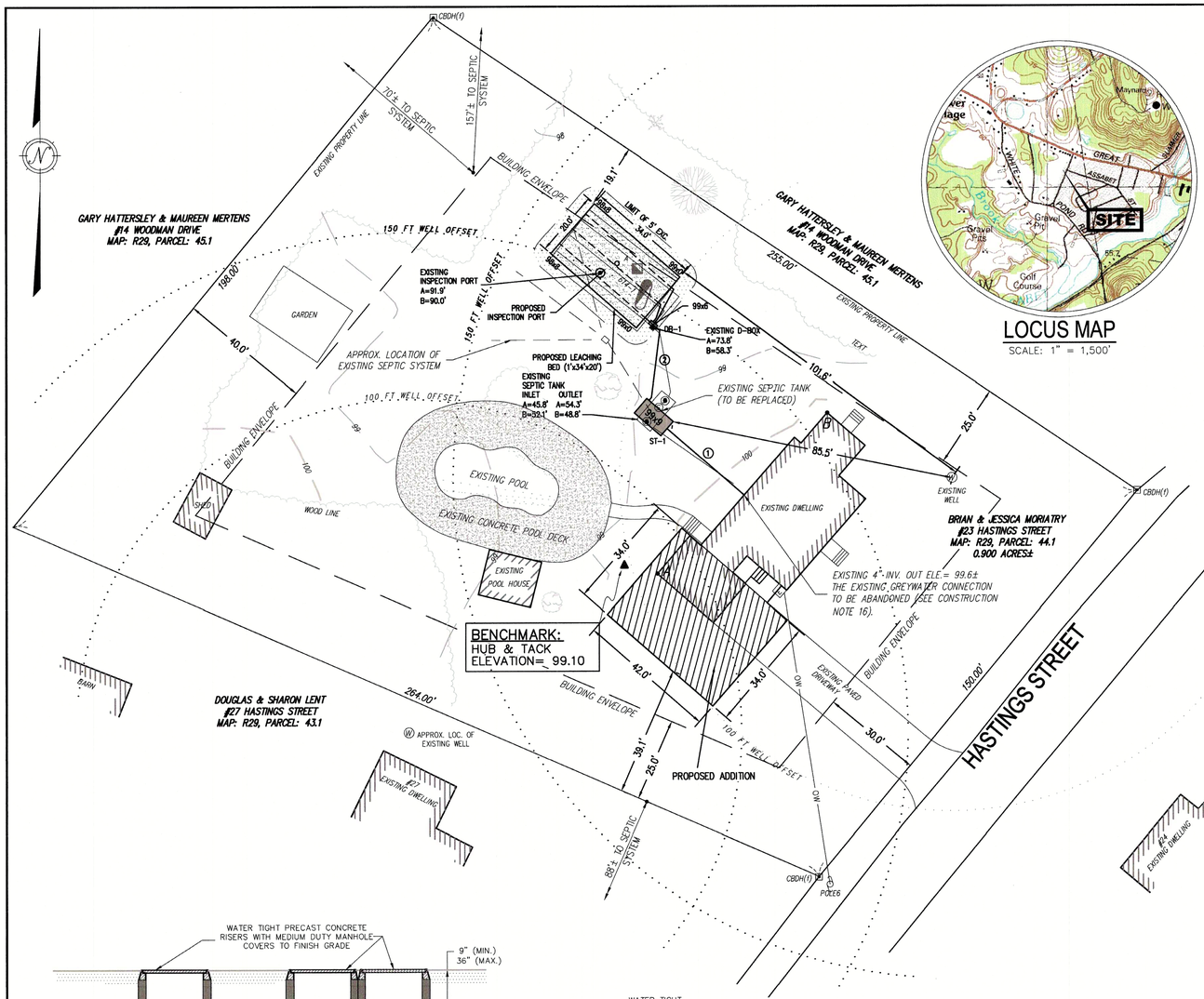


LOCUS MAP

SCALE: 1" = 1,500'

SCHEDULE OF ELEVATIONS:

SYSTEM ELEVATIONS:	AS-BUILT ELEVATIONS:	PIPE DATA:
T.O.F. ELEV.= 102.3± INV. ELE. AT BUILDING= 99.60	INV. ELE. @ BLDG= 99.61	PIPE 1 GRAVITY SEWER 4" PVC (SCH. 40) L= 31' S=0.03 L= 29.5' S=0.02 (AS-BUILT)
SEPTIC TANK (ST-1) – H-10 4" INV. (IN)= 98.75 4" INV. (OUT)= 98.50	SEPTIC TANK (ST-1) 4" INV. (IN)= 99.01 4" INV. (OUT)= 98.84	
D-BOX (DB-1) 4" INV. (IN)= 98.04 (3)4" INV. (OUT)= 97.87	D-BOX (DB-1) 4" INV. (IN)= 98.39 (3)4" INV. (OUT)= 98.21	PIPE 2 GRAVITY SEWER 4" PVC (SCH. 40) L= 2.3' S=0.02 L= 20.5' S=0.02 (AS-BUILT)
PRIMARY BED ELEVATIONS:		
ELEV. OF BOT. OF BED: 96.60 (96.93 ASB)	ELE. INV. BEG DIST. LINES: 97.77 (98.12 ASB)	ELE. INV. END DIST. LINES: 97.60 (97.93 ASB)

SOIL TEST DATA

NAME OF SOIL EVALUATOR:
DUCHARME & DILLIS, CIVIL DESIGN GROUP, INC.
LAWRENCE J. DUCHARME, P.L.S. (SE 632)

NAME OF APPROVING AUTHORITY:
STOW BOARD OF HEALTH
JACK WALLACE, R.S. (AGENT)

PERCOLATION TEST:

NO.	DATE:	SURFACE ELEVATION	DEPTH FROM SURFACE:	PERC RATE:
PT A	6/11/14	98.5	18–30"	<2 MPI

TEST HOLE NO. TH 614–1 — DEPTH OF GROUNDWATER: >108
DATE OF TEST: 6/11/14 — DEPTH OF ESHGW: 72"
SURFACE ELEV.: 98.5 — ELEVATION OF ESHGW: 92.5

DEPTH: (IN.)	SOIL MATRIX HOR.	COLOR:	REDOX FEATURES: DEPTH/COLOR/%	SOIL TEXTURE:
0–14"	Ap	10YR 3/2	–	SL
14–36"	Bw	10YR 5/6	–	SND
36–108"	C	2.5Y 5/4	72" 10YR 5/8	SND

GENERAL NOTES:

1. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON–THE–GROUND SURVEY PERFORMED BY DUCHARME & DILLIS CIVIL DESIGN GROUP, INC. ELEVATIONS REFER TO AN ASSUMED DATUM (SEE BENCH MARK LOCATED ON PLOT PLAN).
2. PROPERTY LINE AND LOCATION OF EXISTING SITE FEATURES ARE THE RESULT OF AN ON–THE–GROUND SURVEY BY DUCHARME & DILLIS CIVIL DESIGN GROUP, INC.
3. PROPERTY LINES SHALL BE DETERMINED PRIOR TO CONSTRUCTION OR INSTALLATION OF ANY OF THE PROPOSED IMPROVEMENTS HEREON.
4. PERCOLATION TESTS PERFORMED IN ACCORDANCE WITH 310 CMR (TITLE 5) REGULATIONS 15.104 AND 15.105.
5. ANY DEVIATIONS FROM THE DESIGN PLAN MUST BE APPROVED IN WRITING BY DUCHARME & DILLIS CIVIL DESIGN GROUP, INC.
6. NO PERMANENT STRUCTURES MAY BE CONSTRUCTED OVER THE RESERVE LEACHING AREA.
7. 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.
8. 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.
9. THERE ARE NO POTABLE DRINKING WATER WELLS WITHIN 150 FEET OF THE PROPOSED SEWAGE DISPOSAL SYSTEM UNLESS OTHERWISE NOTED.
10. THIS DESIGN DOES NOT ACCOMMODATE A GARBAGE DISPOSAL.
11. 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.
12. EXISTING UTILITIES 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 UTILITIES 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.
2. BACKFILL OVER THE SOIL ABSORPTION SYSTEM, SEPTIC TANK AND DISTRIBUTION BOX SHALL BE A MINIMUM OF 9 INCHES EXCLUDING TOPSOIL, PLACED IN LIFTS AND SUFFICIENTLY COMPACTED TO PREVENT DEPRESSIONS DUE TO SETTLING. BACKFILL OVER THE SOIL ABSORPTION SYSTEM SHALL BE FREE OF STONES AND BOULDERS GREATER THAN 6 INCHES IN SIZE.
3. THE BUILDING SEWER SHALL BE LAID ON A COMPACTED FIRM BASE.
4. ALL PIPING SHALL BE MINIMUM OF SCHEDULE 40 UNLESS OTHERWISE NOTED.
5. ALL PIPE JOINTS AND CONNECTIONS TO SYSTEM COMPONENTS SHALL BE MECHANICALLY SOUND, WATER TIGHT AND PROTECTED AGAINST DAMAGE BY ROOTS. ALL JOINTS TO BE SOLVENT WELDED.
6. ALL BUILDING SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STATE PLUMBING CODE 248 CMR 10.00.
7. OUTLET DISTRIBUTION LINES FROM THE D–BOX SHALL BE LEVEL FOR A MINIMUM OF 2 FEET OF THEIR LENGTH.
8. 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%
9. EFFLUENT DISTRIBUTION LINES SHALL HAVE A SLOPE OF 0.5%.
10. 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).
11. THE A/B SOIL HORIZON SHALL BE REMOVED 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 C SOIL HORIZON AND REPLACED WITH FILL SPECIFIED IN CONSTRUCTION NOTE 10.
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.
13. 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 DEPARTMENT.
14. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
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.
16. EXISTING GREYWATER SEWER SERVING THE WASHING MACHINE AND BASEMENT SINK TO BE EITHER ABANDONED OR TIED INTO THE 4" BUILDING SEWER USING A LIBERTY 700 SERIES PRE–ASSEMBLED SIMPLEX SEWAGE SYSTEM (24"x36") 70 GALLON OR EQUAL16.
17. CONTRACTOR SHALL DETERMINE THE NATURE AND COMPOSITION OF THE EXISTING SEPTIC SYSTEM. STRUCTURES (TANKS, CHAMBERS, CESSPOOLS, ETC.) SHALL BE PUMPED, THEIR BOTTOMS RUPTURED, THEN COMPLETELY BACKFILLED WITH CLEAN ON–SITE OR IMPORTED FILL MATERIAL, OR BE PUMPED AND REMOVED FOR DISPOSAL AT AN APPROVED DISPOSAL SITE. LEACHING FIELDS OR TRENCHES SHALL BE ABANDONED IN PLACE. INSTALLER SHALL NOTIFY THE STOW BOARD OF HEALTH AGENT PRIOR TO ABANDONMENT TO SCHEDULE ANY REQUIRED INSPECTION(S).

VARIANCES REQUESTED:

LOCAL VARIANCES:

PERCOLATION AND DEEP TEST PIT REGULATION:
REQUIRED: TWO PERCOLATION TEST AND TWO DEEP TEST PIT FOR EACH PROPOSED PRIMARY DISPOSAL AREA.
REQUESTED: ONE PERCOLATION TEST AND ONE DEEP TEST PIT WITHIN THE PROPOSED DISPOSAL AREA.

5.2 WELL LOCATION REQUIREMENTS:
REQUIRED: A WELL SHALL BE NO CLOSER THAN 150 FEET TO AN LEACHING FACILITY AND 100 FEET FROM A SEPTIC TANK.
REQUESTED: THE EXISTING WELL IS LOCATED 101 FEET FROM THE PROPOSED LEACHING FACILITY AND 85 FROM THE PROPOSED SEPTIC TANK.

TITLE V VARIANCES:
15.405(h)2: LOCAL UPGRADE APPROVAL – DEPTH TO GROUNDWATER
REQUIRED: FIVE FEET IN SOILS WITH A RECORDED PERCOLATION RATE OF TWO MINUTES OR LESS PER INCH.
REQUESTED: A SEPARATION OF 4 FEET FROM ESTIMATED SEASONAL HIGH GROUNDWATER.

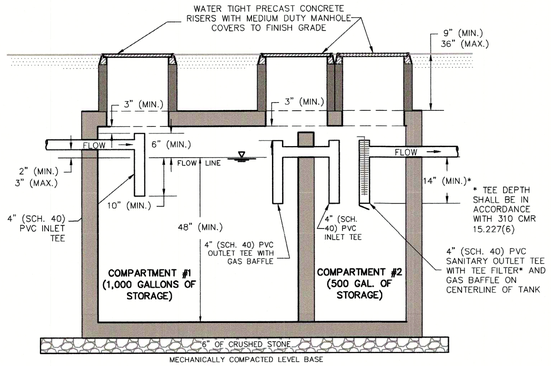
310 CMR 15.405 (1)(k): LOCAL UPGRADE APPROVAL
REQUIRED: TWO DEEP OBSERVATION HOLES WITHIN PROPOSED DISPOSAL AREA.
REQUESTED: TO ALLOW USE OF A SINGLE DEEP OBSERVATION HOLE WITHIN THE PROPOSED DISPOSAL AREA.

CALCULATIONS:

HYDRAULIC LOADING:
THREE (3) BEDROOMS AT 110 GALLONS PER DAY PER BEDROOM = 330 GALLONS PER DAY.

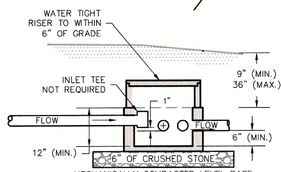
SEPTIC TANK SIZE:
TWO CHAMBER TANK REQUIRED
FIRST CHAMBER: AVERAGE DAILY FLOW = 330 G.P.D. X 200% = 660 GALLONS (MINIMUM STORAGE)
SECOND CHAMBER: AVERAGE DAILY FLOW = 330 G.P.D. X 100% = 330 GALLONS (MINIMUM STORAGE)
SEPTIC TANK PROVIDED = 1500 GALLONS (1000 GAL./500 GAL.)

PRIMARY LEACHING AREA:
DESIGN PERCOLATION RATE = 5 M.P.I. (SOIL CLASS I)
EFFLUENT LOADING RATE = 0.74 GALLONS/S.F.
TOTAL LEACHING AREA REQUIRED = (330 GPD / 0.74 GAL./S.F.)(1.5 PER STOW B.O.H. REG) = 669 S.F.
TOTAL LEACHING AREA PROVIDED = LEACHING BED, 34' LONG X 20' WIDE = 680 S.F.)
TOTAL DESIGN FLOW PROVIDED= (680 S.F X 0.74 GALLON/S.F.) = 503 GALLONS.



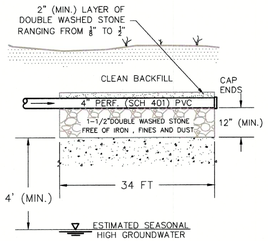
SEPTIC TANK (ST-1)

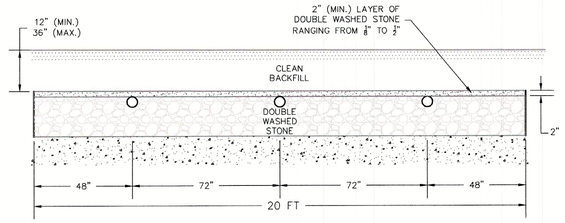
(IN ACCORDANCE WITH 310 CMR 15.223 TO 15.228)
CAPACITY = 1,500 GALLONS
PRECAST REINFORCED CONCRETE – H10 LOADING
MANUFACTURER: LAMARRE PRECAST OR EQUIVALENT



DISTRIBUTION BOX (DB-1) H-10

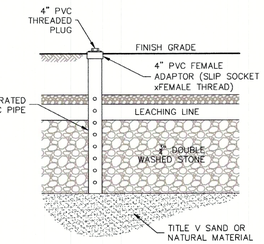
(IN ACCORDANCE WITH 310 CMR 15.232)
SIZE = 5 OUTLET (UNUSED OUTLETS TO BE PLUGGED)
PRECAST REINFORCED CONCRETE
MANUFACTURER: LAMARRE PRECAST OR EQUIVALENT





LEACHING BED CROSS SECTION

(IN ACCORDANCE WITH 310 CMR 15.251)
LEACHING BED SHALL BE LEVEL FOR ENTIRE LENGTH
BED DIMENSIONS – 34' L X 20' W X 12" D



INSPECTION PORT DETAIL

NOT TO SCALE

PREPARED BY:
DUCHARME & DILLIS
Civil Design Group, Inc.
CIVIL ENGINEERS• LAND SURVEYORS• WETLAND CONSULTANTS
1092 MAIN STREET, P.O. BOX 428
BOLTON, MASSACHUSETTS 01740
PHONE: (978) 779–6091 FAX: (978) 779–0260
www.DucharmeandDillis.com

OWNER:
BRIAN & JESSICA MORIARTY
23 HASTINGS STREET
STOW, MASSACHUSETTS 01775

APPLICANT:
BRIAN & JESSICA MORIARTY
23 HASTINGS STREET
STOW, MASSACHUSETTS 01775

SCALE:
20 0 10 20 40 80
1 in. = 20 ft.

DIG SAFE 1–888–344–7233

COMMONWEALTH OF MASSACHUSETTS STANLEY R. DILLIS 33702 REGISTERED PROFESSIONAL LAND SURVEYOR

DATE: 6/26/2020
DESIGN BY: WJM
DRAWN BY: WJM
CHECKED BY: SRD

EXISTING SITE PLAN
23 HASTING STREET
STOW, MASSACHUSETTS 01775

NO.	DATE	DESCRIPTION	BY
1.	8/4/14	AS–BUILT ADDED	JM

JOB NO. 4937–M
DRAWING NO. 4937–M
SHEET NO. 1 OF 1

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