

REVISION DATE	AREA OF RFA DISTURBANCE
6-29-22 (ORIG)	8,333 S.F.
8-10-22	8,333 S.F.
10-4-22	8,333 S.F.
8-28-23	7,049 S.F.
12-4-23	7,049 S.F.



WETLAND SITE PLAN  
67 HILL STREET; WINCHENDON, MA  
MAP-5C1 PARCEL-73

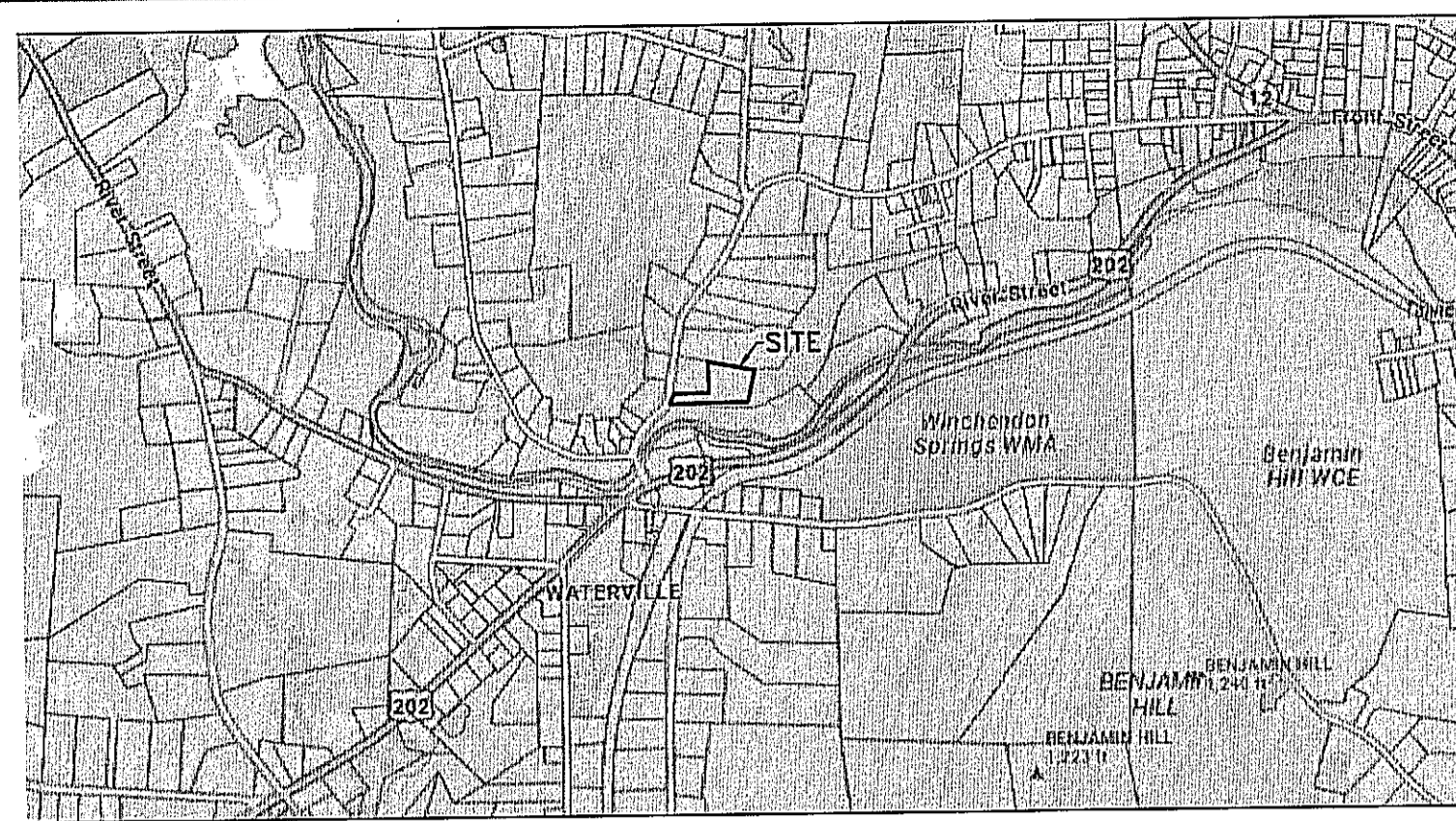
PREPARED FOR:  
DAN BERTRAM

SEPTEMBER 28, 2023

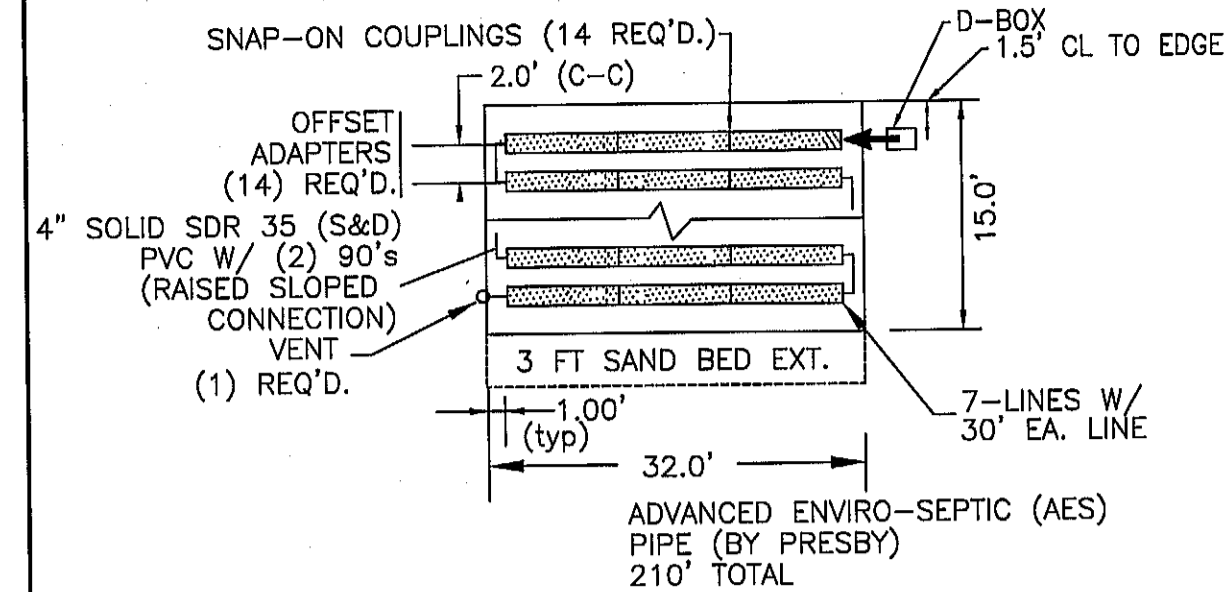
**GRAZ Engineering, LLC**  
WWW.GRAZENGINEERING.COM  
323 WEST LAKE RD.; FITZWILLIAM, NH 03447; (603) 585-6959

JOB NUMBER 22103  
SHEET 1 OF 1

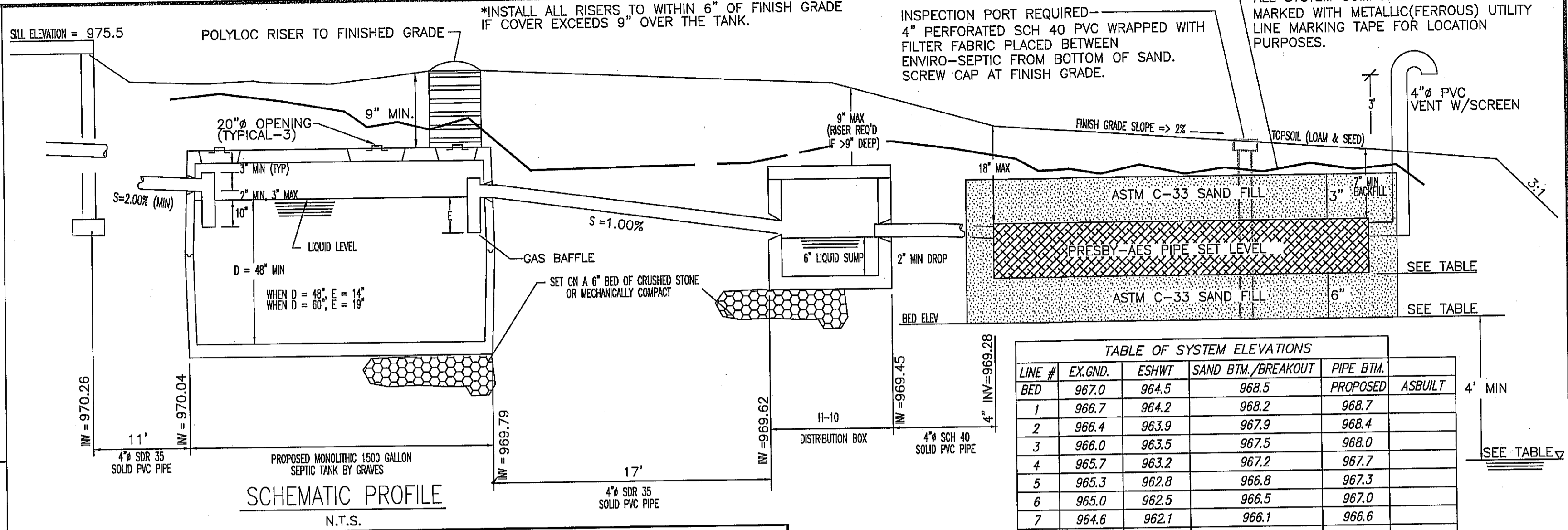
REVISED 12-4-23 PER MASSDEP COMMENTS



LOCUS NTS



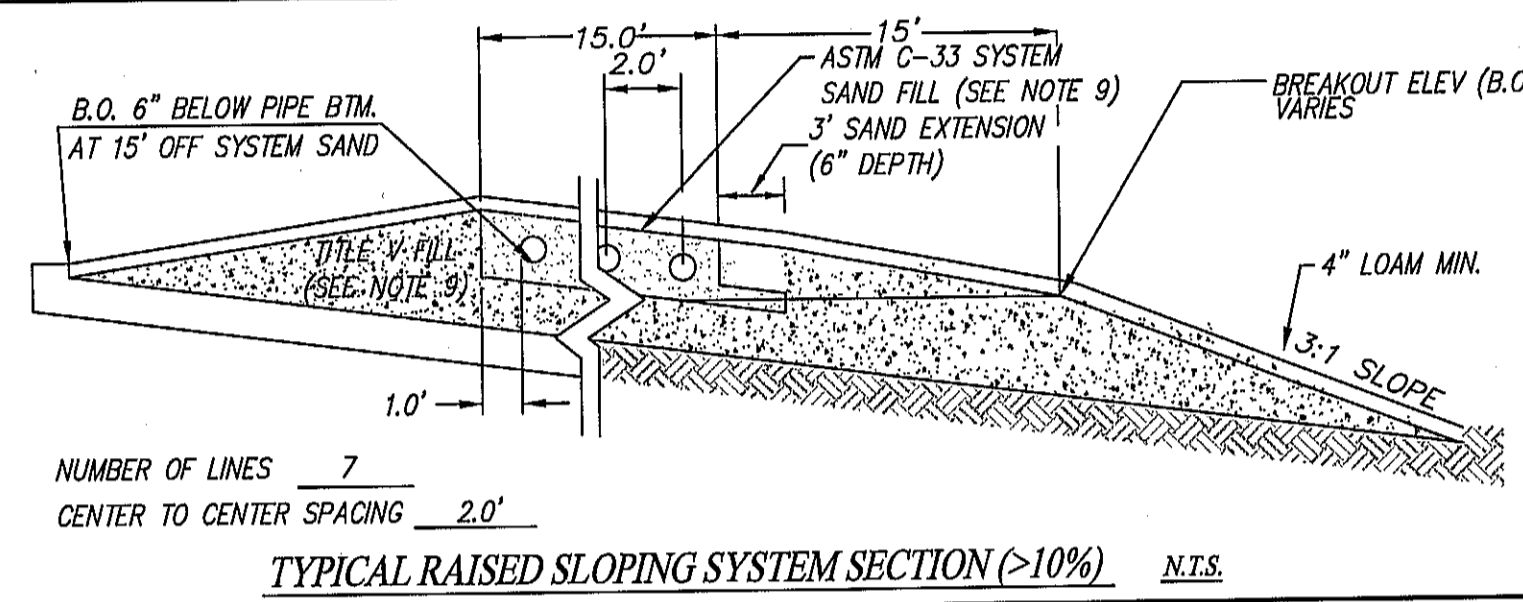
PARTIAL BED PLAN NTS



SCHEMATIC PROFILE N.T.S.

TABLE OF SYSTEM ELEVATIONS

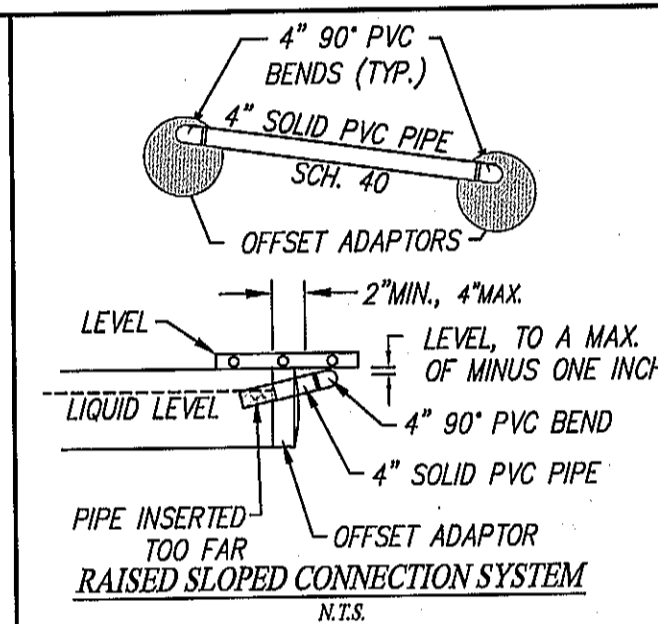
LINE #	EX.GND.	ESHW	SAND BTM/BREAKOUT	PIPE BTM.	PROPOSED	ASBUILT
BED	967.0	964.5	968.5	968.7	968.7	
1	966.7	964.2	968.2	968.4	968.4	
2	966.4	963.9	967.9	968.1	968.1	
3	966.0	963.5	967.5	967.8	967.8	
4	965.7	963.2	967.2	967.5	967.5	
5	965.3	962.8	966.8	967.1	967.1	
6	965.0	962.5	966.5	966.8	966.8	
7	964.6	962.1	966.1	966.4	966.4	
BED	964.3	961.8	965.8	966.1	966.1	



TYPICAL RAISED SLOPING SYSTEM SECTION (>10%) N.T.S.

DESIGN CRITERIA

- Estimated Hydraulic Loading  
3 bedrooms at 110 gals/day/bedroom = 330 gpd.  
Garbage disposal shall not be allowed with this system.
- Septic tank size = 1,500 gallons
- Leaching Area Design Criteria  
Percolation Rate = 10 mpi  
Required linear feet of Presby AES pipe = 210 L.F.  
Linear feet of Enviro-septic pipe provided = 210 L.F.  
Square footage required by Title V = 330 GPD/0.6 = 550 S.F.  
Square footage provided = 576 S.F.

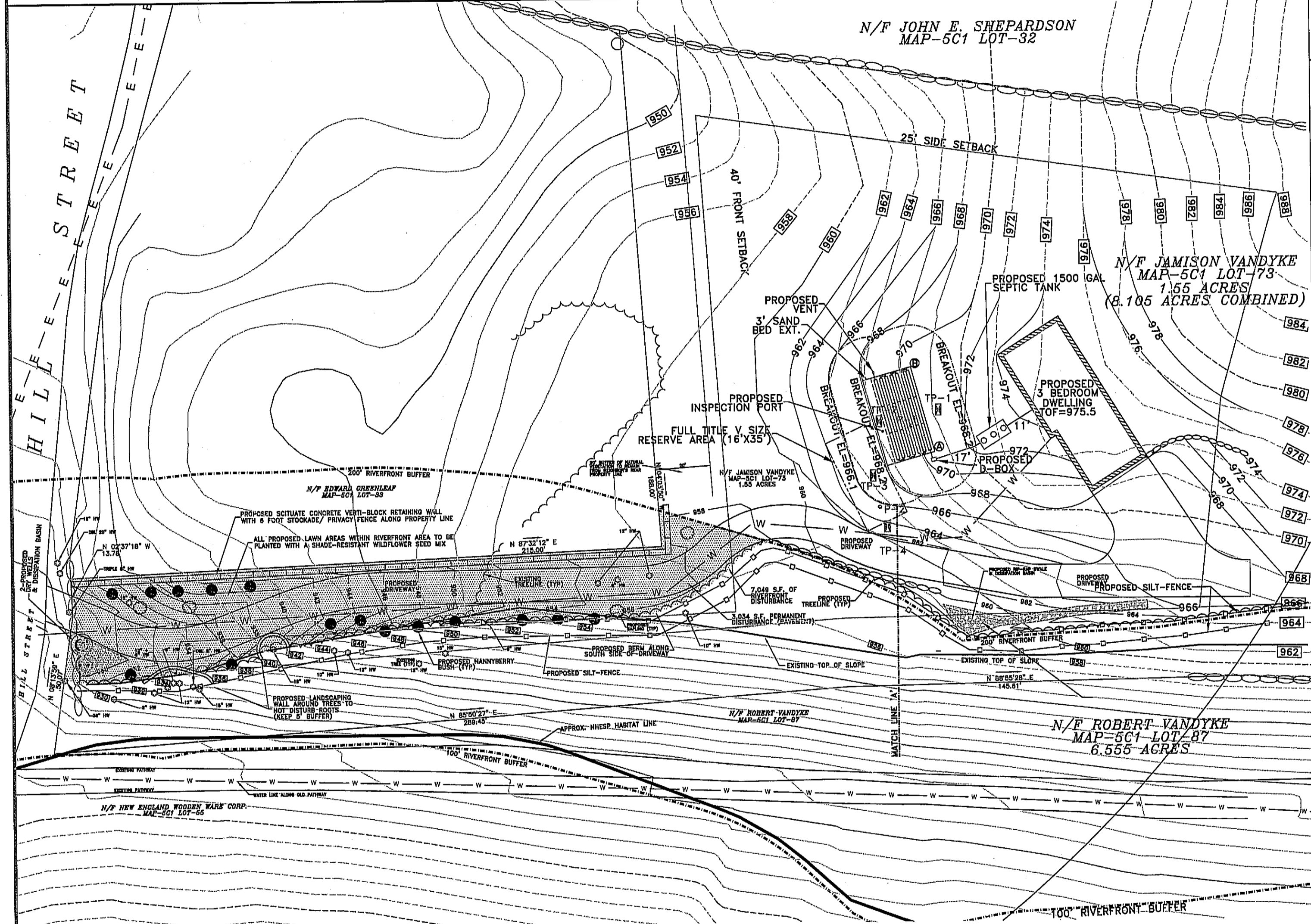


NOTES

- Unless otherwise noted, property lines shown are compiled from existing plans and/or deeds.
- Underground utility data is plotted from visible field locations and available records. The locations are approximate only and verification must be made in the field and Dig-Safe notified.
- All work shall be performed by a Licensed Installer and construction shall conform to the State of Massachusetts requirements as established in 310 CMR 15.00. Installation of the Presby AES leaching system shall conform to the Enviro-Septic Design and Installation Handbook. (ENVIRO-SEPTIC MASSACHUSETTS DESIGN AND INSTALLATION MANUAL)
- The contractor shall install the system exactly as shown on this plan. If changes are necessary, the contractor must contact the Engineer in advance.
- Heavy machinery shall not be permitted to pass over the leaching area.
- All piping shall be polyvinyl chloride (PVC) pipe per ASTM D1785 for sch.40 and ASTM D3034 for SDR 35 where indicated on the profile, unless otherwise noted. S&D pipe shall be SDR 35 PVC.
- Septic tank shall be a 1,500 gallon reinforced concrete tank by Groves Concrete (or equal).
- An H-10 load-rated distribution box (D-box) is required.
- All topsoil, roots and impervious material, if any, must be excavated and removed below the soil absorption system area (and the 3:1 fill slope). The natural soil shall be hand raked. The system sand (ASTM C-33) shall be used above, between, 12" beyond sides and 6" below the AES system sand. The system sand shall meet ASTM C-33. The system installer shall provide the system owner and the local approving authority with a bill of lading certifying that the sand fill meets ASTM C-33.
- For proper performance, septic tank should be inspected at least once a year and pumped when the combined thickness of the sludge (bottom) and scum (surface) equals 1/3 or more of the tank depth.
- Refer to Massachusetts DEP I/A Approval & Presby Operation and Maintenance documents.
- Sand fill (except for ASTM C-33 around Presby AES) shall be per title V, a clean granular sand, free from organic matter and deleterious substances. Mixtures and layers of different classes of soil from not be used. The sand fill shall not contain any material larger than 2 inches. A sieve analysis, using a #4 sieve, shall be performed on a representative sample of the fill. Up to 45% by weight of the fill sample may be retained on the #4 sieve. Sieve analyses also shall be performed on the fraction of the fill sample passing the #4 sieve, such analyses must demonstrate that the material meets or exceeds each of the following specifications: 100% passing #4 sieve; 10%-100% passing #50 sieve; 0%-20% passing #100 sieve; 0%-5% passing #200 sieve. (11/95 DEP SPEC)
- ENVIRO-SEPTIC DESIGN CERTIFICATE NUMBER: 2488MAES
- The owner & designer must certify that the installation meets the DEP General Use Approval.
- No structures shall be placed on or near the reserve area.
- A conventional title-V system would consist of a 16' x 35' bed, resulting in 560 S.F. of leaching area.

LEGEND

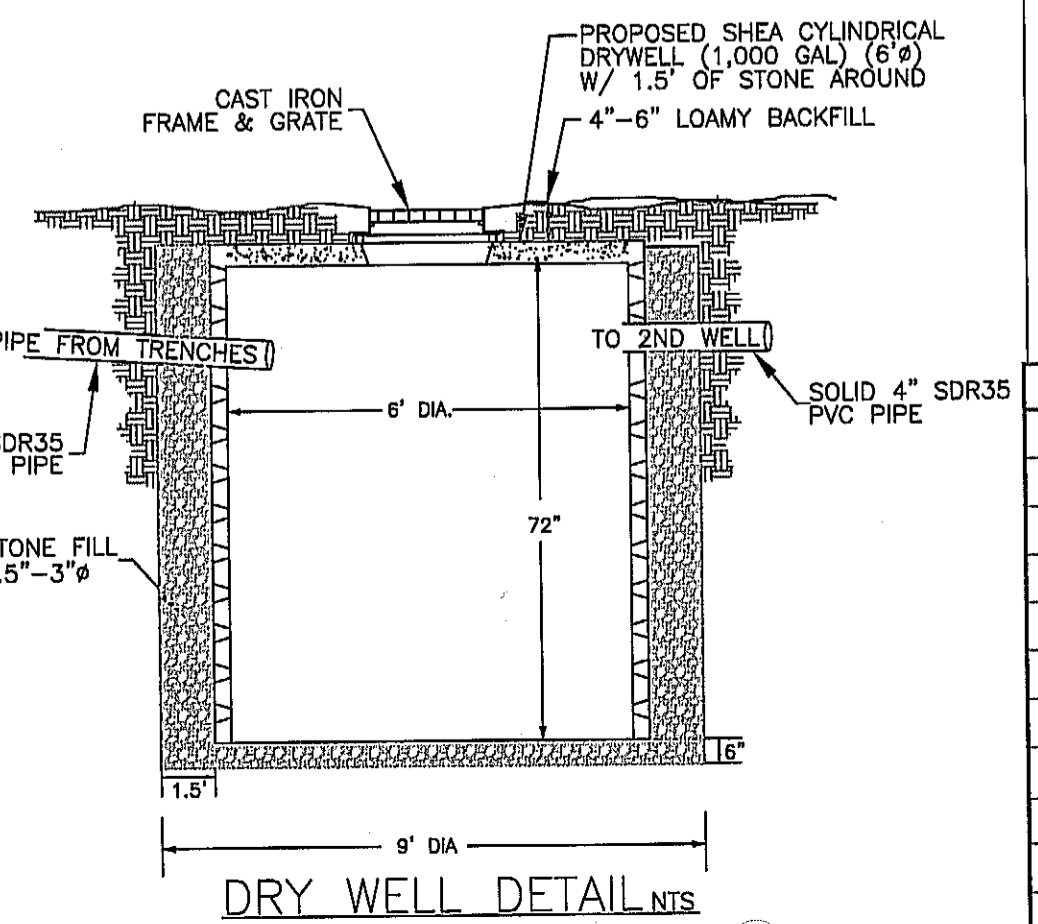
- 242 --- EXISTING CONTOUR
- - - 242 - - - PROPOSED CONTOUR
- TP-1A DEEP HOLE TEST PIT
- P-1A PERCOLATION TEST
- + 238.6 SPOT ELEVATION
- IPF O IRON PIN FOUND
- BND O STONE BOUND FOUND
- EXISTING STONE WALL
- NANNYBERRY BUSHES TO BE PLANTED ON TOP OF SLOPE



PLAN

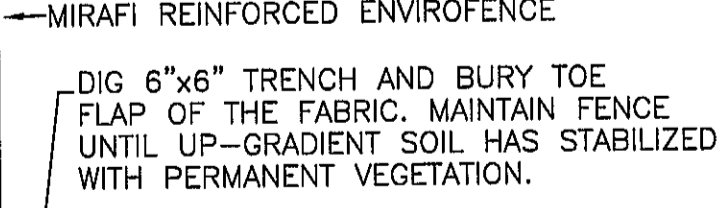
PROPOSED TIES

	TBM(1)	TBM(2)
PRESBY CORNER-A	64.1	42.8
PRESBY CORNER-B	34.5	60.7



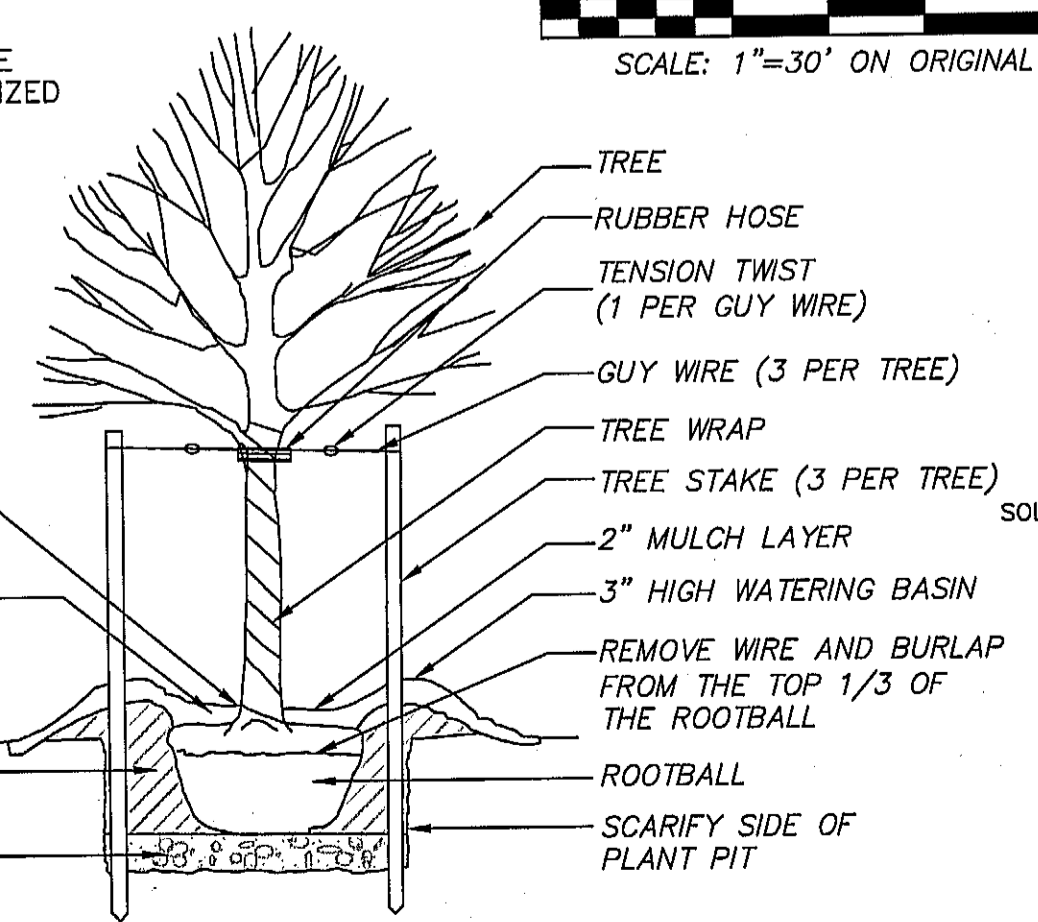
DRY WELL DETAIL NTS

SILT FENCE N.T.S.



- MIRAFI REINFORCED ENVIROFENCE
- DIG 6"x6" TRENCH AND BURY TOE FLAP OF THE FABRIC. MAINTAIN FENCE UNTIL UP-GRADE SOIL HAS STABILIZED WITH PERMANENT VEGETATION.
- NOTE: DO NOT PLACE SOIL OVER ROOTBALL
- FINISH GRADE VARIES (REFER TO PLANS)
- BACKFILL MIX
- 1'-0" DRAINAGE FILL LAYER OVER PIT BOTTOM FOR TREE LEVELING MOUND

TREE PLANTING/WITHOUT DRAINAGE N.T.S.



SOIL TEST DATA

DEEP HOLE & PERC TESTS

PERFORMED BY: PAUL GRASEWICZ, P.E.  
 WITNESSED BY: JIM ABARE & STEVE CALICHMAN, B.O.H. WINCHENDON  
 DATE: JUNE 6, 2022

DEEP HOLE # TP-1	DEEP HOLE # TP-2	DEEP HOLE # TP-3	DEEP HOLE # TP-4
FINE SANDY LOAM 10YR 3/2	FINE SANDY LOAM 10YR 3/2	FINE SANDY LOAM 10YR 3/2	FINE SANDY LOAM 10YR 3/2
FINE SANDY LOAM 10YR 4/6	FINE SANDY LOAM 10YR 4/6	FINE SANDY LOAM 10YR 4/6	FINE SANDY LOAM 10YR 4/6
LOAMY SAND 2.5Y 5/6	LOAMY SAND 2.5Y 5/6	LOAMY SAND 2.5Y 5/6	LOAMY SAND 2.5Y 5/6
COMPACT SAND 2.5Y 6/4	COMPACT SAND 2.5Y 6/4	COMPACT SAND 2.5Y 6/4	COMPACT SAND 2.5Y 6/4
10% GRVL, 10% CBBL	10% GRVL, 10% CBBL	10% GRVL, 10% CBBL	10% GRVL, 10% CBBL
ESWT = 30"	ESWT = 40"	ESWT = 30"	ESWT = 33"
GRD EL. 968.2	GRD EL. 964.3	GRD EL. 962.0	GRD EL. 960.2
ESHW 12 EL. 965.7	ESHW 12 EL. 961.0	ESHW 12 EL. 959.5	ESHW 12 EL. 957.5
WATER EL. N/A	WATER EL. N/A	WATER EL. N/A	WATER EL. N/A

PERC TEST NUMBER	DEPTH	PERC RATE	NOTES
PERC-1	32"	10 MPI	
PERC-2	34"	4 MPI	

NO.	DESCRIPTION	DATE	BY
4	REVISED PER MASSDEP COMMENTS	12-4-23	TWF
3	LOCATED TREES IN THE RIVERFRONT AREA & REPLACEMENT TREES ALONG SLOPE	8/28/23	TNR
2	ADDED DRY WELLS & DRIVEWAY BERM	10/4/22	TWF
1	ADDED SILT-FENCE AT LIMIT-OF-WORK	8/10/22	PFG

DESIGNED BY TWF  
 DRAWN BY TWF  
 CHECKED BY PFG  
 DATE 6/29/22  
 SCALE 1"=30'  
 JOB NUMBER 22103

PROPOSED SINGLE FAMILY SEPTIC SYSTEM  
 DESIGN & NOI PLAN  
 67 HILL STREET, WINCHENDON, MA  
 MAP-5C1 PARCEL-73  
 PREPARED FOR:  
 DAN BERTRAM

GRAZ Engineering, LLC  
 WWW.GRAZENGINEERING.COM  
 323 WEST LAKE RD., FITZWILLIAM, NH 03447; (603) 585-6959

FIELD BOOK NO. \_\_\_\_\_  
 PAGES \_\_\_\_\_  
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