

SEPTIC DRIP CALCULATION SHEET

Job Name: Viewmont Drive Location: Concord, Lake County, Ohio
 Project No: 413/2007

1. 300 GALLONS PER DAY 3. NO. OF BEDROOMS
 2. 150 FT. (Length) 10 FT. (Width) AREA FOR DISPOSAL LAYO, 1500, FT2
 3. 1500 TOTAL DRAINAGE PROVIDED (Zone 1 + Zone 2)
 4. 1500 SEPTIC TANK SIZE (gallons)
 5. 1500 DRAINAGE TANK SIZE (gallons)
 6. 30 GALLONS PER INCH IN DRAINAGE TANK (Provided From Manufacturer)

7. ZONE ONE
 8. 250 TOTAL ABSORPTION AREA (FT2)
 9. 500 LINEAR FEET OF DRAIN TUBING (1 Total Tubing for Zone 1)
 10. 250 LONGEST LATERAL LENGTH (FT) 40.55 Minimum Dose Volume (Gals/Dose)
 11. 4.38 DRAINAGE FLOW RATE (GPM) (Length of tubing 72" (0.41 Gals/ft) / (60 Min/ft)
 12. 4.38 NO RETURN FLOW FIELD FLUSH CONNECTIONS (Waste)
 13. 4.38 FIELD FLUSH FLOW RATE (GPM) (1.6 gpm/Connection) x (no. of field flush connections)
 14. 9.38 TOTAL FLOW REQUIRED (GPM) (Dosing flow rate + Field flushing flow rate)

15. ZONE TWO
 16. 250 TOTAL ABSORPTION AREA (FT2)
 17. 500 LINEAR FEET OF DRAIN TUBING (1 Total Tubing for Zone 1)
 18. 250 LONGEST LATERAL LENGTH (FT) 40.55 Minimum Dose Volume (Gals/Dose)
 19. 4.38 DRAINAGE FLOW RATE (GPM) (Length of tubing 72" (0.41 Gals/ft) / (60 Min/ft)
 20. 4.38 NO RETURN FLOW FIELD FLUSH CONNECTIONS (Waste)
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 22. 9.38 TOTAL FLOW REQUIRED (GPM) (Dosing flow rate + Field flushing flow rate)

23. 10 MAXIMUM DESIGN TOTAL FLUSHING FLOW (GPM)
 24. 8 FEET OF HEAD LOSS FROM HYDRAULIC UNIT (TDH) (Based Chart 2A)

25. HYDRAULIC UNIT SUPPLY LINE
 26. 1.5" PIPE DIAMETER (Inches) (From pump to Hydraulic Unit)
 27. 50 LENGTH SUPPLY PIPE (FT) (From pump to Hydraulic Unit)
 28. 5 FEET OF STATIC LIFT (From pump to Hydraulic Unit)
 29. 7 TOTAL FEET HEAD LOSS IN LINE (Dynamic Head Loss + 6.5)

30. FORCE MAIN SUPPLY LINE PIPE SIZE & LENGTH:
 31. 1" ZONE 1 SIZE 50' ZONE 1 LENGTH 3' FT. HEAD LOSS
 32. 1" ZONE 2 SIZE 50' ZONE 2 LENGTH 3' FT. HEAD LOSS
 33. 1" TOTAL HEAD LOSS THROUGH SUPPLY PIPING AT THE SPECIFIC SIZE, DISTANCE AND FLOW, AS LISTED ABOVE

34. RETURN FLUSH LINE SIZE & RETURN:
 35. 1" ZONE 1 SIZE 50' ZONE 1 LENGTH 3' FT. HEAD LOSS
 36. 1" ZONE 2 SIZE 50' ZONE 2 LENGTH 3' FT. HEAD LOSS
 37. 1" TOTAL HEAD LOSS THROUGH RETURN PIPING AT THE SPECIFIC SIZE, DISTANCE AND FLOW, AS LISTED ABOVE

38. STATIC HEAD:
 39. 1 FEET OF TOTAL STATIC HEAD LOSS (Vertical Lift)
 40. TOTAL PRESSURE LOSS (Add Items 35, 36, 37, 38, 39 + Flushing)
 41. 86 ZONE 1 HEAD LOSS, INCLUDES 35 FEET FLUSHING (Chart 3A)
 42. 86 ZONE 2 HEAD LOSS, INCLUDES 35 FEET FLUSHING (Chart 3A)
 43. TOTAL HEAD LOSS INCLUDES FRICTION THROUGH PIPING TO H.U. THROUGH H.U. SUPPLY PIPING, RETURN PIPING, CHART 3A, AND CHART 3A

44. PUMP SIZING:
 45. 95 MAXIMUM TOTAL PRESSURE LOSS (Highest 41 or 42)
 46. 125 DISC FILTER BACKFLUSH PRESS + 115# @ 15 GPM
 47. 15 GPM @ 125 FEET 115 VOLTS 1 PHASE 0.5 HP

48. 47 TIMED DOSING PER ZONE:
 49. ZONE ONE:
 50. 4.38 Dosing GPM 8.95 Min/Dose 40.95 Gallons Per Dose (Minimum FRI Ratio 3.5)
 51. 2.6 Ave. Cycles 4.4 Peak Cycles (Run Frequencies)
 52. ZONE TWO:
 53. 4.38 Dosing GPM 8.95 Min/Dose 40.95 Gallons Per Dose (Minimum FRI Ratio 3.5)
 54. 2.6 Ave. Cycles 4.4 Peak Cycles (Run Frequencies)

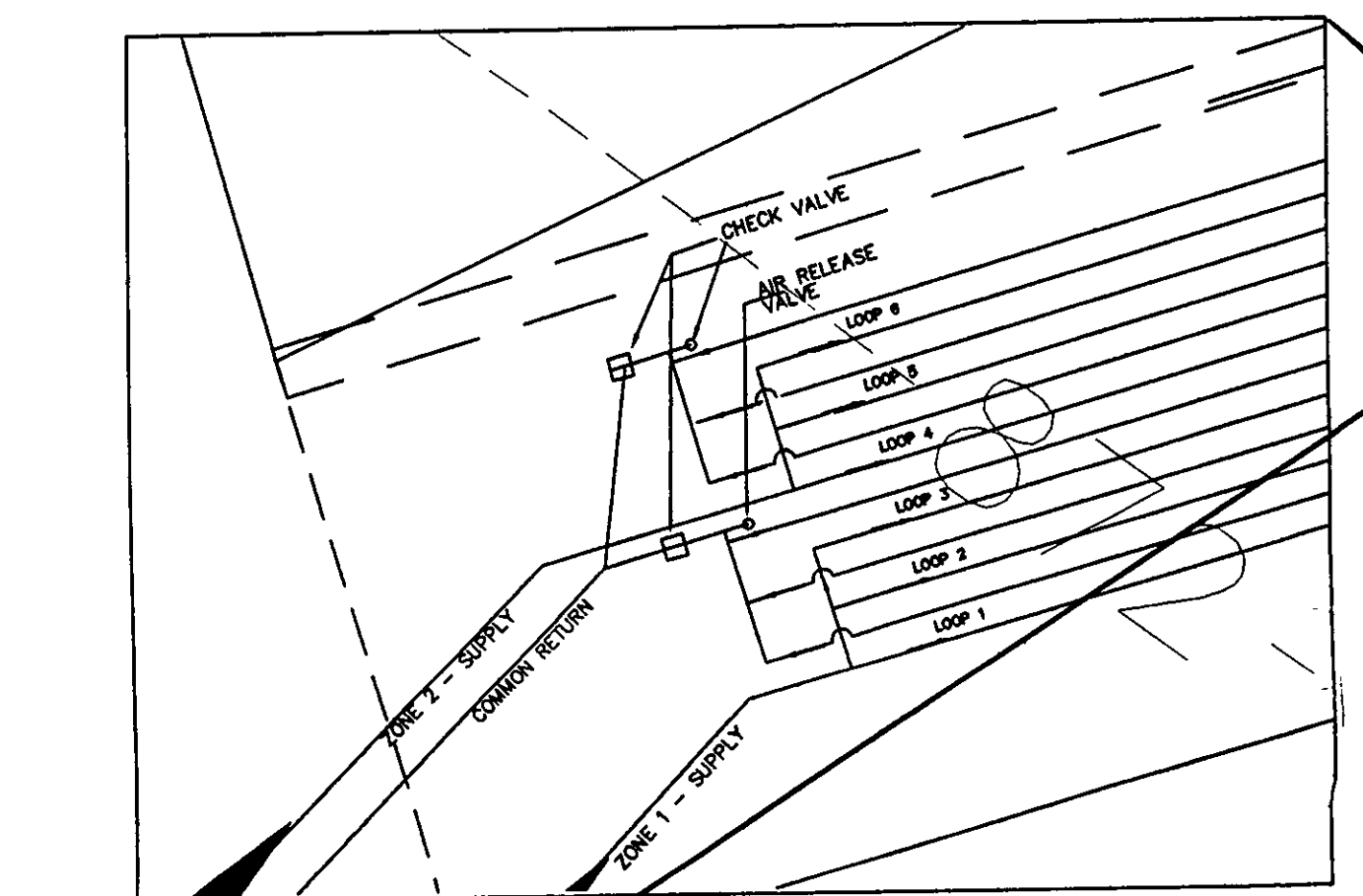
55. AVERAGE DOSING REST TIMES:
 56. 273 Minutes
 57. 184 Minutes
 58. AS GIVEN FROM SITE ELEVATION OR DESIGNER

59. LANDSCAPE LINEAR LOADING RATE:
 60. 2.4 GPD/FT
 61. 2.4 GPD/FT

62. SOIL LOADING RATE:
 63. 0.24 GPD/FT
 64. 0.40 GPD/FT

65. CALCULATION SHEET - MOUND
 66. James Reeder
 67. Viewmont Drive
 68. Concord, Lake County, Ohio

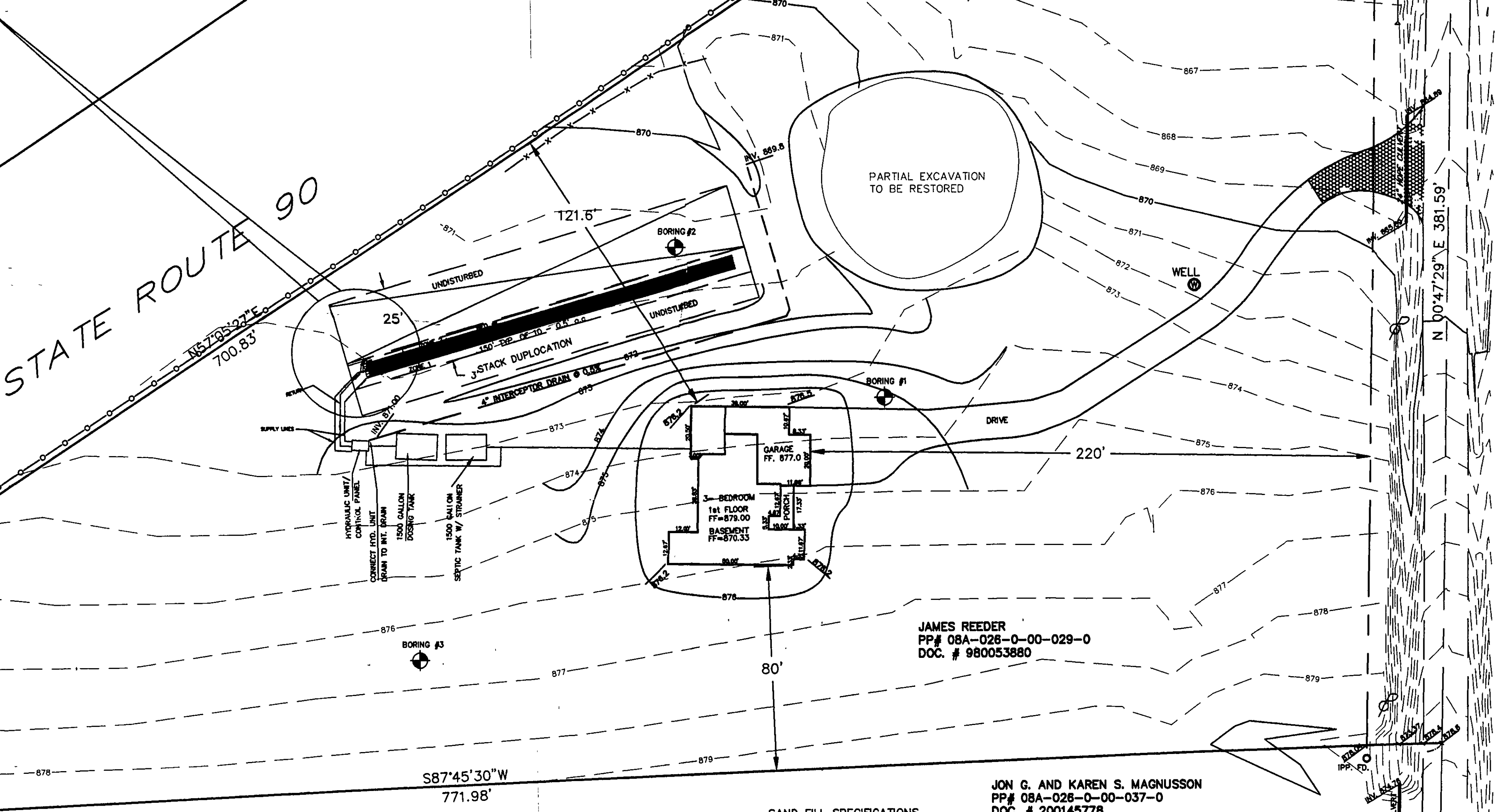
69. SHEET NO. FILE



MANIFOLD DETAIL AND ZONE LAYOUT

DATE: 6/17/07
 BY: David A. Rapp
 Title: Designer

NOTES: 1. The Contractor Shall Verify the Following Before Starting:
 Finish Floor Elevations and House Size.
 Location and elevation of existing utility connections.
 2. Contractor Shall Contact OUPs at least 2 Working Days prior to construction, 1-800-362-2764.
 3. The undersigned hereby certify that this topography, indicated by 'i' contours and elevations shown hereon represents an actual field survey made by me in APRIL, 2007 and that the elevations were taken at appropriate intervals and that as of that date they existed as indicated hereon.



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GENERAL NOTES:
 1. CONTRACTOR TO CONSULT WITH DESIGNER PRIOR TO MAKING CHANGES ON SEPTIC SYSTEM.
 2. INSTALLATION AND O&M MANUALS ARE AVAILABLE UPON REQUEST FROM THE MANUFACTURER OR DESIGNER.
 3. THE DESIGNER AND / OR INSTALLER SHALL ASSURE THAT ALL ELECTRICAL WIRING MEETS THE NATIONAL ELECTRIC CODE (NEC).

SAND FILL SPECIFICATIONS
 < 20% greater than 2 mm
 < 5% smaller than 0.053mm
 plus
 1. 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

JON G. AND KAREN S. MAGNUSSON
 PP# 08A-026-0-00-037-0
 DOC. # 200145778
 CONCORD TOWNSHIP ZONING OFFICE
 Zoning Permit # 0807-13123
 Date Issued 5/22/07
 Subject to Approval by:
 Lake Co. Engineers & Storm Water Mgmt.
 Lake Co. Utilities Dept.
 Lake Co. Soil & Water District
 Lake Co. Health District
 Lake Co. Building Dept.

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 Twenty-one (21) 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.

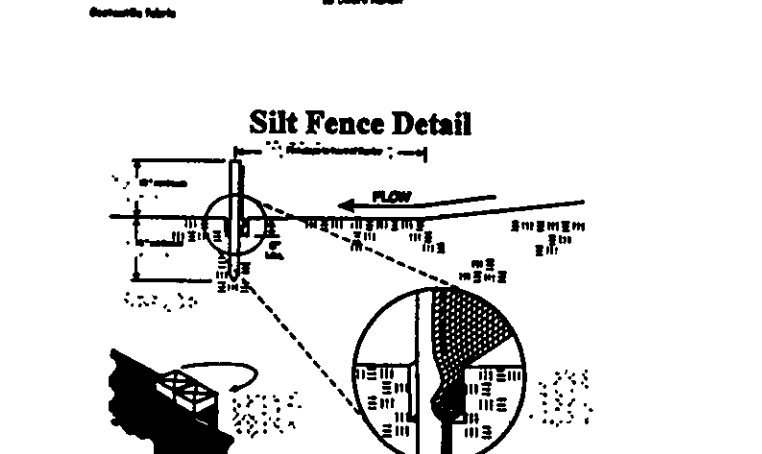
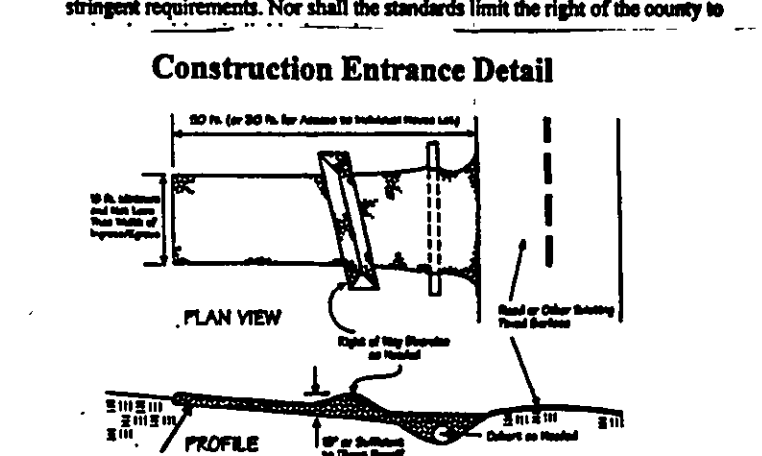
Stabilization of critical areas within fifty (50) feet of any stream or wetland shall be complete within two (2) days of the disturbance if the site is to remain inactive for longer than fourteen (14) days.

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.

Note:
 All erosion and sediment control specifications, applications, and timetables are based on the descriptions and standards of The Ohio Department of Natural Resources "Rainwater and Land Development 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



Temporary Seeding Specifications

| Seeding Date | Seeder | Rate | Per Acre |
|------------------------------|--------|------|--------------------|
| March 1 to August 15 | Grass | 3 | 3 bushels @ 60 lb. |
| August 16 to November 1 | Grass | 3 | 3 bushels @ 60 lb. |
| November 1 to Spring Seeding | Grass | 3 | 3 bushels @ 60 lb. |

Lake County Soil & Water Conservation District
 125 East Erie Street
 Painesville, Ohio 44077
 Phone: (440) 350-2730
 Fax: (440) 350-2730
 www.lakecountyohio.org/soil

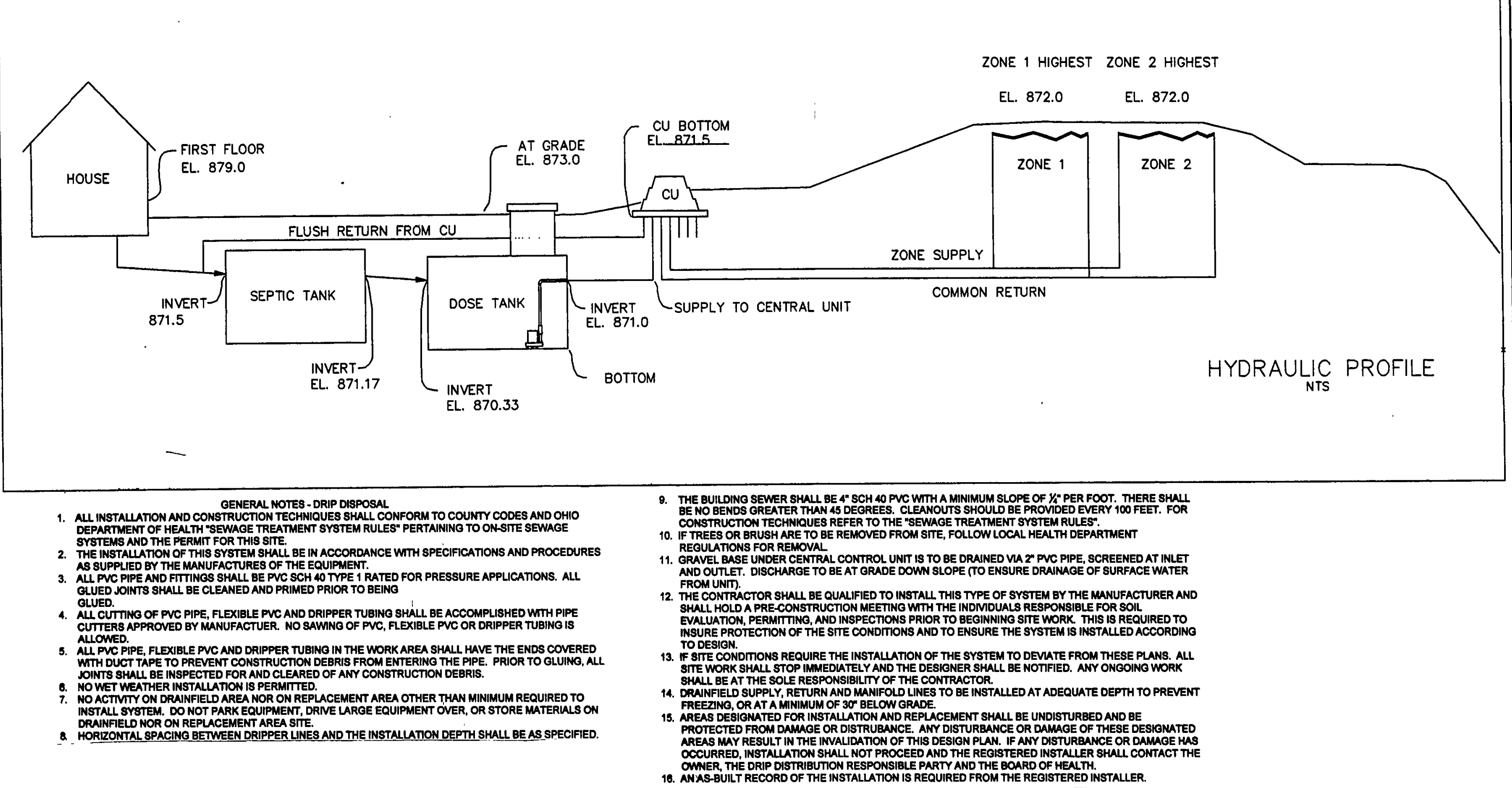
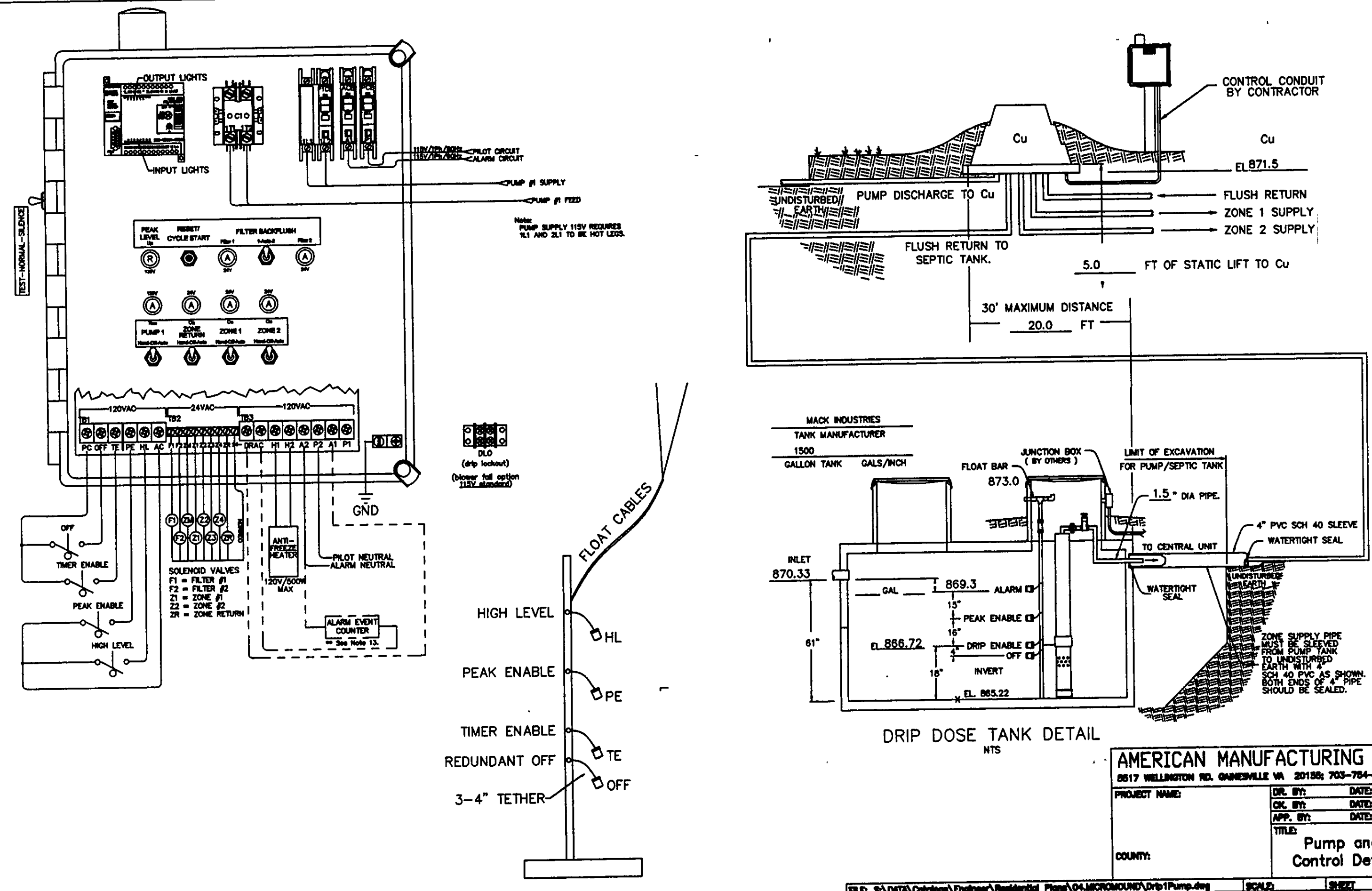
27014
 SHEET No. 1 OF 2

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 VIEWMONT DRIVE, CONCORD

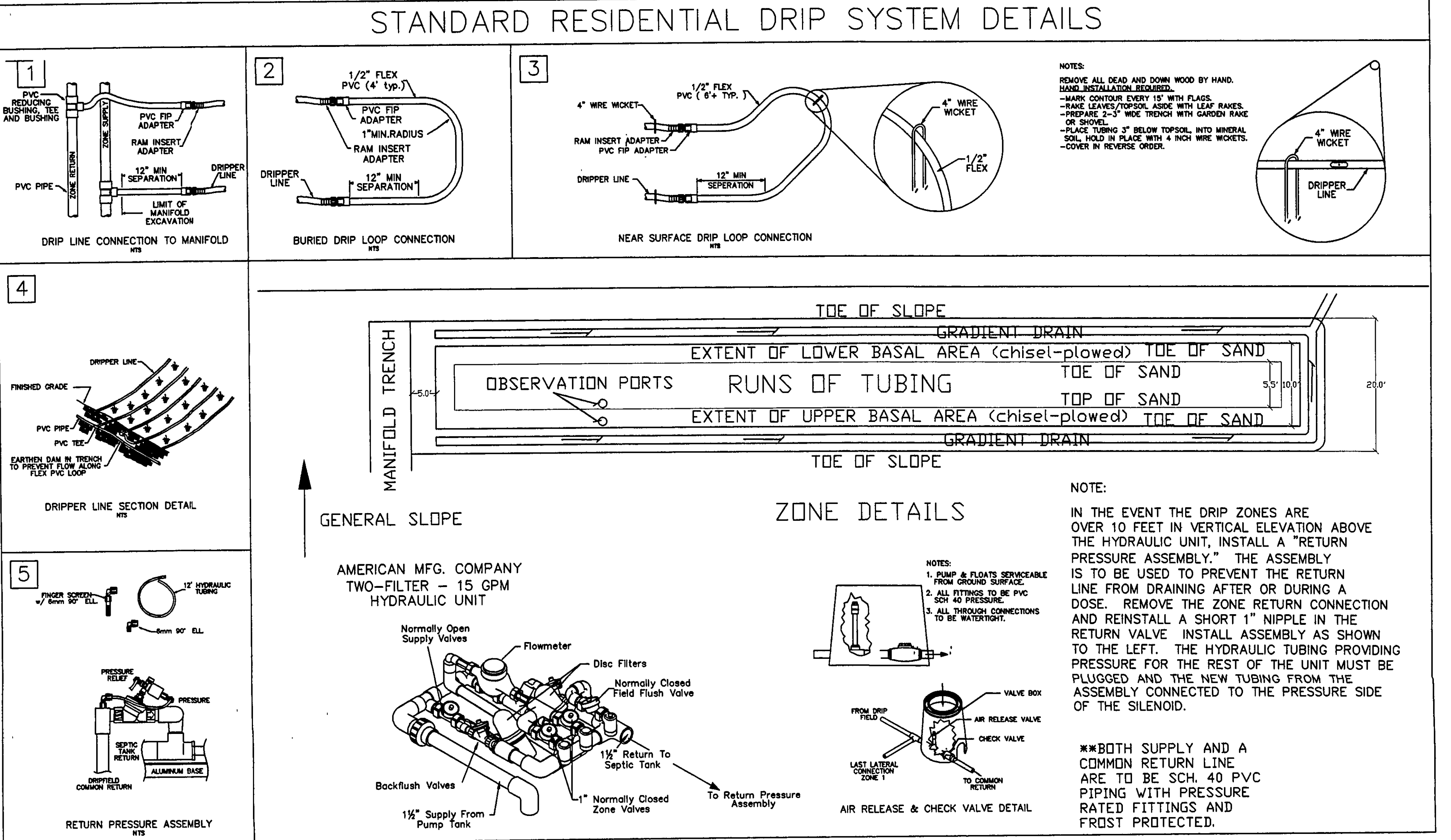
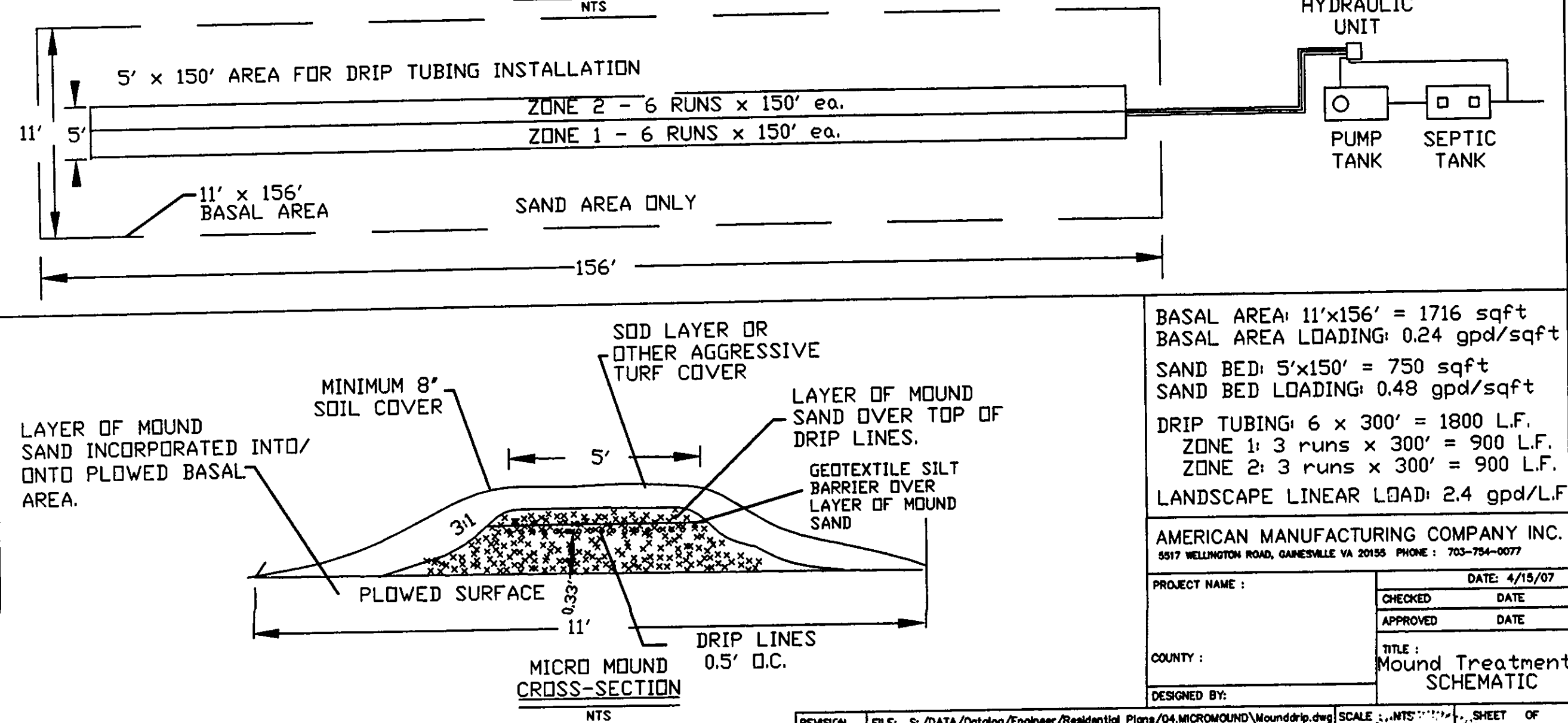
SITE PLAN

27014
 SHEET No. 1 OF 2



- GENERAL NOTES - DRIP DISPOSAL
1. ALL INSTALLATION AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO COUNTY CODES AND OHIO DEPARTMENT OF HEALTH "SEWAGE TREATMENT SYSTEM RULES" PERTAINING TO ON-SITE SEWAGE SYSTEMS AND THE PERMIT FOR THIS SITE.
 2. THE INSTALLATION OF THIS SYSTEM SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES AS SUPPLIED BY THE MANUFACTURERS OF THE EQUIPMENT.
 3. ALL PVC PIPE AND FITTINGS SHALL BE PVC SCH 40 TYPE 1 RATED FOR PRESSURE APPLICATIONS. ALL GLUED JOINTS SHALL BE CLEANED AND PRIMED PRIOR TO BEING GLUED.
 4. ALL CUTTING OF PVC PIPE, FLEXIBLE PVC AND DRIPPER TUBING SHALL BE ACCOMPLISHED WITH PIPE CUTTERS APPROVED BY MANUFACTURER. NO SAWING OF PVC, FLEXIBLE PVC OR DRIPPER TUBING IS ALLOWED.
 5. ALL PVC PIPE, FLEXIBLE PVC AND DRIPPER TUBING IN THE WORK AREA SHALL HAVE THE ENDS COVERED WITH DUCT TAPE TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING THE PIPE. PRIOR TO GLUING, ALL JOINTS SHALL BE INSPECTED FOR AND CLEARED OF ANY CONSTRUCTION DEBRIS.
 6. NO WET WEATHER INSTALLATION IS PERMITTED.
 7. NO ACTIVITY ON DRAINFIELD AREA NOR ON REPLACEMENT AREA OTHER THAN MINIMUM REQUIRED TO INSTALL SYSTEM. DO NOT PARK EQUIPMENT, DRIVE LARGE EQUIPMENT OVER, OR STORE MATERIALS ON DRAINFIELD NOR ON REPLACEMENT AREA SITE.
 8. HORIZONTAL SPACING BETWEEN DRIPPER LINES AND THE INSTALLATION DEPTH SHALL BE AS SPECIFIED.
 9. THE BUILDING SEWER SHALL BE 4" SCH 40 PVC WITH A MINIMUM SLOPE OF 1/4" PER FOOT. THERE SHALL BE NO BENDS GREATER THAN 45 DEGREES. CLEANOUTS SHOULD BE PROVIDED EVERY 100 FEET. FOR CONSTRUCTION TECHNIQUES REFER TO THE "SEWAGE TREATMENT SYSTEM RULES".
 10. IF TREES OR BRUSH ARE TO BE REMOVED FROM SITE, FOLLOW LOCAL HEALTH DEPARTMENT REGULATIONS FOR REMOVAL.
 11. GRAVEL BASE UNDER CENTRAL CONTROL UNIT IS TO BE DRAINED VIA 2" PVC PIPE, SCREENED AT INLET AND OUTLET. DISCHARGE TO BE AT GRADE DOWN SLOPE (TO ENSURE DRAINAGE OF SURFACE WATER FROM UNIT).
 12. THE CONTRACTOR SHALL BE QUALIFIED TO INSTALL THIS TYPE OF SYSTEM BY THE MANUFACTURER AND SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE INDIVIDUALS RESPONSIBLE FOR SOIL EVALUATION, PERMITTING, AND INSPECTIONS PRIOR TO BEGINNING SITE WORK. THIS IS REQUIRED TO INSURE PROTECTION OF THE SITE CONDITIONS AND TO ENSURE THE SYSTEM IS INSTALLED ACCORDING TO DESIGN.
 13. IF SITE CONDITIONS REQUIRE THE INSTALLATION OF THE SYSTEM TO DEVIATE FROM THESE PLANS, ALL SITE WORK SHALL STOP IMMEDIATELY AND THE DESIGNER SHALL BE NOTIFIED. ANY ONGOING WORK SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 14. DRAINFIELD SUPPLY, RETURN AND MANIFOLD LINES TO BE INSTALLED AT ADEQUATE DEPTH TO PREVENT FREEZING, OR AT A MINIMUM OF 30" BELOW GRADE.
 15. AREAS DESIGNATED FOR INSTALLATION AND REPLACEMENT SHALL BE UNDISTURBED AND BE PROTECTED FROM DAMAGE OR DISTURBANCE. ANY DISTURBANCE OR DAMAGE OF THESE DESIGNATED AREAS MAY RESULT IN THE INVALIDATION OF THIS DESIGN PLAN. IF ANY DISTURBANCE OR DAMAGE HAS OCCURRED, INSTALLATION SHALL NOT PROCEED AND THE REGISTERED INSTALLER SHALL CONTACT THE OWNER, THE DRIP DISTRIBUTION RESPONSIBLE PARTY AND THE BOARD OF HEALTH.
 16. AN AS-BUILT RECORD OF THE INSTALLATION IS REQUIRED FROM THE REGISTERED INSTALLER.

- NOTES:
1. PLOW ENTIRE 11'x156' AREA OF DRAINFIELD (SAME WAY YOU WOULD A REGULAR MOUND).
 2. ADD LAYER OF MOUND SAND INCORPORATING IT INTO/ONTO PLOWED BASAL AREA.
 3. PLACE DRIP TUBING ON TOP OF SAND IN THE 5'x150' UPPER SECTION OF DRAINFIELD.
 4. ADD LAYER OF MOUND SAND OVER TOP OF DRIP TUBING IN THE 5'x150' AREA AND COVER W/ A GEOTEXTILE SILT BARRIER. **PLAN VIEW**
 5. COVER ENTIRE 11'x156' AREA OF DRAINFIELD WITH A MINIMUM COVER OF 8" WITH A TURTLE-BACK GRADE FOR POSITIVE DRAINAGE.
 6. AN AGGRESSIVE TURF COVER OVER ENTIRE 11'x156' AREA IS RECOMMENDED (PREFERABLY SOD).
- ALL PVC PIPE SHALL BE SCH 40 PVC.



David Rapp Services
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Madison, Ohio 44057
440-428-1686

DATE: APRIL 2007
DRAWN BY: DAR
CHECKED BY: DAR
APPROVED BY: DAR
P.E. NO. 7597

JAMES REEDER
PP# 08A-026-0-00-029-0
VIEWMONT DRIVE, CONCORD

