

ON-SITE WASTEWATER TREATMENT (SEPTIC) SYSTEM

Shallow Trench Absorption System

Four Bedroom Single Family Home

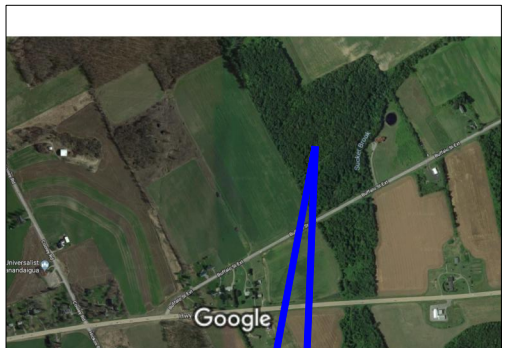
Prepared For:
Jeff Carson

Site Location:
Part of 5600 Buffalo Street Ext.

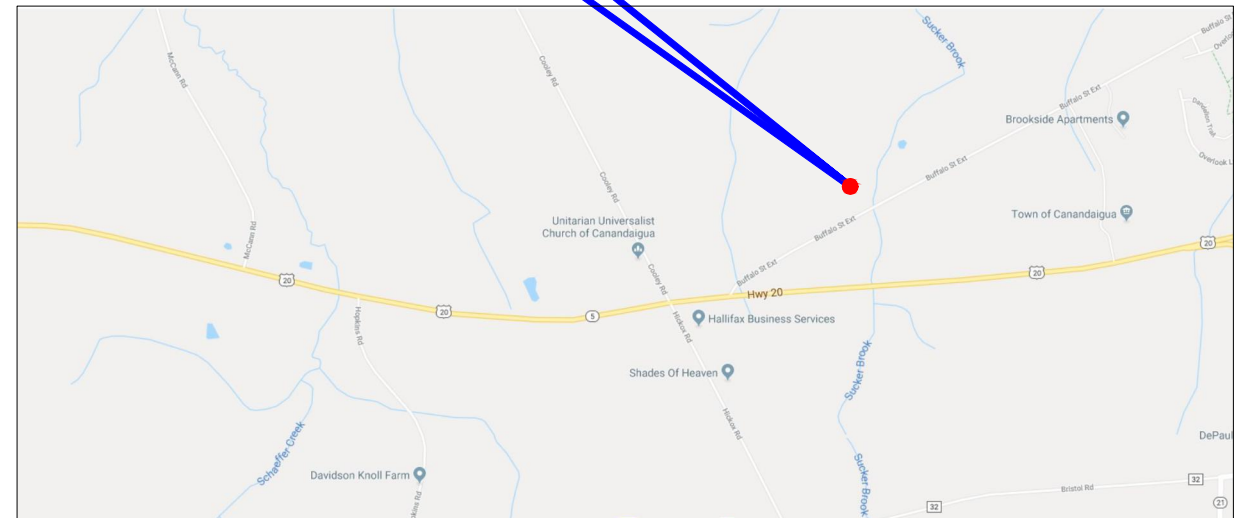
(T) Canandaigua, Ontario County, New York
Part of Tax Map ID No. 83.00-1-25.112

Prepared By:
McCormick Engineering P.C.

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PROJECT SITE



DRAWING NO.	DRAWING TITLE
C-1.0	SEPTIC SYSTEM BASIS OF DESIGN
C-1.1	SEPTIC SYSTEM BASIS OF DESIGN
C-2.0	OVERALL SITE PLAN
C-2.1	ENLARGED SITE PLAN
C-3.0	SEPTIC SYSTEM DETAILS 1 OF 3
C-4.0	SEPTIC SYSTEM DETAILS 2 OF 3
C-5.0	SEPTIC SYSTEM DETAILS 3 OF 3
C-6.0	SYSTEM PROFILE

CALL DIG SAFELY
NEW YORK
48 HOURS BEFORE
DIGGING OR
DRIVING POSTS
@ 811

License No.: 076842

PN 18-219
July 23, 2018
REVISED 05oct18
REV 2 01APR20

THE FOLLOWING PRESENTS THE BASIS OF DESIGN FOR THE ON SITE WASTEWATER TREATMENT SYSTEM.
AREA TO BE SERVED: RESIDENTIAL – FOUR BEDROOM SINGLE FAMILY HOME
DESIGN FLOW: 520 GPD (4 BEDROOMS X 130 GPD/BEDROOM) NO GARBAGE DISPOSAL/NO GARDEN TUB
SITE CHARACTERISTICS: DEPTH TO GROUNDWATER/IMPERMEABLE LAYER – 4’, SITE SLOPE LESS THAN 10%
POTABLE WATER FROM A PRIVATE GROUNDWATER WELL

ON–SITE TESTS

PERCOLATION TESTS AND DEEP HOLE TEST COMPLETED BY JASON MCCORMICK, PE, MCCORMICK ENGINEERING
PC. TESTS COMPLETED ON JULY 18, 2018

PERC TEST

HOLE (MARK)	DEPTH OF HOLE (INCH)	PERCOLATION RATE (MIN/INCH)			
		RUN 1	RUN 2	RUN 3	RUN 4
PT–1	24	22	26	28	29
PT–2	24	25	28	28	29
PT–3	24	19	25	27	26

DESIGN PERC RATE OF 21–30 MIN/INCH (APPLICATION RATE – 0.60 GAL/DAY/SF)

DEEP HOLE (DUE TO LIITED SITE ACCESS, AN AUGER WAS USED FOR DEEP HOLE TEST) (MARK DH1)

DEPTH	SOIL CONDITION
0”–8”	TOPSOIL
8”–34”	LOAM WITH SOME STONES AND ROOTS
34”–64”	LOAM WITH NO ROOTS, FEW STONES

DEPTH TO IMPERMEABLE LAYER – GREATER THAN 5’–0”

DEPTH TO GROUNDWATER OR MOTTLING – 4’–0” GROUNDWATER WAS OBSERVED

A SECOND DEEP HOLE TESTED WAS EXCAVATED WITH A MINI EXCAVATOR ON SEPTEMBER 6, 2018 (MARK DH2)

DEPTH	SOIL CONDITION
0”–11”	TOPSOIL
11”–48”	LOAM WITH SOME STONES AND ROOTS
48”–63”	LOAM WITH NO ROOTS, WET, FEW STONES

DEPTH TO IMPERMEABLE LAYER – GREATER THAN 5’–0”

DEPTH TO GROUNDWATER OR MOTTLING – 4’–1” MOTTLING WAS OBSERVED

HOUSE WAS RELOCATED SO ADDITIONAL ON–SITE TESTING WAS COMPLETED

PERCOLATION TESTS AND DEEP HOLE TEST COMPLETED BY JASON MCCORMICK, PE, MCCORMICK ENGINEERING
PC. TESTS COMPLETED ON APRIL 2, 2020

PERC TEST

HOLE (MARK)	DEPTH OF HOLE (INCH)	PERCOLATION RATE (MIN/INCH)			
		RUN 1	RUN 2	RUN 3	RUN 4
PT–A	24	24	27	29	29
PT–B	24	24	26	27	28
PT–C	24	26	27	29	29

DESIGN PERC RATE OF 21–30 MIN/INCH (APPLICATION RATE – 0.60 GAL/DAY/SF)

DEEP HOLE (MARK DHA)

DEPTH	SOIL CONDITION
0”–9”	TOPSOIL
9”–38”	LOAM WITH SOME STONES AND ROOTS
38”–66”	LOAM WITH NO ROOTS, FEW STONES

DEPTH TO IMPERMEABLE LAYER – GREATER THAN 5’–0”

DEPTH TO GROUNDWATER OR MOTTLING – 4’–2” GROUNDWATER WAS OBSERVED

A SHALLOW TRENCH SYSTEM (12” OF FILL + 6” TOPSOIL) IS RECOMMENDED.
DURING CONSTRUCTION, CONTRACTOR SHALL CONFIRM SOILS ARE CONSISTENT WITH THE PERC AND DEEP HOLE
TESTS. MCCORMICK ENGINEERING PC SHALL BE NOTIFIED IMMEDIATELY OF ANY DIFFERENCES.

SEPTIC TANK

1. A 1,250 GALLON DUAL CHAMBER, PRE–CAST CONCRETE SEPTIC TANK SHALL BE INSTALLED SUCH THAT IT WILL RECEIVE THE DISCHARGE FROM THE NEW HOME.
2. CONTRACTOR SHALL CONFIRM DIMENSIONS OF SEPTIC TANK PRIOR TO EXCAVATION.
3. SEPTIC TANKS SHOULD BE PUMPED OUT EVERY TWO TO THREE YEARS.
4. SEPTIC TANK ADDITIVES (BIOLOGICAL OR CHEMICAL) SHOULD NOT BE USED.

EFFLUENT FILTER (RECOMMENDED)

A ZABEL FILTER (MODEL A1800–4X18) SHALL BE INSTALLED ON THE EFFLUENT PIPE OF THE SEPTIC TANK

ABSORPTION SYSTEM – SHALLOW TRENCH

THE ABSORPTION SYSTEM WAS DESIGNED BASED ON THE NYSDOH RESIDENTIAL ONSITE WASTEWATER TREATMENT SYSTEMS DESIGN HANDBOOK, 2012.

TRENCH LENGTH

APPLICATION RATE: 0.60 GPD PER SQ FT
(TABLE 6 – APPLICATION RATES FOR NONSTANDARD FLOWS)

REQUIRED AREA = 520 GPD / 0.60 GPD PER SQ FT = 867 SQ FT

REQUIRED LENGTH OF 2’ WIDE TRENCH: 434 FEET

PROPOSED CONFIGURATION: (8) 2’ WIDE BY 60’ LONG TRENCHES (TOTAL LENGTH = 480 FT)

TAPER

A TAPER SHALL BE INSTALLED AROUND THE RAISED AREA. THE TAPER SHALL HAVE A MAXIMUM SLOPE OF 1V:3H

FILL MATERIAL

USABLE FILL SHALL HAVE A PERC RATE BETWEEN 21–30 MINUTES PER INCH AND SHALL BE SANDY LOAM SOIL. A PERC TEST SHALL BE CONDUCTED AT THE BURROW SITE TO CONFIRM PERC RATE PRIOR TO PLACEMENT. A SECOND PERC TEST SHALL BE CONDUCTED ON THE SOIL AFTER IT HAS BEEN PLACED AND STABILIZED AT THE SITE. STABILIZE RAISED BED FILL MATERIAL BY MEANS OF MECHANICAL COMPACTION IN 6” LIFTS OR THROUGH A PERIOD OF 6 MONTHS INCLUDING A FREEZE–THAW CYCLE. MECHANICAL COMPACTION SHALL BE ACHIEVED VIA

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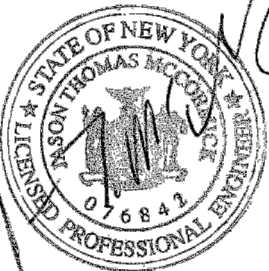
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License No.: 076842

SEPTIC SYSTEM BASIS OF DESIGN

Date: 04/01/20

Drawing No.:

C–1.0

SEPARATION REQUIREMENTS

MINIMUM SEPARATION DISTANCES FROM THE ABSORPTION FIELD.

- 1. 100 FEET FROM ALL GROUNDWATER WELLS LOCATED UPHILL OF THE SYSTEM
- 2. 200 FEET FROM ALL GROUNDWATER WELLS LOCATED DOWNHILL OF THE SYSTEM
- 3. 20 FEET FROM ALL HOUSES\BUILDINGS
- 4. 10 FEET FROM ALL PROPERTY LINES
- 5. 20 FEET FROM DRAINAGE DITCHES
- 6. 100 FEET FROM ANY SURFACE WATER (PONDS, STREAMS, ETC.)
- 7. ANY DRAINAGE TILE FOUND WITHIN 30’ OF THE ON–SITE WASTEWATER TREATMENT SYSTEM SHALL BE REROUTED.

MINIMUM SEPARATION DISTANCES FROM THE SEPTIC TANK.

- 1. 50 FEET FROM ALL GROUNDWATER WELLS
- 2. 10 FEET FROM ALL HOUSES\BUILDINGS
- 3. 10 FEET FROM ALL PROPERTY LINES
- 4. 10 FEET FROM DRAINAGE DITCHES
- 5. 50 FEET FROM ANY SURFACE WATER (PONDS, STREAMS, ETC.)

ALL SEPARATION REQUIREMENTS SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IF SEPARATION REQUIREMENTS CAN NOT BE MET, CONTRACTOR SHALL NOTIFY MCCORMICK ENGINEERING PC AT (585) 721–7219 PRIOR TO CONSTRUCTION.

NOTES:

- 1. REFER TO PIPE SCHEDULE ON THIS DRAWING FOR DETAILS ON SIZE, TYPE AND SLOPE OF PROPOSED PIPING.
- 2. CONTRACTOR SHALL CONFIRM ALL REQUIRED SETBACKS ARE MET PRIOR TO START OF CONSTRUCTION. ANY CONFLICTS SHALL BE REPORTED TO MCCORMICK ENGINEERING PC FOR RESOLUTION.
- 3. BASED ON FIELD INVESTIGATIONS, THE ABSORPTION FIELD MUST BE LOCATED IN THE EXACT SPOT SHOWN ON THE SITE PLAN.
- 4. NO HEAVY EQUIPMENT USE IN THE DESIGNATED ABSORPTION SYSTEM AREA IS ALLOWED TO PREVENT SOIL PERMEABILITY REDUCTION DUE TO COMPACTION AND POSSIBLE TRENCH CAVE–IN AND PIPE BREAKAGE.
- 5. DO NOT INSTALL GARBAGE GRINDERS ON WASTE LINES.
- 6. NON–WASTEWATER FLOWS (SUMPS, ROOF DRAINS, ETC) SHALL NOT BE ADDED TO THE SYSTEM.
- 7. SHALLOW TRENCH LEACH FIELD AREA INCLUDING TAPERS SHALL BE SEEDED AND MAINTAINED AS LAWN

INSPECTIONS

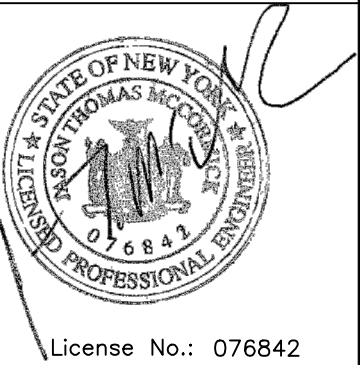
ALL INSTALLATIONS MUST BE INSPECTED AND APPROVED BY MCCORMICK ENGINEERING PC PRIOR TO USE. A MINIMUM OF 48 HOUR NOTICE IS REQUIRED TO SCHEDULE INSPECTIONS.

INSPECTIONS

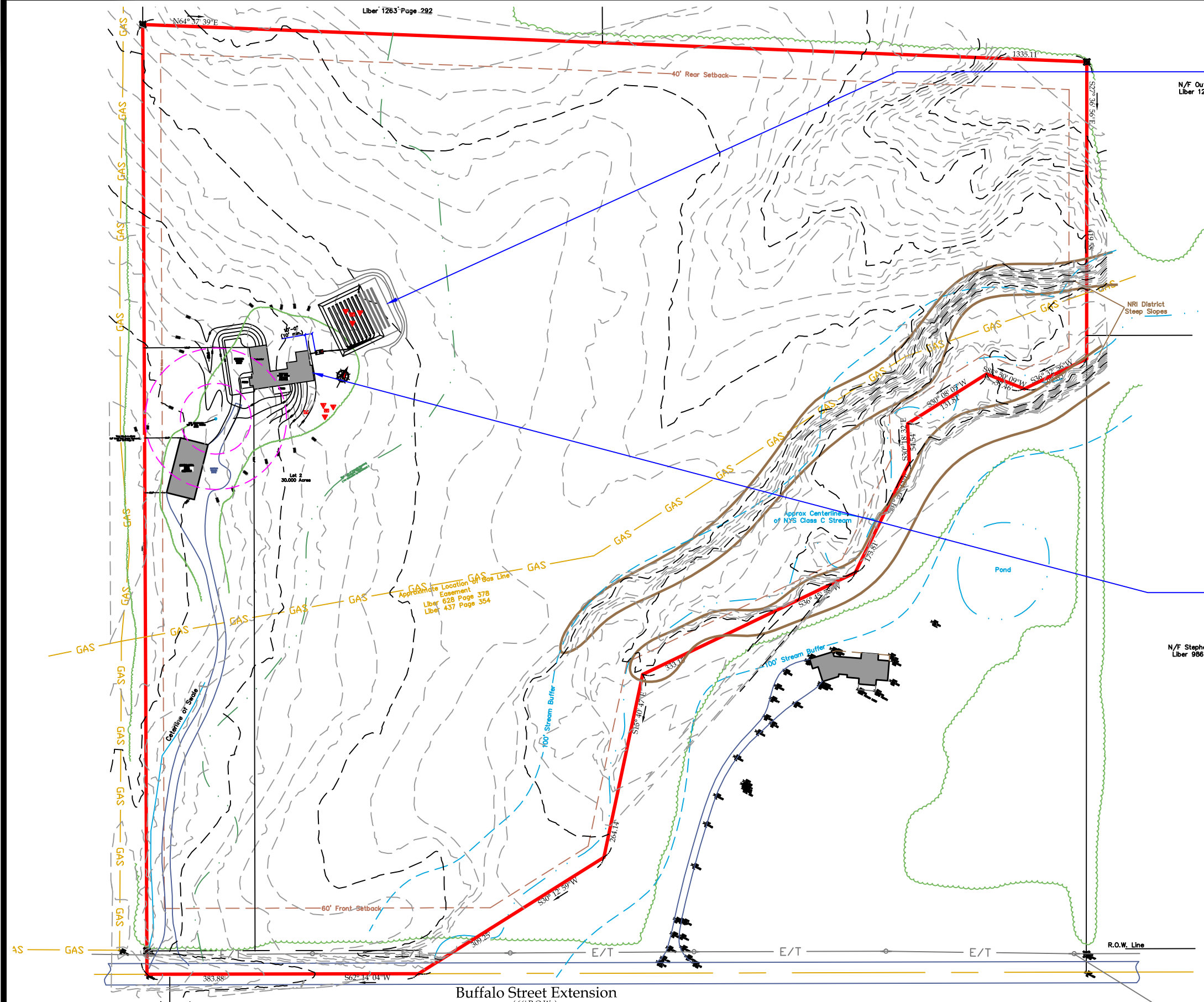
ALL INSTALLATIONS MUST BE INSPECTED AND APPROVED BY MCCORMICK ENGINEERING PC PRIOR TO USE. A MINIMUM OF 72 HOUR NOTICE IS REQUIRED TO SCHEDULE INSPECTIONS.

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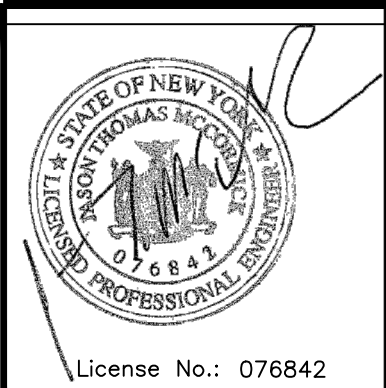
SEPTIC SYSTEM BASIS OF DESIGN



SHALLOW ABSORPTION TRENCH WITH 50% FUTURE EXPANSION AREA.

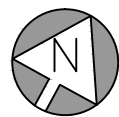
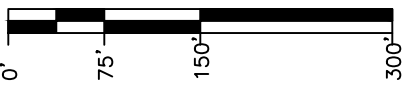
- NOTES:
1. REFER TO BASIS OF DESIGN ON DRAWING C-2.0 AND THE PIPE SCHEDULE ON DRAWING C-5.0 FOR ADDITIONAL REQUIREMENTS AND INFORMATION
 2. CONTRACTOR SHALL CONFIRM ALL REQUIRED SETBACKS ARE MET PRIOR TO START OF CONSTRUCTION.. ANY CONFLICTS SHALL BE REPORTED TO MCCORMICK ENGINEERING PC FOR RESOLUTION.
 3. THE LOCATIONS OF THE SEPTIC TANK AND DISTRIBUTION BOX SHALL BE FIELD ADJUSTED AS REQUIRED TO MAINTAIN GRAVITY. MINIMUM SEPARATION REQUIRES SHALL BE MAINTAINED.

SINGLE FAMILY HOME - 4 BEDROOMS



SITE PLAN

SCALE: 1" = 150'-0"

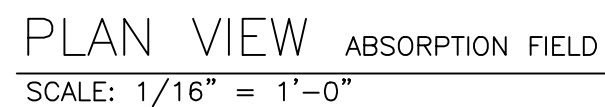
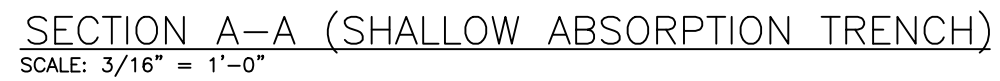


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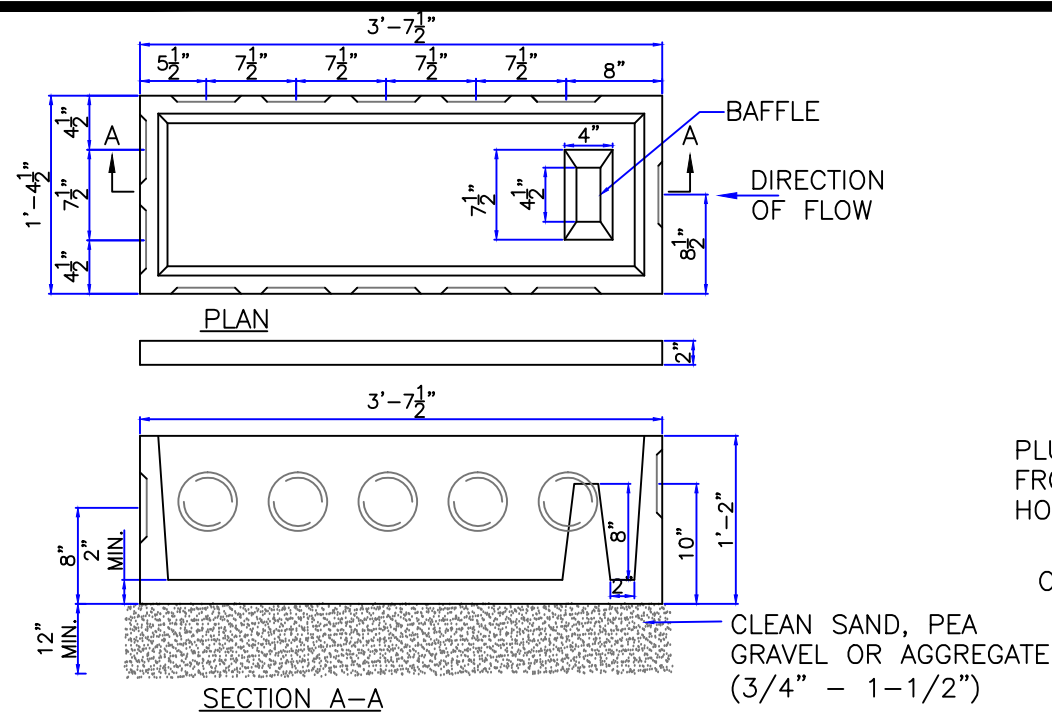
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OVERALL SITE PLAN

Date: 04/01/20 Drawing No.: C-2.0



Date: 04/01/20	Drawing No.: C-3.0
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12 OUTLET DISTRIBUTION BOX

NOT TO SCALE

DISTRIBUTION BOX NOTES:

1. PIPE JOINTS TO BE SEALED WITH ASPHALT MATERIAL OR EQUIVALENT.
2. INVERT ELEVATIONS OF ALL OUTLET PIPES SHALL BE EQUAL. SPEED LEVELING DEVICES ARE REQUIRED.

PRECAST CONCRETE SPECIFICATIONS:

CONCRETE: 4,000 P.S.I. @ 28 DAYS.

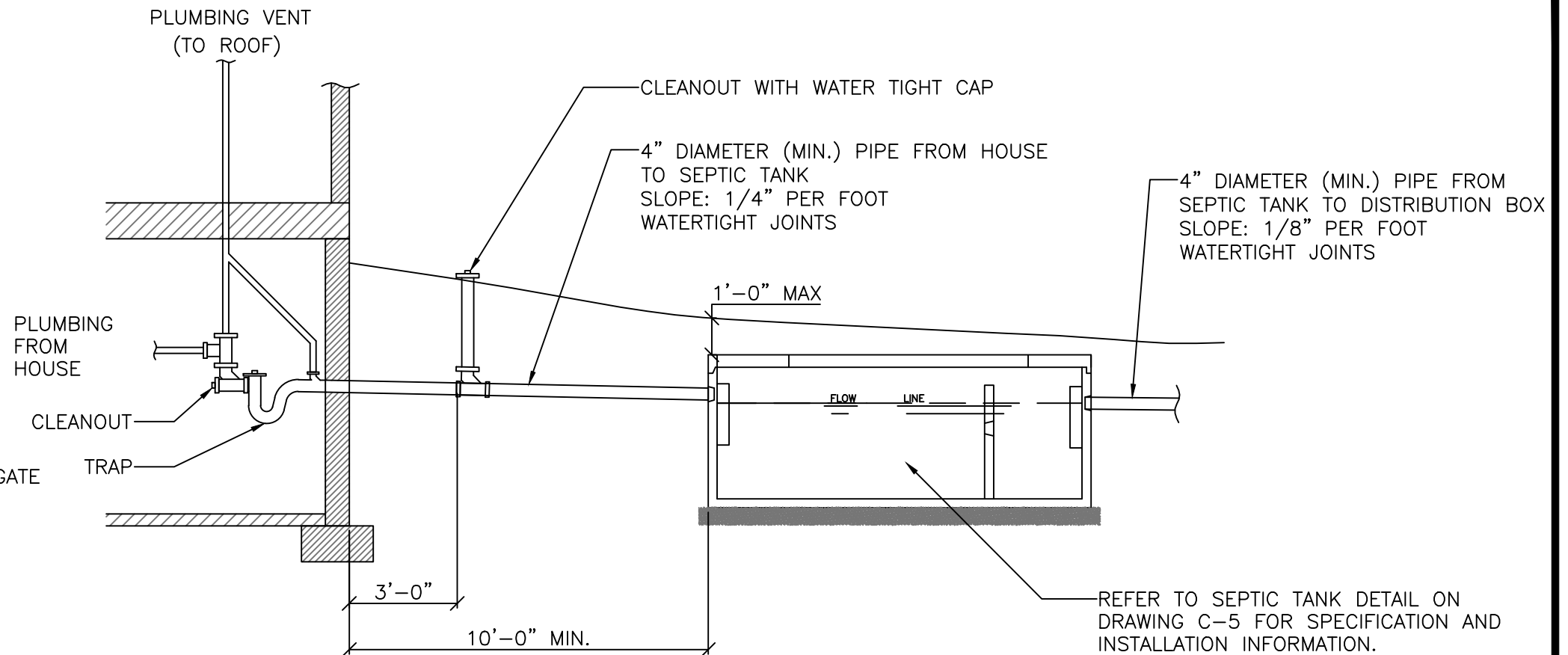
ENTRAINED AIR: 5% - 9%.

STEEL: A.S.T.M. A496-A615
GRADE 60-60 KSI.

DISTRIBUTION BOX SPECIFICATIONS:

DESIGN LOADING: A-0.3/300PSF/WALKWAYS.

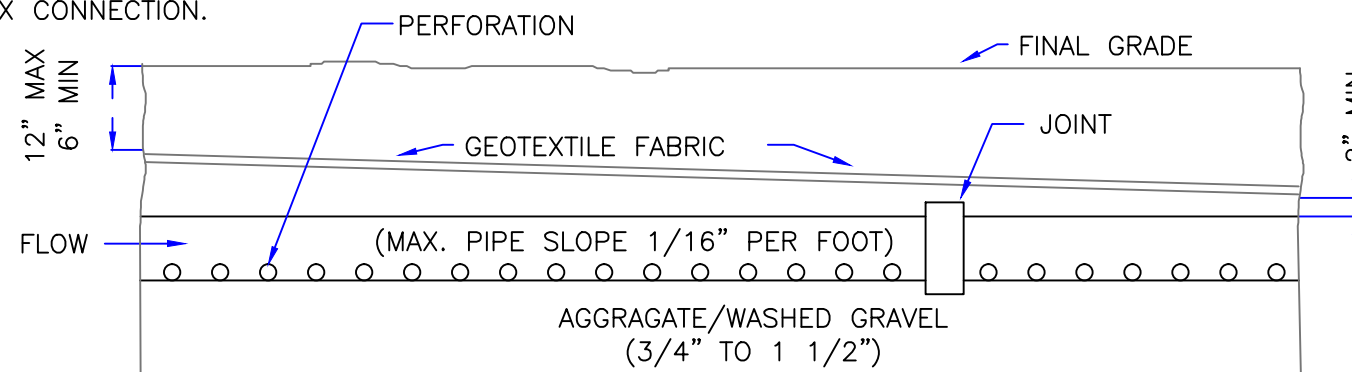
INLET/OUTLETS: LOW PRESSURE POLYETHYLENE
WATERTIGHT PIPE TO BOX CONNECTION.



PLUMBING DETAIL

NOT TO SCALE

NOTE: HOUSE TRAP NOT REQUIRED IF EACH PLUMBING FIXTURE IS INDIVIDUALLY TRAPPED AND VENTED



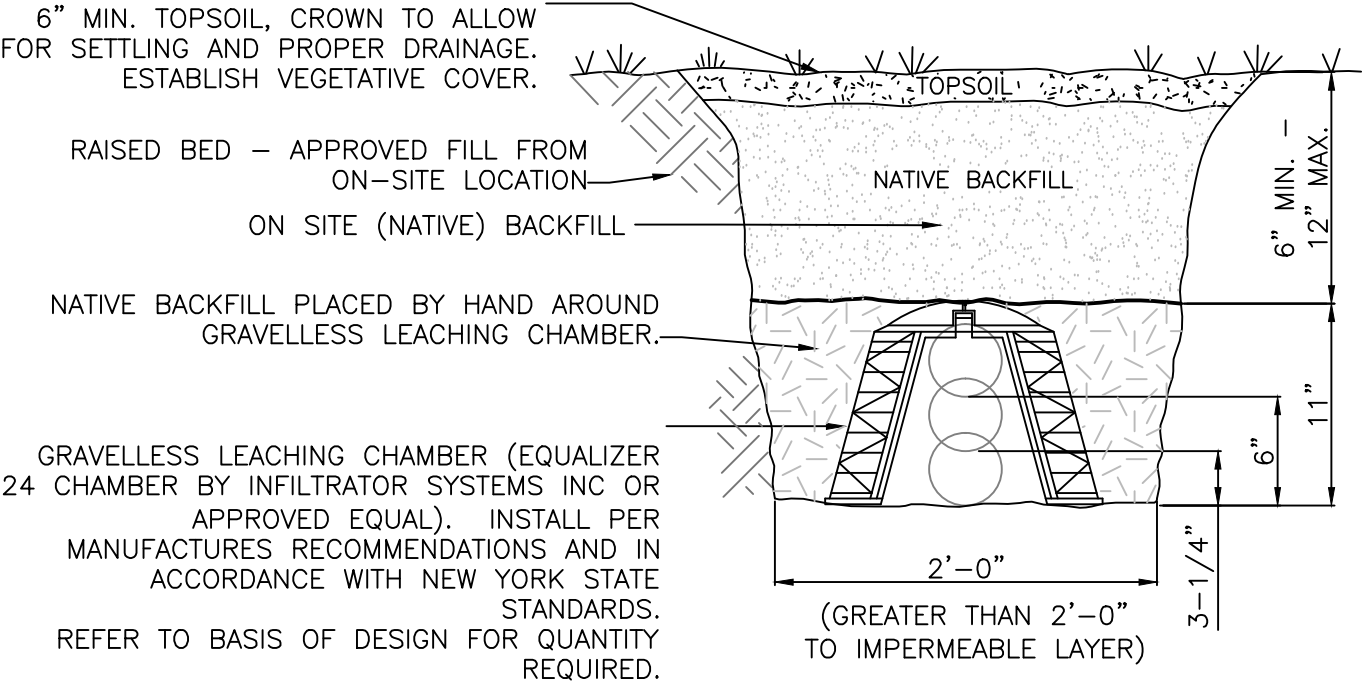
NOTE:

- 1) SPACING OF ABSORPTION TRENCH - 6' O.C.
- 2) ENDS OF ALL DISTRIBUTOR PIPES MUST BE CAPPED.

ABSORPTION TRENCH PROFILE - SECTION B-B

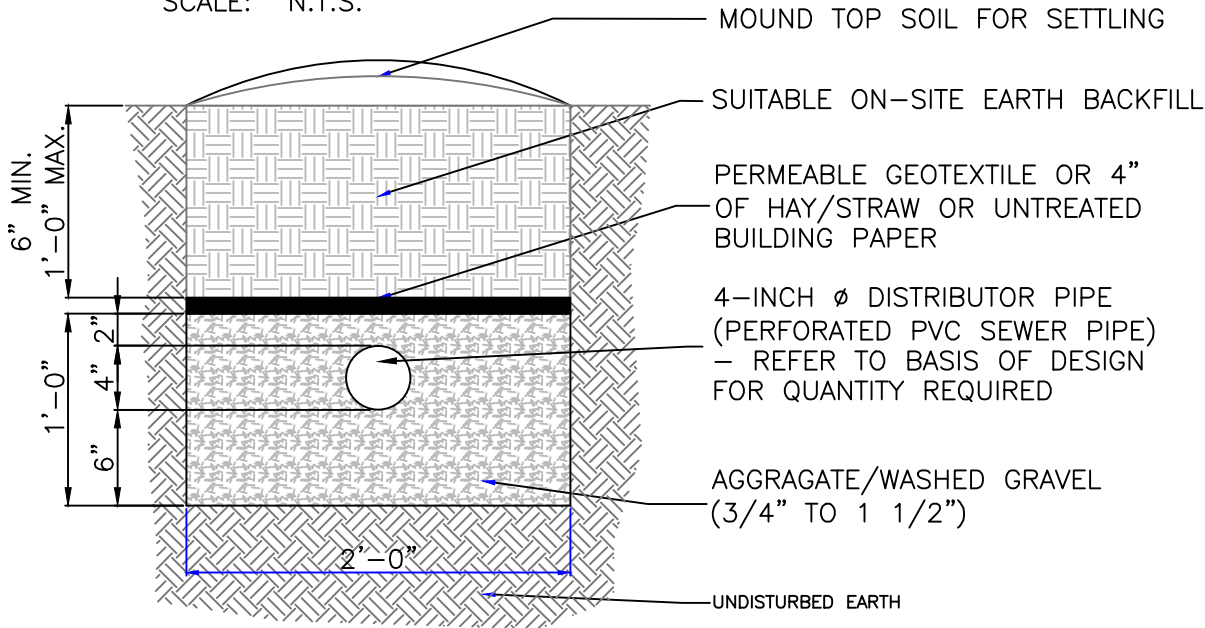
SCALE: N.T.S.

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<p>SEPTIC SYSTEM DETAILS 2 OF 3</p>		
Date: 04/01/20	Drawing No.:	C-4.0



GRAVELLESS ABSORPTION SYSTEM DETAIL

SCALE: N.T.S.

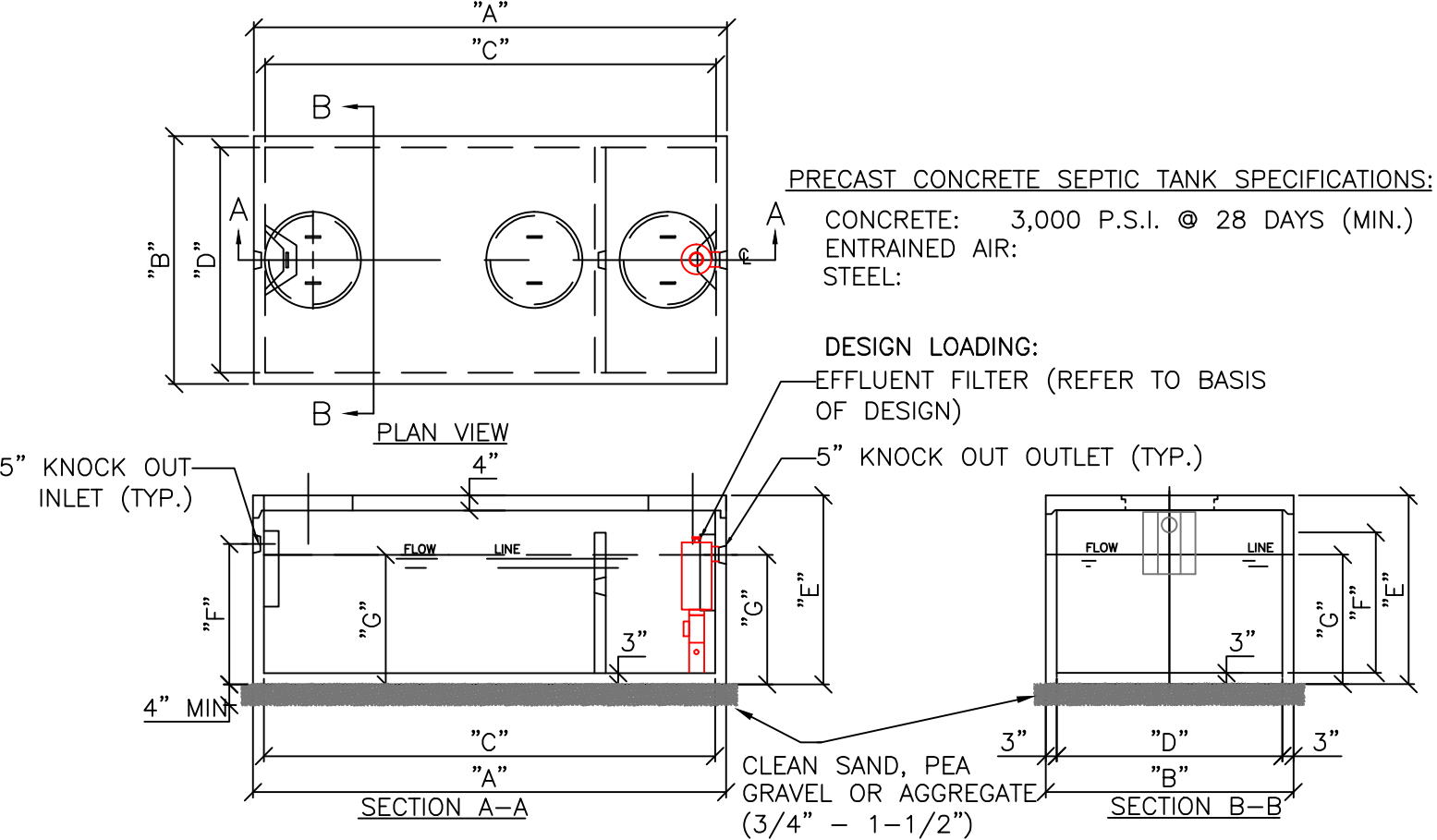


ABSORPTION TRENCH DETAIL

SCALE: 1" = 1'-0"

PIPE SCHEDULE			
LOCATION	SIZE	TYPE	SLOPE
HOUSE TO SEPTIC TANK	4"	PVC SEWER PIPE (SCH. 40) – NON PERFORATED	1/4" PER FOOT (MIN)
SEPTIC TANK TO DISTRIBUTION BOX	4"	PVC SEWER PIPE (SCH. 40) – NON PERFORATED	1/8" PER FOOT (MIN)
DISTRIBUTION BOX TO DISTRIBUTOR PIPE	4"	PVC SEWER PIPE – NON PERFORATED	1/32" (MIN) – 1/8" (MAX) PER FOOT
ABSORPTION TRENCH DISTRIBUTOR PIPE	4"	PVC SEWER PIPE – PERFORATED	1/16" PER FOOT (MAX)
GRAVELLESS LEACHING CHAMBER	OR EQ -24	OR INFILTRATOR EQUALIZER 24	OR LEVEL – 1/16" PER FOOT (MAX)

REFER TO BASIS OF DESIGN FOR REQUIRED LENGTH OF ABSORPTION TRENCH.



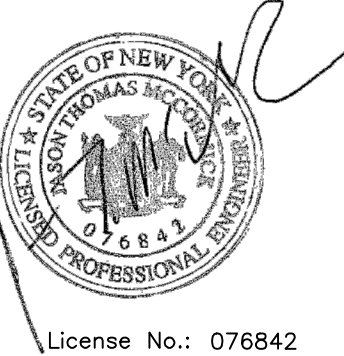
SEPTIC TANK SIZE (GALLONS)	LENGTH O.D. "A"	WIDTH O.D. "B"	LENGTH I.D. "C"	WIDTH I.D. "D"	HEIGHT O.D. "E"	INLET "F"	OUTLET "G"
1,250	129"	68"	123"	62"	59"	46"	43"

- NOTES:
- CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.
 - INSTALL A ZABEL FILTER ON OUTLET
 - REFER TO BASIS OF DESIGN NOTES ON DWG C-2 FOR ADDITIONAL INFORMATION.
 - PLACE A MIN. OF 4-INCH OF CLEAN SAND, PEA GRAVEL OR AGGREGATE (3/4" - 1-1/2") UNDER SEPTIC TANK.

SEPTIC TANK DETAIL

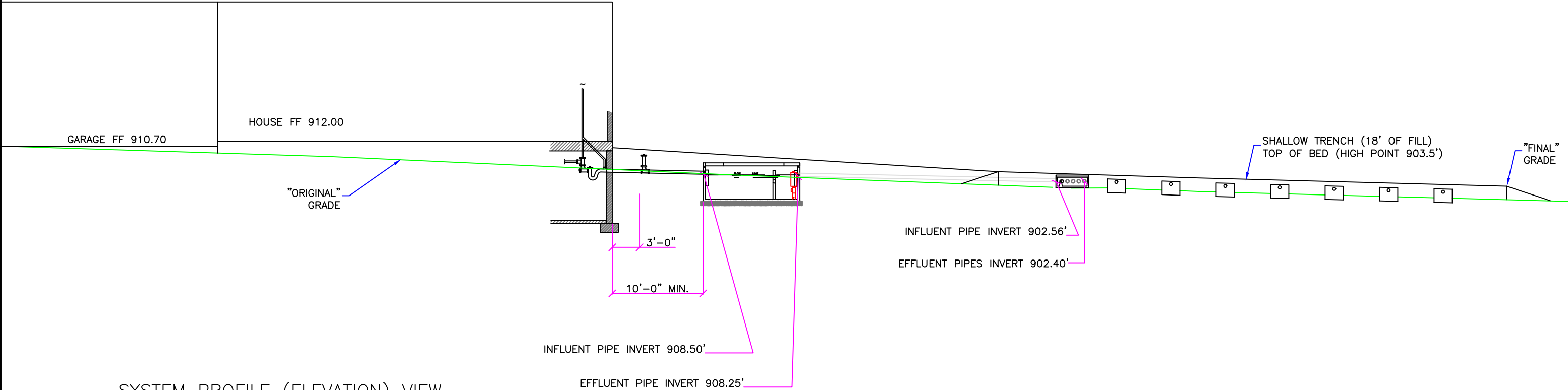
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SEPTIC SYSTEM DETAILS 3 OF 3


Date: 04/01/20 Drawing No.: C-5.0



SYSTEM PROFILE (ELEVATION) VIEW
SCALE: 3/32" = 1'-0"

NOTE:

1. REFER TO PIPE SCHEDULE ON DRAWING C-5.0 FOR PIPE SCHEDULE (SIZE AND SLOPE)
2. SHALLOW TRENCH LEACH FIELD AREA INCLUDING TAPERS SHALL BE SEEDED AND MAINTAINED AS LAWN

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