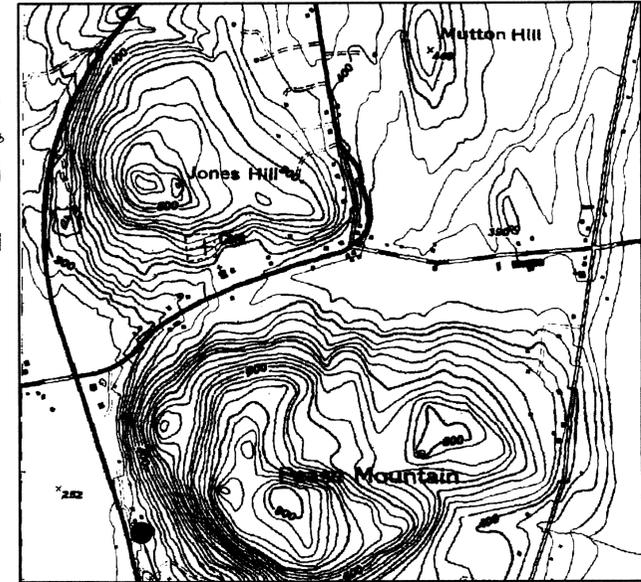


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US ROUTE 7



PLAN
SCALE: 1"=20'



PROJECT LOCATION
LOCATION PLAN
SCALE: 1"=1,000'

LEGEND

EXISTING	BEDROCK WELL	BR
BRICK PAVERS		[Symbol]
CONTOUR	TREELINE	91
SEWER	PROPERTY LINE	S-PL
GRAVEL ROAD	PAVED ROAD	[Symbol]
DECIDUOUS TREE	CONIFEROUS TREE	[Symbol]
SHRUB	SURVEY CONTROL POINT	TP-1
TEST PIT		[Symbol]
PROPOSED	CONTOUR	91
SEWERLINE	UNDERGROUND ELECTRIC	U-E
FORCEMAIN	SWALE	FM
SPOT ELEVATION		704.72

THIS DOCUMENT IS A SITE PLAN, NOT A LEGAL PLAT PLAN. INFORMATION WAS OBTAINED FROM:
 1. TOPOGRAPHICAL SURVEY BY FA&A ON 11/01/08 OF TWO (2) CONCRETE MONUMENTS FOUND.
 2. VERMONT CENTER FOR GEOGRAPHICAL INFORMATION, CHITTENDEN COUNTY GIS INFORMATION, TOWN OF CHARLOTTE PARCEL SHAPE FILES.
 THE PROPERTY LINES AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED ON THIS DRAWING AND IN THIS PERMIT APPLICATION ARE FOR THE USE OF STATE AND TOWN OF CHARLOTTE PERMITTING ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 26 V.S.A. 2502(4), AND SHALL NOT BE USED IN LIEU OF A SURVEY OR AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.

BASIS OF DESIGN

FLOW
 3 BEDROOMS x 2 PER/BR x 70 gpd/per = 420 gpd
MOUND WASTEWATER DISPOSAL SYSTEM
 MOST RESTRICTIVE LAYER = CLAY
 ESTIMATED PERCOLATION RATE = 120 MIN/INCH
Absorption Bed Size Area
 REQUIRED
 420 gpd / 1 gpd/SF = 420 S.F.
 ACTUAL
 8 FT x 64 FT = 512 S.F.
BASAL AREA (MAX. APPLICATION RATE = 0.24 gpd/S.F.)
 REQUIRED
 420 gpd / 0.24 gpd/SF = 1,750 S.F.
 ACTUAL
 64 FT x 28 FT = 1,792 S.F.

DOSING PUMP STATION

MIN. DOSE VOLUME = 1 x FORCEMAIN VOLUME +
 5 x DISTRIBUTION NETWORK
 2" FORCEMAIN LENGTH = 130FT
 1 1/2" DISTRIBUTION LENGTH = 128FT
 $V = \pi r^2 L$
 $V = \pi (2" / 2) / 12" / \pi \times 130 + \pi (1.5" / 2) / 12" / \pi \times 128 \times 5$
 $= 2.83 \text{ FT}^3 + 7.85 \text{ FT}^3$
 $= 10.68 \text{ FT}^3 \times 7.48 \text{ GAL/FT}^3$
 $= 80 \text{ GAL USE 85GAL}$
DOSING CYCLE
 MIN. = 4
 ACTUAL = 420GPD/85GAL/CYCLE
 = 4.9 CYCLES

GENERAL CONSTRUCTION NOTES

- A.) NOTIFICATION OF TOWN AND ENGINEER FOR LAYOUT AND TESTING
- PRIOR TO CONSTRUCTION OF THE WASTEWATER SYSTEM, THE APPROVED LOCATION OF THE MOUND IS TO BE STAKED FOR INSPECTION BY THE ENGINEER AND TOWN PERSONNEL.
 - AFTER CONSTRUCTION, BUT PRIOR TO COVERING OF THE SYSTEM, THE ENGINEER AND TOWN CONSULTANT IS TO BE NOTIFIED AND A FINAL INSPECTION AND PRESSURE TEST IS TO BE SCHEDULED.
 - IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER AT CRITICAL PHASES OF THE CONSTRUCTION SO THAT THE ENGINEER IS PRESENT FOR THE REQUIRED TESTING. FAILURE TO DO SO MAY RESULT IN THE NEED TO UNCOVER ALL OR PORTIONS OF THE WORK AT THE CONTRACTORS EXPENSE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO SCHEDULING TESTING. THE ENGINEER SHALL BE PRESENT FOR THE FOLLOWING TESTING.
 - PUMP STATION LEAKAGE TESTING
 - FORCEMAIN HYDROSTATIC AND LEAKAGE TESTING
 - PRESSURE DISTRIBUTION LATERAL TESTING
- PUMP STATION LEAKAGE TEST**
- PUMP STATION LEAKAGE TEST MAY BE PERFORMED BY A WATER EXFILTRATION OR VACUUM TEST.
 - WATER EXFILTRATION TEST
 - AFTER THE STRUCTURE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES SHALL BE FILLED WITH AN APPROVED NONSHRINK CONCRETE GROUT. THE TEST SHALL BE MADE BEFORE BACKFILLING AND BEFORE FILLING AND POINTING THE HORIZONTAL JOINTS. IF THE GROUNDWATER TABLE HAS BEEN ALLOWED TO RISE ABOVE THE BOTTOM OF THE STRUCTURE, IT SHALL BE LOWERED FOR THE DURATION OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE STRUCTURE SHALL BE SUITABLY PLUGGED AND THE PIPES BRACED TO PREVENT BLOWOUT.
 - THE STRUCTURE SHALL THEN BE FILLED WITH POTABLE WATER TO THE UNDERSIDE OF TOP SLAB. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR SECURING THE WATER FOR TEST PURPOSES AND SHALL BE RESPONSIBLE FOR THE EXPENSE OF THESE ARRANGEMENTS AND THE WATER FOR THE TESTS. IF OBSERVATION INDICATES NO VISIBLE LEAK, THAT IS, NO WATER OBSERVED MOVING DOWN THE SURFACE OF THE VAULT AFTER 24 HOURS, THE STRUCTURE MAY BE CONSIDERED TO BE SATISFACTORILY WATERTIGHT. IF THE TEST, AS DESCRIBED ABOVE IS UNSATISFACTORY AS DETERMINED BY THE ENGINEER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DISASSEMBLE, RECONSTRUCT, REPAIR OR REPLACE THE STRUCTURE AS REQUIRED TO CONSTRUCT A WATERTIGHT STRUCTURE. THE STRUCTURE SHALL THEN BE RETESTED AND, IF SATISFACTORY, INTERIOR JOINTS SHALL BE FILLED AND POINTED. ALLOWABLE LEAKAGE RATE SHALL BE 0.1% OF THE VOLUME OF LIQUID IN THE VAULT FILLED TO THE UNDERSIDE OF THE TOP SLAB, OVER A TESTING PERIOD OF 24 HOURS. REVIEW TESTING PROCEDURES WITH ENGINEER PRIOR TO STARTING TESTING. NO ADJUSTMENTS IN THE LEAKAGE ALLOWANCE WILL BE MADE FOR UNKNOWN CAUSES SUCH AS LEAKING PLUGS, ABSORPTIONS, ETC., (I.E., IT WILL BE ASSUMED THAT ALL LOSS OF WATER DURING THE TEST IS A RESULT OF LEAKS THROUGH THE CONCRETE). THE CONTRACTOR SHALL TAKE ANY STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER TABLE IS BELOW THE BOTTOM OF THE STRUCTURE THROUGHOUT THE TEST.
 - WHEN GROUNDWATER IS ALLOWED TO RETURN TO NATURAL LEVEL OUTSIDE THE STRUCTURE, THERE SHALL BE NO LEAKAGE INTO THE STRUCTURE. IF LEAKAGE OCCURS, THE CONTRACTOR SHALL REPAIR, RECONSTRUCT OR REPLACE THE STRUCTURE, INCLUDING RETESTING, AT NO ADDITIONAL COST TO THE OWNER.
 - VACUUM TEST
 - THE TANK SHALL BE PLACED UNDER A VACUUM OF 5" Hg. THERE SHALL BE NO LOSS IN VACUUM OVER A 2 MINUTE TEST.
- FORCEMAIN HYDROSTATIC AND LEAKAGE TEST**
- PREPARATION:
 - TESTS TO BE MADE ONLY AFTER PARTIAL OR COMPLETE BACKFILLING OF TRENCHES.
 - FILL PIPELINES, FITTINGS AND APPURTENANCES FOR TESTING SLOWLY.
 - EXP. AIR FROM ALL PIPELINES, FITTINGS, AND APPURTENANCES PRIOR TO PERFORMING TESTS.
 - PERFORMANCE CRITERIA:
 - HYDROSTATIC AND LEAKAGE TESTS SHALL BE CONDUCTED CONCURRENTLY.
 - THE SPECIFIED TEST PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP CONNECTED TO THE PIPE IN A MANNER SATISFACTORY TO THE ENGINEER.
 - THE SPECIFIED TEST PRESSURE SHALL NOT BE LESS THAN 1.5 TIMES THE NORMAL WORKING PRESSURE OR 50 PSI, WHICHEVER IS GREATER, AS MEASURED AT THE ELEVATION OF THE LOWEST POINT OF THE PIPELINE OR SECTION UNDER TEST, AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE.
 - PRESSURE DURING TEST SHALL NOT VARY BY MORE THAN 5± PSI.
 - DURATION OF TEST SHALL BE AT LEAST 2 HOURS.
 - LEAKAGE TO BE MEASURED IN MANNER SATISFACTORY TO THE ENGINEER.
 - LEAKAGE IS DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, TO MAINTAIN THE PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE FOR THE REQUIRED TEST DURATION.
 - ALLOWABLE LEAKAGE, NO PIPELINE INSTALLATION, OR VALVED SECTION THEREOF WILL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{S \cdot D \cdot (P)^2}{133,200}$$
 L=ALLOWABLE LEAKAGE IN GALLONS PER HOUR
 S=LENGTH OF SECTION BEING TESTED IN FEET
 D=NORMAL PIPE DIAMETER IN INCHES
 P=AVERAGE TEST PRESSURE IN PSI
 - PRESSURE DISTRIBUTION LATERAL TESTING
 - PRESSURE DISTRIBUTION LATERAL TESTING SHALL BE PERFORMED ON THE MOUND WASTEWATER DISPOSAL SYSTEM UTILIZING PRESSURE DISTRIBUTION. THE DISTRIBUTION LATERAL TESTING SHALL BE PERFORMED WITH THE ACTUAL PUMP, VALVES, PIPING, AND FORCEMAIN FOR THE FIELD. THE PUMPSTATION INCLUDING THE PUMP, PIPING, FITTINGS, AND VALVES, SHALL BE OPERATIONAL. THE FORCEMAIN SHALL BE CONSTRUCTED, LEAKAGE TESTED, AND OPERATIONALLY READY, PRIOR TO TESTING. THE FIRST AND LAST ORIFICE FOR THE TRENCH SHALL REMAIN UNCOVERED UNTIL AFTER THE TEST. TO BE ACCEPTABLE, THE TEST MUST SHOW A MINIMUM OF 1 PSI. (2.31 FEET) IS PRESENT AT THE END OF THE LATERAL, BY MEASURING THE SQUIRT HEIGHT. THE TEST MUST ALSO SHOW THAT THE DIFFERENCE IN DISCHARGE RATE BETWEEN THE TWO ORIFICES, WITH THE GREATEST DIFFERENCE IN DISCHARGE RATES, IS NOT GREATER THAN 15 PERCENT.
- E.) CONSTRUCTION
- THE CONTRACTOR SHALL USE ONLY DESIGNATED BENCH MARKS FOR REFERENCE ELEVATIONS. ELEVATIONS ARE BASED ON AN ASSUMED 100.00' DATUM.
 - THE CONTRACTOR SHALL INSTALL A MECHANICAL PLUG IN THE END OF THE PIPE AT THE COMPLETION OF EACH WORK DAY TO SEAL IT FROM WATER AND SOIL.
 - ADDITIONAL BENDS, AS NECESSARY, SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST. PROVIDE A MAXIMUM OF 45° LONG RADIUS BENDS. NO 90° BENDS ALLOWED.
- F.) DIG SAFE
- CONTRACTOR SHALL NOTIFY DIG SAFE ONE (1) WEEK PRIOR TO ANY ANTICIPATED EXCAVATIONS. CONTRACTOR SHALL NOT EXCAVATE IN ANY AREAS UNTIL DIG SAFE HAS BEEN TO THE SITE AND HAS MARKED UTILITIES. (DIG SAFE: 1-888-344-7233)

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FORCIER & ALDRICH & ASSOCIATES



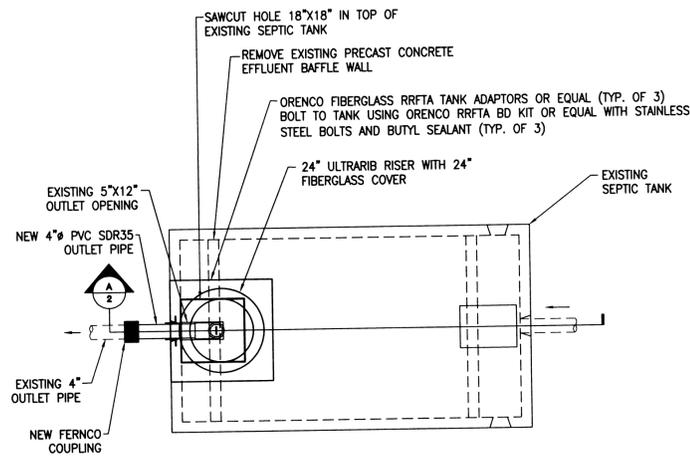
ASKEW RESIDENTIAL WASTEWATER REPLACEMENT DISPOSAL SYSTEM

32 ROOT ROAD
 CHARLOTTE, VERMONT

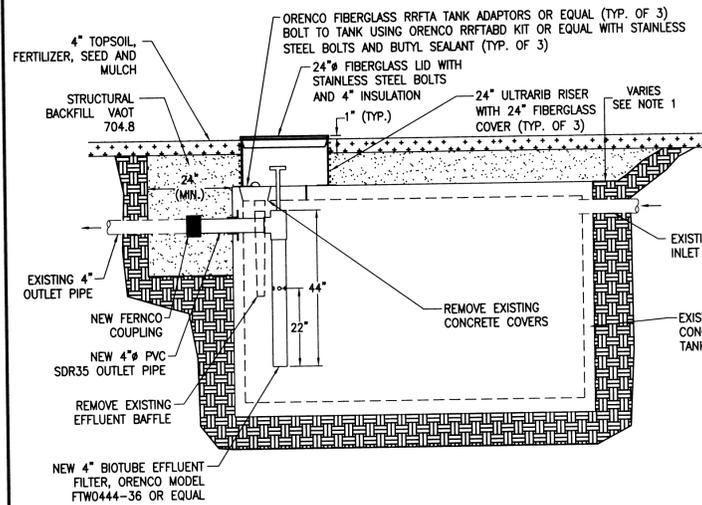
SITE PLAN, LOCATION PLAN AND NOTES

NO.	DATE	REVISION DESCRIPTION	CHECKED

DESIGNED KJC	PROJECT NO. 08092
DRAWN JEN/JEB	DRAWING NO. 1
CHECKED BFA	DATE MAY 1, 2009
SHEET 1	

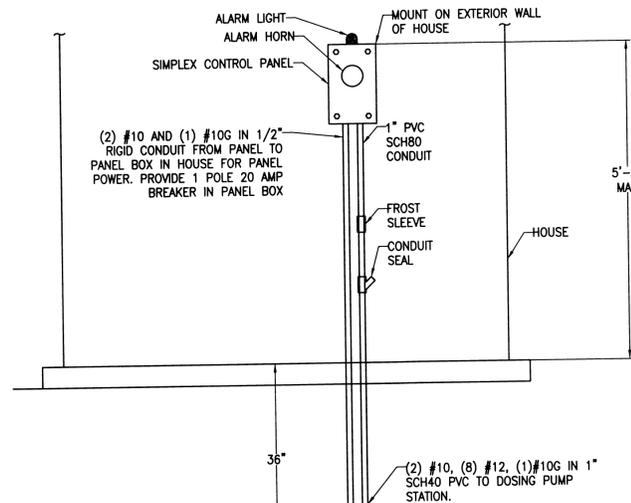


- NOTES:**
- SEPTIC TANK SHALL BE PUMPED OUT BY A SEPTIC HAULER PRIOR TO IMPROVEMENTS.
 - IMPROVEMENTS SHALL BE MADE THE SAME DAY THAT THE TANK IS PUMPED OUT.

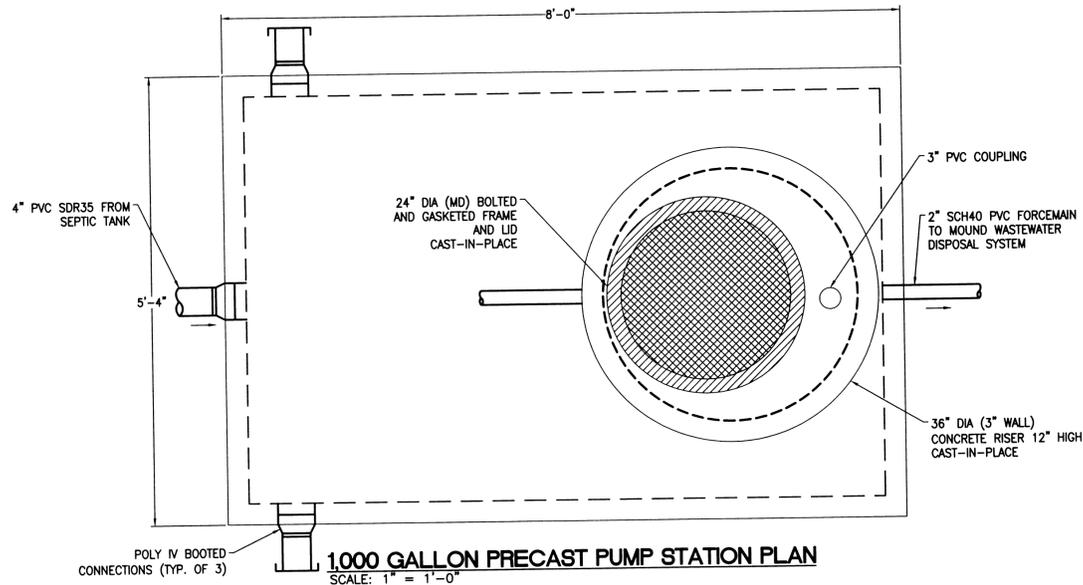


- NOTES:**
- CONTRACTOR SHALL FIELD VERIFY RISER AND ORDER PROPER HEIGHT TO MATCH GROUND ELEVATION AND SEPTIC TANK DEPTH.

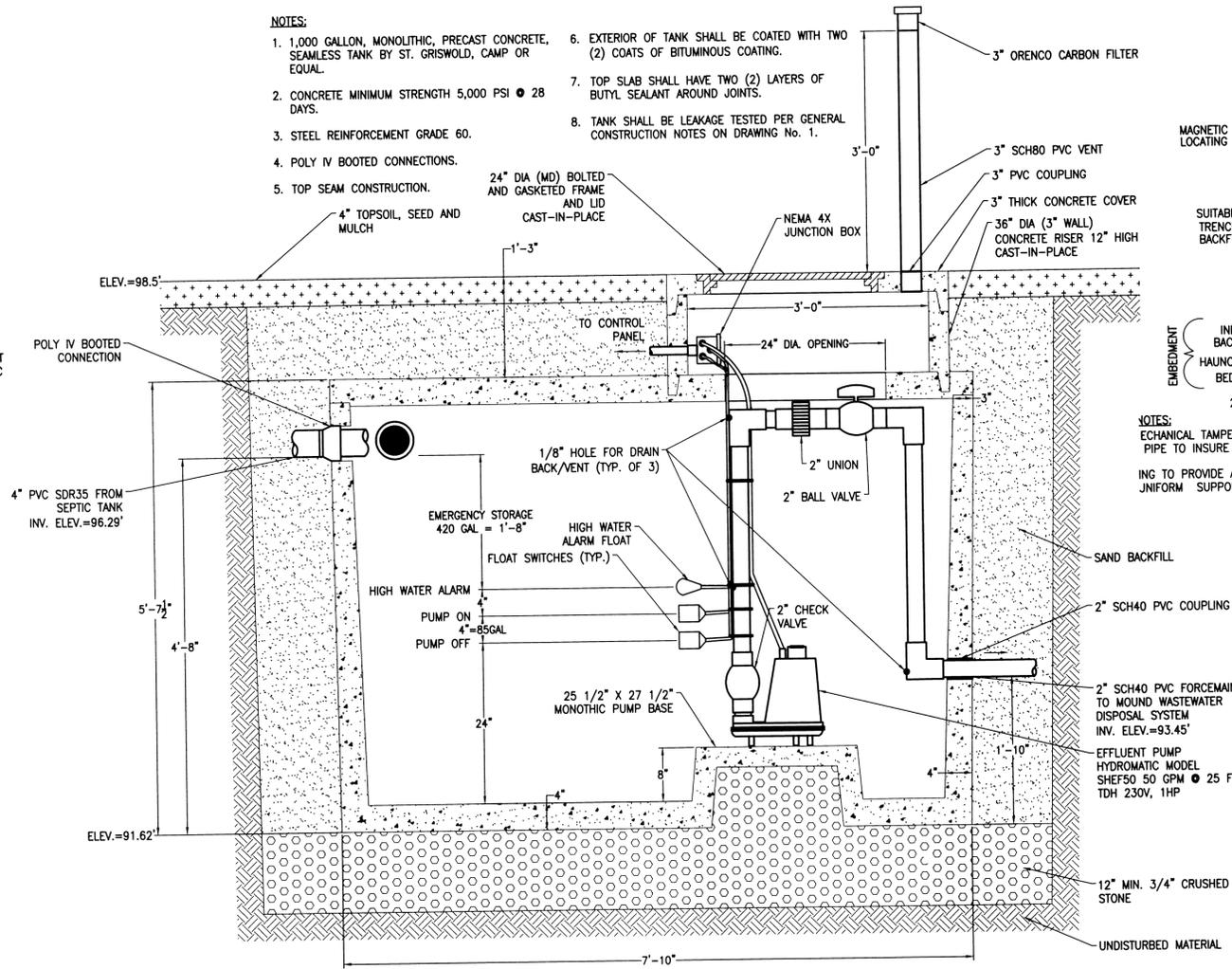
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2



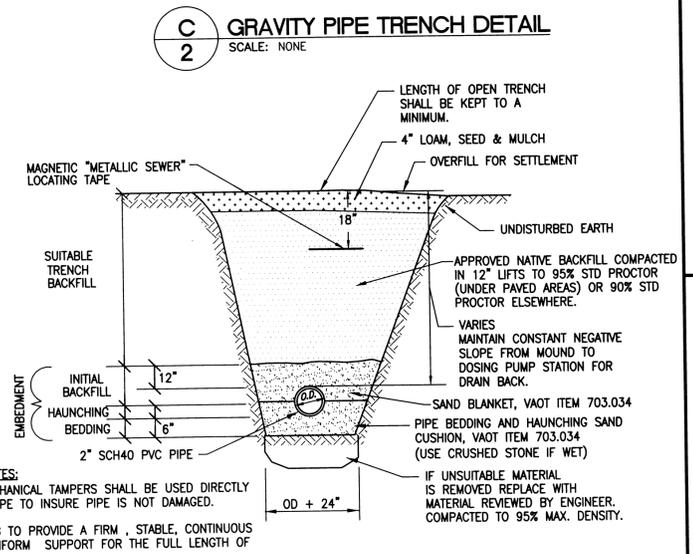
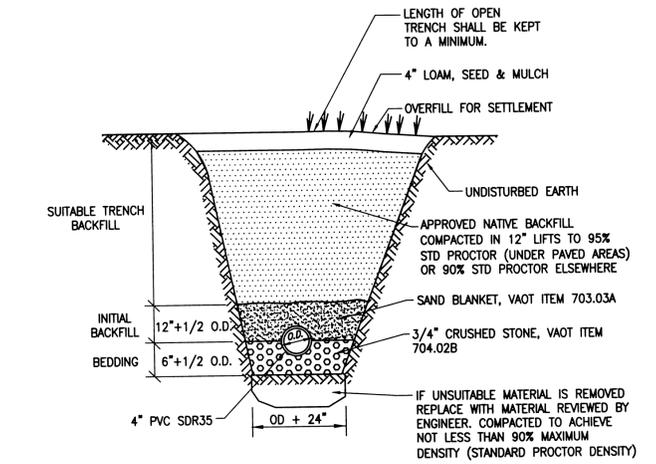
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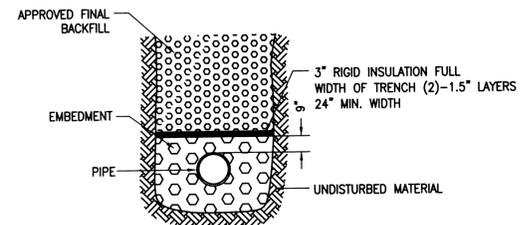
- NOTES:**
- 1,000 GALLON, MONOLITHIC, PRECAST CONCRETE, SEAMLESS TANK BY ST. GRISWOLD, CAMP OR EQUAL.
 - CONCRETE MINIMUM STRENGTH 5,000 PSI @ 28 DAYS.
 - STEEL REINFORCEMENT GRADE 60.
 - POLY IV BOOTED CONNECTIONS.
 - TOP SEAM CONSTRUCTION.
 - EXTERIOR OF TANK SHALL BE COATED WITH TWO (2) COATS OF BITUMINOUS COATING.
 - TOP SLAB SHALL HAVE TWO (2) LAYERS OF BUTYL SEALANT AROUND JOINTS.
 - TANK SHALL BE LEAKAGE TESTED PER GENERAL CONSTRUCTION NOTES ON DRAWING No. 1.



B
2

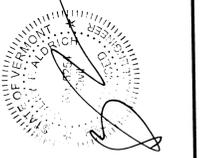


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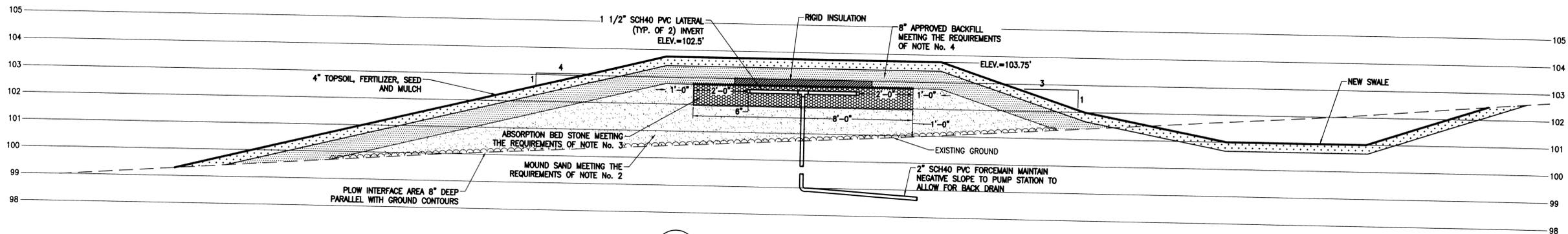


- INSULATION NOTES:**
- STAGGER INSULATION JOINTS SO THAT NO JOINTS OF THE TWO (2) LAYERS ARE ONE OVER THE OTHER.
 - TO BE INSULATED AS DIRECTED BY THE ENGINEER.
 - INSULATION TO BE UTILIZED AT ALL LOCATIONS INDICATED ON THE PIPING PROFILES AND OTHER AREAS WHERE 5'-6" MINIMUM COVER CANNOT BE MAINTAINED.

E
2

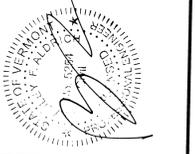


NO.	DATE	REVISION DESCRIPTION	CHECKED



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FA & A
 FORCIER & ALDRICH & ASSOCIATES



ASKEW RESIDENTIAL WASTEWATER REPLACEMENT DISPOSAL SYSTEM
 32 ROOT ROAD
 CHARLOTTE, VERMONT

NO.	REVISION DESCRIPTION	CHECKED
DESIGNED KJC	PROJECT NO. 08092	
DRAWN JEN/JEB	DRAWING NO. 3	
CHECKED BFA		
DATE MAY 1, 2009		
		SHEET 3

MOUND SYSTEM CONSTRUCTION NOTES:

- MOUND CONSTRUCTION SEQUENCING:**
 - ABOVE GROUND VEGETATION SHALL BE CLOSELY CUT AND REMOVED FROM THE GROUND SURFACE THROUGHOUT THE AREA TO BE UTILIZED FOR THE PLACEMENT OF THE FILL MATERIAL. TREE STUMPS SHOULD BE CUT FLUSH WITH THE SURFACE OF THE GROUND AND ROOTS SHOULD NOT BE PULLED.
 - PRIOR TO PLOWING, THE FORCEMAIN FROM THE DOSING PUMP STATION TO THE POINT OF CONNECTION WITH THE DISTRIBUTION PIPING HEADER SHALL BE INSTALLED AND TESTED.
 - THE AREA SHALL BE PLOWED TO A DEPTH OF EIGHT (8) INCHES, PARALLEL TO THE LAND CONTOUR WITH THE PLOW THROWING THE SOIL UPSLOPE TO PROVIDE A PROPER INTERFACE BETWEEN THE FILL AND THE NATURAL SOILS.
 - TO PREVENT COMPACTION, CONSTRUCTION EQUIPMENT SHALL NOT BE MOVED ACROSS THE PLOWED SURFACE OR THE EFFLUENT DISPERSAL AREA. HOWEVER, AFTER PLACEMENT OF A MINIMUM OF SIX (6) INCHES OF SAND OVER THE PLOWED AREA, CONSTRUCTION EQUIPMENT MAY BE DRIVEN OVER THE PROTECTED SURFACE TO EXPEDITE CONSTRUCTION. CONSTRUCTION AND/OR PLOWING SHALL BE INITIATED WHEN SOIL MOISTURE CONTENT IS HIGH. (IF A SAMPLE OF SOIL OBTAINED FROM APPROXIMATELY NINE (9) INCHES BELOW THE SURFACE CAN BE EASILY ROLLED INTO A WIRE, THE SOIL MOISTURE CONTENT IS TOO HIGH FOR CONSTRUCTION PURPOSES.)
 - INSTALL MOUND SAND, EXCAVATE MOUND SAND FOR ABSORPTION BED. INSTALL SIX (6) INCHES OF ABSORPTION BED STONE. INSTALL PRESSURE DISTRIBUTION LATERALS. PERFORM SQUIRT HEIGHT TEST. INSTALL REMAINING ABSORPTION STONE, FILTER FABRIC, APPROVED NATIVE BACKFILL, AND 4" TOPSOIL, FERTILIZER, SEED, AND MULCH.

A MOUND WASTEWATER DISPOSAL SYSTEM SECTION
 SCALE: 1"=2'-0"

2. MOUND WASTEWATER DISPOSAL SYSTEM NOTES:

MOUND SAND SHALL MEET ONE OF THE FOLLOWING THREE (3) SPECIFICATIONS:

a. SIEVE NUMBER	OPENING (mm)	PERCENT PASSING, BY WEIGHT
3/8	9.500	85-100
40	0.420	25-75
60	0.240	0-30
100	0.149	0-10
200	0.074	0-5

b. SIEVE NUMBER	OPENING (mm)	PERCENT PASSING, BY WEIGHT
4	4.750	95-100
8	2.380	80-100
16	1.190	50-85
30	0.590	25-60
50	0.297	10-30
100	0.149	2-10

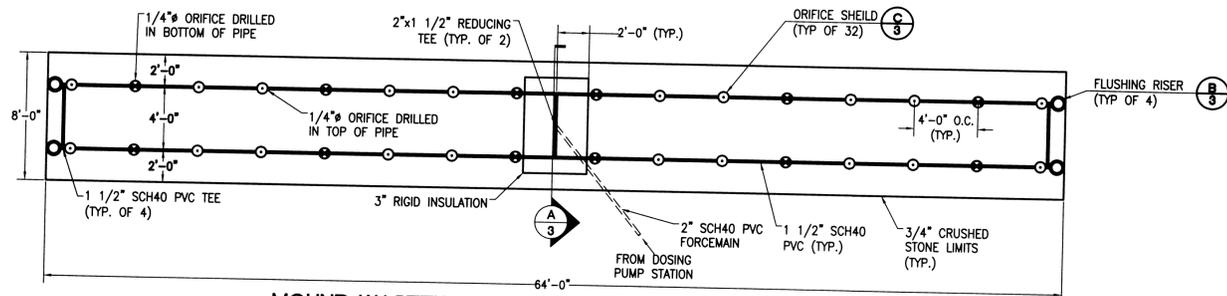
c. SIEVE NUMBER	OPENING (mm)	PERCENT PASSING, BY WEIGHT
3/8	9.500	85-100
40	0.420	30-50
200	0.074	0-5

3. ABSORPTION BED STONE SHALL BE CLEAN, HARD, DURABLE, WASHED CRUSHED STONE MEETING THE FOLLOWING SIEVE REQUIREMENT:

a. SIEVE DESIGNATION	PERCENTAGE OF WEIGHT PASSING SQUARE MESH SIEVES TOTAL SAMPLE
1 1/2"	100
1"	50-90
3/4"	0-50
3/8"	0-1

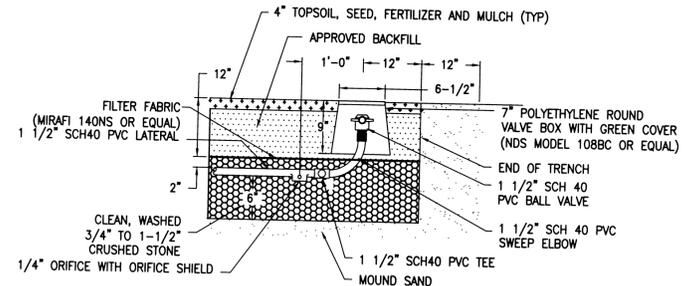
- APPROVED NATIVE BACKFILL SHALL BE NATIVE MATERIAL LESS PERMEABLE THAN THE MOUND SAND EXCAVATED DURING THE COURSE OF CONSTRUCTION OF THE FORCEMAIN, TANKAGE OR OTHER SOURCES. MATERIAL SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, FROZEN MATERIAL, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT AND CLAY, LEDGE MATERIAL, ROCKS OVER 6" IN LARGEST DIMENSION, ROCKS OVER 20 LBS., OR AND MATERIAL THAT WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

- PRESSURE DISTRIBUTION LATERAL TESTING:** PRESSURE DISTRIBUTION LATERAL TESTING SHALL BE PERFORMED ON THE MOUND WASTEWATER DISPOSAL SYSTEM UTILIZING PRESSURE DISTRIBUTION, THE DISTRIBUTION LATERAL TESTING SHALL BE PERFORMED WITH THE ACTUAL PUMP, VALVES, PIPING, AND FORCEMAIN FOR THE FIELD. THE PUMPSTATION INCLUDING THE PUMP, PIPING, FITTINGS, AND VALVES, SHALL BE OPERATIONAL. THE FORCEMAIN SHALL BE CONSTRUCTED, LEAKAGE TESTED, AND OPERATIONALLY READY, PRIOR TO TESTING. THE FIRST AND LAST ORIFICE FOR THE TRENCH SHALL REMAIN UNCOVERED UNTIL AFTER THE TEST. TO BE ACCEPTABLE, THE TEST MUST SHOW A MINIMUM OF 1 PSI (2.31 FEET) IS PRESENT AT THE END OF THE LATERAL BY MEASURING THE SQUIRT HEIGHT. THE TEST MUST ALSO SHOW THAT THE DIFFERENCE IN DISCHARGE RATE BETWEEN THE TWO ORIFICES, WITH THE GREATEST DIFFERENCE IN DISCHARGE RATES, IS NOT GREATER THAN 15 PERCENT.

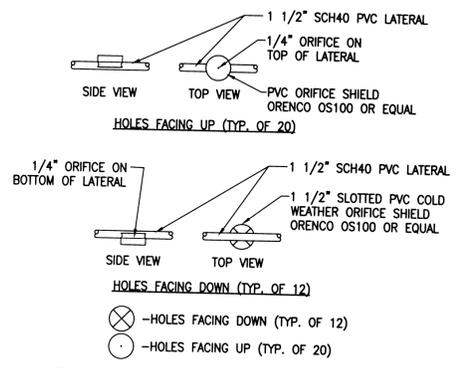


MOUND WASTEWATER DISPOSAL SYSTEM PIPING PLAN
 SCALE: 3/16"=1'-0"

- NOTES:**
- (20) 1/4" ORIFICES DRILLED AT CROWN OF PIPE (12) 1/4" ORIFICES DRILLED IN BOTTOM OF PIPE. PROVIDE ORIFICE SHIELDS FOR ORIFICES-INSTALL AFTER TESTING.
 - 1 1/2" SCH 40 PVC LATERAL
 - ORIFICE SPACING 4'-0" ON CENTER, 2'-0" EITHER SIDE OF TEE.
 - STONE TO EXTEND 2" ABOVE TOP OF PIPE, COVERED BY GEOTEXTILE (SEPARATION FABRIC) MIRAFI 140N OR EQUAL.
 - HOLES FACING UP (O)
HOLES FACING DOWN (●)



B FLUSHING VALVE DETAIL
 SCALE: NONE



C ORIFICE SHIELD DETAIL
 SCALE: NONE