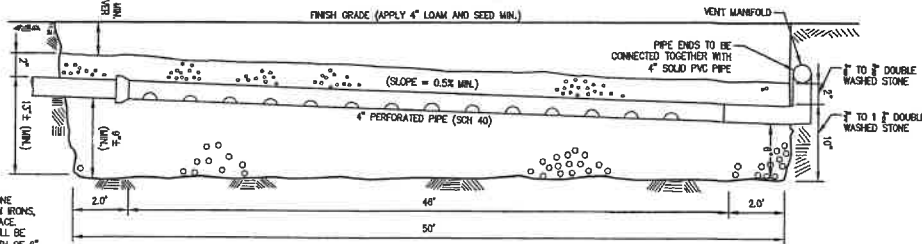


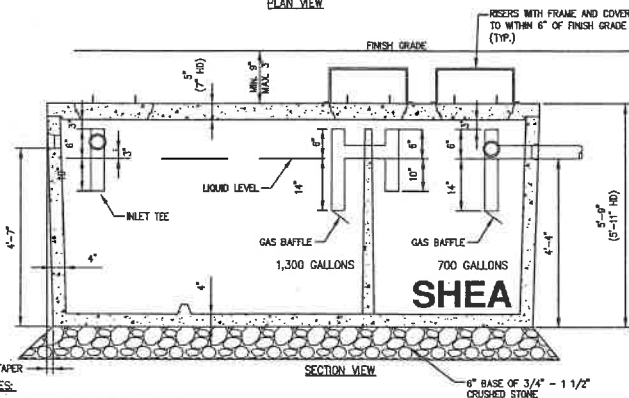
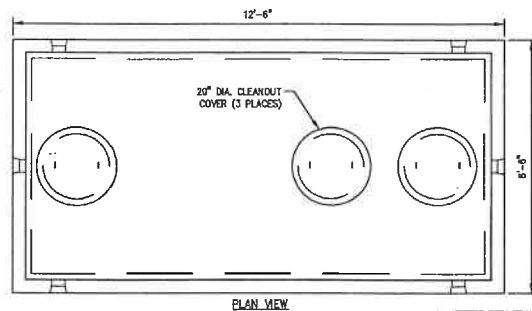
TYPICAL CROSS SECTION



TYPICAL LONGITUDINAL SECTION
LEACH BED (24' X 50')
(NOT TO SCALE)

NOTES:

- DOUBLE WASHED STONE SHALL BE FREE FROM IRONS, FINES & DUST IN PLACE.
- BOTTOM OF BED SHALL BE SCARIFIED TO A DEPTH OF 6" BEFORE STONE IS PLACED.
- ALL PIPING TO BE 4" PVC (SCH 40).

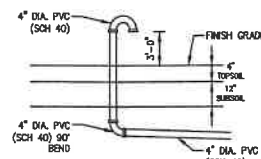
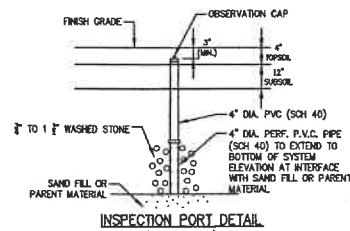


NOTES:

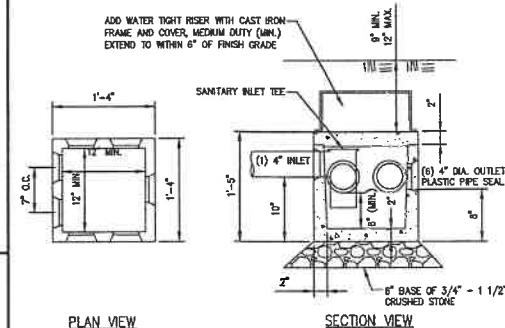
- CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
- DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS. FOR SEPTIC TANKS.
- ALL REINFORCEMENT PER ASTM C1227.
- TIES AND GAS Baffle SOLD SEPARATELY.
- TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
- ALSO AVAILABLE IN H-20 LOADING.

2,000 GALLON (MONOLITHIC) SEPTIC TANK
(NOT TO SCALE)

| ITEM NO. | WEIGHT |
|-------------|---------|
| TK M20002C | 18,150# |
| TK M20002CH | 21,150# |



VENT DETAIL
(NOT TO SCALE)



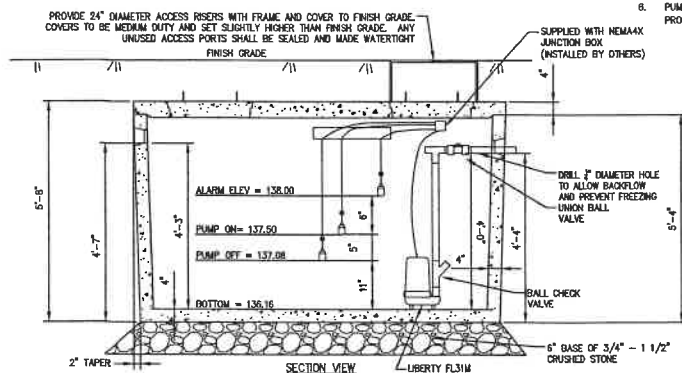
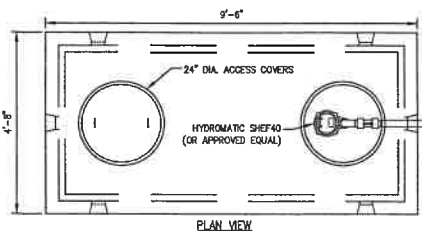
| SHEA CONCRETE ITEM NO. | Weight |
|------------------------|--------|
| B-60B W/COVER | 228# |
| B-60BC COVER ONLY | 45# |

(OR APPROVED EQUAL)

NOTES:

- CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS. TITLE 5 REGS. FOR DISTRIBUTION BOXES.
- DESIGN CONFORMS WITH 310 CMR 15.00, DEP

6-OUTLET DISTRIBUTION BOX
(NOT TO SCALE)



NOTES:

- CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
- CONSTRUCTION OF PUMP CHAMBER CONFORMS WITH DEP TITLE 5 REGS. 310 CMR, SECTION 15.226.
- ALL REINFORCEMENT PER ASTM C1227.
- JOINT SEALED WITH BUTYL RESIN.
- USE SHEA MODEL #M1000 OR APPROVED EQUAL.

EMERGENCY STORAGE ABOVE ALARM FLOAT = 860 GALLONS
1,000 GALLON MONOLITHIC PUMP CHAMBER
(NOT TO SCALE)

| SHEA CONCRETE ITEM NO. (OR EQUAL) | WEIGHT |
|-----------------------------------|---------|
| M1000 | 10,800# |

PUMP NOTES:

- CONTROL PANEL SHALL BE EQUIPPED WITH A RUNNING TIME METER AND EVENT COUNTER.
- TO RECORD ACTUAL PUMP RUN TIME, THE RUNNING TIME METER SHALL BE A MINIMUM OF 3 DIGITS AND BE WIRED TO THE PUMP POWER CIRCUIT, NOT THE PUMP CONTROL CIRCUIT.
- THE HIGH WATER ALARM SHALL BE BOTH VISUAL AND AUDIBLE. THE CONTROL BOX SHALL BE WATERPROOF AND LOCKABLE, BE HEAVY DUTY (MINIMUM) AND INCLUDE THE FOLLOWING:
 - HAND-OFF-AUTO SWITCH
 - MAGNETIC CONTACTOR
 - CIRCUIT BREAKER
 - "PUMP ON" PILOT LIGHT
 - RUNNING TIME METER
 - FLASHING ALARM LIGHT
 - AUDIBLE ALARM BUZZER
 - TEST AND SILENCE SWITCHES
 - DEAD FRONT INTERIOR SHIELD
 - EVENT COUNTER
- PUMP SHALL BE WIRED TO OPERATE IN THE FOLLOWING SEQUENCE:
 - PUMP OFF
 - PUMP ON
 - ALARM ON
- PUMP CONTROLS SHALL INCLUDE INTEGRATED OVERLOAD PROTECTION AND BE CAPABLE OF 10 STARTS PER HOUR.

PUMP CALCULATIONS:

BACKFLOW CALCULATION:
 $22 \text{ FT} \times [3.14(1/12)^2] \text{ SQFT} = 0.48 \text{ CU FT} = 3.6 \text{ GAL.}$

DOSE CALCULATION:
 DOSE = DAILY FLOW/5 = 660 GAL/6 = 110 GAL
 TOTAL DOSE = (DOSE + BACKFLOW) = 110 + 3.6 = 113.6 GAL (15.2 CT)

DOSE HEIGHT REQ'D:
 $15.2 \text{ CT} / (8'-10" \times 8'-0") = 0.43 \text{ FT (USE 5")}$

ACTUAL DOSE TO SAS:
 $[(8'-10" \times 4'-0" \times 8') \times 7.48 \text{ GAL/CF}] = 3.6 \text{ GAL} = 106.5 \text{ GAL.}$

STATIC HEAD(SH):

- COUPLING-PUMP ON = 146.40' - 137.50' = 10.90'
- COUPLING-PUMP OFF = 146.40' - 137.08' = 11.32'

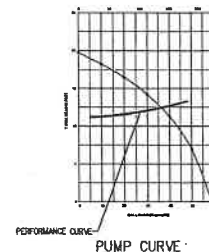
DYNAMIC HEAD (HD):

FORCE MAIN: 2" DIAMETER
 EQUIVALENT LENGTH METHOD:
 90° BEND + 2-45° BENDS + 1-22.5° BEND + 1 CHECK VALVE + 1 GATE VALVE + 1 UNION = 5.5' + (2)2.5 + 1.2' + 1.3' + 1.2' + 4.5' = 30.4'
 TOTAL LENGTH = 22' + 30.4' = 52.4'
 HEAD LOSS IN PIPE @ 37 GPM = 2.39 FT/100 FT
 $HD = 52.4' \times (2.39 \text{ FT}/100\text{FT}) = 1.25'$

PUMP PARAMETERS:

T.O.H. = 12.1' - 12.5' @ 37 GPM

USE LIBERTY FL31M EFFLUENT PUMP OR APPROVED EQUAL



The Morin-Cameron GROUP, INC.
 CIVIL ENGINEERS / ENVIRONMENTAL CONSULTANTS
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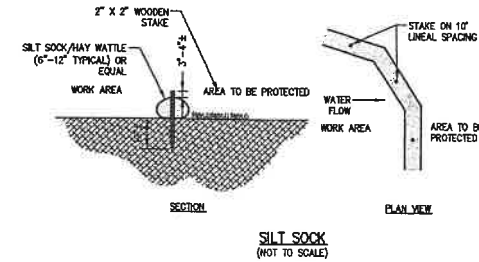




SURVEY BY: JMG / JRG
 DESIGNED BY: JMG / JRG
 CHECKED BY: JMG
 APPROVED BY: JMG
 SCALE: AS NOTED
 DATE: JUNE 30, 2020

| REVISIONS | DATE | BY | DESCRIPTION |
|-----------|----------|-----|---------------------------------------|
| 1 | 8/7/2020 | JMG | ADD MECHANICAL ROOM AND DATE RELEASED |

SITE PLAN OF LAND
 IN
 TOPSFIELD, MASSACHUSETTS
 109 SALEM ROAD
 (ASSESSMENT MAP FOR 2019)
 PREPARED FOR:
 DAWN DAWSON & GREGORY GIBBS

DRAWING NO.
3961-SDP
 SHEET NO.
2 OF 3



| | | | | | | |
|-----------------------------|---|-----------|--|--------------------|--|--|
| DRAWING NO. 3961-SDP | SITE PLAN OF LAND IN TOPSFIELD, MASSACHUSETTS 109 SALEM ROAD (ASSESSOR'S MAP 70, LOT 18) PREPARED FOR DAWN DAWSON & GREGORY GIBBS | REVISIONS | | SURVEY BY: PM / SR |  6/17/2020 |  The Morin-Cameron GROUP, INC. CIVIL ENGINEERS / ENVIRONMENTAL CONSULTANTS LAND SURVEYORS / LAND USE PLANNERS 100 WASHINGTON STREET, SUITE 200 WILMINGTON, MA 01897 P: 978-724-2008 F: 978-724-2001 WWW.MORINCAMERONGROUP.COM |
| SHEET NO. 3 OF 3 | | 1 | ADD WAFSA, ADJUST WETLAND LINE RENSE BUTTER | 8/7/2020 | | |