

SEPTIC SYSTEM PROFILE

OBSERVATION HOLE #1  
 PERFORMED BY: J. RANDOLPH PARKER, PLS  
 WITNESSED BY: MICHELLE ROBERTS, BOH AGENT  
 PERC RATE: 2.5  
 DATE: 06/11/15

DEPTH FROM SURFACE (INCHES)	SOIL HORIZONS	SOIL TEXTURES (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, CONCRETES, GRAVEL)
0-6"	OA		10 YR 3/2		
6-34"	B <sub>w</sub>	LOAMY SAND	10 YR 5/6		MED. FRIABLE
34-82"	C <sub>1</sub>	LOAMY SAND	2.5 Y 6/4		MED-COARSE LOOSE
82-144"	C <sub>2</sub>	SAND	2.5 Y 7/4		MED. FIRM 10% Gravel

WEeping FROM PIT FACE: N/A  
 ESTIMATED DEPTH TO MAX. G.W. > 144" (EL. 75.8)  
 STANDING N/A

OBSERVATION HOLE #2  
 PERFORMED BY: J. RANDOLPH PARKER, PLS  
 WITNESSED BY: MICHELLE ROBERTS, BOH AGENT  
 PERC RATE: 2.5  
 DATE: 06/11/15

DEPTH FROM SURFACE (INCHES)	SOIL HORIZONS	SOIL TEXTURES (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, CONCRETES, GRAVEL)
0-10"	OA		10 YR 3/2		
10-34"	B <sub>w</sub>	LOAMY SAND	10 YR 5/6		MED. FRIABLE
34-84"	C <sub>1</sub>	LOAMY SAND	2.5 Y 6/4		MED-COARSE LOOSE
84-144"	C <sub>2</sub>	SAND	2.5 Y 7/4		MED. FIRM 10% Gravel

WEeping FROM PIT FACE: N/A  
 ESTIMATED DEPTH TO MAX. G.W. > 144" (EL. 75.8)  
 STANDING N/A

OBSERVATION HOLE #3  
 PERFORMED BY: J. RANDOLPH PARKER, PLS  
 WITNESSED BY: MICHELLE ROBERTS, BOH AGENT  
 PERC RATE: 2.5  
 DATE: 06/11/15

DEPTH FROM SURFACE (INCHES)	SOIL HORIZONS	SOIL TEXTURES (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, CONCRETES, GRAVEL)
0-12"	OA		10 YR 3/2		
12-38"	B <sub>w</sub>	LOAMY SAND	10 YR 5/6		MED. FRIABLE
38-108"	C <sub>1</sub>	LOAMY SAND	2.5 Y 6/4		MED-COARSE LOOSE
108-144"	C <sub>2</sub>	SAND	2.5 Y 7/4		MED. FIRM 10% Gravel

WEeping FROM PIT FACE: N/A  
 ESTIMATED DEPTH TO MAX. G.W. > 144" (EL. 73.8)  
 STANDING N/A

OBSERVATION HOLE #4  
 PERFORMED BY: J. RANDOLPH PARKER, PLS  
 WITNESSED BY: MICHELLE ROBERTS, BOH AGENT  
 PERC RATE: 2.5  
 DATE: 06/11/15

DEPTH FROM SURFACE (INCHES)	SOIL HORIZONS	SOIL TEXTURES (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, CONCRETES, GRAVEL)
0-24"	OA		10 YR 3/2		
24-48"	B <sub>w</sub>	LOAMY SAND	10 YR 5/6		MED. FRIABLE
48-84"	C <sub>1</sub>	LOAMY SAND	2.5 Y 6/4		MED-COARSE LOOSE
84-144"	C <sub>2</sub>	SAND	2.5 Y 7/4		MED. FIRM 10% Gravel

WEeping FROM PIT FACE: N/A  
 ESTIMATED DEPTH TO MAX. G.W. > 144" (EL. 72.0)  
 STANDING N/A

NOTES CONTINUED

10. THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE GRINDER.
11. THE DESIGN ENGINEER TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO REQUIRED INSPECTIONS.
12. SEPTIC TANKS SHALL BE INSPECTED ONCE A YEAR AND PUMPED A MINIMUM OF ONCE EACH THREE YEARS OR AS DEEMED NECESSARY BY THE SYSTEM INSPECTOR.
13. IN ACCORDANCE WITH THE GENERAL USE PERMIT, THE REMOVE AND REPLACE SHALL BE LIMITED TO THE AREA OF THE PROPOSED DRIP IRRIGATION SYSTEM (48' x 60'). IN THIS AREA, ALL TOPSOIL, PEAT AND OTHER IMPERVIOUS MATERIAL SHALL BE REMOVED AND REPLACED WITH A CLEAN GRANULAR SAND FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, WHICH SHALL BE GRADED SUCH THAT:
  - 1. NO MATERIAL IS LARGER THAN 2 INCHES.
  - 2. NOT MORE THAN 45% IS RETAINED ON THE #4SIEVE;
  - 3. OF THE FRACTION PASSING THE #4 SIEVE, THE MATERIAL SHALL FALL WITHIN THE GRADATION LIMITS AS FOLLOWS:
 

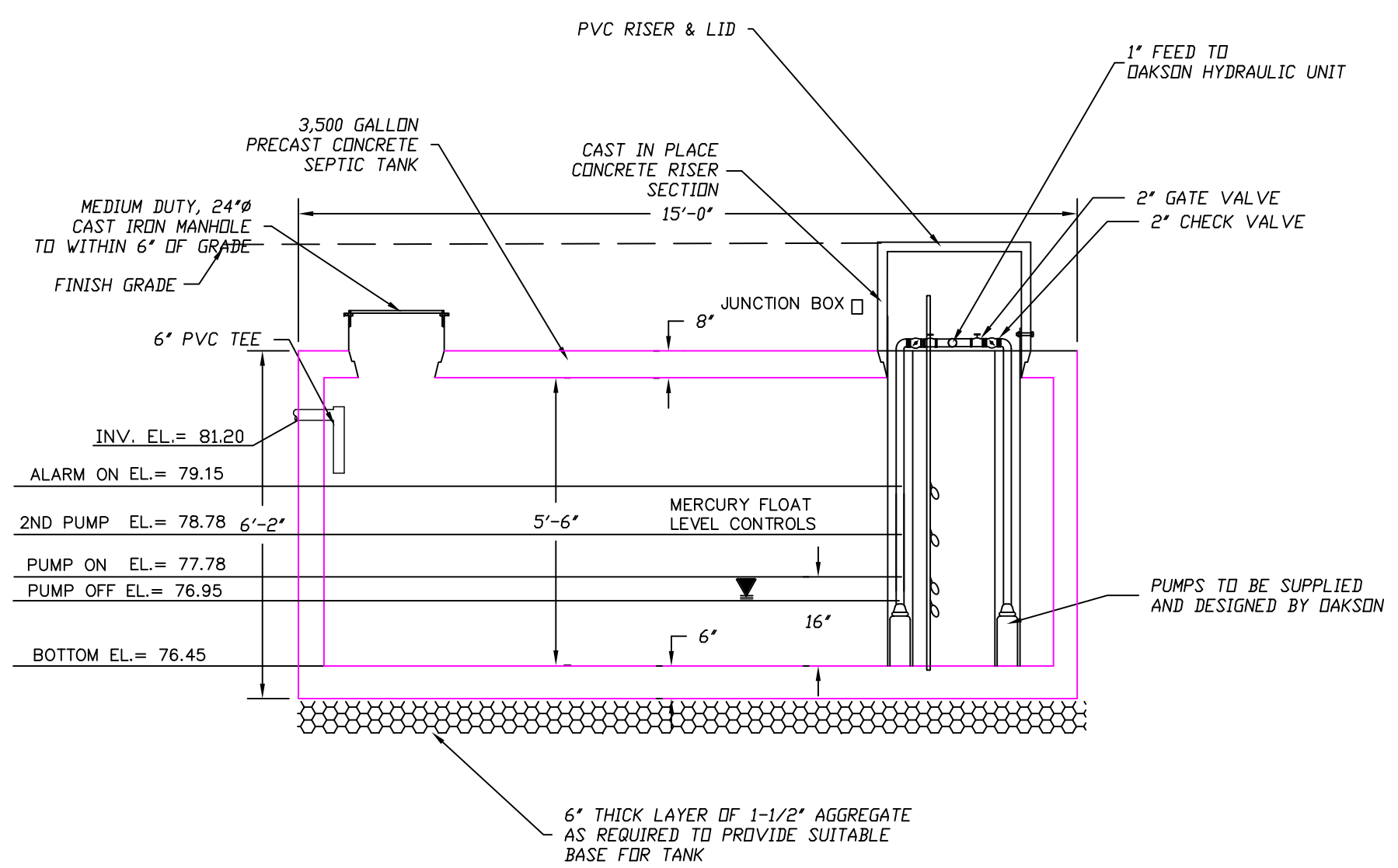
SIEVE SIZE	PERCENT PASSING
#50	10-100%
#100	0-20%
#200	0-5%
14. A SIEVE ANALYSIS OF THE MATERIAL SHALL BE PERFORMED TO DETERMINE THAT IT MEETS THE GRADATION REQUIREMENTS AS NOTED ABOVE.
15. REMOVE AND REPLACE SHALL EXTEND TO A DEPTH OF 19" OR UNTIL B HORIZON IS ENCOUNTERED;
  - EXCAVATION QUANTITY= 235 CU. YDS.
  - REPLACEMENT QUANTITY= 940" CU. YDS.
  - \* INCLUDES 20% COMPACTION ALLOWANCE
16. UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE SCHEDULE 40 PVC AND SHALL BE COVERED BY A MAGNETIC TAPE TO ASSIST WITH LOCATING THE PIPE.
17. UNLESS OTHERWISE NOTED, THERE ARE NO KNOWN WELLS WITHIN 200' OF THE PROPOSED LEACHING FACILITIES.
18. DESIGN ENGINEER SHALL BE CONTACTED TO INSPECT THE CONSTRUCTION PROGRESS OF THE SYSTEM:
  1. WHEN ALL MATERIAL HAS BEEN REMOVED TO INSPECT THE MATERIAL AT THE BOTTOM OF THE HOLE;
  2. WHEN THE SYSTEM COMPONENTS HAVE BEEN INSTALLED PRIOR TO BACKFILLING; AND
  3. WHEN THE SYSTEM FINAL GRADING HAS BEEN COMPLETED.
19. THE SITE IS NOT LOCATED IN A FEMA FLOOD HAZARD AREA.
20. THE SITE IS LOCATED IN A ZONE II OF A PUBLIC WATER SUPPLY WELL.
21. PERC RITE DRIP IRRIGATION SYSTEM SHALL BE OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEP GENERAL USE PERMIT.
22. ALL ELECTRICAL WORK MUST BE DONE BY A LICENSED ELECTRICIAN, WHO MUST RECIEVE A PERMIT AND HAVE WORK INSPECTED AND APPROVED BY THE TOWN WIRING INSPECTOR.
23. REMOVE AND REPLACE FOR LEACHING FACILITIES SHALL BE PREPARED PRIOR TO ISSUANCE OF BUILDING PERMITS FOR ANY PROPOSED DWELLINGS.
24. SYSTEM INSTALLATION SHALL BE COMPLETED PRIOR TO ISSUANCE OF OCCUPANCY PERMIT ON ANY PROPOSED DWELLING.
25. NITROGEN SENSITIVE LOADING CALCULATIONS
 

TOTAL DAILY VOLUME	1,320 GALLONS
LOT AREA	169,180 SQ. FT.
LOADING RATE	312.1 GALLONS / 40,000 SQ. FT. ok

1. ELEVATIONS REFER TO NAVD 88
2. BENCH MARK CATCH BASIN RIM  
EL. 88.50
3. ESTIMATED DAILY FLOW  
12 BEDROOMS x 110 GALLONS PER BEDROOM PER DAY= 1320 GALLONS PER DAY.
4. SEPTIC TANK REQ'D CAPACITY
 

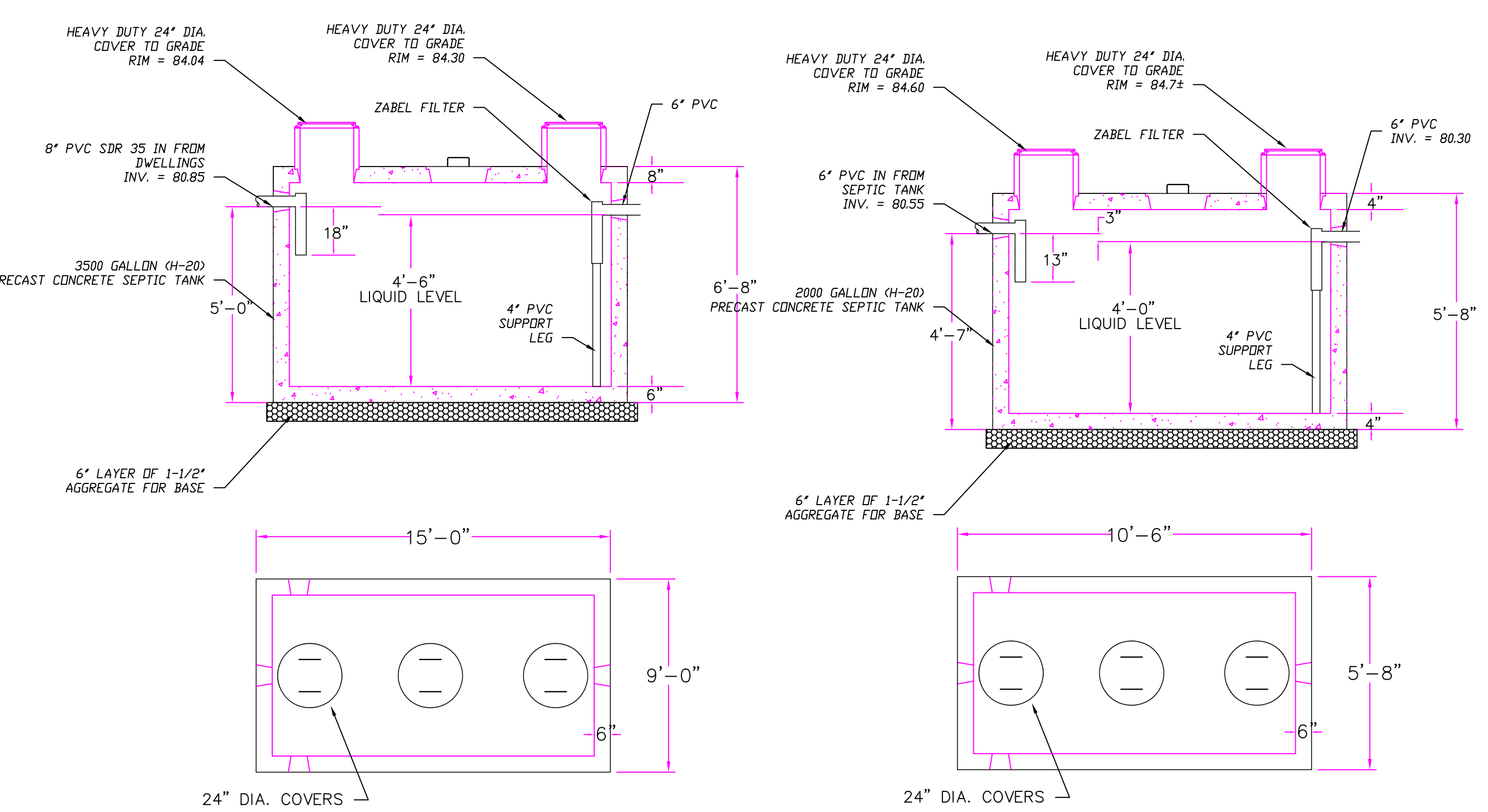
1st COMPARTMENT	200% OF DAILY FLOW = 2640 GALLONS USE 3000 GALLON TANK
2nd COMPARTMENT	100% OF DAILY FLOW = 1500 GALLONS USE 2000 GALLON TANK
5. LEACHING AREA REQUIREMENTS; CLASS I SOIL PERC RATE < 5 MIN/IN  
APPLICATION RATE = 0.74 G/SF  
AREA REQ. = 1320 ÷ 0.74 GAL/S.F. = 1783.8 S.F.
6. LEACHING AREA PROVIDED USE PERC RITE DRIP IRRIGATION BED  
60'L X 32' W  
AREA PROV. = 32 X 60 = 1,920 S.F.  
CAP. PROV. = 1920 X 0.74 G/S.F. = 1420.8 G.P.D.
7. HEAVY GRADING MACHINERY SHALL NOT BE PERMITTED TO PASS OVER LEACHING AREAS.
8. ALL CONSTRUCTION TO CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF ENV. PROTECTION SANITARY CODE, TITLE 5, AND THE TOWN OF PLYMOUTH BOARD OF HEALTH.
9. PERCOLATION DATA
 

PERC RATE	DEPTH OF TEST	DATE
1		
2	< 2 MIN/IN	06/11/15
3		
4		
5		



3,500 GALLON PUMP STATION

- NOTES:
1. ALARM & POWER SUPPLY CABLES SHALL BE CONNECTED TO SEPERATE CIRCUITS. THESE CONNECTIONS SHALL BE SEPERATE FROM ANY OF THE TENANTS POWER SUPPLY AND BE SUPPLIED BY THE OWNER EXCLUSIVELY.
  2. ALARM PANEL SHALL BE EQUIPPED WITH BOTH VISIBLE AND AUDIBLE ALARMS WITH INDICATOR LIGHT WHICH ILLUMINATES TO SHOW WHEN PUMP IS OPERATING.
  3. PANEL SHALL BE EQUIPPED WITH AN HOUR METER WHICH SHALL DISPLAY THE LENGTH OF OPERATION FOR EACH PUMP.
  4. ALRM PANEL SHALL BE VISIBLY MOUNTED WITH BOTH AUDIBLE AND VISIBLE ALARM. IT SHALL ALSO BE REMOTELY CONNECTED TO THE SERVICE PROVIDER TO MONITOR OPERATIONS AND ALERT THEM OF ANY FAILURES OR OTHER ISSUES.
  5. DOSING VOLUME = 14(8.0)(3)(7.48) = 251.3 GALLONS
  6. EMERGENCY STORAGE PROVIDED = 6 (14) 2.05 (7.48 G/GP) = 1,171.4 GALLONS



3000 GAL. SEPTIC TANK (H-20)

1500 GAL. SEPTIC TANK (H-20)

SUBSURFACE SEWAGE DISPOSAL SYSTEM SYSTEM DESIGN DETAILS THE RESIDENCES AT SERENITY HILL 221 BEAVER DAM ROAD PLYMOUTH, MA 02370 SCALE: 1"=20' DATE: JULY 27,2020

JAMES ENGINEERING, INC.  
 125 GREAT ROCK ROAD  
 HANOVER, MASS. 02339  
 TEL: 1- (781)-878-1795



NO.	DATE	DESCRIPTION	BY
1	12/15/20	response to engineering	GDJ
2	12/23/20	ADDED LOT NUMBERS	GDJ
3	02/15/21	RESPONSE TO ENGINEERING	GDJ
4	03/15/21	RESPONSE TO ENGINEERING	GDJ
5	04/08/21	MINDR REVS	GDJ