

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 ASSUMED DATUM (SEE BENCH MARK LOCATED ON PLOT PLAN).
2. PROPERTY LINE INFORMATION TAKEN FROM RECORDED PLAN ON FILE WITH THE MIDDLESEX REGISTRY OF DEEDS. PLAN BOOK: 1971 - PLAN: 517
3. PERCOLATION TESTS PERFORMED IN ACCORDANCE WITH 310 CMR (TITLE 5) REGULATIONS 15.104 AND 15.105.
4. ANY DEVIATIONS FROM THE DESIGN PLAN MUST BE APPROVED IN WRITING BY DUCHARME & DILLIS CIVIL DESIGN GROUP, INC.
5. NO PERMANENT STRUCTURES MAY BE CONSTRUCTED OVER THE RESERVE LEACHING AREA.
6. 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 CERTIFY IN WRITING THAT ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE TERMS OF THE PERMIT AND THE APPROVED PLANS.
7. 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 PLUMPED.
8. THIS DESIGN DOES NOT ACCOMMODATE A GARBAGE DISPOSAL.
9. 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 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 811 TO OBTAIN A 1-888-DIG-SAFE REPORT 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 PUMP CHAMBER 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 BRICKLIES 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.
6. 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 INTRUSION OF SURFACE WATER AND MINIMIZE EROSION. FINISH GRADE SHALL HAVE A MINIMUM SLOPE OF 2%.
8. EFFLUENT DISTRIBUTION LINES SHALL HAVE A SLOPE OF 0.005.
9. OUTLET DISTRIBUTION LINES FROM THE D.B. BOX SHALL BE LEVEL FOR A MINIMUM OF TWO FEET OF THEIR LENGTH.
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 15.225(3).
11. 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 FERROUS 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 DRAINAGED.
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 15.02(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 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.

REPAIR NOTES:

1. CONTRACTOR TO VERIFY ELEVATION (+) PRIOR TO THE START OF CONSTRUCTION AND REPORT TO ENGINEER ANY VARIATIONS IN ELEVATIONS TO THOSE SHOWN ON THIS PLAN.
2. EXISTING SYSTEM MAY BE ENCOUNTERED DURING THE INSTALLATION OF NEW SOIL ABSORPTION SYSTEM. (S.A.S.), REMOVAL, DISPOSAL AND UTILIZATION OF MATERIAL SHALL BE IN ACCORDANCE WITH THE TOWN OF ACTON'S BOARD OF HEALTH RULES AND REGULATIONS.
3. EXISTING CESSPOOL TO BE PUMPED, CRUSHED AND BACKFILLED WITH CLEAN GRANULAR MATERIAL AND/OR IN ACCORDANCE WITH THE TOWN OF ACTON'S BOARD OF HEALTH RULES AND REGULATIONS.

CALCULATIONS:

HYDRAULIC LOADINGS:
FOUR (4) BEDROOMS AT 110 GALLONS PER DAY PER BEDROOM = 440 GALLONS PER DAY.

SEPTIC TANK SIZE:
AVERAGE DAILY FLOW = 440 G.P.D.
MINIMUM STORAGE REQUIRED:
SEPTIC TANK = 440 G.P.D. X 200% = 880 GAL.
SEPTIC TANK PROVIDED = 1,500 GALLONS

PRIMARY LEACHING AREA:
DESIGN PERCOLATION RATE = 18 M.P.I. (SOIL CLASS II)
EFFLUENT LOADING RATE = 0.53 GALLONS/S.F.
LEACHING AREA REQUIRED = 440 GPD / 0.53 GPD/S.F. = 831 S.F.
TOTAL LEACHING AREA PROVIDED = 42' x 20' BED/FIELD, (WITH 12" OF STONE) = 840 S.F.
TOTAL DESIGN FLOW = 840 S.F. X 0.53 GALLON/S.F. = 445 GALLONS.

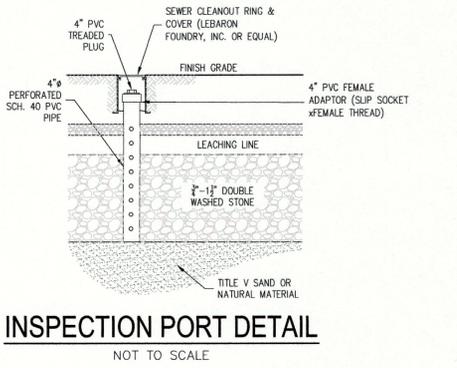
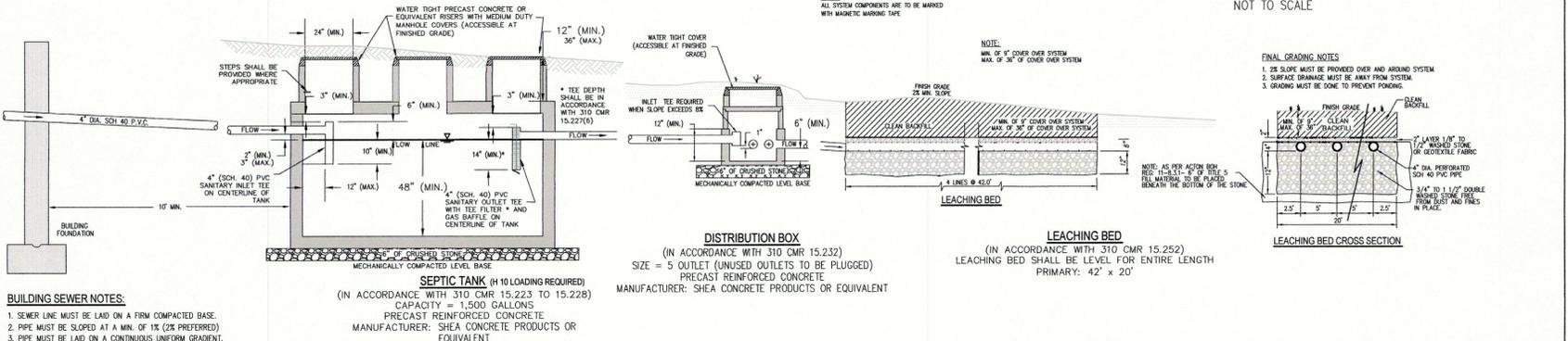
SCHEDULE OF ELEVATIONS:

SYSTEM ELEVATIONS:				PIPE DATA:			
TOP EL. OF FOUNDATION WALL= 103.07±				PIPE 1 GRAVITY SEWER			
INV. EL. AT FOUNDATION WALL= 100.37 *(SEE REPAIR NOTES)				4" PVC (SCH. 40)			
SEPTIC TANK (ST-1) - H=10				L= 12			
4" INV. (IN)= 99.65				S= 0.0379			
4" INV. (OUT)= 99.40				PIPE 2 GRAVITY SEWER			
DISTRIBUTION BOX (DB-1)				4" PVC (SCH. 40)			
4" INV. (IN)= 98.99				L= 20'			
4" INV. (OUT)= 98.81				S= 0.015			
PRIMARY BED/FIELD ELEVATIONS:				AS-BUILT ELEVATIONS:			
LINE NO.	EL. INV. BEG. OF BED/FIELD:	EL. INV. END OF BED/FIELD:	EL. OF BOT. OF BED/FIELD:	LINE NO.	EL. INV. BEG. OF BED/FIELD:	EL. INV. END OF BED/FIELD:	EL. OF BOT. OF BED/FIELD:
P1-3	98.71	98.50	97.50	P1	XXX.XX	XXX.XX	XXX.XX
				P2	XXX.XX	XXX.XX	XXX.XX
				P3	XXX.XX	XXX.XX	XXX.XX

SOIL TEST DATA										NAME OF SOIL EVALUATOR:	
IN-SEASON GROUND WATER TESTING - (IF REQ'D)										DUCHARME & DILLIS CIVIL DESIGN GROUP	
PERCOLATION TEST DATA										WILLIAM J. "JACK" MALONEY, JR. (SE-13704)	
TEST PIT NO.	DATE	SURFACE ELEVATION	DEPTH TO OBSERVED GROUNDWATER	SL. WATER ELEVATION	TEST PIT NO.	DATE	DEPTH FROM SURFACE	SURFACE ELEVATION	DATE, MINUTES PER HOUR		
					PA	5/4/15	48"	101.5±	18 WPI		
SOIL CLASSIFICATION: 629-C. CANTON-CHARLTON-URBAN											
GEOLOGICAL MATERIAL: GRAVELLY LOAMY SAND											
LAND FORM: GROUND MORaine											
SOIL LIMITATIONS: NONE											
GENERAL NOTES: X											
DEPTH	HOR.	TEX.	COLOR	MOTT.	G.W.	OTHER					
DEEP TEST PIT: 515-1	0-12"	A	S.L.	10R 3/3	NONE	NONE	CRUMB, FRABLE				
DATE OF TEST: 5/4/15	12-30"	B	S.L.	10R 5/6	NONE	NONE	S.A.B. FRABLE				
REFUSAL AT: NONE	30-90"	C	S.L.	10R 5/3	Ø 90"	NONE	MASSIVE, FRABLE				
OBSERVED											
SURFACE ELEV. = 101.0±										AT 90" (ELEVATION = 93.5±)	
ESTIMATED SEASONAL HIGH GROUND WATER											
DEPTH	HOR.	TEX.	COLOR	MOTT.	G.W.	OTHER					
DEEP TEST PIT: 515-2	0-12"	A	S.L.	10R 3/4	NONE	NONE	CRUMB, FRABLE				
DATE OF TEST: 5/4/15	12-30"	B	S.L.	10R 5/6	NONE	NONE	S.A.B. FRABLE				
REFUSAL AT: NONE	30-102"	C	S.L.	10R 5/3	Ø 90"	NONE	MASSIVE, FRABLE				
OBSERVED											
SURFACE ELEV. = 101.0±										AT 90" (ELEVATION = 93.5±)	
ESTIMATED SEASONAL HIGH GROUND WATER											

SYSTEM PROFILE

NOT TO SCALE



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

Jack Maloney
LICENSED SOIL EVALUATOR:
WILLIAM J. "JACK" MALONEY, JR. (SE-13704)
DATE: 5/6/15

LEGEND

DESCRIPTION	DRAWING ENTITY
NOTES EXISTING CONTOUR (INDEX)	100
NOTES EXISTING CONTOUR (INTERMEDIATE)	99
NOTES PROPOSED CONTOUR (INDEX)	100
NOTES PROPOSED CONTOUR (INTERMEDIATE)	98
NOTES LIMIT OF EXCAVATION OF UNSUITABLE SOILS	5' EXC.
NOTES PROPOSED SEWER LINE	S
NOTES PROPOSED WATER LINE	W
NOTES PROPOSED UNDERGROUND UTILITIES	U
NOTES PROPOSED BUILDING ENVELOPE	B
NOTES PROPOSED CONCRETE SEPTIC TANK	ST-1
NOTES PROPOSED CONCRETE PUMP CHAMBER	PC-1
NOTES PROPOSED CONCRETE DISTRIBUTION BOX	DB-1
NOTES PROPOSED SEWER CLEANOUT	CO

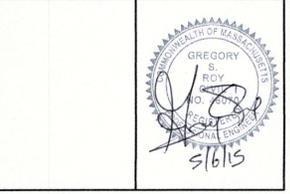
PREPARED BY:
DUCHARME & DILLIS
Civil Design Group, Inc.
CIVIL ENGINEERS • LAND SURVEYORS • WETLAND CONSULTANTS
1092 MAIN STREET, P.O. BOX 428 BOLTON, MASSACHUSETTS 01740
PHONE: (978) 779-6091 FAX: (978) 779-0260
www.DucharmeandDillis.com

OWNER:
DEBRA HERCHEK
17 LINCOLN DRIVE
ACTON, MASSACHUSETTS

APPLICANT:
DEBRA HERCHEK
17 LINCOLN DRIVE
ACTON, MASSACHUSETTS

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

COPYRIGHT DUCHARME & DILLIS CIVIL DESIGN GROUP, INC 2015



DATE: 5/6/15
DESIGN BY: WJM
DRAWN BY: WJM
CHECKED BY: GSR

SEWAGE DISPOSAL SYSTEM DESIGN
17 LINCOLN DRIVE (MAP: 19, PCL: 13)
ACTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

JOB NO. 5071
DRAWING NO. 5071-SDS
SHEET 1 OF 1