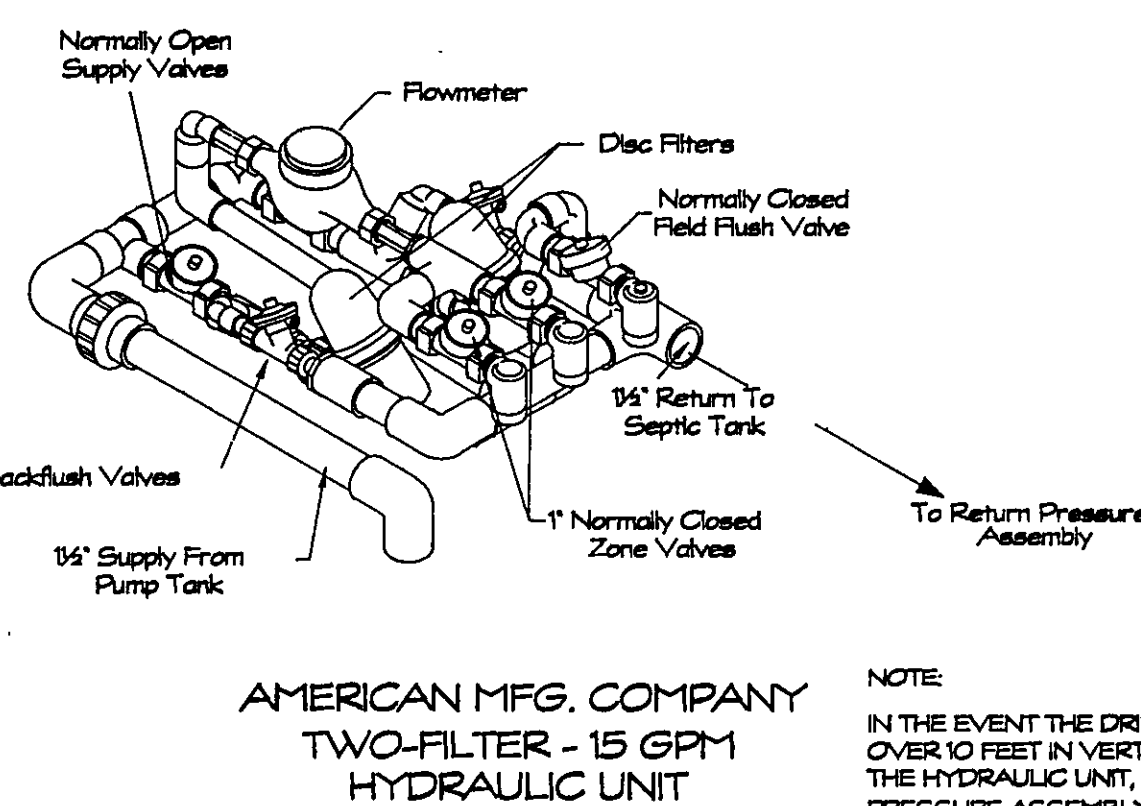
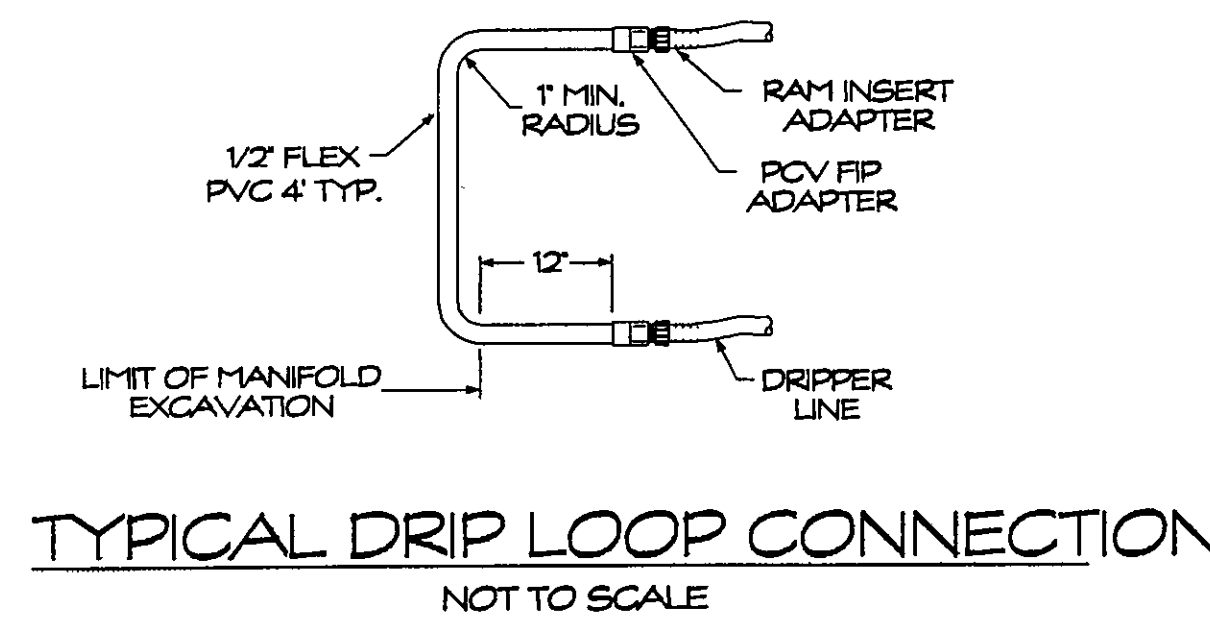
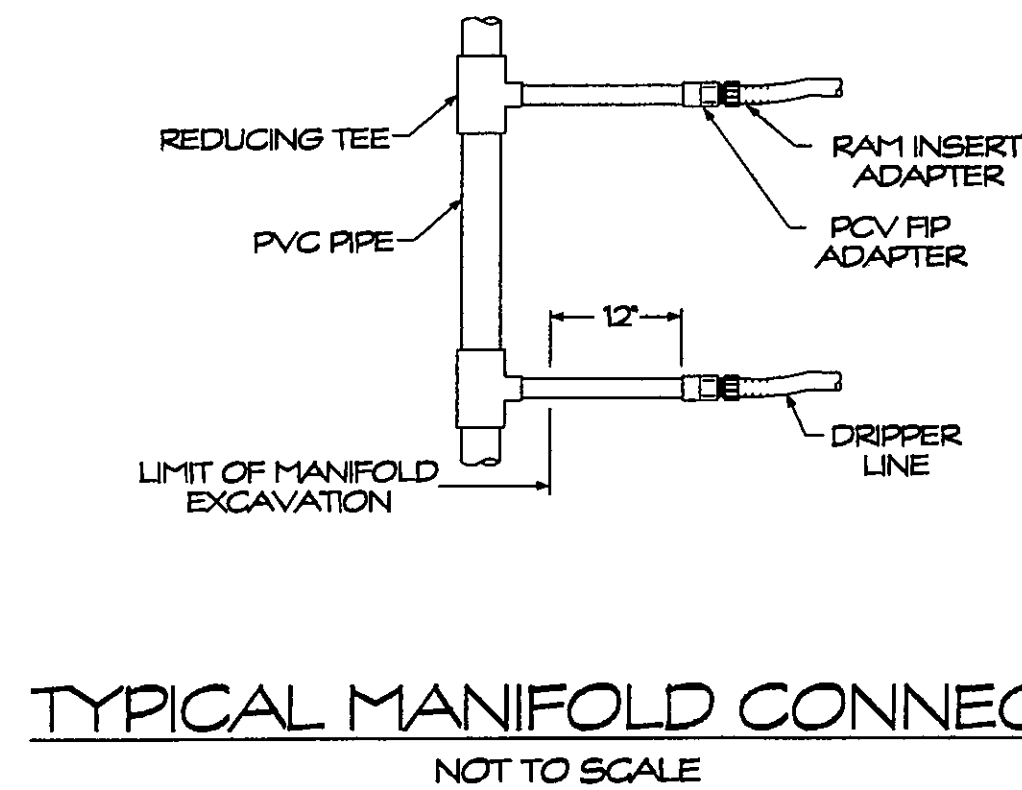
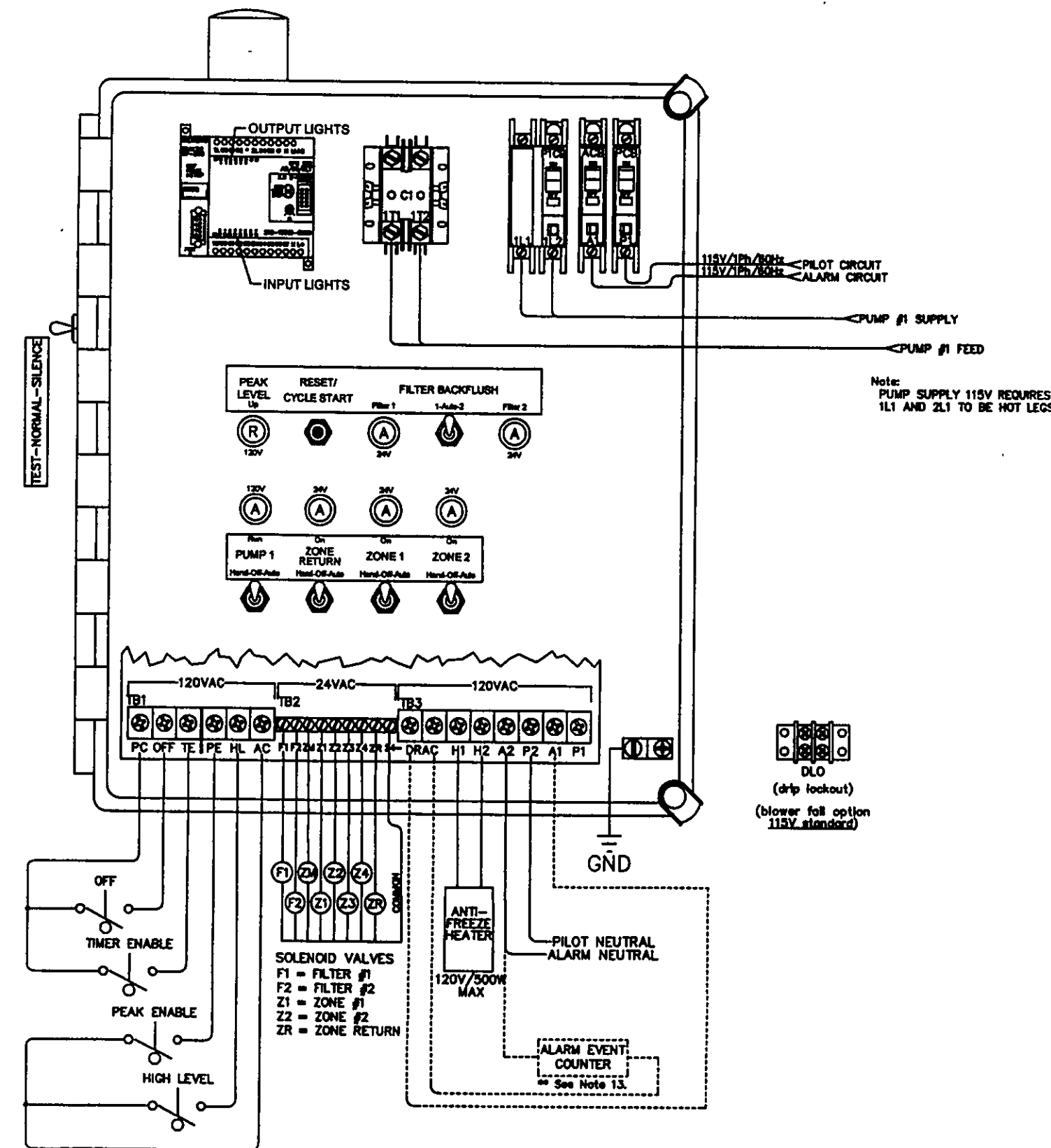


- NOTES:
- EMITTER SHALL BE SELF FLUSHING
 - EMITTER INLET SHALL BE 0.26" FROM WALL OF DRIPPERLINE
 - EACH EMITTER SHALL CONTAIN A FILTER
 - EACH EMITTER SHALL HAVE A MECHANICAL BARRIER TO PREVENT ROOT INTRUSION.
 - DRIPPERLINE SHALL BE IMPREGNATED WITH "VINYSENE", A ANTIMICROBAR ADDITIVE TO PREVENT SLIME FORMATION AND ROOT GROWTH.
 - EACH EMITTER SHALL PROVIDE 0.61 GPH FLOW RATE AT LINK PRESSURES BETWEEN 7 AND 60 PSI.

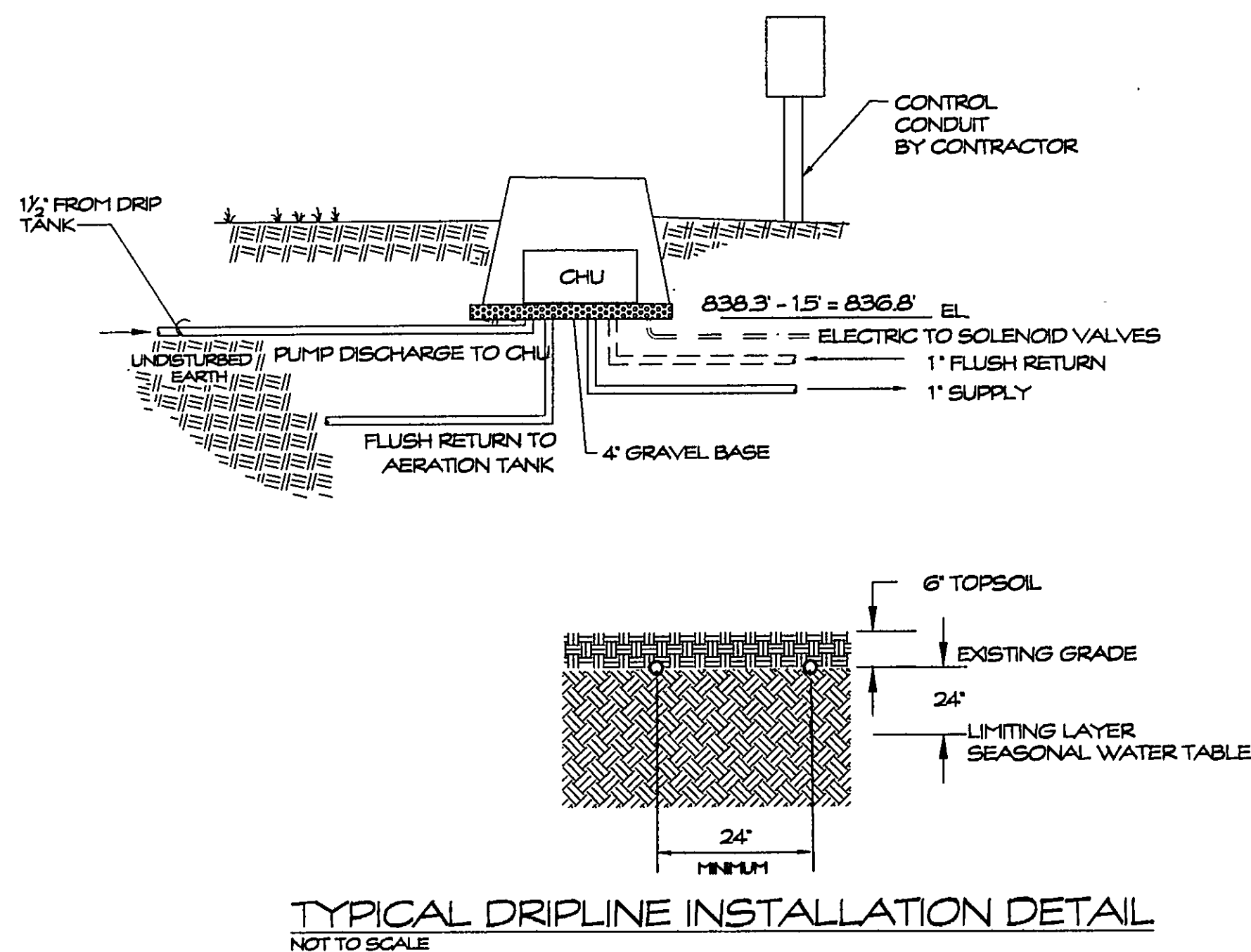


- NOTE:
- IN THE EVENT THE DRIP ZONES ARE OVER 10 FEET IN VERTICAL ELEVATION ABOVE THE HYDRAULIC UNIT, INSTALL A RETURN PRESSURE ASSEMBLY. THE ASSEMBLY IS TO BE USED TO PREVENT THE RETURN LINE FROM DRAINING AFTER OR DURING A DOSE. REMOVE THE ZONE RETURN CONNECTION AND REINSTALL A SHORT 1" NIPPLE IN THE 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 SOLENOID.



- GENERAL DRIP DISPOSAL NOTES**
- 1) ALL INSTALLATION AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO COUNTY CODES AND OHIO DEPT. OF HEALTH SEWAGE TREATMENT SYSTEM RULES AND THE PERMIT FOR THE 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 MANUFACTURER. NO SAWING OF PVC, FLEXIBLE PVC OR DRIPPER TUBING 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 GULGING ALL JOINTS 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 MATERIALS ON DRAIN FIELD SITE.
 - 8) HORIZONTAL SPACING BETWEEN DRIPPER LINES AND THE INSTALLATION DEPTH SHALL BE AS SPECIFIED.
 - 9) IF TREES ARE TO BE REMOVED FROM SITE, CUT STUMPS FLUSH WITH GROUND. REMOVE WITH LOW GROUND PRESSURE EQUIPMENT.
 - 10) 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.)
 - 11) 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 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.
 - 12) 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.
 - 13) DRAIN FIELD SUPPLY AND RETURN LINES TO BE INSTALLED AT ADEQUATE DEPTH TO PREVENT FREEZING.
 - 14) OPERATION AND MAINTENANCE MANUAL TO BE PROVIDED AT JOB COMPLETION.
 - 15) 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 15 TIMES THE VOLUME OF THE PIPES FROM THE CENTRAL UNIT TO THE AIR RELEASE VALVE. c) REPEAT THIS PROCEDURE FOR EACH ZONE (THE FLUSHING SYSTEM IS ACCOMPLISHED BY MANUAL OVERRIDE OF THE CONTROL PANEL BY THE MANUFACTURER OR ENGINEER.)

- DRIP DISPOSAL MATERIAL SPECIFICATIONS**
- 1) **DISC FILTERS:** DISC FILTERS SHALL BE AN OBLIQUE FILTER, ENTIRELY OF PLASTIC, WITH TWO MALE END CONNECTIONS TO NPT SCHEDULE 40 PRESSURE PVC. THE FILTER ELEMENTS SHALL CONSIST OF GROOVED RINGS, MOUNTED ON A SPINE FORMING A CYLINDRICAL FILTER BODY. THE RINGS ARE TO BE KEPT TOGETHER BY A SPRING SEATED AT THE BOTTOM OF THE FILTER COVER. THE OUT-IN FILTER SHALL BE OF THE SCREW-IN TYPE WITH NITRILIC RUBBER O-RING SEAL. THE BODY MATERIALS SHALL BE POLYESTER. THE SPINE AND RINGS SHALL BE POLYPROPYLENE, AND THE SPRING SHALL BE STAINLESS STEEL. THE NOMINAL FILTRATION CAPACITY OF THE FILTER SHALL BE 15 MICRONS.
 - 2) **DRIPPER TUBING:** THE DRIPPER TUBING SHALL BE NETAFIM BILINE PRESSURE COMPENSATING DRIPPERLINE FOR WASTEWATER. THE TUBING SHALL BE NOMINAL 0.61 GALLONS PER HOUR (GPH) FLOW RATE FROM 7 TO 60 PSI. THE TUBING SHALL FUNCTION AS A TURBULENT FLOW EMITTER BETWEEN 0 AND 7 PSI, ENSURING THAT THE NOMINAL DESIGN FLOW IS NOT TO EXCEED AT SYSTEM STARTUP. THE TUBING SHALL BE POLYETHYLENE 120 PSI RATINGS. TUBING END CONNECTIONS AND SPLICE CONNECTIONS SHALL BE MANUFACTURED SPECIFICALLY FOR THE TUBING AND FOR CONNECTION TO STANDARD SCHEDULE 40 NPT ADAPTERS.
 - 3) **AUTOMATIC CONTROL VALVES:** THE AUTOMATIC CONTROL VALVE SHALL BE SOLENOID ACTIVATED DIAPHRAGM VALVES BY BERMAD. THE BODY AND COVER SHALL BE REINFORCED NYLON. THE METAL PARTS SHALL BE STAINLESS STEEL. THE DIAPHRAGM SHALL BE NYLON FABRIC REINFORCED POLYISOPRENE. THE SEALS SHALL BE BUNA-N. THESE VALVES SHALL OPERATE ELECTRICALLY USING HYDRAULIC PRESSURE TO OPEN AND TO CLOSE.
 - 4) **RETURN PRESSURE ASSEMBLY FOR ZONE RETURN CONTROL VALVE:** THE AUTOMATIC ZONE RETURN VALVE SHALL, IN THE EVENT THE DRIP ZONES ARE OVER 10 FEET IN VERTICAL ELEVATION ABOVE THE HYDRAULIC UNIT, HAVE INSTALLED A RETURN PRESSURE ASSEMBLY. THE ASSEMBLY IS TO BE USED TO PREVENT THE LINE FROM DRAINING AFTER OR DURING EACH DOSE. SEE STANDARD



- NOTES:
1. GROUND SURFACE SHALL BE SCARIFIED AS PER MANUFACTURERS RECOMMENDATION TO A DEPTH TO BREAK UP SOIL/SOIL. REMOVE VEGETATION. USE LOW GROUND PRESSURE EQUIPMENT.
 2. SEED AND MULCH DRIP ZONES WITH OWNERS' PREFERRED BRAND UPON COMPLETION.
 3. CONTRACTOR MAY USE VIBRATORY FLOW AND INSTALL TUBING 6 INCHES DEEP.

- GENERAL NOTES:**
1. Supply and return lines shall be installed 36" minimum below grade.
 2. Drip tubing shall be installed 6" below grade.
 3. Drip tubing shall follow contours and shall be a minimum of 2'-0" O.C.
 4. Drip field shall be installed with low ground pressure equipment.
 5. Drip tubing shall be 0.57" I.D. and shall be rated @ 0.61 GPH per emitter.

- DRIP SYSTEM DESIGN PARAMETERS:**
- PEAK DAILY DOSE = 480 Gallons
 - AVERAGE DAILY DOSE = 60 % OF 480 Gal. = 288 Gallons
 - EACH ZONE SHALL BE DOSED 5.3 TIMES PER DAY AT AVERAGE FLOW AND 8.8 TIMES PER DAY AT PEAK FLOW.
 - DOSE VOLUME = 27.3 Gallon/Dose
 - DOSE DURATION = 6.95 Min/Dose
 - DOSE FREQUENCY @ AVERAGE FLOW = 137 Min.
 - DOSE FREQUENCY @ PEAK FLOW = 82 Min.
 - DRIP FIELD SHALL BE FLUSHED EVERY 30 DOSES
 - DRIP FIELD DOSING PUMPS SHALL BE AER-MOTOR MODEL
 - 15 GPM - 1/2 H.P. OR EQUAL AND SHALL BE ABLE TO PUMP
 - 15 GPM @ 125 Feet TDH

DRIP IRRIGATION DETAILS ARE THE PROPERTY OF AMERICAN MANUFACTURING CO., AND IT OR THE TECHNOLOGY CONTAINED HEREIN MAY NOT BE REPRODUCED NOR USED EXCEPT AS ORIGINALLY INTENDED WITHOUT THE EXPRESSED CONSENT OF AMERICAN MANUFACTURING CO.

AMERICAN MANUFACTURING CO.
5517 WELLINGTON RD. GAINESVILLE VA 20155, 703-754-0077

DATE _____		BY _____
ADDENDA REVISIONS		
NO.	DATE	BY
ISSUED FOR CONSTRUCTION		
DATE _____		BY _____

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1.	AS PER STREAMKEY, INC.	4/11/07	KRB
2.	AS PER LOGHD	4/12/07	KRB
3.	AS PER STREAMKEY, INC.	4/13/07	KRB

RESIDENTIAL WASTEWATER TREATMENT PLAN FOR

Enzoco Homes
S/L 4, Giuliano Drive, Kirtland
Lake County, Ohio

KRB Engineering, Inc.
Professional Civil Engineering

330 Derrington Drive
Chardon, Ohio 44024

Phone: (440) 286-7150
Email: kbeender1@att.net

DATE	APR 2007	DRAWN BY:	KRB
CHECKED BY:	KRB	JOB NO.:	K7-16
SCALE	AS NOTED		
SHEET TITLE	RESIDENTIAL WASTEWATER PLAN & DETAILS		

2 OF 2