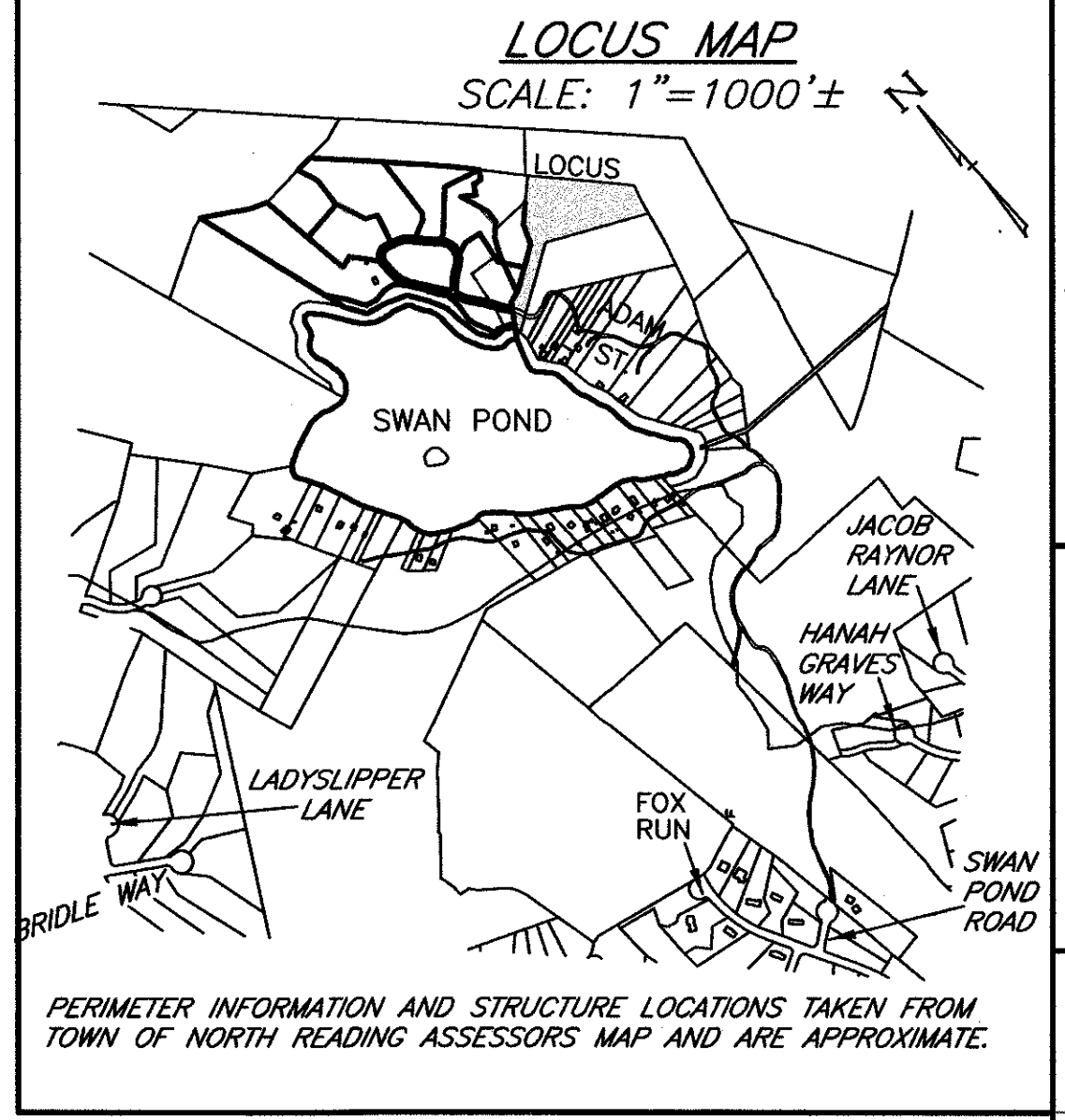


LEGEND OF SYMBOLS & ABBREVIATIONS:

- x 100.0 EXIST. SPOT ELEVATION
- - - 100 EXIST. CONTOUR
- (100.0) PROP. SPOT ELEVATIONS
- - - 100 PROP. CONTOURS
- - - PROP. WATER SUPPLY LINE
- MW PROP. INSPECTION PORT/MONITORING WELL
- ⊗ TEST HOLE
- ⊕ PERC TEST
- ⊕ DRAIN MANHOLE
- ⊕ CATCH BASIN
- ⊕ WATER SUPPLY WELL

BENCHMARK REFERENCE DATUM: NGVD
SPIKE IN 10" OAK. ELEV.=98.00'
SPIKE IN 3" PINE. ELEV.=100.00'

Prepared For:
Owner / Applicant:
Daniel Smith LLC
279 Main Street, Apt. #6
No. Reading, Mass. 01864
Map 81 Lot 11

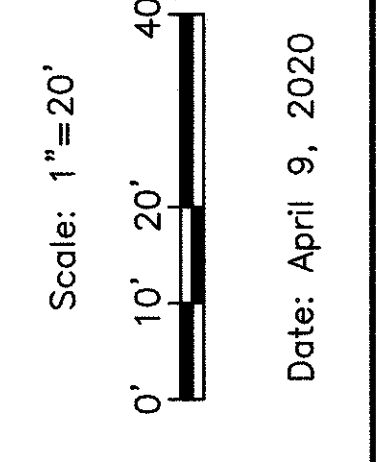


Prepared By:
Hayes Engineering, Inc.
603 Salem Street
Wakefield, MA 01880
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Design By: gr
Drawn By: gr
Checked By: pjo
Project File: NOR-0190D
Comp. No: NOR70

Issued For Permit
 Issued For Review
 Issued For Bid
 Issued For Construction
 Not For Construction

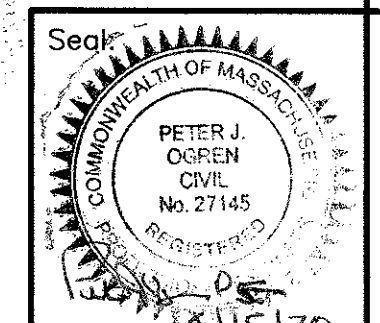
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Drawing Title:
Sanitary Disposal System Plan
#3 Dogwood Lane
Lot 1
No. Reading, Mass. 01864

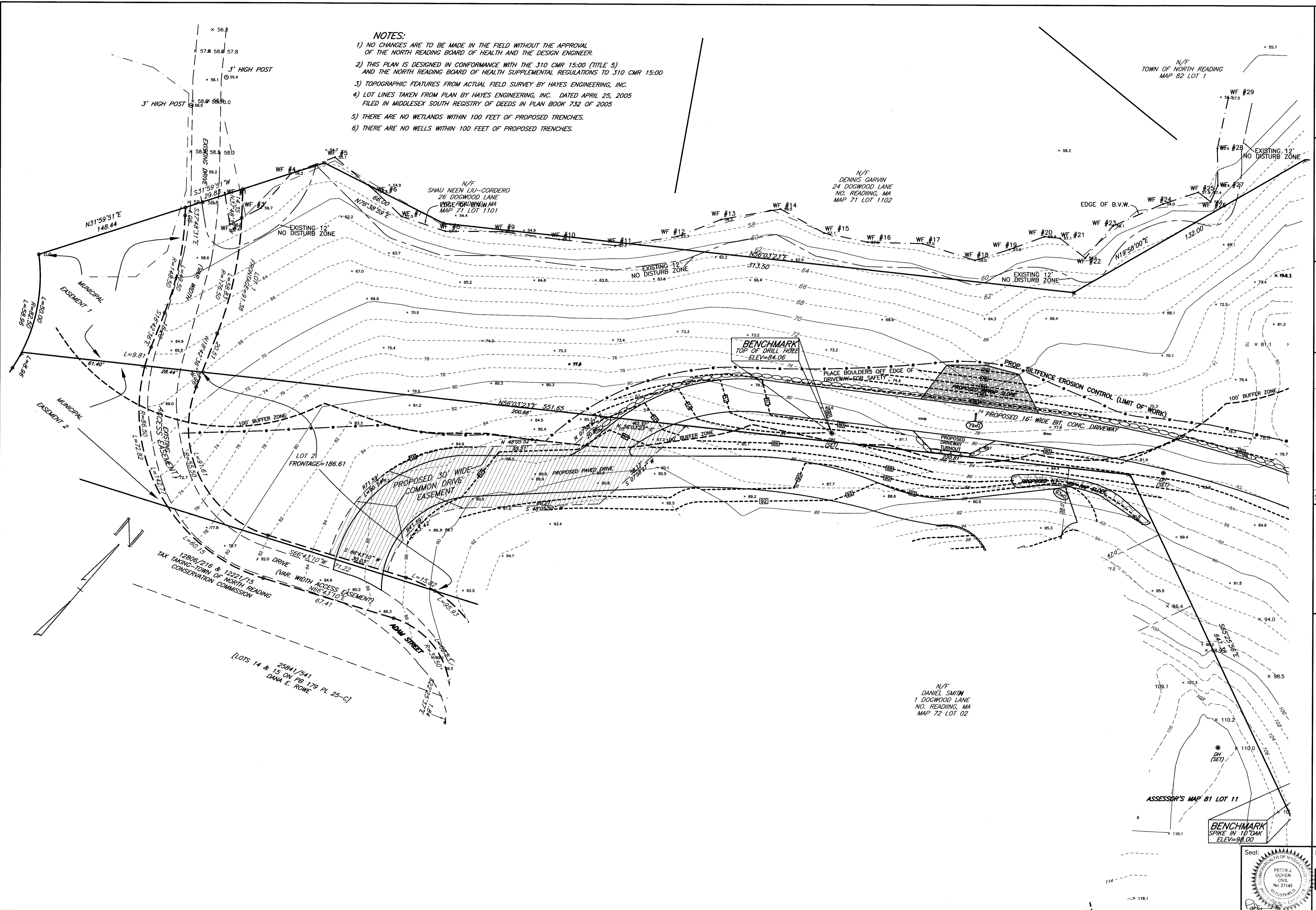
I CERTIFY THAT I AM CURRENTLY APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION PURSUANT TO 310 CMR 15.017 TO CONDUCT SOIL EVALUATIONS AND THAT THE ABOVE ANALYSIS HAS BEEN PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE, AND EXPERIENCE DESCRIBED IN 310 CMR 15.017. I FURTHER CERTIFY THAT THE RESULTS OF MY SOIL EVALUATION, AS INDICATED ON THE ATTACHED SOIL EVALUATION FORMS, ARE ACCURATE AND IN ACCORDANCE WITH 310 CMR 15.100 THROUGH 15.107.

SIGNATURE: *Hadia B.* 562074
DATE: April 15, 2020



Drawing No.:
PL-1
SHEET 1 OF 3

- NOTES:**
- 1) NO CHANGES ARE TO BE MADE IN THE FIELD WITHOUT THE APPROVAL OF THE NORTH READING BOARD OF HEALTH AND THE DESIGN ENGINEER.
 - 2) THIS PLAN IS DESIGNED IN CONFORMANCE WITH THE 310 CMR 15:00 (TITLE 5) AND THE NORTH READING BOARD OF HEALTH SUPPLEMENTAL REGULATIONS TO 310 CMR 15:00
 - 3) TOPOGRAPHIC FEATURES FROM ACTUAL FIELD SURVEY BY HAYES ENGINEERING, INC.
 - 4) LOT LINES TAKEN FROM PLAN BY HAYES ENGINEERING, INC. DATED APRIL 25, 2005 FILED IN MIDDLESEX SOUTH REGISTRY OF DEEDS IN PLAN BOOK 732 OF 2005
 - 5) THERE ARE NO WETLANDS WITHIN 100 FEET OF PROPOSED TRENCHES.
 - 6) THERE ARE NO WELLS WITHIN 100 FEET OF PROPOSED TRENCHES.



Prepared For:
 Owner / Applicant
 Brad Smith
 GDB Realty, LLC
 609 Main Street
 No. Reading, MA
 Map 81 Lot 11

Prepared By:
 Hayes Engineering, Inc.
 Hayes
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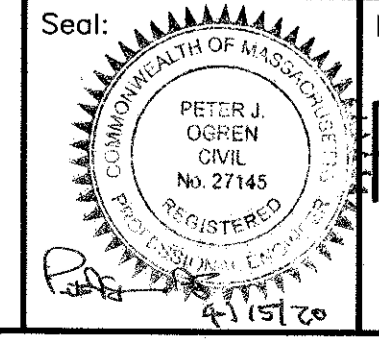
Design By: gr
 Drawn By: gr
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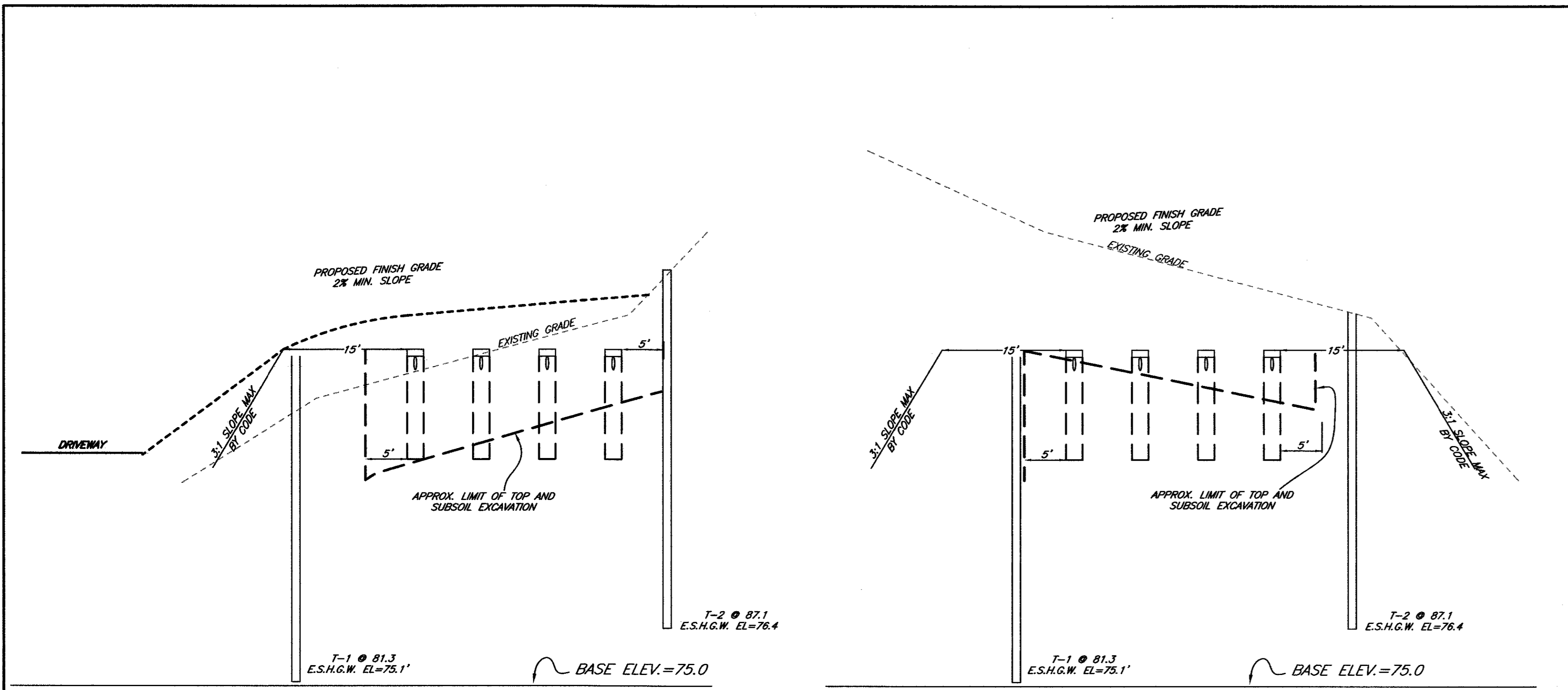
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Scale: 1" = 20'
 0' 10' 20' 40'
 Date: April 9, 2020

Drawing Title:
**Sanitary Disposal System Plan
 #3 Dogwood Lane
 Lot 1
 No. Reading, Mass. 01864**

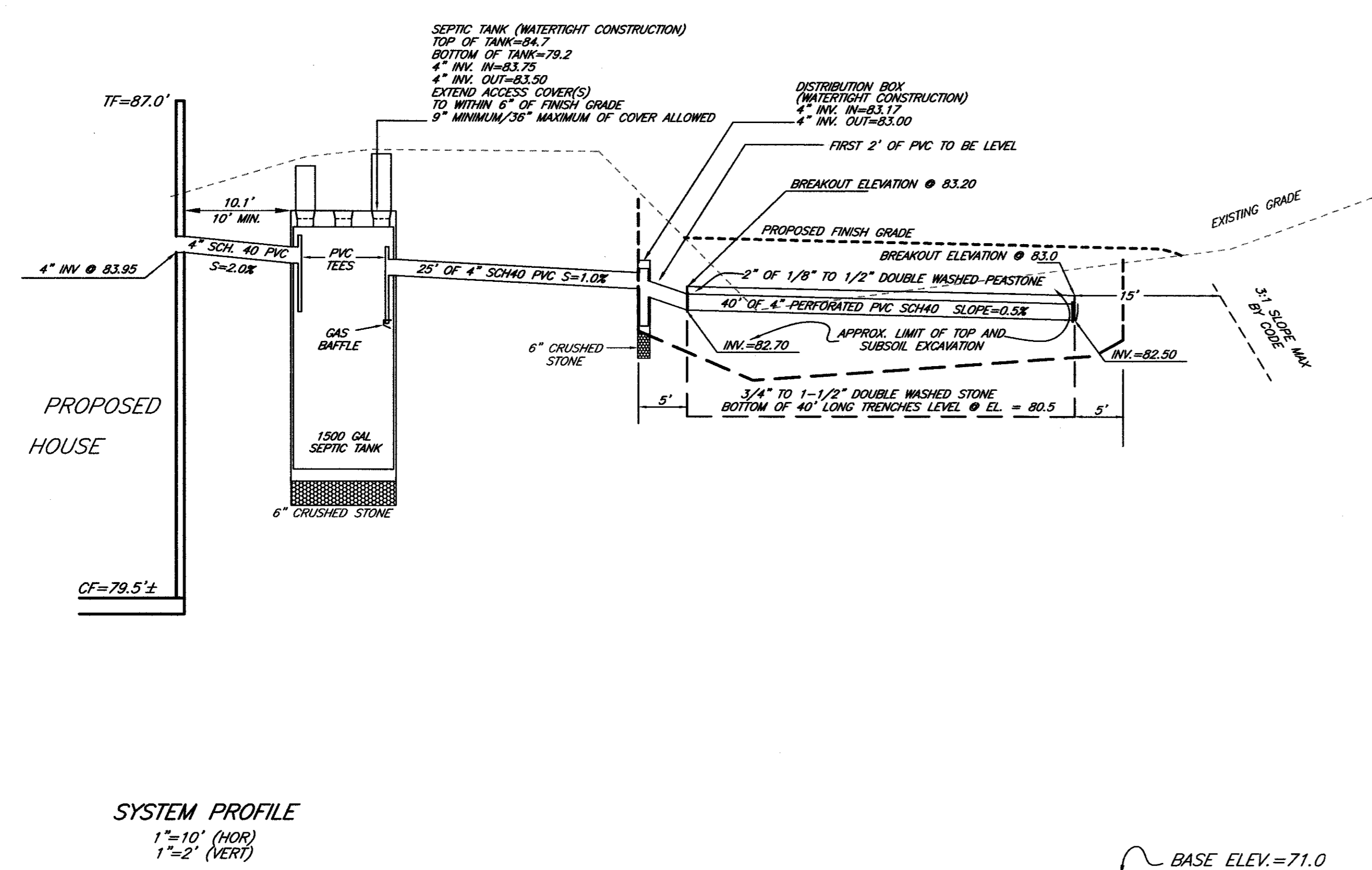
Drawing No.:
PL-2
 SHEET 2 OF 3



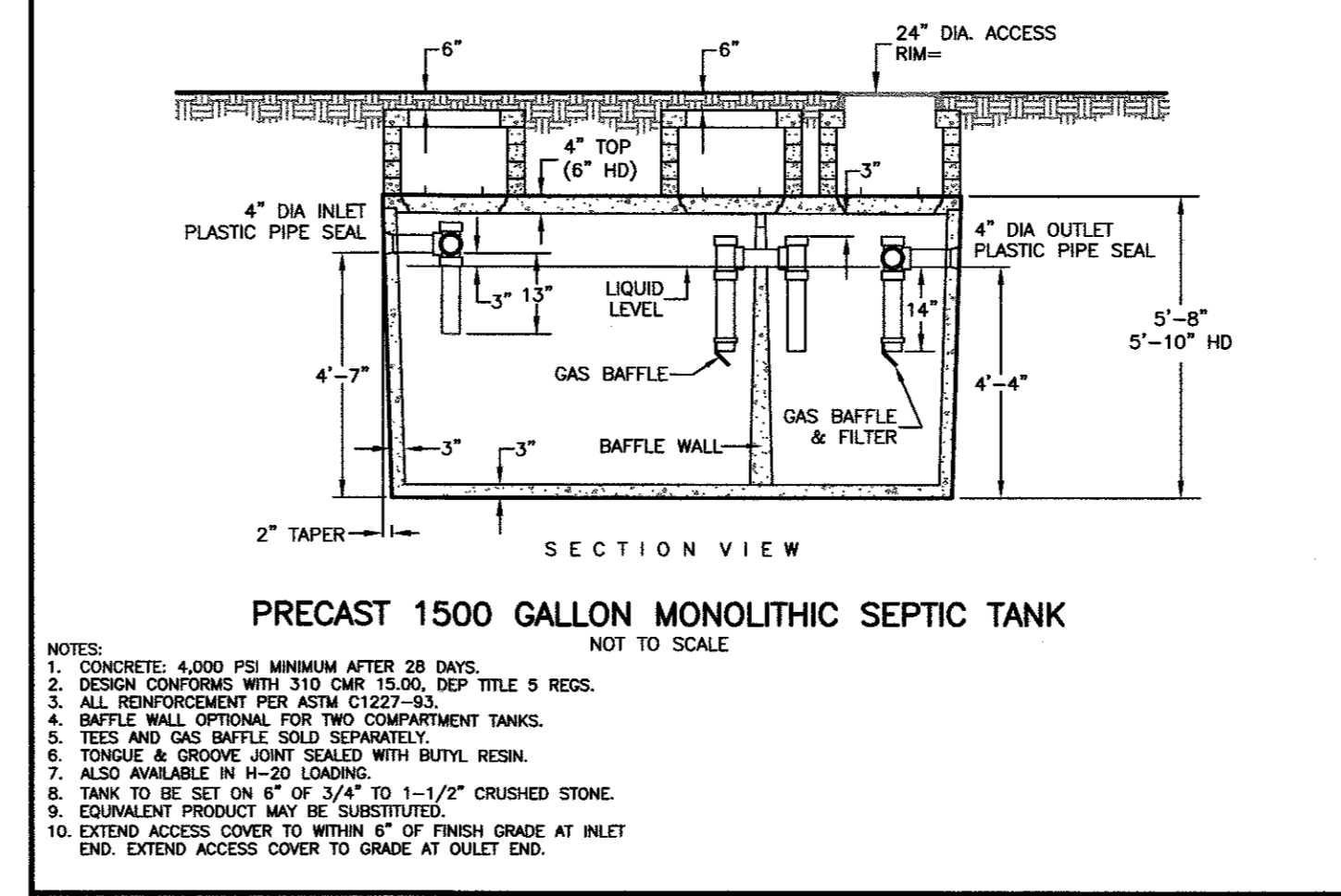
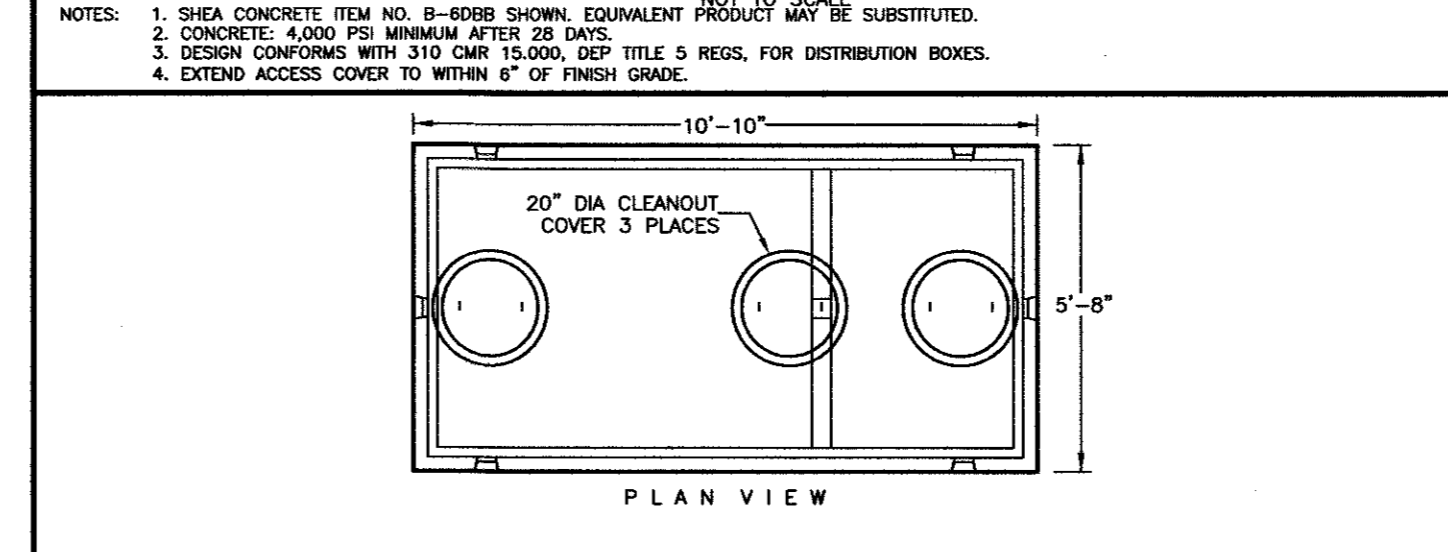
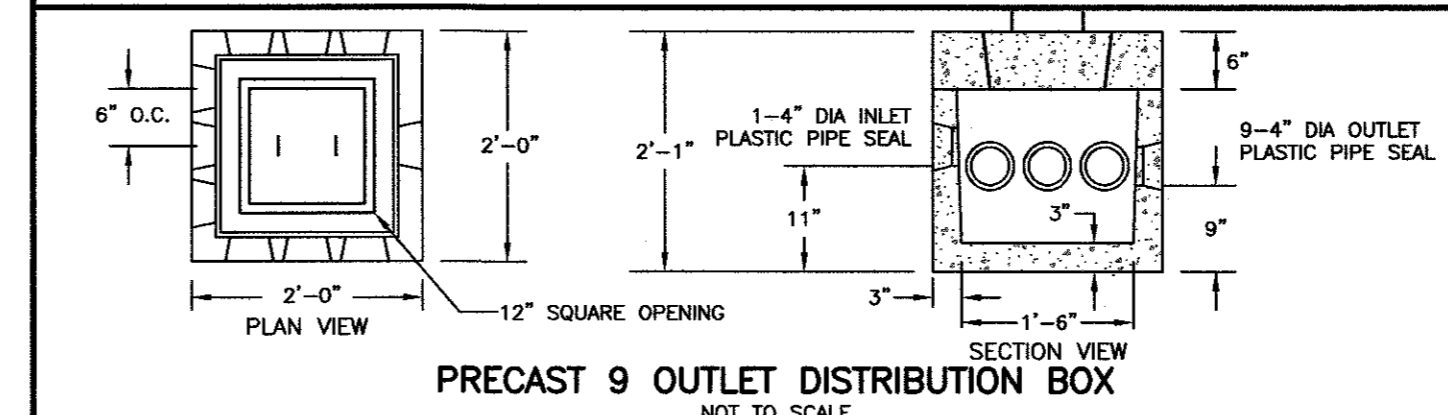
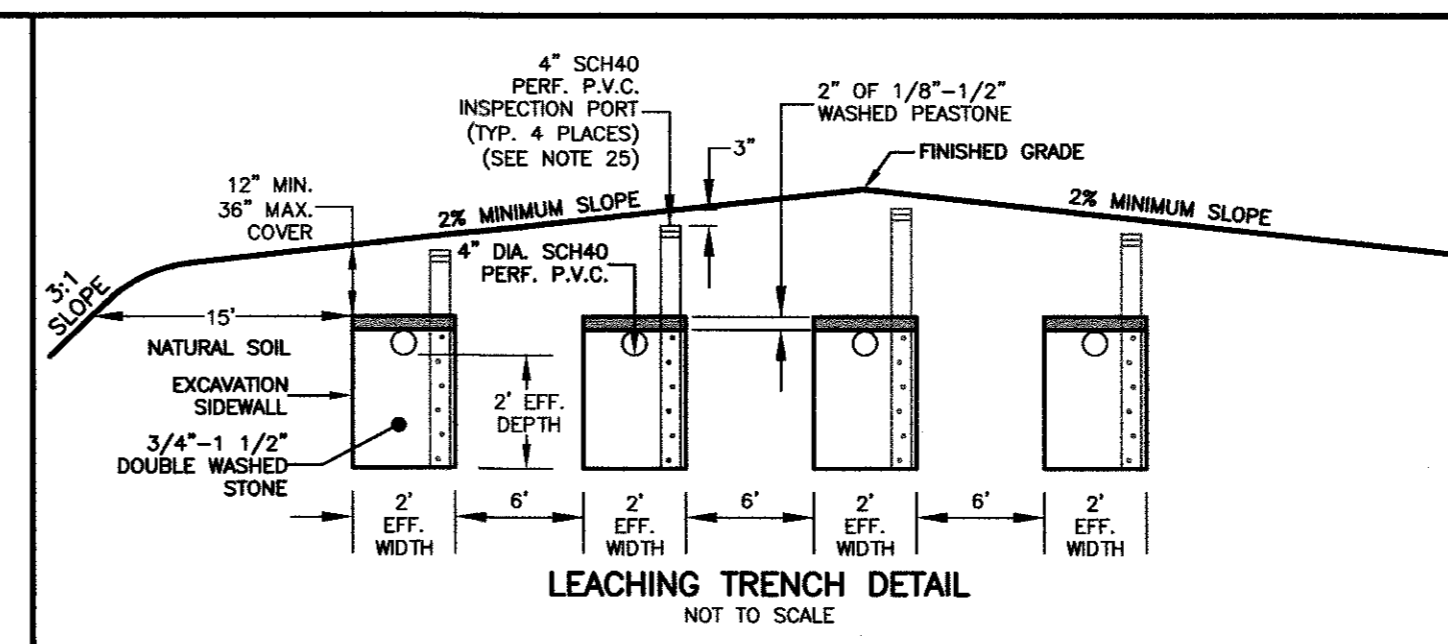


SYSTEM SECTION A-A
1"=10' (HOR)
BASE ELEV.=75.0

SYSTEM SECTION B-B
1"=10' (HOR)
BASE ELEV.=75.0



SYSTEM PROFILE
1"=10' (HOR)
1"=2' (VERT)
BASE ELEV.=71.0



DEPTH (ft.)	SOIL HORIZON/LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)	SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME (USDA)	SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)	DESCRIPTION OF HORIZONS	
00'-05'	Ap	10R 3/2		fs	0	0/0	gr	mfr	g very coarse sand
05'-10'	Bw	10R 5/6		fs	0	0/0	m	mfr	g coarse sand
10'-15'	C	2.5Y 4/6		si	10	10/10	m	mfr	g fine sand
15'-20'	C	2.5Y 4/6		si	10	10/10	m	mfr	g very fine sand
20'-25'	C	2.5Y 4/6		si	10	10/10	m	mfr	g loamy coarse sand
25'-30'	C	2.5Y 4/6		si	10	10/10	m	mfr	g loamy sand
30'-35'	C	2.5Y 4/6		si	10	10/10	m	mfr	g loamy fine sand
35'-40'	C	2.5Y 4/6		si	10	10/10	m	mfr	g sandy loam
40'-45'	C	2.5Y 4/6		si	10	10/10	m	mfr	g fine sandy loam
45'-50'	C	2.5Y 4/6		si	10	10/10	m	mfr	g very fine sand loam

LEACHING AREA CALCULATIONS:
 BOTTOM: (2'W)(40'L) = 80 S.F.
 SIDES: (2)(2')(40'L) = 160 S.F.
 LEACHING AREA PER TRENCH = 240 S.F.
 TOTAL LEACH AREA PROVIDED: (4 TRENCHES)(240 S.F./TRENCH) = 960 S.F.

DESIGN DATA:
 NUMBER OF BEDROOMS: 5
 DAILY FLOW: 110 G.P.D./B.R.
 SEPTIC TANK REQUIRED: 550 GAL.X2=1100 GAL.
 SEPTIC TANK USED: 1500 GAL. 2 COMPT.
 LEACH AREA REQUIRED:
 CLASS I SOILS LTAR = 0.60 G.P.D./S.F.
 550 G.P.D./0.60 G.P.D./S.F. = 917 S.F.
 LEACH AREA USED: 960 S.F.
 NO GARBAGE DISPOSALS ALLOWED

GENERAL NOTES:
 HAYES ENGINEERING, INC. HAS BEEN RETAINED TO FURNISH A SEPTIC SYSTEM DESIGN PLAN TO THE CLIENT BUT HAS NOT BEEN RETAINED TO CONSTRUCT OR SUPERVISE CONSTRUCTION OF THE SYSTEM.
 IN VIEW OF SAME, NO GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, IS MADE TO THE CLIENT OR TO THE ULTIMATE USER RELATIVE TO ANY SYSTEM INSTALLED PURSUANT TO THE PLAN.
 HAYES ENGINEERING, INC. DOES REPRESENT THAT THE PLAN MEETS THE REQUIREMENTS OF THE STATE CODE, TITLE 5, EXCEPT WHERE VARIANCES ARE NOTED.

- The general contractor is responsible for horizontal and vertical control of all system components.
- This plan shows the design of the subsurface sewage disposal system only. The system is designed for flows estimated under design criteria.
- System is designed only to accommodate sanitary sewage associated with normal domestic usage and consisting of water-carried putrescible waste.
- The system is not designed for garbage grinders.
- The system shall be vented through building plumbing as required by building code.
- Property lines and building locations are graphic only. Property lines not having been verified, no representation as to the accuracy or certification of those shown is implied or intended.
- Applicable zoning by-laws or other local regulations shall be confirmed by the owner prior to construction.
- The plan shows only those features that were visually apparent on the date of topography and the absence of subsurface structures, utilities, etc. does not mean that they do not exist.
- The installer of this system must be licensed by the local board of health.
- There are no existing wells within 100 feet of the proposed sewage disposal system, to the best of our knowledge, unless otherwise indicated.
- Disposal system areas are to be raked (scarified) before installation of stone. All stones exceeding 2 inches in diameter and all foreign material encountered during excavation are to be removed from the leaching area bed surface.
- Finished surface of the leaching area shall be graded to assure water runoff (2% minimum slope).
- All disturbed areas to be loamed, seeded, and maintained to prevent erosion.
- The septic tank shall be periodically inspected and maintained and should be pumped when sludge in the bottom exceeds 1/4 of the depth.
- Alternate manufacturers for concrete structures and equipment shown on these plans may be used upon the written approval of the design engineer. Alternate manufacturers will not be used if the use of their equipment requires design changes.
- If any part of this design is to be altered in any way, the design engineer as well as the approving authorities shall be notified in writing before construction.
- All work is to comply with the Commonwealth of Massachusetts Department of Environmental Protection State Sanitary Code, Title 5 and any local board of health supplementary regulations.
- The local board of health agent will conduct periodic inspections as needed.
- These plans and specifications are intended to be explanatory of the work to be done and of each other, but should any omission, errors, or discrepancies appear, they shall be subject to correction and interpretation by the design engineer thereby defining and fulfilling the intent of the plans.
- Contractor to notify engineer of any site condition differing from those indicated.
- All work and materials shall conform to the applicable sections of Title 5 of the State Environmental Code.
- Designer to submit an as-built plan of system within two weeks from final inspection.
- General contractor to check between benchmarks shown on this plan.
- All system components shall be marked with magnetic marking tape or a comparable means in order to locate them once buried.
- The soil absorption system shall have a minimum of one (1) inspection port consisting of a perforated four (4) inch pipe placed vertically down into the stone to the naturally occurring soil or sand fill below the stone. The pipe shall be capped with a screw type cap and accessible to within three (3) inches of finish grade.

MATERIAL NOTES:
 Leach Bedding:
 1. Clean double washed stone shall be free of iron particles, fines and dust in place.
 2. Bottom stone in leach area shall be 3/4" to 1-1/2" double washed stone as indicated in note 1 above.
 3. Top stone in leach area shall be 1/8" to 1/2" double washed peastone as indicated in note 1 above. Geotextile fabric may be substituted for the minimum 2 inch layer of double washed peastone.

CONSTRUCTION NOTES:
 1. Excavate all topsoil, subsoil, and any other unsuitable material within the limits of excavation and replace to top of peastone elevation with select on-site or imported soil material, consisting of clean granular sand, free from organic matter and deleterious substances.
 2. Fill material shall not contain any material larger than two (2) inches. The fill material shall comply with Title 5, State Environmental Code 310 CMR 15.255 (3) as revised.
 3. Contractor to supply to the town a current sieve test analysis report at their own expense if required by the local approving authority.

Prepared For:
 Owner / Applicant
 Brad Smith
 GDB Realty, LLC
 279 Main Street Apt. #6
 No. Reading, Ma. 01864
 Map 81 Lot 11

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Design By: gr
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Date: April 9, 2020

Drawing Title:
 Sanitary Disposal System Plan
 #3 Dogwood Lane
 Lot 11
 No. Reading, Mass. 01864

Drawing No.:
 PRO

SHEET 3 OF 3

