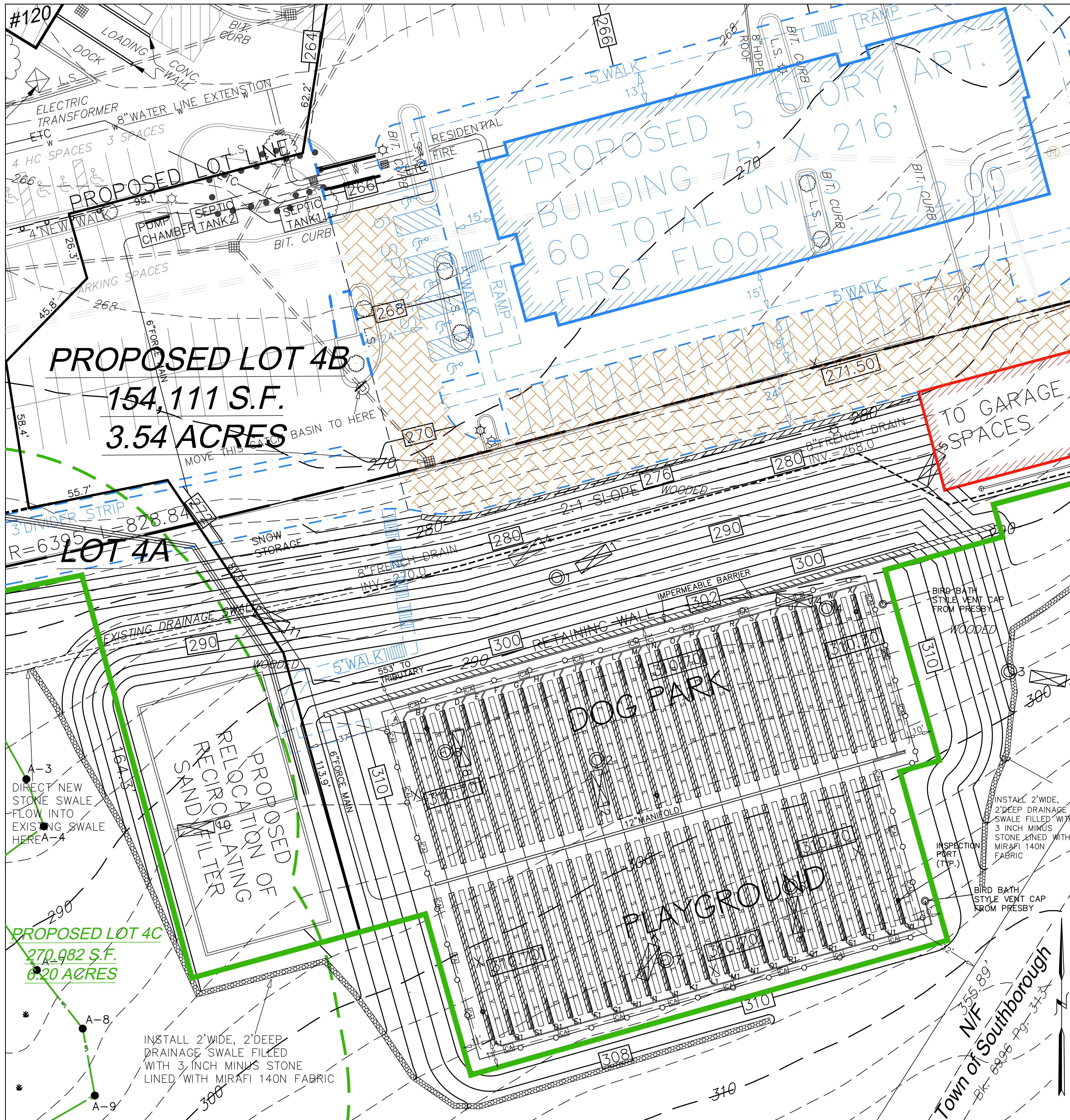




PERCOLATION TESTS			
PERCOLATION TEST #:	2	DATE:	9/7/2022
PERCOLATION RATE:	3	MIN./IN.	
DEPTH OF PERC:	50"		
PERCOLATION TEST #:	4	DATE:	9/7/2022
PERCOLATION RATE:	5	MIN./IN.	
DEPTH OF PERC:	39"		
PERCOLATION TEST #:	6	DATE:	10/19/2022
PERCOLATION RATE:	7	MIN./IN.	
DEPTH OF PERC:	39"		
PERCOLATION TEST #:	7	DATE:	10/19/2022
PERCOLATION RATE:	3	MIN./IN.	
DEPTH OF PERC:	41"		
PERCOLATION TEST #:	8	DATE:	10/19/2022
PERCOLATION RATE:	4	MIN./IN.	
DEPTH OF PERC:	39"		
THE PERCOLATION TESTS ON BOTH SEPTEMBER 7 AND OCTOBER 19, 2022 WERE CONDUCTED BY JAMES TETREAULT, SOIL EVALUATOR #2421. THESE TESTS WERE OBSERVED BY DENNIS COSTELLO, THE SOUTHBOROUGH BOARD OF HEALTH'S AGENT.			
DESIGN PERCOLATION RATE: 10 MINS. PER INCH			

- GENERAL NOTES**
- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN OF SOUTHBOROUGH HEALTH RULES AND REGULATIONS AND TITLE 5, THE STATE ENVIRONMENTAL CODE.
 - THIS PLAN IS TO BE USED ONLY FOR THE CONSTRUCTION OF THE DESIGNED DISPOSAL SYSTEM AND DOES NOT REPRESENT ACTUAL AS BUILT CONDITIONS UNLESS OTHERWISE NOTED.
 - THE PROPOSED SYSTEM SHOWN HEREON IS NOT DESIGNED FOR THE USE OF GARBAGE DISPOSALS AND SAID USE IS NOT ALLOWED.
 - THE SEPTIC TANKS SHOULD BE PUMPED OUT EVERY YEAR.
 - ALL WASHED STONE IN TRENCHES MUST HAVE LESS THAN 0.2 PERCENT MATERIAL FINER THAN A NUMBER 200 SIEVE AS DETERMINED BY AASHTO (AS MOST RECENTLY AMENDED) AND BE DOUBLE WASHED.
 - TIGHT JOINT PIPING TO CONSIST OF POLYVINYL CHLORIDE PIPE (PVC) SCHEDULE 40, UNLESS OTHERWISE NOTED.
 - THERE ARE SEVERAL WETLAND RESOURCE AREAS ON THIS PROPERTY. THESE WETLAND BOUNDARIES HAVE BEEN FLAGGED BY THE STAFF OF GODDARD CONSULTING, LLC.
 - PIPING FROM THE PROPOSED BUILDING TO THE PUMP CHAMBER IS TO CONSIST OF POLYVINYL CHLORIDE PIPE (PVC) SCHEDULE 40 PIPE. THE 6" FORCE MAIN, 12" MANIFOLD AND 2" DISTRIBUTION LINES ARE TO BE CLASS 150 PRESSURE PIPE.
 - TWO NEW BARNES MODEL 4SE11334HL 11.3 HPE PUMPS SHALL BE INSTALLED ON A PULTRUDED SLIDE RAIL FOR EASE OF ACCESS AND MAINTENANCE. THE PUMPS SHALL ALTERNATE AND WILL HAVE DUPLEX CONTROLS WITH A CONTROL BOX IN THE PROPOSED BUILDING.
 - TO PREVENT POTENTIAL SEWAGE BREAKOUT, AN IMPERMEABLE BARRIER WILL BE INSTALLED IN FRONT OF THE RETAINING WALL. PROPOSED NORTH OF THE SOIL ABSORPTION SYSTEM ACCORDANCE WITH 310 CMR 15.255(2). THE ELEVATION OF THE TOP OF THE BARRIER SHALL BE AT LEAST THE BREAKOUT ELEVATION AND THE BASE OF THE BARRIER SHALL BE AT LEAST 1 FOOT BELOW EXISTING GROUND.
 - THE PROPOSED 6 INCH DIAMETER FORCE MAIN SHALL HAVE 4 FEET OF COVER AT ALL TIMES AND SHALL BE PITCHED TO DRAIN BACK INTO THE PUMP CHAMBER.
 - THIS DEVELOPMENT IS PROPOSED UNDER AN APPLICATION FOR A COMPREHENSIVE PERMIT PURSUANT TO MASSACHUSETTS GENERAL LAWS (M.G.L.) CHAPTER 40B.

2" LATERAL INVERTS IN TRENCHES:			
A	309.00	A1	309.00
B	309.00	B1	309.00
C	309.00	C1	309.00
D	309.00	D1	309.00
E	309.00	E1	309.00
F	309.00	F1	309.00
G	309.00	G1	309.00
H	309.00	H1	309.00
I	309.00	I1	309.00
J	309.00	J1	309.00
K	309.00	K1	309.00
L	309.00	L1	309.00
M	309.00	M1	309.00
N	309.00	N1	309.00
O	309.00	O1	309.00
P	309.00	P1	309.00
Q	309.00	Q1	309.00
R	309.00	R1	309.00
S	309.00	S1	309.00
T	309.00	T1	309.00
U	309.00	U1	309.00
V	309.00	V1	309.00
W	309.00		
X	309.00		

DEEP OBSERVATION HOLES			
HOLE: 2	DATE: 9/7/2022	HOLE: 3	DATE: 9/7/2022
SOIL DEPTH, HORIZON, & TEXTURE:		SOIL DEPTH, HORIZON, & TEXTURE:	
0'-7" A SANDY LOAM		0'-7" A SANDY LOAM	
7'-24" B SANDY LOAM		7'-25" B SANDY LOAM	
24'-39" C1 SANDY LOAM, GRAVELLY, COBBLY		25'-44" C1 SANDY LOAM, GRAVELLY, COBBLY	
39'-70" C2 SANDY LOAM, GRAVELLY, COBBLY WITH MOTTLING		44'-78" C2 SANDY LOAM, GRAVELLY, COBBLY WITH MOTTLING	
SURFACE EL.: 296.70		SURFACE EL.: 299.20	
EST. SEASONAL HIGH GROUND WATER: 293.37		EST. SEASONAL HIGH GROUND WATER: 295.53	
WEeping WATER EL.: NOT OBS.		WEeping WATER EL.: NOT OBS.	
STANDING WATER EL.: NOT OBS.		STANDING WATER EL.: NOT OBS.	
BEDROCK EL.: NOT OBS.		BEDROCK EL.: NOT OBS.	
HOLE: 4	DATE: 9/7/2022	HOLE: 6	DATE: 10/19/2022
SOIL DEPTH, HORIZON, & TEXTURE:		SOIL DEPTH, HORIZON, & TEXTURE:	
0'-9" A SANDY LOAM		0'-9" A SANDY LOAM	
9'-25" B SANDY LOAM		9'-25" B SANDY LOAM	
26'-46" C1 SANDY LOAM, GRAVELLY, COBBLY		25'-78" C SANDY LOAM, GRAVELLY, COBBLY WITH MOTTLING	
46'-80" C2 SANDY LOAM, GRAVELLY, COBBLY WITH MOTTLING			
SURFACE EL.: 290.63		SURFACE EL.: 304.07	
EST. SEASONAL HIGH GROUND WATER: 286.80		EST. SEASONAL HIGH GROUND WATER: 301.99	
WEeping WATER EL.: NOT OBS.		WEeping WATER EL.: NOT OBS.	
STANDING WATER EL.: NOT OBS.		STANDING WATER EL.: NOT OBS.	
BEDROCK EL.: NOT OBS.		BEDROCK EL.: NOT OBS.	
HOLE: 7	DATE: 10/19/2022	HOLE: 8	DATE: 10/19/2022
SOIL DEPTH, HORIZON, & TEXTURE:		SOIL DEPTH, HORIZON, & TEXTURE:	
0'-9" A SANDY LOAM		0'-8" A SANDY LOAM	
9'-25" B SANDY LOAM		8'-29" B SANDY LOAM	
25'-75" C SANDY LOAM, GRAVELLY, STONY WITH MOTTLING		29'-76" C SANDY LOAM, GRAVELLY, COBBLY WITH MOTTLING	
SURFACE EL.: 303.90		SURFACE EL.: 609.73	
EST. SEASONAL HIGH GROUND WATER: 301.82		EST. SEASONAL HIGH GROUND WATER: 604.07	
WEeping WATER EL.: NOT OBS.		WEeping WATER EL.: NOT OBS.	
STANDING WATER EL.: NOT OBS.		STANDING WATER EL.: NOT OBS.	
BEDROCK EL.: NOT OBS.		BEDROCK EL.: NOT OBS.	
SOIL EVALUATOR: JAMES TETREAULT, PE OBSERVED BY TOWN AGENT: DENNIS COSTELLO			

DESIGN CALCULATIONS
90 BEDROOMS IN A 5 STORY APARTMENT BUILDING WITH 60 UNITS = 9,900 GPD

SIDE (4 S.F.) x (0.60 GAL./S.F.) =	2.40	GALS.	DIMENSIONS OF SYSTEM
BOTTOM (2 S.F.) x (0.60 GAL./S.F.) =	1.20	GALS.	46 LINES
TOTAL GALLONS DISPERSED PER 1' OF TRENCH	3.60	GALS.	60 FEET LONG
LENGTH OF TRENCH REQUIRED = $\frac{9,900}{3.60}$	2,750	FT.	2 FEET WIDE
LENGTH OF TRENCH PROVIDED	2,760	FT.	2 FEET OF STONE
TOTAL AREA OF SYSTEM = 16,560 S.F.			
SYSTEM CAPACITY = 16,560 s.f. x 0.60 GPD/s.f. = 9,936 GPD			

DESIGN ELEVATIONS	BENCH MARKS
PROPOSED BUILDING ELEVATIONS: APARTMENT BUILDING FIRST FLOOR: 272.00 BUILDING SEWER AT FOUNDATION: 264.50	GIVEN THE EXTENT OF EARTHWORK THAT WILL BE NECESSARY FOR THE GRADING IN THE AREA OF THE SOIL ABSORPTION SYSTEM, TWO OR MORE BENCHMARKS FOR THE CONSTRUCTION OF THE SEPTIC SYSTEM WILL BE SET AFTER CLEARING IS COMPLETED.
PROPOSED FIRST SEPTIC TANK: SIZE OF SEPTIC TANK: 10,000 GALLONS INLET: 263.50 OUTLET: 263.25	
PROPOSED SECOND SEPTIC TANK: SIZE OF SEPTIC TANK: 10,000 GALLONS INLET: 262.50 OUTLET: 262.25	
PROPOSED PUMP CHAMBER: SIZE OF PUMP CHAMBER: 15,000 GALLONS INLET: 262.15 PUMP OFF: 248.00	
PROPOSED DISTRIBUTION LATERALS: INVERT: 309.00	

LEGEND	
PERCOLATION TEST	⊙
DEEP OBSERVATION HOLE	⊠
DISTRIBUTION BOX	⊕
SEPTIC TANK	⊞
WATER LINE	— W —
DRAIN LINE	— D —
BORDERING VEGETATED WETLANDS	— WL —
100' BUFFER LINE	— — —
EXISTING BROOK	— 123 —
EXISTING GRADE	— 123 —
PROPOSED GRADE	— 123 —
CLEARING AREA	— CA —

SEWAGE DISPOSAL SYSTEM PLAN
LOT ADDRESS: 120 TURNPIKE ROAD, LOT 4B AREA OF LOT: 3.54 AC. ASSESSORS MAP/PCL: 37/4 IN
SOUTHBOROUGH, MASS.
PREPARED FOR:
FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MA 01772

SCALE: 1 INCH = 20 FEET
DATE: AUGUST 10, 2024
REVISIONS: 8/22/2024

DESIGNED BY: JLT
DRAWING NAME: 120TURNPIKECURRENT
CLIENT NO.: 504 JOB NO.: 290-504

EXPEDITED ENGINEERING, LLC
CIVIL ENGINEERS & LAND SURVEYORS
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MA 01772
(508) 399-9993

SHEET 1 OF 2

EXCEPT FOR VISIBLE STRUCTURES (MANHOLES, GATES, POLES, ETC.) LOCATED BY THOMPSON-LISTON ASSOCIATES, INC., ALL UNDERGROUND UTILITIES SHOWN WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM THE INDIANAPOLIS UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE. FIELD VERIFICATIONS MUST BE DETERMINED IN THE FIELD BEFORE DESIGNING, EXCAVATING, BLASTING OR INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC & PRIVATE, MUST BE CONTACTED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. EXPEDITED ENGINEERING, LLC, ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. CALL "DIG SAFE" AT 1-800-322-4844.