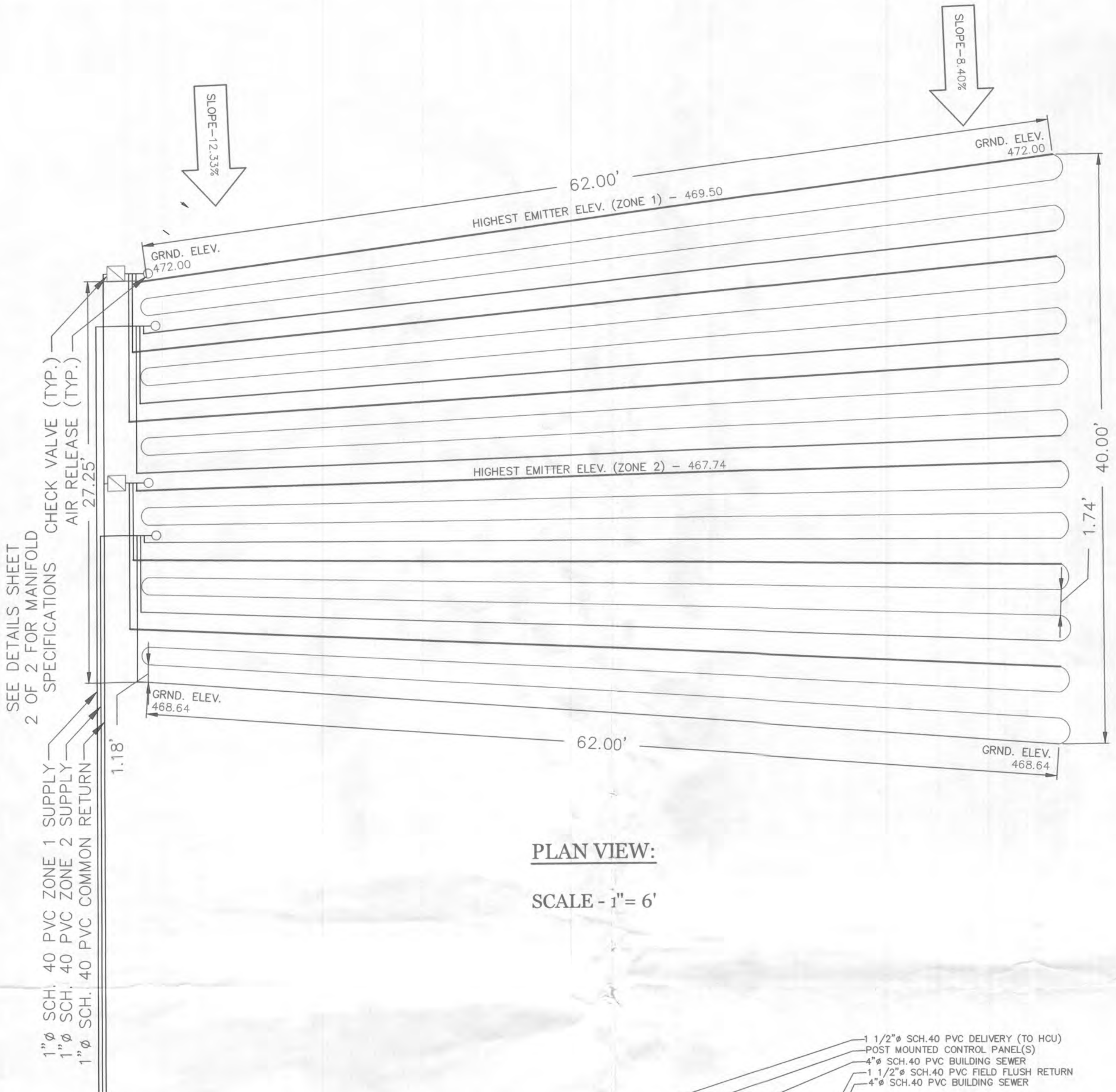
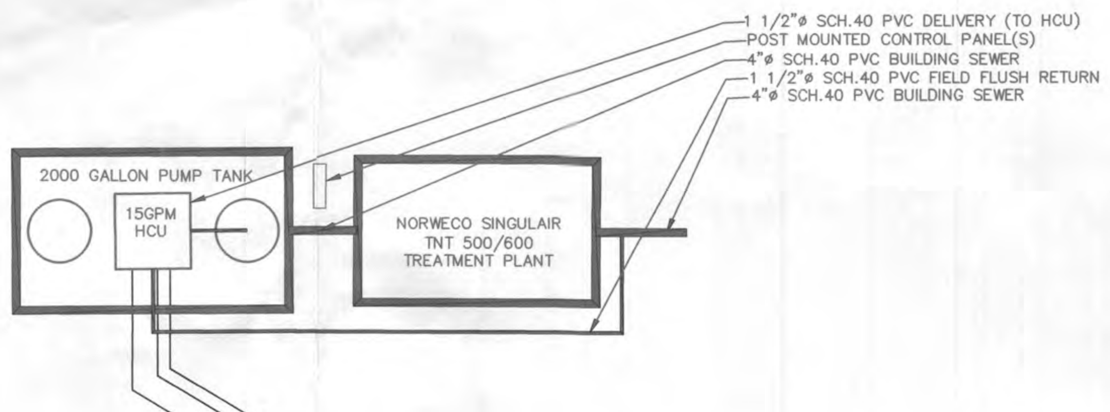
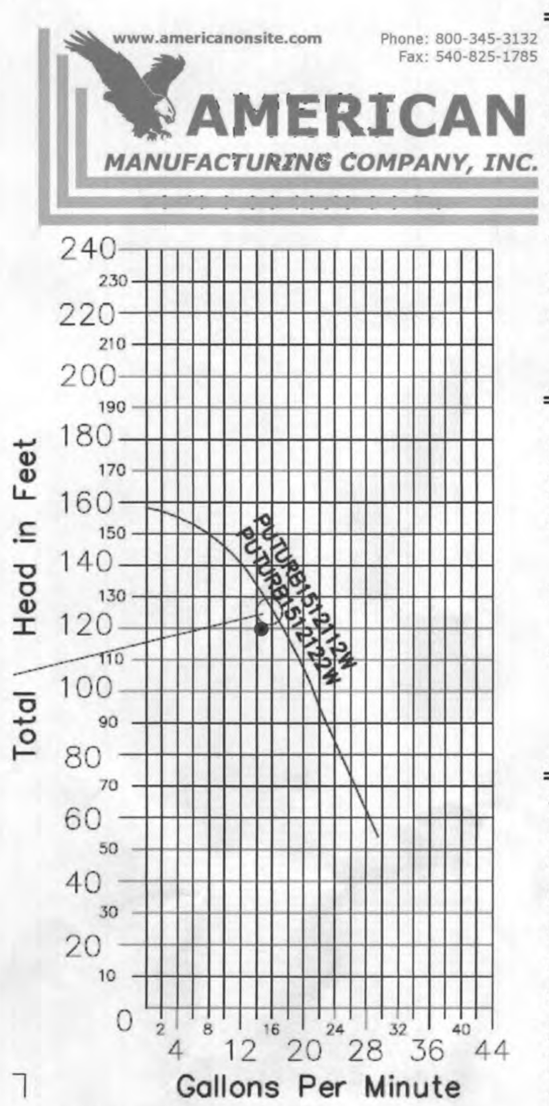


PLAN VIEW:

SCALE - 1"= 6'





PUMP PERFORMANCE CURVE

SITE TESTING DATA

TEST PIT (SOIL)	DEPTH	LZ
A	84"	WATER
B	84"	WATER

DESIGN PARAMETERS

BEDROOMS	4	QUAN.
PEAK GALLONS PER DAY	600	GAL.
AVG. GALLONS PER DAY	360	GAL.
USDA/NRCS SOIL TEXTURE	LOAM	
PROPOSED ZONES	2	QUAN.
PROPOSED DRIPPER LINE	1488.00	L.F.
PEAK DAILY DESIGN LOAD	0.2751	GPD/SQFT
MIN. TUBING SPACING	1.18	FT.
MAX. TUBING SPACING	1.74	FT.
AVG. SLOPE IN DRIP AREA	10.37%	

SYSTEM SURFACE AREA	**2181.00**	**SQ.FT.**
LARGEST ZONE AREA	**1090.50**	**SQ.FT.**
GALLONS PER DOSE	**30.00**	**GAL.**
PEAK DAILY DESIGN LOAD	**0.2751**	**GPD/SQ.FT.**
AVG. DAILY DESIGN LOAD	**0.1651**	**GPD/SQ.FT.**
INSTANTANEOUS LOAD	**0.0275**	**GAL/SQ.FT./DOSE**
DOSE LOAD AS INCHES	**0.0441**	**IN./DOSE**
PEAK FOOTPRINT LOADING	**0.0917**	**GPD/SQ.FT.**
AVG. FOOTPRINT LOADING	**0.0550**	**GPD/SQ.FT.**

PRIMARY SYSTEM COMPONENTS

PRIMARY SYSTEM COMPONENTS			I.D.	TYPE/MODEL
TREATMENT REQUIRED	4	BEDROOM		AEROBIC OR SECONDARY FILTRATION
PRIMARY TREATMENT	4	BEDROOM	1	NORWECO SINGULAIR TNT 600
ABSORP. DOSE TANK	2000	GAL.	2	SINGLE COMPARTMENT MONOLITHIC CONCRETE
DRIP AREA DOSE PUMP	1	QUAN.		AMERICAN MANUFACTURING CO INC.-MODEL# PUTURB15
HYDRAULIC CONTROL UNIT	1	QUAN.	3	15 GPM UNIT BY AMERICAN MANUFACTURING. CO, INC. (CU)
LAMINAR FLOW PUMP JACKET	1	QUAN.		COOL GUIDE™ OR SITE FABRICATED
DRIP TUBING	2	QUAN.		1,000 FOOT ROLLS

ZONE DATA:

ZONE	1		
STATIC HEAD (PUMP TO CU)	5.06	FT.	
TUBING LENGTH	744.0	FT.	
LONGEST LATERAL	248.0	FT.	
NUMBER OF LATERALS	3	QUAN.	
FORWARD FLUSH RATE	4.80	GPM	(1.6 GPM/LATERAL)
EMITTERS	372	QUAN.	(EVERY 2 FEET)
EMITTER DISCHARGE	3.78	GPM	(0.01016 GPM EACH)
DESIGN FLOW	8.58	GPM	
RETURN CONNECTIONS	3	QUAN.	
SUPPLY LINE LENGTH	281.00	FT.	(FROM CONTROL UNIT)
SUPPLY LINE DIAMETER	1.00	IN.	
FRICTION LOSS SUPPLY LINE	4.14	FT./100 FT.	
FRICTION LOSS SUPPLY LINE	11.62	FT.	(DESIGN FLOW RATE USED)
RETURN LINE DIAMETER	1.00	IN.	
RETURN LINE LENGTH	280.00	FT.	(TO CONTROL UNIT)
FRICTION LOSS RETURN LINE	1.41	FT./100 FT.	(TO CONTROL UNIT)
FRICTION LOSS RETURN LINE	3.95	FT.	(FORWARD FLUSH FLOW RATE USED)
STATIC HEAD CHANGE	14.50	FT.	(CU TO DRAINFIELD)
HEAD LOSS IN CU	6.00	FT.	(FORWARD & DOSE CYCLE)
FRICTION LOSS IN TUBING	26.00	FT.	
TOTAL HEAD LOSS	67.16	FT.	
TOTAL FLOW	8.58	GPM	

ZONE	2		
STATIC HEAD (PUMP TO CU)	5.06	FT.	
TUBING LENGTH	744.00	FT.	
LONGEST LATERAL	248.00	FT.	
NUMBER OF LATERALS	3	QUAN.	
FORWARD FLUSH RATE	4.80	GPM	(1.6 GPM/LATERAL)
EMITTERS	372	QUAN.	(EVERY 2 FEET)
EMITTER DISCHARGE	3.78	GPM	(0.01016 GPM EACH)
DESIGN FLOW	8.58	GPM	
RETURN CONNECTIONS	3	QUAN.	
SUPPLY LINE LENGTH	266.00	FT.	(FROM CONTROL UNIT)
SUPPLY LINE DIAMETER	1.00	IN.	
FRICTION LOSS SUPPLY LINE	4.14	FT./100 FT.	
FRICTION LOSS SUPPLY LINE	11.00	FT.	(DESIGN FLOW RATE USED)
RETURN LINE DIAMETER	1.00	IN.	
RETURN LINE LENGTH	280.00	FT.	(TO CONTROL UNIT)
FRICTION LOSS RETURN LINE	1.41	FT./100 FT.	(TO CONTROL UNIT)
FRICTION LOSS RETURN LINE	3.95	FT.	(FORWARD FLUSH FLOW RATE USED)
STATIC HEAD CHANGE	12.74	FT.	(CU TO DRAINFIELD)
HEAD LOSS IN CU	6.00	FT.	(FORWARD & DOSE CYCLE)
FRICTION LOSS IN TUBING	26.00	FT.	
TOTAL HEAD LOSS	64.78	FT.	
TOTAL FLOW	8.58	GPM	

DOSE PUMP TO CU DATA:

MAXIMUM HEAD LOSSES IN CU	115.00	FT.	(DURING BACKFLUSH CYCLE)
STATIC HEAD	5.06	FT.	(PUMP TO CU)
MAX. DELIVERY LINE LENGTH	5.00	FT.	(PUMP TO CU)
FRICTION LOSS DELIVERY LINE	0.51	FT./100 FT.	(PUMP TO CU)
DELIVERY LINE FRICTION LOSS	0.03	FT.	(PUMP TO CU)
MAXIMUM DESIGN FLOW	15.00	GPM	(BACKFLUSH FLOW)
TOTAL HEAD	120.09	FT.	@ GPM
MAXIMUM DESIGN FLOW	8.58	GPM	(DOSE PLUS FLUSH CYCLE)
CU CAPABILITY	15	GPM	

PUMP SELECTION ANALYSIS:

UNIT					
ZONE 1	8.58	GPM	@	67.16	FT./HEAD
ZONE 2	8.58	GPM	@	64.78	FT./HEAD
CU	15.00	GPM	@	120.09	FT./HEAD
PUMP SHALL DELIVER	15.00	GPM	@	120.09	FT./HEAD

THE ABOVE SELECTS THE MOST LIMITING SYSTEM FACTORS OF THE PRIMARY COMPONENTS

DOSE SUMMARY & TIMER RECOMMENDATIONS:

ZONE	1	2	
PERCENT OF TUBING	50.00%	50.00%	
CYCLES PER DAY	6.00	6.00	**AVERAGE (120 MIN. REST)**
CYCLES PER DAY	10.00	10.00	**PEAK ENABLED (72 MIN. REST)**
GALLONS PER DAY PER ZONE	300.00	300.00	PEAK DAILY FLOW
GALLONS PER DAY PER ZONE	180.00	180.00	AVERAGE DAILY FLOW
GALLONS PER DOSE CYCLE	30.00	30.00	GAL.
ZONE DELIVERY	3.78	3.78	GPM
PUMP RUN TIME	7.93	7.93	MINUTES
DRAWDOWN	0.64	0.64	INCHES
120 MINUTE AVG. CYCLE DOSE	180.00	180.00	GAL./DAY
72 MINUTE PEAK CYCLE DOSE	300.00	300.00	GAL./DAY

GENERAL NOTES:

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. PREPARE FIELD LOCATION FOR INSTALLATION. VERIFY CONTOUR AND DESIGN. NO WET WEATHER INSTALLATION. NO ACTIVITY ON DRAIN-FIELD OTHER THAN MINIMUM TO INSTALL SYSTEM. CLEARING OF VEGETATION TO BE PERFORMED WITH MINIMAL SITE DISTURBANCE. DO NOT PARK EQUIPMENT OR STORE MATERIALS ON DRAIN-FIELD AREA.
3. THE INSTALLATION OF THIS SYSTEM SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES AS SUPPLIED BY THE MANUFACTURER OF THE EQUIPMENT.
4. 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.
5. 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.
6. 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.
7. NO WET WEATHER INSTALLATION IS PERMITTED.
8. 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.
9. HORIZONTAL SPACING BETWEEN DRIPPER LINES AND THE INSTALLATION DEPTH SHALL BE AS SPECIFIED.
10. 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 WATER 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.)
11. IF TREES ARE TO BE REMOVED FROM SITE, CUT STUMPS FLUSH WITH GRADE AND GROUND IN PLACE.
12. 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).
13. 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.
14. 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.
15. OPERATION AND MAINTENANCE MANUAL TO BE PROVIDED AT JOB COMPLETION BY THE INSTALLER AND/OR MANUFACTURER.
16. 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 BACK FLUSHED DURING STARTUP AND ANY CLOGGING COULD CAUSE INCORRECT RATE OF FLOW READINGS FOR THE CONTROLLER.)
17. PRESSURE CHECK ALL FITTINGS AND LINES. INSPECT FIELD AND LOOPS. FIND LEAKS AND REPAIR.
18. CHECK SETUP VALUES AGAINST CALCULATED VALUES. SET RUN TIME FOR CENTRAL UNIT.
19. BACKFILL ONCE LINES AND FIELDS ARE DETERMINED TO HAVE NO LEAKS. BACKFILLING IS TO BE CONTROLLED TO PREVENT THE DAMAGING OF PIPES OR FITTINGS. ONCE COMPLETED, DRAIN-FIELD AREA SHOULD BE GRADED TO SHED SURFACE WATER WITH ADDITIONAL CLEAN SOIL AS NECESSARY. ESTABLISH FESCUE OR OTHER TURF COVER, CUT LONG (6-8").

GENERAL CONSTRUCTION NOTES:

1. THE PROPOSED SYSTEM AREA SHOULD BE PROTECTED FROM DISTURBANCE.
2. THE AREA SURROUNDING THE DRAIN-FIELD SHALL BE GRADED TO PROVIDE FOR DIVERSION OF SURFACE WATER RUNOFF.
3. CONTRACTOR SHALL CONTACT LOCAL APPROVING AUTHORITY PRIOR TO COMMENCING CONSTRUCTION.
4. ALL CONTRACTORS PROVIDING CONSTRUCTION SERVICES AT THIS SITE (OR SITE RELATED CONSTRUCTION) SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE OSHA (OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION) STANDARDS AND REGULATIONS. PENN'S TRAIL ENVIRONMENTAL, LLC WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR LIABILITY ARISING FROM THE FAILURE OF ANY PARTY TO CONFORM TO APPLICABLE OSHA STANDARDS AND REGULATIONS.
5. THE INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A PROFESSIONAL SERVICE RENDERED BY PENN'S TRAIL ENVIRONMENTAL, LLC. THIS PLAN IS PREPARED SPECIFICALLY FOR THE CLIENT AND PROJECT DESIGNATED HEREON. MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF PENN'S TRAIL ENVIRONMENTAL, LLC IS PROHIBITED. COPYRIGHT 2021 PENN'S TRAIL ENVIRONMENTAL, LLC ALL RIGHTS RESERVED.
6. ANY VARIATIONS FOUND DURING INSTALLATION WHICH DIFFER FROM THE INFORMATION REPRESENTED HEREON, SHALL BE REPORTED TO PENN'S TRAIL ENVIRONMENTAL, LLC SO OUR RECOMMENDATIONS CAN BE REVIEWED AND REVISED IF REQUIRED.
7. IN CASE OF MALFUNCTION OF MODIFICATION OF SYSTEM DESIGN, THE LOCAL APPROVING AUTHORITY AND PENN'S TRAIL ENVIRONMENTAL, LLC MUST BE NOTIFIED.
8. CONTRACTOR SHALL NOTIFY AND MEET WITH REPRESENTATIVES FROM THE LOCAL APPROVING AUTHORITY AND THE DESIGNER AT THE SITE PRIOR TO START OF CONSTRUCTION OF THE SYSTEM.
9. ALL ELECTRICAL COMPONENTS SHALL BE PLUG TYPE, WATER TIGHT CONNECTIONS.
10. PERMIT ISSUED MAY BE SUBJECT TO A MAINTENANCE AND OPERATION AGREEMENT. THAT AGREEMENT AND ITS ATTACHMENTS ARE HEREBY INCORPORATED BY REFERENCE.
11. THIS DESIGN INCLUDES BY REFERENCE ALL MANUFACTURERS MANUALS, DESIGN REPORTS AND OTHER NOTICES AS MAY BE RECEIVED FROM THE AGENCIES, INSTALLERS AND MANUFACTURES CONTRIBUTING TO THE INSTALLATION OF THIS SYSTEM. THE MOST RESTRICTIVE COVENANTS SHALL APPLY.
12. USE OF CABLE PULLER FOR INSTALLATION OF DRIP TUBING IS STRICTLY PROHIBITED. IT IS RECOMMENDED THAT A VIBRATORY PLOW OR PICK AXE IS USED FOR TUBING INSTALLATION.

COLD WEATHER INSTALLATION NOTES:

1. "TOP FEED" MANIFOLDS SHOULD BE USED ON ALL SITES WITH A DISCERNABLE SLOPE TO ALLOW FOR PROPER DRAINAGE OF THE MANIFOLDS AND THE 3/4" AND 1/2" LATERAL CONNECTORS INTO THE DRIP TUBING.
2. THE MAIN SUPPLY AND RETURN LINES SHALL BE INSTALLED BELOW THE LOCAL FROST LINE AND SHALL FEED THE SHALLOW "TOP FEED" MANIFOLDS WITH A SINGLE VERTICAL SECTION OF INSULATED SCH. 40 PVC PIPE. INSULATION SHALL BE MINIMUM 1/2" THICK FOAM INSULATION (OR EQUIVALENT).
3. ON LEVEL SITES WHERE "TOP FEED" MANIFOLDS WILL NOT DRAIN THEREFORE REQUIRING THE USE OF "SIDE FEED" MANIFOLDS, A MINIMUM 12 INCHES OF COVER IS RECOMMENDED BETWEEN HIGHEST POINT OF 1/2" BLACK FLEXIBLE PVC PIPE ("NON LOOP" CONNECTIONS) AND FINAL GRADE. ON DRIP TUBING INSTALLATIONS LESS THAN 12 INCH THIS REQUIRES ADDITIONAL COVER OVER THE HEADER DITCH AREA TO CREATE THE 12 INCH SEPARATION. ANY ADDITIONAL COVER IS TO BE GRADED AND TAPERED INTO LANDSCAPE. PLEASE SEE NOTE #6 BELOW.
4. DENSE TURF COVER SHALL BE ESTABLISHED OVER SUPPLY TRENCH, RETURN TRENCH AND TUBING BEFORE FIRST EXPOSURE TO COLD WEATHER. IF VEGETATION CANNOT BE ESTABLISHED, TRENCHES AND TUBING SHALL BE COVERED WITH A THICK LAYER (MINIMUM 6") OF MULCH, STRAW/HAY, ETC. UNTIL TURF COVER IS ESTABLISHED. COVER MUST BE STABILIZED AND MAINTAINED UNTIL DENSE TURF IS ESTABLISHED. AMOUNT OF COVER MAY NEED TO BE ADJUSTED FOR SETTLING OF BACKFILL.
5. ALL VALVE BOXES THAT HOUSE "REMOTE ZONE VALVES" SHALL BE INSULATED. INSULATION TO CONSIST OF BLUE BOARD, BAGGED STYROFOAM PEANUTS OR EQUIVALENT. FIBERGLASS INSULATION IS NOT PERMITTED. THE "REMOTE ZONE VALVES" SHALL BE PLACED ON A BED OF GRAVEL OR SCREENINGS AT LEAST 6 INCHES IN DEPTH. THE AREA SURROUNDING THE VALVE BOXES SHALL BE GRADED TO DIVERT SURFACE WATER TO REDUCE THE VOLUME OF GROUNDWATER THAT MAY COLLECT IN VALVE BOX. CERTAIN SITES MAY REQUIRE POSITIVE DRAINS TO PROVIDE SUB-GRADE DRAINAGE AROUND THE VALVE BOXES.
6. ALL LOOPS CONNECTING DRIP RUNS WITH 1/2" FLEXIBLE PVC SHALL BE SLIGHTLY ELEVATED (MINIMUM 1-2 INCHES) SO THAT THEY FORWARD DRAIN INTO DRIP TUBING AFTER THE PUMP CYCLE ENDS. THE CONTRACTORS SHALL ENSURE THESE LOOPS STAY ELEVATED AFTER BACKFILLING.
7. ALL MAIN SUPPLY AND RETURN TRENCHES TO BE INSTALLED BELOW THE LOCAL FROST LINE. IF THIS IS NOT POSSIBLE DUE TO SITE RESTRICTIONS THEN ADEQUATE SOIL MUST BE ADDED SO THAT THE EFFECTIVE FINISHED GRADE REMAINS BELOW THE FROST LINE POST-SETTLEMENT. SUPPLEMENTAL SOIL COVER SHALL BE PREPARED AND SEEDED FOR TURF ESTABLISHMENT AND STABILIZED. IF VEGETATION CANNOT BE ESTABLISHED THEN TRENCHES SHALL BE TEMPORARILY STABILIZED AS DESCRIBED IN NOTE #4.
8. SUFFICIENT GROUND COVER AROUND THE HYDRAULIC UNIT IS REQUIRED TO INSULATE THE UNIT. ALL PIPES ENTERING AND LEAVING THE HYDRAULIC UNIT SHALL ELBOW VERTICALLY DOWN 90° TO A DEPTH BELOW THE FROST LINE PRIOR TO EXTENDING AWAY FROM THE UNIT HORIZONTALLY. ADDITIONAL INSULATION INSIDE THE HYDRAULIC UNIT IS ENCOURAGED. INSULATION TO CONSIST OF EITHER BLUE BOARD, BAGGED STYROFOAM PEANUTS OR EQUIVALENT.

NO.	REVISIONS	DATE

CALL BEFORE YOU DIG!
1-800-257-7777
PROTECTION LAW THE UNDERGROUND UTILITY LINE
CONTRACTORS MUST VERIFY LOCATIONS OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES HEREON HAVE BEEN DEVELOPED FROM THE UTILITY COMPANY RECORDS AND 1-800-242-1776, NO LESS THAN 3 NOR MORE THAN 10 DAYS PRIOR TO BY NOTIFYING FACILITY OWNERS THROUGH THE MISS UTILITY SYSTEM. COMPLETENESS OR ACCURACY ATTENTION ALL CONTRACTORS: LOCATIONS OF EXISTING UTILITIES SHOWN EXCAVATION OR DEMOLITION WORK.
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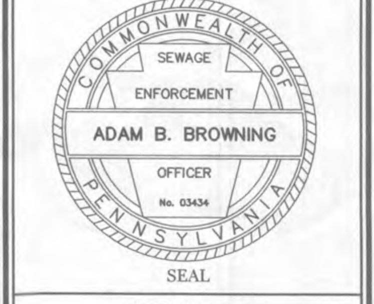
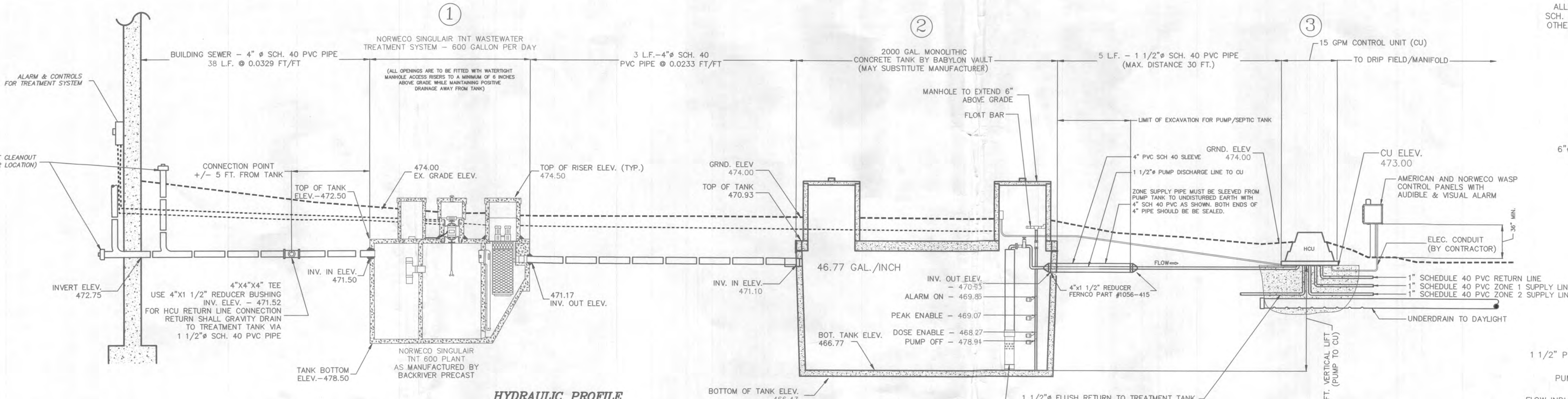
MOUNT AIRY, MD 21771
ph. (301) 829-5022
email: staff@pennstrail.com

DRIP DISPERSAL SYSTEM DESIGN PLAN
PREPARED FOR
2905 EVERGREEN WAY TRACT
ELLICOTT CITY, 3RD ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND
DATE: DECEMBER 12, 2022
SCALE: AS NOTED



SEAL

PTE#6120
SHEET 2 OF 4



HYDRAULIC PROFILE

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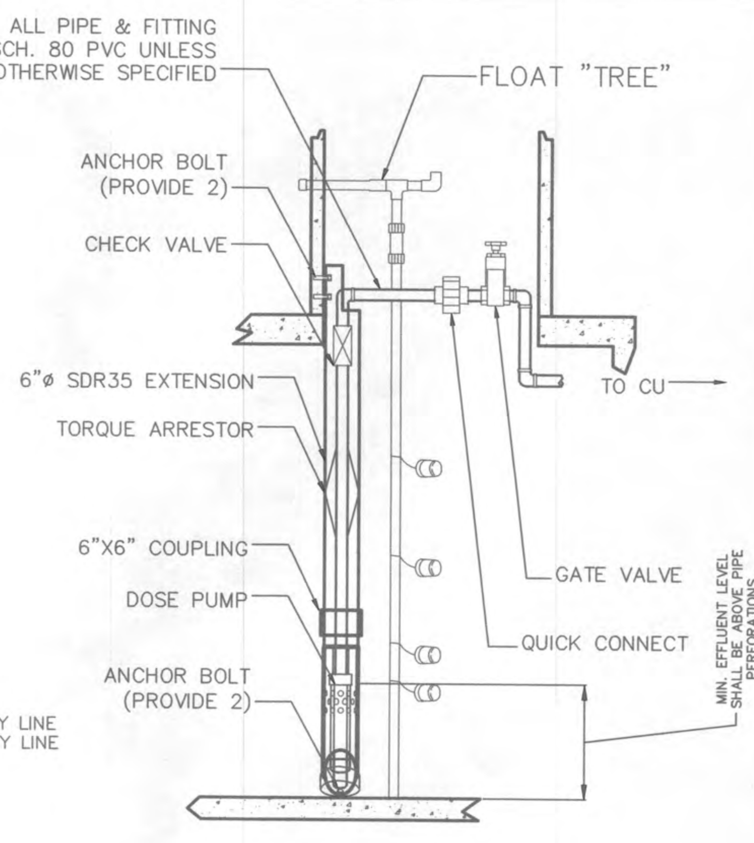
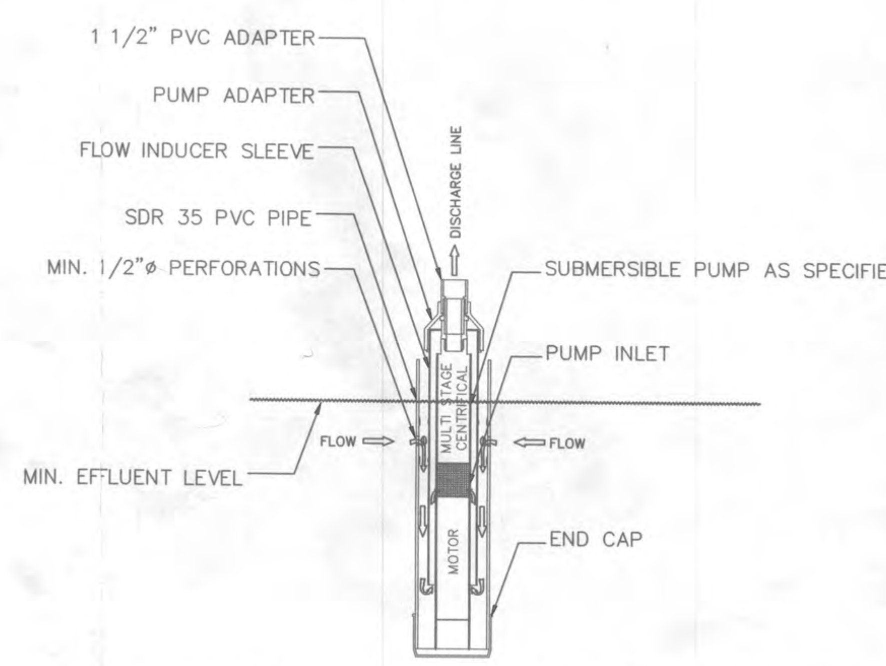
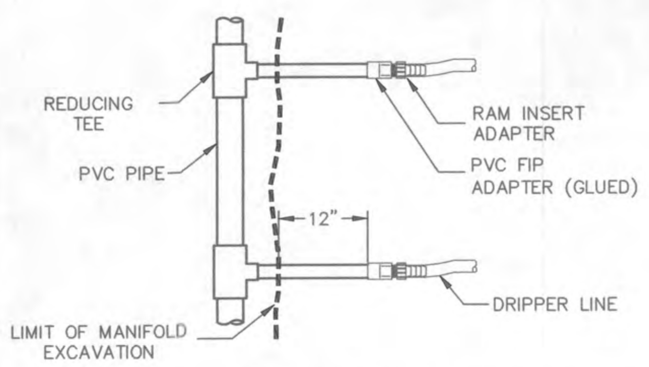


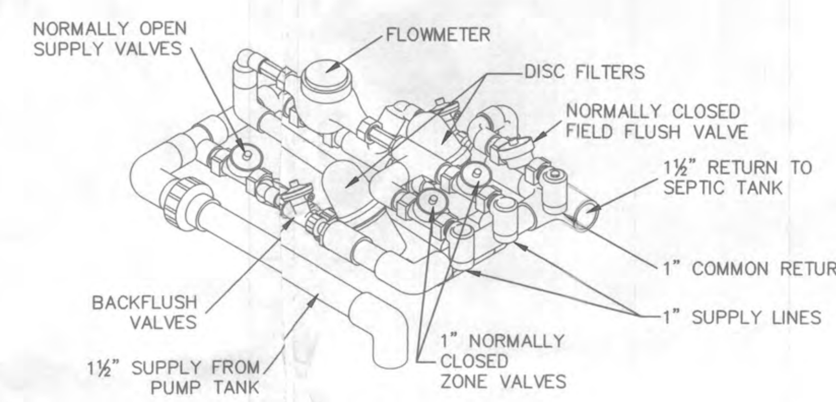


THE FLOAT SWITCHES SHOULD BE INSTALLED SO WHEN THE BOTTOM FLOAT IS DOWN AND OFF, THE INLET HOLES ARE STILL COVERED BY THE EFFLUENT. THE HOLE IN THE ADAPTER IS TO PROVIDE AN EXIT POINT FOR THE PUMP MOTOR CORD AND TO PREVENT THE COOL GUIDE FROM "AIR LOCKING" THE PUMP. DO NOT SEAL OFF THIS HOLE.



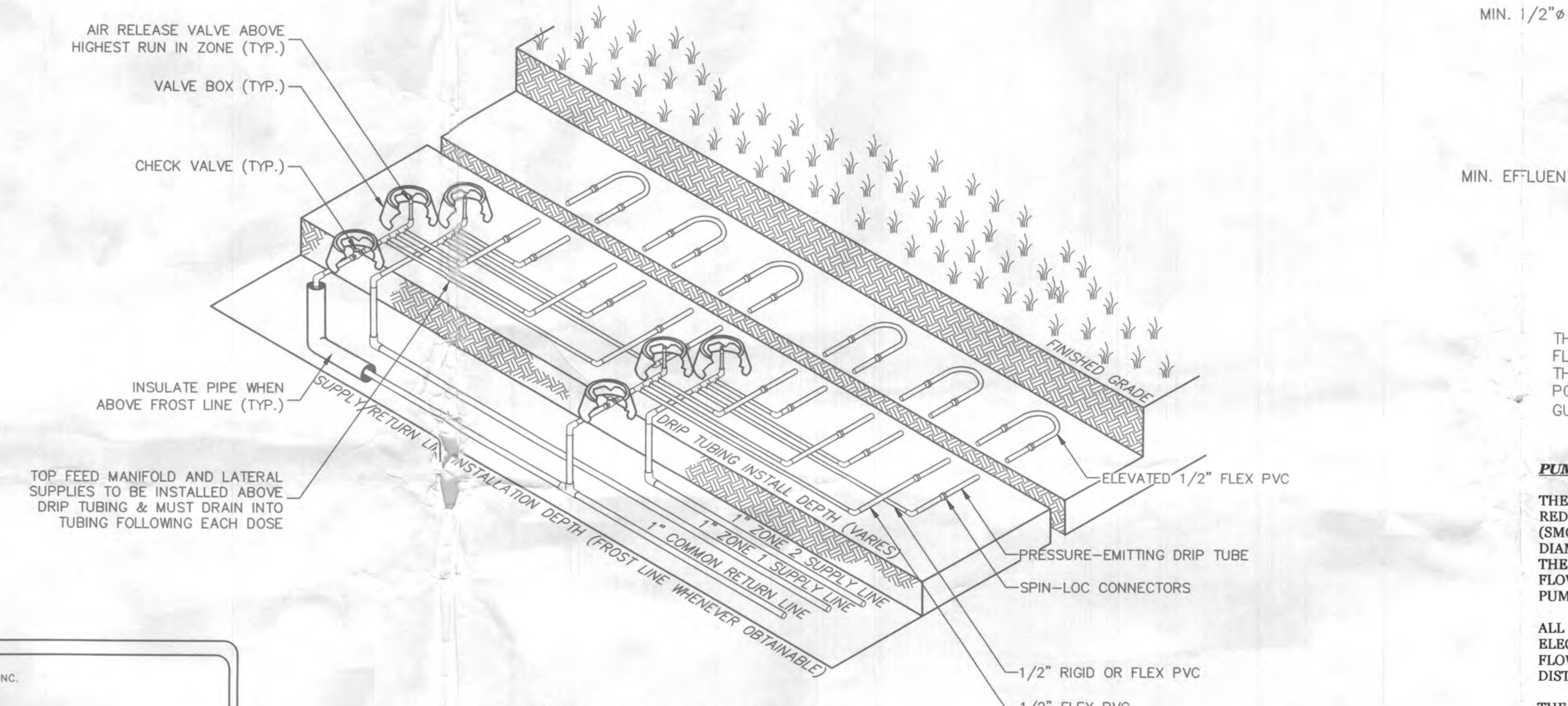
TYPICAL MANIFOLD CONNECTION

NTS



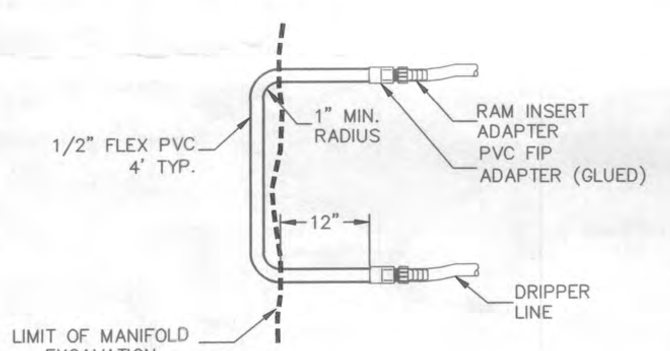
TWO–FILTER 15 GPM CONTROL UNIT

NTS



RESIDENTIAL MANIFOLD DETAIL

NTS



TYPICAL DRIP LOOP CONNECTION

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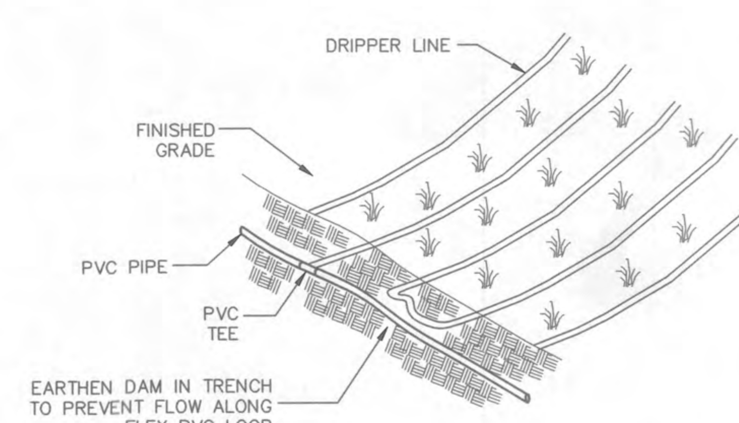
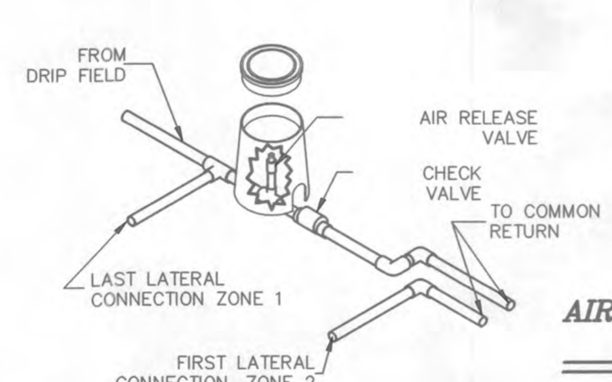


DRIPPER LINE SECTION DETAIL

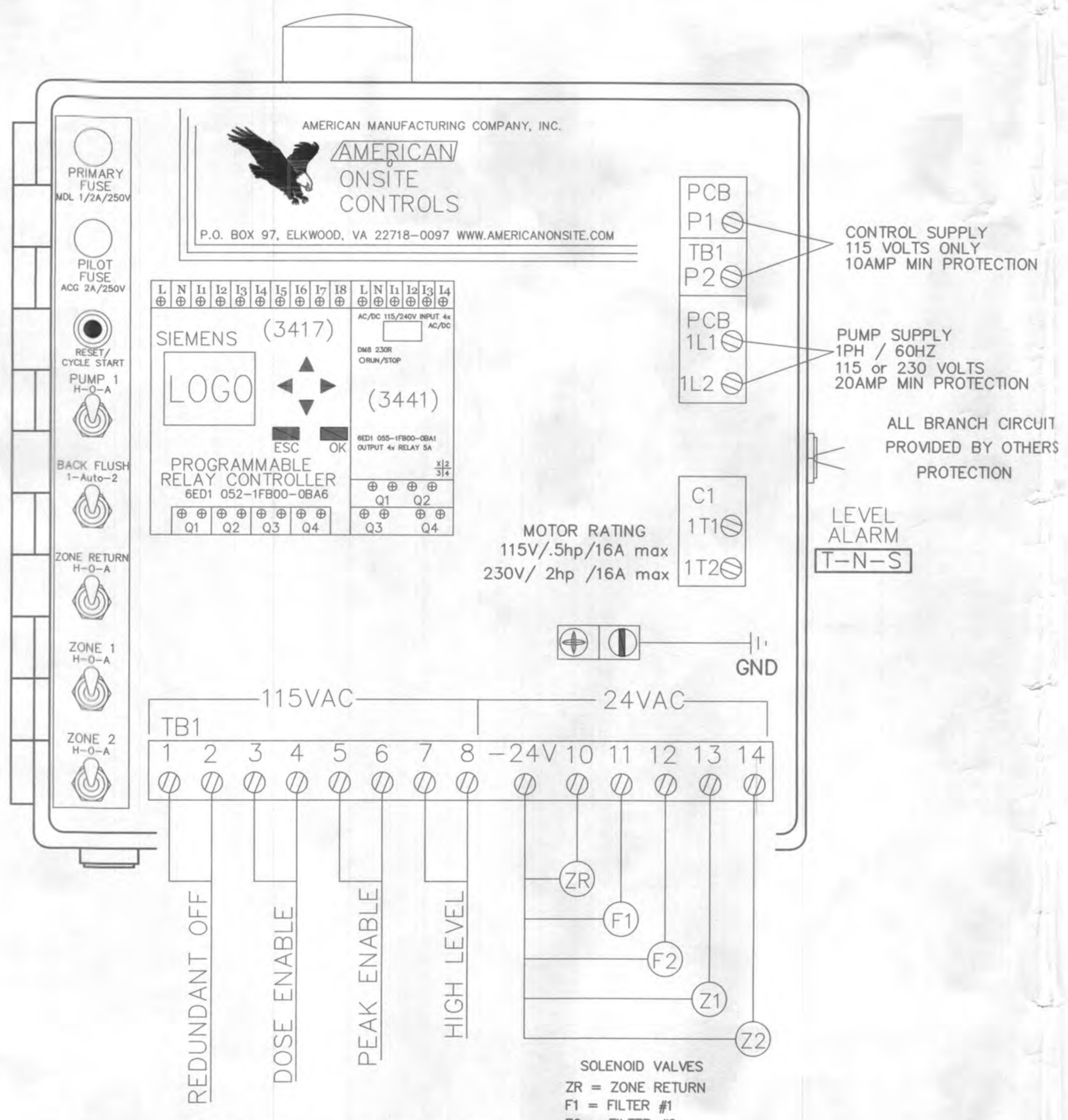
NTS



NOTES:
1. THE AIR RELEASE VALVE SHALL E PLACED AT THE HIGHEST POINT ONTHE RETURN LINE OF EACH ZONE.
2. EACH ZONE TO HAVE THE SAME VALVE BOX SETUP AND THEREAFTE CONNECTED.

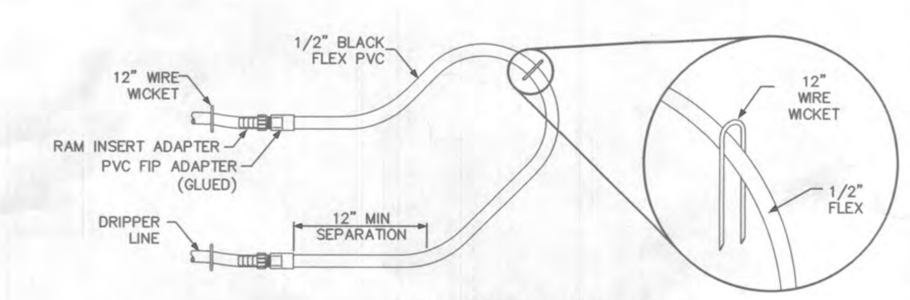
AIR RELEASE & CHECK VALVE DETAIL

NTS



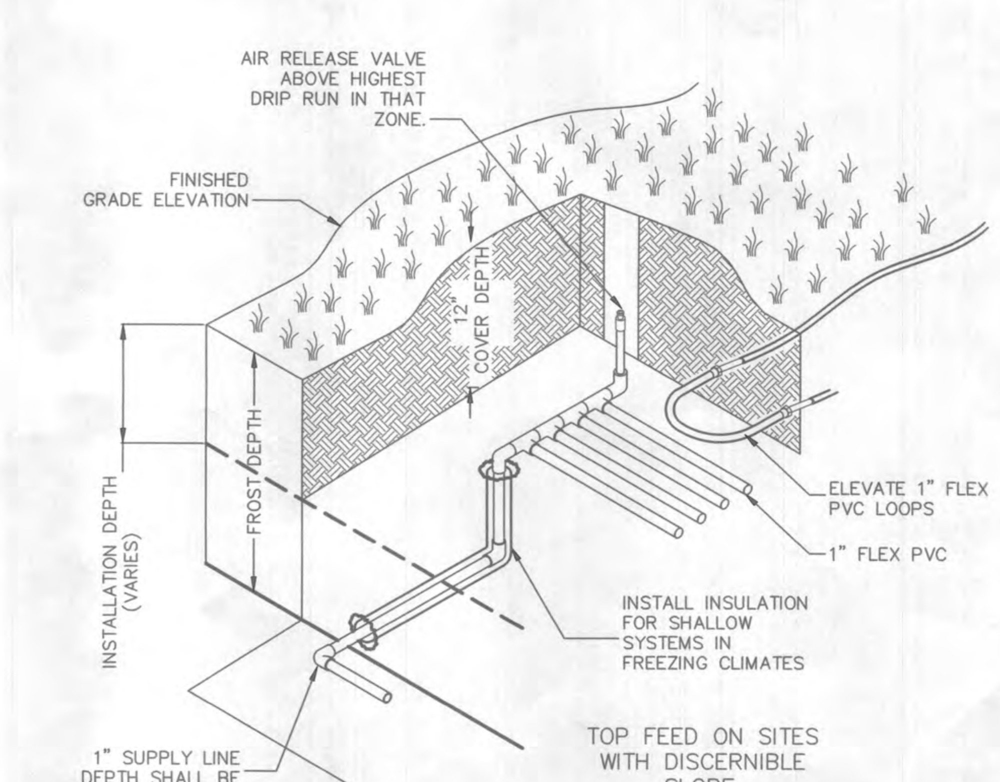
INNER DOOR LAYOUT

NTS



DRIP LOOP CONNECTION

NTS



TOP FEED ON SITES WITH DISCERNIBLE SLOPE.

TOP FEED DETAIL

NTS

PUMP COOLING SPECIFICATIONS:

THE SUBMERSIBLE PUMP SPECIFIED REQUIRES A COOLING FLOW PAST THE MOTOR TO REDUCE PREMATURE FAILURE. THIS IS ACCOMPLISHED BY CREATING A LAMINAR (SMOOTH) FLOW CONDITION BY USE OF AN OUTER PIPE OF MAXIMUM 6 INCH DIAMETER AND A FLOW INDUCER SLEEVE MOUNTED ON THE SUBMERSIBLE PUMP. THE EFFECT IS TO DRAW WATER FIRST DOWNWARD ALONG THE OUTSIDE OF THE FLOW INDUCER AND THEN UPWARD ON THE INTERIOR OF THE INDUCER TO THE PUMP INLET.

ALL PUMPS SPECIFIED BY PENN'S TRAIL ENVIRONMENTAL, LLC USE FRANKLIN ELECTRIC MOTORS. FRANKLIN ELECTRIC, GOULDS, & RED JACKET CAN SUPPLY THIS FLOW INDUCER DIRECTLY TO THE INSTALLER OR THROUGH COMPETITIVE DISTRIBUTORS.

THE LAMINAR FLOW COLLAR SHALL BE MADE OF SDR 35 PVC AND HAVE SUFFICIENT HOLES (NO LESS THAN 20) OF AT LEAST ½" DIAMETER IN THE OUTER GUIDE TUBE TO ASSURE LAMINAR FLOW FOR THE RATED CAPACITY. THE INNER FLOW INDUCER SLEEVE SHALL EXTEND NEAR THE BOTTOM TO PROVIDE SUFFICIENT COOLING FLOW FOR THE MOTOR. THE DIMENSION BETWEEN THE INNER COLLAR AND THE PUMP MOTOR SHALL NOT RESTRICT FLOW TO THE PUMP INTAKE, BUT WILL PROVIDE FOR SCOURING OF SURFACES.

INSTALLATION INSTRUCTIONS:

1. MEASURE THE DISTANCE FROM THE BOTTOM OF THE TANK TO 6" DOWN FROM THE TOP OF THE RISER.
2. CUT THE EXTENSION PIPE (6" SDR 35) TO THE LENGTH NECESSARY TO REACH THIS HEIGHT. CUT 1/2 OF THE PIPE DOWN 12" TO 18" AWAY FROM THE TOP OF THE PIPE FOR PUMP DISCHARGE PIPE.
3. GLUE THE EXTENSION COUPLING TO THE EXTENSION PIPE AND TO THE PERFORATED SECTION HOUSING THE PUMP AND FLOW INDUCER.
4. ANCHOR THE FLAT CAP TO THE BOTTOM OF THE TANK IN THE PROPER LOCATION TO HOLD THE LAMINAR COOLING ASSEMBLY. THE END CAP DOES NOT NEED TO BE GLUED TO THE ASSEMBLY. ATTACH THE EXTENSION TO THE RISER WITH THE ANCHORS AS SHOWN.
5. PLACE THE PIPE DOPE ON THE ADAPTER THREADS AND THREAD THEM INTO PUMP DISCHARGE.
6. ATTACH COOLING COLLAR TO ADAPTER WITH SET SCREWS.
7. GLUE PIPE INTO FLOW COLLAR AND WITH PUMP ATTACHED, LOWER INTO THE GUIDE TUBE.
8. ATTACH TO DISCHARGE PIPE, TORQUE ARRESTOR, VALVES, AND CONNECT ELECTRICAL AS SPECIFIED.

PENN'S TRAIL ENVIRONMENTAL, LLC RECOMMENDS USE OF QUALIFIED AND REGISTERED PLUMBERS AND ELECTRICIANS. IN ALL CASE THE LOCAL BUILDING, PLUMBING AND ELECTRICAL CODES SHALL BE FOLLOWED.

OPERATION & MAINTENANCE REQUIREMENTS & RECOMMENDATIONS:

OWNER'S ARE ENCOURAGED TO CONTRACT A MONITORING AND MAINTENANCE PROFESSIONAL TO PROVIDE THE NECESSARY MANAGEMENT REQUIRED AND/OR RECOMMENDED TO ENSURE THE PROPER OPERATION OF THE SEPTIC SYSTEM AND THEREFORE MAXIMIZE THE LIFE OF THE SYSTEM. THESE ARE MINIMUM REQUIREMENTS. ADDITIONAL MANUFACTURER OR MUNICIPAL RECOMMENDATIONS/REQUIREMENTS ARE TO BE APPLIED.

MAINTENANCE TO BE PROVIDED EVERY:

6-MONTH

1. INSPECT DISPOSAL FIELD AND AREA SURROUNDING AREA FOR SEEPAGE OR EXCESSIVE SPONGINESS. AIR RELEASE, REMOTE ZONE AND CHECK VALVES ARE TO BE INSPECTED PROPER FUNCTION AND FREEZING IN WINTER MONTHS.
2. INSPECT TANKAGE, HYDRAULIC CONTROL UNIT AND VISABLE PIPING FOR STRUCTURAL INTEGRITY.
3. INSPECT AEROBIC BLOWER UNIT FOR STRUCTURAL INTEGRITY AND PROPER FUNCTION. WHEN PEAT MEDIA TREATMENT IS UTILIZED THE TANK SHOULD BE INSPECTED FOR CRACKS OR LEAKS.
4. INSPECT ALL ELECTRICAL CONNECTIONS AND PANELS FOR CORROSION. INSPECT CONDUIT AND CONTROL PANELS FOR STRUCTURAL INTEGRITY AND LEAKS. CONDUIT OPENINGS SHOULD BE SEALED FROM MOISTURE.
5. TEST PUMPS AND PANEL FIELD CONTROLS.
6. INSPECT HYDRAULIC CONTROL UNIT MECHANICS FOR LEAKS OR ABNORMAL FLOW METER READINGS.
7. INLINE EFFLUENT FILTERS ARE TO BE REMOVED MANUALLY, CLEANED AND REPLACED.

3 YEARS

1. EFFLUENT IS TO BE PUMPED FROM SEPTIC TREATMENT AND PUMP TANKS BY LICENSED SEWAGE HAULER UNLESS AN APPROVED INSPECTION PROGRAM PROVIDES REPORT VERIFYING ADAQUATE CAPACITY FOR AN ADDITIONAL YEAR OF SERVICE.

NO.	REVISIONS	DATE

CALL BEFORE YOU DIG!
1–800–257–7777
PROTECTION LAW THE UNDERGROUND UTILITY LINE
CONTRACTORS MUST VERIFY LOCATIONS OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES HEREON HAVE BEEN DEVELOPED FROM THE UTILITY COMPANY RECORDS AND 1–800–242–1776, NO LESS THAN 3 NOR MORE THAN 10 DAYS PRIOR TO BY NOTIFYING FACILITY OWNERS THROUGH THE MISS UTILITY SYSTEM, COMPLETENESS OR ACCURACY ATTENTION ALL CONTRACTORS: LOCATIONS OF EXISTING UTILITIES SHOWN EXCAVATION OR DEMOLITION WORK.
MISS UTILITY

PENN'S TRAIL ENVIRONMENTAL, LLC
327 E. RIDGEVILLE BLVD. - #141
MOUNT AIRY, MD 21771
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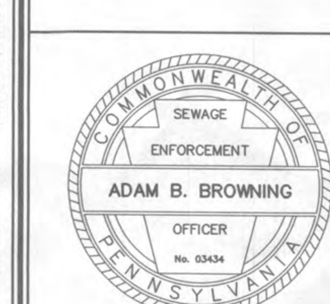
email: staff@pennstrail.com

DRIP DISPERSAL SYSTEM DESIGN PLAN

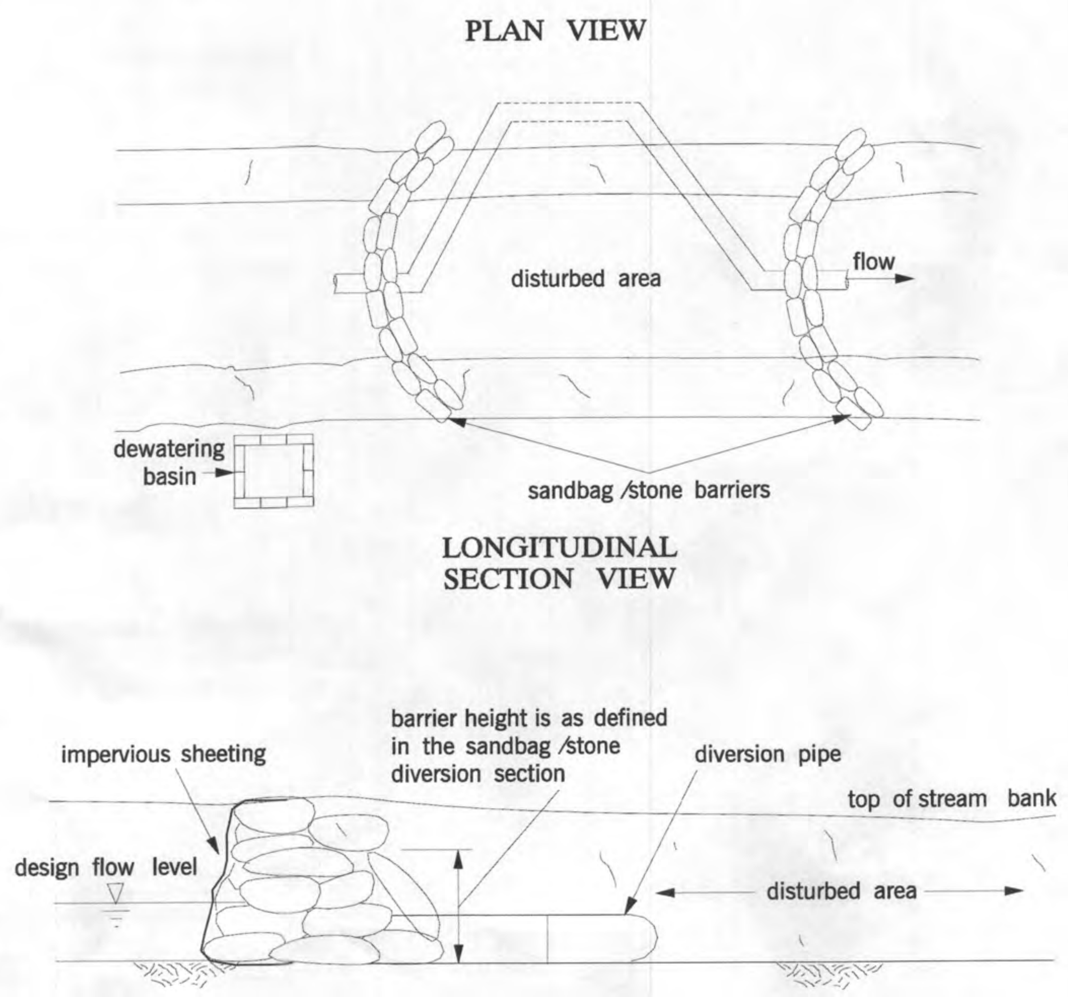
PREPARED FOR
2905 EVERGREEN WAY TRACT
ELLICOTT CITY, 3RD ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND
DATE: DECEMBER 12, 2022
SCALE: AS NOTED



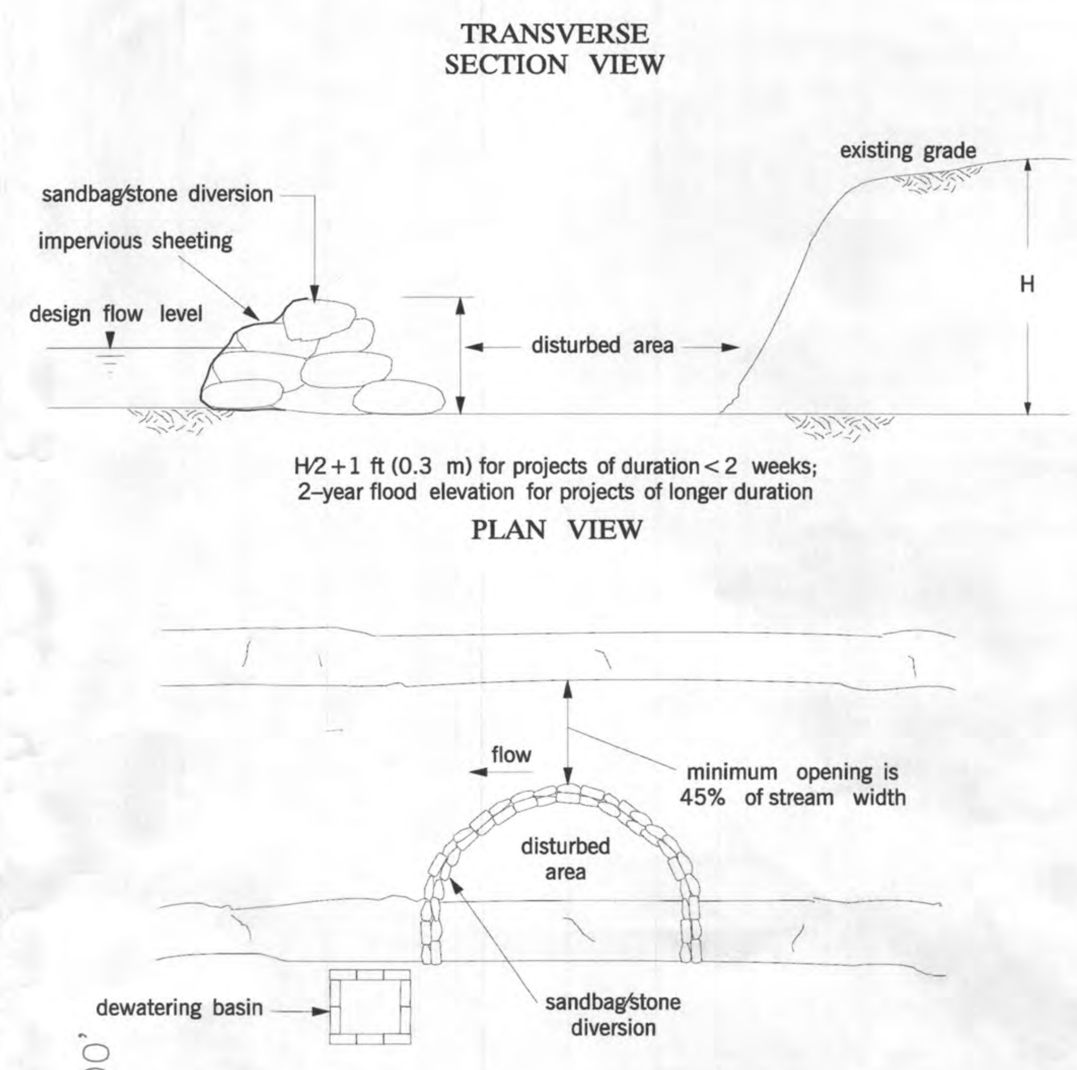
SEAL

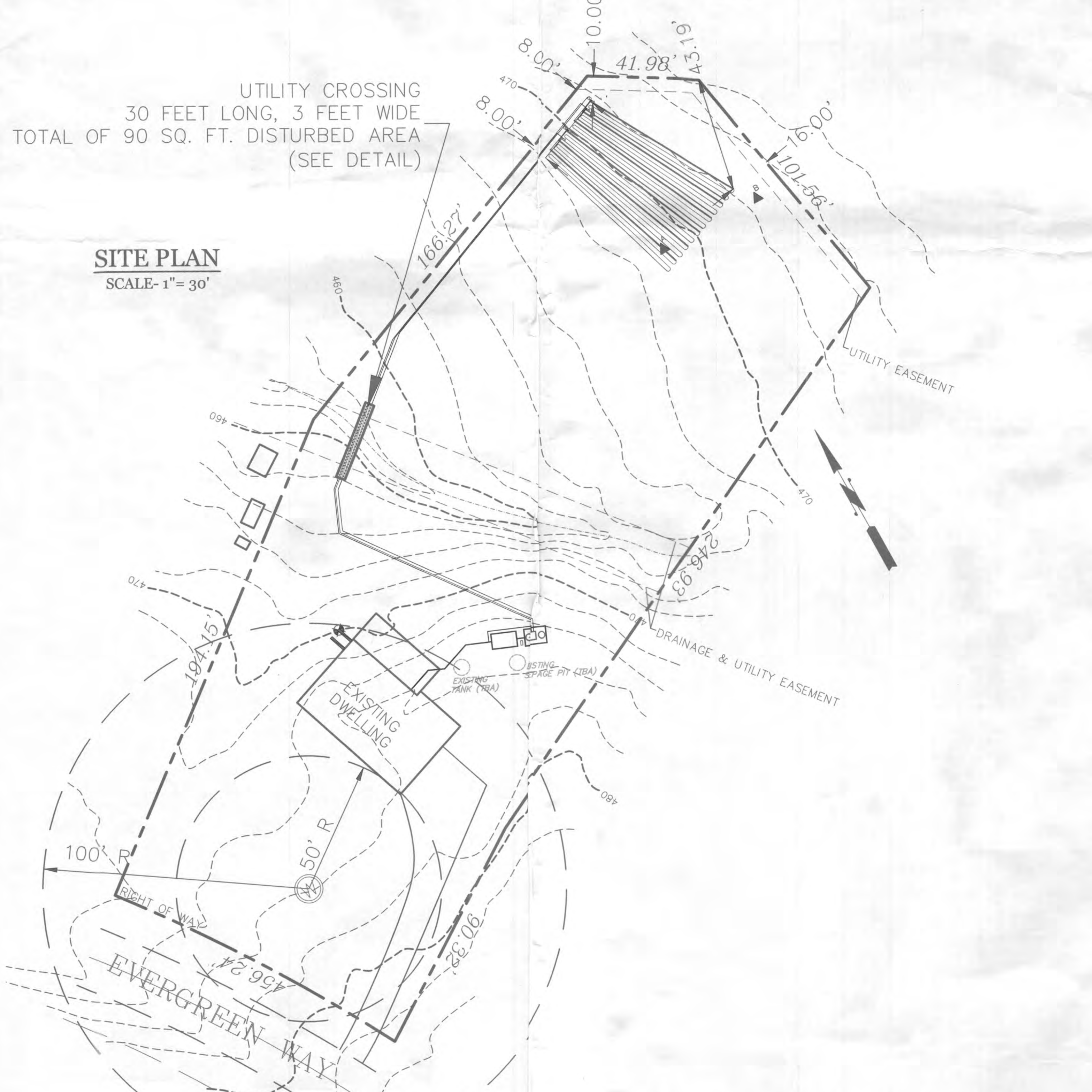
PTE#6120
SHEET 3 OF 4

Maryland's Guidelines To Waterway Construction
DETAIL 1.4: DIVERSION PIPE



Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION





MGWC 4.2: UTILITY CROSSING

DESCRIPTION:

THE WORK SHOULD CONSIST OF INSTALLING EROSION CONTROL DEVICES IN AND ADJACENT TO THE CONSTRUCTION OF UTILITY CROSSINGS.

INSTALLATION GUIDELINES:

ALL EROSION AND SEDIMENT CONTROL DEVICES, INCLUDING DEWATERING BASINS, SHOULD BE IMPLEMENTED AS THE FIRST ORDER OF BUSINESS ACCORDING TO A PLAN APPROVED BY THE WMA OR LOCAL AUTHORITY. (SEE *THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.*) THE PROPOSED CONSTRUCTION SEQUENCE IS AS FOLLOWS (REFER TO DETAIL 4.2):

1. THE CONTRACTOR SHOULD ENSURE THAT A CONTINUOUS PERIMETER CONTROL BARRIER IS IN PLACE TO MINIMIZE THE AMOUNT OF POLLUTANTS ENTERING THE FLOW. A DIVERSION PIPE AS SHOWN IN MGWC 1.4: DIVERSION PIPE OR OTHER MEASURE SHOULD BE INSTALLED AND SANDBAG OR STONE BARRIERS AS SHOWN IN MGWC 1.5: SANDBAG/STONE DIVERSION SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS TO DIVERT THE STREAMFLOW.

2. EXCAVATED TOPSOIL AND SUBSOIL SHOULD BE KEPT SEPARATE, PLACED ON THE UPLAND SIDE OF THE EXCAVATION AND REPLACED IN THEIR NATURAL ORDER.

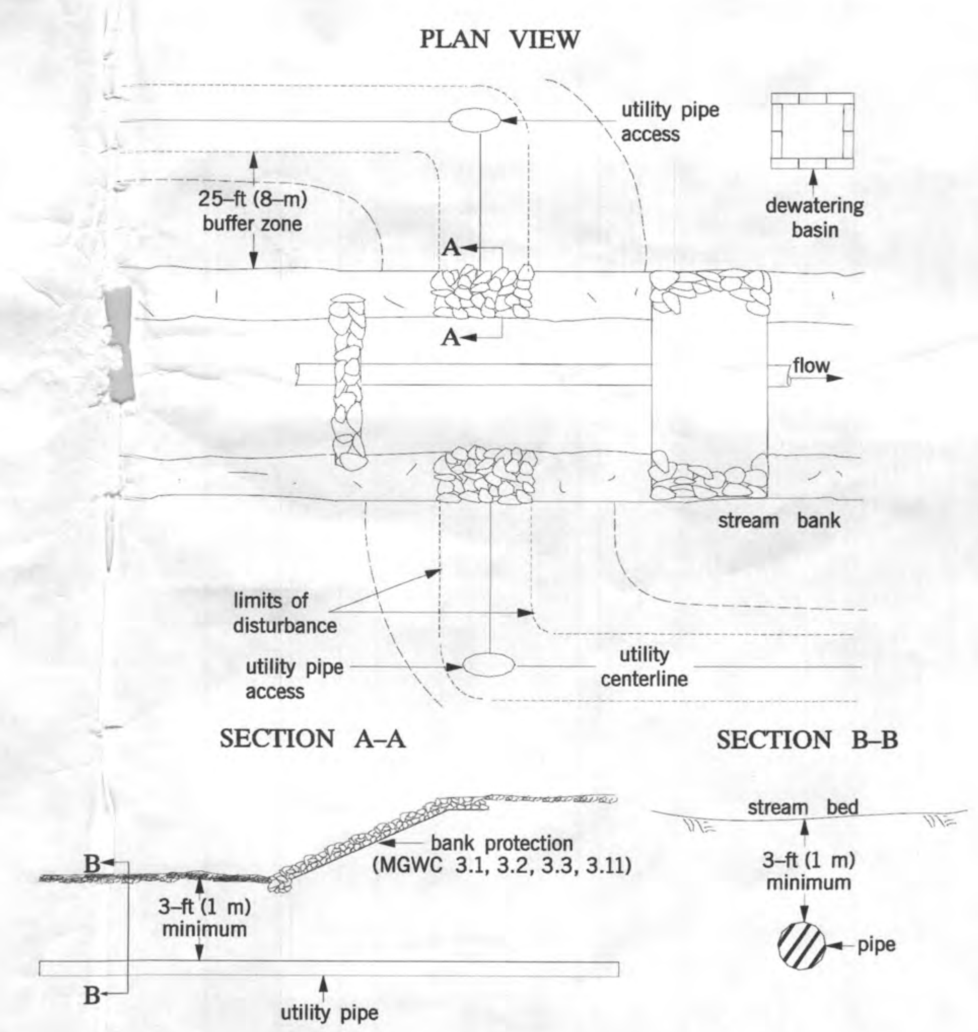
3. ALL CONSTRUCTION SHOULD TAKE PLACE DURING STREAM LOW FLOWS. THE LENGTH OF CONSTRUCTION TIME SHOULD BE LIMITED TO A MAXIMUM OF 5 CONSECUTIVE DAYS FOR EACH CROSSING.

4. ALL UTILITY CROSSINGS SHOULD BE PLACED A MINIMUM OF 3 FEET (1 METER) BENEATH THE STREAM BED UNLESS AN ALTERNATIVE SECTION IS SPECIFICALLY APPROVED BY THE WMA. FOR INSTANCES WHERE A 3-FOOT COVER IS NOT VIABLE, TWO ALTERNATE STABILIZATION OPTIONS ARE GIVEN IN THE DETAIL 4.2. A LOW FLOW CHANNEL SHALL BE CONSTRUCTED THROUGH ALL RIPRAP PLACEMENTS ACROSS THE STREAM BED.

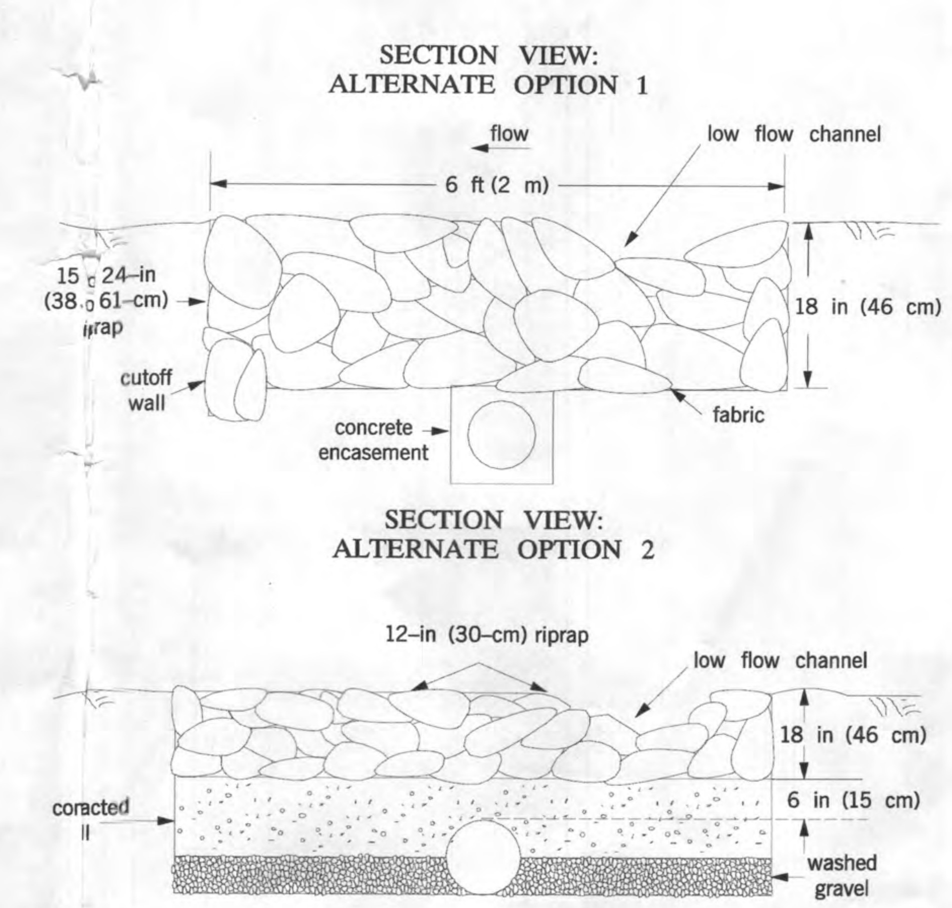
5. THE STREAM SHOULD BE DIVERTED BY AN APPROVED TEMPORARY STREAM DIVERSION, THE CONSTRUCTION AREA SHOULD BE DEWATERED, AND ANY DISTURBED BANKS SHOULD BE STABILIZED. THE CONTRACTOR MAY ELECT TO CONSTRUCT THE UTILITY CROSSING IN TWO STAGES. IN THIS CASE, A WMA APPROVED FLOW BARRIER MAY BE CONSTRUCTED TO KEEP THE CONSTRUCTION AREA DRY.

6. ONCE THE CROSSING IS COMPLETED, THE DIVERSION SHOULD BE REMOVED FROM UPSTREAM TO DOWNSTREAM. SEDIMENT CONTROL DEVICES, INCLUDING PERIMETER EROSION CONTROLS, ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTION AUTHORITY APPROVES THEIR REMOVAL

Maryland's Guidelines To Waterway Construction
DETAIL 4.2(a): UTILITY CROSSING



Maryland's Guidelines To Waterway Construction
DETAIL 4.2(b): UTILITY CROSSING



MGWC 1.4: DIVERSION PIPE

DESCRIPTION:

THE WORK SHOULD CONSIST OF INSTALLING FLOW DIVERSION PIPES IN COMBINATION WITH SANDBAG OR STONE DIVERSIONS WHEN CONSTRUCTION ACTIVITIES OCCUR WITHIN THE STREAM CHANNEL.

EFFECTIVE USES & LIMITATIONS:

DIVERSION PIPES WITH AN INSUFFICIENT FLOW CAPACITY CAN CAUSE THE CHANNEL DIVERSION TO FAIL THEREBY RESULTING IN SEVERE EROSION OF THE DISTURBED CHANNEL SECTION UNDER CONSTRUCTION. THEREFORE, IN-CHANNEL CONSTRUCTION ACTIVITIES SHOULD OCCUR ONLY DURING PERIODS OF LOW FLOW.

MATERIAL SPECIFICATIONS:

MATERIALS FOR STREAM DIVERSIONS SHOULD MEET THE FOLLOWING REQUIREMENTS:

· *RIPRAP*: STONE SHOULD BE WASHED AND HAVE A MINIMUM DIAMETER OF 6 INCHES (15 CENTIMETERS).

· *SANDBAGS*: SANDBAGS SHOULD CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND SHOULD BE WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL (I.E., SAND, FINE GRAVEL, ETC.).

· *SHEETING*: SHEETING SHOULD CONSIST OF POLYETHYLENE OR OTHER MATERIAL WHICH IS IMPERVIOUS AND RESISTANT TO PUNCTURE AND TEARING.

INSTALLATION GUIDELINES:

ALL EROSION AND SEDIMENT CONTROL DEVICES INCLUDING MANDATORY DEWATERING BASINS SHOULD BE INSTALLED AS THE FIRST ORDER OF BUSINESS ACCORDING TO A PLAN APPROVED BY THE WMA OR LOCAL AUTHORITY. INSTALLATION SHOULD PROCEED FROM UPSTREAM TO DOWNSTREAM DURING LOW FLOW CONDITIONS. IF NECESSARY, SILT FENCE OR STRAW BALES SHOULD BE INSTALLED AROUND THE PERIMETER OF THE WORK AREA. DIVERSION PIPES WITH SANDBAG OR STONE BARRIERS SHOULD BE COMPLETED AS FOLLOWS (REFER TO DETAIL 1.4):

1. SANDBAG/STONE BARRIERS SHOULD BE SIZED AND INSTALLED AS DETAILED IN MGWC 1.5: SANDBAG/STONE DIVERSION. THE MATERIALS SHOULD BE SIZED TO WITHSTAND BASEFLOW VELOCITIES.

2. ALL EXCAVATED MATERIAL SHOULD BE DEPOSITED AND STABILIZED IN AN APPROVED AREA OUTSIDE THE 100-YEAR FLOODPLAIN UNLESS OTHERWISE AUTHORIZED BY THE WMA.

3. SEDIMENT-LADEN WATER FROM THE CONSTRUCTION AREA SHOULD BE PUMPED TO A DEWATERING BASIN.

4. THE DIVERSION PIPE SHOULD HAVE A MINIMUM CAPACITY SUFFICIENT TO CONVEY THE 2-YEAR FLOW FOR PROJECTS WITH A DURATION OF TWO WEEKS OR GREATER. FOR PROJECTS OF SHORTER DURATION, THE CAPACITY OF THE PIPE CAN BE REDUCED ACCORDINGLY.

5. IF NECESSARY, SILT FENCE OR STRAW BALES SHOULD BE INSTALLED AROUND THE PERIMETER OF THE WORK AREA.

6. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

DESCRIPTION:

THE WORK SHOULD CONSIST OF INSTALLING SANDBAG OR STONE FLOW DIVERSIONS FOR THE PURPOSE OF EROSION CONTROL WHEN CONSTRUCTION ACTIVITIES OCCUR WITHIN THE STREAM CHANNEL.

EFFECTIVE USES & LIMITATIONS:

DIVERSIONS ARE USED TO ISOLATE WORK AREAS FROM FLOW DURING THE CONSTRUCTION OF IN-STREAM PROJECTS. DIVERSIONS WHICH HAVE AN INSUFFICIENT FLOW CAPACITY CAN FAIL AND SEVERELY ERODE THE DISTURBED CHANNEL SECTION UNDER CONSTRUCTION. THEREFORE, IN-CHANNEL CONSTRUCTION ACTIVITIES SHOULD OCCUR ONLY DURING PERIODS OF LOW RAINFALL. THIS TEMPORARY MEASURE MAY NOT BE PRACTICAL IN LARGE CHANNELS.

MATERIAL SPECIFICATIONS:

MATERIALS FOR SANDBAG AND STONE STREAM DIVERSIONS SHOULD MEET THE FOLLOWING REQUIREMENTS:

· *RIPRAP*: RIPRAP SHOULD BE WASHED AND HAVE A MINIMUM DIAMETER OF 6 INCHES (0.15 METERS).

· *SANDBAGS*: SANDBAGS SHOULD CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND SHOULD BE WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF THE FILL MATERIAL (I.E., SAND, FINE GRAVEL, ETC.).

· *SHEETING*: SHEETING SHOULD CONSIST OF POLYETHYLENE OR OTHER MATERIALS WHICH ARE IMPERVIOUS AND RESISTANT TO PUNCTURE AND TEARING.

INSTALLATION GUIDELINES:

ALL EROSION AND SEDIMENT CONTROL DEVICES, INCLUDING DEWATERING BASINS, SHOULD BE IMPLEMENTED AS THE FIRST ORDER OF BUSINESS ACCORDING TO A PLAN APPROVED BY THE WMA OR LOCAL AUTHORITY. INSTALLATION SHOULD PROCEED FROM UPSTREAM TO DOWNSTREAM DURING PERIODS OF LOW FLOW. IF NECESSARY, SILT FENCE OR STRAW BALES SHOULD BE INSTALLED AROUND THE PERIMETER OF THE WORK AREA.

SANDBAG/STONE DIVERSIONS CAN BE USED INDEPENDENTLY OR AS COMPONENTS OF OTHER STREAM DIVERSION TECHNIQUES. INSTALLATION OF THIS MEASURE SHOULD PROCEED AS FOLLOWS ('*SANDBAG/STONE CHANNEL DIVERSION DETAIL*'):

1. THE DIVERSION STRUCTURE SHOULD BE INSTALLED FROM UPSTREAM TO DOWNSTREAM.

2. THE HEIGHT OF THE SANDBAG/STONE DIVERSION SHOULD BE A FUNCTION OF THE DURATION OF THE PROJECT IN THE STREAM REACH. FOR PROJECTS WITH A DURATION LESS THAN 2 WEEKS, THE HEIGHT OF THE DIVERSION SHOULD BE ONE HALF THE STREAMBANK HEIGHT, MEASURED FROM THE CHANNEL BED, PLUS 1 FOOT (0.3 METERS) OR BANKFULL HEIGHT, WHICHEVER IS GREATER. FOR PROJECTS OF LONGER DURATION, THE TOP OF THE SANDBAG OR STONE DIVERSION SHOULD CORRESPOND TO BANKFULL HEIGHT. FOR DIVERSION STRUCTURES UTILIZING SANDBAGS, THE STREAM BED SHOULD BE HAND PREPARED PRIOR TO PLACEMENT OF THE BASE LAYER OF SANDBAGS IN ORDER TO ENSURE A WATER TIGHT FIT. ADDITIONALLY, IT MAY BE NECESSARY TO PREPARE THE BANK IN A SIMILAR FASHION.

3. ALL EXCAVATED MATERIAL SHOULD BE DEPOSITED AND STABILIZED IN AN APPROVED AREA OUTSIDE THE 100-YEAR FLOODPLAIN UNLESS OTHERWISE AUTHORIZED BY THE WMA.

4. SEDIMENT-LADEN WATER FROM THE CONSTRUCTION AREA SHOULD BE PUMPED TO A DEWATERING BASIN.

5. SHEETING ON THE DIVERSION SHOULD BE POSITIONED SUCH THAT THE UPSTREAM PORTION COVERS THE DOWNSTREAM PORTION WITH AT LEAST A 18-INCH (0.45 METERS) OVERLAP.

6. SANDBAG OR STONE DIVERSIONS SHOULD NOT OBSTRUCT MORE THAN 45% OF THE STREAM WIDTH. ADDITIONALLY, BANK STABILIZATION MEASURES SHOULD BE PLACED IN THE CONSTRICTED SECTION IF ACCELERATED EROSION AND BANK SCOUR ARE OBSERVED DURING THE CONSTRUCTION TIME OR IF PROJECT TIME IS EXPECTED TO LAST MORE THAN 2 WEEKS.

7. PRIOR TO REMOVAL OF THESE TEMPORARY STRUCTURES, ANY ACCUMULATED SEDIMENT SHOULD BE REMOVED, DEPOSITED AND STABILIZED IN AN APPROVED AREA OUTSIDE THE 100-YEAR FLOODPLAIN UNLESS AUTHORIZED BY THE WMA.

8. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.

NO.	REVISIONS	DATE

CALL BEFORE YOU DIG!
1-800-257-7777

PROTECTION LAW THE UNDERGROUND UTILITY LINE
CONTRACTORS MUST VERIFY LOCATIONS OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES HEREON HAVE BEEN DEVELOPED FROM THE UTILITY COMPANY RECORDS AND 1-800-242-1776. NO LESS THAN 3 NOR MORE THAN 10 DAYS PRIOR TO BY NOTIFYING FACILITY OWNERS THROUGH THE MISS UTILITY SYSTEM. COMPLETENESS OR ACCURACY ATTENTION ALL CONTRACTORS: LOCATIONS OF EXISTING UTILITIES SHOWN EXCAVATION OR DEMOLITION WORK.

MISS UTILITY

PENN'S TRAIL ENVIRONMENTAL, LLC
327 E. RIDGEVILLE BLVD. - #141
MOUNT AIRY, MD 21771
ph. (301) 829-5022
email: staff@pennstrail.com

DRIP DISPERSAL SYSTEM DESIGN PLAN
PREPARED FOR
2905 EVERGREEN WAY TRACT
ELLICOTT CITY, 3RD ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND
DATE: DECEMBER 12, 2022
SCALE: AS NOTED

COMMONWEALTH OF PENNSYLVANIA
SEWAGE ENFORCEMENT
ADAM B. BROWNING
OFFICER
No. 03434
SEAL

PTE#6120

NOTES:

PLANS AND SPECIFICATIONS HEREIN ARE INTENDED FOR THE REPLACEMENT OF A FAILING SEPTIC SYSTEM TO SERVE AN EXISTING 4-BEDROOM DWELLING. THE PEAK DAILY FLOW VALUE IS 600 GPD PER COMAR SPECIFICATIONS.

PROPOSAL CONSISTS OF NORWECO SINGULAIR TNT 600 PRETREATMENT (BAT) UNIT, 2000 GALLON SINGLE COMPARTMENT DOSE TANK, 15 GPM HYDRAULIC CONTROL UNIT AND A 2-ZONE DRIP DISPERSAL SYSTEM. TUBING TO BE INSTALLED USING EITHER A VIBRATORY PLOW OR 'GROUND SAW'. DEPTH OF INSTALLATION SHALL BE 6 INCHES. TUBING TO BE BACKFILLED WITH SOIL TO ORIGINAL GRADE. TUBING RUNS TO HAVE A MINIMUM HORIZONTAL SPACING OF 1.17 FEET (MAX. 1.74 FEET). VEGETATIVE COVER TO BE RE-ESTABLISHED AS NECESSARY.

**PRIOR TO PERMIT ISSUANCE, PROPERTY OWNER IS REQUIRED TO RECORD THE FOLLOWING AGREEMENTS WITH THE HOWARD COUNTY HEALTH DEPARTMENT AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT:

1. NON-CONVENTIONAL ONLOT SEWAGE DISPOSAL SYSTEM (OSDS) AGREEMENT
2. BEST AVAILABLE TECHNOLOGY (BAT) AGREEMENT

APPROVAL BLOCK:

APPROVING AUTHORITY:_____

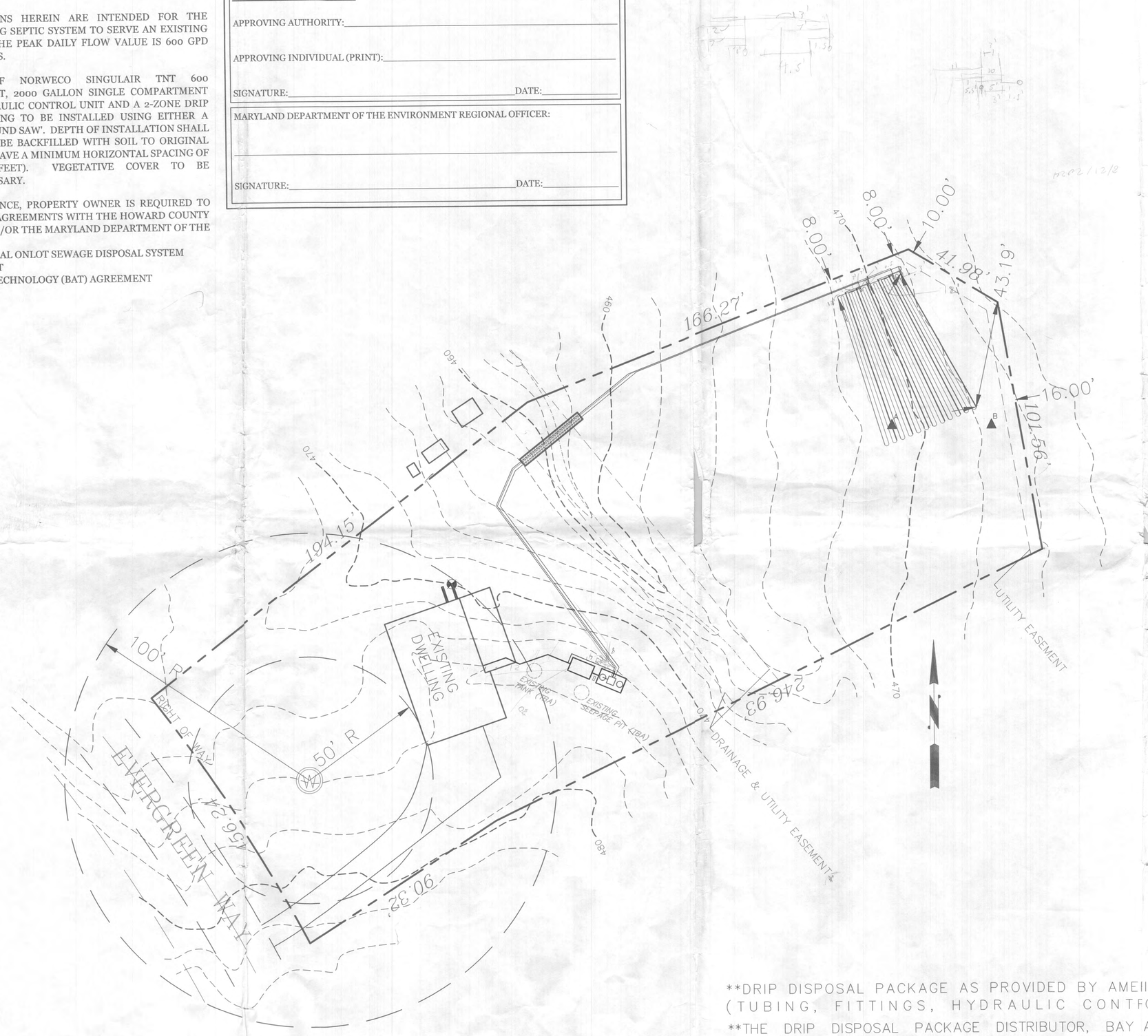
APPROVING INDIVIDUAL (PRINT):_____

SIGNATURE:_____DATE:_____

MARYLAND DEPARTMENT OF THE ENVIRONMENT REGIONAL OFFICER:

_____

SIGNATURE:_____DATE:_____



LEGEND:

▲ TP XX = TEST EXCAVATIONS

(A12) = PERMEAMETER TEST LOCATIONS

= EXISTING CONTOUR

= PROPOSED CONTOUR

= BENCHMARK LOCATION

= PUBLIC WATER SERVICE

SITE PLAN & DATA

SCALE- 1"= 20'

AREA = +/- 1.10 AC.

DISTRICT: 03

ACCOUNT NO.: 292266

MAP/GRID/PARCEL: 0016/0019/0242

***ALL EXISTING SEPTIC COMPONENTS ARE TO BE ABANDONED IN A MANNER ACCEPTABLE TO THE HOWARD COUNTY DEPARTMENT OF HEALTH.

***BOUNDARY SHOWN HEREON IS FROM A SURVEY TITLED *BOUNDARY DRAWING GREEN HENGE* BY BENCHMARK ENGINEERING, INC. DATED 08/31/2022, LEGAL DEED DESCRIPTION, FIELD RECORDED MEASUREMENTS AND COUNTY GIS SERVICES. PLAN IS INTENDED FOR USE IN SEPTIC SYSTEM INSTALLATION ONLY.

Approved Septic System Plan
Howard County Health Department
Signature 6/9/2023 Date
and for
Steve Kroll
(MDE)

**DRIP DISPOSAL PACKAGE AS PROVIDED BY AMEIICAN MANUFACTURING CO., INC. (TUBING, FITTINGS, HYDRAULIC CONTFOL UNIT, PANEL. ETC.).

**THE DRIP DISPOSAL PACKAGE DISTRIBUTOR, BAY AREA ENVIRONMENTAL, SHALL BE RESPONSIBLE FOR SYSTEM STARTUP, FLOW RATE VIRIFICATION AND CERTIFICATION OF PRODUCTS AND INSTALL METHODS. AMERICAN DRIP PACKAGE PRODUCTS ARE TO BE PROVIDED FROM BAY AREA ENVIRONMENTAL, REGIONAL DISTRIBUTOR AND AMERICAN REPRESENTATIVE.

NO.	REVISIONS	DATE

CALL BEFORE YOU DIG!
1-800-257-7777
PROTECTION OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF THE MARYLAND UNDERGROUND FACILITY DAMAGE PREVENTION LAW, THE SITE HAS BEEN DEVELOPED FROM THE UTILITY COMPANY RECORDS AND 1-800-257-7777, MISS UTILITY, TICKETS. THE CONTRACTORS MUST KEEP LOCATIONS OF UNDERGROUND UTILITIES OWNERS THROUGH THE MISS UTILITY SYSTEM. COMPLETENESS OR ACCURACY OF UTILITIES SHOWN HEREON IS NOT GUARANTEED. CONTRACTOR TO PAY ATTENTION ALL CONDITIONS PRIOR TO STARTING EXCAVATION OR DEMOLITION WORK.

MISS UTILITY

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DRIP DISPERSAL SYSTEM DESIGN PLAN
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COMMONWEALTH OF PENNSYLVANIA
SEWAGE ENFORCEMENT OFFICER
ADAM B. BROWNING
No. 0343
SEAL

PTE#6120
SHEET 1 OF 4