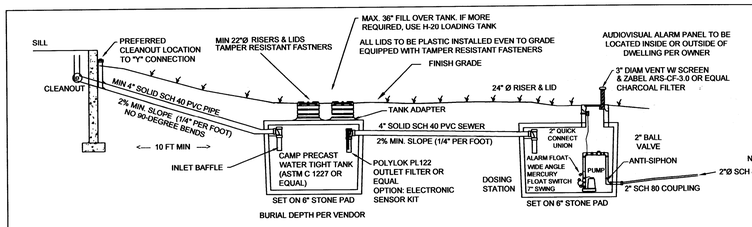


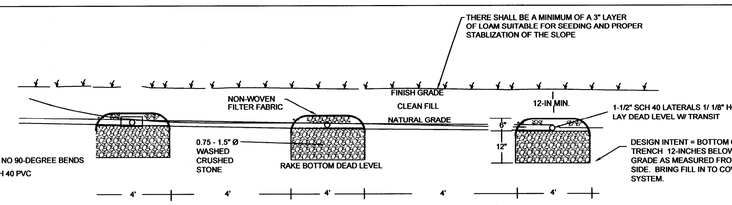
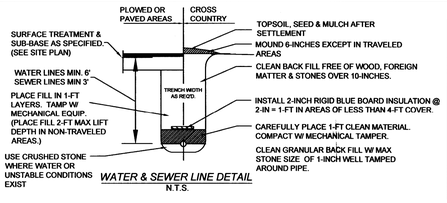
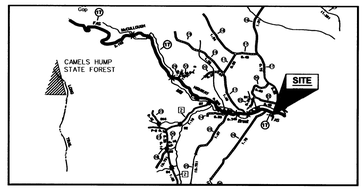


ILLUSTRATION - SEE PLAN VIEW FOR NUMBER OF TRENCHES - FIVE (5) TRENCHES TOTAL



WATER & SEWER LINE DETAIL
N.T.S.

- LOCUS MAP -



- PROJECT DESCRIPTION -

PROPOSED PROJECT IS THREE LOT SUBDIVISION TO SERVE THREE (3) EXISTING DWELLINGS CONSTRUCTED ON ONE PARCEL. LOT#1 IS 4-BR HOMESTEAD TO BE SERVED BY ON-SITE IN-GROUND SEPTIC AND EXISTING SPRIG WELL. LOTS #2 AND #3 ARE 5/2 3-BR SERVED BY COMMON SEPTIC LOCATED ON LOT #2 AND INDIVIDUAL DRILLED WELLS ON THEIR OWN LOTS.

THE SEPTIC SYSTEMS DESIGNED FOR ALL THREE LOTS DO NOT MEET STATE REQUIRED ISOLATION DISTANCES TO PROPERTY LINES. THEREFORE, A DIMENSIONAL WAIVER IS REQUESTED FROM THE REQUIRED ISOLATION DISTANCES.

OWNER IS RESPONSIBLE FOR ENSURING THAT ALL PERMITS ARE IN PLACE PRIOR TO CONSTRUCTION AND CONSTRUCTING THE PROJECT ACCORDINGLY.

LOT #1 HOMESTEAD DESIGN

BASIS OF DESIGN: *(VANR REGULATIONS 1/1/06)*

NUMBER OF BEDROOMS @ 140 GPD:	4
NUMBER OF BEDROOMS @ 70 GPD:	0
DESIGN FLOW:	560 GPD
REQUIRED TANK SIZE:	840 GAL (MIN. 1,000 GAL)
PERC RATE:	16.0 MIN PER INCH

ABSORPTION TRENCH DESIGN

TRENCH APPLICATION RATE:	0.8 GAL/SQ FT
TRENCH AREA REQUIRED:	747 SQ FT
NUMBER OF TRENCHES PROVIDED:	3
WIDTH OF EACH TRENCH PROVIDED:	4 FT
LENGTH OF EACH TRENCH PROVIDED:	64 FT
DEPTH OF STONE BELOW PIPE:	12 INCHES
TRENCH AREA PROVIDED:	768 SQ FT

RECEIVED NOV 16 2007 WASTE WATER MANAGEMENT DIVISION

LOTS #2 & #3 DESIGN

BASIS OF DESIGN: *(VANR REGULATIONS 9/29/075)* *150% DESIGN CAPACITY SYSTEM*

NUMBER OF BEDROOMS @ 140 GPD:	6
NUMBER OF BEDROOMS @ 70 GPD:	0
DESIGN FLOW:	1260 GPD
REQUIRED TANK SIZE:	1,890 GAL (TWO 1,000 GAL Tr
PERC RATE:	16.0 MIN PER INCH

ABSORPTION TRENCH DESIGN

TRENCH APPLICATION RATE:	0.8 GAL/SQ FT
TRENCH AREA REQUIRED:	1680 SQ FT
NUMBER OF TRENCHES PROVIDED:	5
WIDTH OF EACH TRENCH PROVIDED:	4 FT
LENGTH OF EACH TRENCH PROVIDED:	84 FT
DEPTH OF STONE BELOW PIPE:	12 INCHES
TRENCH AREA PROVIDED:	1680 SQ FT

NOTES:

1. LOW FLOW FIXTURES REQUIRED.

2. WATER SYSTEM TO BE CHLORINATED AND TESTED PER VT E.P.R. PRIOR TO USE.

3. CONTRACTOR TO REPORT ALL ERRORS AND OMISSIONS TO ENGINEER PRIOR TO CONSTRUCTION. ALL CHANGE ORDERS, ALTERNATIVE MATERIALS, OR PLAN DEVIATIONS TO BE PRE-APPROVED BY OWNER AND/OR ENGINEER PRIOR TO INSTALLATION AS APPROPRIATE.

4. CONTRACTOR WARNED THAT UNDERGROUND UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THESE PLANS. CONTRACTOR MUST CONTACT DIG-SAFE PRIOR TO ANY DIGGING. THESE PLANS ARE BASED ON LIMITED SUBSURFACE EXCAVATION PER CONTRACTED SCOPE OF WORK. OWNER AND CONTRACTOR WARNED THAT LEDGE OR OTHER UNDESIRABLE CONDITIONS MAY EXIST THAT ARE NOT SHOWN ON THESE PLANS.

5. IF EQUIPPED, SEPTIC TANK EFFLUENT FILTER TO BE INSPECTED & CLEANED EVERY SIX MONTHS. SEPTIC TANK SHOULD BE PUMPED OUT AND CLEANED EVERY THREE YEARS.

6. IF EQUIPPED WITH A SEPTIC TANK, OWNER IS WARNED THAT GARBAGE DISPOSALS, LAUNDRY BLEACH, ANTIBACTERIAL SOAP, HAZARDOUS MATERIALS, PHARMACEUTICALS, AND HOUSEHOLD CLEANERS WILL REDUCE LIFE OF SEPTIC SYSTEM.

7. IT IS THE OWNER'S RESPONSIBILITY TO BECOME FAMILIAR WITH THESE PLANS IN REGARDS TO THE OVERALL PROJECT AND FUTURE USE OF THE PROPERTY. CARE SHALL BE TAKEN TO MAINTAIN THE SYSTEM REPLACEMENT AREA UNDISTURBED AND TO OBSERVE SETBACK REQUIREMENTS FOR ANY FUTURE CONSTRUCTION.

8. CONTRACTOR AND OWNER ARE RESPONSIBLE FOR SITE SAFETY AND COMPLIANCE WITH OSHA, EROSION CONTROL, AND OTHER STATE AND FEDERAL REQUIREMENTS DURING CONSTRUCTION.

9. THIS PLAN WAS CREATED FOR THE PURPOSE OF COMPLETING THE CONTRACTED SCOPE OF WORK AND IS NOT TO BE USED FOR OTHER PURPOSES WITHOUT PERMISSION.

10. THIS MAP IS BASED ON TAX MAP PARCEL DATA AND/OR DEED INFORMATION SUPPLEMENTED WITH ORTHOPHOTO AND FIELD SURVEY BY BANNON ENGINEERING FOR THIS PROJECT. CONTOURS BASED ON SPOT ELEVATIONS AND/OR STATE DEM DATA. BANNON ENGINEERING SHALL NOT BE RESPONSIBLE FOR USE OF THIS INFORMATION BY ANY OTHER ENTITY INCLUDING THE OWNER. THE PROPERTY LINES, EASEMENTS, AND OTHER REAL PROPERTY SHOWN ON THESE PLANS ARE FOR THE USE OF THE VERMONT AGENCY OF NATURAL RESOURCES ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 26 VSA § 2502(4), AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.

- CONSTRUCTION NOTES -

1. CONTACT BANNON ENGINEERING (1-800-349-6139) TO SCHEDULE MANDATORY PRE-CONSTRUCTION MEETING, INSPECTION, AND TESTING AT LEAST 10-DAYS PRIOR TO START OF CONSTRUCTION. FINAL REPORT WILL NOT BE PROVIDED IF SYSTEM IS COVERED.

2. CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION. INSTALL EROSION CONTROLS.

3. BRUSH HOG AND REMOVE DEBRIS FROM AREA. STAKE OUT TANK(S), D-BOX(S), AND TRENCH LOCATIONS. TRENCHES WILL BE PLACED ALONG THE CONTOUR LINES. CONTRACTOR TO CONSTRUCT SYSTEM USING A TRANSIT LEVEL (LASER LEVEL PREFERRED).

4. CONSTRUCTION TO TAKE PLACE DURING DRY CONDITIONS. EXCAVATE TRENCHES TO THE DEPTH SHOWN ON PLANS AS MEASURED FROM THE UPHILL SIDE OF TRENCH TO MAINTAIN DESIGN INTENT AS SHOWN.

5. WORKING BACKWARDS FROM THE TRENCHES, EXCAVATE FOR SEWER DISTRIBUTION PIPE,PUMP STATIONS AND TANK TO ACCOMMODATE THE SLOPE REQUIREMENTS.

6. TRENCH BOTTOM TO BE DEAD LEVEL AND RAKED TO ROUGHEN SURFACE. PLACE 1 TO 1-1/2 INCH DIAM. WASHED CRUSHED STONE IN TRENCHES. LEVEL STONE. INSTALL DISTRIBUTION PIPES DEAD LEVEL WITH HOLES DOWN. CAP ENDS. DO NOT COVER PIPES UNTIL APPROVED BY THE ENGINEER.

7. INSTALL PRE-DRILLED LATERALS ON STONE BEDS. HOLES POINT DOWN. LEVEL BEDS. INSTALL VALVES IF NEED FOR EVEN DISTRIBUTION.

8. ONCE APPROVED BY THE ENGINEER, PLACE ADDITIONAL STONE ON TOP OF LINES TO A DEPTH OF AT LEAST 2-INCHES ABOVE PIPE. USE CARE NOT TO DISTURB THE LEVELED SYSTEM.

9. PLACE AND SECURE SYNTHETIC NON-WOVEN GEOFABRIC OVER STONE.

10. INSTALL AT LEAST 12-INCHES OF CLEAN PERMEABLE (3" MINUS) COVER MATERIAL OVER THE FABRIC. INSTALL FILL BETWEEN TRENCHES SO THAT SYSTEM IS EVENLY GRADED. USE CARE NOT TO DISTURB THE LEVELED SYSTEM.

11. INSTALL OTHER COMPONENTS AS SHOWN. COVER ALL COMPONENTS WITH 2-INCH RIGID BLUE BOARD INSULATION IF SUFFICIENT COVER CAN NOT BE MAINTAINED TO PREVENT FREEZING.

12. FINISH GRADE AROUND SYSTEM TO DIVERT SURFACE RUNOFF WATER AWAY FROM FIELD.

13. RECORD AS-BUILT TIES TO LOCATE ALL SEPTIC SYSTEM COMPONENTS FOR FUTURE RECOVERY. SUBMIT AS-BUILT TIES AND BILL OF MATERIALS TO ENGINEER FOR FINAL REPORT.

14. ALL SEPTIC SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES.

15. THE 2" FORCEMAIN SHALL BE PRESSURE TESTED AT 50-PSI FOR 2-HRS PER STATE REGULATIONS PRIOR TO BACKFILL.

Dept. Of Environmental Conservation
Approved:
Permit #: WW-5-4394d-1
12/14/07

- SOIL DATA -

SOIL TEST PITS BY M. BANNON 4-11-06
OBSERVED BY VANR KATE PERYL

SB #1 & #2
Ap 0-7" LOOSE PLATEY LOAMY CLAY 10YR 3/2
B 7-30" FIRM PLATEY CLAY GLEY 1 5/5GY
C 30-64" LOOSE GRANULAR SANDY GRAVEL 5Y 5/2
SHGW = 7" VIA DISTINCT MOTTLES FREE WATER @ 36"
LEDGE = NONE TO DEPTH ROOTS = 7"

SB #3
AP 0-11" LOOSE GRANULAR LOAMY SAND 10YR 3/2
B 11-20" LOOSE GRANULAR LOAMY SAND 10YR 4/4
C 20-72" LOOSE GRANULAR LOAMY SAND 10YR 4/3
SHGW = 54" VIA FAINT NON-DISTINCT MOTTLING
LEDGE = NONE TO DEPTH ROOTS = 17"

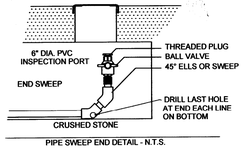
SB #4
AP 0-7" LOOSE GRANULALR LOAMY SAND 10YR 3/2
B 7-27" LOOSE GRANULALR LOAMY SAND 10YR 4/4
C 27-62" LOOSE GRANULALR LOAMY SAND 10YR 4/3
SHGW = 62" VIA FAINT NON-DISTINCT MOTTLING
LEDGE = NONE TO DEPTH ROOTS = 22"

SB #5
AP 0-6" LOOSE GRANUALR LOAMY SAND 10YR 3/2
B 6-40" LOOSE GRANUALR LOAMY SAND 10YR 4/4
C 40-72" LOOSE GRANUALR LOAMY SAND 10YR 4/3
SHGW = 48" VIA FAINT NON-DISTINCT MOTTLING
LEDGE = NONE TO DEPTH ROOTS = 22"

SB #6
AP 0-10" LOOSE GRANUALR LOAMY SAND 10YR 3/2
B 10-22" LOOSE GRANUALR LOAMY SAND 10YR 4/4
C 22-78" LOOSE GRANUALR LOAMY SAND 10YR 4/3
SHGW = 70" VIA FAINT NON-DISTINCT MOTTLING
LEDGE = NONE TO DEPTH ROOTS = 50"

PERC TEST BY M. BANNON 6/28/06

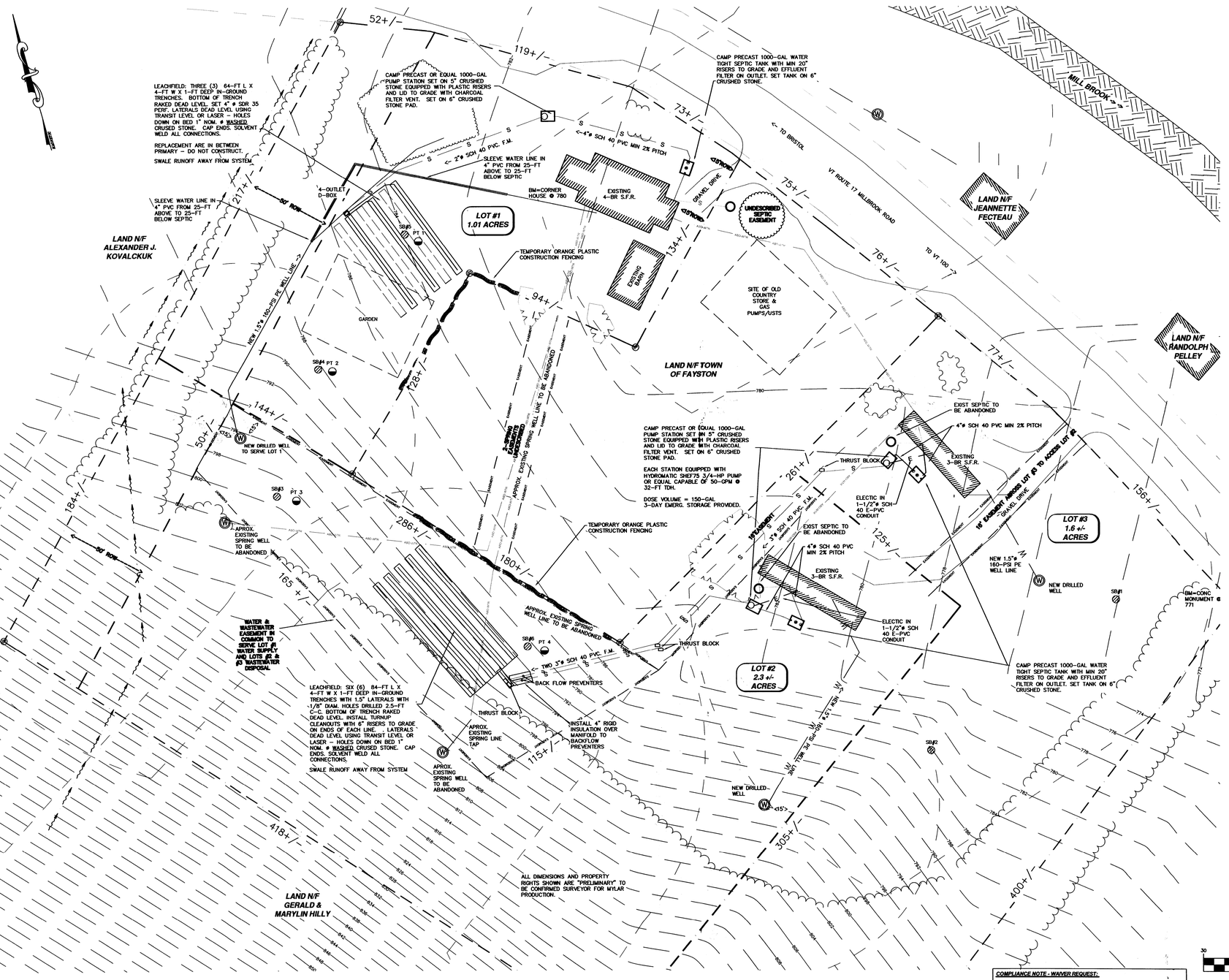
PRIMARY SYSTEM =
PERC 1 = 16 MPI @ 24"
PERC 2 = 16 MPI @ 24" <= DESIGN
PERC 3 = 13 MPI @ 24"
PERC 4 = 10 MPI @ 24"



PIPE SWEEP END DETAIL - N.T.S.

COMMON SETBACKS

100' TO UPSLOPE DRILLED WELL
200' TO DOWNSLOPE DRILLED WELL
50' SEPTIC TANK TO WELL
10' FIELD TO DRIVES
25' FIELD TO ROAD OR DITCH
75' FIELD UPSLOPE OF HOUSE
35' FIELD DOWNSLOPE OF HOUSE
25' FIELD TO PROPERTY LINES
25' FIELD TO TOP EMBANKMENT
50' FIELD TO SURFACE WATERS
25' WATER LINE TO FIELD & TANK
10' WATER LINE TO SEWER LINE



LEGEND

- SOIL BORING OR TEST PIT
- PERCOLATION TEST
- TRAFFIC FLOW
- SIGN
- STUMP
- WATER VALVE
- STORM MANHOLE
- TRAVERSE POINT
- WOOD STAKE OR IRON PIN
- ROCK OUTCROP
- WELL
- SPOT ELEVATION
- UTIL POLE
- GUY WIRE
- DOUBLE SIGN
- RIP RAP
- HYDRANT
- LIGHT
- SEWER MANHOLE
- CATCH BASIN
- WATER SHUTOFF
- BENCHMARK
- WET AREA
- STONE PAD
- EXISTING DECIDUOUS TREE
- PROPOSED DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- PROPOSED EVERGREEN TREE
- EXISTING CONTOURS
- FINAL CONTOURS
- DRAINAGE COURSE
- FENCE
- STONEWALL
- SEWER
- WATER
- SILT FENCE
- BOUNDARY
- DITCH LINE
- STORM DRAIN
- UNDERGROUND UTILITY
- RIGHT OF WAY
- OVERHEAD UTILITY
- TREELINE
- CULVERT
- WELL SHIELD

TOPOGRAPHICAL SURVEY BY: BANNON ENGINEERING

DATE: 6-2006

DATUM

VERTICAL: ASSUMED VIA REC GRADE GPS

HORIZONTAL: ASSUMED 5000, 5000 ON NAD83 SPC

COMPLIANCE NOTE - WAIVER REQUEST:

THE SEPTIC SYSTEMS SHOWN ON THIS PLAN REQUIRE A WAIVER FOR THE REQUIRED 25-FT SETBACKS FROM PROPERTY LINES. THE 25-FT SETBACK IS A CONSTRUCTION SETBACK REQUIREMENT AND NOT A HEALTH SETBACK. IN LIEU OF MEETING THE SETBACKS, TEMPORARY CONSTRUCTION FENCING.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

0 1 2 3
INCHES

RELEASED FOR PERMITTING SUBJECT TO CHANGE.

STATE OF VERMONT REGISTERED PROFESSIONAL ENGINEER No. 7172 MARK BANNON

SIGNATURE, SEAL, & DATE

REVISIONS

1. MCB 10/31/07 REVISED LOT2&3 COMMON SEPTIC TO ELIMINATE REPLACEMENT AREA VIA DESIGN FOR 150% FLOW PER NEW REGULATIONS. THIS ALLOWS FOR A NEW DRILLED WELL TO SERVE LOT 1 LOCATED WITHIN COMMON EASEMENT.

2. MCB 10/31/07 REVISED EASEMENT PER KEITH VAN DERSTINE, PLS. ADVISEMENT.

BANNON ENGINEERING
POST OFFICE BOX 1087
WAITSFIELD, VT 05673
802.728.6500
- CIVIL - ENVIRONMENTAL - DESIGN - PLANNING -

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FILE NAME:	BROTHERS.dwg
DRAWN BY:	MCB
CHECKED:	MCB
SCALE:	1" = 30'
DATE:	8/11/06

PROJECT TITLE
KENNETH & BEVERLY BROTHERS, 113 MILL BROOK ROAD (VT17), FAYSTON, VT PARCEL # 07-003 BK 104 PG 676

SHEET TITLE
SEPTIC SYSTEM DESIGNS FOR LOTS 1, 2, & 3

SHEET NO.
S-2