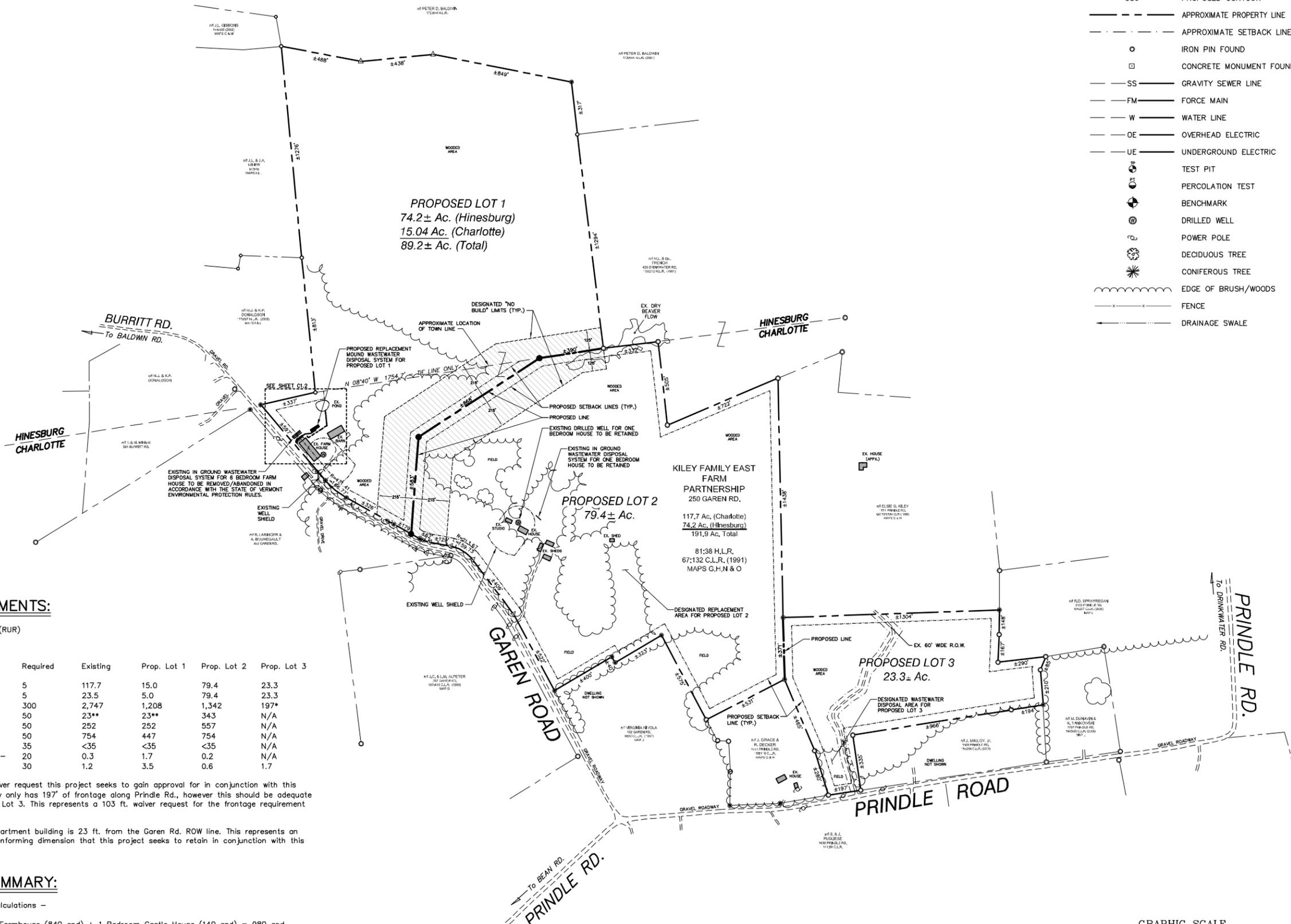




LEGEND

- 336 --- EXISTING CONTOUR
- 336 — PROPOSED CONTOUR
- - - - - APPROXIMATE PROPERTY LINE
- - - - - APPROXIMATE SETBACK LINE
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- SS — GRAVITY SEWER LINE
- FM — FORCE MAIN
- W — WATER LINE
- OE — OVERHEAD ELECTRIC
- UE — UNDERGROUND ELECTRIC
- ⊕ TEST PIT
- ⊕ PERCOLATION TEST
- ⊕ BENCHMARK
- ⊕ DRILLED WELL
- ⊕ POWER POLE
- ⊕ DECIDUOUS TREE
- ⊕ CONIFEROUS TREE
- ~ EDGE OF BRUSH/WOODS
- - - - - FENCE
- - - - - DRAINAGE SWALE



ZONING REQUIREMENTS:

Zoning District – Rural District (RUR)

Dimensional Standards –

	Required	Existing	Prop. Lot 1	Prop. Lot 2	Prop. Lot 3
Minimum Lot Size (Ac.) –	5	117.7	15.0	79.4	23.3
Minimum Density (Ac./unit) –	5	23.5	5.0	79.4	23.3
Minimum Frontage (ft.) –	300	2,747	1,208	1,342	197*
Minimum Front Setback (ft.) –	50	23**	23**	34.3	N/A
Minimum Side Setback (ft.) –	50	252	252	557	N/A
Minimum Rear Setback (ft.) –	50	754	447	754	N/A
Maximum Building Height (ft.) –	35	<35	<35	<35	N/A
Maximum Building Coverage (%) –	20	0.3	1.7	0.2	N/A
Maximum Lot Coverage (%) –	30	1.2	3.5	0.6	1.7

* – This value represents a waiver request this project seeks to gain approval for in conjunction with this subdivision. The existing property only has 197' of frontage along Prindle Rd., however this should be adequate to meet the needs of Proposed Lot 3. This represents a 103 ft. waiver request for the frontage requirement for Proposed Lot 3.

** – The existing Farmhouse apartment building is 23 ft. from the Garen Rd. ROW line. This represents an existing, grand fathered, non-conforming dimension that this project seeks to retain in conjunction with this subdivision.

DESIGN FLOW SUMMARY:

Water and Sewer Design Flow Calculations –

Existing Property – 6 Bedroom Farmhouse (840 gpd) + 1 Bedroom Castle House (140 gpd) = 980 gpd

Proposed Lot 1 – 6 Bedroom Farmhouse = 840 gpd

Proposed Lot 2 – 1 Bedroom Castle House = 140 gpd

Proposed Lot 3 – Deferral request until Site Plan application is made.

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LN., So. BURLINGTON, VT 05403
802-864-2323 FAX: 802-864-2271 web: www.cca-vt.com

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JSO

CHECKED

SAV

APPROVED

JSO

OWNER:

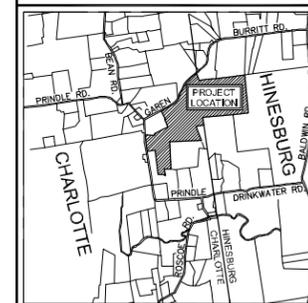
**KILEY FAMILY
EAST
PARTNERSHIP**

2033 DORSET ST.
CHARLOTTE, VT 05445

PROJECT:

**PROPOSED
MINOR
SUBDIVISION**

PRINDLE & GAREN RD.
CHARLOTTE, VT 05445



LOCATION MAP

1" = 4000'

DATE	CHECKED	REVISION
2/1/12	JSO	REVISED DESIGN BASIS

**OVERALL
PROPOSED
SITE PLAN**

DATE

SEPT. 1, 2011

SCALE

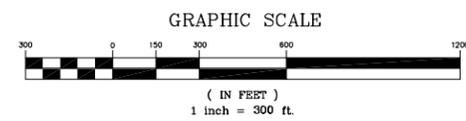
1" = 300'

PROJ. NO.

11114.01

DRAWING NUMBER

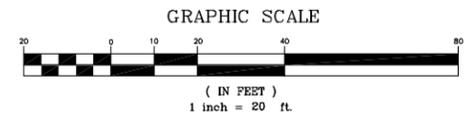
C1.1



TEST PIT RESULTS

6/11/11 JSO

- TEST PIT #202
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-14" RED BROWN SANDY LOAM
 - 14-36" GREY BROWN VERY FINE SANDY LOAM MOTTLING @ 18", WATER @ 32"
- TEST PIT #203
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-20" GREY BROWN FINE SANDY LOAM
 - 20-35" GREY BROWN VERY FINE SANDY LOAM MOTTLING @ 20", NO WATER
- TEST PIT #204
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-22" DARK BROWN SANDY LOAM
 - 22-40" GREY BROWN VERY FINE SANDY LOAM MOTTLING @ 20", NO WATER
- TEST PIT #205
 - 0-8" DARK BROWN SANDY LOAM TOPSOIL
 - 8-16" DARK BROWN SANDY LOAM
 - 16-40" DARK GREY BROWN VERY FINE SANDY LOAM MOTTLING @ 18", NO WATER
- TEST PIT #206
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-30" DARK BROWN SANDY CLAY LOAM MOTTLING @ 12", NO WATER
- TEST PIT #207
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-12" RED BROWN SANDY LOAM
 - 12-42" GREY BROWN VERY FINE SANDY LOAM MOTTLING @ 15", NO WATER
- TEST PIT #208
 - 0-4" DARK BROWN SANDY LOAM TOPSOIL
 - 4-20" RED BROWN SANDY LOAM
 - 20-38" DARK BROWN FINE SANDY LOAM MOTTLING @ 20", NO WATER
- TEST PIT #209
 - 0-6" DARK BROWN SANDY LOAM TOPSOIL
 - 6-20" RED BROWN SANDY LOAM
 - 20-45" DARK BROWN FINE SANDY LOAM MOTTLING @ 30", NO WATER



MINIMUM ISOLATION DISTANCES

(Contact Engineer for any Clarifications or Conflicts)

Disposal Field	Horizontal Distance (Ft.)	
	Septic Tank	Septic Tank
Drilled Well - Up Slope of System	100*(Min.)	50
Drilled Well - Down Slope of System	200*(Min.)	50
Service Water Lines	25	25
Roadways, Driveways	10	5
Stream, Watercourse, Lake or Impoundment	50	25
Drainage Swales, Roadway Ditches	25	--
Foundation, Footing Drains	35 (75 Downslope)	10
Replacement Area - Sides	10	--
Replacement Area - Uphill or Downhill	25	--
Property Line - 10' from toe or 25' from edge of disposal system, whichever is greater.		
Property Line - Downgradient Toe	25	--

*Isolation distances to well locations may vary due to site conditions - contact Engineer for verification with the Vermont Water Supply Rule.

PERC TEST RESULTS

6/15/11 JCB/GAC

- PERC TEST #1 - 40 MIN./IN.
- PERC TEST #2 - 40 MIN./IN.

DESIGN DATA FOR REPLACEMENT SYSTEM

- Design Data Flow:
 - One 3 bedroom apartment = 1 x (3 @ 140 gpd) = 420 gpd
 - One 2 bedroom apartment = 1 x (2 @ 140 gpd) = 280 gpd
 - One 1 bedroom apartment = 1 x (1 @ 140 gpd) = 140 gpd
 - Total Design Flow = 420 + 280 + 140 = 840 gpd
- Septic Tank Size:
 - Design Flow = 840 gpd
 - Tank Size = 1.5 x 840 = 1,260 gal
 - Use 1,500 gal septic tank
- Application Rate:
 - Use 1.0 gal/sf for mound design
 - Double rate through use of pre-treatment
 - Use 2.0 gal/sf for system
- Absorption Trench Area:
 - 840 gal @ 2 gal/sq ft = 420 sq ft required
 - Use two 4 ft x 55 ft trench = 440 sq ft provided
- Pump Requirements:
 - Each lateral to have eleven orifices
 - Twenty-two 1/4" dia. ori. @ 1.28 gpm/ori. = 28 gpm
 - IDH @ 28 gpm
 - Elevation 6 ft
 - Friction 6 ft
 - Residual 3 ft
 - 15 ft
 - Use SHEF33 (1/3 Hp) effluent pump or approved equal
 - Confirm pump selection with Engineer prior to construction
- Desktop Mounding Analysis:
 - Ave. Slope = 4.5%
 - Soil Condition = Sandy Loam
 - f = 18.7
 - h = 18 - 6 = 1.0'
 - LLR = 18.7 x 1.0 = 18.7 gpd/lf
 - Length = 840 gpd / 18.7 gpd/lf = 45 lf required
 - Design Length = 55 lf provided
- Replacement System:
 - Not required due to mound primary system design

LEGEND

- 336--- EXISTING CONTOUR
- 336— PROPOSED CONTOUR
- - - - - APPROXIMATE PROPERTY LINE
- - - - - APPROXIMATE SETBACK LINE
- IRON PIN FOUND
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- - - - - FENCE
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SITE ENGINEER:



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OWNER:

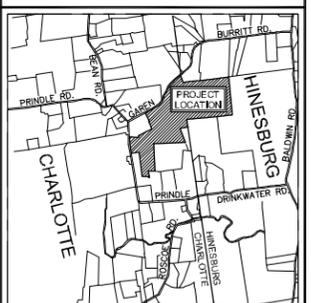
**KILEY FAMILY
EAST
PARTNERSHIP**

2033 DORSET ST.
CHARLOTTE, VT 05445

PROJECT:

**PROPOSED
MINOR
SUBDIVISION**

PRINDLE & GAREN RD.
CHARLOTTE, VT 05445



LOCATION MAP

1" = 4000'

DATE	CHECKED	REVISION
2/1/12	JSO	REVISED DESIGN BASIS & SYSTEM

WASTEWATER DISPOSAL SYSTEM SITE PLAN

DATE
SEPT. 1, 2011
SCALE
1" = 20'
PROJ. NO.
11114.01

DRAWING NUMBER
C1.2

GENERAL NOTES:

- Utilities shown do not purport to constitute or represent all utilities located upon or adjacent to the surveyed premises. Existing utility locations are approximate only. The Contractor shall field verify all utility conflicts. All discrepancies shall be reported to the Engineer. The Contractor shall contact Dig Safe (888-344-7233) prior to any construction.
- All existing utilities not incorporated into the final design shall be removed or abandoned as indicated on the plans or directed by the Engineer.
- The Contractor shall maintain as-built plans (with ties) for all underground utilities. Those plans shall be submitted to the Owner at the completion of the project.
- The Contractor shall repair/restore all disturbed areas (on or off the site) as a direct or indirect result of the construction.
- All grassed areas shall be maintained until full vegetation is established.
- Maintain all trees outside of construction limits.
- The Contractor shall be responsible for all work necessary for complete and operable facilities and utilities.
- The Contractor shall submit shop drawings for all items and materials incorporated into the site work. Work shall not begin on any item until shop drawing approval is granted.
- If there are any conflicts or inconsistencies with the plans or specifications, the Contractor shall contact the Engineer for verification before work continues on the item in question.
- Property line information is based upon a plat entitled "Plat of Boundary Survey - Kiley Family East Farm Partnership", dated May 2, 2008, prepared by Civil Engineering Associates, Inc. and recorded in Slide ___ of the town of Charlotte Land Records. This plan is not a boundary survey and is not intended to be used as one.
- The project benchmark, of 420.4', is a spike set in a 22" Ash tree located immediately north of the proposed wastewater disposal system. Vertical datum referenced to NAVD 88 (Geoid 03) based on GPS observations performed during the topographic survey with Trimble 4700 dual frequency receivers. Horizontal datum based on a magnetic reading taken at the time of survey.

DISPOSAL FIELDS & FORCE MAINS
PART 1 - GENERAL

- 1.01 Summary
 A. Section includes:
 1. Wastewater Disposal Field
 2. Force Main Materials
 1.02 References

A. All work shall be done in accordance with the most recent edition of the State of Vermont Environmental Protection Rules.

PART 2 - PRODUCTS

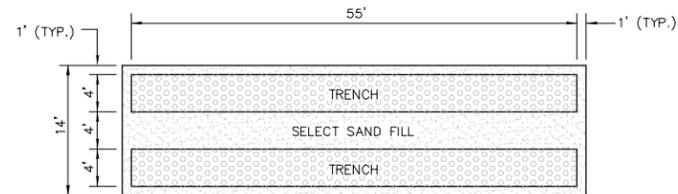
2.01 General

- A. Disposal Fields: Schedule 40 PVC pipe meeting the requirements of the latest revision of ASTM Specification D-1785. Fittings used in the disposal fields shall be compatible with distribution lines material.
 B. Force Mains: PVC pipe shall conform in all respects to the latest revisions of ASTM Specifications D-2241. All pipe fittings shall be SCH 40 (or SDR 26) clearly marked as follows:
 - Manufacturer's Name and Trademark
 - Nominal Pipe Size (as shown on plans)
 - Material Designation
 Joints shall be push-on type using elastomeric gaskets factory installed conforming to ASTM Specification D-3212.
 C. Crushed stone shall be clean, durable and no smaller than 3/4" or larger than 1 1/2 inches in diameter.

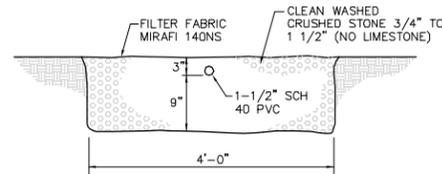
PART 3 - EXECUTION

3.01 Mound Construction

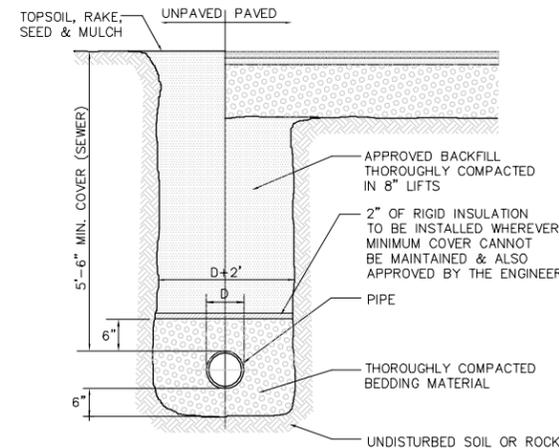
- A. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material. Prior to plowing, the dosing pump discharge line from the pump chamber or dosing chamber to the point of connection with the distribution piping header shall be installed. The area shall then be plowed to a depth of seven to eight inches, parallel to the land contour with the plow throwing the soil uplope to provide a proper interface between the fill and natural soils. Tree stumps should be cut flush with the surface of the ground and roots should not be pulled. Once plowing of the mound area is completed, the area shall be fenced to prevent vehicles and equipment from entering the plowed area.
 B. To prevent compaction, construction equipment shall not be moved across the plowed surface or the effluent disposal area. However, after placement of a minimum of six inches of sand fill over the plowed area, construction equipment may be driven over the protected surface to expedite construction. Construction equipment shall be kept off the area down gradient of the disposal field. Construction and/or plowing shall not be initiated when the soil moisture content is high.
 C. Construction should be initiated immediately after preparation of the soil interface by placing all of the sand fill needed for the mound to a minimum depth of 27 inches. This depth will permit excavation of trenches to accommodate the crushed stone (12 inches) necessary for the distribution piping.
 D. The pressure distribution pipe should be laid level on top of the stone and flushing valves installed at the ends of the pipe. Upon completion of the distribution piping, the qualified consultant shall test the system with clean water. The test shall show that a minimum pressure of three feet of head is present at the ends of the pipe and that the difference in discharge rate between the two orifices with the greatest difference in discharge rates is not greater than 15 percent. After connecting the distribution pipe to the force main, the distribution pipe shall be covered with at least two inches of clean stone aggregate. The stone aggregate shall be covered completely with filter fabric.
 E. After installation of the distribution system, crown the entire mound with cover of soil less permeable than the mound fill, covering with 12 inches on the side slopes and a minimum of 18 inches over the center of the mound. Native soil from the site is normally suitable for cover material, though the top two to four inches of this cover should be topsoil. The entire mound shall be seeded, sodded or otherwise provided with vegetative cover to assure stability of the installation.
 F. The area surrounding the disposal field shall be graded to provide diversion of surface runoff waters if required.
 3.02 Testing Notes
 A. The wastewater system shall be inspected during critical stages of construction by a qualified consultant. This shall include at a minimum the staking of the disposal field, the trenches after the initial 9 inches of stone and distribution piping is placed, the installation and pressure test of distribution piping, and a final inspection of the entire system. The Contractor will be responsible for contacting the Engineer to set up the inspection schedule.
 B. Testing of pressure distribution shall be done in the Engineer's presence. Pressure shall be measured to insure a minimum of 1 psi. (See section D above).
 C. The distribution line shall then be carefully placed on the bedding with no slope, orifice shields snapped into place, and covered with at least 2" of crushed stone.
 D. All work shall be done in accordance with the most recent edition of the State of Vermont Environmental Protection Rules and the Town of Charlotte's requirements.
 E. Prior to use of the system, the qualified consultant shall submit a written report to the State of Vermont stating that the system has been installed according to the approved plans and permit. The report shall specifically address the inspection of the site preparations and include numerical results of the orifice discharge rate comparison.



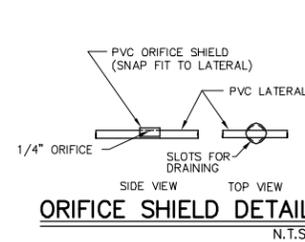
TYPICAL TRENCH PLAN
N.T.S.



TYPICAL TRENCH SECTION
N.T.S.

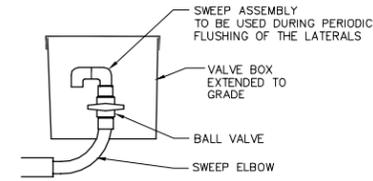


TYPICAL TRENCH DETAIL
N.T.S.

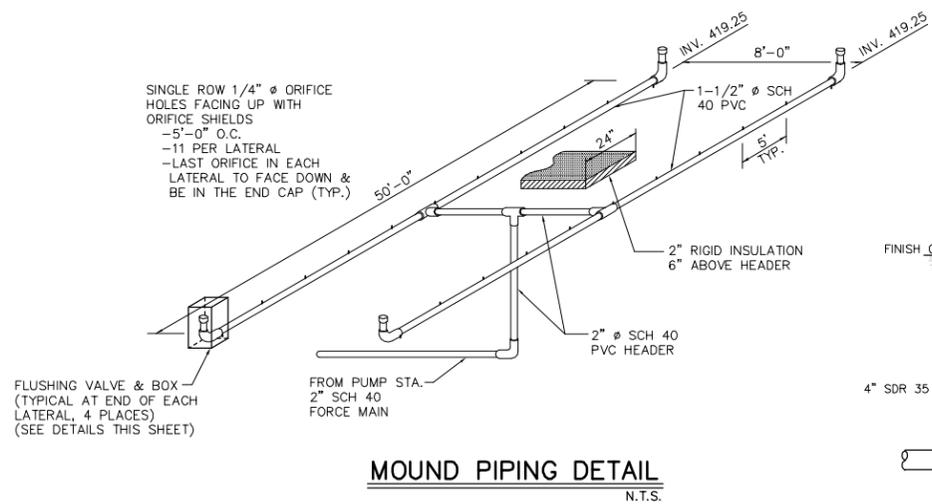


ORIFICE SHIELD DETAIL
N.T.S.

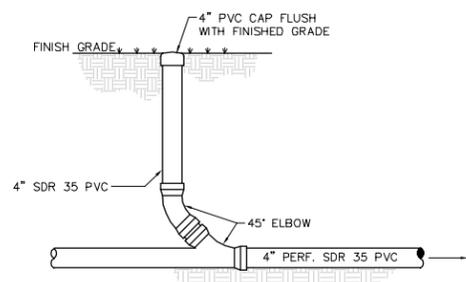
- NOTES:
 1. Typical trench for water, sewer, and drainage pipe.
 2. Compaction of backfill and bedding shall be a minimum of 90% (95% under roadway surfaces) of maximum dry density determined in the standard proctor test (ASTM D698).
 3. Bedding material shall not be placed on frozen subgrade.
 4. Approved backfill shall not contain any stones more than 6" in largest dimension, 2" maximum diameter within 2' of the outside of the pipe, or any frozen, or organic material.
 5. Trenches shall be completely dewatered prior to placing of pipe bedding material and kept dewatered during installation of pipe and backfill.
 6. The sides of trenches 4' or more in depth entered by personnel shall be sheeted or sloped to the angle of repose as defined by O.S.H.A. standards.
 7. Bedding material for wastewater lines shall consist of crushed stone or gravel with maximum size of 3/4".



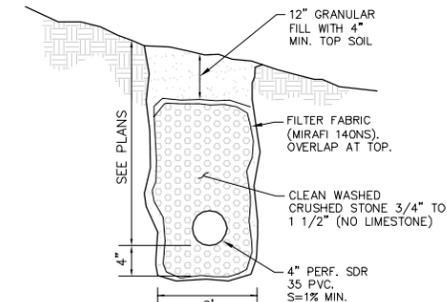
FLUSHING VALVE DETAIL
N.T.S.



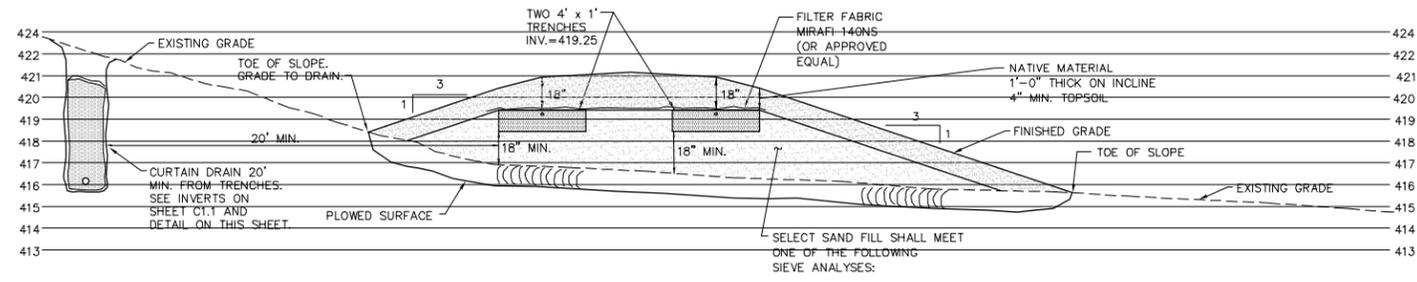
MOUND PIPING DETAIL
N.T.S.



TYPICAL CLEANOUT DETAIL
N.T.S.



CURTAIN DRAIN DETAIL
N.T.S.



SECTION A-A
1/4" = 1'-0"

SIEVE #	% PASSING	SIEVE #	% PASSING	SIEVE #	% PASSING
10	85-100	8	80-100	10	85-100
40	25-75	16	50-85	40	30-50
60	0-30	30	25-60	200	0-10
100	0-10	50	10-30		
200	0-5	100	2-10		

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
 10 MANSFIELD VIEW LN., So. BURLINGTON, VT 05403
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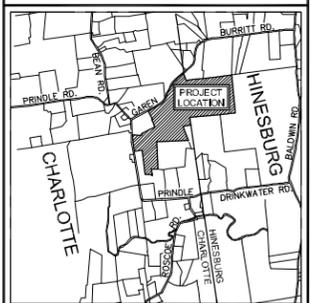
**KILEY FAMILY
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2033 DORSET ST.
 CHARLOTTE, VT 05445

PROJECT:

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 MINOR
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PRINDLE & GAREN RD.
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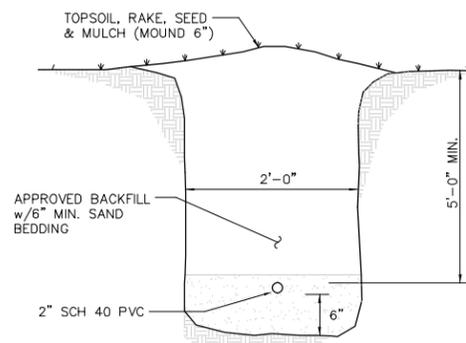
LOCATION MAP
1" = 4000'

DATE	CHECKED	REVISION
2/1/12	JSO	REVISED DESIGN BASIS

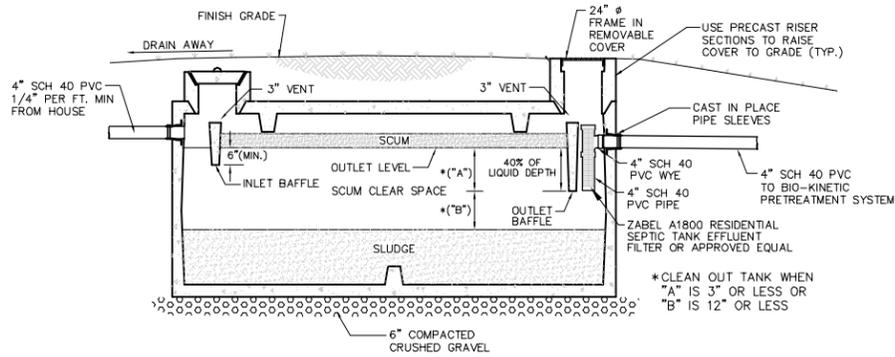
**WASTEWATER
 DETAILS PLAN**

DATE
SEPT. 1, 2011
SCALE
AS SHOWN
PROJ. NO.
11114

DRAWING NUMBER
C2.0



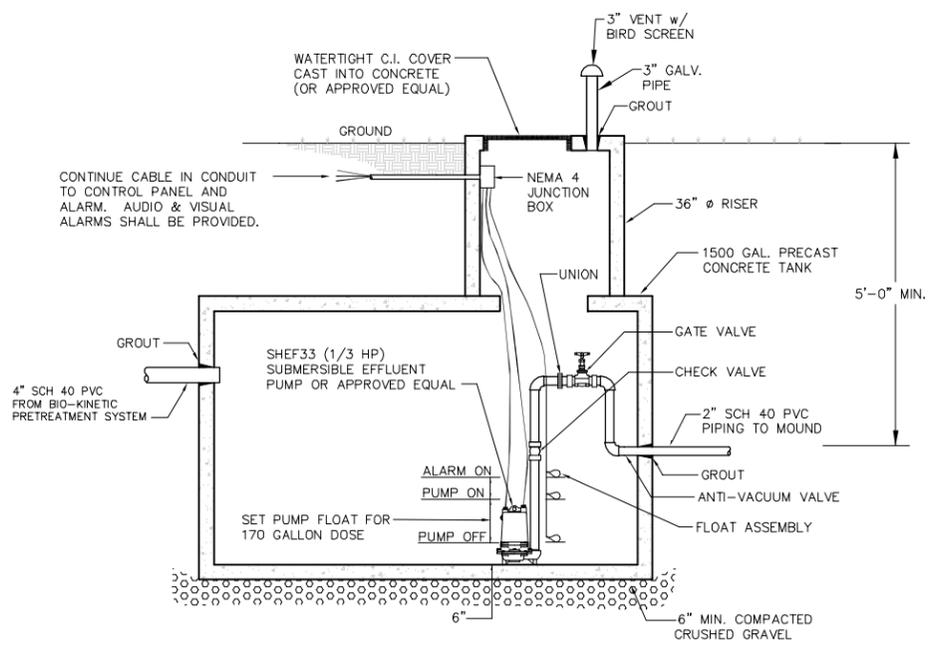
FM TRENCH SECTION
N.T.S.



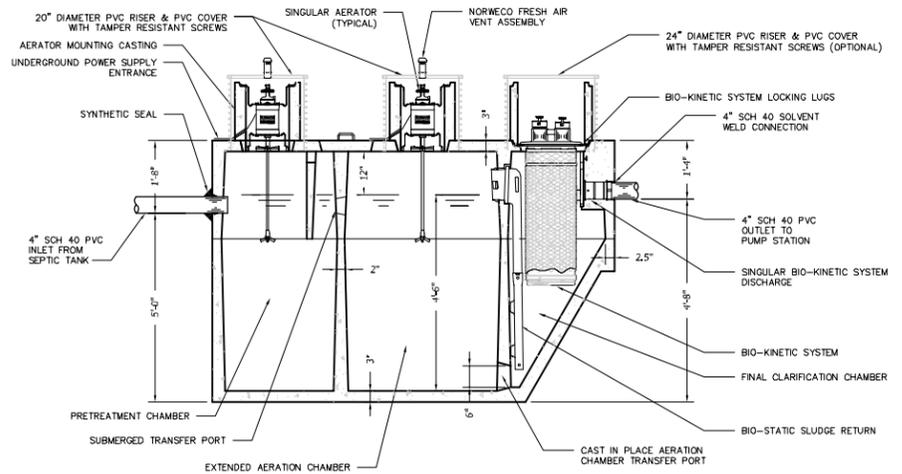
1500 GALLON SEPTIC TANK
N.T.S.

SEPTIC TANK NOTES

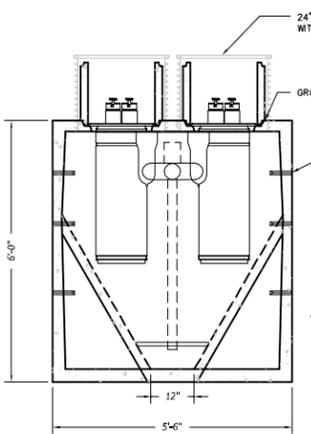
- Septic tank shall be a precast concrete tank, unless otherwise approved.
- Maintenance**
 - At least once a year, the depth of sludge and scum in the septic tank should be measured. The tank should be pumped if:
 - The sludge is closer than twelve inches to the outlet baffle or;
 - The scum layer is closer than three inches to the outlet baffle.
 - Under no circumstances should anyone enter a septic tank.
- Recommendations**
 - The use of garbage grinders is discouraged as sludge accumulation in the septic tank can be increased by up to 40%. If used, the septic tank will require more frequent pumping.
 - The septic system is designed to handle human waste and toilet paper, plus water from plumbing fixtures such as toilets, baths and sinks. Moderate use of household cleaners, detergents and bleach should not damage your system; however, indiscriminate use may cause problems. Non-degradable paper products and any other non-biodegradable substances should not be put in your wastewater system.
 - Minimize the amount of water used in the household. Excessive water could flush solids from the septic tank to the disposal field which leads to clogging or plugging of the piping. When dishwashers and washers are used, make sure loads are full and stagger their use to reduce peak flows, i.e. stagger loads of laundry over several days instead of one day.
- Walkways, patios and decks or other permanent structures should not be constructed over the septic tank.
- There should be no need to use commercial "starter", "bacterial feeds", or "cleaners", etc. Bacteria in a septic tank system occurs naturally.



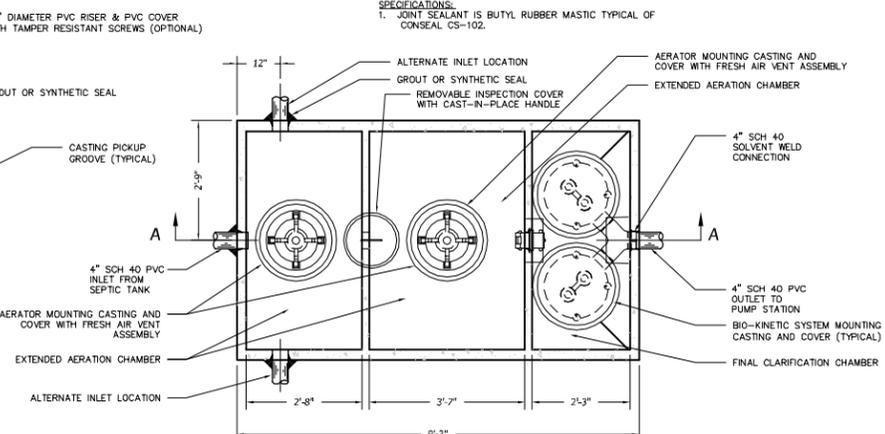
1000 GALLON PUMP STATION DETAIL
N.T.S.



SECTION A-A



OUTLET END VIEW



PLAN VIEW

SPECIFICATIONS:
1. JOINT SEALANT IS BUTYL RUBBER MASTIC TYPICAL OF CONSEAL CS-102.

PRODUCT # 960-1000

OnSite
Septic Solutions, LLC
BUSINESS PARK AT CAMBRIDGE
CAMBRIDGE, VT. 05444
paul@onsitesepicsolutions.biz
TEL. 802-644-5500

- NOTES:**
- TOTAL SYSTEM CAPACITY: 2,300 GALLONS
 - RATED CAPACITY: 1,000 GALLONS PER DAY

**MODEL 960-1000 GPD SINGULAIR
BIO-KINETIC WASTEWATER TREATMENT SYSTEM**
N.T.S.

SITE ENGINEER:



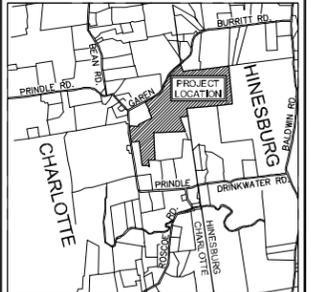
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APPROVED: JSO

OWNER:
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2033 DORSET ST.
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PROJECT:
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MINOR
SUBDIVISION**
PRINDLE & GAREN RD.
CHARLOTTE, VT 05445



LOCATION MAP
1" = 4000'

DATE	CHECKED	REVISION
2/1/12	JSO	REVISED PRETREATMENT SYSTEM

**WASTEWATER
DETAILS PLAN**

DATE: SEPT. 1, 2011
SCALE: AS SHOWN
PROJ. NO.: 11114
DRAWING NUMBER: C2.1