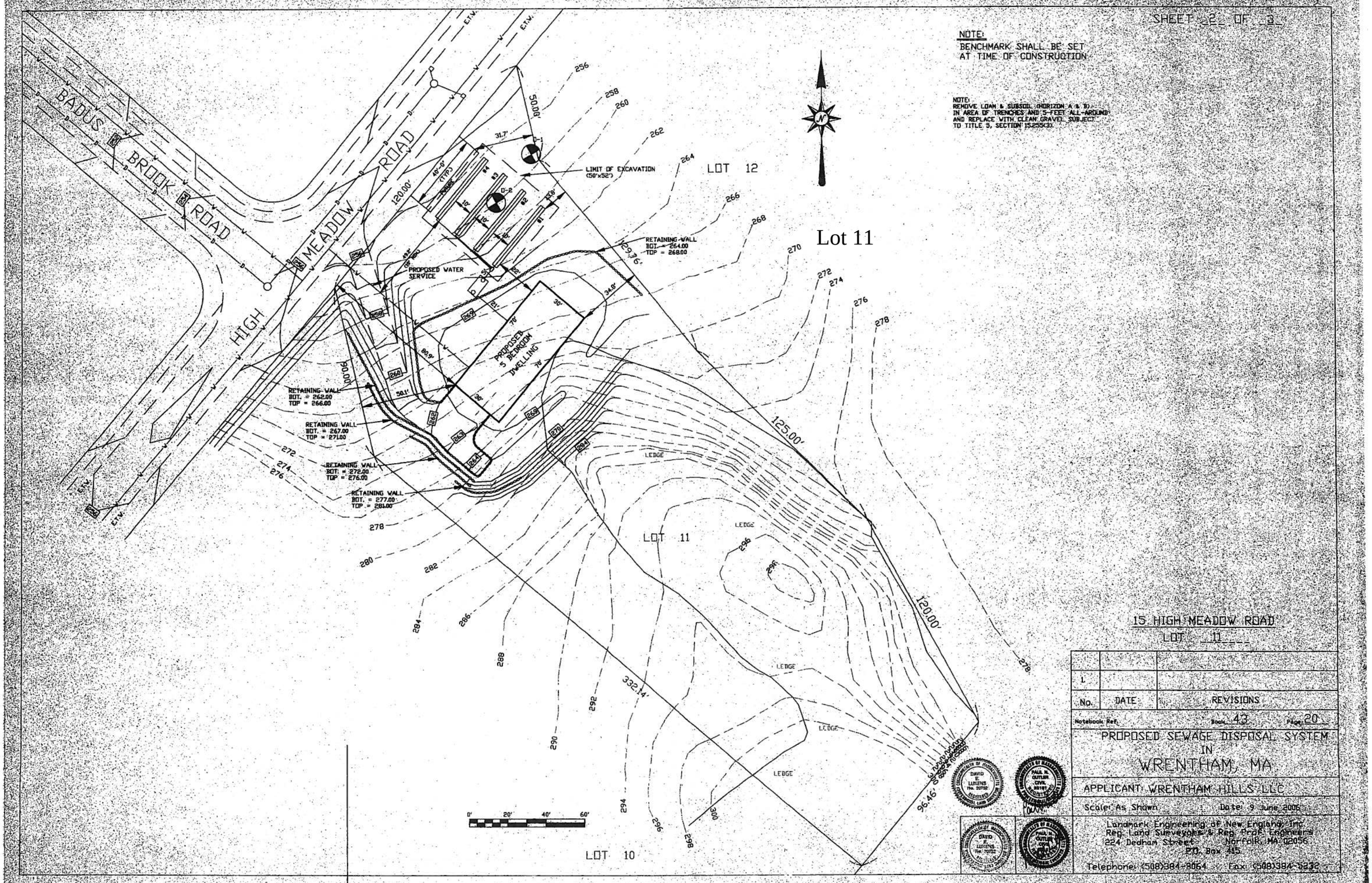
NOTE:
BENCHMARK SHALL BE SET AT TIME OF CONSTRUCTION

NOTE:
REMOVE LOAM & SUBSOIL (HORIZON A & B) IN AREA OF TRENCHES AND 5-FEET ALL-AROUND AND REPLACE WITH CLEAN GRAVEL SUBJECT TO TITLE 5, SECTION 15.255(3).



15 HIGH MEADOW ROAD
LOT 11

No.	DATE	REVISIONS

Notebook Ref. Book 43 Page 20

PROPOSED SEWAGE DISPOSAL SYSTEM
IN
WRENTHAM, MA

APPLICANT: WRENTHAM HILLS LLC

Scale: As Shown Date: 9 June 2006

Landmark Engineering of New England, Inc.
Reg. Land Surveyors & Reg. Prof. Engineers
224 Dedham Street Norfolk, MA 02056
P.O. Box 445
Telephone: (508)384-8064 Fax: (508)384-5232

SCHEDULE OF ELEVATIONS

			Finished Grade above Structure				
Top of Foundation	=	271.00					
Basement Floor	=	263.50					
Invert of Pipe at Foundation	=	262.17	269x5				
Invert at Septic Tank Inlet	=	260.72					
Invert at Septic Tank Outlet	=	260.47	262x9				
Invert at Dist. Box Inlet	=	257.97	261x5				
Invert at Dist. Box Outlet	=	257.80					
Invert at Beginning of trench #1	=	257.70	261x2	Invert at Beginning of trench #3	=	254.00	257x5
Invert at End of trench #1	=	257.50	260x3	Invert at End of trench #3	=	253.80	257x3
Bottom Trench #1	=	255.50		Bottom Trench #3	=	251.80	
Invert at Beginning of trench #2	=	255.70	259x2	Invert at Beginning of trench #4	=	254.00	256x9
Invert at End of trench #2	=	255.50	258x6	Invert at End of trench #4	=	253.80	256x1
Bottom Trench #2	=	253.50		Bottom Trench #4	=	251.80	

REQUIRED: 110 GALLONS/BEDROOM/DAY
x 5 BEDROOMS
DESIGN: 550 GALLONS/DAY

PROVIDED: 4 LEACHING TRENCHES
3'-0" WIDE x 40'-0" LONG
WITH 10'-0" BETWEEN TRENCHES
= 828.80 GALLONS/DAY

CALCULATIONS: USING REQUIREMENTS OF TITLE 5 FOR
A PERCOLATION RATE OF 5 MIN./INCH.
SIDEWALLS: 4 SQ. FT. x 0.74 GALLONS/SQ. FT. = 2.96 GALLONS/FT.
+ BOTTOM: 3 SQ. FT. x 0.74 GALLONS/SQ. FT. = 2.22 GALLONS/FT.
TOTAL = 5.18 GALLONS/FT.
USING 4 - 40' TRENCHES x 5.18 GALLONS/FT. = 828.80 GALLONS/DAY

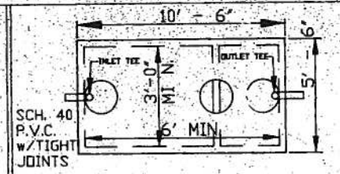
PLOT PLAN

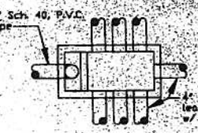
Scale : 1" = 20'

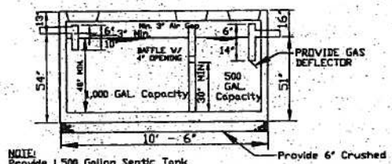
LOT AREA = 57,713 SQ. FT.

LOT # 11

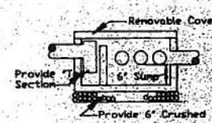
NOTE:
REMOVE LOAM & SUBSOIL (HORIZON A & B) IN AREA OF TRENCHES AND 5-FEET ALL-AROUND AND REPLACE WITH CLEAN GRAVEL SUBJECT TO TITLE 5, SECTION 15.255(3).



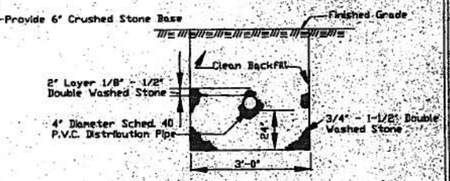




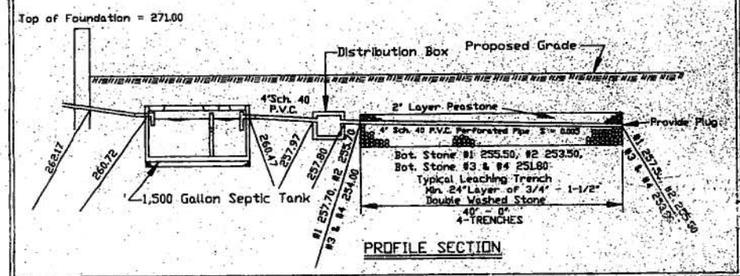
NOTE:
Provide 1,500 Gallon Septic Tank conforming to New Title 5 Requirements effective 4/21/06.



DISTRIBUTION BOX



CROSS - SECTION



PROFILE SECTION

OBSERVATION TEST HOLE & PERCOLATION TEST DATA

SEE PLOT PLAN FOR TEST HOLE LOCATION & ELEVATION

DATE: 5/26/00

OBSERVATION TEST HOLE #1

Surface Elevation = 257.42
Top of Monitor Pipe 260.5

Horizon	Texture	Color	Depth
A	Sandy Loam	10YR3/3	0" - 10"
Bw	Sandy Loam	10YR3/6	10" - 48"
C	Medium Sand & Gravel	10YR3/6	48" - 144"

A — ELEV. = 256.59
Bw — ELEV. = 253.42
C
Bot. Hole = 243.42

No Water
No Ledge
No Groundwater @ 144" (3/29/01)
ELEV. = 245.42 + 1.3' Corr.= 246.72

Surface Elev. = 257.42
Percolation Test #1 at a Depth of 44" - 52" ELEV. = 253.75
Rate = 12 Min./Inch - 252.25

OBSERVATION TEST HOLE #2

Surface Elevation = 257.97
Top of Monitor Pipe 259.97

Horizon	Texture	Color	Depth
A	Sandy Loam	10YR3/3	0" - 10"
Bw	Sandy Loam	10YR3/6	10" - 34"
C1	Medium Sand & Gravel	10YR3/6	34" - 56"
C2	Fine Sand	10YR5/6	56" - 156"

A — ELEV. = 257.14
Bw — ELEV. = 255.14
C1 — ELEV. = 253.38
C2
Bot. Hole = 244.97

No Water
No Ledge
No Groundwater @ 156" (3/29/01)
ELEV. = 244.97 + 1.3' Corr. = 246.27

Surface Elev. = 257.97
Percolation Test #2 at a Depth of 36" - 54" ELEV. = 254.97
Rate = 12 Min./Inch - 253.47

SCS SOIL TYPE: HINCKLEY SANDY LOAM

NOTES:
1. TESTHOLES WITNESSED BY TOWN OF WRENTHAM BOARD OF HEALTH AGENT, DEAN MONSEES, ON 5/23/00.
2. SOIL EVALUATION AND PERCOLATION TESTING PERFORMED BY PAUL CUTLER, P.E. ON 5/23/00.
3. TESTHOLES PRE-SOAKED FOR 15 MINUTES PRIOR TO TEST.
4. WATERTABLE CORRECTIONS FROM U.S.G.S. (FRIMPTER METHOD).
5. SITE DOES NOT LIE IN A NITROGEN SENSITIVE AREA.
6. PLACE MAGNETIC TAPE OVER PIPE AND ALL COMPONENTS OF THE SYSTEM.
7. PROVIDE RISERS FOR SEPTIC TANK COVERS TO WITHIN 6" OF GRADE.
8. IF D-BOX IS DEEPER THEN 9", PROVIDE RISER TO WITHIN 6" OF GRADE.

DAVID E. LUCENS No. 30752 REGISTERED PROFESSIONAL LAND SURVEYOR
PAUL R. CUTLER CIVIL No. 30781 REGISTERED PROFESSIONAL ENGINEER

SHEET 1 OF 3

GENERAL NOTES:
1. Septic Tank and Distribution Box to be of Pre-Cast Concrete.
2. The tee leg length below the flow line shall be in accordance with the following:

Tank Depth	Tee Length	Tank Depth	Tee Length
4' - 6"	18"	6' - 6"	24"
4' - 6"	18"	7' - 0"	24"
5' - 0"	18"	8' - 0"	24"
5' - 6"	22"		

3. Tanks are to be installed on a level, stable base that will not settle.
4. No vehicles of heavy equipment are permitted over the tanks or system.
5. Invert elevations of all outlets of the distribution box are to be the same. Leave outlets plugged for future expansion as required.

LEGEND
- EXISTING ELEV.
- PROPOSED ELEV.
- OBSERVATION TEST HOLE
- PERCOLATION TEST HOLE

APPROVED:
WRENTHAM BOARD OF HEALTH
DATE: 7/19/00
AGENT: WILLIAM R. DOMES, P.E.

RECEIVED JUL 16 2008

15 HIGH MEADOW ROAD
LOT 11

No.	DATE	REVISIONS
1.		

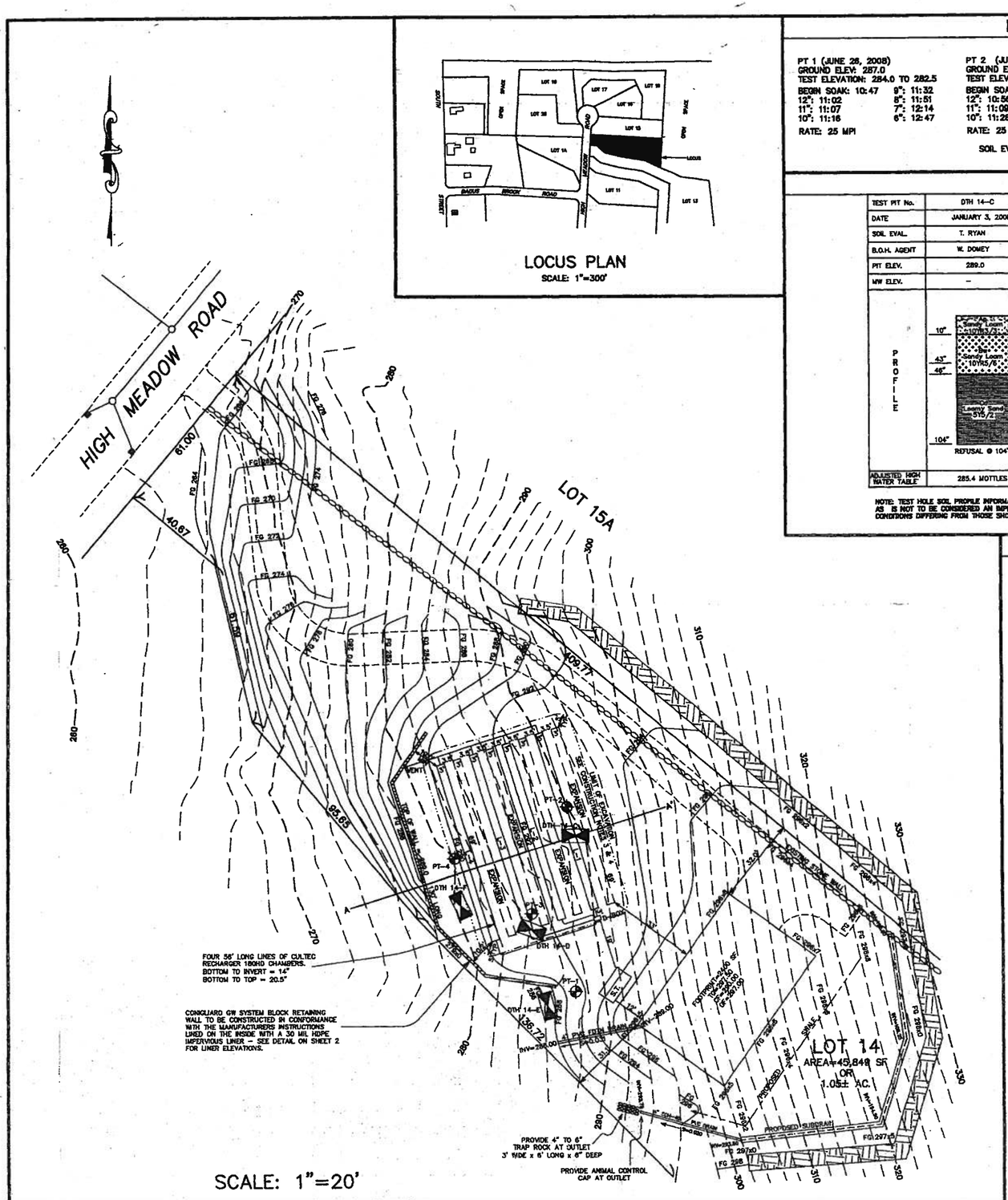
Notebook Ref. Book: 43 Page: 20

PROPOSED SEWAGE DISPOSAL SYSTEM
IN
WRENTHAM, MA

APPLICANT: WRENTHAM HILLS LLC

Scale: As Shown Date: 9 June 2008

Landmark Engineering of New England, Inc.
Reg. Land Surveyors & Reg. Prof. Engineers
224 Dedham Street Norfolk, MA 02056
P.O. Box 415
Telephone: (508)384-3064 Fax: (508)384-5232



LOCUS PLAN
SCALE: 1"=300'

PERCOLATION TESTING DATA

PT 1 (JUNE 28, 2008) GROUND ELEV: 287.0 TEST ELEVATION: 284.0 TO 282.5		PT 2 (JUNE 28, 2008) GROUND ELEV: 290.0 TEST ELEVATION: 287.0 TO 285.5		PT 3 (JUNE 28, 2008) GROUND ELEV: 284.5 TEST ELEVATION: 281.5 TO 280.0		PT 4 (JUNE 28, 2008) GROUND ELEV: 280.0 TEST ELEVATION: 277.0 TO 275.5	
BEGIN SOAK: 10:47	9": 11:32	BEGIN SOAK: 10:41	9": 11:50	BEGIN SOAK: 10:40	9": 11:10	BEGIN SOAK: 10:44	9": 11:05
12": 11:02	8": 11:51	12": 10:56	8": 12:11	12": 10:55	8": 11:18	12": 11:02	8": 11:06
11": 11:07	7": 12:14	11": 11:09	7": 12:38	11": 11:00	7": 11:26	11": 11:03	7": 11:08
10": 11:16	6": 12:47	10": 11:28	6": 1:04	10": 11:04	6": 11:37	10": 11:04	6": 11:10
RATE: 25 MPI		RATE: 25 MPI		RATE: 9 MPI		RATE: L.T. 2 MPI	

SOIL EVALUATOR: T. RYAN B.O.H. AGENT: W. DOMEY

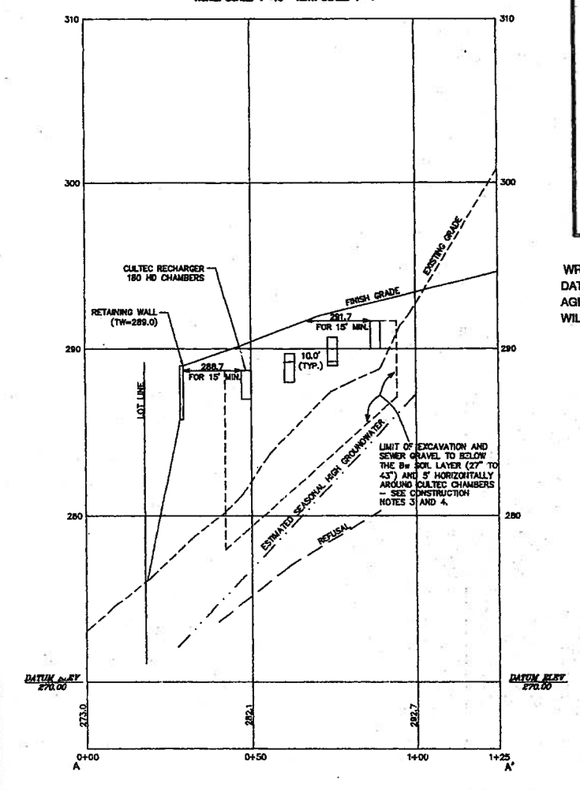
SOIL PROFILE DATA

TEST PIT No.	DTH 14–C	DTH 14–D	DTH 14–E	DTH 14–F
DATE	JANUARY 3, 2008	JANUARY 3, 2008	JANUARY 3, 2008	JANUARY 3, 2008
SOIL EVAL.	T. RYAN	T. RYAN	T. RYAN	T. RYAN
B.O.H. AGENT	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY
PIT ELEV.	289.0	284.0	289.0	280.0
MW ELEV.	–	–	–	–
PROFILE	10" Fill; 43" Sandy Loam 10YR3/2; 46" Sandy Loam 10YR5/6; 104" Loamy Sand 5Y5/2	8" Fill; 32" Sandy Loam 10YR3/2; 74" Sandy Loam 10YR5/6; 84" Loamy Sand 5Y5/2	8" Fill; 20" Sandy Loam 10YR3/2; 33" Sandy Loam 10YR5/6; 104.5" Loamy Sand 5Y5/2	8" Fill; 27" Sandy Loam 10YR3/2; 50" Sandy Loam 10YR5/6; 68" Loamy Sand 10YR5/2; 77" Sandy Loam 10YR5/2
	288.2; 285.4; 285.2; 280.3	288.3; 281.3; 277.8; 277.0	285.3; 284.3; 283.2; 277.3	279.3; 279.8; 275.8; 274.3; 273.8
	REFUSAL @ 104"	REFUSAL @ 84"	REFUSAL @ 104.5"	REFUSAL @ 77"
ADJUSTED HIGH WATER TABLE	285.4 MOTTLES	277.8 MOTTLES	284.3 MOTTLES	275.9 MOTTLES

NOTE: TEST HOLE SOIL PROFILE INFORMATION SHOWN HEREON IS LIMITED TO THE SOIL CONDITIONS FOUND AT THAT PARTICULAR TEST HOLE LOCATION AS IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESS WARRANTY OF SOIL CONDITIONS BEYOND THE LIMITS OF SUCH TEST HOLES. ANY CONDITIONS DIFFERING FROM THOSE SHOWN HEREON SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.

SOIL ABSORBTION AREA CROSS SECTION

HORIZ. SCALE: 1"=10' VERT. SCALE: 1"=4'



GENERAL NOTES

1. CONTRACTOR TO VERIFY ACTUAL LOCATION OF EXISTING UTILITY SERVICES IN THE FIELD PRIOR TO CONSTRUCTION (GAS, ELECTRIC, ETC.) CALL DIGSAFE: 1-888-344-7233.
2. ALL ELEVATIONS SHOWN REFER TO 1929 NGVD.
3. ZONED: R-43 SETBACK: 40 FT SIDEYARD: 25 FT REARYARD: 40 FT
4. THERE ARE NO PUBLIC WELLS WITHIN 500 FEET, NOR ANY PRIVATE WELLS WITHIN 200 FEET, NOR ANY BORDERING VEGETATED WETLANDS WITHIN 150 FEET, NOR ANY INLAND BANKS WITHIN 150 FEET, NOR ANY SURFACE WATERS WITHIN 150 FEET, NOR ANY SURFACE DRAINS WITHIN 50 FEET, NOR ANY OPEN, SURFACE, OR SUBSURFACE DRAINS WHICH INTERCEPT THE SEASONAL HIGH GROUND WATER WITHIN 50 FEET, NOR ANY VERNAL POOLS WITHIN 100 FEET, NOR ANY STORM DRAINAGE LEACHING CATCH BASINS OR DRYWELLS WITHIN 50 FEET, NOR ANY PERENNIAL STREAMS WITHIN 200 FEET, NOR ANY BOUNDARY OF A REGULATORY FLOODWAY OR 100 YEAR FLOOD PLAIN WITHIN 150 FEET OF THE PROPOSED SEPTIC SYSTEM.
5. NO INDUSTRIAL OR OTHER PROHIBITED WASTEWATERS ARE TO BE DISCHARGED INTO THE PROPOSED SEPTIC SYSTEM.
6. THE EXISTING ELEVATIONS SHOWN AROUND THE PROPOSED CONSTRUCTION ARE THE RESULT OF AN ON-GROUND SURVEY BY APPLEWOOD SURVEY CO. ON JUNE 28, 1997.
7. UPON COMPLETION OF SYSTEM CONSTRUCTION, THE INSTALLER SHALL SUBMIT A CERTIFICATION OF CONFORMANCE OF SAID CONSTRUCTION TO THE DESIGN PLAN TO THE BOARD OF HEALTH.
8. NO MODIFICATIONS MAY BE MADE TO THE SPECIFICATIONS ON THIS PLAN WITHOUT THE CONSENT OF THE WRENTHAM BOARD OF HEALTH AND THE DESIGN ENGINEER.
9. NO VARIANCES AGAINST TITLE 5 OR THE WRENTHAM BOARD OF HEALTH RULES AND REGULATIONS ARE REQUESTED FOR THE APPROVAL OF THIS PLAN.

DESIGN DATA

DESIGN FLOW: 4 BEDROOM, SINGLE-FAMILY DWELLING @ 110 GPD/BEDROOM = (4 BEDROOMS)(110 GPD/BEDROOM) = 440 GPD x 150% = 660 GPD

SOIL ABSORPTION SYSTEM: CLASS II SOIL, PERCOLATION RATE = 25 MPI
LTAR = 0.40 GPD/SF

REQUIRED LEACHING AREA: 660 GPD/0.40 GPD/SF = 1,650 SF
FOUR (4), 2' H x 2' W TRENCHES, 69' LONG
PROVIDED LEACHING AREA = (4)(69') [(2')(2')+(2')] = 1,656 SF
RESERVE LEACHING AREA = (4)(69') [(2')(2')+(2')] = 1,656 SF

SEPTIC TANK: REQUIRED CAPACITY = 660 GPD (2 DAYS) = 1320 GAL.
PROVIDED CAPACITY = 1,500 GAL.

SYSTEM ELEVATIONS

TOP OF FOUNDATION: 297.50
BASEMENT FLOOR: 290.00
INVERT AT FOUNDATION: 293.00
INVERT AT SEPTIC TANK INLET: 292.50
INVERT AT SEPTIC TANK OUTLET: 292.25
INVERT AT D-BOX INLET: 291.62
INVERT AT D-BOX OUTLET: 291.45
INVERT OF LINE 1: 291.17
BOTTOM OF LINE 1: 290.0
BREAK-OUT OF LINE 1: 291.7 @ 15' 290 @ 20.1'
INVERT OF LINE 2: 290.17
BOTTOM OF LINE 2: 289.0
BREAK-OUT OF LINE 2: 290.7 @ 15' 290 @ 17.1'
INVERT OF LINE 3: 289.17
BOTTOM OF LINE 3: 288.0
BREAK-OUT OF LINE 3: 289.7 @ 15' 288 @ 20.1'
INVERT OF LINE 4: 288.17
BOTTOM OF LINE 4: 287.0
BREAK-OUT OF LINE 4: 288.7 @ 15' 288 @ 17.1'

APPROVED
WRENTHAM BOARD OF HEALTH
DATE: 4/23/10
AGENT: [signature]
WILLIAM R. DOMEY, P.E.

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM

COMMONWEALTH OF MASSACHUSETTS TIMOTHY L. BEAUCHEMIN No. 31897 PROFESSIONAL ENGINEER 3-12-10

COMMONWEALTH OF MASSACHUSETTS TERRENCE M. RYAN # 37057 PROFESSIONAL LAND SURVEYOR 3/12/10

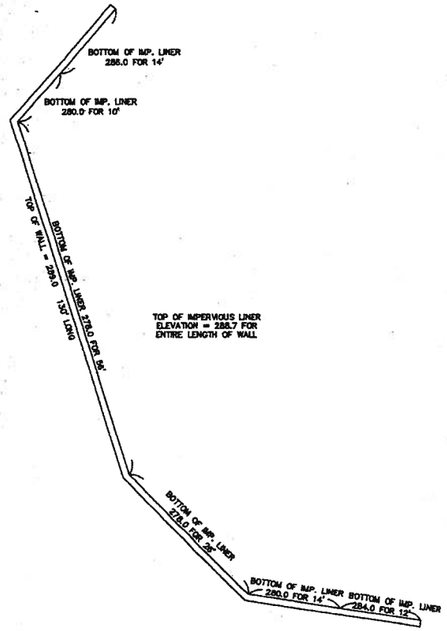
LOCATION:
LOT 14
HIGH MEADOW ROAD
WRENTHAM, MASS.

APPLICANT & OWNER:
WRENTHAM HILLS LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN P.E. 31897
TERRENCE M. RYAN R.L.S. 37057

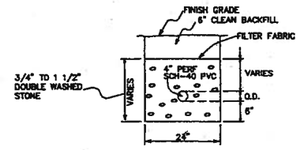
No.	DATE	REVISION	BY
1	2-25-10	ENLARGE LEACH AREA BY 150%	TMR

DATE: OCTOBER 28, 2009



IMPERVIOUS LINER ELEVATIONS

SCALE: 1"=10'

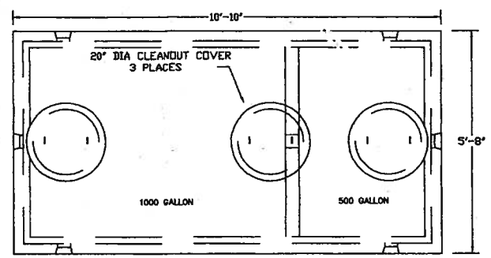


SUBDRAIN DETAIL

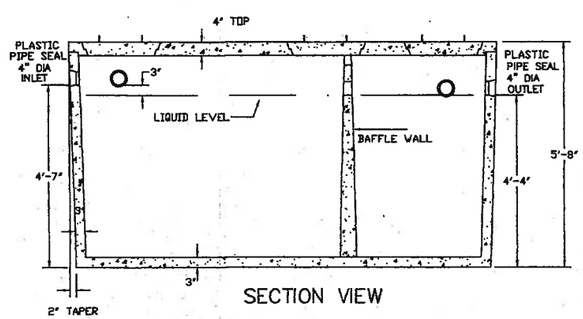
NOT TO SCALE

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE REGULATIONS SET FORTH IN 310 CMR 15.000, THE STATE ENVIRONMENTAL CODE (TITLE V), AND TO THE RULES AND REGULATIONS OF THE WRENTHAM BOARD OF HEALTH.
2. EXCAVATION FOR THE CONSTRUCTION OF THE SOIL ABSORPTION SYSTEM MAY BE DONE BY MECHANICAL MEANS PROVIDED THAT CARE IS TAKEN TO ASSURE THE SOIL AT THE BOTTOM OF EXCAVATION IS NOT COMPACTED OR SMEARED. THE BOTTOM AND SIDES OF EXCAVATION SHALL BE LEVEL AND SCARIFIED. EXCAVATION SHALL BE DONE ONLY ON DRY SURFACES FREE OF MUD. STOCKPILING OF MATERIALS AND/OR STORAGE OF EQUIPMENT OR VEHICLES IN THE AREA OF EXCAVATION SHALL BE PROHIBITED AT ALL TIMES DURING AND AFTER THE CONSTRUCTION OF THE SYSTEM. (310 CMR 15.248)
3. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL CONSISTING OF CLEAN GRANULAR SAND FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOILS SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN TWO INCHES. A SIEVE ANALYSIS OF THE FILL SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE. A MAXIMUM OF 45% OF THE SAMPLE MAY BE RETAINED ON THE #4 SIEVE. OF THE MATERIAL PASSING THE #4 SIEVE, 10% TO 100% MUST PASS THE #50 SIEVE. NOT MORE THAN 20% SHALL PASS THE #100 SIEVE, AND NOT MORE THAN 5% MAY PASS THE #200 SIEVE. (310 CMR 15.255.3)
4. WHERE FILL IS REQUIRED TO REPLACE UNSUITABLE OR IMPERMEABLE SOILS, THE EXCAVATION OF THE UNSUITABLE MATERIAL SHALL EXTEND A MINIMUM OF FIVE (5) FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF THE NATURALLY OCCURRING PERVIOUS MATERIAL (310 CMR 15.240) AND REPLACED WITH FILL MEETING THE SPECIFICATIONS OF 310 CMR 15.255.3.
5. PRIOR TO THE PLACEMENT OF FILL, WHICH SHALL BE STOCKPILED AT THE EDGE OF EXCAVATION AND FILLED IN GRADUALLY, THE BOTTOM SURFACE OF THE EXCAVATION SHALL BE SCARIFIED AND RELATIVELY DRY. FILL SHALL NOT BE PLACED DURING RAIN OR SNOW STORMS. IF THE WATER TABLE ELEVATION IS ABOVE THE ELEVATION OF THE BOTTOM OF THE EXCAVATION, THE EXCAVATION SHALL BE DEWATERED AS NECESSARY. (310 CMR 15.255.6)
6. A MINIMUM OF ONE REPRESENTATIVE SAMPLE WILL BE TAKEN FROM THE IN-PLACE FILL FOR A SYSTEM SERVING A SINGLE FAMILY RESIDENCE AND TESTED FOR COMPLIANCE WITH THE GRAIN SIZE DISTRIBUTION SPECIFICATION.
7. SEPTIC TANKS AND PUMP CHAMBERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 310 CMR 15.221 AND 15.228. ACCESS MANHOLES SHALL BE PROVIDED OVER THE INLET AND OUTLET TEES AND SHALL BE BROUGHT TO WITHIN 6" TO 12" BELOW FINISH GRADE. THE TOP OF THE SEPTIC TANK AND PUMP CHAMBER SHALL HAVE A MINIMUM OF 8" OF COVER. PLACEMENT OF TANKS SHALL BE IN ACCORDANCE WITH 310 CMR 15.228.
8. DISTRIBUTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH 310 CMR 15.232.2 AND SHALL BE PROVIDED WITH AN ACCESS MANHOLE BROUGHT TO WITHIN 6" TO 12" BELOW FINISH GRADE.
9. MORTAR ALL UNUSED KNOCK-OUTS ON SEPTIC TANKS, PUMP CHAMBERS, AND DISTRIBUTION BOXES.
10. ALL SEWER PIPES SHALL BE TIGHT JOINT 4" DIAMETER SCH-40 PVC CONFORMING TO 310 CMR 15.222 UNLESS OTHERWISE NOTED.
11. THE DISTRIBUTION LINES CONNECTING THE DISTRIBUTION BOX TO THE SOIL ABSORPTION SYSTEM DISTRIBUTION LINES SHALL BE UNPERFORATED 4" DIAMETER SCH-40 PVC WITH WATER TIGHT CONNECTIONS (310 CMR 15.251.10).
13. THE DISTRIBUTION LINES FOR LEACHING TRENCHES SHALL BE PERFORATED 4" DIAMETER SCH-40 PVC WITH THE PERFORATIONS LAID DOWN. SAID PERFORATIONS SHALL BE EVENLY SPACED ALONG TWO ROWS RUNNING THE LENGTH OF THE LINE ON EACH SIDE, MIDWAY BETWEEN THE INVERT AND THE CENTERLINE OF THE PIPE WHICH SEPARATES THE UPPER AND LOWER HALVES OF THE PIPE. FOR GRAVITY DISTRIBUTION, THE ORIFICES SHALL BE NO SMALLER THAN 3/8" DIAMETER AND NO LARGER THAN 5/8" DIAMETER (310 CMR 15.251.8).
14. EFFLUENT DISTRIBUTION LINES SHALL HAVE A UNIFORM SLOPE OF 0.005 FEET PER FOOT AND SHALL HAVE ENDS CAPPED OR CONNECTED TOGETHER BY UNPERFORATED PIPE OR REQUIRED VENTING MATERIAL (310 CMR 15.251.9).
15. DISTRIBUTION LINES EXCEEDING FIFTY (50) FEET IN LENGTH SHALL BE CONNECTED AND VENTING PROVIDED IN ACCORDANCE WITH 310 CMR 15.241.
16. NO DRIVEWAY, PARKING AREA, TURNING AREA, OR IMPERVIOUS AREA SHALL BE LOCATED ABOVE THE SOIL ABSORPTION SYSTEM. VEHICLES AND TRAFFIC, MATERIAL STOCKPILING, AND EQUIPMENT STORAGE IS PROHIBITED AT ALL TIMES OVER THE LEACHING AREA
17. FINISH GRADING TO BE DONE IN ACCORDANCE WITH THE DESIGN PLAN. SURFACE AND SUBSURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE SOIL ABSORPTION SYSTEM. FINAL COVER ABOVE THE SYSTEM SHALL BE GRADED TO REDUCE THE INFILTRATION OF SURFACE WATER AND MINIMIZE EROSION. THE FINISH GRADE ABOVE THE SOIL ABSORPTION SYSTEM SHALL HAVE A MINIMUM SLOPE OF 0.02 FEET PER FOOT.
18. FROM THE DATE OF THE INSTALLATION OF THE SOIL ABSORPTION SYSTEM UNTIL RECEIPT OF A CERTIFICATE OF COMPLIANCE FROM THE APPROVING AUTHORITY IN ACCORDANCE WITH 310 CMR 15.021, THE PERIMETER OF THE SOIL ABSORPTION SYSTEM SHALL BE STAKED AND FLAGGED TO PREVENT THE USE OF SUCH AREA FOR ALL ACTIVITIES WHICH MIGHT DAMAGE THE SOIL ABSORPTION SYSTEM. SUCH FLAGGING IS NOT INTENDED TO PRECLUDE THE FINAL GRADING AND LANDSCAPING OF THE AREA OF THE SOIL ABSORPTION SYSTEM. STOCKPILING OF MATERIALS OR EQUIPMENT WITHIN THE AREA IS PROHIBITED (310 CMR 15.248.2).
19. THE DESIGN ENGINEER SHALL BE CONTACTED PRIOR TO BACKFILLING SYSTEM IN ORDER TO CONDUCT AN AS-BUILT SURVEY. NO BACKFILLING MAY PROCEED WITHOUT THE CONSENT OF THE BOARD OF HEALTH.
20. THE DESIGN ENGINEER SHALL CERTIFY CONFORMANCE OF THE CONSTRUCTION OF THE SYSTEM, LOCATION OF THE SYSTEM, AND FINISH GRADES WITH THE DESIGN PLAN.
21. THE SEPTIC SYSTEM INSTALLER SHALL CERTIFY TO THE BOARD OF HEALTH THAT THE SYSTEM WAS CONSTRUCTED IN CONFORMANCE WITH THE DESIGN PLAN.
22. THE DESIGN ENGINEER AND THE WRENTHAM BOARD OF HEALTH SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF REQUIRED INSPECTIONS. A MINIMUM OF THREE INSPECTIONS SHALL BE REQUIRED:
    A. UPON COMPLETION OF EXCAVATION OF SOIL ABSORPTION SYSTEM AREA
    B. UPON COMPLETION OF SEWAGE DISPOSAL SYSTEM BUT PRIOR TO BACKFILLING
    C. UPON COMPLETION OF FINISH GRADING
23. FOR PROPER PERFORMANCE, THE SEPTIC TANK SHOULD BE PUMPED EVERY 3 YEARS.
24. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.



PLAN VIEW



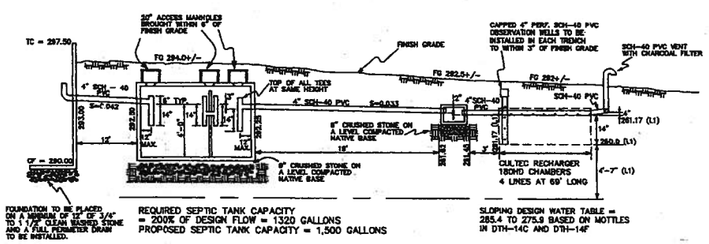
SECTION VIEW

CONCRETE: 4000 PSI AT 28 DAYS DENSITY: 140 PCF
CEMENT: PORTLAND TYPE I OR TYPE III PER ASTM C150-81
ADMIXTURES PER ASTM C233-82
CONSTRUCTION TO CONFORM TO 310 CMR 15.226.2.a

TANK SHALL BE FITTED WITH AN OUTLET GAS BAFFLE
TEES SHALL BE CONSTRUCTED IN CONFORMANCE TO 310 CMR 15.227
TANK SHALL CONTAIN MANUFACTURERS Q/C SEAL STATING CONFORMANCE TO ASTM C1227-93 PER 310 CMR 15.228.4
TANK SHALL BE WATERTIGHT
DISTRIBUTOR: SHEA CONCRETE PRODUCTS
ITEM TK 2C1500 OR APPROVED EQUAL

MONOLITHIC SEPTIC TANK

NOT TO SCALE

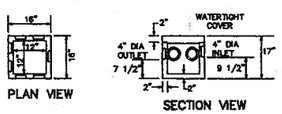


REQUIRED SEPTIC TANK CAPACITY
= 200% OF DESIGN FLOW = 1320 GALLONS
PROPOSED SEPTIC TANK CAPACITY = 1,500 GALLONS

SLOPING DESIGN WATER TABLE =
285.4 TO 275.9 BASED ON MOTTLES
IN DTH-14C AND DTH-14F

SYSTEM PROFILE

NOT TO SCALE

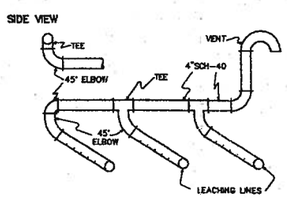


CONCRETE: 4000 PSI AT 28 DAYS

CONSTRUCTION SHALL CONFORM TO 310 CMR 15.232
DISTRIBUTOR: SHEA CONCRETE PRODUCTS
ITEM B-6088 OR APPROVED EQUAL

DISTRIBUTION BOX

NOT TO SCALE



VENT CONNECTION DETAIL

NOT TO SCALE

APPROVED
WRENTHAM BOARD OF HEALTH
DATE: _____
AGENT: _____
WILLIAM R. DOMEY, P.E.

MAR 17 2010

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY L. BEAUCHEMIN
No. 31897
REGISTERED PROFESSIONAL ENGINEER
3-17-10

LOCATION:
WRENTHAM HILLS LLC
75 WEST CENTRAL STREET
NATICK, MASS. 01746

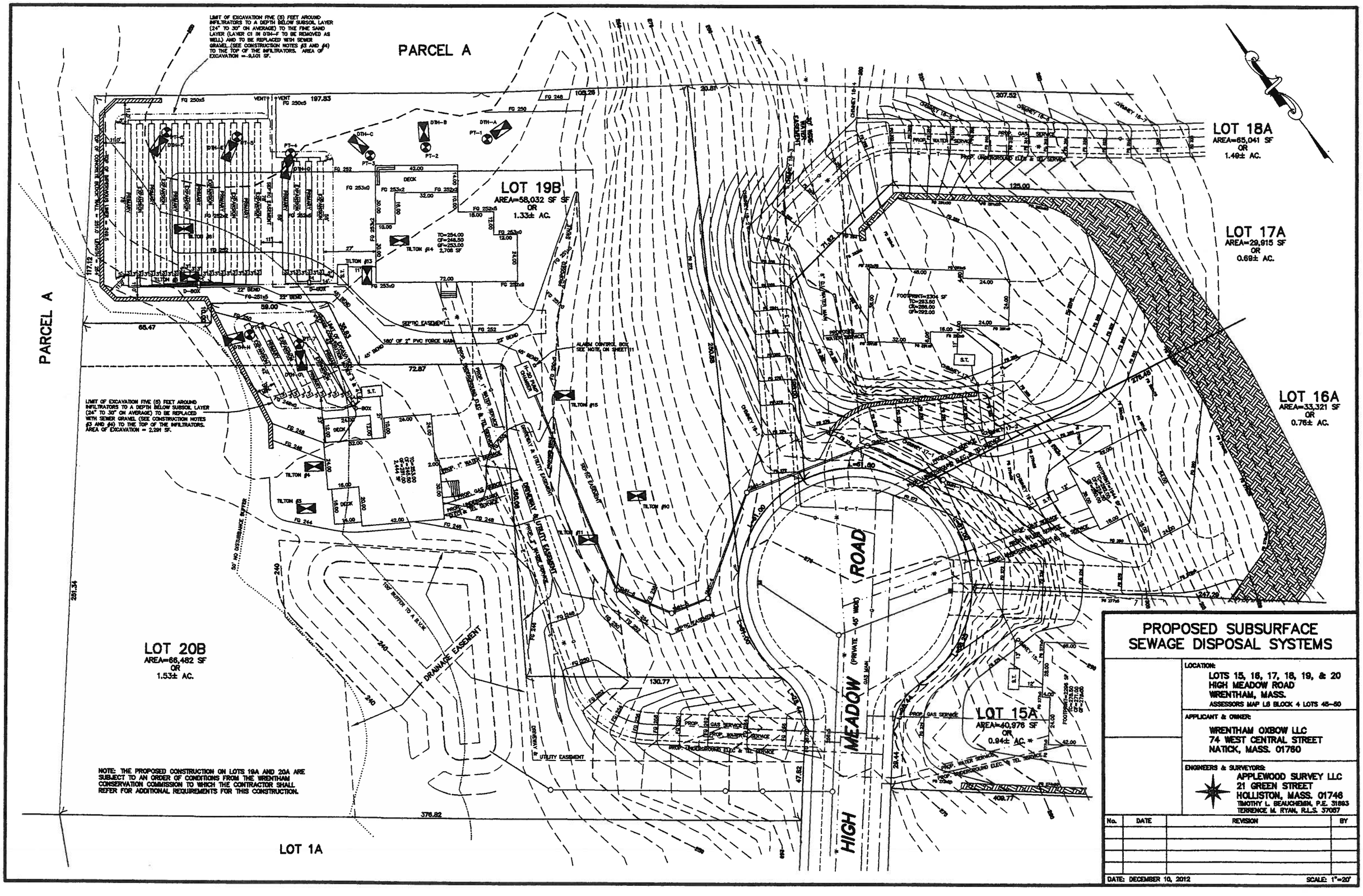
APPLICANT & OWNER:
COURTLAND SQUARE REALTY TR.
508 SOUTH STREET
NEEDHAM, MASS. 02192

COMMONWEALTH OF MASSACHUSETTS
TERRENCE M. RYAN
37057
REGISTERED PROFESSIONAL LAND SURVEYOR
3/17/10

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN P.E. 31897
TERRENCE M. RYAN R.L.S. 37057

No.	DATE	REVISION	BY
1	2-25-10	ENLARGE LEACH AREA BY 150%	TMR

DATE: OCTOBER 28, 2009



PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS

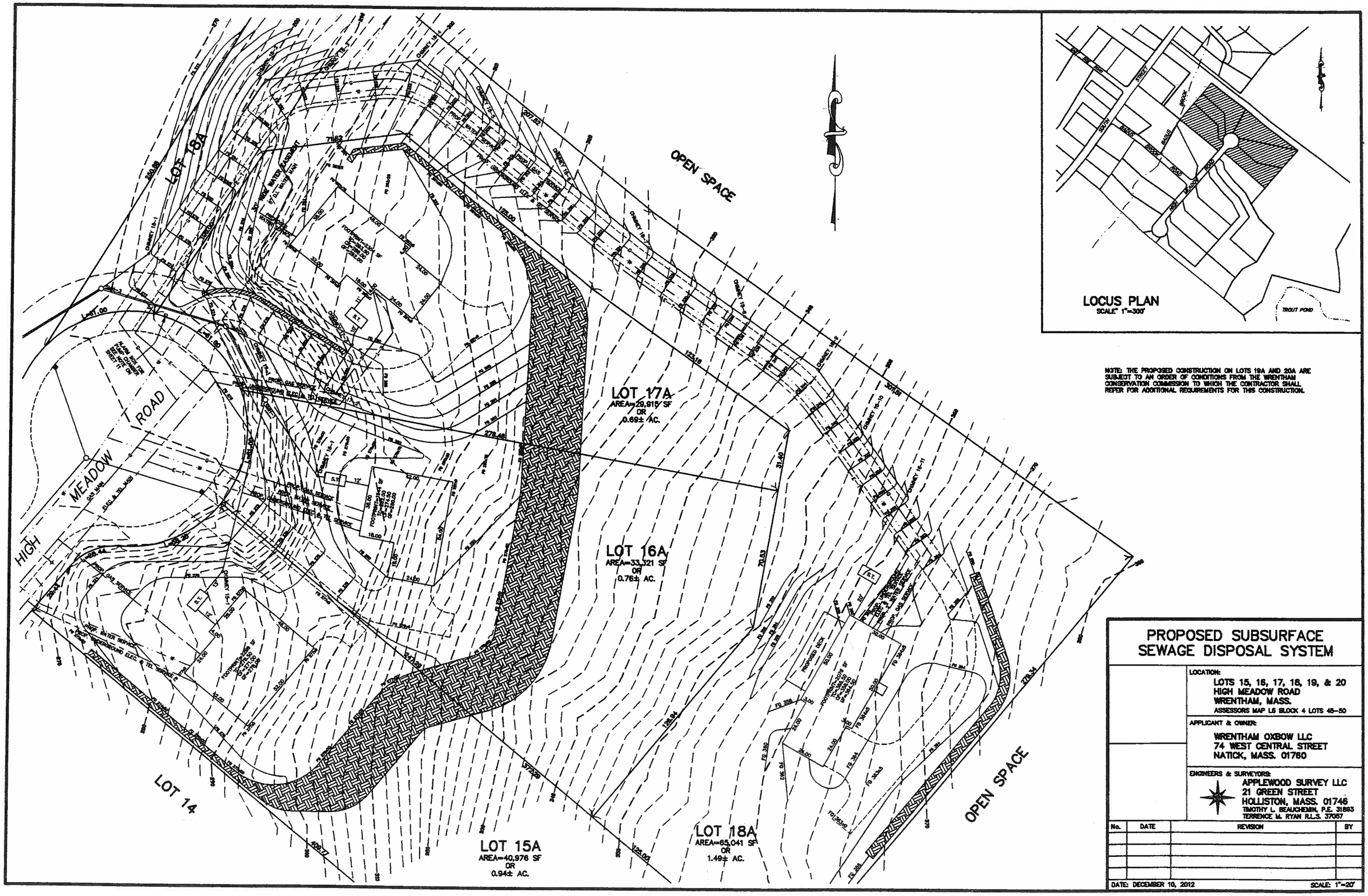
LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45-50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31893
TERRENCE M. RYAN, R.L.S. 37067

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 SCALE: 1"=20'



SHEET 2 OF 11 SHEETS

SOIL PROFILE DATA

TEST PIT No.	DTH-A	DTH-B	DTH-C	DTH-D	DTH-E	DTH-F	DTH-G	DTH-H	TILTON-3	TILTON-4	TILTON-5	TILTON-6	TILTON-13	TILTON-14
DATE	SEPT. 12, 2006	SEPT. 12, 2006	SEPT. 12, 2006	SEPT. 12, 2006	SEPT. 12, 2006	SEPT. 12, 2006	OCT. 17, 2006	OCT. 17, 2006	MAY 28, 1996	MAY 28, 1996	MAY 28, 1996	MAY 28, 1996	MAY 28, 1996	MAY 28, 1996
SOIL EVAL.	T. RYAN	T. RYAN	T. RYAN	T. RYAN	T. RYAN	T. RYAN	T. RYAN	T. RYAN	L. TILTON	L. TILTON	L. TILTON	L. TILTON	L. TILTON	L. TILTON
B.O.H. AGENT	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY	W. DOMEY	N. LETENDRE	N. LETENDRE	N. LETENDRE	N. LETENDRE	N. LETENDRE	N. LETENDRE
PIT ELEV.	248.3	250.3	248.4	248.1	250.5	250.5	248.4	248.8	242.8	243.5	247.5	248.5	248.0	248.1
MW ELEV.	249.88	250.86	250.75	249.66	250.55	250.71	248.92	248.10	NONE	NONE	NONE	NONE	248.02	NONE
PROFILE	Ap 0-10" (248.3-247.5) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 10"-38" (247.5-245.3) SANDY LOAM 10YR5/6 STRUCTURELESS, FRIABLE Cd 38"-100" (245.3-240.0) SANDY LOAM 5Y5/4 STRUCTURELESS, FIRM LARGE MOTTLES 10YR6/8 BEG. AT 36" (245.3) NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 100" (240.0) 4' PERVIOUS LAYER = Cd	Ap 0-8" (250.3-249.8) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 8"-30" (249.8-247.9) SANDY LOAM 10YR5/6 STRUCTURELESS, FRIABLE Cd 30"-118" (247.9-240.5) SANDY LOAM 5Y5/4 STRUCTURELESS, FIRM LARGE MOTTLES 10YR6/8 BEG. AT 37" (247.2) NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 118" (240.5) NO 4' PERVIOUS LAYER	Ap 0-8" (249.4-248.7) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 8"-24" (248.7-247.4) SANDY LOAM 10YR5/6 STRUCTURELESS, FRIABLE Cd 30"-120" (247.4-239.4) SANDY LOAM 5Y5/4 STRUCTURELESS, FIRM NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 120" (239.4) NO 4' PERVIOUS LAYER	Ap 0-8" (248.1-248.4) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 8"-25" (248.4-247.0) SANDY LOAM 10YR5/8 STRUCTURELESS, FRIABLE C 25-118" (247.0-239.3) FINE SAND 5YR5/2 STRUCTURELESS, VERY FRIABLE LARGE MOTTLES 10YR6/8 BEG. AT 101" (240.7) NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 118" (239.3) W.T.C.F.= +2.2' 4' PERVIOUS LAYER = C	Ap 0-8" (250.5-248.5) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 8"-30" (249.8-248.0) SANDY LOAM 10YR5/6 STRUCTURELESS, FRIABLE C 30"-120" (248.0-240.5) MED. SAND 5YR6/2 STRUCTURELESS, VERY FRIABLE NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 120" (240.5) W.T.C.F.= +2.2' 4' PERVIOUS LAYER = C	A 0-6" (250.5-250.0) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE B 6-23" (250.0-248.6) SANDY LOAM 10YR5/8 STRUCTURELESS, FRIABLE C1 23"-55" (248.6-244.8) SANDY LOAM 5YR5/4 STRUCTURELESS, FIRM C2 55"-138" (244.8-239.0) FINE SAND 5YR5/4 STRUTURELESS, VERY FRIABLE MED. MOTTLES 10YR6/8 BEG. AT 74" (244.3) NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 138" (239.0) 4' PERVIOUS LAYER = C2	Ap 0-8" (248.4-245.7) SANDY LOAM 10YR3/3 GRANULAR, FRIABLE Bw 8"-30" (248.7-243.9) SANDY LOAM 10YR5/6 GRANULAR, FRIABLE C1 30"-92" (243.9-238.7) MEDIUM SAND 5Y6/4 STRUCURELESS, VERY FRIABLE Cd 92"-112" (238.7-237.1) SANDY LOAM 5Y5/4 STRUCTURELESS, FIRM NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 112" (237.1) W.T.C.F.=2.2' 4' PERVIOUS LAYER = C1	Ap 0-8" (248.8-246.1) SANDY LOAM 10YR3/3 GRANULAR, MOIST Bw 8-31" (246.1-244.2) SANDY LOAM 10YR5/6 GRANULAR, MOIST C 31-87" (244.2-238.8) MEDIUM SAND 5Y6/4 STRUCURELESS, VERY FRIABLE Cd 87-110" (238.8-237.6) SANDY LOAM 5Y5/4 STRUCTURELESS, FIRM SOME COBBLES NO WATER NO REFUSAL MON. WELL READ 11-27-07 DRY AT 110" (237.6) W.T.C.F.= 2.2' 4' PERVIOUS LAYER = C	A 0-14" (242.8-241.5) LOAMY SAND 10YR3/4 B 14-26" (241.5-240.7) LOAMY SAND 10YR5/8 C1 24-98" (240.7-234.7) SAND 10YR6/8 C2 98-125" (234.7-232.4) MEDIUM FINE SAND 10YR4/1 4' PERVIOUS LAYER = C1	A 0-12" (243.5-242.5) LOAMY SAND 10YR3/4 B 12-24" (242.5-241.5) LOAMY SAND 10YR5/8 C 24-90" (241.5-238.5) COARSE SAND 10YR8/8 C2 90-72" (238.5-237.5) FINE SAND 10YR4/1 4' PERVIOUS LAYER= C + C2	A 0-10" (247.5-246.7) LOAMY SAND 10YR3/4 B 10-20" (246.7-245.8) LOAMY SAND 10YR5/6 C 20-108" (245.8-238.5) SAND 10YR4/6 C2 108-132" (238.5-236.5) FINE SAND 10YR3/2 4' PERVIOUS LAYER = C	A 0-12" (248.8-247.8) SANDY LOAM 10YR3/4 B 12-28" (247.8-246.5) SANDY LOAM 10YR5/6 C 28-90" (246.5-241.3) SAND 10YR4/6 C2 90-138" (241.3-237.3) LOAMY SAND 10YR3/2 4' PERVIOUS LAYER = C	A 0-12" (248.0-247.0) SANDY LOAM 10YR3/3 B 12-24" (247.0-246.0) SANDY LOAM 10YR5/6 C 24-132" (246.0-237.0) SILTY SAND 10YR5/8 MON. WELL READ 11-27-07 DRY AT 132" (237.0) W.T.C.F. = 2.2' 4' PERVIOUS LAYER = C	A 0-12" (248.1-247.1) SANDY LOAM 10YR3/3 B 12-24" (247.1-246.1) SANDY LOAM 10YR5/6 C 24-132" (246.1-237.1) SILTY SAND 10YR5/8 4' PERVIOUS LAYER = C
SEASONAL HIGH WATER TABLE	245.3 MOTTLES	247.2 MOTTLES	247.4 TOP OF Cd	241.5 W.T.C.F.	242.7 W.T.C.F.	244.3 MOTTLES	238.3 W.T.C.F.	238.8 W.T.C.F.	234.8 W.T.C.F.	238.7 W.T.C.F.	238.7 W.T.C.F.	238.5 W.T.C.F.	238.2 W.T.C.F.	238.3 W.T.C.F.

PERCOLATION

PT-1 SEPT. 12 & 13, 2006
GROUND ELEV: 248.3
TEST ELEVATION: 245.3 TO 243.8
OVERNIGHT SOAK
BEGIN SOAK: 11:03 9": 11:49
12": 11:18 8": 12:06
11": 11:25 7": 12:26
10": 11:34 6": 12:45
RATE: 19 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-2 SEPT. 12 & 13, 2006
GROUND ELEV: 250.3
TEST ELEVATION: 248.6 TO 245.1
OVERNIGHT SOAK
BEGIN SOAK: 11:00 9": 2:00
12": 11:15 8": 3:27
11": 11:50 7": –
10": 12:44 6": –
RATE: FAIL

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-3 SEPT. 12 & 13, 2006
GROUND ELEV: 249.4
TEST ELEVATION: 246.7 TO 245.2
OVERNIGHT SOAK
BEGIN SOAK: 10:47 9": 1:32
12": 11:12 8": 2:32
11": 11:46 7": 3:50
10": 12:34 6": –
RATE: FAIL

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-4 SEPT. 12, 2006
GROUND ELEV: 249.1
TEST ELEVATION: 245.8 TO 245.3
BEGIN SOAK: 4:48 9": 5:06
12": 5:03 8": 5:07
11": 5:04 7": 5:08:30
10": 5:05 6": 5:10
RATE: L.T. 2 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-5 SEPT. 12, 2006
GROUND ELEV: 250.5
TEST ELEVATION: 247.5 TO 245.9
BEGIN SOAK: 4:10 9": 4:27
12": 4:25 8": 4:28
11": 4:25:40 7": 4:29
10": 4:26:20 6": 4:30
RATE: L.T. 2 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-6 SEPT. 12, 2006
GROUND ELEV: 250.5
TEST ELEVATION: 240.5 TO 239.0
BEGIN SOAK: 3:05 9": 3:26
12": 3:20 8": 3:30
11": 3:21:30 7": 3:34:30
10": 3:23:30 6": 3:38:30
RATE: 4 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-7 OCT. 17, 2006
GROUND ELEV: 248.4
TEST ELEVATION: 242.7 TO 241.1
BEGIN SOAK: 12:55 9": 1:11:20
12": 1:10 8": 1:12:00
11": 1:10:25 7": 1:12:45
10": 1:10:45 6": 1:13:30
RATE: L.T. 2 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

PT-8 OCT. 17, 2006
GROUND ELEV: 248.8
TEST ELEVATION: 244.1 TO 242.5
BEGIN SOAK: 1:16 9": 1:35
12": 1:31 8": 1:38:45
11": 1:32 7": 1:39:15
10": 1:33:20 6": 1:42:45
RATE: 3 MPI

SOIL EVALUATOR: T. RYAN
B.O.H. AGENT: W. DOMEY

NOTE: TEST HOLE SOIL PROFILE INFORMATION SHOWN HEREON IS LIMITED TO THE SOIL CONDITIONS FOUND AT THAT PARTICULAR TEST HOLE LOCATION AS IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESS WARRANTY OF SOIL CONDITIONS BEYOND THE LIMITS OF SUCH TEST HOLES. ANY CONDITIONS DIFFERING FROM THOSE SHOWN HEREON SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.

DESIGN DATA
LOTS 15A, 16A, 17A, & 18A

ESTIMATED FLOW:
16 BEDROOMS x 110 GPD/BR = 1,760 GPD
x 150% (GARBAGE GRINDER) = 2,640 GPD REQUIRED
DESIGN PERCOLATION RATE: 4 MPI
SOIL TEXTURAL CLASS: I
LEACHING CALCULATON:
2,640 GPD / 0.74 GPD/SF = 3,568 SF REQUIRED
3,568 SF / 7.93 SF/FT = 450 FT REQUIRED
DAILY FLOW ACCEPTANCE BY S.A.S.:
6 LINES x 78 FT/LINE = 468 FT x 7.93 SF/FT =
3,711 SF PROVIDED
3,711 SF x 0.74 GPD/SF = 2,746 GPD PROVIDED

DESIGN DATA LOT 19A

ESTIMATED FLOW:
4 BEDROOMS x 100 GPD/BR = 440 GPD
x 150% (GARBAGE GRINDER) = 660 GPD REQUIRED
DESIGN PERCOLATION RATE: 4 MPI
SOIL TEXTURAL CLASS: I
LEACHING CALCULATON:
660 GPD / 0.74 GPD/SF = 892 SF REQUIRED
892 SF / 7.93 SF/FT = 112.5 FT REQUIRED
DAILY FLOW ACCEPTANCE BY S.A.S.:
4 LINES x 30 FT/LINE x 7.93 SF/FT =
951 SF PROVIDED
951 SF x 0.74 GPD/SF = 704 GPD PROVIDED

DESIGN DATA LOT 20A

ESTIMATED FLOW:
4 BEDROOMS x 100 GPD/BR = 440 GPD
x 150% (GARBAGE GRINDER) = 660 GPD REQUIRED
DESIGN PERCOLATION RATE: 3 MPI
SOIL TEXTURAL CLASS: I
LEACHING CALCULATON:
660 GPD / 0.74 GPD/SF = 892 SF REQUIRED
892 SF / 7.93 SF/FT = 112.5 FT REQUIRED
DAILY FLOW ACCEPTANCE BY S.A.S.:
3 LINES x 42 FT/LINE x 7.93 SF/FT =
999 SF PROVIDED
999 SF x 0.74 GPD/SF = 739 GPD PROVIDED

SYSTEM ELEVATIONS LOT 15A

TOP OF FOUNDATION: 278.50
BASEMENT FLOOR: 271.00
INVERT AT FOUNDATION: 274.50
INVERT AT SEPTIC TANK INLET: 274.25
INVERT AT SEPTIC TANK OUTLET: 274.00
INVERT AT PUMP CHAMBER INLET: 247.25
INVERT AT PUMP CHAMBER OUTLET: 247.00
INVERT AT D-BOX INLET: 250.70
INVERT AT D-BOX OUTLET: 250.50
INVERT AT BEG. OF INFILTRATOR: 250.20
ELEVATION OF TRENCH BOTTOM: 249.3
DESIGN WATER TABLE: 244.3 (DTH-F MOTTLES)
FINISH GRADE OVER S.A.S.: 252.5 +/-
BREAK-OUT: 249.3 @ 15' 248.0 @ 18.9'

SYSTEM ELEVATIONS LOT 16A

TOP OF FOUNDATION: 282.00
BASEMENT FLOOR: 274.50
INVERT AT FOUNDATION: 278.25
INVERT AT SEPTIC TANK INLET: 276.00
INVERT AT SEPTIC TANK OUTLET: 275.75
INVERT AT PUMP CHAMBER INLET: 247.25
INVERT AT PUMP CHAMBER OUTLET: 247.00
INVERT AT D-BOX INLET: 250.70
INVERT AT D-BOX OUTLET: 250.50
INVERT AT BEG. OF INFILTRATOR: 250.20
ELEVATION OF TRENCH BOTTOM: 249.3
DESIGN WATER TABLE: 244.3 (DTH-F MOTTLES)
FINISH GRADE OVER S.A.S.: 252.5 +/-
BREAK-OUT: 249.3 @ 15' 248.0 @ 18.9'

SYSTEM ELEVATIONS LOT 17A

TOP OF FOUNDATION: 293.50
BASEMENT FLOOR: 286.00
INVERT AT FOUNDATION: 289.00
INVERT AT SEPTIC TANK INLET: 287.50
INVERT AT SEPTIC TANK OUTLET: 287.25
INVERT AT PUMP CHAMBER INLET: 247.25
INVERT AT PUMP CHAMBER OUTLET: 247.00
INVERT AT D-BOX INLET: 250.70
INVERT AT D-BOX OUTLET: 250.50
INVERT AT BEG. OF INFILTRATOR: 250.20
ELEVATION OF TRENCH BOTTOM: 249.3
DESIGN WATER TABLE: 244.3 (DTH-F MOTTLES)
FINISH GRADE OVER S.A.S.: 252.5 +/-
BREAK-OUT: 249.3 @ 15' 248.0 @ 18.9'

SYSTEM ELEVATIONS LOT 18A

TOP OF FOUNDATION: 365.50
BASEMENT FLOOR: 358.00
INVERT AT FOUNDATION: 356.00
INVERT AT SEPTIC TANK INLET: 355.60
INVERT AT SEPTIC TANK OUTLET: 355.35
INVERT AT PUMP CHAMBER INLET: 247.25
INVERT AT PUMP CHAMBER OUTLET: 247.00
INVERT AT D-BOX INLET: 250.70
INVERT AT D-BOX OUTLET: 250.50
INVERT AT BEG. OF INFILTRATOR: 250.20
ELEVATION OF TRENCH BOTTOM: 249.3
DESIGN WATER TABLE: 244.3 (DTH-F MOTTLES)
FINISH GRADE OVER S.A.S.: 252.5 +/-
BREAK-OUT: 249.3 @ 15' 248.0 @ 18.9'

SYSTEM ELEVATIONS LOT 19A

TOP OF FOUNDATION: 254.00
BASEMENT FLOOR: 246.50
INVERT AT FOUNDATION: 251.80
INVERT AT SEPTIC TANK INLET: 251.50
INVERT AT SEPTIC TANK OUTLET: 251.20
INVERT AT D-BOX INLET: 250.70
INVERT AT D-BOX OUTLET: 250.50
INVERT AT BEG. OF INFILTRATOR: 250.20
ELEVATION OF TRENCH BOTTOM: 249.3
DESIGN WATER TABLE: 244.3 (DTH-F MOTTLES)
FINISH GRADE OVER S.A.S.: 252 +/-
BREAK-OUT: 249.3 @ 15' 248.0 @ 18.9'

SYSTEM ELEVATIONS LOT 20A

TOP OF FOUNDATION: 254.00
BASEMENT FLOOR: 246.50
INVERT AT FOUNDATION: 250.00
INVERT AT SEPTIC TANK INLET: 249.50
INVERT AT SEPTIC TANK OUTLET: 249.25
INVERT AT D-BOX INLET: 249.00
INVERT AT D-BOX OUTLET: 248.80
INVERT AT BEG. OF INFILTRATOR: 248.50
ELEVATION OF BED BOTTOM: 247.6
DESIGN WATER TABLE: 239.8 W.T.C.F. DTH-H
FINISH GRADE OVER S.A.S.: 249.5 +/-
BREAK-OUT: 247.6 @ 15' 248.0 @ 19.8'

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
SOIL AND DESIGN DATA

LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 46-50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, R.L.S. 37067

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 SCALE: AS SHOWN

CONSTRUCTION NOTES

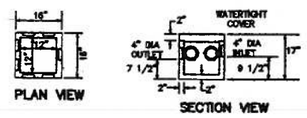
1. ALL CONSTRUCTION SHALL CONFORM TO THE REGULATIONS SET FORTH IN 310 CMR 15.000, THE STATE ENVIRONMENTAL CODE (TITLE V), AND TO THE RULES AND REGULATIONS OF THE WRENTHAM BOARD OF HEALTH.
2. EXCAVATION FOR THE CONSTRUCTION OF THE SOIL ABSORPTION SYSTEM MAY BE DONE BY MECHANICAL MEANS PROVIDED THAT CARE IS TAKEN TO ASSURE THE SOIL AT THE BOTTOM OF EXCAVATION IS NOT COMPACTED OR SMEARED. THE BOTTOM AND SIDES OF EXCAVATION SHALL BE LEVEL AND SCARIFIED. EXCAVATION SHALL BE DONE ONLY ON DRY SURFACES FREE OF MUD. STOCKPILING OF MATERIALS AND/OR STORAGE OF EQUIPMENT OR VEHICLES IN THE AREA OF EXCAVATION SHALL BE PROHIBITED AT ALL TIMES DURING AND AFTER THE CONSTRUCTION OF THE SYSTEM. (310 CMR 15.244)
3. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL CONSISTING OF CLEAN GRANULAR SAND FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOILS SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN TWO INCHES. A SIEVE ANALYSIS OF THE FILL SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE. A MAXIMUM OF 45% OF THE SAMPLE MAY BE RETAINED ON THE #4 SIEVE. OF THE MATERIAL PASSING THE #4 SIEVE, 10% TO 100% MUST PASS THE #50 SIEVE, NOT MORE THAN 20% SHALL PASS THE #100 SIEVE, AND NOT MORE THAN 5% MAY PASS THE #200 SIEVE. (310 CMR 15.255.3)
4. WHERE FILL IS REQUIRED TO REPLACE UNSUITABLE OR IMPERMEABLE SOILS, THE EXCAVATION OF THE UNSUITABLE MATERIAL SHALL EXTEND A MINIMUM OF FIVE (5) FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF THE NATURALLY OCCURRING PERVIOUS MATERIAL. (310 CMR 15.240) AND REPLACED WITH FILL MEETING THE SPECIFICATIONS OF 310 CMR 15.255.3.
5. PRIOR TO THE PLACEMENT OF FILL, WHICH SHALL BE STOCKPILED AT THE EDGE OF EXCAVATION AND FILLED IN GRADUALLY, THE BOTTOM SURFACE OF THE EXCAVATION SHALL BE SCARIFIED AND RELATIVELY DRY. FILL SHALL NOT BE PLACED DURING RAIN OR SNOW STORMS. IF THE WATER TABLE ELEVATION IS ABOVE THE ELEVATION OF THE BOTTOM OF THE EXCAVATION, THE EXCAVATION SHALL BE DEWATERED AS NECESSARY. (310 CMR 15.255.6)
6. A MINIMUM OF ONE REPRESENTATIVE SAMPLE WILL BE TAKEN FROM THE IN-PLACE FILL FOR A SYSTEM SERVING A SINGLE FAMILY RESIDENCE AND TESTED FOR COMPLIANCE WITH THE GRAIN SIZE DISTRIBUTION SPECIFICATION.
7. SEPTIC TANKS AND PUMP CHAMBERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 310 CMR 15.221 AND 15.226. ACCESS MANHOLES SHALL BE PROVIDED OVER THE INLET AND OUTLET TEES AND SHALL BE BROUGHT TO WITHIN 6"TO 12" BELOW FINISH GRADE. THE TOP OF THE SEPTIC TANK AND PUMP CHAMBER SHALL HAVE A MINIMUM OF 9" OF COVER. PLACEMENT OF TANKS SHALL BE IN ACCORDANCE WITH 310 CMR 15.228.
8. DISTRIBUTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH 310 CMR 15.232.2 AND SHALL BE PROVIDED WITH AN ACCESS MANHOLE BROUGHT TO WITHIN 6" TO 12" BELOW FINISH GRADE.
9. MORTAR ALL UNUSED KNOCK-OUTS ON SEPTIC TANKS, PUMP CHAMBERS, AND DISTRIBUTION BOXES.
10. ALL SEWER PIPES SHALL BE TIGHT JOINT 4" DIAMETER SCH-40 PVC CONFORMING TO 310 CMR 15.222 UNLESS OTHERWISE NOTED.
11. IF REQUIRED, THE SEWER FORCE MAIN FROM THE PUMP CHAMBER TO THE DISTRIBUTION BOX SHALL BE TIGHT JOINT 2" DIAMETER SCH-80 PVC CONFORMING TO 310 CMR 15.221.6.
12. THE DISTRIBUTION LINES CONNECTING THE DISTRIBUTION BOX TO THE SOIL ABSORPTION SYSTEM DISTRIBUTION LINES SHALL BE UNPERFORATED 4" DIAMETER SCH-40 PVC WITH WATER TIGHT CONNECTIONS (310 CMR 15.251.10).
13. THE DISTRIBUTION LINES FOR LEACHING TRENCHES SHALL BE PERFORATED 4" DIAMETER SCH-40 PVC WITH THE PERFORATIONS LAID DOWN. SAID PERFORATIONS SHALL BE EVENLY SPACED ALONG TWO ROWS RUNNING THE LENGTH OF THE LINE ON EACH SIDE, MIDWAY BETWEEN THE INVERT AND THE CENTERLINE OF THE PIPE WHICH SEPARATES THE UPPER AND LOWER HALVES OF THE PIPE. FOR GRAVITY DISTRIBUTION, THE ORIFICES SHALL BE NO SMALLER THAN 3/8" DIAMETER AND NO LARGER THAN 5/8" DIAMETER (310 CMR 15.251.8).
14. EFFLUENT DISTRIBUTION LINES SHALL HAVE A UNIFORM SLOPE OF 0.005 FEET PER FOOT AND SHALL HAVE ENDS CAPPED OR CONNECTED TOGETHER BY UNPERFORATED PIPE OR REQUIRED VENTING MATERIAL (310 CMR 15.251.9).
15. DISTRIBUTION LINES EXCEEDING FIFTY (50) FEET IN LENGTH SHALL BE CONNECTED AND VENTING PROVIDED IN ACCORDANCE WITH 310 CMR 15.241.
16. NO DRIVEWAY, PARKING AREA, TURNING AREA, OR IMPERVIOUS AREA SHALL BE LOCATED ABOVE THE SOIL ABSORPTION SYSTEM. VEHICLES AND TRAFFIC, MATERIAL STOCKPILING, AND EQUIPMENT STORAGE IS PROHIBITED AT ALL TIMES OVER THE LEACHING AREA.
17. FINISH GRADING TO BE DONE IN ACCORDANCE WITH THE DESIGN PLAN. SURFACE AND SUBSURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE SOIL ABSORPTION SYSTEM. FINAL COVER ABOVE THE SYSTEM SHALL BE GRADED TO REDUCE THE INFILTRATION OF SURFACE WATER AND MINIMIZE EROSION. THE FINISH GRADE ABOVE THE SOIL ABSORPTION SYSTEM SHALL HAVE A MINIMUM SLOPE OF 0.020.
18. FROM THE DATE OF THE INSTALLATION OF THE SOIL ABSORPTION SYSTEM UNTIL RECEIPT OF A CERTIFICATE OF COMPLIANCE FROM THE APPROVING AUTHORITY IN ACCORDANCE WITH 310 CMR 15.021, THE PERIMETER OF THE SOIL ABSORPTION SYSTEM SHALL BE STAKED AND FLAGGED TO PREVENT THE USE OF SUCH AREA FOR ALL ACTIVITIES WHICH MIGHT DAMAGE THE SOIL ABSORPTION SYSTEM. SUCH FLAGGING IS NOT INTENDED TO PRECLUDE THE FINAL GRADING AND LANDSCAPING OF THE AREA OF THE SOIL ABSORPTION SYSTEM. STOCKPILING OF MATERIALS OR EQUIPMENT WITHIN THE AREA IS PROHIBITED (310 CMR 15.246.2).
19. THE DESIGN ENGINEER SHALL BE CONTACTED PRIOR TO BACKFILLING SYSTEM IN ORDER TO CONDUCT AN AS-BUILT SURVEY. NO BACKFILLING MAY PROCEED WITHOUT THE CONSENT OF THE BOARD OF HEALTH.
20. THE DESIGN ENGINEER SHALL CERTIFY CONFORMANCE OF THE CONSTRUCTION OF THE SYSTEM, LOCATION OF THE SYSTEM, AND FINISH GRADES WITH THE DESIGN PLAN.
21. THE SEPTIC SYSTEM INSTALLER SHALL CERTIFY TO THE BOARD OF HEALTH THAT THE SYSTEM WAS CONSTRUCTED IN CONFORMANCE WITH THE DESIGN PLAN.
22. THE DESIGN ENGINEER AND THE WRENTHAM BOARD OF HEALTH SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF REQUIRED INSPECTIONS. A MINIMUM OF THREE INSPECTIONS SHALL BE REQUIRED:
    A. UPON COMPLETION OF EXCAVATION OF SOIL ABSORPTION SYSTEM AREA
    B. UPON COMPLETION OF SEWAGE DISPOSAL SYSTEM BUT PRIOR TO BACKFILLING
    C. UPON COMPLETION OF FINISH GRADING
23. FOR PROPER PERFORMANCE, THE SEPTIC TANK SHOULD BE PUMPED EVERY 3 TO 5 YEARS.

NOTE: THE PROPOSED CONSTRUCTION ON LOTS 19A AND 20A ARE SUBJECT TO AN ORDER OF CONDITIONS FROM THE WRENTHAM CONSERVATION COMMISSION TO WHICH THE CONTRACTOR SHALL REFER FOR ADDITIONAL REQUIREMENTS FOR THIS CONSTRUCTION.

NOTE: THE PROPOSED LEACHING AREAS FOR LOTS 15A THROUGH 19A ARE TO BE CONSTRUCTED AT THE SAME TIME.

NOTE: IT IS RECOMMENDED THAT THE EXPANSION INFILTRATORS BE INSTALLED WHEN THE PRIMARY INFILTRATORS ARE INSTALLED TO MINIMIZE FUTURE DISTURBANCE TO LOT 19A IN THE EVENT THAT THE USE OF THE EXPANSION INFILTRATORS BECOME NECESSARY.

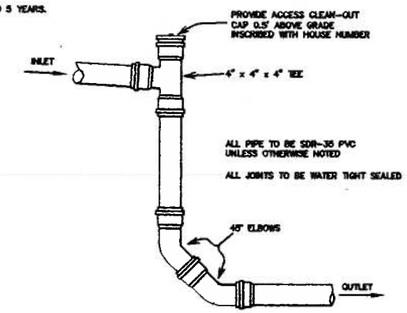
NOTE: THE DESIGN ENGINEER TO BE CONTACTED AS CONSTRUCTION OF THE CHIMNEY SEWER LINES ARE CONSTRUCTED TO CONDUCT ON-GOING AS-BUILTS OF PIPE INVERT ELEVATIONS PRIOR TO BACK-FILLING.



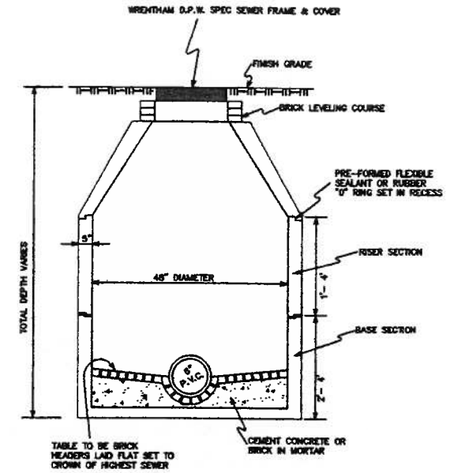
CONCRETE: 4000 PSI AT 28 DAYS

CONSTRUCTION SHALL CONFORM TO 310 CMR 15.232
DISTRIBUTOR: SHEA CONCRETE PRODUCTS
ITEM B-6088 OR APPROVED EQUAL.

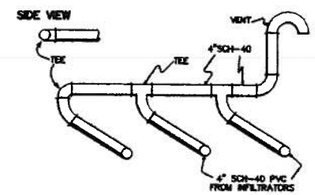
DISTRIBUTION BOX
NOT TO SCALE



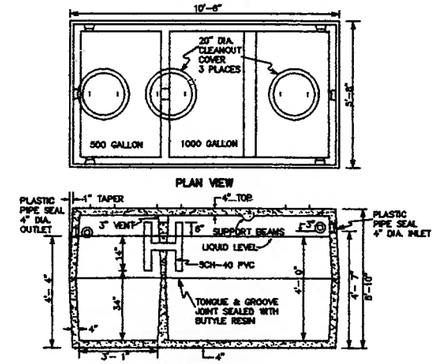
CHIMNEY DETAIL
NOT TO SCALE



PRECAST CONCRETE
SEWER MANHOLE
NOT TO SCALE



VENT CONNECTION DETAIL
NOT TO SCALE



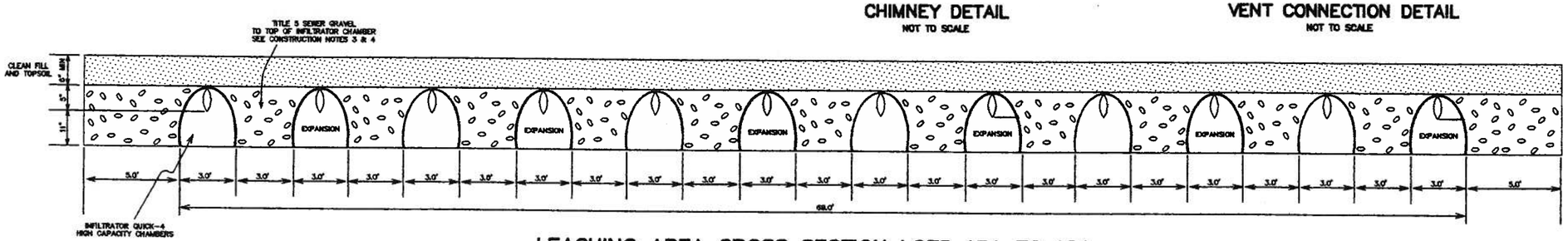
CONCRETE: 4000 PSI AT 28 DAYS DENSITY: 140 PCF
CEMENT: PORTLAND TYPE I OR TYPE III PER ASTM C150-81
ADMIXTURES PER ASTM C233-82
CONSTRUCTION TO CONFORM TO 310 CMR 15.228.2.a

TANK SHALL BE FITTED WITH AN OUTLET GAS BAFFLE
TEES SHALL BE CONSTRUCTED IN CONFORMANCE TO 310 CMR 15.227
TANK SHALL CONTAIN MANUFACTURERS Q/C SEAL STATING CONFORMANCE TO ASTM C1227-93 PER 310 CMR 15.226.4
TANK SHALL BE WATERTIGHT
DISTRIBUTOR: SHEA CONCRETE PRODUCTS
ITEM TK 2C1500 OR APPROVED EQUAL

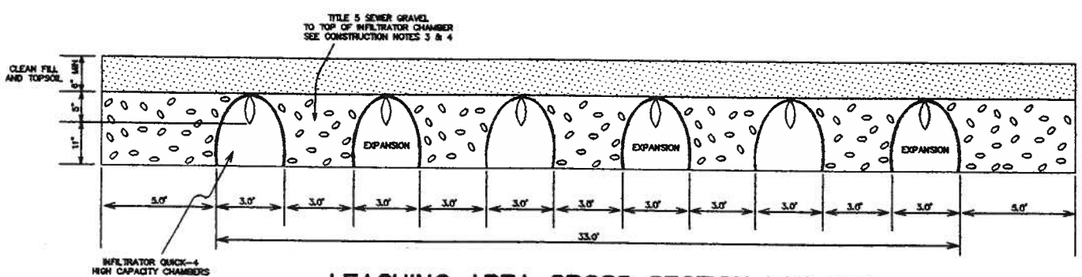
SEPTIC TANK
NOT TO SCALE

GENERAL NOTES

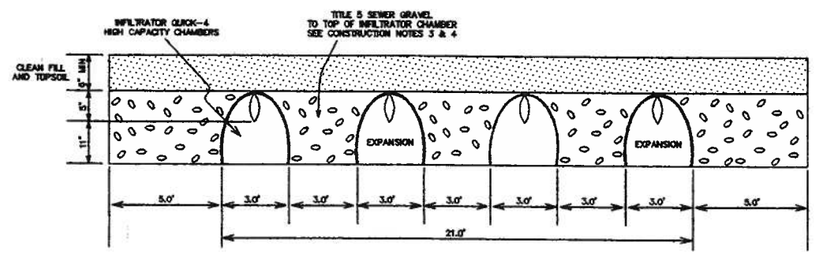
1. CONTRACTOR TO VERIFY ACTUAL LOCATION OF EXISTING UTILITY SERVICES IN THE FIELD PRIOR TO CONSTRUCTION (GAS, ELECTRIC, ETC.) CALL DIGSAFE: 1-888-344-7233.
2. ALL ELEVATIONS SHOWN ARE 1929 NGVD.
3. ZONED: R-43 SETBACK: 40 FT SIDEYARD: 25 FT REARYARD: 40 FT
4. THE LOT SHOWN IS LOCATED WITHIN AN INTERIM WELLHEAD PROTECTION AREA Ba - NITROGEN SENSITIVE AREA (MAXIMUM EFFLUENT LOADING = 440 GPD PER ACRE).
5. THERE ARE NO PUBLIC WELLS WITHIN 500 FEET, NOR ANY PRIVATE WELLS WITHIN 200 FEET, NOR ANY INLAND BANKS WITHIN 150 FEET, NOR ANY SURFACE WATERS WITHIN 150 FEET, NOR ANY SURFACE DRAINS WITHIN 50 FEET, NOR ANY OPEN, SURFACE, OR SUBSURFACE DRAINS WHICH INTERCEPT THE SEASONAL HIGH GROUND WATER WITHIN 50 FEET, NOR ANY VERNAL POOLS WITHIN 100 FEET, NOR ANY STORM DRAINAGE, LEACHING CATCH BASINS, OR DRYWELLS WITHIN 50 FEET, NOR ANY PERENNIAL STREAMS WITHIN 200 FEET, NOR ANY BOUNDARY OF A REGULATORY FLOODWAY OR 100 YEAR FLOOD PLAIN WITHIN 150 FEET OF THE PROPOSED SEPTIC SYSTEM.
6. NO INDUSTRIAL OR OTHER PROHIBITED WASTEWATERS ARE TO BE DISCHARGED INTO THE PROPOSED SEPTIC SYSTEM.
7. THE EXISTING ELEVATIONS SHOWN AROUND THE PROPOSED CONSTRUCTION ARE THE RESULT OF AN ON-GROUND SURVEYS BY APPLEWOOD SURVEY LLC BETWEEN SEPTEMBER 25, 2006 AND NOVEMBER 7, 2006.
8. UPON COMPLETION OF SYSTEM CONSTRUCTION, THE INSTALLER SHALL SUBMIT A CERTIFICATION OF CONFORMANCE OF SAID CONSTRUCTION TO THE DESIGN PLAN TO THE BOARD OF HEALTH.
9. NO MODIFICATIONS MAY BE MADE TO THE SPECIFICATIONS ON THIS PLAN WITHOUT THE CONSENT OF THE WRENTHAM BOARD OF HEALTH AND THE DESIGN ENGINEER.
10. NO VARIANCES AGAINST TITLE 5 OR THE WRENTHAM BOARD OF HEALTH RULES AND REGULATIONS ARE REQUESTED FOR THE APPROVAL OF THIS PLAN.



LEACHING AREA CROSS SECTION LOTS 15A TO 18A
NOT TO SCALE



LEACHING AREA CROSS SECTION LOT 20A
NOT TO SCALE



LEACHING AREA CROSS SECTION LOT 19A
NOT TO SCALE

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM
CONSTRUCTION DETAILS

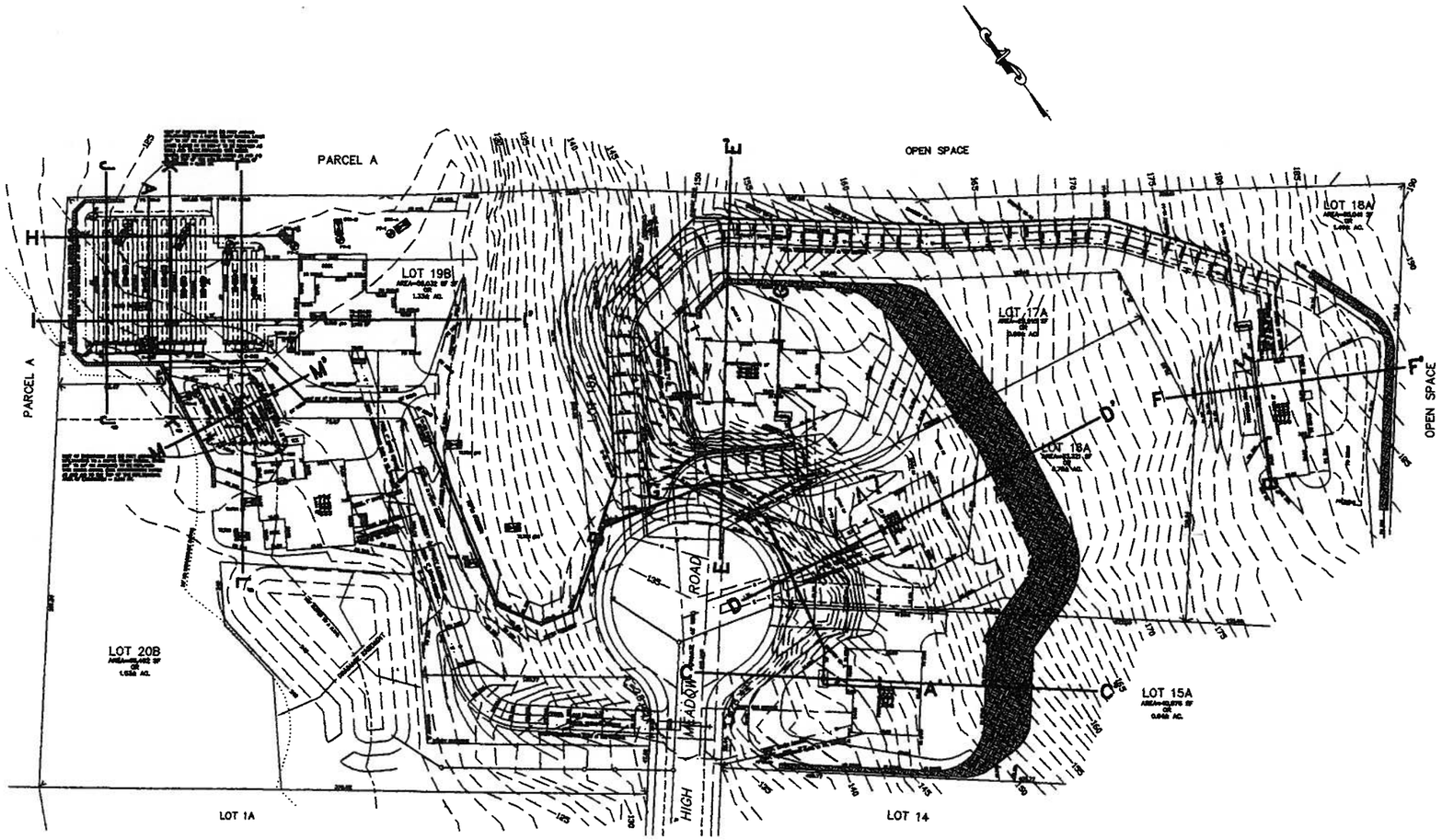
LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45-50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN R.L.S. 37067

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 SCALE: AS SHOWN



PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
PROFILE LOCATIONS

LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45–50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
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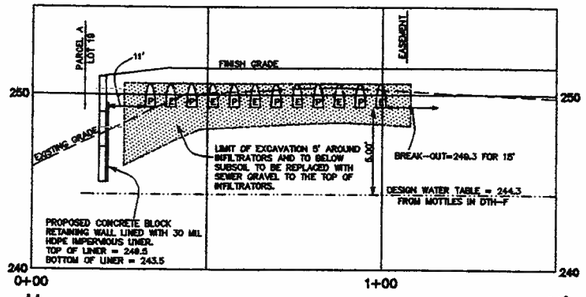
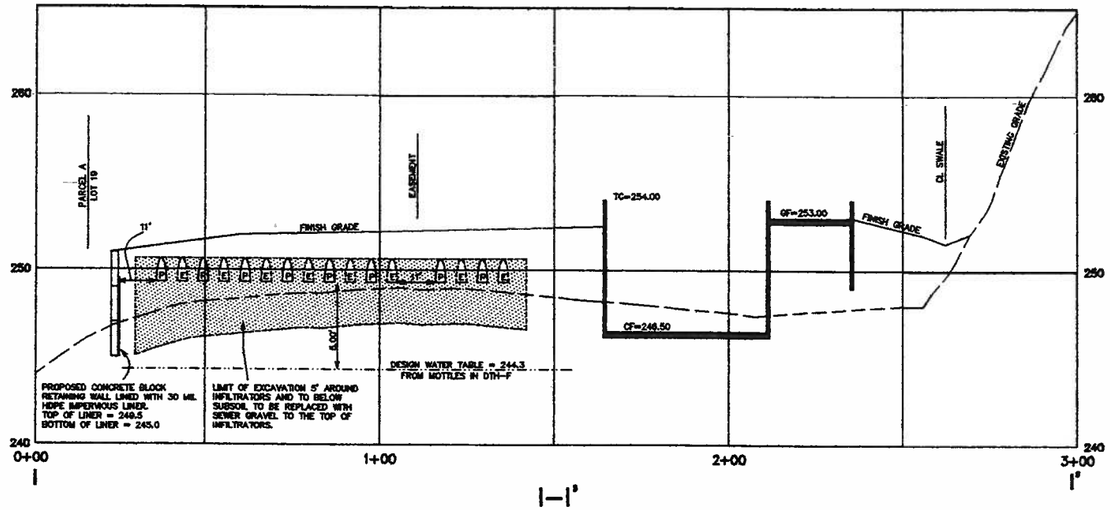
TIMOTHY L. BEAUCHEMIN, P.E. 31893
TERRENCE M. RYAN, R.L.S. 37067

No.	DATE	REVISION	BY

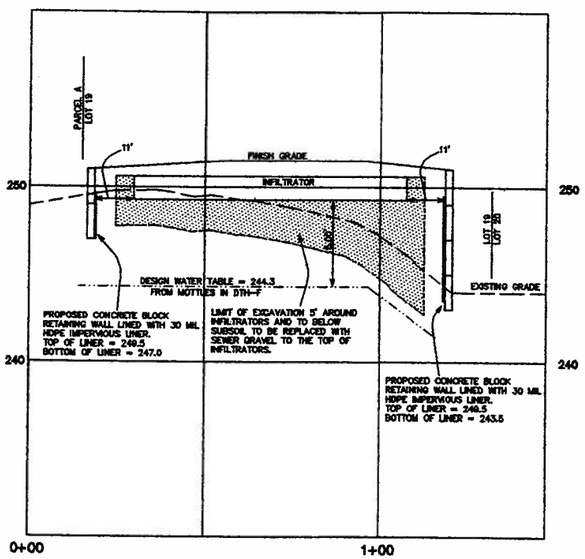
DATE: DECEMBER 10, 2012 SCALE: 1"=40'



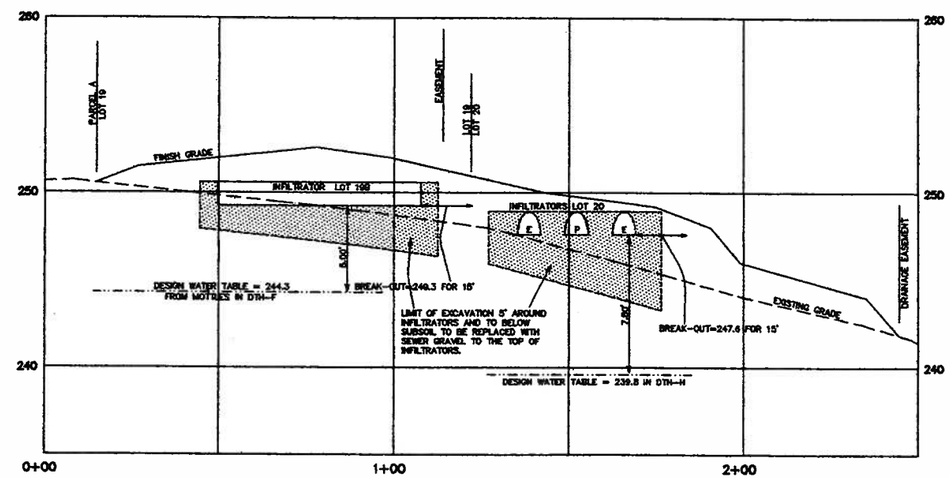
H–H'



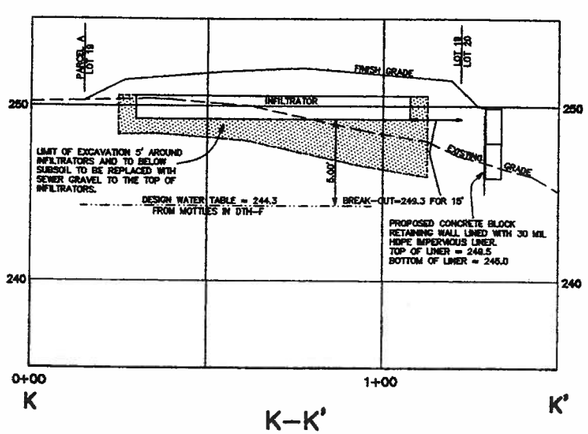
I–I'



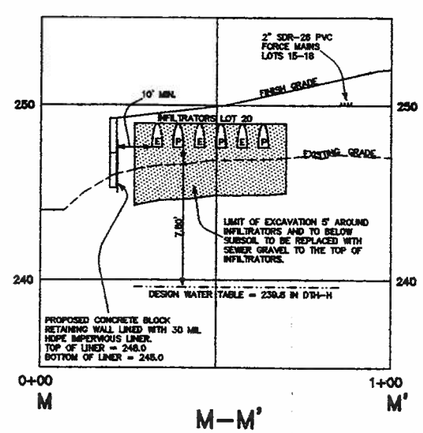
J–J'



L–L'



K–K'



M–M'

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS LEACHING AREA CROSS SECTIONS

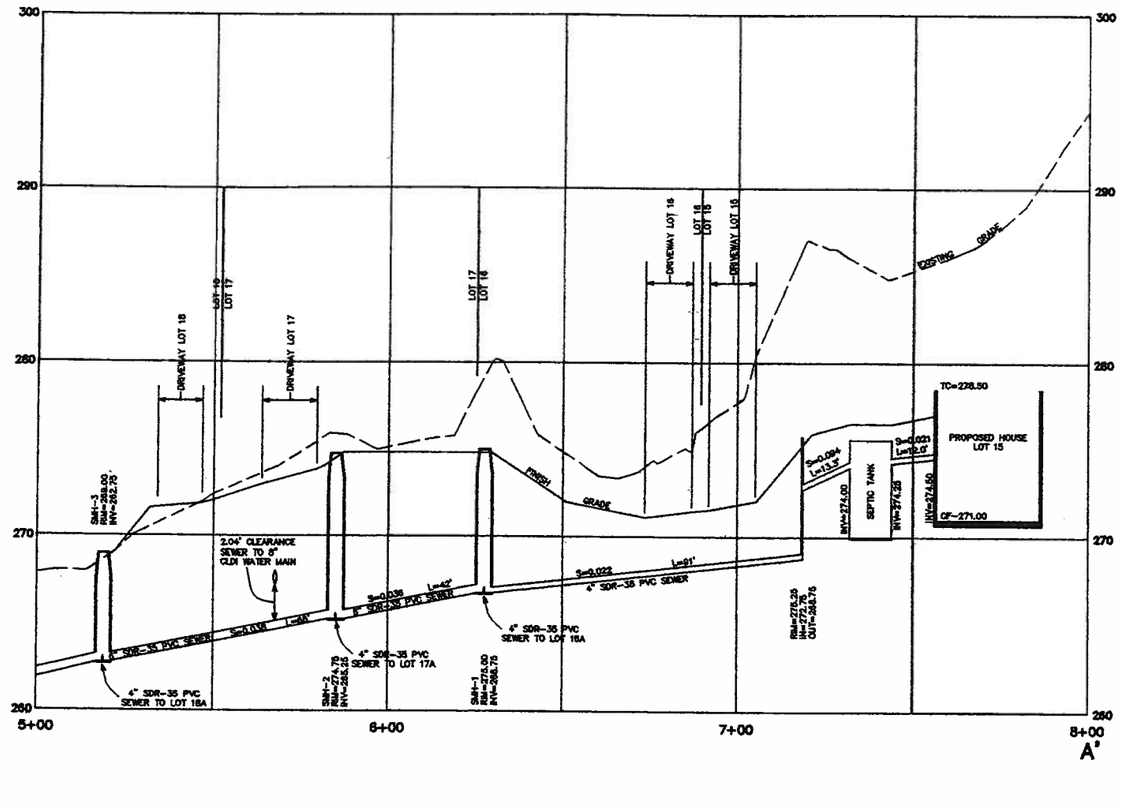
LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45–50

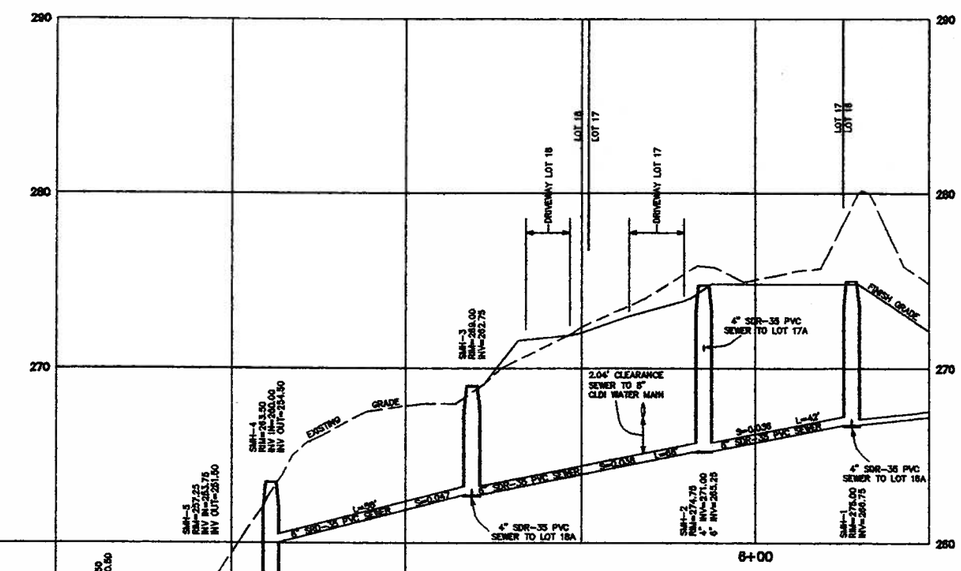
APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

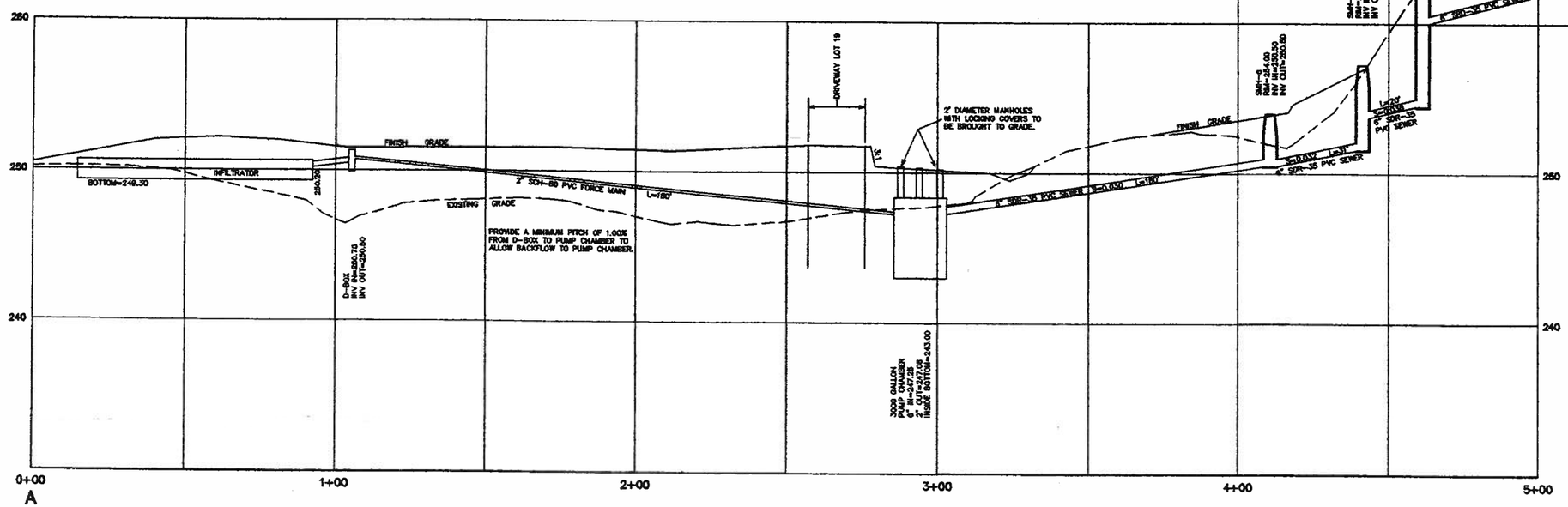
ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, R.L.S. 37057

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 HORZ. SCALE: 1"=20' VERT. SCALE: 1"=4'







PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
SEWER PROFILE

LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45-50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
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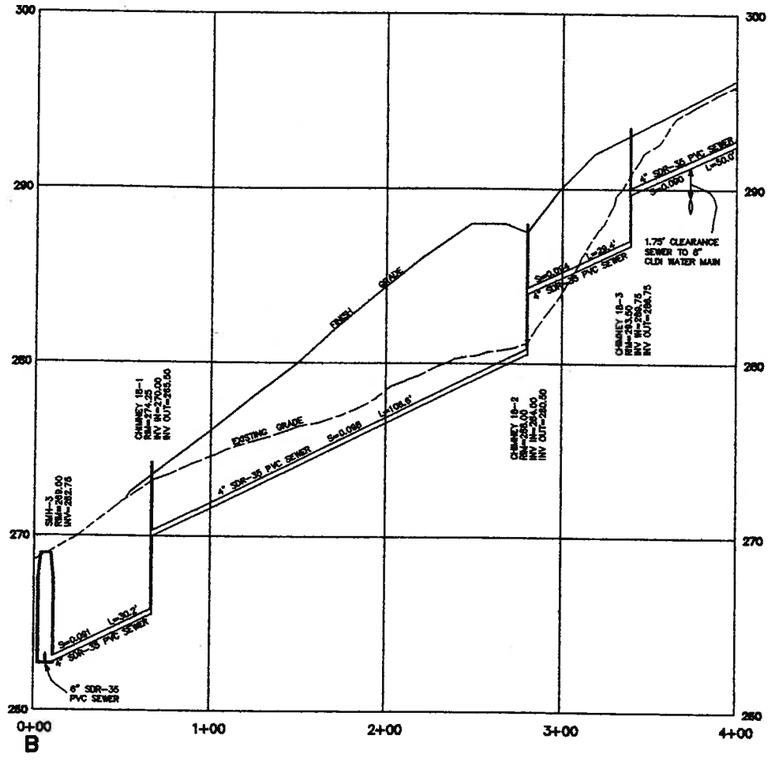
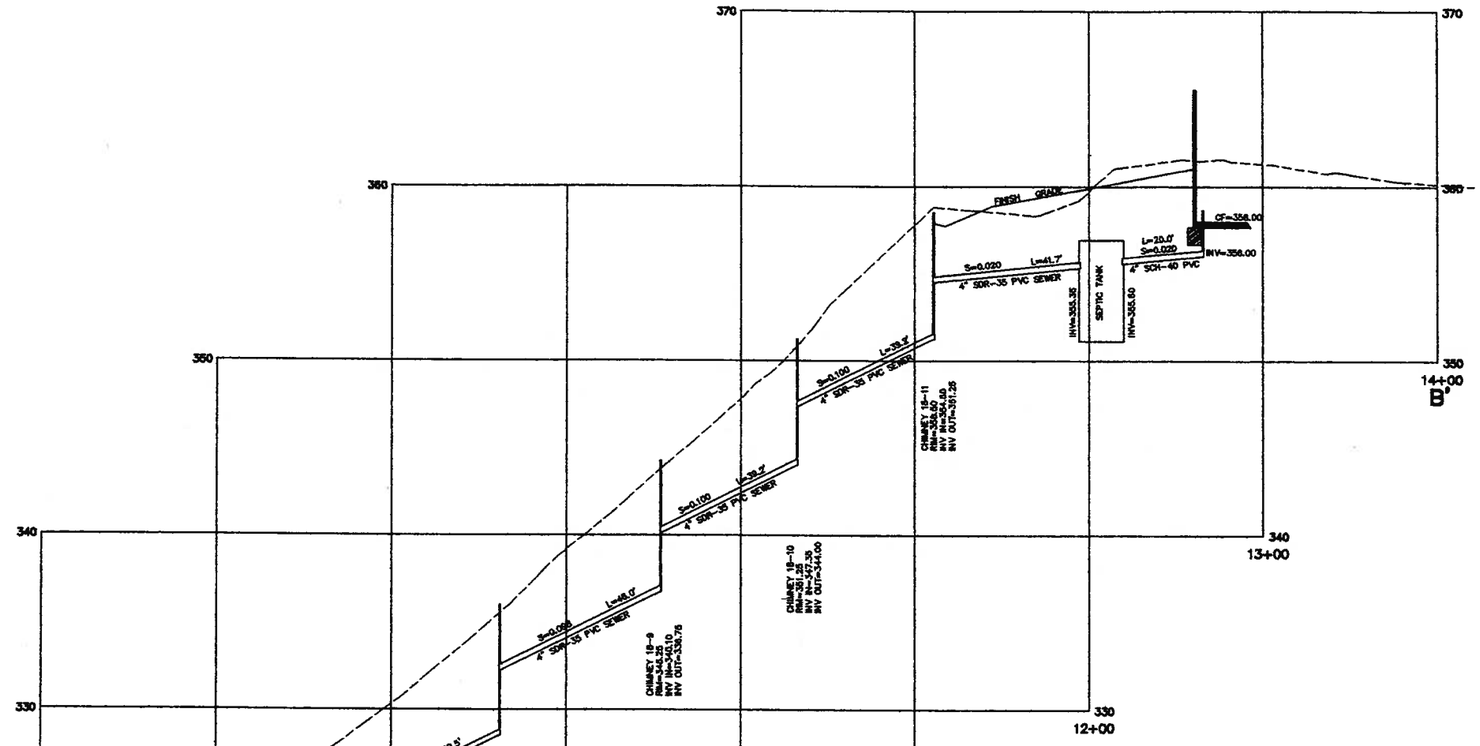
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, P.L.S. 37057

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 HORZ. SCALE: 1"=20' VERT. SCALE: 1"=4'





PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
SEWER PROFILE LOT 18A

LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45–50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
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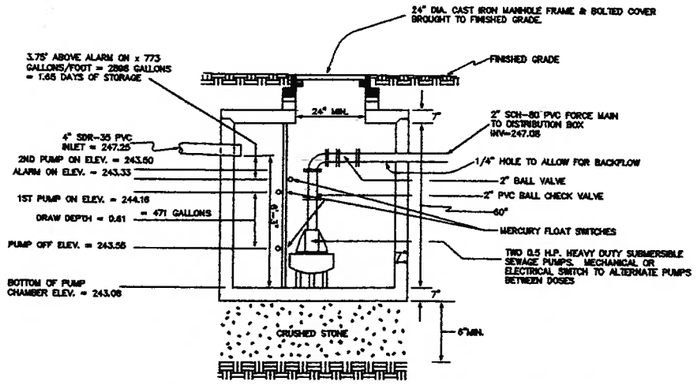
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, R.L.S. 37057

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 HORZ. SCALE: 1"=20' VERT. SCALE: 1"=4'



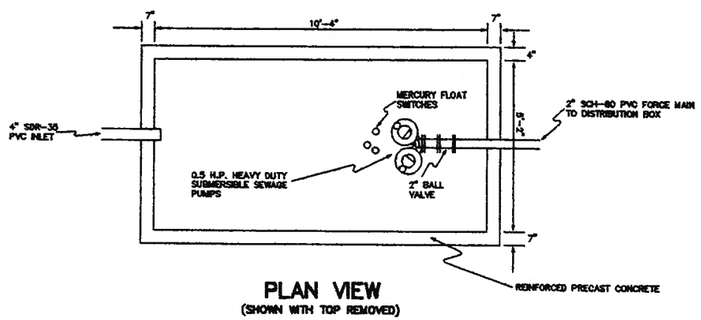
DOSING CHAMBER

WILLIAM N. LAMARRE CONCRETE PRODUCTS INC.
COMMERCIAL GRADE PRECAST CONCRETE TANK
OR APPROVED EQUAL
3000 GALLON
H-20 MIN. LOADING
NOT TO SCALE

TYPE: HYDROMATIC SKV50A1
SYSTEM: DUPLEX
50 GPM AT 18.25 TDH 4.0 FT/SEC
0.5 HP, 230 VOLTS, SINGLE PHASE
1750 RPM 60 HERTZ
SUPPLIER: WILLIAMSON ELECTRIC
(OR APPROVED EQUAL)

h=250.70-242.05 = 8.65'
FRICTION=(180' OF 2" PVC) @ 50 GPM = 5.6
PIPE EQUIVALENT = 2.0
TDH = 16.25

PUMP CYCLES FOR SAND = 4 PER DAY
440 GPD x 4 HOUSES / 4 DOSES/DAY = 440 GAL/DOSE
(1750/4 + 29 DRAINBACK)/773 GAL PER FOOT
DRAINBACK = 180' OF 2" PIPE = 29 GALLONS
440 GALS. + 29 GALS. = 469 GALS
469 GALS/773 GALS. PER VERTICAL FOOT = 0.61'



PLAN VIEW

(SHOWN WITH TOP REMOVED)

PUMPS AND PUMP SPECIFICATIONS

1. GENERAL

FURNISH AND INSTALL ONE COMPLETE PUMPING SYSTEM CONSISTING OF TWO SUBMERSIBLE SEWAGE PUMPS AND MOTORS, MECHANICAL OR ELECTRICAL SWITCH TO ALTERNATE PUMPS BETWEEN DOSES, DISCHARGE PIPING AND VALVES, MERCURY FLOAT SWITCH LEVEL CONTROLS, HIGH WATER ALARM, DUPLEX CONTROL PANEL, AND A PRECAST CONCRETE DOSING CHAMBER. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERE'S RECOMMENDATIONS AND WARRANTED FOR A PERIOD OF AT LEAST ONE YEAR. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL PROVIDE A SUFFICIENT SUPPLY OF CLEAN WATER TO CONDUCT TWO PUMP OPERATION TESTS UNDER THE DIRECTION AND SUPERVISION OF THE DESIGN ENGINEER AND THE APPROVING AUTHORITY.

2. DOSING CHAMBER

A MINIMUM 24-INCH DIAMETER OPENING SHALL BE CAST OVER THE PUMP. A MANHOLE SHALL BE BROUGHT TO FINISH GRADE BY PROVIDING WATERTIGHT PRECAST 24-INCH I.D. RISERS, OR (LEBARON CAT. #LA24R, OR APPROVED EQUAL) AND SHALL BE SECURED TO PREVENT UNAUTHORIZED ACCESS (BOLTED COVER).

DOSING CHAMBER SHALL BE A 3000 GALLON SINGLE CHAMBER SEPTIC TANK AND SHALL BE WATERTIGHT.

3. PUMP AND MOTOR

PUMPS AND MOTOR SHALL BE HEAVY DUTY SEWAGE-TYPE EJECTOR WITH A 2-INCH DISCHARGE CAPABLE OF PASSING A MINIMUM 1-½ INCH SOLID. PUMP AND MOTOR SHALL BE FULLY SUBMERSIBLE AND SHALL OPERATE AT 1750 RPM WITH A 230 V, 60 CYCLE SINGLE PHASE AC POWER SOURCE. THE ELECTRICAL CONTRACTOR SHALL VERIFY THAT PROPER VOLTAGE IS AVAILABLE AT THE CONTROL PANEL.

4. LEVEL CONTROLS

SEALED FLOAT-TYPE MERCURY SWITCHES SHALL BE SUPPLIED TO CONTROL THE SUMP LEVEL AND ALARM SIGNAL. TWO FLOAT SWITCHES SHALL BE USED TO CONTROL THE SUMP LEVEL; ONE FOR PUMP "OFF" AND ONE FOR PUMP "ON". A THIRD SWITCH SHALL BE PROVIDED WITH A POWER SOURCE SEPARATE FROM THE PUMP POWER AND SHALL BE FOR THE ALARM UNIT. A NEMA-4 JUNCTION BOX FOR THE FLOAT SWITCHES SHALL BE INSTALLED ABOVE THE HIGH WATER LEVEL. FLOAT SWITCHES SHALL BE MYERS CAT #AWS-1 MERCURY TUBE SWITCHES, OR APPROVED EQUIVALENT.

THE FLOAT LEVEL CONTROLS SHALL BE SET TO OPERATE AT THE ELEVATIONS INDICATED ON THE PLAN.

5. CONTROL PANEL

THE SIMPLEX CONTROL PANEL SHALL BE EQUIPPED WITH A RUN LIGHT FOR THE PUMP, PROPERLY SIZED CIRCUIT BREAKERS, A TRANSFORMER TO GIVE PROPER VOLTAGE TO THE CONTROL CIRCUITS AND ONE THREE-WAY PUMP CONTROL SWITCH. THE SWITCH POSITIONS ARE AS FOLLOWS: 1) PUMP OFF, 2) AUTOMATIC PUMP ON, AND 3) MANUAL PUMP ON.

THE SIMPLEX CONTROL PANEL SHALL BE FOR A 230 V, 60 CYCLE, SINGLE PHASE AC POWER SUPPLY AND HOUSED IN A NEMA-1 ENCLOSURE. THE PANEL SHALL BE INSTALLED IN A SUITABLE LOCATION INSIDE EACH HOUSE.

NOTE: CONTROL PANEL, WIRING, AND MECHANICAL DETAILS TO BE PROVIDED BY THE PUMP MANUFACTURER AND/OR SUPPLIER.

6. ALARM

A HIGH WATER ALARM SHALL BE SUPPLIED WITH BOTH AN AUDIBLE AND VISUAL ALARM WITH A SEPARATE POWER SUPPLY FROM THE PUMP. THE ALARM SHALL BE MOUNTED IN A NEMA-1 ENCLOSURE SEPARATE FROM THE MAIN PUMP CONTROL PANEL. AN ALARM SILENCER BUTTON SHALL BE PROVIDED TO SILENCE THE AUDIBLE ALARM WHILE THE VISUAL ALARM REMAINS LIT UNTIL MANUALLY RESET.

ADDITIONALLY, A VISUAL ALARM SHALL BE MOUNTED ON A STABLE DURABLE POST SET OUTSIDE THE RIGHT-OF-WAY BETWEEN THE PROPOSED DRIVEWAYS TO LOTS 17A AND 18A VISIBLE FROM ALL AREAS OF THE CUL-DE-SAC. NO PLANTINGS ARE ALLOWED THAT WOULD INHIBIT THE ALARM'S VISIBILITY.

7. PIPING

THE PUMP STATION DISCHARGE PIPING, FITTINGS AND SEWAGE FORCE MAIN SHALL BE 2-INCH 160 PSI SCH-80 PVC WITHIN THE PUMP CHAMBER. THE DISCHARGE PIPING SHALL INCLUDE THE FOLLOWING: 1) IN THE VERTICAL POSITION: A 2-INCH BALL-TYPE CHECK VALVE, AND 2) IN THE HORIZONTAL POSITION: A 2-INCH BALL-TYPE GATE VALVE. PIPING AND VALVES SHALL BE ARRANGED SO THAT THEY ARE EASILY ACCESSIBLE FROM THE PUMP CHAMBER MANHOLE COVER.

FORCE MAIN SHALL BE LAID IN A "CLASS B" TRENCH BEDDING AND SHALL DISCHARGE INTO THE DISTRIBUTION BOX WITH A 2-INCH TEE CUT ONE (1) INCH ABOVE THE FLOW LINE.

ALL PIPING OUTSIDE THE PUMP CHAMBER WHICH IS LESS THAN FOUR (4) FEET BELOW FINAL FINISHED GRADE SHALL BE SURROUNDED WITH A MINIMUM OF TWO (2) INCHES OF RIGID STYROFOAM INSULATION.

8. DOSING REQUIREMENTS

PURSUANT TO 310 CMR 15.254 DOSING, THE SYSTEM HAS BEEN DESIGNED TO PROVIDE 4 DOSES A DAY.

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
PUMP DETAILS

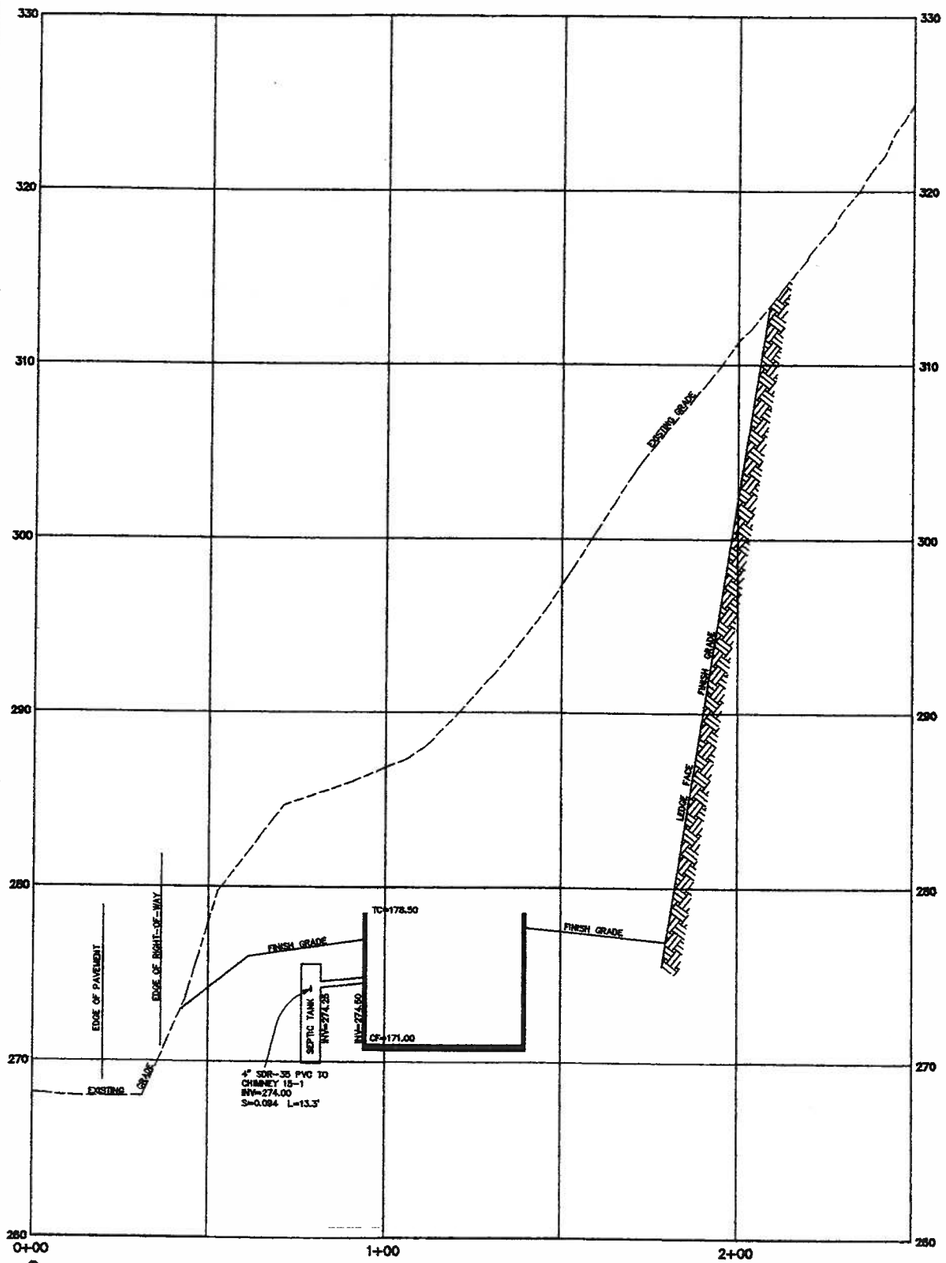
LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 46-50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

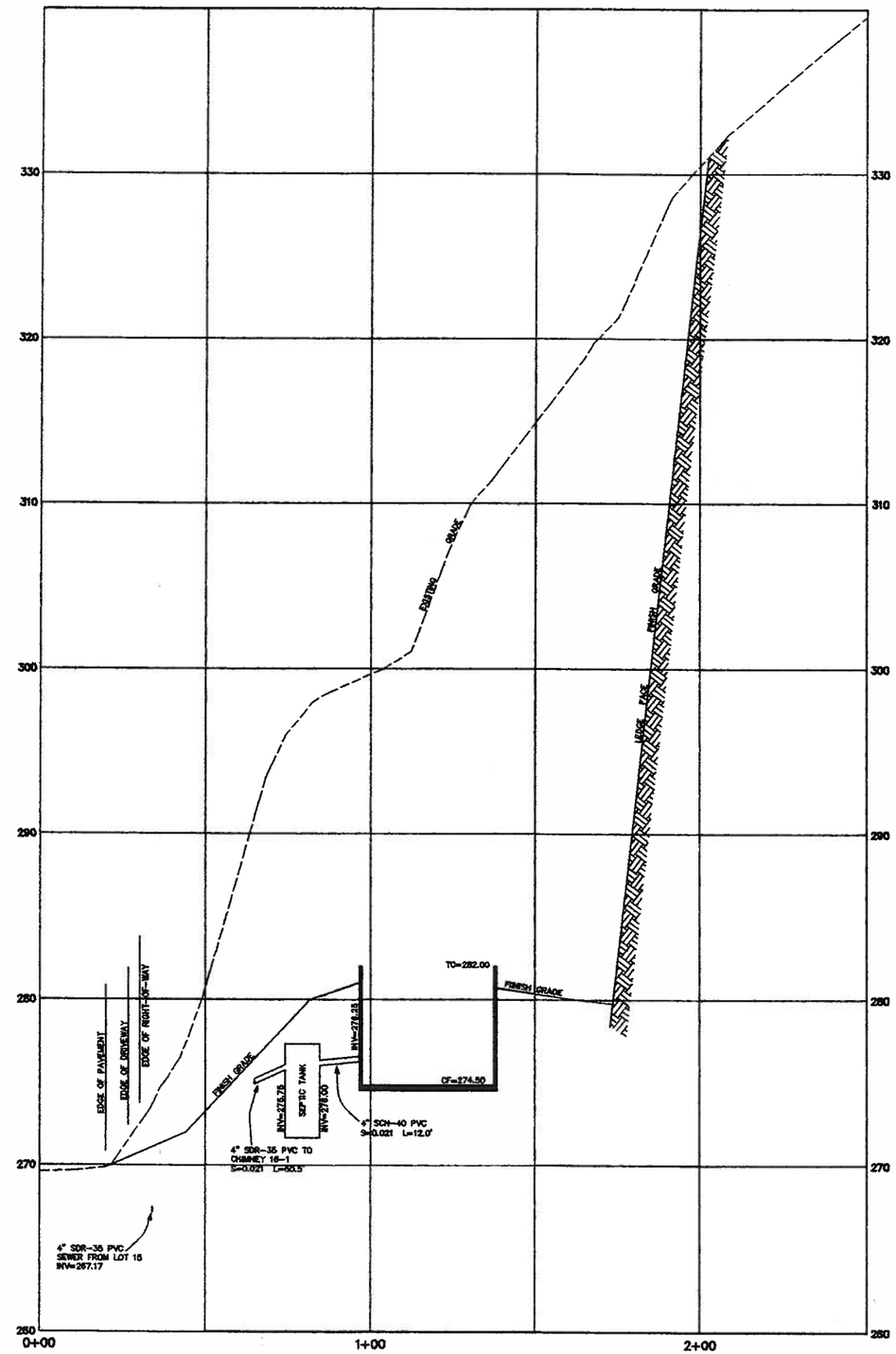
ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, R.L.S. 37057

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 SCALE: AS SHOWN



C–C' LOT 15



D–D' LOT 16

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
LOT CROSS SECTIONS

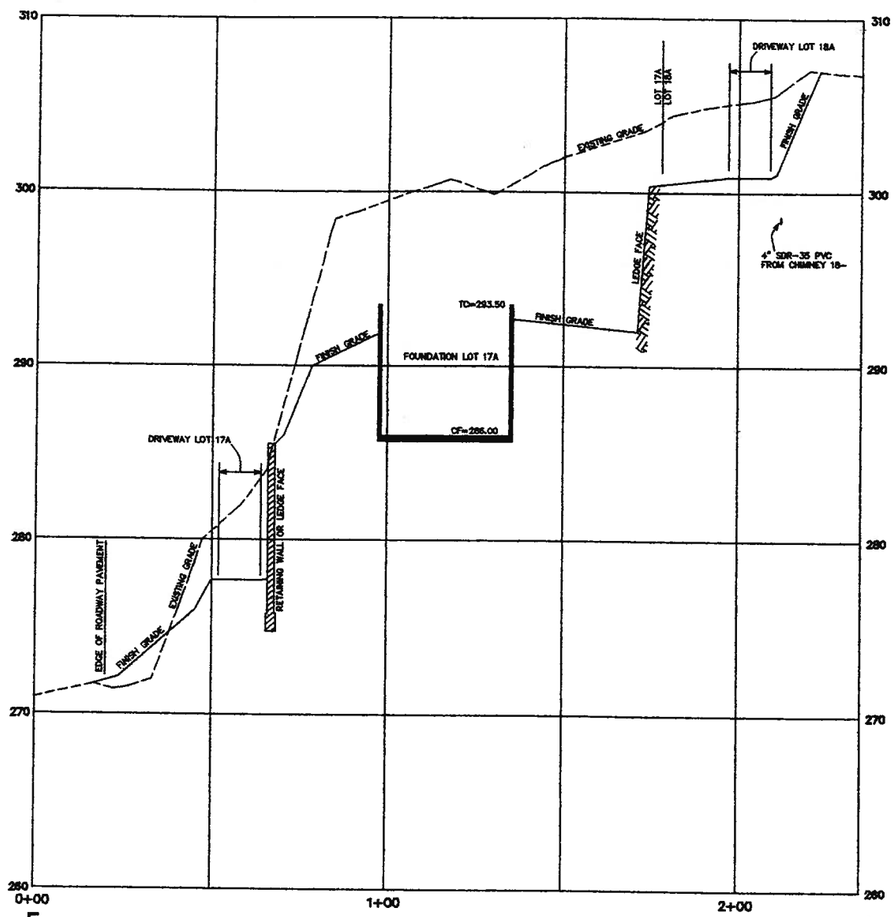
LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45–50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

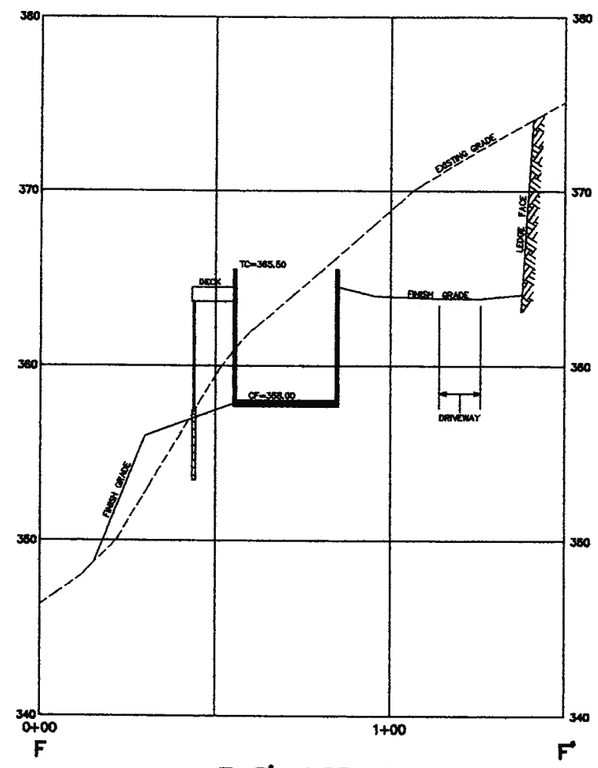
ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31693
TERRENCE M. RYAN, R.L.S. 37057

No.	DATE	REVISION	BY

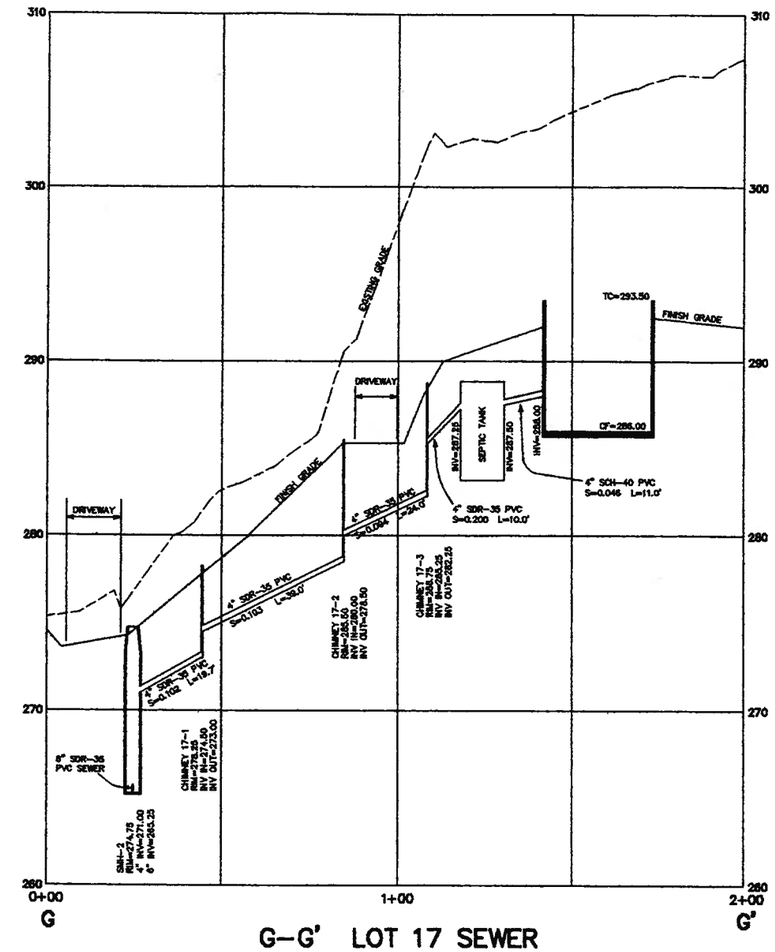
DATE: DECEMBER 10, 2012 HORZ. SCALE: 1"=20' VERT. SCALE: 1"=4'



E–E' LOT 17



F–F' LOT 18



G–G' LOT 17 SEWER

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEMS
LOT CROSS SECTIONS

LOCATION:
LOTS 15, 16, 17, 18, 19, & 20
HIGH MEADOW ROAD
WRENTHAM, MASS.
ASSESSORS MAP L8 BLOCK 4 LOTS 45–50

APPLICANT & OWNER:
WRENTHAM OXBOW LLC
74 WEST CENTRAL STREET
NATICK, MASS. 01760

ENGINEERS & SURVEYORS:
APPLEWOOD SURVEY LLC
21 GREEN STREET
HOLLISTON, MASS. 01746
TIMOTHY L. BEAUCHEMIN, P.E. 31893
TERRENCE M. RYAN, R.L.S. 37067

No.	DATE	REVISION	BY

DATE: DECEMBER 10, 2012 HORZ. SCALE: 1"=20' VERT. SCALE: 1"=4'