

LEGEND	
--- 20 ---	EXISTING CONTOUR
x 20.12	EXISTING SPOT GRADE
== W ==	PROPOSED WATER SERVICE (SLEEVED)
G	PROPOSED GAS SERVICE
O.H.W.	OVERHEAD WIRES
⊕	TEST PIT
⊙	BENCHMARK

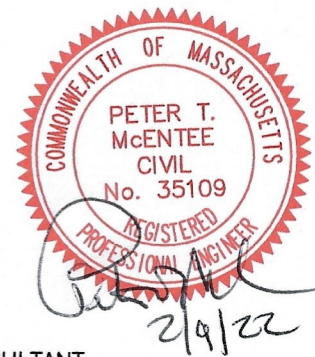


**LOCUS MAP**  
**PARCEL ID: 33.2-6-0**  
 OWNER OF RECORD  
 MOORE, WILLIAM & MARILOU  
 82 CAPTAINS ROW  
 BOURNE, MA 02532

**PROPOSED SEPTIC SYSTEM UPGRADE PLAN**  
**82 CAPTAINS ROW, BOURNE, MA**  
 Prepared for: William Moore, 82 Captains Row, Bourne, MA 02532

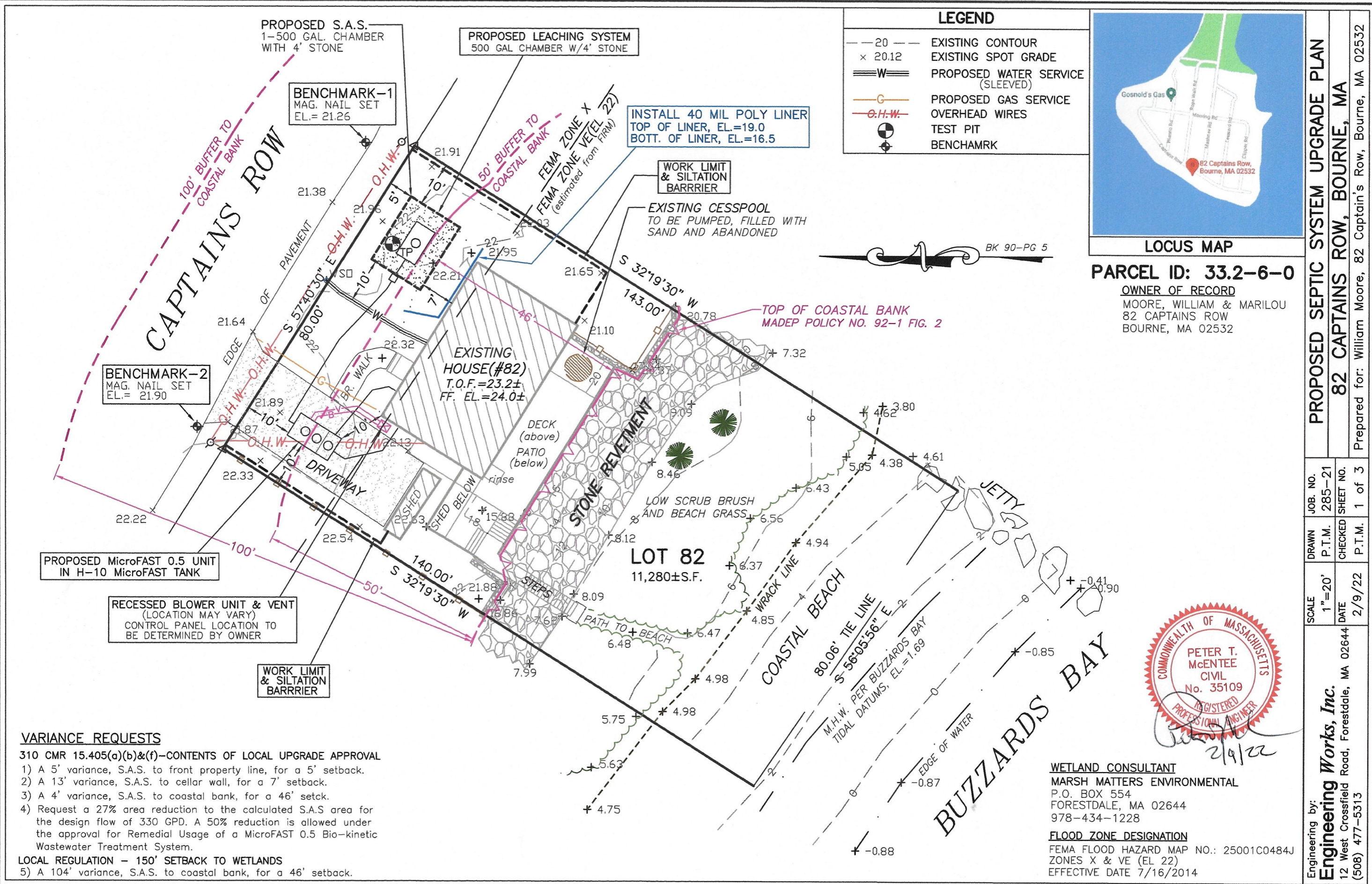
SCALE	1"=20'
DATE	2/9/22
DRAWN	P.T.M. 285-21
CHECKED	P.T.M. 1 of 3
JOB. NO.	285-21
CHECKED SHEET NO.	

Engineering by:  
**Engineering Works, Inc.**  
 12 West Crossfield Road, Forestdale, MA 02644  
 (508) 477-5313

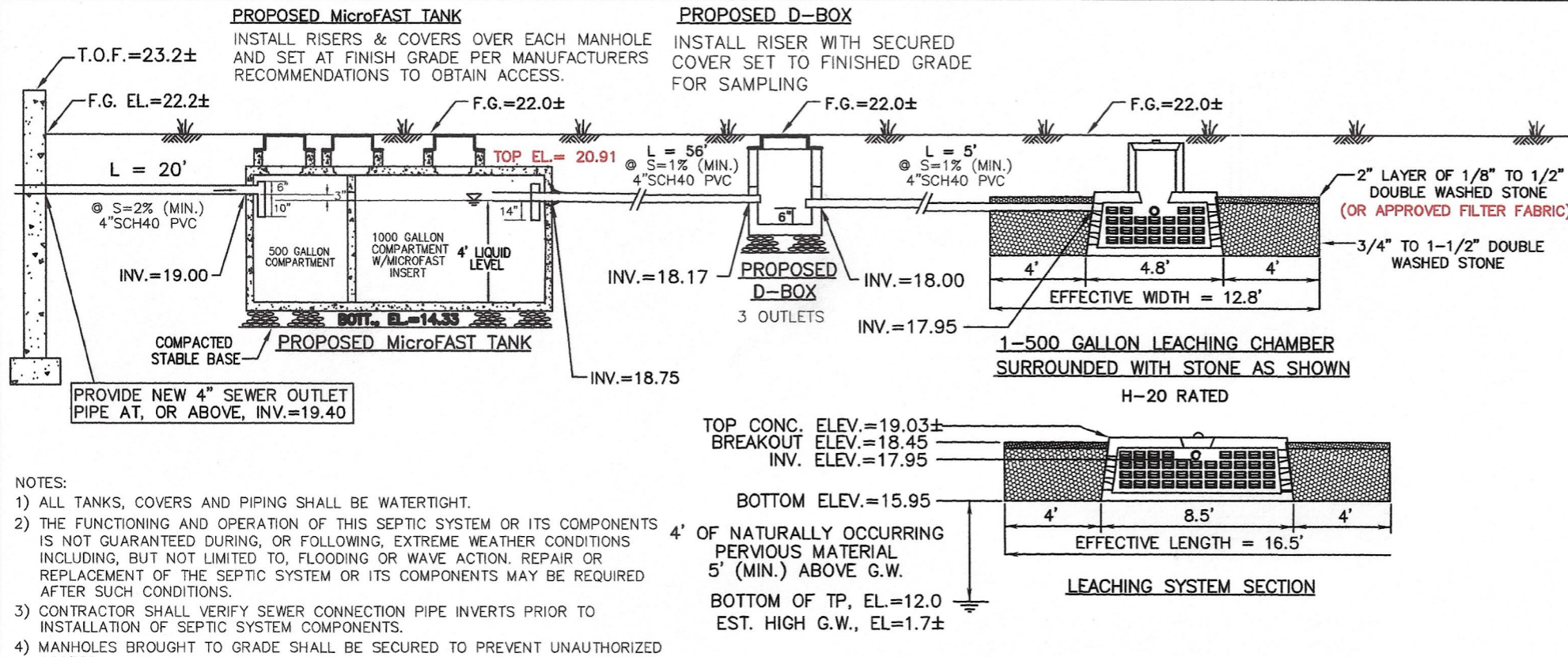


**WETLAND CONSULTANT**  
 MARSH MATTERS ENVIRONMENTAL  
 P.O. BOX 554  
 FORESTDALE, MA 02644  
 978-434-1228

**FLOOD ZONE DESIGNATION**  
 FEMA FLOOD HAZARD MAP NO.: 25001C0484J  
 ZONES X & VE (EL 22)  
 EFFECTIVE DATE 7/16/2014



- VARIANCE REQUESTS**  
 310 CMR 15.405(a)(b)&(f)-CONTENTS OF LOCAL UPGRADE APPROVAL
- 1) A 5' variance, S.A.S. to front property line, for a 5' setback.
  - 2) A 13' variance, S.A.S. to cellar wall, for a 7' setback.
  - 3) A 4' variance, S.A.S. to coastal bank, for a 46' setback.
  - 4) Request a 27% area reduction to the calculated S.A.S. area for the design flow of 330 GPD. A 50% reduction is allowed under the approval for Remedial Usage of a MicroFAST 0.5 Bio-kinetic Wastewater Treatment System.
- LOCAL REGULATION - 150' SETBACK TO WETLANDS**
- 5) A 104' variance, S.A.S. to coastal bank, for a 46' setback.



- NOTES:
- 1) ALL TANKS, COVERS AND PIPING SHALL BE WATERTIGHT.
  - 2) THE FUNCTIONING AND OPERATION OF THIS SEPTIC SYSTEM OR ITS COMPONENTS IS NOT GUARANTEED DURING, OR FOLLOWING, EXTREME WEATHER CONDITIONS INCLUDING, BUT NOT LIMITED TO, FLOODING OR WAVE ACTION. REPAIR OR REPLACEMENT OF THE SEPTIC SYSTEM OR ITS COMPONENTS MAY BE REQUIRED AFTER SUCH CONDITIONS.
  - 3) CONTRACTOR SHALL VERIFY SEWER CONNECTION PIPE INVERTS PRIOR TO INSTALLATION OF SEPTIC SYSTEM COMPONENTS.
  - 4) MANHOLES BROUGHT TO GRADE SHALL BE SECURED TO PREVENT UNAUTHORIZED ACCESS.

### SEPTIC SYSTEM PROFILE

N.T.S.

### SOIL LOG

DATE: JANUARY 19, 2022  
 SOIL EVALUATOR: PETER McENTEE PE, (SE#1542)  
 WITNESS: KAITLYN SHEA (HEALTH AGENT)

Elev.	TP-1	Depth
22.0		0"
	FILL	
21.5	A	6"
	LOAMY SAND 10YR 4/2	
20.6	B	17" PERC 4"/22"
	LOAMY SAND 10YR 5/8	
19.3	C1	32"
	MED. SAND 2.5Y 6/4	
14.2	C2	94"
	MED. SAND 10YR 4/2	
13.8	C3	98"
	MED. SAND 10YR 5/8	
12.0		120"

PERC RATE: <2 MIN./INCH "B" HORIZON  
 NO GROUNDWATER ENCOUNTERED

### DESIGN CRITERIA

NUMBER OF BEDROOMS: 3  
 SOIL TYPE: CLASS I  
 DESIGN PERCOLATION RATE: <2 MIN./IN.  
 DAILY FLOW: 330 GPD  
 DESIGN FLOW: 330 GPD  
 GARBAGE GRINDER: NO  
 SEPTIC PRE TREATMENT TANK: MicroFAST 0.5 UNIT (REMEDIAL APPROVAL)

LEACHING AREA REQUIRED:  $\frac{330 \text{ GPD}}{0.74 \text{ GPD/SF}} = 446 \text{ SF}$

WITH REMEDIAL APPROVAL REDUCTION OF 50% = 223 SF  
 DISTRIBUTION BOX: 1 INLET, 3 OUTLETS H-10 RATING

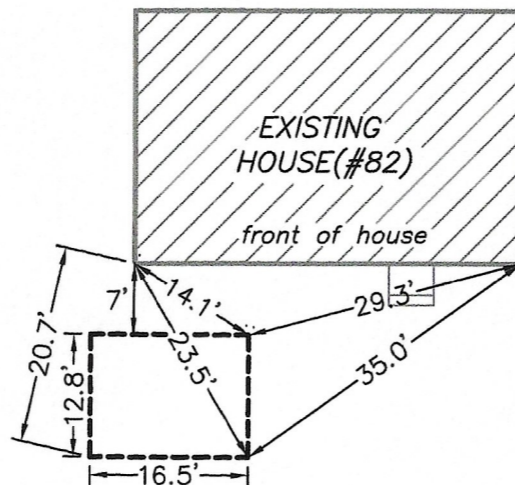
**USE 1-500 GALLON LEACHING CHAMBERS IN SERIES SURROUNDED BY DOUBLE WASHED STONE ON ALL SIDES**

SIDEWALL AREA:  $2(12.8' + 16.5') \times 2 = 117.2 \text{ SF}$

BOTTOM AREA:  $12.8' \times 16.5' = 212.2 \text{ SF}$

TOTAL AREA: 328.4 SF

328.4 SF REPRESENTS A 27% AREA REDUCTION (50% ALLOWED)



PROPOSED S.A.S.  
 1-500 GAL. CHAMBER WITH 4' STONE

### SEPTIC LAYOUT

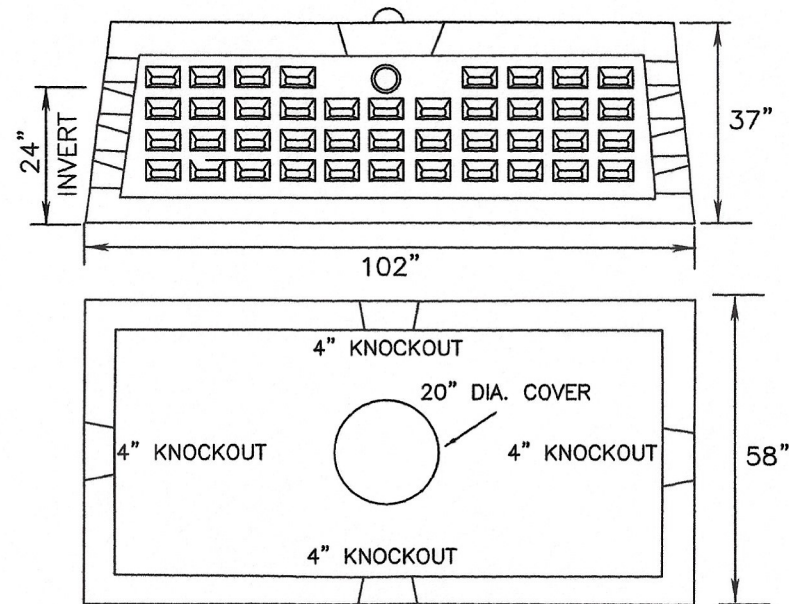
### GENERAL NOTES:

1. ALL CHANGES TO THIS PLAN MUST BE APPROVED BY THE LOCAL BOARD OF HEALTH AND THE DESIGN ENGINEER.
2. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE STATE ENVIRONMENTAL CODE, TITLE V, AND ANY APPLICABLE LOCAL RULES AND REGULATIONS EXCEPT AS REQUESTED ON SHEET 1.
3. THE SEWAGE DISPOSAL SYSTEM SHALL NOT BE BACKFILLED PRIOR TO INSPECTION AND APPROVAL BY THE BOARD OF HEALTH AND THE DESIGN ENGINEER.
4. ANY CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFERING FROM THOSE SHOWN HEREON SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.
5. ALL ELEVATIONS BASED ON AN NAVD88.
6. THE DESIGN ENGINEER IS NOT RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR OR OWNER TO NOTIFY THE LOCAL BOARD OF HEALTH FOR PROPER INSPECTIONS DURING CONSTRUCTION.
7. WATER SUPPLY PROVIDED BY TOWN WATER SERVICE.
8. THERE ARE NO PRIVATE WELLS WITHIN 150' OF THE PROPOSED S.A.S.
9. ALL AREAS CLEARED FOR CONSTRUCTION SHALL BE RESTORED AS AGREED UPON BY OWNER AND CONTRACTOR OR AS OTHERWISE DIRECTED BY THE APPROVING AUTHORITIES.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, PRIOR TO BEGINNING CONSTRUCTION.
11. WHERE REQUIRED, CONTRACTOR SHALL REMOVE ALL UNSUITABLE SOILS IN THE AREA BENEATH THE S.A.S. AND REPLACE WITH CLEAN SAND AS SPECIFIED IN 310 CMR 255(3).
12. AREAS REQUIRING STRIPOUT OF UNSUITABLE MATERIALS SHALL BE INSPECTED BY DESIGN ENGINEER PRIOR TO BACKFILL.

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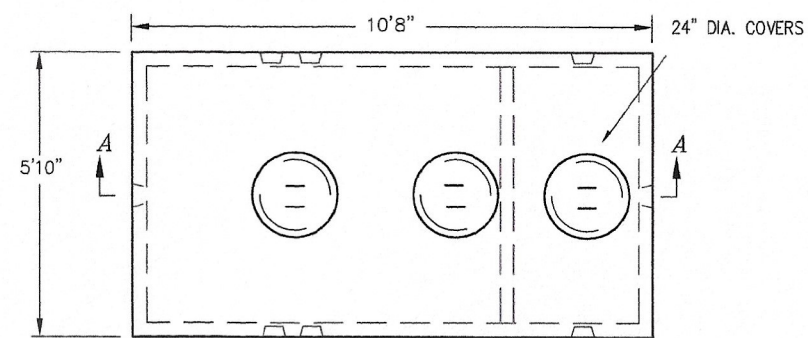
JOB NO. 285-21  
 DRAWN P.T.M.  
 SCALE N.T.S.  
 CHECKED P.T.M.  
 DATE 2/9/22  
 SHEET NO. 2 of 3

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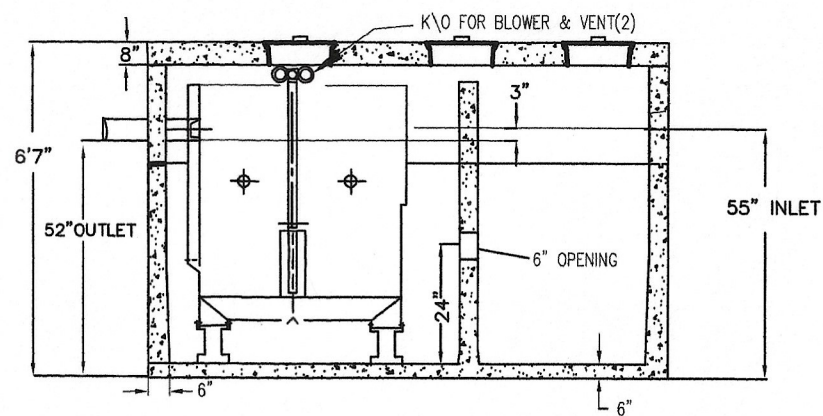


500 GALLON CAPACITY, H-20 LOADING CHAMBERS

N.T.S.



PLAN VIEW



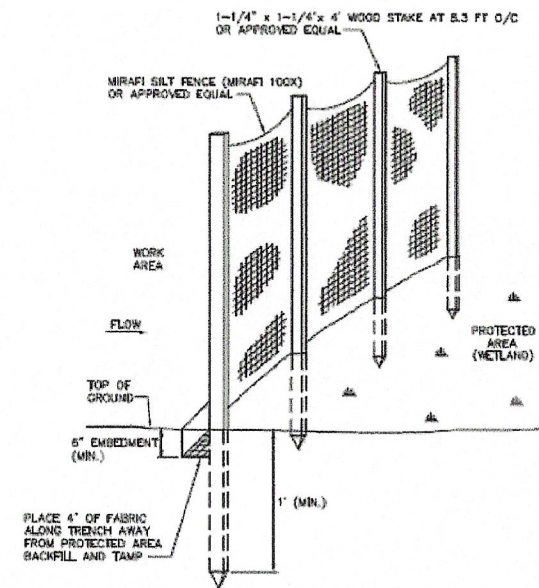
CROSS SECTION A-A

WEIGHT 19,504 LBS

**SPECIFICATIONS**

- 1.) CONCRETE STRENGTH F'C 5,000 PSI @ 28 DAYS. DENSITY 150 PCF.
- 2.) CEMENT, PORTLAND TYPE I OR III. ASTM C150-81.
- 3.) ADMIXTURES, AIR & PLASTICIZERS @ ASTM C233-82.
- 4.) REINFORCING ASTM A615 FOR WIRE FABRIC, GRADE 60 BAR.
- 5.) DESIGN LOADING AASHTO HS20-44.
- 6.) CONSTRUCTION JOINTS SEALED WITH BUTYL RUBBER.

**MicroFAST H-20 TANK**



**SILTATION FENCE DETAIL**

**BUOYANCY CALCULATIONS**

(NOT REQUIRED)

TANKS ARE SET ABOVE WATER TABLE.

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