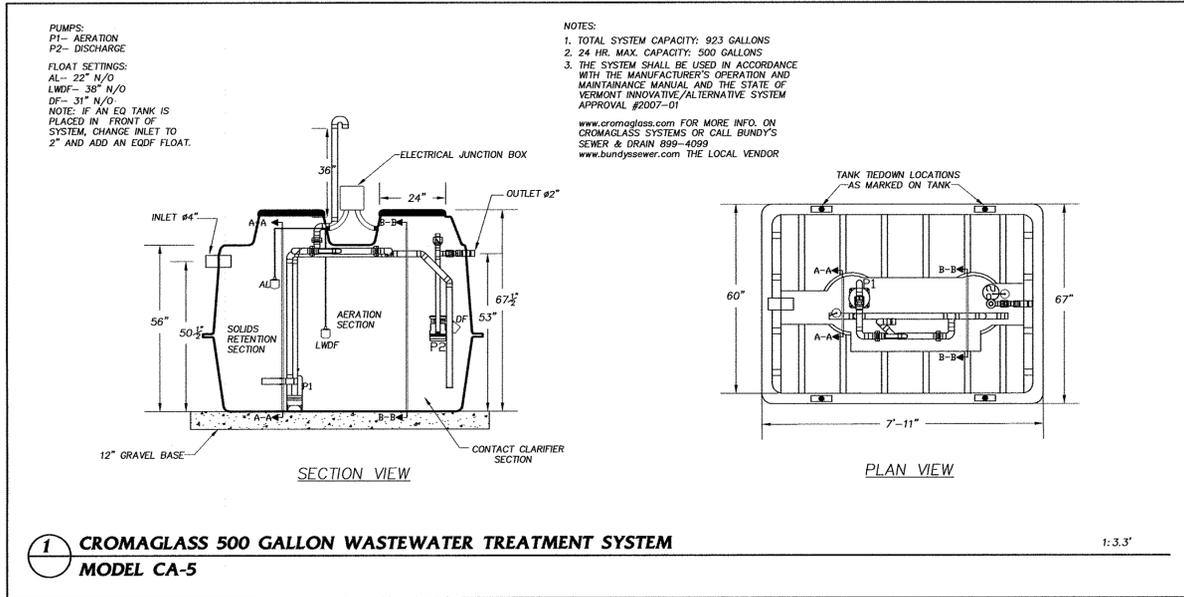
478 Blair Park Road  
Box 308 Williston, Vermont 05495 (802) 879-6331

THESE PLANS ARE SUITABLE FOR THE PURPOSE OF:

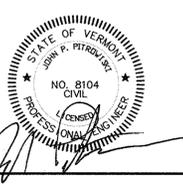
- CONCEPTUAL APPROVAL SUBMISSION
- PRELIMINARY APPROVAL SUBMISSION
- ACT 250 SUBMISSION
- FINAL APPROVAL SUBMISSION
- CONSTRUCTION DRAWINGS

USE AND INTERPRETATION OF THE DRAWINGS

- Drawings prepared for submittal are intended for preliminary planning, coordination with other disciplines, utilities, and approving authorities. They are not intended as final drawings or construction drawings.
- Drawings prepared for construction are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines. They are specific to the project. If errors are discovered they are to be brought to the attention of Truelli Consulting Engineers (TCE) before using. By use of these drawings for construction of the Project, the Owner represents that (he/she) has reviewed, approved, and accepted the drawings. The drawings shall be considered "Final Approval Submittal" once they receive state and local approval.
- As instruments of service these drawings and copies thereof furnished by the Engineer are his property. Changes to the drawings may only be made by the Engineer.
- It is the User's responsibility to ensure this copy contains the most current revisions.



No.	Description	Date	By
Revisions			



Project Title  
**J.C. Small & Company**  
Abbott, Melby, Mundie  
Camp Project  
29 Salmon Lane  
Charlotte, Vermont

Sheet Title  
**Details**

Drawing Number : 2010056-70 Extension : 00  
Project manager : DPB Drawn : DPB  
Date : 08/25/30 Scale : SHOWN  
Approved

**D1**

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