

SEPTIC SYSTEM DESIGN CRITERIA (NEW BUILDING #4):

EMPLOYEES/PARKING
OFFICE 1,000 SF @ 300 SF/SPACE = 3.3 SPACES/EMPLOYEES
MANUFACTURING 10,000 SF @ 800 SF/SPACE = 12.5 SPACES/EMPLOYEES
WAREHOUSE 1,000 SF @ 1,200 SF/SPACE = 0.8 SPACES/EMPLOYEES
17 EMPLOYEES @ 25 gpd EACH = 425 gpd FLOW
1,500 GAL SEPTIC TANK (MIN SIZE FOR NON-RESIDENTIAL) - HD-20
DESIGN PERCOLATION RATE: 1.0 TO 10.0 MIN./IN. (4.8 MIN./IN.)
MINIMUM LEACHING SYSTEM SPREAD
RESTRICTIVE LAYER > 60" (MLSS DOES NOT APPLY)
EFFECTIVE LEACHING AREA REQUIRED:
425 GPD / 1.5 GPD/SF = 283 SF (300 SF PROVIDED)
LEACHING SYSTEM GST 6212: = 10.0 SF/LF
LENGTH OF LEACHING FIELD REQUIRED:
1-ROW @ 30 SF x 10 SF/LF = 300 SF
TOTAL = 300 SF (283 SF REQUIRED)

SANITARY ELEVATION DATA:
1 SANITARY INVERT AT FOUNDATION: 70.85
2 75" - 4" DIA. SCHEDULE 40 ASTM D1785 OR EQUIVALENT PIPE (MIN. SLOPE -1/8" PER FT.)
3 1,500 GALLON TWO COMPARTMENT SEPTIC TANK (HD-20) W/LOAD RATED ACCESS MANHOLES TO GRADE
INVERT IN: 68.25
INVERT OUT: 69.0
4 18" - 4" DIA. SDR 35 PVC PIPE @ 1% MIN
5 CAPPED 4" OBSERVATION PIPE (HD-20)
INVERT IN: 68.6 NOTE: PROVIDE H-20 LOAD RATED ACCESS MANHOLE TO GRADE
6 30' LONG GST-6212
BOTTOM ELEV: 67.6 RESTRICTIVE LAYER @ (ELEV. 63.5)
INV. ELEV: 68.6

SITE SOILS DATA

TEST HOLES
PERFORMED 12/13/13, WITNESSED BY LLHD & PAT LAFAYETTE, P.E.
TH-1 REDUC 12/10/13 BY P. LAFAYETTE
TH-1
0-8/10" - TOPSOIL HUMUS
8-33/36" - ORANGE FINE SANDY LOAM/SILT LOAM
33-102" - GRAY/TAN MED. SAND & GRAVEL W/COBBLES & SMALL BOULDERS, NO LEDGE, NO WATER, NO MAX. WATER
TH-2
0-8/10" - TOPSOIL & HUMUS
8-20/35" - ORANGE/BROWN FINE SANDY LOAM/SILT LOAM
20-115" - GRAY/TAN COARSE TO MED./COARSE SAND & GRAVEL W/COBBLES, NO LEDGE, WATER @ 48", MAX. WATER @ 29"
TH-3
0-10" - TOPSOIL & HUMUS
10-30" - ORANGE/BROWN FINE SANDY LOAM/SILT LOAM
30-102" - GRAY/TAN COARSE TO MED./COARSE SAND & GRAVEL W/COBBLES & BOULDERS, NO LEDGE, WATER @ 93.5", MAX. WATER @ 56"
TH-4
0-9" - TOPSOIL
10-38" - ORANGE/BROWN FINE SANDY LOAM/SILT
38-200" - GRAY/TAN COARSE TO MED. SAND & GRAVEL W/STONES NO LEDGE, NO WATER, NO MAX. WATER
TH-5
0-8" - TOPSOIL
8-40" - ORANGE/BROWN FINE SANDY LOAM
40-150" - GRAY/TAN COARSE TO MEDIUM SAND & GRAVEL W/STONES NO LEDGE, NO WATER, NO MAX. WATER
TH-6
0-8" - TOPSOIL
8-32" - TAN SANDY LOAM
32-120" - COARSE SAND AND STONES
NO LEDGE, WATER @ 120", MOTTLING @ 120"
TH-7
0-120" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, WATER @ 74", MAX. WATER @ 40"
TH-8
0-6" - TOPSOIL
6-42" - TAN SANDY LOAM
42-140" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, WATER @ 46", MAX. WATER @ 22.8"
TH-A (12-15-13)
0-210" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, NO WATER, NO MOTTLING
\* WATER LEVELS BASED ON A SITE GRADE OF 72.0

SEPTIC NOTES

- 1. INSTALLER TO SUBMIT SCALED AND/OR TIED AS-BUILT TO LLHD UPON 30 DAYS OF COMPLETION WITH DISTANCES TO FLOW LINE AT HOUSE, INLET AND OUTLET, COVER OF TANK, D-BOXES, CLEANOUTS AND ENDS OF LEACHING ROWS, WELL, FOOTING/CURTAIN DRAINS AND BETWEEN THE POINTS. IN ADDITION, PROVIDE THE NAME OF INSTALLER, DATE, HOUSE LOCATION AND STREET/ DIRECTIONAL ARROW.
2. GEOMATRIX INSTALLATION INSTRUCTIONS FOR H-20 LOAD RATING CALL FOR PLACEMENT OF 12 INCHES OF SANDY GRAVEL SOIL HAVING NO PARTICLES OVER 1.5" ABOVE GST DISTRIBUTION PIPE. A GEOTEXTILE FABRIC IS RECOMMENDED AFTER THE INITIAL 6" OF LIGHTLY COMPACTED FILL PLACEMENT.
3. PROVIDE H-20 LOAD RATED RISERS/ MANHOLES TO GRADE ON THE EXISTING LEACHING SYSTEM FOR BLDG #3 AND ON THE PROPOSED SYSTEM FOR BLDG #4.
4. THE EXISTING SEPTIC SYSTEM FOR BLDG. #2 IS TO BE INSPECTED DURING PROJECT CONSTRUCTION, AND IF APPLICABLE AFTER INSPECTION, AN AIR VENT WILL BE INSTALLED.

LEGEND table with symbols for PROPERTY LINE, STREET LINE, EXISTING CONTOURS, PROPOSED CONTOURS, OVERHEAD UTILITIES, UGU, UNDERGROUND UTILITIES, UNDERGROUND WATER LINE, UTILITY POLE, x75.0, PROPOSED SPOT GRADE, WV, WATER VALVE, CB, CATCH BASIN, TH, TEST HOLE, PT, PERC TEST.

PERCOLATION TEST table with columns: TIME PM, MEASURE(IN.), DROP (IN.). Data points from 12:05 to 12:47.

SUBSURFACE STORAGE CHAMBER (SSC)

PERFORMED 12/10/13 BY PAT LAFAYETTE, P.E. table with columns: TIME PM, MEASURE(IN.), DROP (IN.). Data points from 2:05 to 2:45.

STORMWATER STRUCTURE TABLE

Table with columns: STRUCTURE, INVERT IN, INVERT OUT. Lists structures like CB-1 (YARD DRAIN), SSC, CB-2 (YARD DRAIN), EX. CB-2 (SPECIAL TOP), DMH-3, CB-4 (HOODED), \*SWTU STRUC., FEU-1.

STORMWATER PIPE TABLE

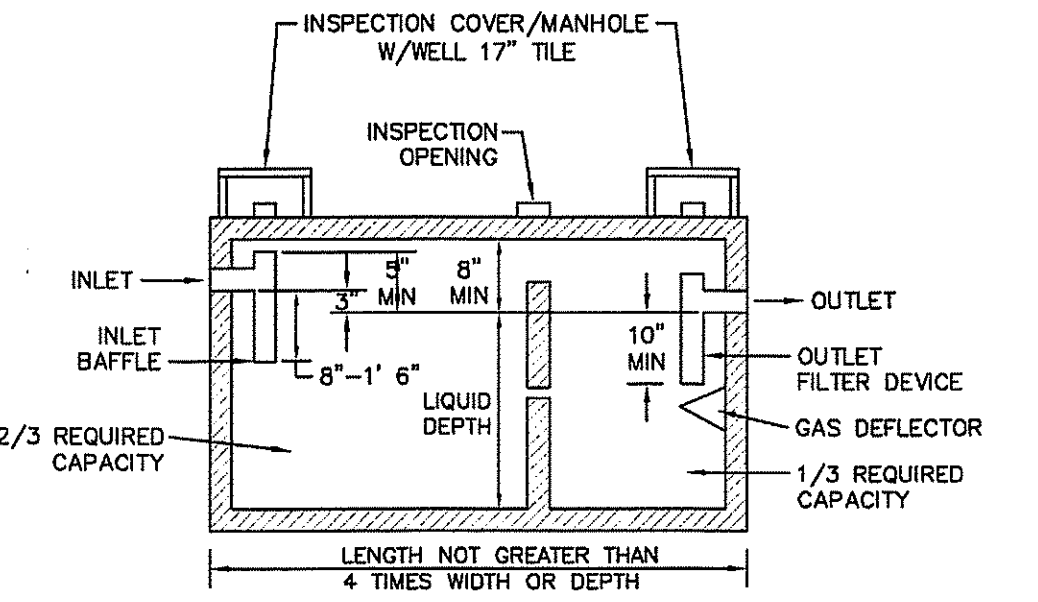
Table with columns: RUN, SIZE/PIPE, LENGTH, SLOPE, CAPACITY. Lists runs from CB-1 TO CB-2, SSC TO CB-2, etc.

\* STRUCTURE IS A CDS MODEL PMSU 40-30 STORMWATER TREATMENT UNIT (TSS REMOVAL)

\*\* SEE TABLE NO 2-C PUBLIC HEALTH CODE - ACCEPTED TIGHT PIPE PVC ASTM F1760, SDR 35 (RUBBER COMPRESSION GASKETS OR SOLVENT) WELD COUPLINGS/FITTINGS USING PROPER 2 STEP PVC SOLVENT SOLUTION PROCEDURE.

TEST HOLE TH-X

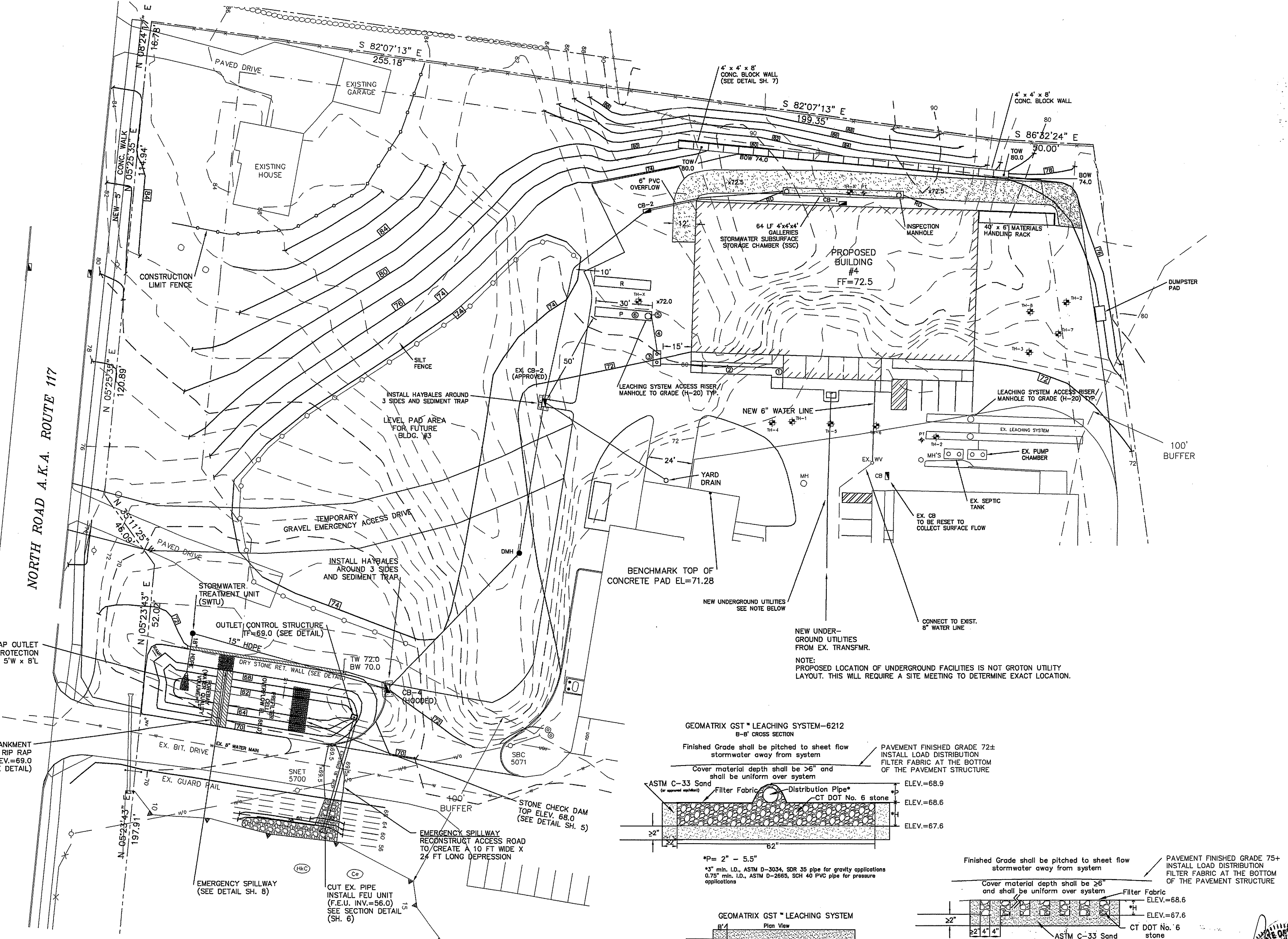
PERFORMED 10/17/14 WITNESSED BY LLHD
TH-X
0-120" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, WATER @ 74", MAX. WATER @ 40"
TH-8
0-6" - TOPSOIL
6-42" - TAN SANDY LOAM
42-140" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, WATER @ 46", MAX. WATER @ 22.8"
TH-A (12-15-13)
0-210" - COARSE SAND & GRAVEL W/STONES
NO LEDGE, NO WATER, NO MOTTLING



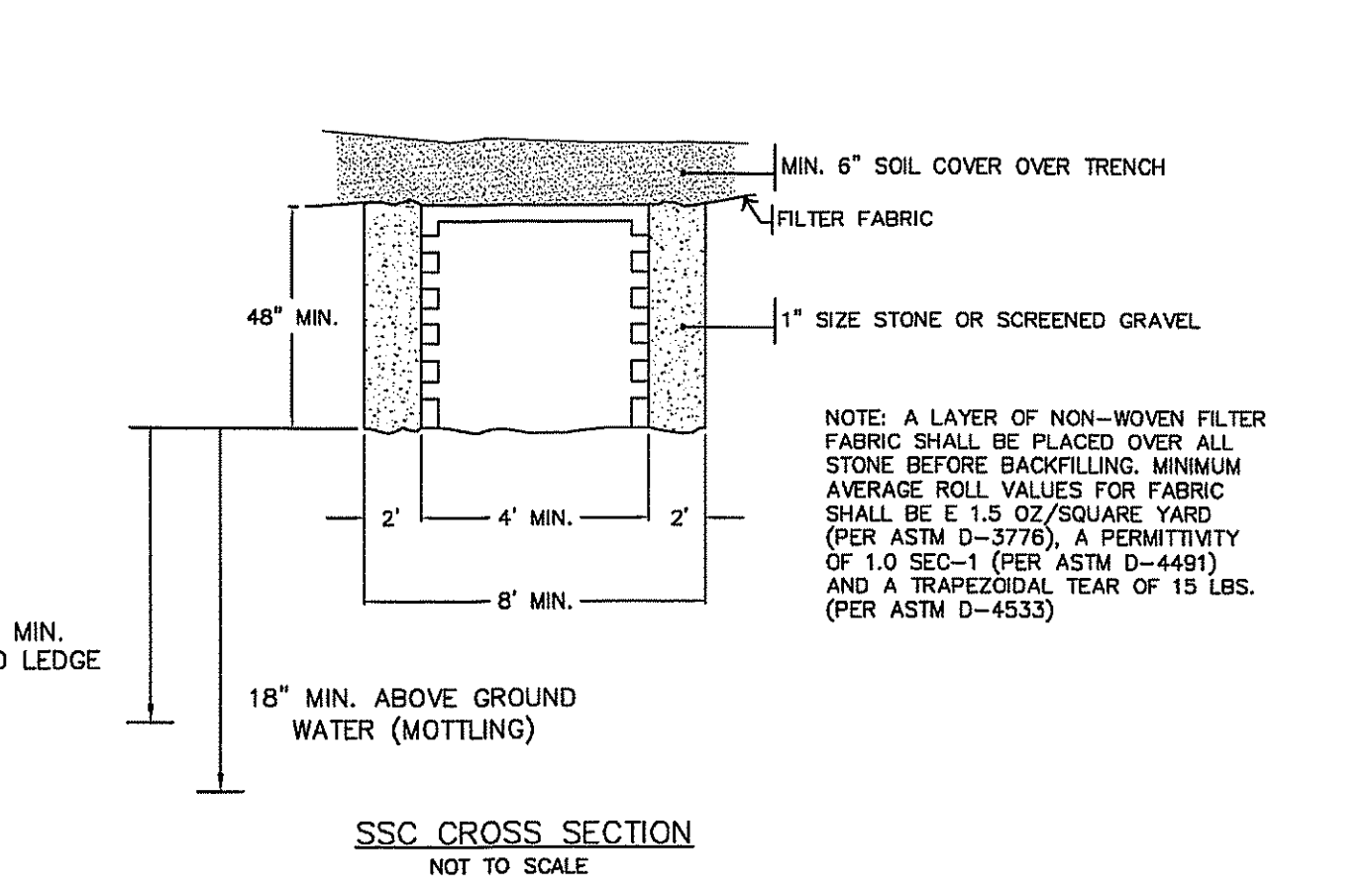
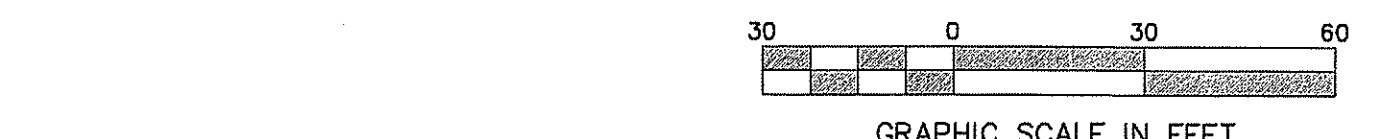
TYPICAL SEPTIC TANK

NOTE: CLEANOUT MANHOLES AND ALL BAFFLED INSPECTION MANHOLES SHALL BE LOCATED AT A DEPTH NOT GREATER THAN 12" BELOW FINAL GRADE.

APPENDIX B APPROVED SEPTIC TANK table with columns: MANUFACTURER, MODEL, THORSBY & BOWNE, SANITEE, etc.

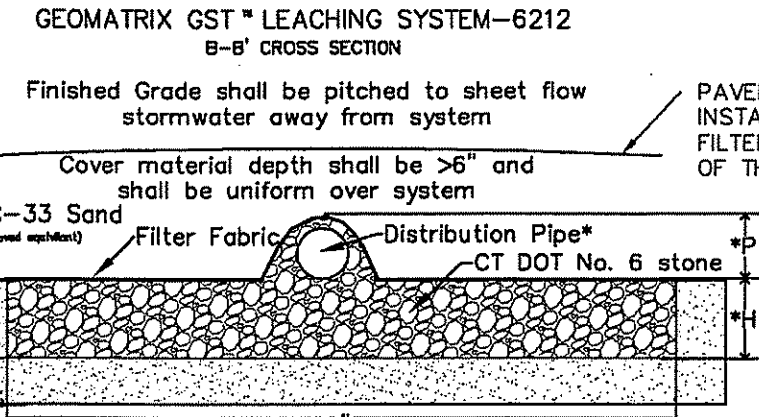


SITE DEVELOPMENT PLAN

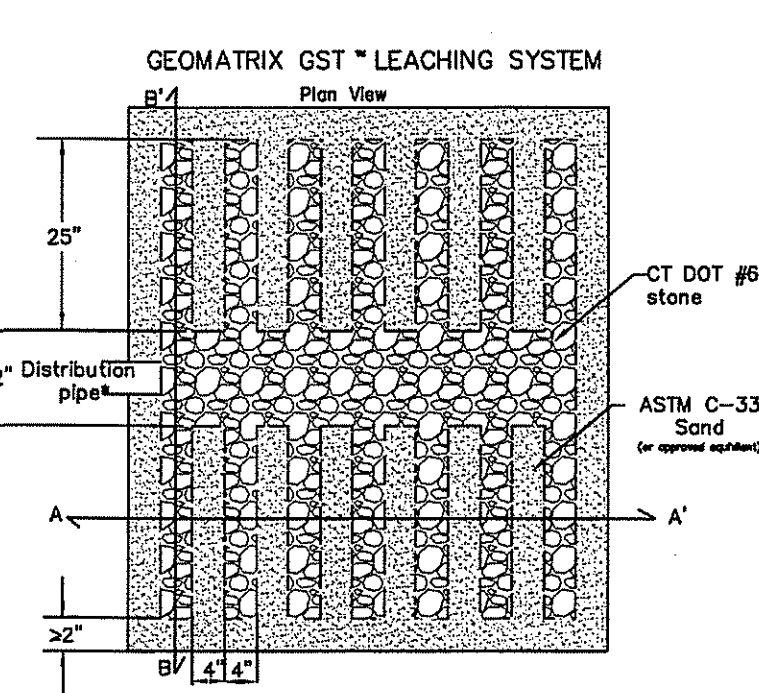


SSC CROSS SECTION NOT TO SCALE

TOWN OF GROTON PLANNING COMMISSION APPROVAL GRANTED stamp with date DEC 09 2014 and signature.



GEOMATRIX GST LEACHING SYSTEM - B-B' CROSS SECTION



GEOMATRIX GST LEACHING SYSTEM - PLAN VIEW



GEOMATRIX GST LEACHING SYSTEM - A-A' CROSS SECTION

\*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications

REVISION table with columns: DATE, REVISION. Lists dates from 1/7/14 to 11/25/14 and corresponding revision descriptions.

GRADING, DRAINAGE AND UTILITY PLAN title block containing project name (LBI COMMERCIAL PARK), address (973 NORTH ROAD, A.K.A. CT. ROUTE 117), and drawing information (DATE: September 23, 2013, DRAWN BY: TJ, SCALE: 1"=30', SHEET NO. 4 of 8, DRAWING NO. DS-13-539).