

DISCUSSION:

THE IMPERVIOUS SURFACE ADDED FOR THE DRIVE EXPANSION IS APPROX 834 SF. USING A RUNOFF C OF .9 FOR IMPERVIOUS SURFACES THE POSTDEVELOPMENT RUNOFF IS AS FOLLOWS:
 600 SF(8.37/12) = 396 CF (100 YR STORM)

THE PROPOSAL IS TO STORE THE EXTRA VOLUME BY UTILIZING DRYWELLS.

METHODOLOGY:

PERCOLATION RATE: 8 MIN. PER INCH

DRYWELL SIZE:

10 FT 6 IN DIAMETER

3 FT DEEP

BOTTOM AREA = $3.14 * D * D / 4 = 3.14 * 10.5 * 10.5 / 4 = 86.6 \text{ SF}$

VOLUME OF PIT: $3.14 * D * D * H / 4 = 3.14 * 6.5 * 6.5 * 3 / 4 = 99.5 \text{ CF}$

VOLUME OF STONE = $3.14 * D * D * H / 4 = 3.14 * 10.5 * 10.5 * 3 / 4 = 259.8 \text{ CF}$

VOID STORAGE VOLUME = VOID RATIO (STONE VOLUME - PIT VOLUME)

STORAGE PER DRYWELL = $99.5 + 56.1 = 155.6 \text{ CF}$

(.35(259.8 - 99.5)) = 56.1

INFILTRATION CAPACITY = BOTTOM AREA * INFILTRATION RATE

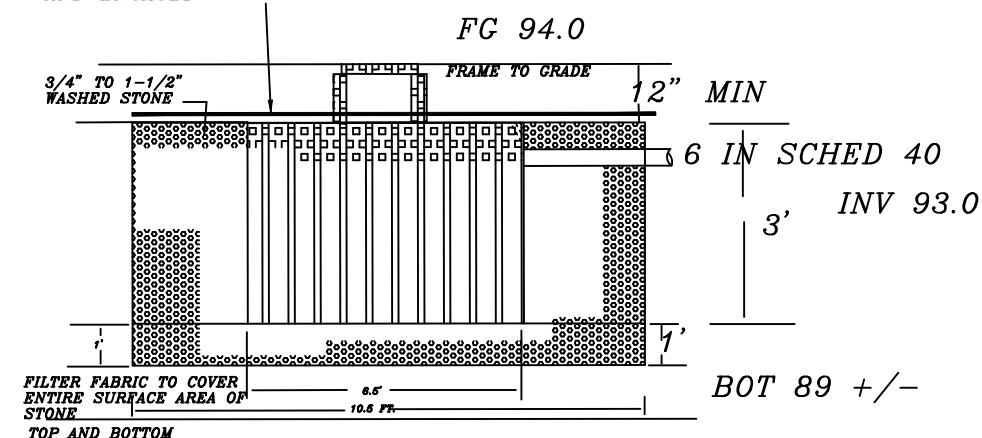
= $86.6 \text{ SF} * .125 \text{ IN/MIN} * 1/12 * 60/\text{HR}$

= 54.1 CF/HOUR

= 1298 TOTAL CAPACITY)

ONE DRYWELL REQUIRED

TOP OF DRYWELL TO BE COVERED WITH A MINIMUM 3" PEASTONE AND ENCASED WITH FILTER FABRIC

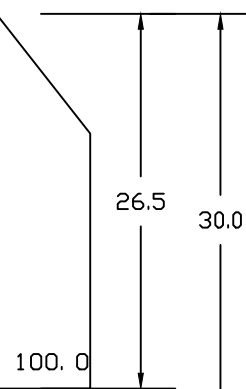


DRYWELL DETAIL (NTS)
 TOP OF DRYWELL TO BE COVERED WITH A MINIMUM 3" PEASTONE

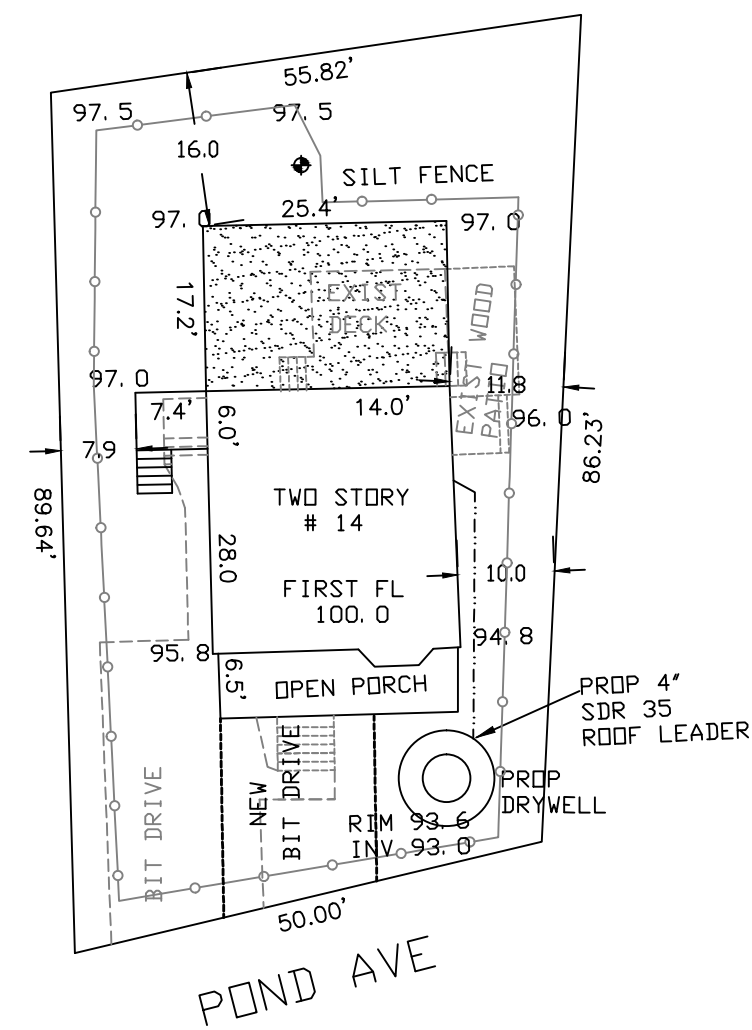
TEST PIT PERC 9-14-15

0-5' TOPSOIL 10 YR 4/4
 5'-3' LOAMY SAND & GRAVEL 10YR 6/5
 3'-9' SAND & GRAVEL 10 YR 6/4

NO SHWT
 PERC 2 MIN/INCH
 USED 8 FOR DESIGN



PLANE 96.5



MR2 OLD
 AREA 4530 SF

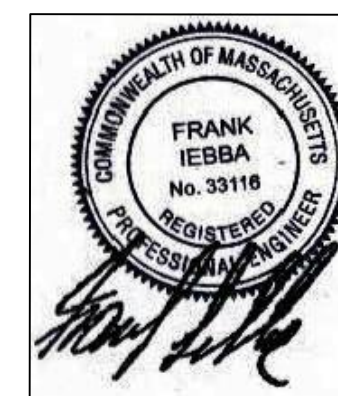
EXIST
 LOT COVER 19 %
 OPEN SPACE 61 %
 PRDP
 LOT COVER 25 %
 OPEN SPACE 64 %

AVG GRADE: SUM LI<PI>/PERIM= 96.5

FIRST FL = 100
 TOP FOUND 98.9
 BASEMENT 91.5
 67 % BELOW GRADE

FAR BY ARCHITECT

NET IMPERVIOUS ADDED
 470 SF



PROPOSED ADDITION
 14 POND AVE
 NEWTON, MA
 SCALE: 1 IN = 20 FT
 SEPT 20, 2015
 NOV 8, 2015
 JULY 12, 2017

ESSEX ENGINEERING & SURVEY
 PO BOX 620622
 NEWTON LOWER FALLS
 MA 02462-0622

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- 1) ALL WORK TO BE IN ACCORDANCE WITH CITY OF NEWTON AND MASS HIGHWAY STANDARDS. DRIVEWAY WILL CONFORM TO MA, AAB & NEWTON STANDARDS. A MINIMUM 3 FT (36 IN) WIDTH AND MAX 1.5 % CROSS SLOPE WILL BE MAINTAINED.
- 2) MINIMUM COMPACTION IN TO BE 98% AND MAXIMUM 1 FT LIFTS
- 3) PRIOR TO START CONSTRUCTION ALL APPLICABLE LOCAL AGENCIES AND DIG SAFE WILL BE NOTIFIED AT LEAST 72 HOURS
- 4) AS BUILT UTILITY & GRADING PLAN WILL BE SUBMITTED TO NEWTON DPW(ENG DIV) IN BOTH DIGITAL AND HARD COPY PRIOR TO ISSUANCE OF OCCUPANCY PERMIT. PLAN MUST SHOW ALL UTILITIES, WITH TIES, EASEMENTS
- 5) STREET OPENING, SIDEWALK CROSSING, AND UTILITY CONNECTION PERMITS WILL BE OBTAINED FROM THE CITY PRIOR TO COMMENCING ANY WORK
- 6) TRENCH PAVEMENT PERMANENT PATCH WILL CONFORM NEWTON STANDARDS AND WITH THE TRENCH SECTION SPECIFIED HEREIN.
- 7) LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE. CONTRACTOR WILL NOTIFY DIG SAFE PRIOR TO COMMENCING WORK. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE RESULTING FROM INCORRECTLY LOCATED UTILITIES.
- 8) ALL BACKFILL MATERIAL WILL BE FREE OF ORGANIC MATTER AND COMPACTED TO MIN 98 % (NO GREATER THAN 1" STONES TO BE USED)