

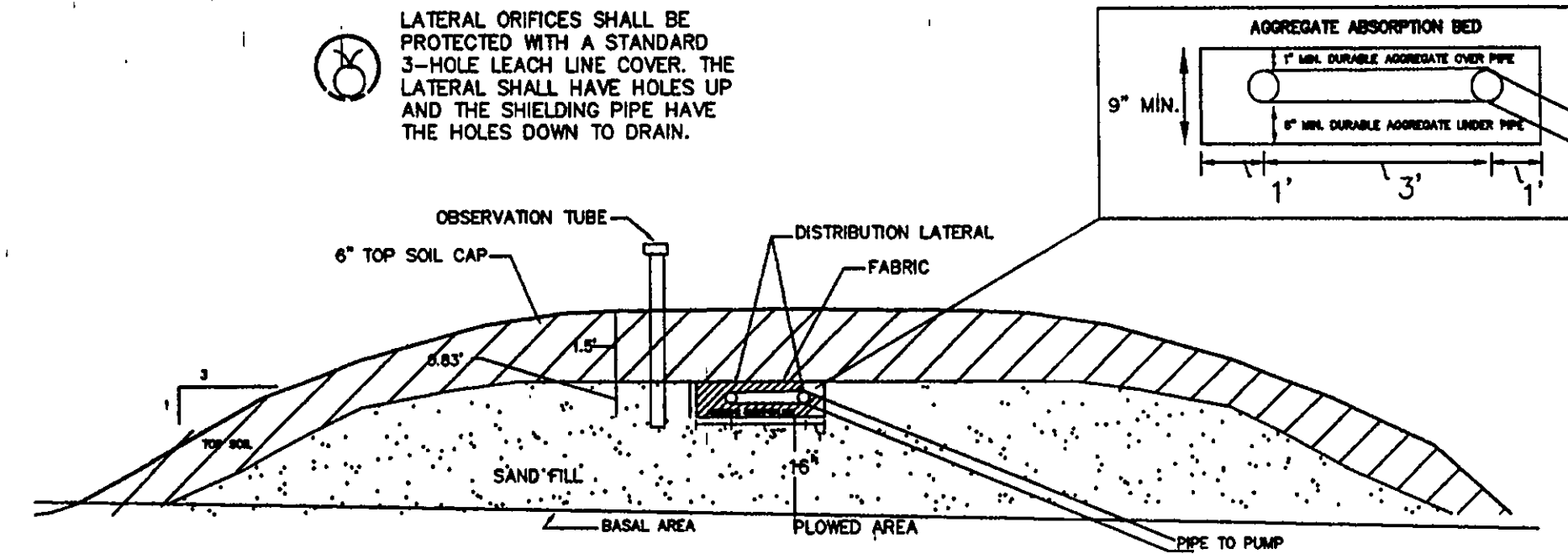
I, the undersigned, hereby certify that the topography shown thereon, indicated by one foot contours and elevations represents an actual field topographic survey made by me in March, 2007 and that the elevations were taken at appropriate intervals and that as of that date they existed as indicated thereon.

DAVID A. RAPP REGISTRATION NO. 7597

REVIEWED AND ACCEPTED  
LAKES COUNTY HEALTH DISTRICT  
DATE 5/1/07 BY [Signature]

SAND FILL SPECIFICATIONS  
 < 20% greater than 2 mm  
 < 5% smaller than 0.053mm  
 plus  
 Total sample sieve analysis fits preferably between the solid lines of Fig. 6. Permissible to the dashed line  
 2. ASTM C-33 Specifications  
 3. Effective Diameter  
 D10 = 0.15-0.30mm  
 Coefficient of Uniformity  
 D60/D10 = 4-6

SYMBOLS:  
 - - - - - SILT FENCE  
 [Pattern] STONED CONSTRUCTION  
 [Pattern] ENTRANCE W/ UNDERLAIN  
 [Pattern] FILTER FABRIC



- Gravel in the Absorption Bed shall be 3/4\"-1 1/2\" in size.
- The Cap material shall be a well sifted Topsoil suitable for growing a cover material.

TYP. CROSS SECTION  
NOT TO SCALE

### Erosion and Sediment Control Schedule

**Ingress-Egress**  
A stone access drive complete with under lying geo-textile fabric (20 feet wide and 50 feet long) for ingress and egress at the site shall be installed. This drive shall be the only entrance and exit to the site.

**Silt Fence**  
All silt fence shall be installed prior to any earthwork activities at the site in the locations shown on the site plan as well as along the front of any lot that slopes towards the street.

**Temporary Seeding**  
Disturbed areas of the site that are to remain idle for more than thirty (30) days shall be properly seeded and straw mulched within seven (7) days of completion of initial grading. Temporary seeding and mulching of a thirty (30) foot strip of the entire front of the lot shall be maintained on the site once initial grading is complete.

**Stabilization of critical areas** within fifty (50) feet of any stream or wetland shall be complete within two (2) days of the disturbance if the site is to remain inactive for longer than fourteen (14) days.

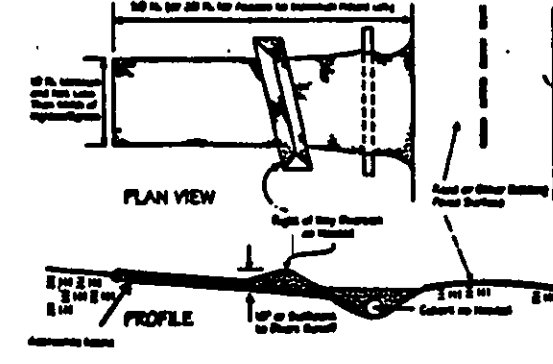
**Mulching**  
Straw-mulch shall be applied at a rate of 1 bale per every ten (10) feet of curb, at a width of thirty (30) feet of the entire length of the lot. Wood chips may also be used but must be spread at a minimum depth of four inches over the thirty-foot width and must be accompanied by a properly installed silt fence.

**Maintenance**  
Erosion and sediment controls shall be inspected every seven (7) days or within 24 hours of a 0.5\" or greater rainfall event. Necessary repairs shall be made at this time.

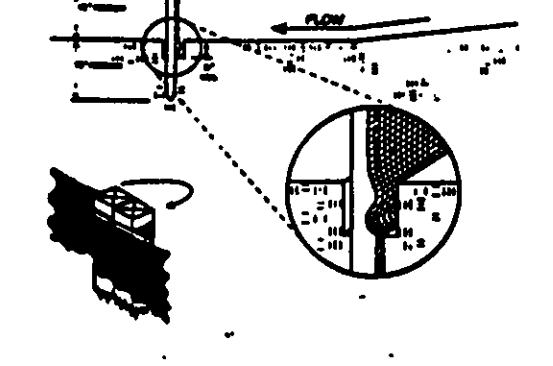
**Notes:**  
All erosion and sediment control specifications, applications, and timetables are based on the decreptions and standards of The Ohio Department of Natural Resources \"Erosion and Sediment Control Manual\" and can be found in the Lake County Erosion and Sediment Control Rules as adopted December 21, 1999.

The specified erosion and sediment control standards are general guidelines and shall not limit the right of the county to impose, at any time, additional, more stringent requirements. Nor shall the standards limit the right of the county to

### Construction Entrance Detail



### Silt Fence Detail



### Temporary Seeding Specifications

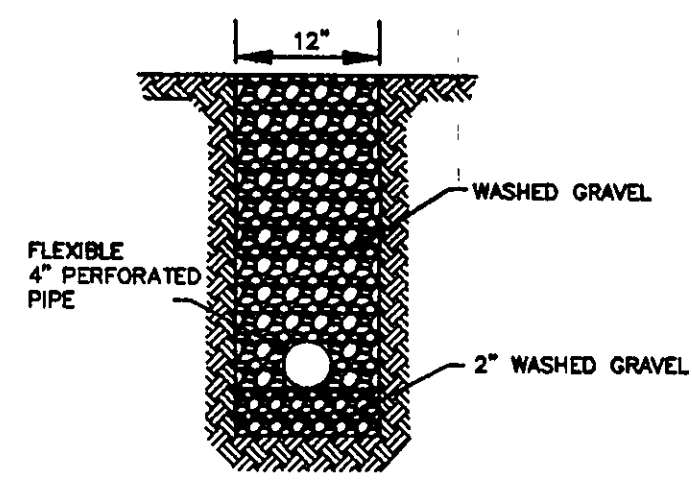
Seeding Date	Species	Gr./Sq. Yd.	Per Ac.
March 1 to August 15	Ryegrass Tall Fescue Annual Ryegrass Annual Ryegrass Annual Ryegrass	1 1 1 1 1	4,500 4,500 4,500 4,500 4,500
August 16 to November 1	Ryegrass Tall Fescue Annual Ryegrass Annual Ryegrass Annual Ryegrass	2 2 2 2 2	9,000 9,000 9,000 9,000 9,000
November 1 to Spring Seeding	Ryegrass Tall Fescue Annual Ryegrass Annual Ryegrass Annual Ryegrass	3 3 3 3 3	13,500 13,500 13,500 13,500 13,500

### GENERAL NOTES:

- The system will be installed in accordance with the rules and regulations of the Ohio EPA and the County Health Department.
- The engineer shall be responsible for setting grades and elevations and for ensuring satisfactory installation of the treatment system.
- The existing septic tank shall be pumped by a licensed septic disposal company. The tank will then be crushed and filled with sand to eliminate voids.
- All pipe shall be SCH 40 PVC.
- The designer and / or installer shall assure that all electrical wiring meets the national electric code.

### INSTALLATION PROCEDURES FOR MOUND SYSTEM CONSTRUCTION

- Stake out mound so that absorption bed runs parallel to the contour, and isolate area with tape to prevent disturbance.
- Locate upslope edge of the absorption bed and then the lower.
- Cut trees and remove vegetation from the site close to ground level. It is not necessary to remove the stumps unless a significant number of stumps exist. At which time the basal area may be enlarged.
- Trench and lay the force main from the pumping chamber to the mound. Perpendicular to the side of the mound. Cut and cap the pipe one foot beneath the ground surface. Lay the pipe below the frost line or slope back to the pumping chamber. Backfill and compact soil around pipe to prevent back seepage of effluent along pipe. This step must be done before plowing to avoid compacting and disturbing the surface.
- Till the basal area of the mound to improve infiltration at the sand / soil interface. Check soil moisture. Plowing may be done with a moldboard or chisel plow and should always be done along the contour. \*\* Backhoe bucket teeth are not satisfactory and are not to be used.
- Extend the effluent pipe to several feet above the ground surface.
- Place the fill material around the edge of the plowed area. \* Keep wheels of truck off plowed area. \*\* Stay off downslope side, work from ends of upslope side.
- Move fill into place with the tractors blade. Always keep a minimum of six (6) inches of sand beneath the tracks to prevent compaction of the natural soil. Place fill to the required depth at the top of the absorption bed. Shape sides to the desired slope.
- Form the bed with the blade of the tractor. The bottom of the absorption bed should be hand leveled and checked with a surveyors level.
- Place the coarse aggregate in the bed to a minimum depth of six (6) inches and level. Place the distribution system on the aggregate, connecting to the pipe from the dosing chamber. Make sure the laterals are as level as possible. Place two (2) more inches of aggregate over the distribution system. Soft limestone should not be used since it dissolves and flakes with time.
- Place a layer of synthetic fabric, such as Typar, Mirafix of the equivalent over the aggregate. The fabric will prevent soil particles from migrating through the aggregate / soil interface.
- Place soil on top of the bed to a depth one (1) foot in the center and six (6) inches at the outer edges of the bed. \*\* This may be subsoil of topsoil.
- Place an additional six (6) inches of good quality top soil over the entire mound surface. Finally, grade the mound and area with light weight equipment so that surface water moves away from the mound and does not accumulate.
- Landscape the mound by planting grass, using the best vegetation available. Shrubs can be planted around the base and up the side slope. The shrubs should be moisture tolerant.

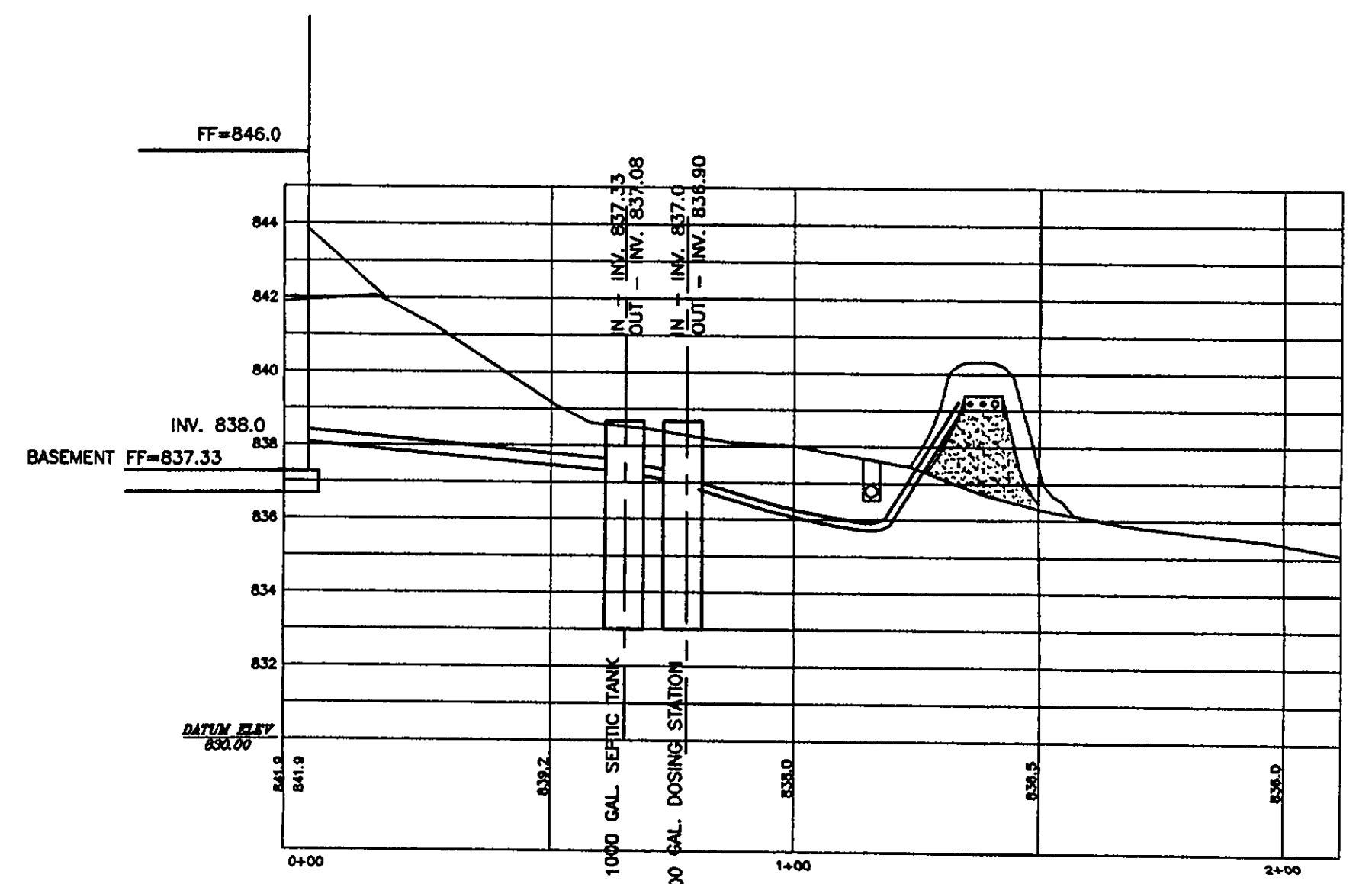


TYPICAL INTERCEPTOR DRAIN CROSS SECTION  
NO SCALE

### SEPTIC PRESSURE DISTRIBUTION SYSTEM:

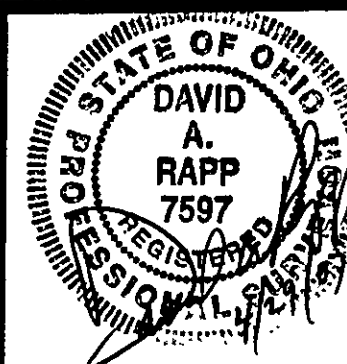
240 GALLONS PER DAY  
 BASIL LOADING RATE 0.6  
 LANDSCAPE LOADING RATE 3.0  
 MOUND LENGTH - TOP 80.0'  
 BOTTOM 95.0'  
 MOUND WIDTH - TOP 5.0'  
 BOTTOM 20.0'  
 LATERAL LENGTH: 4 @ 40' EACH  
 HOLE SPACING - 3.25'  
 HOLE DIAMETER - 1/4\"  
 TOTAL NO. OF HOLES: 48  
 LATERAL SIZE: 1\"  
 DISTAL PRESSURE - 3\"  
 FLOW PER HOLE: 1.25 GPM  
 FLOW PER LATERAL: 15 GPM  
 TOTAL FLOW: 60 GPM  
 MANIFOLD LENGTH: 3' SIZE: 1.5\" (CENTER CONNECTION)  
 LATERAL SPACING: 3' DOSING VOLUME: 60 GALLONS  
 STATIC LIFT: 6\" SWITCH SEPARATION: 6\"  
 HEAD LOSSES: 4\"  
 TDH: 10\"  
 MAIN SIZE: 1.5\"  
 USE MYERS ME3H PUMP WITH 1/3 HP MOTOR OR EQUAL.

NOTES:  
 1. CONTRACTOR TO CONSULT WITH DESIGNER PRIOR TO MAKING CHANGES ON SEPTIC SYSTEM.



HYDRAULIC PROFILE  
SCALE: HORIZ. - 1\"/>

**DAVID RAPP SERVICES**  
 3406 DAYTON ROAD MADISON, OHIO 44057  
 440-983-1607



DATE: March, 2007  
 DRAWN BY: DAR  
 CHECKED BY:  
 APPROVED BY:  
 PE No. P.E. NO. 62081

**GREG AND MONIKA WILLIAMS**  
 PP# 01A-039-0-00-011-0  
 MADISON TOWNSHIP, OHIO

### SEPTIC SYSTEM IMPROVEMENTS

REvised 4/8/07  
 Hor. Scale Vert. Scale  
 CONTRACT No. 27007  
 SHEET No. 1 OF 1