

1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462

PHONE: (978) 779-6091 www.dillisandroy.com

187 NORTH END ROAD TOWNSEND, MA 01469

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**GENERAL NOTES:** 

- 1. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY DILLIS & ROY CIVIL DESIGN GROUP, INC. ELEVATIONS REFER TO ASSUMED DATUM (SEE BENCH MARK LOCATED ON PLOT PLAN).
- PROPERTY LINE INFORMATION TAKEN FROM A DEFINITIVE SUBDIVISION PLAN PREPARED FOR CAMPBELL FARM BY DILLIS & ROY CIVIL DESIGN GROUP, INC. SAID PLAN TO BE RECORDED AT THE MIDDLESEX SOUTH DISTRICT REGISTRY OF DEEDS FOLLOWING APPROVAL BY THE TOWNSEND PLANNING BOARD.
- PERCOLATION TESTS PERFORMED IN ACCORDANCE WITH 310 CMR (TITLE 5) REGULATIONS 15.104 AND 15.105. ANY DEVIATIONS FROM THE DESIGN PLAN MUST BE APPROVED IN WRITING BY DILLIS & ROY CIVIL DESIGN GROUP, INC.
- NO PERMANENT STRUCTURES MAY BE CONSTRUCTED OVER THE RESERVE LEACHING AREA. THE BOARD OF HEALTH REQUIRES INSPECTION OF ALL CONSTRUCTION BY THE DESIGN ENGINEER OR BY AN AGENT OF THE BOARD OF HEALTH, AND THAT SUCH A PERSON CERTIFIES IN WRITING THAT ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE TERMS OF
- THE PERMIT AND THE APPROVED PLANS. FOR PROPER PERFORMANCE, A SEPTIC TANK SHOULD BE INSPECTED AT LEAST ONCE EVERY YEAR AND WHEN THE TOTAL DEPTH OF SCUM AND SOLIDS EXCEEDS ONE THIRD OF LIQUID DEPTH OF THE TANK, THE TANK SHOULD BE PUMPED.
- THIS DESIGN DOES NOT ACCOMMODATE A GARBAGE DISPOSAL. CONSTRUCTION WITHIN 100 FEET OF A WETLAND RESOURCE AREA AS DEFINED IN THE MASSACHUSETTS WETLAND PROTECTION ACT AND REGULATIONS (310 CMR 10.00) SHALL NOT BE PERFORMED UNTIL AN ORDER OF CONDITIONS OR NEGATIVE DETERMINATION OF APPLICABILITY HAS BEEN OBTAINED FROM THE LOCAL CONSERVATION COMMISSION.
- 10. EXISTING UTILITES SHOWN ON THIS PLAN WERE COMPILED FROM FIELD MEASUREMENT AND RECORD PLANS. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY AND SHOULD NOT BE ASSUMED TO BE CORRECT NOR SHOULD IT BE ASSUMED THAT THE UTILITIES SHOWN ARE THE ONLY UTILITES LOCATED ON OR NEAR THE SITE. THE CONTRACTOR SHALL CALL DIG SAFE 1-888-DIG-SAFE PRIOR TO CONSTRUCTION IN ACCORDANCE WITH STATE LAWS.

### CONSTRUCTION NOTES:

- 1. FINISH GRADING SHALL BE DONE IN ACCORDANCE WITH THE PLOT PLAN. ALL DISTURBED AREAS SHALL BE COVERED WITH A MINIMUM OF 4" OF LOAM AND SEEDED WITH A NATIVE GRASS MIXTURE.
- BACKFILL OVER THE SOIL ABSORPTION SYSTEM, SEPTIC TANK AND PUMP CHAMBER SHALL BE A MINIMUM OF 9 INCHES EXCLUDING TOPSOIL, PLACED IN LIFTS AND SUFFICIENTLY COMPACTED TOP PREVENT DEPRESSIONS DUE TO SETTLING. BACKFILL OVER THE SOIL ABSORPTION SYSTEM SHALL BE FREE OF STONES AND BOULDERS GREATER THAN 6 INCHES IN SIZE. THE BUILDING SEWER SHALL BE LAID ON A COMPACTED FIRM BASE.
- ALL PIPING SHALL BE MINIMUM OF SCHEDULE 40 UNLESS OTHERWISE NOTED. ALL PIPE JOINTS AND CONNECTIONS TO SYSTEM COMPONENTS SHALL BE MECHANICALLY SOUND, WATER TIGHT AND PROTECTED AGAINST
- DAMAGE BY ROOTS. 5. ALL BUILDING SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STATE PLUMBING CODE 248 CMR 2.00. 7. FINAL COVER OVER THE SYSTEM SHALL BE GRADED TO REDUCE INFILTRATION OF SURFACE WATER AND MINIMIZE EROSION. FINISH GRADE SHALL HAVE A MINIMUM SLOPE OF 2%.
- EFFLUENT DISTRIBUTION LINES SHALL HAVE A SLOPE OF 0.05%. OUTLET DISTRIBUTION LINES FROM THE D-BOX SHALL BE LEVEL FOR A MINIMUM OF TWO FEET OF THEIR LENGTH.
- 0. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOILS THAT MEET THE MINIMUM REQUIREMENTS STATED IN 310 CMR 15.255(3).
- 1. WHERE FILL IS REQUIRED TO REPLACE UNSUITABLE OR IMPERMEABLE SOILS, THE EXCAVATION OF THE UNSUITABLE MATERIAL SHALL EXTEND A MINIMUM OF 5 FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF 3 INCHES INTO THE NATURALLY OCCURRING PERVIOUS MATERIAL. 12. 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. SUBSURFACE COMPONENTS OF A SYSTEM SHALL NOT BE BACKFILLED OR OTHERWISE CONCEALED FROM VIEW UNTIL A FINAL INSPECTION HAS BEEN CONDUCTED BY THE APPROVING AUTHORITY AND PERMISSION HAS BEEN GRANTED BY THE APPROVING AUTHORITY TO BACKFILL
- THE SYSTEM. THE DESIGNER SHALL INSPECT THE CONSTRUCTION AFTER THE INITIAL EXCAVATION, PRIOR TO BACKFILLING, AND DURING BACKFILLING, IN ADDITION, THE FINAL INSPECTION OF THE SYSTEM SHALL BE CONDUCTED BY THE APPROVING AUTHORITY, THE SYSTEM INSTALLER AND THE DESIGNER PRIOR TO THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE PURSUANT TO 310 CMR 15.021(3). ANY COMPONENT OF THE SYSTEM WHICH HAS BEEN COVERED WITHOUT SUCH PERMISSION SHALL BE UNCOVERED UPON THE REQUEST OF THE APPROVING AUTHORITY OR THE DESIGNER. 14. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE
- 15. ALL SOIL ABSORPTION SYSTEMS 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.

NAME OF AF TOWNSEND E RICK METCAI	PPROVING AUT BOARD OF HEA LF, N.A.B.O.H.	HORITY: ALTH AGENT	S	OIL	TEST	DA	٩ΤΑ	WILLI	NAM DILLIS & R AM J. "JACK" MA	ME OF SOIL E OY CIVIL DES LONEY, JR. (	VALUATOR: IGN GROUP SE—13704)
IN-SEASON	GROUND WATE	ER TESTIN	G — (IF RE	EQ'D)				PERCOL	ATION TEST DATA	١	
TEST PIT DATE EI NO.		SURFACE	DEPTH TO	G.WATE	R TES	PIT DATE NO.		_	TOP OF 12" OF	RATE:	
		ELEVATION	OBSERVED GROUNDWATER	ELEVATIO	N PIT NO.			E	DEPTH FROM SURFACE	SURFACE ELEVATION	ACE MINUTE'S TION PER INCH
					718	3–I–B	7/13/	′18	40"	495.0±	19 M/I
					718	8–J–B	7/13/	'18	42"	494.3±	20 M/I
SOIL CLASSIF GEOLOGICAL LAND FORM: SOIL LIMITAT GENERAL NO	FICATION: S MATERIAL: L H IONS: N DTES: 3	SCITUATE FI LODGEMEN HILLSLOPE NONE 315B	ne sandy lo T TILL	MAC							
	DIT: 1117_7	DEPTH	HOR.	TEX.		 Т мотт		G.W.	OTHER		
DEEP TEST PIT: $11/7/17$		0-9"	A	S.L.	10YR 3/3	NONE		NONE	CRUMB, FRIABLE		
REFUSAL AT	REFUSAL AT: NONE OBSERVED		В	S.L.	10YR 5/6	NONE		NONE	S.A.B., FRIABLE		
			С	L.S.	2.5Y 5/3	<b>@</b> 16"		<b>@</b> 24"	MASSIVE, FRIABLE		
(SURFACE ELEV.	= 495.0±)										
ESTIMATED SEAS	SONAL HIGH GROUN	D WATER		AT 16	" (ELEVATION :	= 493.7±	E)				
DEEP TEST PIT: 1117-8		DEPTH	HOR.	TEX.	COLOR	MOTT	•	G.W.	OTHER		
DATE OF TES	ST: 11/3/17	0-12"	A	S.L.	10YR 3/3	NONE		NONE	CRUMB, FRIABLE		
REFUSAL AT	: NONE	12-22"	В	S.L.	10YR 5/6	NONE		NONE	S.A.B., FRIABLE		
	OBSERVED	22-108"	C	L.S.	2.5Y 5/3	<b>@</b> 22"		© 22"	MASSIVE, FRIABLE		
(SURFACE ELEV.	= 494.0±)										
ESTIMATED SEAS	SONAL HIGH GROUN	D WATER		AT 22	" (ELEVATION	= 492.2:	±)				
DEEP TEST F	IT: 618-7	DEPTH	HOR.	TEX.	COLOR	MOTT	•	G.W.	OTHER		
DATE OF TES	ST: 6/29/18	0-8"	A	S.L.	10YR 3/3	NONE		NONE	CRUMB, FRIABLE		
REFUSAL AT:	: NONE	8-22"	В	S.L.	10YR 5/8	NONE		NONE	S.A.B., FRIABLE		
	OBSERVED	22-102"	C	S.L.	2.5Y 5/3	© 22"		NONE	MASSIVE, FRIABLE		
(SURFACE ELEV.	= 495.0±)										
ESTIMATED SEAS	SONAL HIGH GROUN	D WATER		AT 22	" (ELEVATION	= 493.2:	±)		1		
DEEP TEST F	PIT: 618-8	DEPTH	HOR.	TEX.	COLOR	MOTT	•	G.W.	OTHER		
DATE OF TES	ST: 6/29/18	0-9"	A	S.L.	10YR 3/3	NONE		NONE	CRUMB, FRIABLE		
REFUSAL AT	: NONE	9-22"	В	S.L.	10YR 5/8	NONE		NONE	S.A.B., FRIABLE		
SUBEACE FLEV	UBSERVED = 494.0+)	22-108"	C	S.L.	2.5Y 5/3	@ 22"		NONE	MASSIVE, FRIABLE		

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 EXPERIENC DESCRIBED IN 310 CMR 15.017. I FURTHER CERTIFY THAT THE RESULTS OF MY SOIL EVALUATION, AS INDICATED ON THE ATTACHED SOIL EVALUATION FORM, ARE ACCURATE IN ACCORDANCE WITH 310 CMR 15.100 THROUGH 15.107

AT 22" (ELEVATION =  $492.3\pm$ )



ESTIMATED SEASONAL HIGH GROUND WATER

# LEGEND

DESCRIPTION DENOTES EXISTING CONTOUR (INDEX) DENOTES EXISTING CONTOUR (INTERMEDIATE) DENOTES PROPOSED CONTOUR (INDEX) DENOTES PROPOSED CONTOUR (INTERMEDIATE) DENOTES LIMIT OF EXCAVATION OF UNSUITABLE SOILS DENOTES PROPOSED SEWER LINE DENOTES PROPOSED WATER LINE

DENOTES PROPOSED UNDERGROUND UTILITIES

DENOTES PROPOSED CONCRETE SEPTIC TANK

DENOTES PROPOSED CONCRETE PUMP CHAMBER

DENOTES PROPOSED CONCRETE DISTRIBUTION BOX

DENOTES PROPOSED BUILDING ENVELOPE

DENOTES PROPOSED SEWER CLEANOUT





C.O.

DATE: 1/4/2021		SEWA	GE DISPOSAL SYSTEM DESIGN		JOB NO. 5707
DESIGN BY: CLM			DRAWING NO.		
	NO.	DATE	DESCRIPTION	BY	3707 3032
DRAWN BY:	1	01/21/2021	PER N.A.B.O.H. REVIEW COMMENTS	CLM	SHEET NO.
CLM					
CHECKED BY:					
WJM					OF 2

## GENERAL PUMP NOTES

1. <u>GENERAL</u>-FURNISH AND INSTALL A COMPLETE PUMPING SYSTEM CONSISTING OF A SUBMERSIBLE SEWAGE PUMP AND MOTOR, DISCHARGE PIPING AND VALVES, FLOAT SWITCH LEVEL CONTROLS, HIGH WATER ALARM, SIMPLEX CONTROL PANEL AND A PRECAST CONCRETE PUMP CHAMBER. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS AND SHALL BE WARRANTED FOR AT LEAST ONE YEAR. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT QUANTITY OF CLEAN WATER TO CONDUCT TWO PUMP OPERATION TESTS.

2. <u>PUMP\_CHAMBER</u>-THE PUMP\_CHAMBER\_SHALL BE A REINFORCED PRECAST CONCRETE STRUCTURE. CONSTRUCTION JOINTS AND OPENINGS SHALL BE SEALED WITH A HYDRAULIC CEMENT OR OTHERWISE MADE WATERTIGHT.

3. <u>PUMP AND MOTOR</u>— PUMP AND MOTOR SHALL BE MYERS SUBMERSIBLE SEWAGE PUMP CAPABLE OF PASSING 2—INCH SOLIDS. PUMP AND MOTOR SHALL BE FULLY SUBMERSIBLE AND SHALL OPERATE AT 3450 RPM WITH A 230V, 60 CYCLE, SINGLE PHASE AC POWER SOURCE. (NOTE: ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABLE VOLTAGE AT THE PUMP CONTROL PANEL PRIOR TO CONSTRUCTION.) PUMP SHALL BE RATED AS FOLLOWS:



MODEL: MYERS MW-50 - OR EQUAL (SEE SYSTEM CURVE)

4. <u>PIPING</u>-2-INCH (SCHEDULE 80) PVC PIPE AND FITTINGS SHALL BE USED FOR INTERIOR PUMP STATION DISCHARGE PIPING AND FITTINGS. THE SEWAGE FORCE MAIN SHALL BE 2-INCH DIAMETER SDR 21 PVC PIPE. THE DISCHARGE LINES WITHIN THE PUMP CHAMBER SHALL INCLUDE THE FOLLOWING:

1) IN THE VERTICAL POSITION: A 2-INCH CHECK VALVE 2) IN THE HORIZONTAL POSITION: A 2-INCH BALL VALVE

ALL PIPING BETWEEN THE PUMP CHAMBER AND THE DISTRIBUTION BOX SHALL BE INSULATED. (SEE NOTE 8 & FORCE MAIN INSULATION DETAIL)

5. LEVEL CONTROLS-SEALED FLOAT TYPE MECHANICAL SWITCHES SHALL BE SUPPLIED TO CONTROL THE PUMP LEVEL AND ALARM SIGNAL. THREE FLOAT SWITCHES SHALL BE USED TO CONTROL THE PUMP LEVEL: ONE EACH FOR PUMP "ON" AND FOR PUMP "OFF" AND A THIRD SWITCH SHALL BE PROVIDED WITH A POWER SOURCE SEPARATE FROM THE PUMP POWER AND SHALL BE FOR THE ALARM UNIT. THE ALARM SHALL BE LOCATED IN THE BUILDING SERVED BY THE SYSTEM. FLOAT SWITCHES SHALL BE OF THE MECHANICAL TUBE TYPE SEALED IN POLYURETHANE FLOATS. THE FLOAT LEVEL CONTROLS SHALL BE SET TO OPERATE AT THE ELEVATIONS INDICATED ON THE PLANS. FLOATS AND ALARMS SHALL BE WIRED TO THE CONTROL BOX IN THE DWELLING WITHOUT THE USE OF A JUNCTION BOX.

6. CONTROL PANEL

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

2) AUTOMATIC PUMP ON 3) MANUAL PUMP ON

THE CONTROL PANEL SHALL BE HOUSED IN A NEMA-1 CONTROL BOX FOR 220V, SINGLE PHASE OPERATION. PANEL SHALL BE INSTALLED IN A SUITABLE LOCATION INSIDE THE BUILDING. 7. <u>Alarm</u>-

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

8. <u>PIPE INSULATION</u>-FORCE MAIN SHALL BE COVERED WITH 2-INCH, THICK RIDGED POLYSTYRENE INSULATION.

9. <u>EFFLUENT TEE FILTER</u>— EFFLUENT TEE FILTER SHALL BE ZABEL A—1800 OR EQUAL DEP APPROVED FILTER.









4070	DATE: 1/4/2021		SEWA	JOB NO. 5707			
STE	DESIGN BY: CLM			DRAWING NO.	)52		
		NO.	DATE	DESCRIPTION	BY		
	DRAWN BY:	1	01/21/2021	PER N.A.B.O.H. REVIEW COMMENTS	CLM	SHEET NO.	
	CLM						
	CHECKED BY:						
	WJM					OF	2