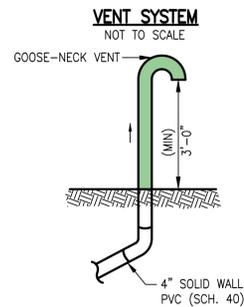


SOIL TEST DATA
SOIL TESTING AND EVALUATION BY: GREGORY J. MORSE, P.E., S.E.#2906
SOIL TESTING WITNESSED BY: PATRICK BRENNAN, P.E.
DATE: APRIL 3, 2025

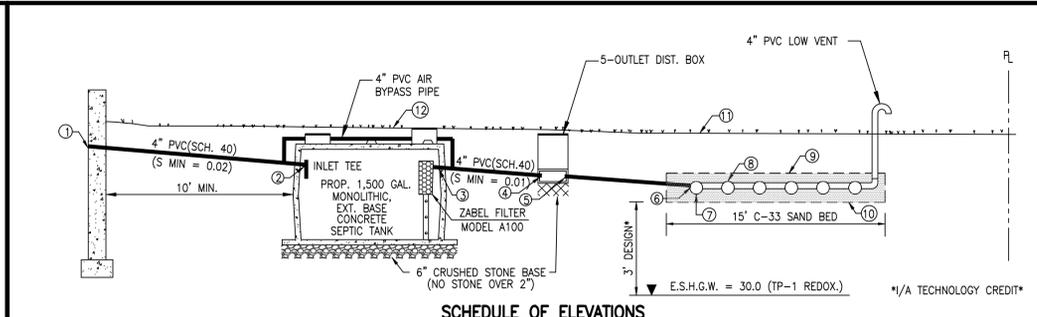
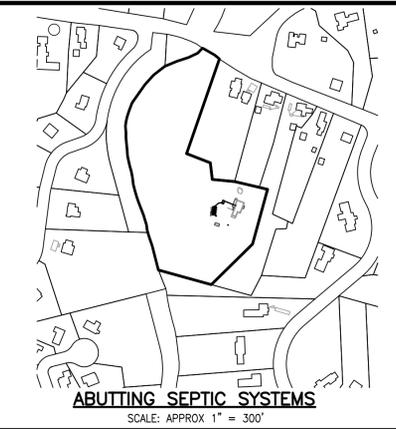
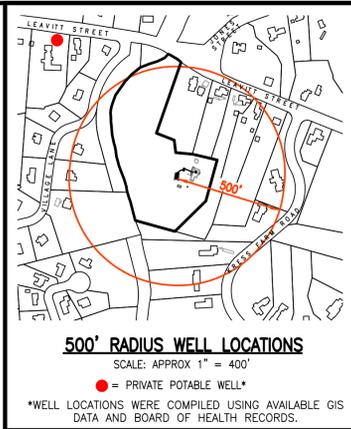
TP-1	APPROX. GRADE EL.	TP-2	APPROX. GRADE EL.
EL. 34.2	12"	EL. 34.5	10"
EL. 33.2	24"	EL. 33.3	24"
EL. 29.9	64"	EL. 28.1	86"

WEeping OBSERVED: NONE
MOTTLING OBSERVED: 62"
PERC. RATE: NONE
ESHOW: 62" (EL. 30.0)

WEeping OBSERVED: NONE
MOTTLING OBSERVED: 80"
PERC. RATE: <2MPI @ 20-38"
ESHOW: 80" (EL. 28.6)

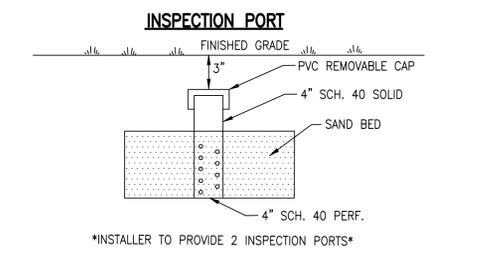


*TO CONNECT TO PIPES 3, 6, 9.
*PRESBY VENT TO BE PAINTED GREEN.

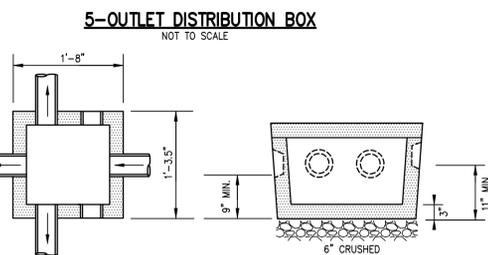


SCHEDULE OF ELEVATIONS

1. INVERT AT FOUNDATION = 38.2 (MIN.) (INSTALLER TO VERIFY PRIOR TO CONSTRUCTION)	7. INVERT OF ENVIRO-SEPTIC PIPE = 33.50
2. INVERT OF PIPE AT SEPTIC TANK INLET = 37.25	8. TOP OF ENVIRO-SEPTIC PIPE = 34.50
3. INVERT OF PIPE AT SEPTIC TANK OUTLET = 37.00	9. TOP OF C-33 SAND = 35.00
4. INVERT OF PIPE AT DIST. BOX INLET = 34.42	10. BOTTOM OF C-33 SAND = 33.00
5. INVERT OF PIPE AT DIST. BOX OUTLET = 34.25	11. FINISHED GRADE OVER LEACHING FACILITY = 35.5 (MIN) - 37.5 (MAX)
6. INVERT OF 4" PVC AT ENVIRO-SEPTIC PIPE INLET = 34.08	12. FINISHED GRADE OVER SEPTIC TANK = 39.0 (MIN) - 41.3 (MAX)

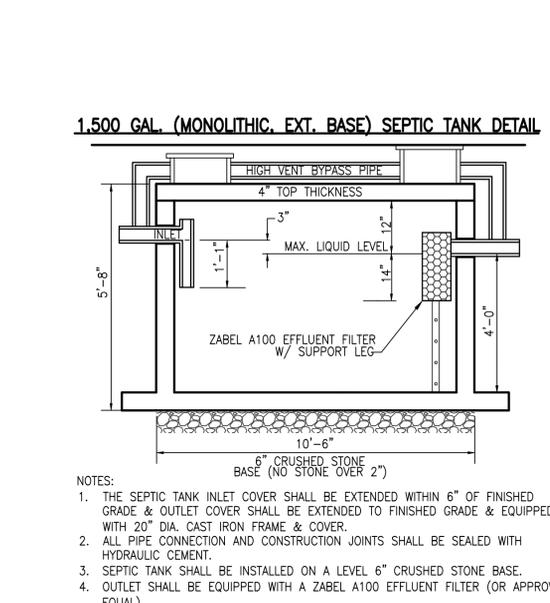
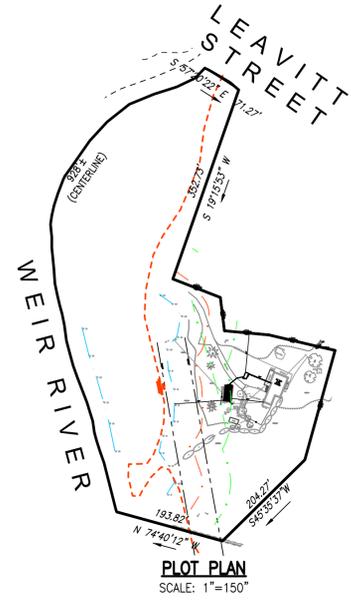


INSTALLER TO PROVIDE 2 INSPECTION PORTS

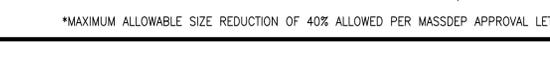
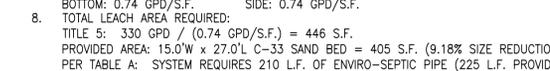
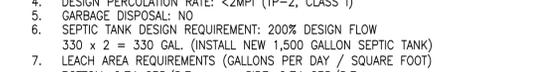
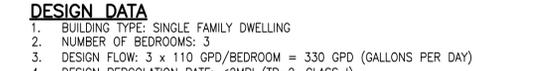
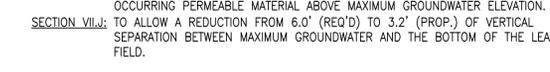
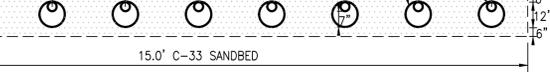
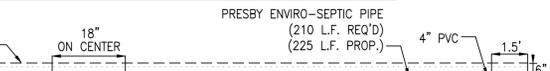
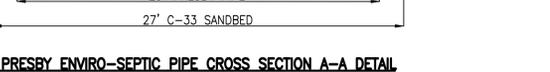
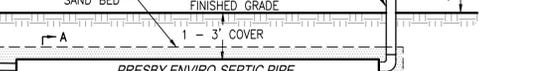
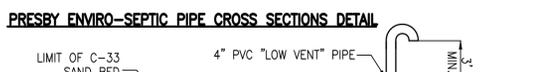
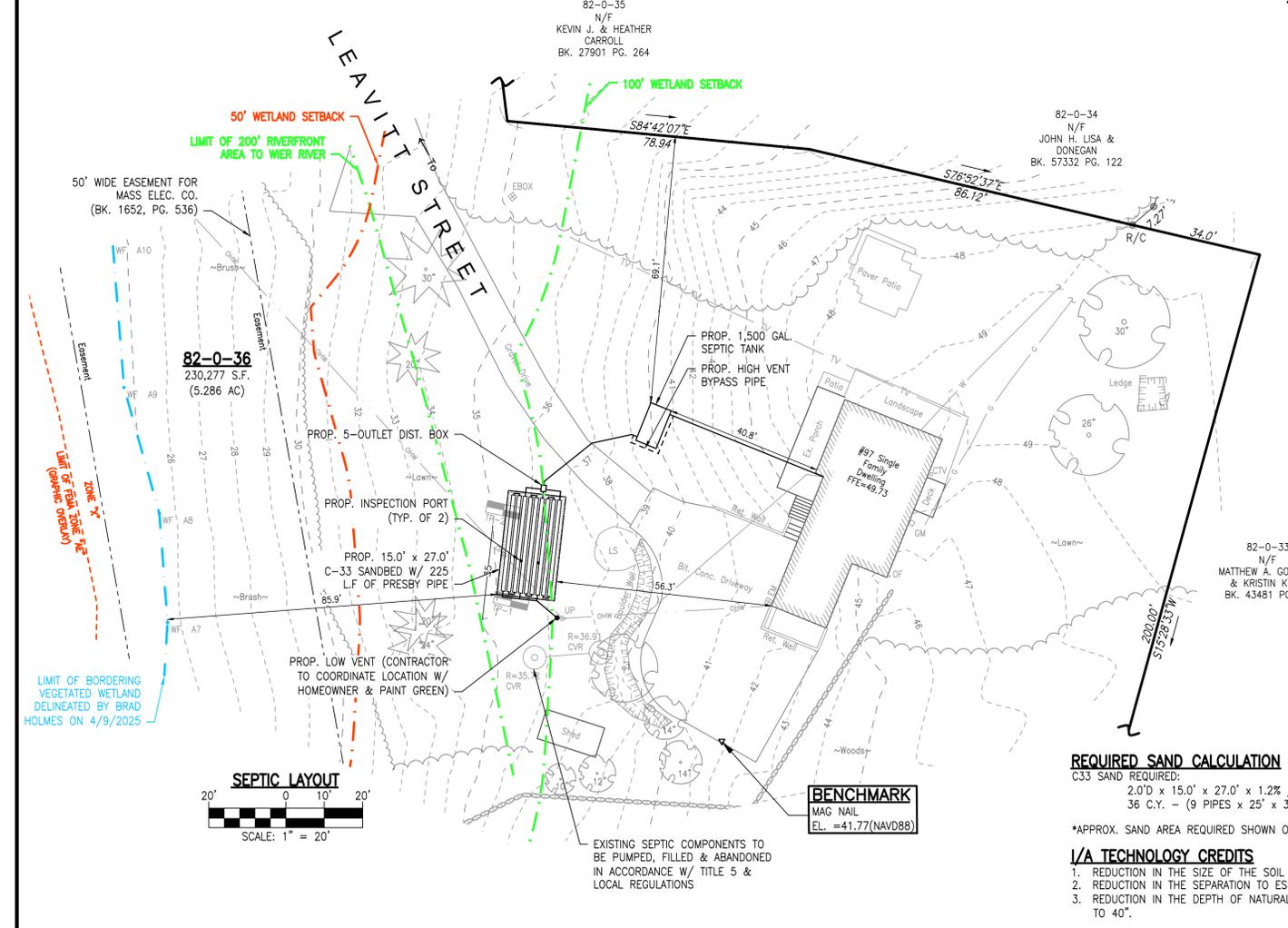


NOTES:
1. DISTRIBUTION BOX COVER SHALL BE EQUIPPED WITH RISERS AS NECESSARY TO BRING THE COVER TO WITHIN 6" OF FINISHED GRADE.
2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
3. DISTRIBUTION BOX TO BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.

2" DISTRIBUTION BOX RULE DETAIL
NOT TO SCALE
NOTE: THE OUTLET OF A DISTRIBUTION BOX MUST BE SET AT LEAST 2 IN. ABOVE THE HIGHEST INLET OF THE AES ROW, WITH THE CONNECTING PIPE SLOPE NOT LESS THAN 1% (APPROXIMATELY 1/8 IN. PER FOOT).



NOTES:
1. THE SEPTIC TANK INLET COVER SHALL BE EXTENDED WITHIN 6" OF FINISHED GRADE & OUTLET COVER SHALL BE EXTENDED TO FINISHED GRADE & EQUIPPED WITH 20" DIA. CAST IRON FRAME & COVER.
2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
3. SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
4. OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).



GENERAL NOTES

- SEPTIC SYSTEM INSTALLATION CONTRACTORS SHALL BE LICENSED BY THE BOARD OF HEALTH AND MUST COMPLY WITH ALL REQUIREMENTS OF THE BOARD OF HEALTH DISPOSAL WORKS CONSTRUCTION PERMIT AND ANY CONDITIONS, IF ISSUED BY THE CONSERVATION COMMISSION.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE BOARD OF HEALTH AND DESIGN ENGINEER.
- ANY CHANGE IN SITE CONDITIONS, DISCREPANCIES, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH TITLE 5 (310 CMR 15) AND THE LOCAL BOARD OF HEALTH REQUIREMENTS TO THE FULLEST EXTENT PRACTICABLE. NO GUARANTEE TO THE SYSTEMS PERFORMANCE IS EXPRESSED OR IMPLIED.
- SOIL TEST DATA SHOWN IS LIMITED TO THE CONDITIONS EXISTING AT THE SUBJECT TEST PIT LOCATION ONLY. IF DIFFERENT SOIL CONDITIONS ARE FOUND IN THE AREA OF THE PROPOSED SOIL ABSORPTION SYSTEM THEY SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING IMMEDIATELY.
- THE CONTRACTOR SHALL NOTIFY DISAFAE PRIOR TO ANY EXCAVATION AT THE SUBJECT PROPERTY. IT IS SPECIFICALLY CAUTIONED THAT THE SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND OBSERVABLE SITE FEATURES. UTILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT AT THIS LOCATION.
- THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY, PROPERTY LINES NOT HAVING BEEN VERIFIED. NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED.
- CONTRACTOR TO VERIFY AND ENSURE THAT ALL INTERIOR PLUMBING IS DIRECTED INTO PROPOSED SEPTIC SYSTEM. ANY VARIATIONS FROM THE DESIGN AS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

CONSTRUCTION NOTES

- CONTRACTOR SHALL COORDINATE INSPECTION TIMES WITH THE LOCAL BOARD OF HEALTH AND DESIGN ENGINEER 24-HOURS IN ADVANCE OF THE FOLLOWING INSPECTIONS:
1. AFTER EXCAVATION OF ALL UNSUITABLE MATERIAL FROM SOIL ABSORPTION AREA.
2. PRIOR TO COVERING THE CONSTRUCTED SYSTEM.
3. AFTER SYSTEM BACKFILL AND FINAL GRADING.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- ALL TIGHT-JOINT PLUMBING SHALL BE REGULATIONS OF SCH. 40 PVC PIPE WITH CLEANED AND CEMENTED FITTINGS, UNLESS OTHERWISE NOTED.
- ALL PRECAST/PIPE CONSTRUCTION JOINTS AND FITTINGS SHALL BE MADE WATERTIGHT BY PARING WITH HYDRAULIC CEMENT.
- THE CONTRACTOR SHALL PROVIDE A SIEVE ANALYSIS OF THE TITLE 5 PERC SAND UTILIZED FOR FILL TO VERIFY THAT IT MEETS THE REQUIREMENTS OF 310 CMR 15.25(3). TITLE 5 SAND FILL SHALL COMPLY WITH THE FOLLOWING:

SIEVE SIZE	PARTICLE SIZE
#4	4.75 mm
#50	0.30 mm
#100	0.15 mm
#200	0.075 mm

- THE CONTRACTOR SHALL PREVENT ANY HEAVY CONSTRUCTION MACHINERY AND/OR TRUCKS FROM DRIVING OVER THE PROPOSED SOIL ABSORPTION SYSTEM LOCATION UNTIL FINISHED GRADE IS ESTABLISHED.
- THE CONTRACTOR SHALL INSTALL MAGNETIC TAPE OVER SYSTEM PIPING & COMPONENTS
- THE DESIGN ENGINEER SHALL CERTIFY AND PREPARE AN "AS-BUILT" PLAN FOR SUBMITTAL TO THE BOARD OF HEALTH UPON SEPTIC SYSTEM COMPLETION.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" LOAM & SEED POST CONSTRUCTION.
- ALL SEPTIC SYSTEM COMPONENTS TO BE STAKED OUT BY PROFESSIONAL LAND SURVEYOR PRIOR TO SYSTEM INSTALLATION.
- CONTRACTOR SHALL ABANDON EXISTING SEPTIC COMPONENTS IN ACCORDANCE WITH 310 CMR SEC. 15.354 OF TITLE 5 AND LOCAL REGULATIONS BY PUMPING DRY, CRUSHING AND ABANDONING.

SITE NOTES

- LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II RESOURCE AREA.
- ALL KNOWN WETLANDS WITHIN 100 FEET OF THE PROPOSED SEWAGE SYSTEM ARE SHOWN.
- PROPERTY LINE DATA WAS OBTAINED FROM RECORDED DEED (BK.49267, PG.313) AND RECORDED PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS.
- THERE WERE NO ACTIVE/POTABLE WELLS OBSERVED WITHIN 500' OF THE PROPOSED SYSTEM.
- LOCUS LIES PARTIALLY WITHIN FEMA ZONE "AE" (EL. 25.9) AS SHOWN ON FEMA COMMUNITY MAP PANEL 25023C 0101L DATED JULY 3, 2024.

***INSTALLER TO BE PRESBY CERTIFIED**

	<p>PREPARED BY:</p>
<p>PROJECT:</p> <p>97 LEAVITT STREET (ASSESSOR'S PARCEL: 82-0-36) HINGHAM, MASSACHUSETTS</p>	<p>DESIGN:</p> <p>JML</p>
<p>APPLICANT:</p> <p>JOHN KAPLAN</p>	<p>CHECK:</p> <p>GJM</p>
<p>PLAN TITLE:</p> <p>SEPTIC SYSTEM DESIGN PLAN</p>	<p>JOB NO:</p> <p>25-147</p>
	<p>DATE:</p> <p>4/30/2025</p>
	<p>REV:</p> <p>-</p>
	<p>SHEET:</p> <p>1</p>

HINGHAM BOARD OF HEALTH SUPPLEMENTARY RULES & REGULATIONS FOR THE DISPOSAL OF SANITARY SEWAGE

SECTION VII.M.1: TO ALLOW A REDUCTION FROM 6.0' (REQ'D) TO 3.2' (PROP.) OF NATURALLY OCCURRING PERMEABLE MATERIAL ABOVE MAXIMUM GROUNDWATER ELEVATION.

SECTION VII.L: TO ALLOW A REDUCTION FROM 6.0' (REQ'D) TO 3.2' (PROP.) OF VERTICAL SEPARATION BETWEEN MAXIMUM GROUNDWATER AND THE BOTTOM OF THE LEACHING FIELD.

DESIGN DATA

- BUILDING TYPE: SINGLE FAMILY DWELLING
- NUMBER OF BEDROOMS: 3
- DESIGN FLOW: 3 x 110 GPD/BEDROOM = 330 GPD (GALLONS PER DAY)
- DESIGN PERCOLATION RATE: <2MPI (TP-2, CLASS I)
- GARBAGE DISPOSAL: NO
- SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW
- 330 x 2 = 330 GAL. (INSTALL NEW 1,500 GALLON SEPTIC TANK)
- LEACH AREA REQUIREMENTS (GALLONS PER DAY / SQUARE FOOT)
BOTTOM: 0.74 GPD/S.F. SIDE: 0.74 GPD/S.F.
- TOTAL LEACH AREA REQUIRED:
TITLE 5: 330 GPD / (0.74 GPD/S.F.) = 446 S.F.
PROVIDED AREA: 15.0'W x 27.0'L C-33 SAND BED = 405 S.F. (9.18% SIZE REDUCTION*)
PER TABLE A: SYSTEM REQUIRES 210 L.F. OF ENVIRO-SEPTIC PIPE (225 L.F. PROVIDED)

*MAXIMUM ALLOWABLE SIZE REDUCTION OF 40% ALLOWED PER MASSDEP APPROVAL LETTER.

REQUIRED SAND CALCULATION

C33 SAND REQUIRED:
2.0' x 15.0' x 27.0' x 1.2% / 27 = 36 C.Y.
36 C.Y. - (9 PIPES x 25' x 3.14' x 0.5 x 0.5) / 27 = 29± C.Y.*

*APPROX. SAND AREA REQUIRED SHOWN ON CROSS SECTION A-A.

I/A TECHNOLOGY CREDITS

- REDUCTION IN THE SIZE OF THE SOIL ABSORPTION SYSTEM (40% MAX, 9.18% PROP.).
- REDUCTION IN THE SEPARATION TO ESHOW FROM 5-FT. TO 3-FT.
- REDUCTION IN THE DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL FROM 48" TO 40".

