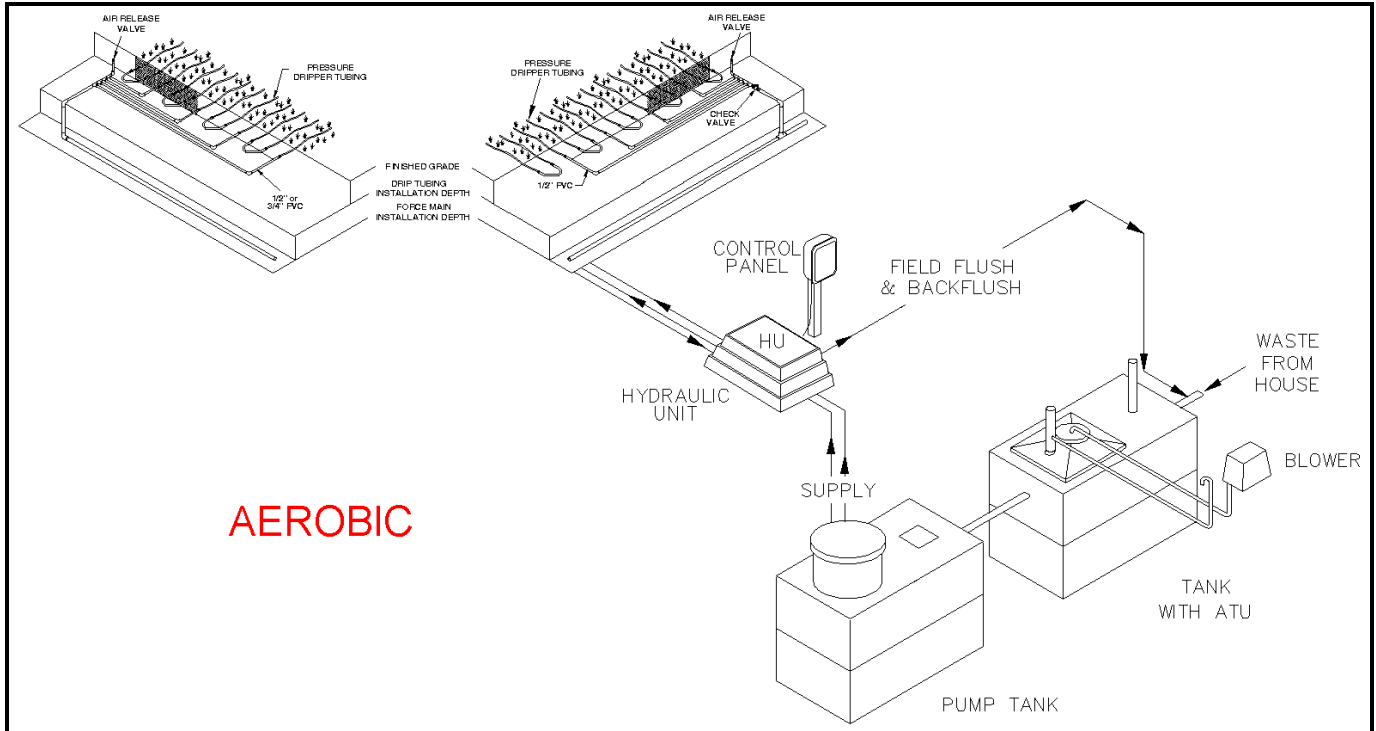




PERC-RITE® DRIP DISPERSAL DESIGN SUBMITTAL

American Manufacturing Company, Inc.

1-800-345-3132 www.americanonsite.com



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| ASD152-S122 | 2 ZONE DRIP W/ SIMPLEX 2 FILTER, 2 ZONE CONTROL PANEL |
| ASD153-S124 | 3 ZONE DRIP W/ SIMPLEX 2 FILTER, 4 ZONE CONTROL PANEL |
| ASD154-S124 | 4 ZONE DRIP W/ SIMPLEX 2 FILTER, 4 ZONE CONTROL PANEL |
| ASD153-D124 | 3 ZONE DRIP W/ DUPLEX 2 FILTER, 4 ZONE CONTROL PANEL |
| ASD154-D124 | 4 ZONE DRIP W/ DUPLEX 2 FILTER, 4 ZONE CONTROL PANEL |
| ABD121-S121 | 1 ZONE QM SKID MOUNT W/ LCD CONTROL |
| ABD121-S121SV2 | 2 ZONE QM INSERT W/ SEQUENCER & LCD CONTROL |
| AMD151-S121 | 1 ZONE SIMPLEX MANUAL CLEAN INSERT W/ LCD CONTROL |

SCOPE

Household Sewage will flow by gravity through an aerobic treatment unit, then to a drip dispersal equalization pump tank. From the drip pump tank the effluent is filtered through a 115-micron disc filter and dispersed through a drip dispersal-piping network into the soil. The piping network is composed of pressure compensating drip tubing laid on contour and managed by the Perc-Rite® process.

American Manufacturing Company, Inc. has designed the drip dispersal system for the site in accordance with findings recommendations with the site / soils evaluator, who is the consultant for the owner. American's pre-engineered system has been selected for the site by the owner's representative. American certifies the system mechanical application for this site in accordance with the design manual and makes no representation for soil suitability or other site engineering code requirements.

GENERAL NOTES FOR DRIP DISPOSAL SYSTEMS

1. All installation and construction techniques shall conform to county codes and state board of health "Sewage Handling and Disposal Regulations" 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 manufacturer 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 with purple (dyed) pvc primer prior to being glued.
4. All cutting of pvc pipe, flexible pvc and dripper tubing shall be accomplished with pipe cutters approved by the manufacturer. No sawing of pvc pipe, pvc flexible or drip tubing.
5. All pvc pipe, flexible pvc and drip 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 and piping shall be inspected for and cleared of any construction debris.
6. No wet weather installation is permitted.
7. No activity on drain field area other than minimum required to install system. Do not park equipment, drive large equipment over or store building or soil materials on drain field site.
8. Horizontal spacing between dripper lines shall be as specified.
9. Prior to start up of the drip disposal system the air release valves shall be removed and each zone in the system shall be flushed as follows: a.) Using an appropriate length of flexible pvc pipe with a male fitting attached to the air release connection to direct the flushing water away from the construction area. B.) Flush the zone with a volume of clean water (to be provided by the contractor) equal to 1.5 times the volume of the pipes from the central unit to the air release valve. C.) Repeat this procedure for each zone (flushing of the system is accomplished by manual override of the control panel by the manufacturer or engineer).
10. If trees are to be removed from site, cut stumps flush with the ground level. Do not remove.
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 the unit).
12. The contractor shall be certified to install this type of system by the manufacturer and shall hold a pre construction meeting with the individuals responsible for the soil evaluation, permitting and inspections prior to site work beginning to insure protection of the site conditions and to ensure the system is installed according to design.
13. If site conditions are determined to 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. Operation and maintenance manual to be provided at job completion.

INSTALLATION INSTRUCTIONS

1. Prepare field location for installation. Verify contour and design. No wet weather installation. No activity on drainfield other than minimum to install system. Clearing of vegetation to be performed with minimal site disturbance. Do not park equipment or store materials on drainfield area.
2. Set pretreatment and pump tanks.
3. Dig header ditch for field manifold.
4. Install dripper tubing. Horizontal spacing between dripper lines shall be as specified; and installation depth shall be as specified. Install on contour.
5. Install loops (flex tubing) and construct field supply / return manifolds. All PVC pipe and fittings shall be PVC SCH 40 type 1 rated for pressure applications. All glued joints shall be cleaned and primed with purple (dyed) PVC primer prior to being glued. All cutting of PVC pipe, flexible PVC and/or dripper tubing shall be accomplished with pipe cutters. Sawing of PVC pipe, flexible PVC and/or dripper tubing shall be followed by cleaning all shavings or sawing shall not be allowed. All open PVC pipe, flexible PVC and/or dripper tubing in the work area shall have the ends covered with duct tape during construction to prevent construction debris from entering the pipe. Prior to gluing all glue joints shall be inspected for and cleared of construction debris.
6. Dig ditches for conveyance lines, pump supply line, and flush return line. Connect supply and return lines with manifolds.
7. Place Central Unit and mount control panel. Connect conveyance, supply, and flush return lines to hydraulic unit.
8. Set switch tree in pump tank.
9. Install electrical (and phone line if applicable). Check power supply and power up unit.
10. Provide one day volume of clean water for startup. Prior to startup of the drip disposal system the air release valves shall be removed and each zone in the system shall be flushed as follows: a) using an appropriate length of flexible PVC pipe with a male fitting attached to the air release connection to direct the flushing away from the construction area, b) flush the zone with a volume of water (clean water to be provided by contractor) equal to 1.5 times the volume of the pipes from the central unit to the air release valve, c) repeat this procedure for each zone (the flushing of the system is accomplished by manual override of the control panel by the manufacturer or engineer.) Once completed replace and glue air relief valves.
11. If existing septic tanks are to be used, they shall be pumped out by a commercial septic tank pumper, checked for leakage or other problems, and replaced if necessary. After the tank is emptied, the tank shall be rinsed, pumped, and refilled with clean water. Debris in septic tank shall be kept to a minimum since it could clog the disk filters during startup. (Disk filters are not backflushed during startup and any clogging could cause incorrect rate of flow readings for the controller.)
12. Pressure check all fittings and lines. Inspect field and loops. Find leaks and repair.
13. Check setup values against calculated values. Set run time for Central Unit.
14. Backfill once lines and fields are determined to have no leaks. Back filling is to be controlled to prevent the damaging of pipes or fittings. Once completed, drainfield area should be graded to shed surface water with additional clean soil as necessary. Establish fescue or other turf cover, cut long (6-8").

SPECIAL INSTALLATION INSTRUCTIONS

FORCE MAIN TESTING

All force mains shall be tested for leaks during startup. Uncovered force mains shall be visibly inspected during a zone dose. If a leak is suspected in covered force mains then the force main shall be tested at a minimum pressure of at least 50 percent above the design operating pressure, for at least 30 minutes. There shall be no discernible leakage. All supply and return manifolds shall remain uncovered until system testing is complete.

PIPE BEDDING

Classes A, B or C bedding (latest edition of ASCE Manuals and Reports on Engineering Practice and the WEF Manual of Practice) or AWWA pipe installation conditions 3, 4 or 5, shall be provided for installation of pipelines in excavated trenches. Installation of pipelines of flexible materials shall be in accordance with recognized standards. For residential installations of PVC pipe less than 3" diameter, excavation to undisturbed earth and direct burial with excavated dirt that will not damage the pipe is required.

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 on the building sewer shall be provided every 25 feet with additional cleanouts provided as necessary. For construction techniques refer to the "Sewage Handling and Disposal Regulations".

Drainfield supply and return lines and manifolds to be installed at adequate depth to prevent freezing. Horizontal spacing between the dripper lines and the installation depth to be as specified.

WATER SEWER LINE CROSSING

Sewer shall be laid at least ten (10) feet horizontal from a water main. The distance shall be measured edge-to-edge. When local conditions prohibit this horizontal separation, the sewer may be laid closer provided that the water main is in a separate trench or an undisturbed earth shelf located on one side of the sewer and the bottom of the water main is at least 18 inches above the top of the sewer. Where this vertical separation cannot be obtained, the sewer shall be constructed of water pipe material in accordance with AWWA specification and pressure tested in place without leakage prior to backfilling. The hydrostatic test shall be conducted in accordance with the most recent edition of the AWWA Standard for the pipe material, with a minimum test pressure of 30 psi.

Sewers shall cross under water mains such that the top of the sewer is at least 18 inches below the bottom of the water main. When local conditions prohibit this vertical separation, the sewer shall be constructed of AWWA specified water pipe and pressure tested in place without leakage prior to backfilling, in accordance with the provisions of this chapter.

Sewers crossing over water mains shall be laid to provide a separation of at least 18 inches between the bottom of the sewer and the top of the water main. The sewer must be constructed of AWWA approved water pipe and pressure tested in place without leakage prior to backfilling, in accordance with above. The sewers must have adequate structural support to prevent damage to the water main and sewer joints must be placed equidistant and as far as possible from the water main joints.

OPERATION AND MAINTENANCE FOR PERC-RITE® DRIP SYSTEM SYSTEM

The **PERC-RITE® DRIP SYSTEM** has been developed to automatically monitor operational functions. The system is designed to be easily fixed after it breaks, in other words periodic monitoring can confirm good operating conditions, but there are no operational adjustments necessary until a mechanical component becomes in need of repair. In the event a “QM” Quality Monitor series is installed, periodic cleaning of the backwash filter is necessary only to prevent a high water alarm. Further, any malfunction or breakage of a mechanical component will result in a failure similar to any traditional system, a wet spot in the field, a backup or a high level alarm. Reference Owners’ and Dealers’ Manuals.

The **MONITORING FREQUENCY** should be no more than traditional systems. The most important component for the operational success is owner awareness. All onsite systems have a finite hydraulic capacity. Drip systems have no storage capacity in the soil so storage or flow equalization must be provided in the pump tank. The owner must be aware system exists and the peak flow limitations for usage.

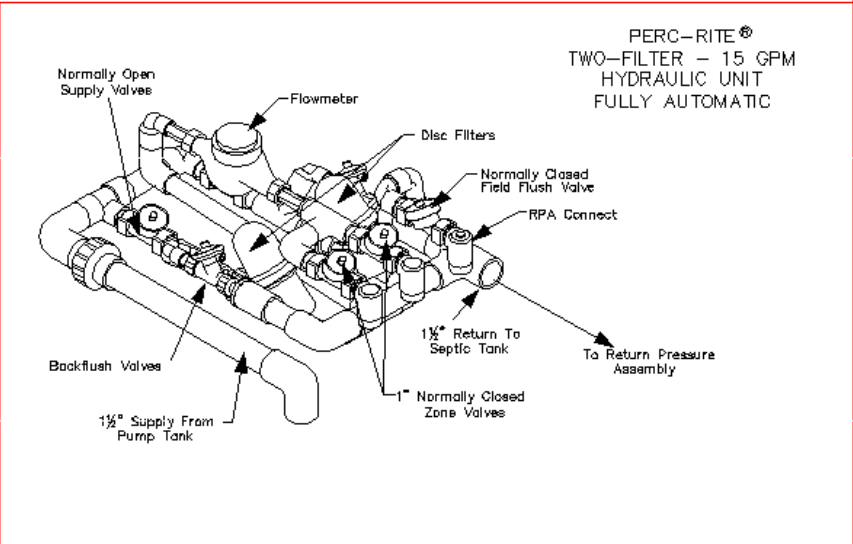
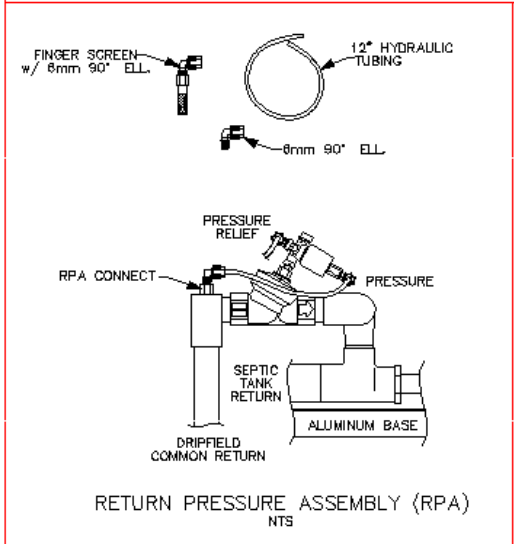
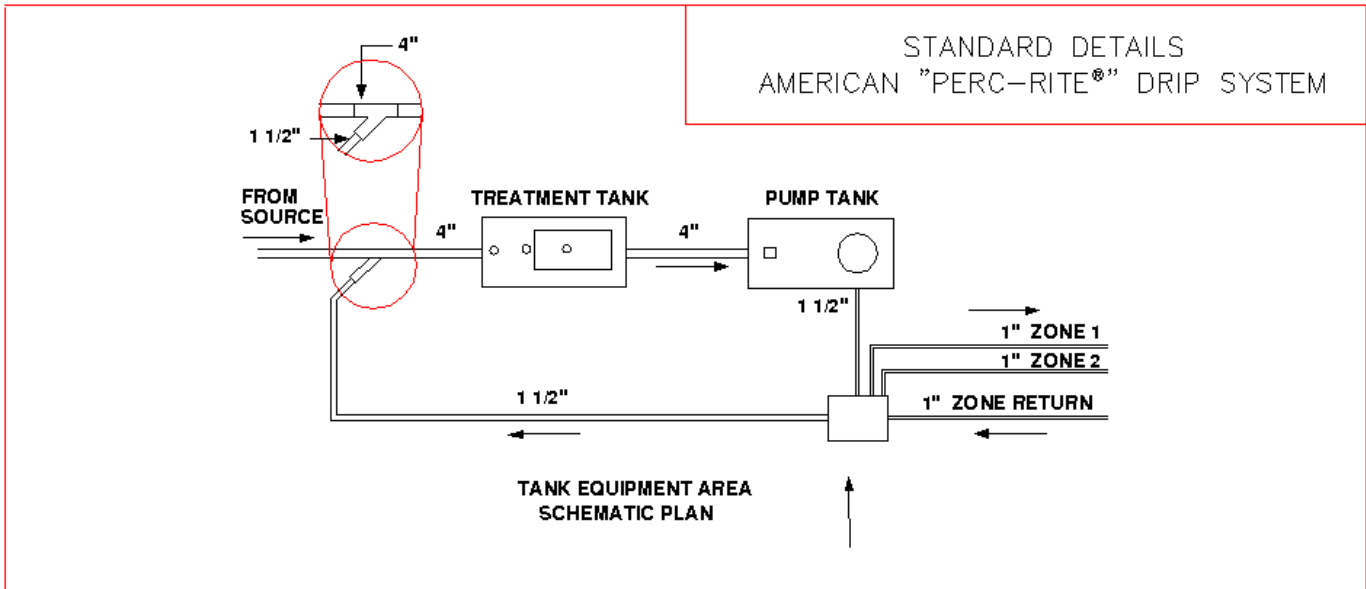
After a successful installation and startup the system should be inspected from one to three months after the owner takes occupancy to confirm operational compliance and to inform the owner of the operational characteristics of the system. The system should then go on a schedule of annual inspections to monitor usage and inspect system for wear in order to minimize emergency service requirements. Each system is provided with an owners manual. The local dealer has a more detailed installation and maintenance supplement manual. Provide monitoring frequency at the rate determined by the most sensitive component.

A **OPERATIONAL CHECKLIST** is provided in the dealer’s supplement manual for determining satisfactory operation of the system. The following topics are covered;

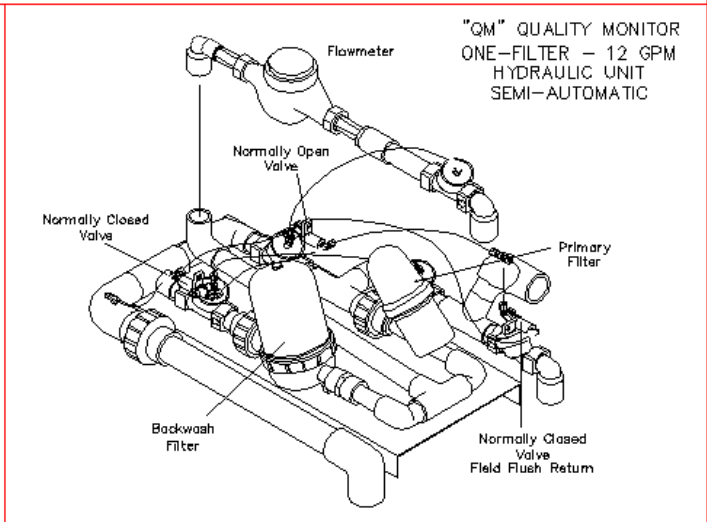
1. Field Conditions
2. Check septic tank and pump tank condition
3. Check operation of pump, control and valves.
4. Check zone dose rates.
5. Evaluate and record meter for usage.

NOTES;

PERC-RITE® DESIGN SUBMITTAL STANDARD DETAILS



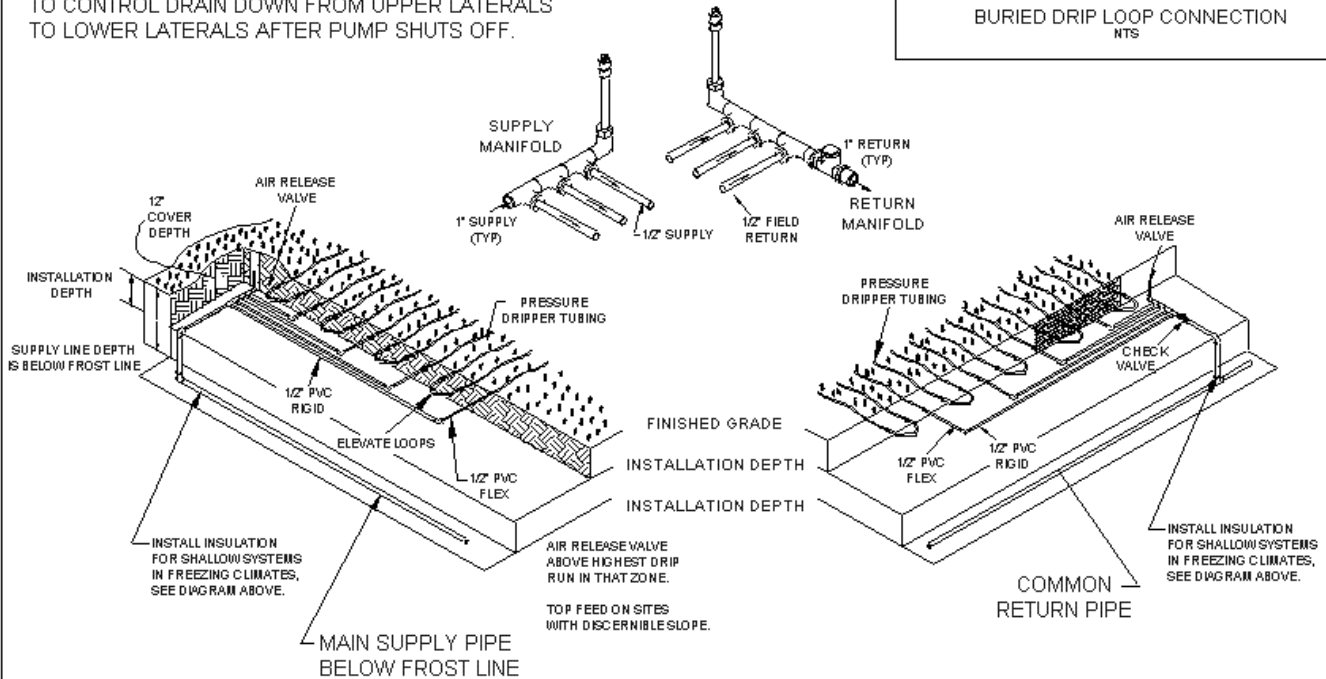
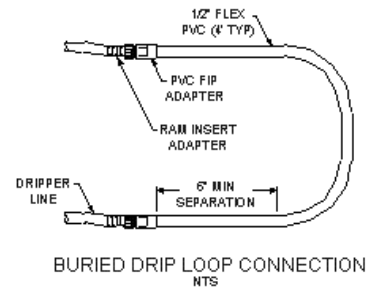
NOTE:
IN THE EVENT THE DRIP ZONES ARE OVER 10 FEET IN VERTICAL ELEVATION ABOVE THE HYDRAULIC UNIT, INSTALL A "RETURN PRESSURE ASSEMBLY." THE ASSEMBLY IS TO BE USED TO PREVENT THE RETURN LINE FROM DRAINING AFTER OR DURING A DOSE. REMOVE THE ZONE RETURN CONNECTION AND REINSTALL A SHORT 1" NIPPLE IN THE RETURN VALVE. INSTALL ASSEMBLY AS SHOWN TO THE LEFT. THE HYDRAULIC TUBING PROVIDING PRESSURE FOR THE REST OF THE UNIT MUST BE PLUGGED AND THE NEW TUBING FROM THE ASSEMBLY CONNECTED TO THE PRESSURE SIDE OF THE SILENOID.



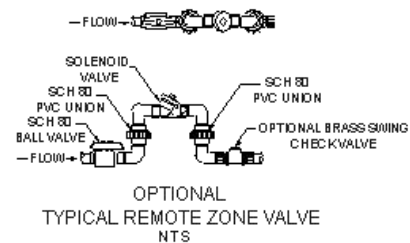
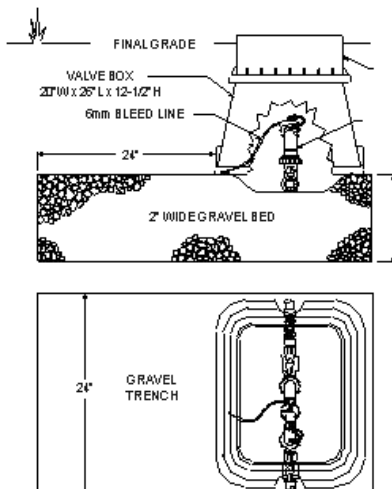
STANDARD DETAILS AMERICAN "PERC-RITE" DRIP SYSTEM

TOP FEED MANIFOLDS

USE ON ALL SITES WITH A DISCERNIBLE SLOPE TO CONTROL DRAIN DOWN FROM UPPER LATERALS TO LOWER LATERALS AFTER PUMP SHUTS OFF.



RESIDENTIAL
Patent No. 5,984,574



REMOTE ZONE VALVE

TYPICALLY USED ON DRIP SYSTEMS WHEN ZONES OR PORTIONS OF ZONES ARE LOCATED AT A LOWER ELEVATION THAN THE "REDUNDANT OFF" LEVEL FLOAT IN THE PUMP TANK. 24V IS REQUIRED AT EACH "REMOTE ZONE VALVE".