

DESIGN CRITERIA & NOTES:

- PERCOLATION RATE: 20.1-30.0 MIN. / INCH (MAP REFERENCE 1)
- MAXIMUM BUILDING CAPACITY: 100 PEOPLE
- PROPOSED DESIGN FLOW: 100 MEALS * 5 GPD/MEAL = 500 GPD
- MINIMUM SIZE OF SEPTIC TANK REQUIRED: 1,000 GALLONS
- LEACHING AREA REQUIRED BY HEALTH CODE: 556 SQ. FT.
- LEACHING AREA PROVIDED: ONE ROW OF EIGHTEEN (18") PRECAST CONCRETE GALLERIES - 64" IN LENGTH, (6.2 SF PER LF X 64 LF) = 396.8 SF + EXISTING LEACHING AREA (1,042 SF) = 1,438.4 SF. ONE FOOT OF APPROVED AGGREGATE (NO. 4 STONE) IS TO BE ADDED TO EACH GALLERY END AS DEPICTED HEREON.
- MOTTLING: FOUND TO BE 28" IN TEST HOLE #3.
- LEDGE: NONE
- THE MAXIMUM DEPTH INTO EXISTING GROUND (28" - 18") = 10".
- THE PIPE BETWEEN THE BUILDING AND SEPTIC TANK SHALL BE 4 IN. EXTRA HEAVY CAST IRON, DUCTILE IRON, EXTRA STRENGTH PVC ASTM D 1785 SCHEDULE 40, OR APPROVED EQUAL.
- ALL DISTRIBUTION PIPE IS TO BE ASTM D3034 SDR35 (4" PVC) OR EQUAL UNLESS NOTED.
- SEPTIC TANK SHALL BE 1,000 GALLONS MEETING THE CT PUBLIC HEALTH CODE TECHNICAL STANDARDS BEING A TWO COMPARTMENT TANK WITH THE FIRST COMPARTMENT CONTAINING TWO THIRDS THE REQUIRED CAPACITY FOR SOLIDS. THE SECOND COMPARTMENT SHALL CONTAIN ONE THIRD THE REQUIRED CAPACITY FOR LIQUIDS. THE TANK SHALL BE SET LEVEL ON A MINIMUM OF 6" OF PROCESSED AGGREGATE OR BROKEN STONE BASE ON COMPACTED SUBGRADE. THE OUTLET TO THE TANK SHALL CONTAIN THE APPROPRIATE TEE BAFFLE AND EFFLUENT FILTER ZABEL A-1800 OR APPROVED EQUAL.
- THE BOTTOM OF EACH LEACHING GALLERY TRENCH SHALL BE SIX FEET (6') WIDE AND LEVEL THROUGHOUT. THE GALLERY SHALL BE AT LEAST FOUR FEET (4') WIDE WITH AN ADDITIONAL TWELVE INCHES (12") ON EACH SIDE BACKFILLED WITH APPROVED AGGREGATE CONSISTING OF BROKEN STONE, CRUSHED STONE, OR SCREENED GRAVEL MEETING THE DEPARTMENT OF TRANSPORTATION FORM B18 SPECIFICATION M.01.01 FOR NO. 4 STONE.

APPROVED AGGREGATE (NO. 4 STONE)

SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
2-INCH	100%
1.5-INCH	90%-100%
1-INCH	20%-55%
3/4-INCH	0-15%
3/8-INCH	0-5%

- TOPSOIL IN THE VICINITY OF THE SYSTEM SHALL BE REMOVED PRIOR TO PLACEMENT OF FILL. THE SEPTIC AREA SHALL BE PROTECTED FROM OVERCOMPACTION BY EXCESSIVE TRAVEL FROM RUBBER Tired MACHINES, STOCKPILE AREAS, ETC.
- "SELECT FILL MATERIAL" AND "SELECT BACKFILL MATERIAL" PLACED WITHIN AND ADJACENT TO PROPOSED LEACHING AREAS SHALL BE COMPRISED OF CLEAN SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE FILL MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS.

SELECT FILL MATERIAL MUST CONFORM TO THE FOLLOWING CRITERIA:

- THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN (3) INCHES
- UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE # 4 SIEVE (THIS IS THE GRAVEL PORTION OF THE SAMPLE)
- THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN RE-WEIGHED AND THE SIEVE ANALYSIS STARTED
- THE REMAINING SAMPLE SHALL MEET THE FOLLOWING GRADATION CRITERIA:

SIEVE SIZE	PERCENT PASSING	WET SIEVE	DRY SIEVE
NO. 4	100%	100%	100%
NO. 10	70%-100%	70%-100%	70%-100%
NO. 40	**10%-50%	**10%-50%	10%-75%
NO. 100	0-20%	0-20%	0-5%
NO. 200	0-5%	0-5%	0-2.5%

NOTE: ** PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%. DOCUMENTATION OF TEST RESULTS ARE TO BE PROVIDED TO THE HEALTH DEPARTMENT.

- AFTER TOPSOIL IS PLACED, THE AREA SHALL BE SEEDED AND MULCHED. APPROPRIATE CONTROL MEASURES SHALL BE IMPLEMENTED DURING AND AFTER CONSTRUCTION TO PREVENT EROSION AND TRANSPORT OF SEDIMENT.
- AS SHOWN ON THE PLAN, FILL SHALL EXTEND AT LEAST 10' BEYOND THE GALLERY TRENCH BEFORE TAPERING OFF ON THE SLOPE. (5' APPROVED SEPTIC FILL & 5' ORDINARY FILL).
- THE FINAL GRADE TEN FEET FROM THE GALLERY TRENCHES SHALL BE EQUAL TO OR GREATER THAN THE ELEVATION OF THE TOP OF THE ADJACENT GALLERY TRENCH.
- THIS SYSTEM HAS NOT BEEN DESIGNED FOR THE USE OF LARGE CAPACITY (+100 GALLONS) DISCHARGE TYPE BATHTUBS. RESIDENTIAL GARBAGE DISPOSALS ARE NOT ANTICIPATED FOR THIS DESIGN. IN THE EVENT THAT SUCH AN INSTALLATION IS CONTEMPLATED FOR THE PROPOSED HOUSE, A LARGER SEPTIC TANK AND INCREASED LEACHING FIELD CAPACITY WILL BE REQUIRED.
- THERE ARE NO APPARENT WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM AS SHOWN ON THIS PLAN.
- THE LOCATION AND ELEVATION OF THE PROPOSED SEPTIC SYSTEM SHALL BE STAKED BY A LICENSED ENGINEER/LAND SURVEYOR. BOTTOM OF EACH TRENCH IS TO BE SET NO GREATER THAN 10" INTO ORIGINAL GRADE AS (MEASURED AT HIGH (UPHILL) SIDE OF TRENCH). REMOVE ALL TOPSOIL BENEATH SYSTEM AND REPLACE WITH SELECT FILL AS REQUIRED.
- TIGHT PIPE SHALL BE USED WITHIN 25' OF SEPTIC SYSTEM, AND TO REDUCE SEPARATION DISTANCES FOR SWIMMING POOLS, PROPERTY LINE, PRESSURE POTABLE WATER LINE, AND BUILDING SERVED. TIGHT PIPE SHALL BE PVC ASTM D3034, SDR-35. ACCEPTABLE JOINT RUBBER COMPRESSION GASKET OR SOLVENT WELD COUPLINGS/FITTINGS USING PROPER TWO STEP PVC SOLVENT SOLUTION PROCEDURE.
- THIS DESIGN IS A MODIFICATION TO AN EXISTING SEPTIC SYSTEM. THE CURRENT SYSTEM CONFIGURATION AND CAPACITY IS PROVIDED ON THIS PLAN FOR REFERENCE. THE PROPOSED IMPROVEMENTS TO THE SEPTIC SYSTEM ARE BASED ON THE DESIGN FLOW FROM THE PROPOSED SENIOR CENTER.

EXISTING LEACHING SYSTEM CAPACITY

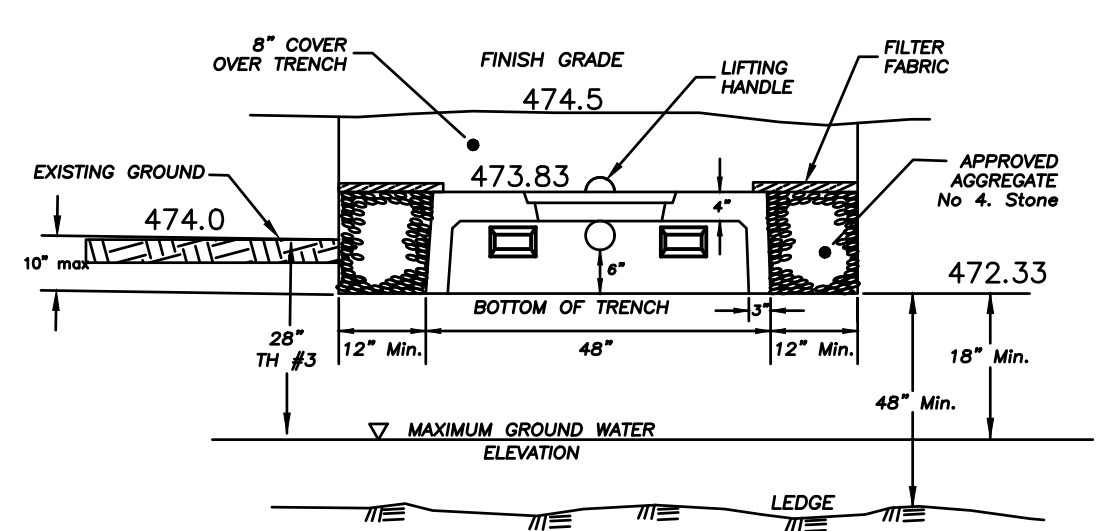
EXISTING LEACHING SYSTEM = 48"x18" CONCRETE GALLERIES
 EFFECTIVE LEACHING AREA (ELA) = 6.2 SF/LF
 EXISTING LEACHING SYSTEM LENGTH = 168 FT
 EXISTING ELA = 1,042 SF

EXISTING LEACHING SYSTEM DESIGN

APPROVED DESIGN FLOW = 900 GPD
 (COMBINED TOWN HALL AND FIRE DEPT.)
 FIELD PERC. RATE = 20.1-30.1 MIN/IN
 APPLICATION RATE = 0.9
 MINIMUM REQ'D ELA = 1,000 SF
 THE PROVIDED EFFECTIVE LEACHING AREA EXCEEDS THE MIN. REQUIRED

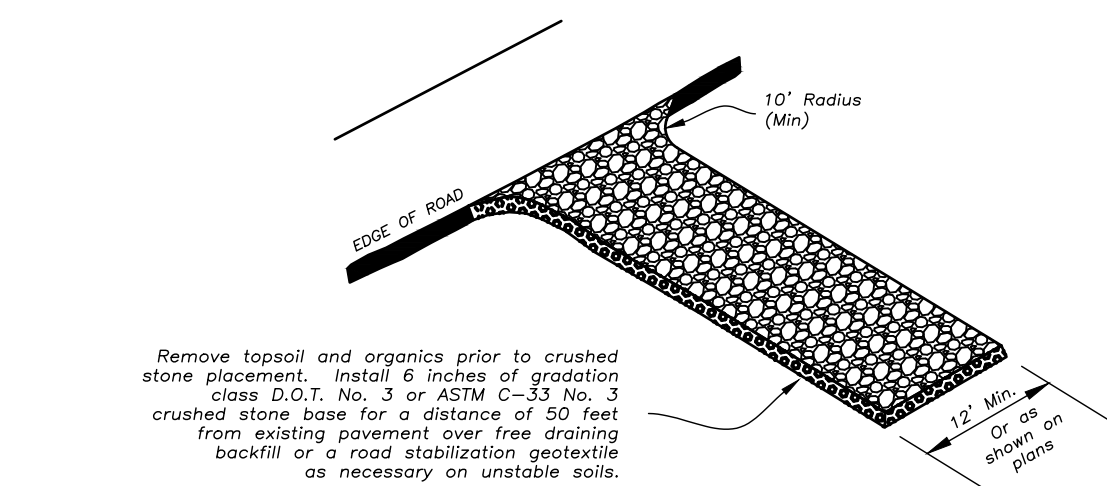
EXISTING MINIMUM LEACHING SYSTEM SPREAD (MLSS)

HYDRAULIC GRADIENT = 10.0%
 RECEIVING SOIL DEPTH = 26.1-30.0 INCHES
 HYDRAULIC FACTOR (HF) = 26
 FF = 3.0
 PF = 1.5
 MLSS = 117 FT
 THE PROVIDED MLSS EXCEEDS THE MINIMUM REQUIRED



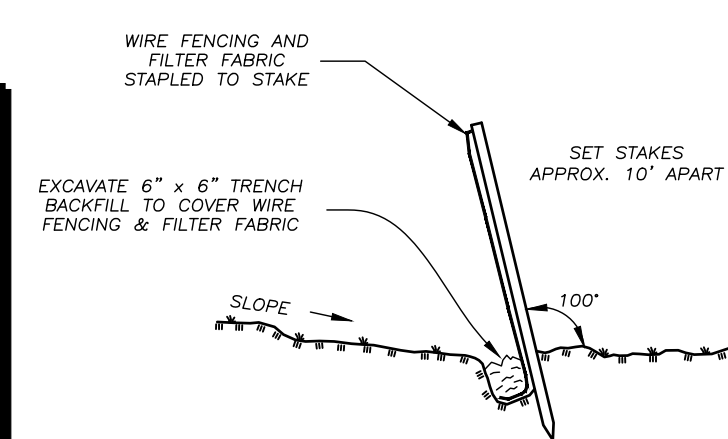
TYPICAL TRENCH DETAIL

TOTAL WIDTH OF TRENCH = 6' MINIMUM
 Not to Scale



CONSTRUCTION ENTRANCE DETAIL

Not to Scale



SILT FENCE DETAIL

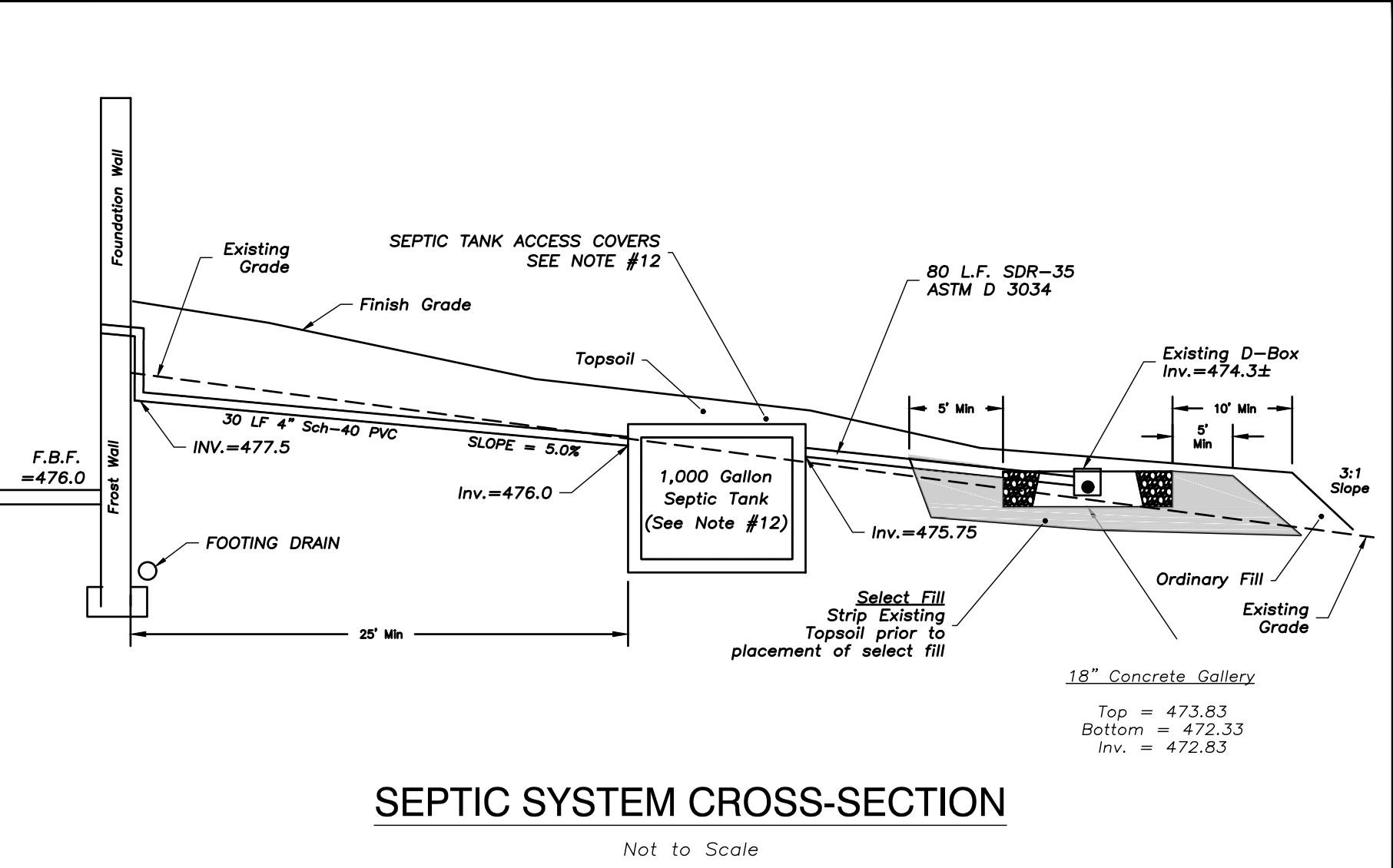
Not to Scale

TEST HOLE DATA

Observed by: Public Safety Complex Design Engineer
 Date: February 8, 1990
 Testhole #3
 0-5" Topsoil
 6-32" Fine sandy loam
 32-84" Moderately compact till
 mottling at 28" restrictive layer at 28" water at 50" ledge not observed
 Testhole #4
 0-12" Topsoil
 12-32" Fine sandy loam
 32-70" Moderately compact till
 mottling at 29" restrictive layer at 29" ledge not observed

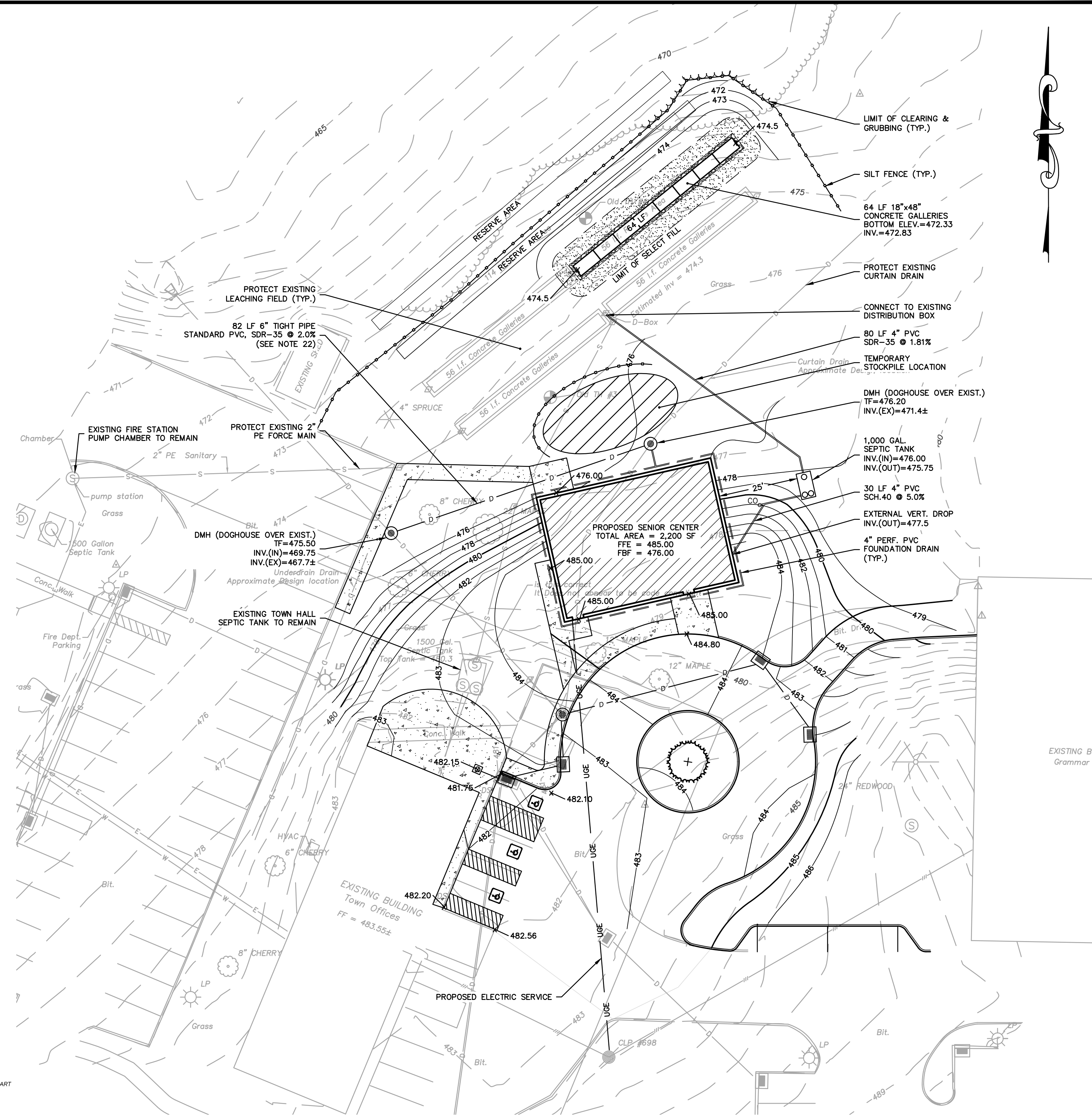
PERCOLATION RATES

Percolation rates obtained from septic system design notes located on Map Reference 1
 Date: 04/04/90
 design rate 20.1-30.0 min/in
MINIMUM LEACHING SYSTEM SPREAD (MLSS)=HF*FF*PF
 HYDRAULIC GRADIENT = 8.1-10.0%
 RESTRICTIVE LAYER = 28.1-30.0"
 HYDRAULIC FACTOR (HF) = 26
 FLOW FACTOR (FF) = 1,150/300 = 3.8
 PERC FACTOR (PF) = 1.5
 (MLSS)=(26 x 3.8 x 1.5) = 148.2 lf.



SEPTIC SYSTEM CROSS-SECTION

Not to Scale



ABBREVIATIONS

N/F	NOW OR FORMERLY
MIN.	MINIMUM
LF	LINEAR FEET
SF	SQUARE FEET
INV	PIPE INVERT
O.F.	OVERFLOW INVERT
BIT	BITUMINOUS PAVEMENT
CONC	CONCRETE
P/M/T	PAVEMENT
TYP.	TYPICAL
TW	TOP FOUNDATION WALL
FFE	FINISH FLOOR ELEVATION
FBF	FINISHED BASEMENT FLOOR
FGF	FINISHED GARAGE FLOOR
±	MORE OR LESS

LEGEND

●	Lot Corner Existing
□	SEPTIC TANK
○	PROPOSED WELL
⊕	DEEP SOIL TEST LOCATION
⊙	PERC TEST LOCATION
x	PROPOSED SPOT GRADE
+	EXISTING SPOT ELEVATION
—	EXISTING CONTOUR
- - -	PROPOSED CONTOUR
~ ~ ~	PROPOSED SILT FENCE
⊃	CLEARING & GRUBBING

CRUD NOTE:

CONTRACTOR REQUIRED TO NOTIFY "CALL-BEFORE-YOU-DIG" 72 HOURS PRIOR TO ANY ON-SITE EXCAVATION OR CONSTRUCTION AT 1-800-922-4455.

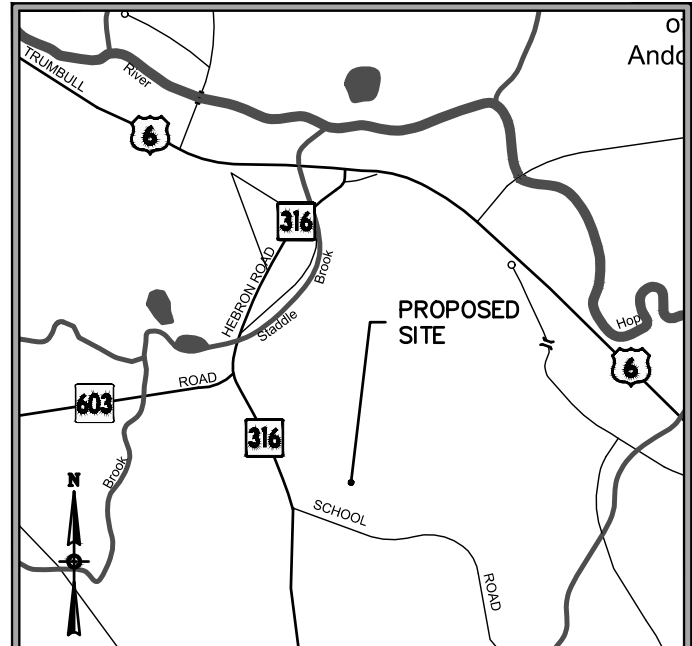
GENERAL SITE NOTES:

- LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
- ALL UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- ALL UTILITY LOCATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE CONDUITS, PRODUCT PIPING, ETC. PRIOR TO COMMENCEMENT OF EXCAVATION OF ANY TYPE. CONTRACTOR TO NOTIFY ENGINEER OF ALL DISCREPANCIES FROM THIS PLAN IDENTIFIED IN THE FIELD.

MAP REFERENCE:

- PLAN SET FOR PUBLIC SAFETY COMPLEX, DATED MARCH 7, 1990, PREPARED BY ALAN C. WEDIE ARCHITECT, PREPARED FOR TOWN OF ANDOVER. ON FILE WITH THE TOWN OF ANDOVER, PROVIDED TO BSC GROUP FOR REFERENCE.

IT IS THE INTENT OF THIS PLAN TO COMPLY WITH THE "CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS" TECHNICAL STANDARDS REVISED TO JANUARY 1, 2018. THE CONTRACTOR INSTALLER SHALL COMPLY WITH THE STANDARDS, MATERIALS AND SPECIFICATIONS SET FORTH THEREIN. IN THE EVENT A CONFLICT ARISES BETWEEN THE ABOVE REFERENCED STANDARDS AND THOSE SPECIFIED ON THIS PLAN, THE MORE STRINGENT SHALL APPLY. THE CONTRACTOR SHALL NOTIFY THE PERMITTING JURISDICTION AND THE ENGINEER OF ANY CHANGES, FIELD CONDITIONS AND/OR DEFICIENCIES OF THE PLAN WITH RESPECT TO THE PROPOSED SEPTIC SYSTEM.



LOCATION MAP
 SCALE 1 IN. = 2000 FT.

DRAFT

MATTHEW R. STEPHAN, PE No. 34678

SUBSURFACE SEWAGE DISPOSAL SYSTEM DESIGN

17 SCHOOL ROAD
 IN
 ANDOVER
 CONNECTICUT

APRIL 7, 2022

REVISIONS:

NO.	DESCRIPTION

PREPARED FOR:
 TOWN OF ANDOVER
 17 SCHOOL ROAD
 ANDOVER, CT 06232

BSC GROUP
 655 Winding Brook Drive
 Glastonbury, Connecticut 06033
 860 652 8227

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 SCALE: 1" = 20'



FILE: 8382100-SEPTIC.DWG
 DWG. NO:
 JOB. NO: 83821.00
SHEET 1 of 1