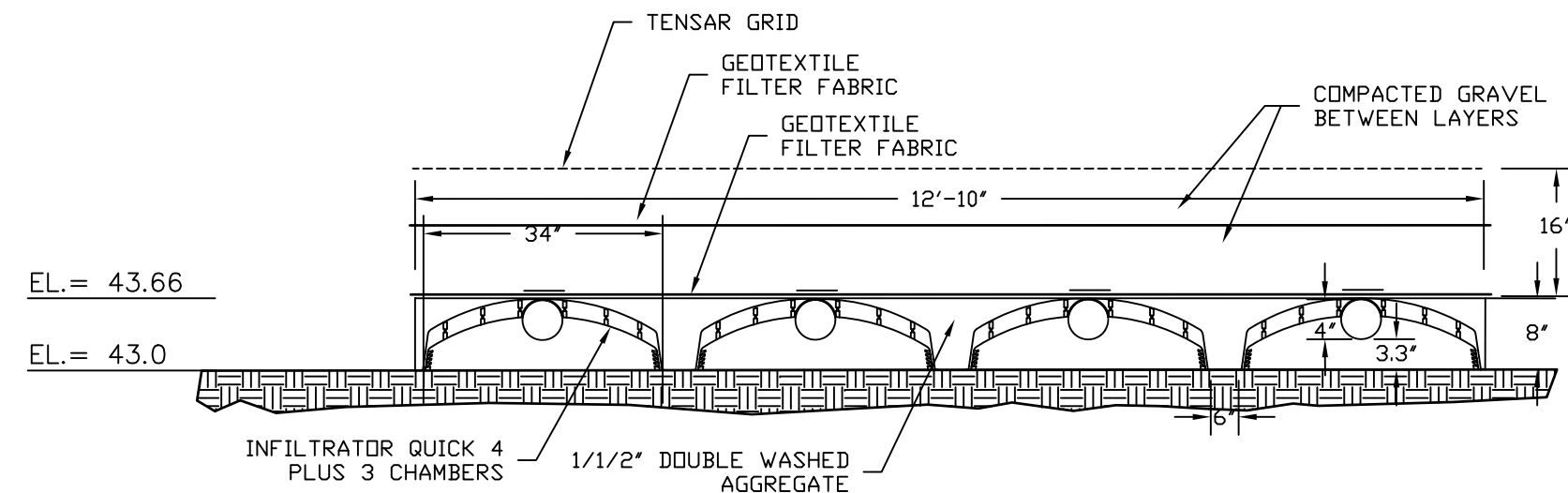
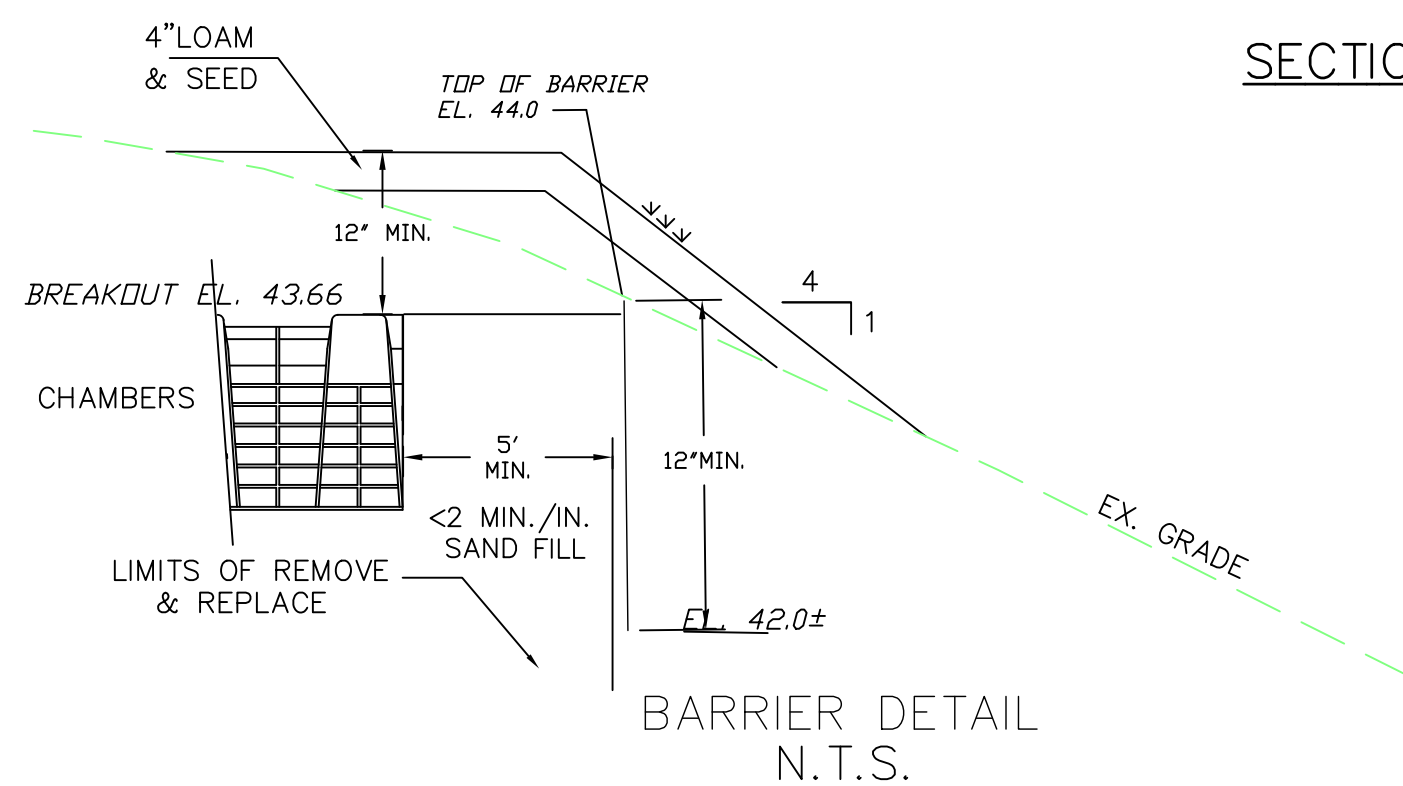


SEPTIC SYSTEM PROFILE



SECTION THRU LEACHING (H-20)



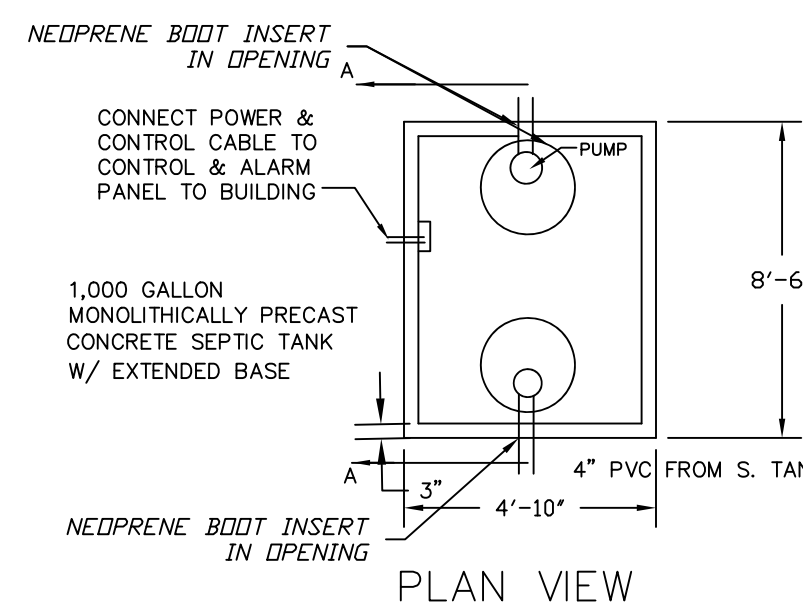
BARRIER DETAIL N.T.S.

BUOYANCY CALCULATIONS

DETERMINE Weight of Tank
 Walls = $2(0.25 \times 5)(4.83 + 8.0)150 \text{ lbs/c.f.} = 32,075 \text{ c.f. (150 lbs/c.f.)} = 4,811.25 \text{ lbs.}$
 Top & Bottom Slab = $(4.83(8.5)0.5) 2 (150 \text{ lbs/c.f.}) = 27,096.3 \text{ c.f. (150 lbs/c.f.)} = 6,158.25 \text{ lbs.}$
 TOTAL WEIGHT = 10,969.5 lbs.

BUOYANCY FORCE
 Depth = $38.1 - 35.15 = 2.95'$
 Force = $4.83(8.5)2.95(62.4 \text{ lbs/c.f.}) = 7,557.4 \text{ lbs.}$

FACTOR OF SAFETY
 F.S. = WEIGHT / BUOYANCY = $10,969.5 / 7,557.4 = 1.45 \text{ ok}$



PLAN VIEW

PUMP STATION

NOTES:

- ALARM & POWER SUPPLY CABLES SHALL BE CONNECTED TO SEPERATE POWER SUPPLY CIRCUITS
- ALARM PANEL SHALL BE EQUIPPED WITH BOTH VISIBLE AND AUDIBLE ALARMS WITH INDICATOR LIGHT WHICH ILLUMINATES TO SHOW WHEN PUMP IS OPERATING
- ALARM PANEL SHALL BE EQUIPPED WITH HOUR METER
- OUTSIDE OF TANK AND ALL JOINTS AND CONNECTIONS SHALL BE MADE WATER TIGHT

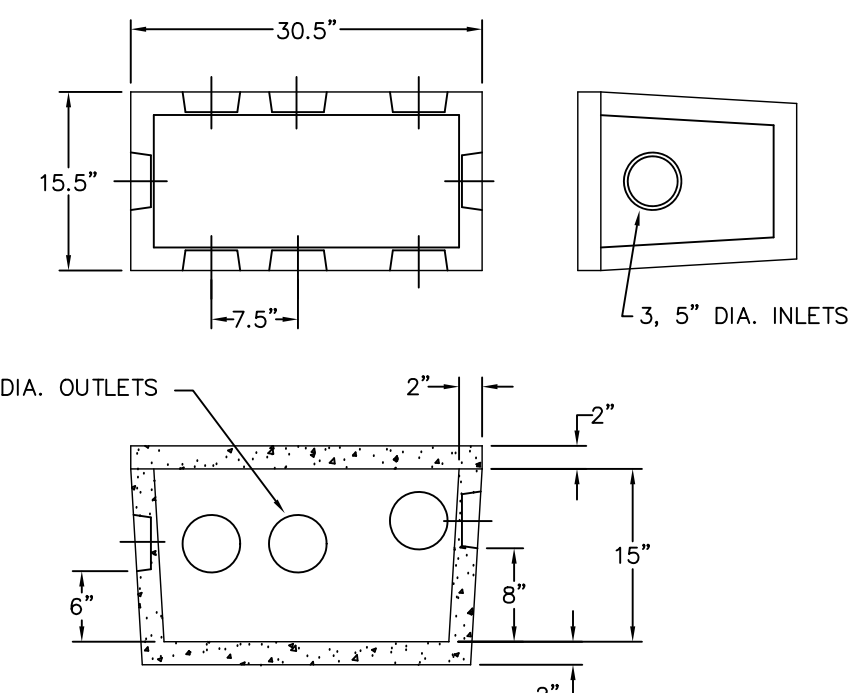
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PUMP CALCULATIONS

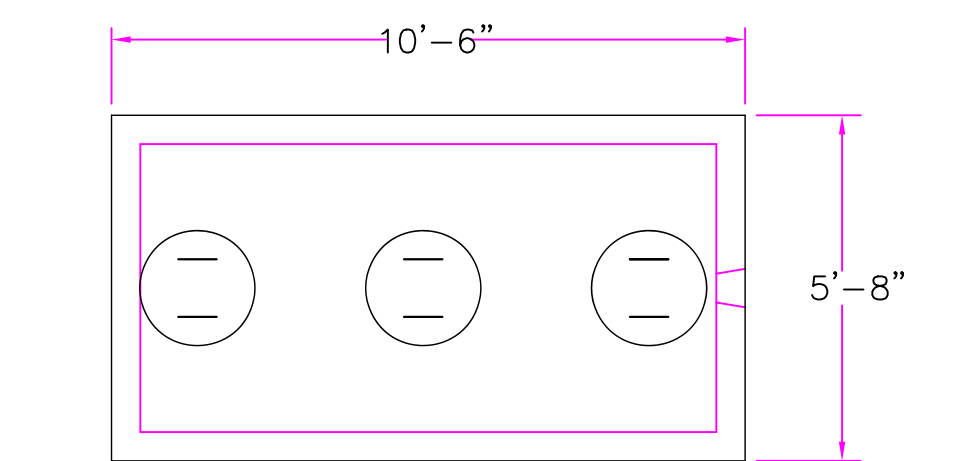
FLDW RATE = 35 gpm (0.078 cfs)
 Velocity in Force Main = 3.58 ft/sec
 Velocity Head = 0.20'
 Friction Loss Rate in Main = 0.09' per linear foot of main
 Length of Main = 118'
 Fittings = 2-90° Bends
 Gate Valve
 Check Valve

TOTAL LOSSES
 FRICTION LOSS = 10.62'
 MINOR LOSSES = 1.0'
 TOTAL LIFT = 43.52 - 36.15 = 7.37'
 TOTAL Head = 18.99'

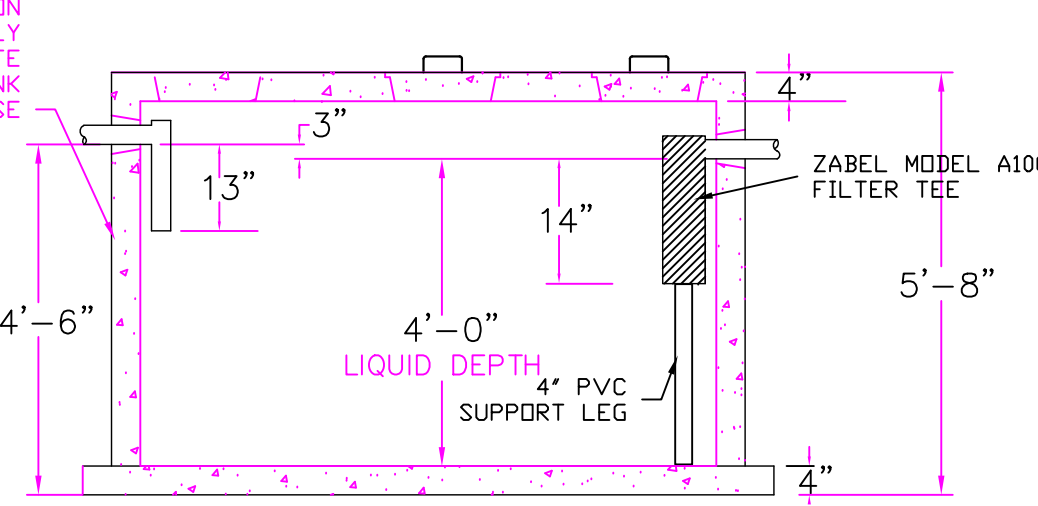
PUMP SHOULD DELIVER 35 GPM AT 20' USE GOULD MODEL 3885 WE0311H 0.3 HP EFFLUENT PUMP OR APPROVED EQUIVALENT



DISTRIBUTION BOX



1500 GAL. SEPTIC TANK



NOTES CONTINUED:

- SEPTIC SYSTEM OWNER SHALL HAVE TANK INSPECTED AT LEAST ONCE A YEAR & PUMPED AS DEEMED NECESSARY BY THE INSPECTOR NOT LESS THAN ONCE EVERY THREE YEARS.
- UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE SCHEDULE 40 PVC AND SHALL BE COVERED BY A MAGNETIC TAPE TO ASSIST WITH LOCATING THE PIPE.
- IN ACCORDANCE WITH THE GENERAL USE PERMIT, WITHIN THE LIMITS OF THE SYSTEM ONLY, 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:
 - NO MATERIAL IS LARGER THAN 2 INCHES.
 - NOT MORE THAN 45% IS RETAINED ON THE #4SIEVE;
 - 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%
- A SIEVE ANALYSIS OF THE MATERIAL SHALL BE PERFORMED TO DETERMINE THAT IT MEETS THE GRADATION REQUIREMENTS AS NOTED ABOVE.
- REMOVE AND REPLACE SHALL EXTEND TO A DEPTH OF 7' OR UNTIL B HORIZON IS ENCOUNTERED.

EXCAVATION QUANTITY= 12 CU. YDS.
 REPLACEMENT QUANTITY= 8' CU. YDS.
 * INCLUDES 20% COMPACTION ALLOWANCE
- UNLESS OTHERWISE NOTED, THERE ARE NO KNOWN WELLS WITHIN 500' OF THE PROPOSED LEACHING FACILITIES.
- ALL SYSTEM COMPONENTS SHALL BE COVERED WITH A MAGNETIC TAPE TO HELP IDENTIFY LOCATION AFTER INSTALLATION.
- DESIGN ENGINEER SHALL BE CONTACTED TO INSPECT THE CONSTRUCTION PROGRESS OF THE SYSTEM ;
 - WHEN ALL MATERIAL HAS BEEN REMOVED TO INSPECT THE MATERIAL AT THE BOTTOM OF THE HOLE;
 - WHEN THE SYSTEM COMPONENTS HAVE BEEN INSTALLED PRIOR TO BACKFILLING; AND
 - WHEN THE SYSTEM FINAL GRADING HAS BEEN COMPLETED.
- THE SITE IS NOT LOCATED IN A FEMA FLOOD HAZARD AREA.
- THE SITE IS NOT LOCATED IN A ZONE II OF A PUBLIC WATER SUPPLY WELL
- 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.
- INFILTRATOR QUICK4 PLUS 3 CHAMBERS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL USE PERMIT ISSUED BY DEP REV JUNE 12,2015.

CONVENTIONAL SYSTEM
 SIZE REQUIRED = 594.6 SQ. FT.
 USE 3'-24" x 24" TRENCHES 35' LONG
 AREA = 6 x 35 x 3 = 630 SQ. FT.
 = 14' x 35'

- ELEVATIONS REFER TO NGVD
- BENCH MARK CATCH BASIN RIM EL. 41.90
- ESTIMATED DAILY FLOW
 4 BEDROOMS X 110 GALLONS PER BEDROOM PER DAY = 440 GALLONS PER DAY.
- SEPTIC TANK REQ'D CAPACITY = 1500 GALLONS
- LEACHING AREA REQUIREMENTS; CLASS I SOIL PERC RATE < 5 MIN/IN
 APPLICATION RATE = 0.74 G/SF
 USE INFILTRATOR CHAMBER PRO ARC 36 STANDARD AREA = 4.73 S.F. / L.F.
 AREA REQ. = 440.0 ÷ 0.74 GAL/S.F. = 594.6 S.F.
 LENGTH REQ. = 594.6 S.F. ÷ 4.73 S.F./L.F. = 125.7 L.F.
- LEACHING AREA PROVIDED
 USE CHAMBER BED 32'L X 12'-10" W
 4 ROWS OF CHAMBERS 32'L = 128'
 EQUIV. AREA PROV. = 128 x 4.73 = 605.4 S.F.
 CAP. PROV. = 605.4 X 0.74 G/S.F. = 448.0 G.P.D.
- HEAVY GRADING MACHINERY SHALL NOT BE PERMITTED TO PASS OVER LEACHING AREAS.
- ALL CONSTRUCTION TO CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF ENV. PROTECTION SANITARY CODE, TITLE 5, AND THE TOWN OF HINGHAM BOARD OF HEALTH.
- PERCOLATION DATA

	PERC RATE	DEPTH OF TEST	DATE
10-1.	< 2 MIN/IN	16"	01/17/19
10-2.	< 2 MIN/IN	17"	06/17/19
10-3.	3 MIN/IN	17"	01/17/19
- THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE GRINDER. REMOVAL OF EXISTING GARBAGE GRINDER. SHALL BE VERIFIED PRIOR TO CERTIFICATE OF COMPLETION.
- THE FIRST TWO FEET OF EACH LINE EXITING FROM THE "D-BOX" SHALL BE LEVEL.
- DESIGN ENGINEER TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO REQUIRED INSPECTIONS.

OWNER & APPLICANT

RYAN P. SILLERY
 CITY POINT CAPITAL
 300 A STREET
 BOSTON , MA 02210
 ASSESS PARCEL No. 64-0-14
 DEED REFERENCE BK 48257, PG 341

APPROVED BY THE PLANNING BOARD

DATE APPROVED:

NO.	DATE	DESCRIPTION	BY
1	04/21/21	Minor Revs.	GDJ
2	07/08/21	Response to Comments	GDJ
3	08/02/21	Labeled Property line	GDJ

SEPTIC DESIGN

SITE PLAN PROPOSED DWELLING 220 Summer Street HINGHAM, MA 02043	SHEET NUMBER 7 OF 8
	SCALE: 1"=20'
	DATE: 3/15/21
JAMES ENGINEERING, Inc. 125 GREAT ROCK ROAD HANOVER, MASS. 02339 TEL:1-(781) 878-1795	EAST-SEPTIC.dwg
	DRAWN: NLJ/ACAD
	CHECKED: G.D.J.

