

SOIL TEST ELEVATIONS			
HOLE NO.	GRADE	ESHW	BOTTOM
515-1	105.9	101.4	95.9
515-2	108.2	102.5	99.2
515-B	105.9	N/A	101.4
515-C	108.2	N/A	106.2

LEGEND

EXISTING

- 100 ELEVATION CONTOUR
- 100.0 SPOT GRADE
- PROPERTY LINE
- BUILDING ENVELOPE
- 10-YR FLOODPLAIN LIMIT
- 100-YR FLOODPLAIN LIMIT
- WETLAND EDGE WITH FLAG NO.
- 25' NO-DISTURBANCE ZONE LIMIT
- 100' WETLAND BUFFER ZONE LIMIT
- SHORELINE
- INTERMITTENT STREAM/DITCH
- 200' RIVERFRONT ZONE LIMIT
- EDGE OF PAVEMENT
- GRAVEL/DIRT ROAD
- FENCE
- STONE WALL
- WATER MAIN
- WATER SERVICE
- FOUNDATION DRAIN
- FORCE MAIN
- GRAVITY SEWER LINE
- G GAS LINE
- BURIED POWER LINE
- STORM DRAIN
- CATCH BASIN
- DRAIN MANHOLE
- HAYBALE BARRIER
- SILT FENCE BARRIER
- RETAINING WALL
- 199-1 DEEP SOIL OBSERVATION HOLE
- 199-A PERCOLATION TEST
- SB1 SOIL BORING
- DM1 GROUNDWATER MONITORING WELL
- W WELL
- ELEVATION BENCHMARK
- SURFACE RUNOFF DIRECTION

PROPOSED

- 100.0 FG
- WS
- FD
- FM
- SS
- SD
- CB
- DMH

ABBREVIATIONS

- TP TOP OF PAVEMENT
- TW TOP OF WALL
- FG FINISH GRADE
- FF FIRST FLOOR
- LL LOWER LEVEL
- BF BOTTOM OF FOOTING
- TOF TOP OF FOUNDATION
- BDR BDR
- GAR GAR

ELEVATION DATUM

DATUM: ASSUMED

NOTE: IF THERE ARE NO BENCH MARKS WITHIN 75 FEET OF THE DISPOSAL SYSTEM TO BE INSTALLED, CONTRACTOR SHALL SET AT LEAST ONE BENCH MARK WITHIN SUCH PROXIMITY PRIOR TO ANY EXCAVATION.

ASSESSORS REFERENCE:

ASSESSORS MAP G-4, PARCEL 132
 RECORD OWNER: WILLIAM F. & BARBARA R. AHERN
 4 PHALEN STREET
 ACTON, MA 01720

REMEDIAL USE APPROVAL (310 CMR 15.284)

1. "APPROVAL FOR REMEDIAL USE" PER MA DEP APPROVAL LETTER TO AMERICAN MANUFACTURING COMPANY, INC. DATE OF ISSUANCE: MARCH 4, 2011 [REVISED MARCH 20, 2015].
 AMERICAN MANUFACTURING COMPANY, INC.
 22011 GREENHOUSE ROAD, P.O. BOX 97
 ELKWOOD, VA 22718

LOCAL UPGRADE APPROVAL (310 CMR 15.405)

310 CMR 15.405(1)(A): REDUCTION OF SYSTEM LOCATION SETBACKS ESTABLISHED WITHIN 310 CMR 15.211 FROM PROPERTY LINES.
 REQUIRED: MINIMUM 10 FEET OFFSET FROM PROPERTY LINE TO TREATMENT UNIT, DOSING CHAMBER AND SOIL ABSORPTION SYSTEM;
 REQUESTED: MINIMUM 5 FOOT OFFSET FROM PROPERTY LINE TO TREATMENT UNIT, DOSING CHAMBER AND SOIL ABSORPTION SYSTEM.

LOCAL BOARD OF HEALTH WAIVERS

NONE REQUIRED

TITLE 5 VARIANCES (310 CMR 15.410-417)

NONE REQUIRED

PLAN NOTES

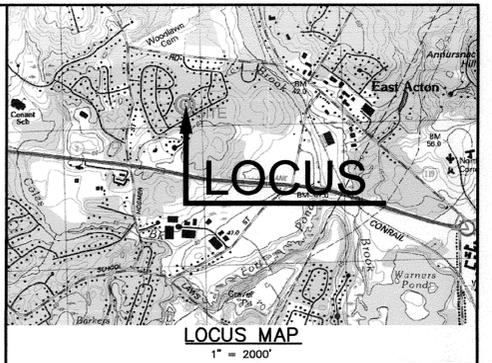
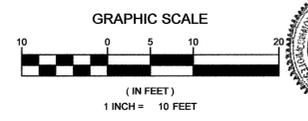
- CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING BUILDING SEWER PRIOR TO INSTALLATION OF THE PROPOSED LEACHING AREA OR TANKS. CONTACT DESIGN ENGINEER IF CONFIRMED LOCATIONS VARY FROM THOSE SHOWN HEREON.
- PER ACTON BOARD OF HEALTH REGULATIONS SECTION 11-7, "NO ELECTRICAL CONNECTIONS OR WIRE SPLICES ARE TO BE MADE INSIDE A PUMP/DOSING CHAMBER, SEPTIC TANK, TIGHT TANK, OR RISER TO ANY OF THE AFOREMENTIONED VESSELS, UNLESS SEALED IN AN APPROPRIATE CODE-APPROVED WATERTIGHT AND AIRTIGHT ENCLOSURE. IT IS PREFERRED THAT ALL ELECTRICAL CONNECTIONS AND WIRE SPLICES SHALL BE MADE ON THE OUTSIDE OF ANY OF THE AFOREMENTIONED VESSELS AND IN THE APPROPRIATE ENCLOSURES."

PLAN REFERENCES

- "PLAN OF LOTS IN ACTON MASS" - SURVEYED FOR JENKS REALTY CORPORATION, BY ALBERT A. MILLER & WILBUR NYLANDER CIVIL ENGR'S & SURVEYORS, DATED JANUARY 26, 1957; MIDDLESEX REGISTRY OF DEEDS, PLAN BOOK 8982, PAGE 293.

SURVEY NOTES:

- OFFSETS ARE NOT FOR THE REPRODUCTION OF PROPERTY LINES.
- THE RESPONSIBILITY OF THE PROFESSIONAL LAND SURVEYOR IS LIMITED TO LAND BOUNDARY DATA AND EXISTING CONDITION INFORMATION ONLY.



NITROGEN LOADING LIMITATIONS (310 CMR 15.214-217)

SENSITIVE AREA: NONE
 UNIT DESIGN FLOW LIMIT: NONE
 UNIT DESIGN FLOW: NO LIMITATION. SEE DESIGN CRITERIA.

DESIGN CRITERIA

FLOW AND SEPTIC TANK

- BUILDING USE: SINGLE FAMILY DWELLING
- NO. OF BEDROOMS: 4
- DESIGN FLOW: 110 GPD PER BEDROOM
- TOTAL DAILY FLOW: 440 GALLONS
- GARBAGE GRINDER: NO
- SEPTIC TANK SIZE: 440 GPD X 200% = 880 GALLONS
 USE 2,500 GALLON, 2-COMPARTMENT TANK MIN.

SOIL ABSORPTION AREA

- DESIGN PERCOLATION RATE: 5 MIN. PER INCH
- SOIL TEXTURAL CLASS: 1
- LONG TERM ACCEPTANCE RATE: 0.74 GPD/SF
- EFFECTIVE AREA REQUIRED (LOCAL CODE): 440 GPD / 0.74 GPD/SF = 595 SF
 600 SF. MIN. WITH SETTLING TANK PER ACTON BOH REGULATION 11-8.1.1
- EFFECTIVE AREA PROVIDED: USING PREC-RITE DRIP DISPERSAL
 REQUIRED TUBING NEEDED: 600 SF / 2 = 300 LF (MIN. 400 LF REQUIRED)
 PROVIDED TUBING: 10 RUNS OF 40 FT = 400 LF
 NUMBER OF ZONES: 1 LATERALS PER ZONE: 5 RUNS PER LATERAL: 2
 AREA PROVIDED: AREA OF TUBING: 40 FT LONG X 13.5 FT WIDE
 + 1 FOOT ADDITION OF ALL SIDES = 42 FT X 15.5 FT = 651 SF
- MIN. SEPARATION, BOTTOM STONE TO ESHGW: REQ'D: 5 FT; PROVIDED: 5 FT

RESERVE AREA

- NONE PROVIDED

DRAWING ISSUED FOR:

CONCEPT CONSTRUCTION
 PERMIT CONSTRUCTION RECORD



THIS DRAWING MAY BE USED FOR CONSTRUCTION UPON ISSUANCE OF ALL PERMITS AND APPROVALS BY REGULATORY AUTHORITIES.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT.

NO.	DATE	BY	APP.	REVISION DESCRIPTION
1	7/27/15	AAA	DEM	REVISED PER ACTON BOH COMMENTS

GPR Engineering Solutions for Land & Structures

GOLDSMITH, PREST & RINGWALL, INC.
 39 MAIN STREET, SUITE 301, ACTON, MA 01726
 CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING
 VOICE: 978.772.1590 FAX: 978.772.1591
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SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE

SITE PLAN

**4 PHALEN STREET
 ACTON, MA**

PREPARED FOR:
 BILL AHERN
 4 PHALEN STREET
 ACTON, MA 01720

DES. BY: AAA	DATE: JULY 2015	JOB 151008	1 OF 3
CHK. BY: NMP			

P:\15-151008\DWG\SSS\DRIP DISPERSAL.DWG 07-27-15 3:23:53 PM - LAYOUT SITE PLAN

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EROSION AND SEDIMENT CONTROL REQUIREMENTS

- PART 1 - GENERAL**
- 1.01 SUMMARY
- A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, STRAW WATTLES, HAY BALE AND SILT FENCE BARRIERS, RIPRAP, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERMITTENT AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.
1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF CONTROL MEASURES REQUIRED TO COMMENCE WORK. THESE CONTROL MEASURES WILL BE ADEQUATE ONLY FOR VEGETATION CLEARING. THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
2. DEVISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
3. DEVISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST EFFECTIVE MANNER.
4. DEVISE AND EMPLOY PERMANENT CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.
5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.
- 1.02 SUBMITTALS
- A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.
- 1.03 QUALITY ASSURANCE
- A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, BOARD OF SELECTMEN, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT, ENVIRONMENTAL PROTECTION AGENCY, WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

PART 2 - PRODUCTS

- 2.01 MATERIALS
- A. STRAW WATTLES: NORTH AMERICAN GREEN MODEL W5925 OR APPROVED EQUAL.
- B. HAY BALES: DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE, APPROXIMATE SIZE EACH BALE 42" X 16" X 16".
- C. SILT FENCE FABRIC: UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 GPM/SF MINIMUM, GRAB TENSILE, RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.
- D. MULCH: ORGANICS INCLUDING HAY, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.
- E. SEED MIXES: PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS, AND / OR FINE FESCUE, DISEASE RESISTANT. NON-MAINTAINED AREA OPTION - ANNUAL RYEGRASS COMBINED WITH MEDIUM RED CLOVER.
- F. EXCELSOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX, 80% OF FIBER IS 1/8" INCHES OR LONGER, WEIGHT 0.975 POUNDS / SQ. YD., CONTAINS NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELSOR COMPANY, OR APPROVED EQUAL.
- G. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS.
- H. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE

PART 3 - EXECUTION

- 3.01 THROUGHOUT CONSTRUCTION
- A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.
- B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.
- C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.
- D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION; BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT; BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.
- E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.
- F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.
- G. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A. IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.
- H. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.
- I. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.
- J. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS.
- 3.02 SITE PREPARATION AND ACCESS
- A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
- B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.
- C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.
- 3.03 CLEARING, GRUBBING, AND STRIPPING
- A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE. DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.
- B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE.
- C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.
- D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.
- E. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.
- 3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES
- A. DEVISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.
- B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.
- C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.
- D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF.
- E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.
- 3.05 SITE GRADING
- A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
- B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.
- 3.06 LANDSCAPING
- A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
- B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.

EROSION AND SEDIMENT CONTROL REQUIREMENTS (CONT'D)

- 3.05 SITE GRADING
- A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
- B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.
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GENERAL NOTES

- LOCATION OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. LOCATE AND PROTECT ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- INSTALL ALL NEW UTILITIES UNDERGROUND, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- EMPLOY A LICENSED PROFESSIONAL LAND SURVEYOR TO LAY OUT BUILDING AND SITE IMPROVEMENTS FOR CONSTRUCTION. PROPERTY LINES SHOWN HEREON ARE APPROXIMATE. SEE PLAN REFERENCE HEREON.
- CONTRACTOR IS RESPONSIBLE FOR SAFETY MEASURES, CONSTRUCTION METHODS, AND CONTROL OF WORK.
- REPAIRS AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND/OR REMOVAL HEREON ARE THE RESPONSIBILITY OF CONTRACTOR. REPAIR SUCH DAMAGE TO THE SATISFACTION OF OWNER(S). THIS PLAN IS NOT INTENDED TO SHOW AN ENGINEERED BUILDING FOUNDATION DESIGN, WHICH WOULD INCLUDE DETAILS AND ELEVATIONS OF FOOTINGS, WALLS AND SUBSURFACE DRAINS TO PREVENT INTERIOR FLOODING. SEE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.
- PRIOR TO IMPLEMENTATION, SEEK ENGINEER REVIEW AND APPROVAL OF ANY INTENDED REVISION OF HORIZONTAL AND/OR VERTICAL DESIGN LOCATION OF IMPROVEMENTS SHOWN HEREON.
- PROMPTLY NOTIFY ENGINEER UPON COMMENCEMENT OF CONSTRUCTION IN ORDER TO ENSURE THAT REQUIRED INSPECTIONS ARE PERFORMED IN A TIMELY AND EFFICIENT MANNER. MAINTAIN DISPOSAL SYSTEM IN AN UNCOVERED CONDITION UNTIL AUTHORIZED TO BACKFILL BY ENGINEER AND LOCAL BOARD OF HEALTH.
- NOTIFY ENGINEER UPON DISCOVERY OF ANY UNFORESEEN SURFACE OR SUBSURFACE CONDITIONS THAT MAY IMPACT SYSTEM INSTALLATION, REGULATORY APPROVAL, OR FUNCTION.
- INSTALL FINISH FIRM ELEVATIONS TO MATCH FINISH PAVEMENT, GRADING OR LANDSCAPING SURFACE, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- PLUG/CAP/FILL EXISTING UTILITY LINES/STRUCTURES THAT ARE TO BE CUT/BROKEN DOWN/ABANDONED, IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS.
- WHERE THE WORD "INSTALL" IS USED HEREIN, IT IS INTENDED TO DIRECT CONTRACTOR TO "FURNISH, INSTALL, AND PLACE IN OPERATION" THE COMPONENT REFERRED TO.
- THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE IS NOT A GUARANTEE THAT THE DISPOSAL SYSTEM WILL FUNCTION SATISFACTORILY.
- INSTALL EROSION CONTROL MEASURES, SUCH AS SILT FENCE OR STRAW BALES AS MAY BE SHOWN HEREON, BEFORE EARTH DISTURBANCE OCCURS.
- THE SUBJECT SYSTEM HAS BEEN DESIGNED TO PROCESS ONLY DOMESTIC SEWAGE AT THE INDICATED LOADING RATE. THE SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE DISPOSAL.
- COORDINATE WITH OWNER/ENGINEER REGARDING REMOVAL OF TREES AND OTHER VEGETATION NOT REQUIRING REMOVAL BY REGULATIONS AND CODES.
- THESE DRAWINGS DO NOT ADDRESS PLUMBING REQUIRED INSIDE BUILDINGS TO ROUTE APPROPRIATE DRAINS TO BUILDING SEWER. OWNER SHALL EMPLOY A LICENSED PLUMBER TO COMPLETE SUCH WORK AS IS NECESSARY TO DRAIN ALL BLACKWATER AND GREYWATER TO THE PROPOSED SEWAGE DISPOSAL SYSTEM.
- ENGINEER TO PERFORM CLEAR WATER TEST OF THE PRESSURE DISTRIBUTION NETWORK AND THE ASSOCIATED ADJUSTMENTS TO ENSURE EQUAL DISTRIBUTION THROUGHOUT NETWORK. TEST PERFORMED PRIOR TO CONTRACTOR BACKFILLING THE SOIL ABSORPTION AREA.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.

CONSTRUCTION SEQUENCE

- INSTALL TEMPORARY EROSION CONTROL MEASURES SUCH AS, BUT NOT LIMITED TO STRAW WATTLES, HAY BALES, SILT FENCE, OR LONGER, WEIGHT 0.975 POUNDS / SQ. YD., CONTAINS NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELSOR COMPANY, OR APPROVED EQUAL.
- CUT DOWN AND STUMP 6" TWIN MAPLE AND 18" PINE AS NOTED ON SHEET 1 OF 3.
- PUMP OUT EXISTING SEPTIC TANK AND DISTRIBUTION BOX
- REMOVE SEPTIC TANK FROM SITE
- RUPTURE BOTTOM OF DISTRIBUTION BOX AND BACKFILL WITH MINUS-3 GRANULAR SOIL
- INSTALL SEPTIC TANK, DOSING CHAMBER, HYDRAULIC UNIT, ASSOCIATED PLUMBING, AND ELECTRICAL CONNECTIONS PER PERC-RITE CONSTRUCTION NOTES AND ON SITE GUIDANCE
- INSTALL 1" SUPPLY AND RETURN LINE TO/FROM LEACHING FIELD
- INSTALL WALKWAY
- USE VIBRATORY PLOUGH TO INSTALL PERC-RITE DRIP TUBING
- REMOVE AND PROPERLY DISPOSE OF ALL WASTE TREES AND SLASH
- OVER ALL DISTURBED AREAS, PLACE 4-INCH DEPTH LOAM, FINE GRADE AND SEED (PERENNIAL MIX)

REGULATORY NOTES

- A LICENSED DISPOSAL SYSTEM INSTALLER SHALL PERFORM ALL WORK ON THE SEWAGE DISPOSAL SYSTEM.
- CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 811 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
- OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- PRIOR TO COMMENCEMENT OF ANY WORK, REVIEW AND THOROUGHLY UNDERSTAND ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES.
- COMPLETE ALL WORK THAT IS OUTSIDE OF BUILDING AND LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATION IN CONFORMANCE WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.

SITE NOTES

- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC AND BOUNDARY SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DATED MAY 22, 2015, MAY 26, 2015, & JULY 6, 2015.
- WETLAND RESOURCE AREA DELINEATION DONE APRIL 30, 2015 BY B&C ASSOCIATES, HUDSON, MA.
- ALL SEWAGE DISPOSAL SYSTEM COMPONENTS ARE GREATER THAN 400 FEET FROM SURFACE WATER RESERVOIRS AND GREATER THAN 200 FEET FROM TRIBUTARIES TO SURFACE WATER RESERVOIRS.
- THERE ARE NO KNOWN EXISTING WELLS WITHIN 150 FEET OF PROPOSED SOIL ABSORPTION AREA, OR WITHIN 50 FEET OF PROPOSED SEPTIC TANK.
- ALL KNOWN WELLS WITHIN 200 FEET OF SEWAGE DISPOSAL SYSTEM ARE SHOWN HEREON.
- WATER SERVICE VIA CONNECTION TO MUNICIPAL WATER MAIN.

SEWAGE DISPOSAL SYSTEM SPECIFICATIONS

- PIPE (310 CMR 15.251)**
- BUILDING SEWER: EXISTING
 - SEPTIC TANK TO DOSING CHAMBER: 4-INCH DIA. SCH 40 PVC OR SDR35 PVC, MIN. SLOPE 1/8 IN. PER FT.
 - SEE PERC-RITE CONSTRUCTION DETAILS AND SPECIFICATIONS FOR PIPE TYPE.
 - BED, HAUNCH, AND BACKFILL ALL PIPE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. ALL JOINTS SHALL BE WATERTIGHT.
 - VENT BUILDING SEWER THROUGH MAIN STACK IN BUILDING SERVED BY IT.
 - CLEAR ALL PIPE AND ORIFICES OF DEBRIS BEFORE BACKFILL OF SYSTEM OCCURS.

- SEPTIC TANK (310 CMR 15.221, 15.223, 15.226)**
- TANK RATED FOR H-10 LOADING. MANUFACTURER: SHEA CONCRETE PRODUCTS, INC., WILMINGTON, MA (978-658-2645), OR EQUAL.
 - SEAL TANK WATERTIGHT, USING RUBBER JOINT SEALER AND NON-SHRINK GROUT ALONG ALL JOINTS. A WATER TEST MAY BE REQUIRED.

- DOSING CHAMBER (310 CMR 15.221, 15.231, 15.254)**
- CHAMBER RATED FOR H-10 LOADING. MANUFACTURER: SHEA CONCRETE PRODUCTS, INC., WILMINGTON, MA (978-658-2645), OR EQUAL.
 - SEAL CHAMBER WATERTIGHT, USING RUBBER JOINT SEALER AND NON-SHRINK GROUT ALONG ALL JOINTS. A WATER TEST MAY BE REQUIRED.
 - BRING ENTRY MANHOLE ABOVE PUMPS TO FINISH GRADE.
 - INSTALL PUMP IN A SIMPLEX CONFIGURATION. PUMP SHALL BE SUPPLIED BY OAKSON, INC. AND INSTALLED PER THEIR SPECIFICATIONS FOR THE PERC-RITE DRIP SYSTEM.
 - INSTALL NON-MERCURY MAGNETIC REED SWITCHES TO CONTROL PUMP AND ALARM, SUCH THAT FLOATS ARE READILY REMOVABLE FROM CHAMBER. JUNCTION BOX: USE WATERTIGHT THERMOPLASTIC STRUCTURAL FOAM BOX BY MYERS OR APPROVED EQUAL. LOCATE BOX OUTSIDE CHAMBER. PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH CODE REQUIREMENTS.
 - INSTALL NEMA 3 CONTROL PANEL ENCLOSURE, WITH WALL MOUNT CABINET, INCLUDING THE FOLLOWING:
 - A VISIBLE AND AUDIBLE ALARM TO SIGNAL HIGH WATER, POWERED BY A SEPARATE, DEDICATED CIRCUIT.
 - INSTALL FORCE MAIN WITHIN DOSING CHAMBER USING SOLVENT WELDED SCHEDULE 80 PVC. SECURE FORCE MAIN AGAINST MOVEMENT AND SHIELD FROM ABRASION. INSTALL A BALL VALVE ON THE VERTICAL FORCE MAIN RUN, ABOVE THE ALARM-ON LEVEL.

- SOIL ABSORPTION AREA**
- REMOVE FROM SOIL ABSORPTION AREA ALL TOPSOIL, BOULDERS LARGER THAN 24 INCHES (LONGEST DIMENSION), OR OTHER UNSUITABLE MATERIAL ENCOUNTERED DURING EXCAVATION.
 - SCARIFY ALL EXCAVATION INTERFACES PRIOR TO PLACEMENT OF FILL OR LEACHING AGGREGATE.
 - COVER MATERIAL: FREE OF DEBRIS AND STONES LARGER THAN 6 INCHES. FINISH GRADE COVER OVER SOIL ABSORPTION AREA TO ENSURE ADEQUATE RUNOFF (2% MIN. SLOPE).

- SELECT SOIL FILL (310 CMR 15.255(3))**
- SELECT SOIL FILL MATERIAL FOR SYSTEM CONSTRUCTION MAY CONSIST OF SELECT ON-SITE SOIL, OR IMPORTED SOIL.
 - SELECT SOIL FILL MATERIAL: COMPRISED OF CLEAN, GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES. MAXIMUM PARTICLE SIZE: 2 INCHES.
 - PERFORM A SIEVE ANALYSIS ON A REPRESENTATIVE SAMPLE OF THE FILL. UP TO 45% BY WEIGHT OF THE FILL SAMPLE MAY BE RETAINED ON A #4 SIEVE. ALSO PERFORM A SIEVE ANALYSIS ON THE FRACTION OF THE FILL SAMPLE PASSING THE #4 SIEVE. SUCH ANALYSIS SHALL DEMONSTRATE THAT THE MATERIAL PASSING THE #4 SIEVE MEETS THE FOLLOWING GRADATION:

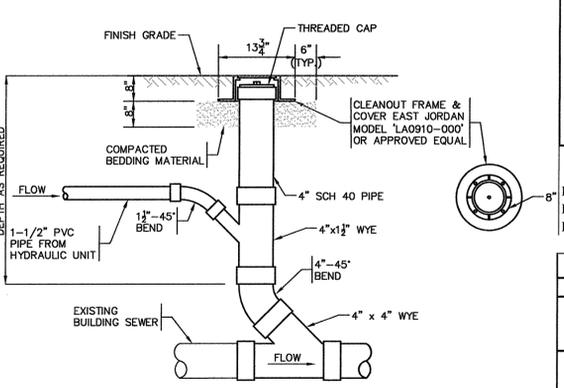
SIEVE	EFFECTIVE PARTICLE SIZE	PERCENT PASSING
#4	4.75 mm	100
#50	0.30 mm	10 TO 100
#100	0.15 mm	0 TO 20
#200	0.075 mm	0 TO 5

- EROSION AND SEDIMENT CONTROL REQUIREMENTS (CONT'D)**
- 3.05 SITE GRADING
- A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
- B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.
- 3.06 LANDSCAPING
- A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
- B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.

BUOYANCY CALCULATIONS

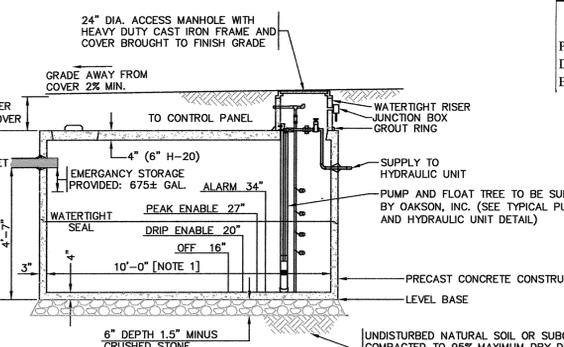
CONDITIONS	UNIT	SEPTIC TANK	DOSING CHAMBER
FINISH GRADE	EL	106.4	106.6
ASSUMED WATER TABLE	EL	101.4	101.4
		(54"± BELOW EXISTING GRADE)	
OUTSIDE TOP OF STRUCTURE	EL	105.4	105.1
OUTSIDE BOTTOM OF STRUCTURE	EL	98.9	99.4
STRUCTURE OUTSIDE LENGTH	FT	12.8	10.5
STRUCTURE OUTSIDE WIDTH	FT	6.8	5.7
STRUCTURE FOOTPRINT	SF	87.0	59.4
SOIL COVER	FT	1.0	1.7
UNIT WEIGHT OF SOIL COVER (DRY)	PCF	100.0	100.0
UNIT WEIGHT OF SOIL (SATURATED)	PCF	125.0	125.0

FORCES	UNIT	GRAVITY	BUOYANCY	GRAVITY	BUOYANCY
WEIGHT OF STRUCTURE	LB	22,650	-	8,765	-
WEIGHT OF SOIL COVER	LB	9,113	-	10,400	-
WEIGHT OF WATER					
DISPLACED (STRUCTURE)	LB	-	13,451	-	7,454
SUBTOTAL FORCE	LB	31,763	13,451	19,165	7,454
NET FORCE	LB	18,312	-	11,711	-
FACTOR OF SAFETY		2.36		2.57	



DROP CLEANOUT

TYPICAL CROSS SECTION
NOT TO SCALE



NOTES:
[1] INSIDE WIDTH: 5'-2"
[2] SEAL INLET & OUTLET PIPES WITH NONSHRINK GROUT.

1,500-GALLON DOSING CHAMBER

310 CMR 15.231
TYPICAL CROSS SECTION

PERCOLATION TEST DATA

PERFORMED BY: BRUCE RINGWALL, GPR, INC.
WITNESSED BY: SHERYL BALL, ACTON BOH
TESTING PERFORMED: 5/21/15

515-B 4 MIN / INCH @ 54"
515-C 2 MIN / INCH @ 24"

SOIL EVALUATION SUMMARY

SOIL EVALUATOR: BRUCE RINGWALL, GPR, INC.
SOIL EVALUATOR APPROVED ON: JUNE 9, 1995
WITNESSED BY: SHERYL BALL, ACTON BOH
EVALUATION PERFORMED: 5/21/15

Deep Observation Hole Log					
Hole #	515-1	NB 28	EL	105.9	
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	fsl	10YR3/2		
12-24	B	sl	10YR5/6	@ 54"	stratified layers
24-72	C1	s, fs, s, cs	10YR5/4	2.5Y6/2	
				2.5Y6/3	
72-120	C2	vfs	2.5Y5/3	2.5Y6/6	
				10YR6/8	

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic): Glacial Outwash Depth to Bedrock: >120"
Depth to Groundwater - Standing Water in the Hol: N/A Weeping from Pit Face: 100"
Estimated Seasonal High Groundwater in the Hole: 54"

Deep Observation Hole Log

Deep Observation Hole Log					
Hole #	515-2	NB 28	EL	108.2	
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	fsl	10YR3/2		
12-27	B	fsl	10YR5/6	@ 68"	
27-108	C	sl	2.5Y5/4	2.5Y6/2	
				10YR6/8	

*MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic): Glacial Outwash Depth to Bedrock: >108"
Depth to Groundwater - Standing Water in the Hol: N/A Weeping from Pit Face: 84"
Estimated Seasonal High Groundwater in the Hole: 68"

DRAWING ISSUED FOR:

- CONCEPT CONSTRUCTION
 PERMIT CONSTRUCTION RECORD

THIS DRAWING MAY BE USED FOR CONSTRUCTION UPON ISSUANCE OF ALL PERMITS AND APPROVALS BY REGULATORY AUTHORITIES.



PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT.

NO.	DATE	BY	APP.	REVISION DESCRIPTION
1	7/27/15	AAA	DEM	NO CHANGE THIS SHEET



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39 MAIN STREET, SUITE 301, AYER, MA 01432
CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING
VOICE: 978.772.1590 FAX: 978.772.1591
www.gpr-inc.com

SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE

FLOW PROFILE, CONSTRUCTION DETAILS & SPECIFICATIONS

4 PHALEN STREET
ACTON, MA

PREPARED FOR:
BILL AHERN
4 PHALEN STREET
ACTON, MA 01720

DES. BY: AAA	DATE: JULY 2015	JOB 151008	2 OF 3
CHK. BY: NMP			

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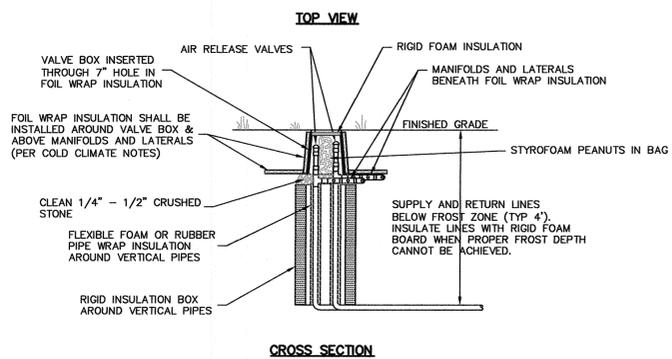
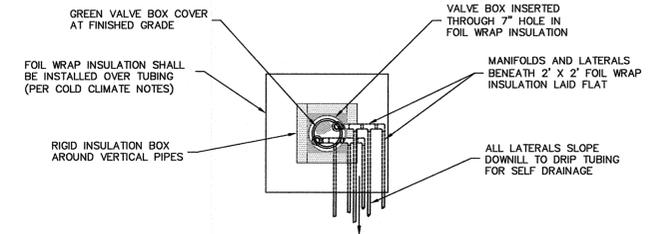
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PERC-RITE DRIP DISPERSAL SYSTEM GENERAL CONSTRUCTION NOTES:

1. THE SYSTEM SHALL NOT BE INSTALLED IN WET OR FROZEN SOILS.
2. DO NOT PARK, DRIVE LARGE EQUIPMENT, OR STORE MATERIALS ON THE DISPERSAL AREA. NO ACTIVITY SHOULD OCCUR ON THE DISPERSAL AREA OTHER THAN THE MINIMUM REQUIRED TO INSTALL THE SYSTEM.
3. ALL INSTALLATION AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO THE STATE AND LOCAL CODES PERTAINING TO ON-SITE WASTEWATER SYSTEMS AND THE PERMIT FOR THE SITE.
4. IF SITE CONDITIONS ARE DETERMINED TO REQUIRE THE INSTALLATION OF THE SYSTEM TO DEVIATE FROM THE DESIGN PLANS, ALL WORK SHALL STOP IMMEDIATELY AND THE DESIGNER AND INSPECTOR SHALL BE NOTIFIED. ANY ONGOING WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. DRIP TUBING MAY BE INSTALLED WITH A VIBRATORY PLOW, A STATIC PLOW, A NARROW TRENCHER (6" WIDE), BY HAND TRENCHING, OR BY SCARIFYING THE SURFACE AND BEDDING THE DRIP TUBING IN CLEAN SAND MEETING THE REQUIREMENTS FOR FILL MATERIAL IN THE STATE CODE. FOR SAND FILL SYSTEMS, COVER CONSISTING OF 2" OF THE SAME SAND AND THEN TOPSOIL MEETING THE APPROVED DEPTH REQUIREMENT SHALL BE PROVIDED.
6. ALL DRIP TUBING IS TO BE INSTALLED PARALLEL TO THE CONTOUR.
7. AIR RELEASE VALVES SHALL BE PLACED BELOW THE GROUND SURFACE IN AN INSULATED VALVE BOX BUT AT AN ELEVATION ABOVE THE HIGHEST DRIP LINE IN THAT PARTICULAR ZONE.
8. VEGETATIVE COVER MUST BE REPLACED FOR INSTALLATIONS WHERE IT IS REMOVED OR BURIED DURING INSTALLATION.
9. ALL CUTTING OF RIGID PVC PIPE, FLEXIBLE PVC, AND DRIP TUBING OF SIZE 2" OR SMALLER SHALL BE ACCOMPLISHED WITH PIPE CUTTERS. NO SAWING IS ALLOWED.
10. ALL RIGID PVC PIPE, FLEXIBLE PVC PIPE AND DRIP TUBING SHALL HAVE THE ENDS COVERED WITH DUCT TAPE AFTER CUTTING TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING THE PIPE.
11. PRIOR TO GLUING, ALL JOINTS SHALL BE INSPECTED FOR AND CLEARED OF ANY DEBRIS. ALL JOINTS SHALL BE CLEANED AND PRIMED WITH PVC PRIMER PRIOR TO BEING GLED.
12. ALL PVC PIPE AND FITTINGS SHALL BE SCH 40.
13. WHENEVER POSSIBLE, ALL FORCE MAINS SHALL BE TESTED FOR LEAKS PRIOR TO BEING BACK-FILLED BY PRESSURIZING THE SYSTEM AND OBSERVING FOR LEAKAGE.
14. THE HYDRAULIC UNIT SHALL BE PLACED ON TOP OF THE SEPTIC/TREATMENT TANK, PUMP CHAMBER, OR ON A BED OF 4" - 6" THICK 3/4" GRAVEL IN A LOCATION WITHIN 30' OF THE PUMP.
15. IF STANDING WATER IS A PROBLEM IN THE VICINITY OF THE HYDRAULIC UNIT, A SCREENED DRAIN TO DAYLIGHT IS REQUIRED.
16. ELECTRICIAN TO PROVIDE SEPARATE CIRCUITS FOR THE PUMP AND CONTROLS/ALARM, OR AS REQUIRED BY STATE AND LOCAL CODES.
17. ALL CONDUIT ENTERING THE CONTROL PANEL SHALL BE SEALED AT BOTH ENDS TO PREVENT CONDENSATION OR GASES INSIDE THE PANEL.

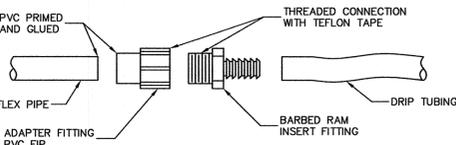
COLD CLIMATE CONSTRUCTION NOTES:

1. ALL ATTEMPTS SHOULD BE MADE TO PLACE THE HYDRAULIC UNIT IN A LOCATION WITH AN OPEN SOUTHERN EXPOSURE FOR WARMING PURPOSES.
2. ALL PIPES ENTERING AND LEAVING THE HYDRAULIC UNIT SHALL ELBOW VERTICALLY DOWN 90 DEGREES TO A DEPTH BELOW THE FROST LINE PRIOR TO EXTENDING AWAY FROM THE UNIT HORIZONTALLY.
3. THE SUPPLY AND RETURN LINES SHALL BE INSTALLED BELOW THE FROST LINE. WHEN THIS IS NOT POSSIBLE, RIGID FOAM INSULATION (MIN 1" THICK) SHALL BE PLACED OVER THOSE PIPES THAT ARE ABOVE THE FROST LINE.
4. THE VERTICAL SECTIONS OF PIPE THAT TRAVEL THROUGH THE FROST ZONE AND CONNECT THE SUPPLY AND RETURN LINES TO THE MANIFOLDS SHALL BE INSULATED SCH 40 PVC PIPE. INSULATION SHALL CONSIST OF FOAM PIPE WRAP INSULATION AND 1" RIGID FOAM INSULATION STRIPS MADE INTO A BOX. (SEE INSULATION DETAIL)
5. FOIL WRAP INSULATION SHALL BE PLACED OVER THE SUPPLY/RETURN MANIFOLDS AND LOOP CONNECTORS SO THAT AT LEAST 1" OF INSULATION EXTENDS EACH DIRECTION BEYOND THE FITTINGS. (SEE INSULATION DETAIL)
6. AIR RELEASE VALVE ENCLOSURES SHALL BE INSULATED WITH BAGGED STYROFOAM PEANUTS, FOIL WRAP INSULATION, AND RIGID FOAM INSULATION INSIDE THE LID. (SEE INSULATION DETAIL)
7. ALL LOOPS CONNECTING DRIP RUNS SHALL BE SLIGHTLY ELEVATED (MINIMUM 1" - 2") SO THAT THEY DRAIN INTO THE DRIP TUBING AFTER THE PUMP SHUTS OFF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THESE LOOPS STAY ELEVATED DURING AND AFTER THE LOOPS ARE BACKFILLED.
8. DENSE VEGETATIVE COVER IS TO BE ESTABLISHED OVER THE SUPPLY TRENCH, RETURN TRENCH, MANIFOLDS, AND DRIP TUBING PRIOR TO THE FIRST EXPOSURE TO FREEZING TEMPERATURES. IF VEGETATION CANNOT BE ESTABLISHED THEN THE ENTIRE DRIP DISPERSAL FIELD IS TO BE COVERED WITH A THICK LAYER (MINIMUM 6") OF MULCH, STRAW/HAY, OR FROST BLANKET UNTIL SUCH TURF COVER IS ESTABLISHED.
9. VEGETATION HEIGHT OVER THE DRIP DISPERSAL AREA SHOULD BE A MINIMUM OF 4" - 6" THROUGHOUT THE WINTER MONTHS.



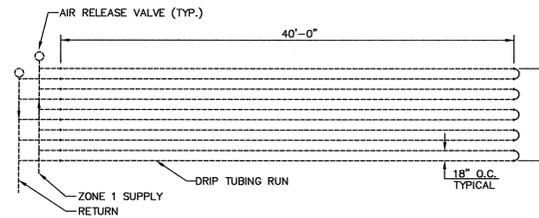
PERC-RITE INSULATION DETAIL

OAKSON, INC. STANDARD DETAIL NOT TO SCALE



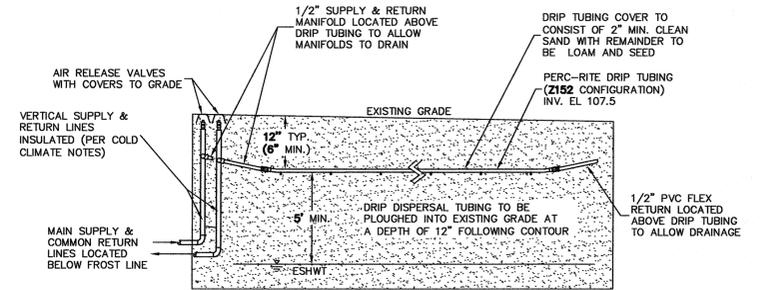
CONNECTING DRIP TUBING TO FLEXIBLE PVC PIPE

OAKSON, INC. STANDARD DETAIL NOT TO SCALE



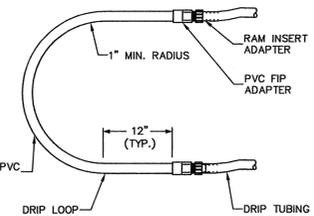
SOIL ABSORPTION SYSTEM

OAKSON, INC. STANDARD DETAIL - SIDE FEED Z152 ZONE LAYOUT NOT TO SCALE



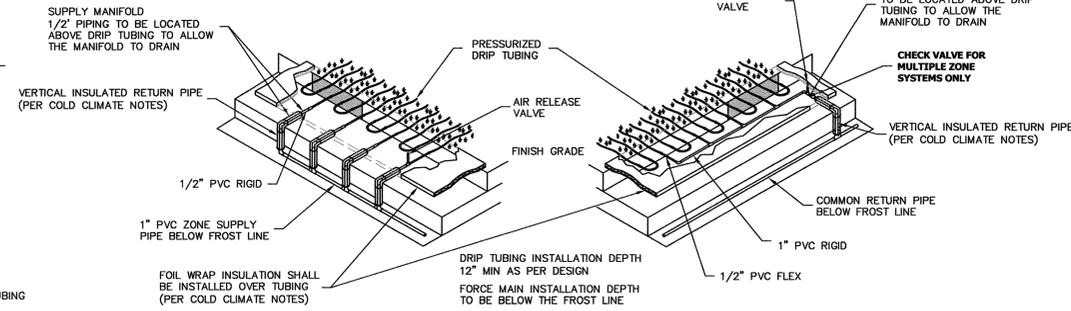
PERC-RITE FIELD (42' X 15.5')

OAKSON, INC. STANDARD DETAIL NOT TO SCALE



TYPICAL DRIP LOOP CONNECTION

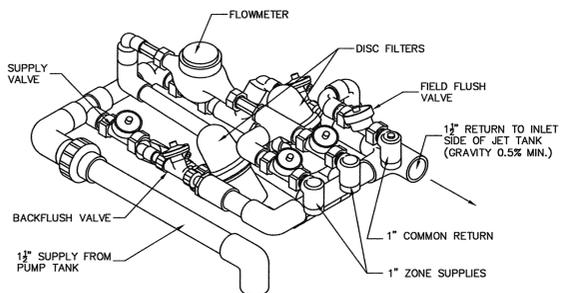
OAKSON, INC. STANDARD DETAIL NOT TO SCALE



NOTE:
1. THE DRIP TUBING SHALL BE THE LOWEST POINT TO ALLOW FOR DRAINAGE FROM BOTH THE VERTICAL INSULATED SUPPLY AND RETURN PIPES

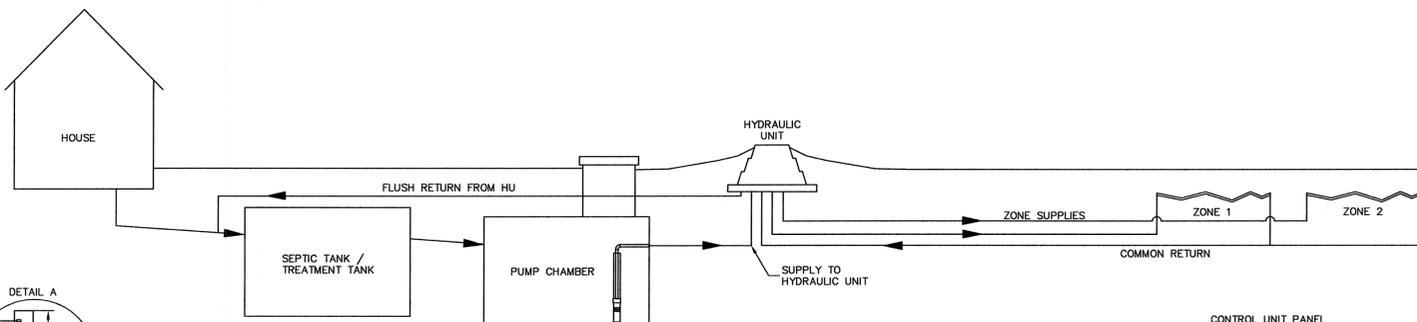
STANDARD DRIP SYSTEM DETAIL

OAKSON, INC. STANDARD DETAIL - SIDE FEED MANIFOLD NOT TO SCALE



HYDRAULIC UNIT DETAIL

OAKSON, INC. STANDARD DETAIL NOT TO SCALE

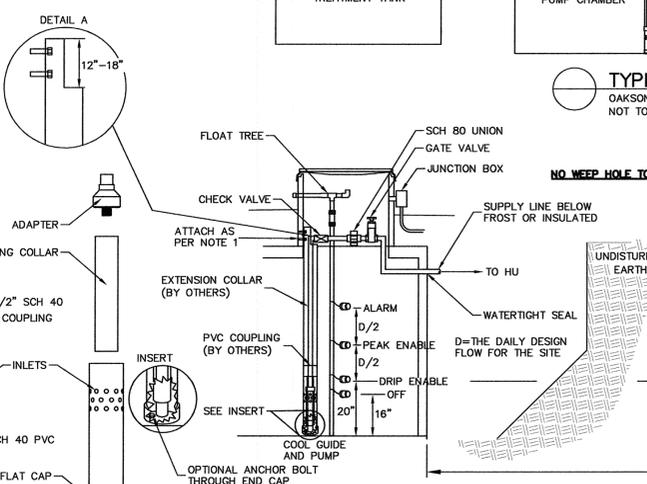


TYPICAL SYSTEM HYDRAULIC PROFILE

OAKSON, INC. STANDARD DETAIL NOT TO SCALE

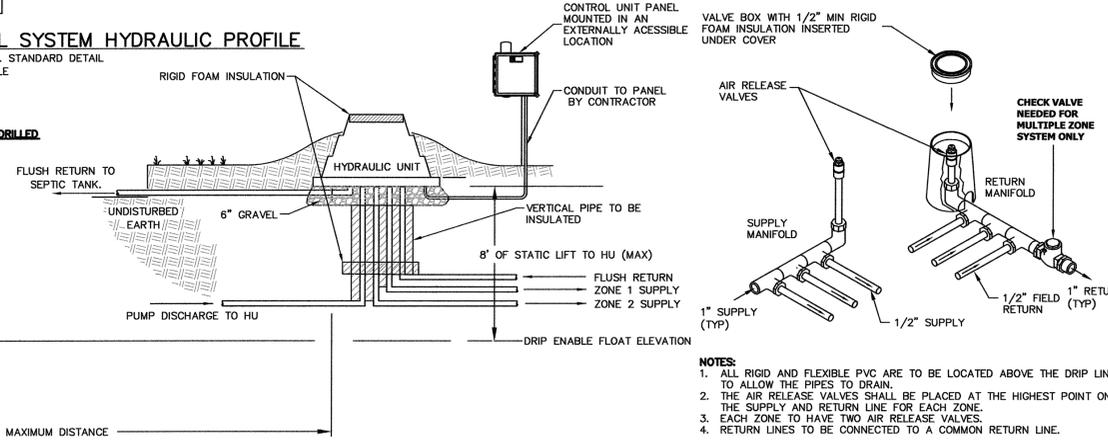
INSTALLATION INSTRUCTIONS:

1. MEASURE THE DISTANCE FROM THE BOTTOM OF THE TANK TO 6" DOWN FROM THE TOP OF THE RISER. CUT THE EXTENSION PIPE (BY OTHERS) TO THE LENGTH NECESSARY TO REACH THIS HEIGHT. CUT HALF OF THE PIPE DOWN 12" TO 18" AWAY FROM THE TOP OF THE PIPE FOR A PUMP DISCHARGE PIPE AND ATTACH TO RISER. (SEE DETAIL A)
2. GLUE THE EXTENSION COUPLING (BY OTHERS) TO THE EXTENSION PIPE AND TO THE COOL GUIDE.
3. FOR REUSE OF EXISTING CONCRETE PUMP CHAMBERS: GLUE ON THE COOL GUIDE FLAT CAP AND PLACE THE COOL GUIDE FIRMLY IN THE BOTTOM OF THE TANK. ATTACH THE EXTENSION TO THE RISER WITH THE ANCHORS AS SHOWN.
4. FOR USE IN NEW CONCRETE PUMP CHAMBERS: ANCHOR THE FLAT CAP TO THE BOTTOM OF THE TANK IN THE PROPER LOCATION TO HOLD THE COOL GUIDE AND EXTENSION. THE CAP MAY OR MAY NOT BE GLED TO THE DEVICE. ATTACH THE EXTENSION WITH THE ANCHORS AS SHOWN.
5. PLACE THE PIPE DOPE ON THE COOL GUIDE ADAPTER THREADS AND THREAD THEM INTO THE PUMP DISCHARGE.
6. ATTACH COOLING COLLAR TO ADAPTER WITH SET SCREW PROVIDED.
7. GLUE PIPE INTO FLOW COLLAR AND WITH PUMP ATTACHED, LOWER INTO THE GUIDE TUBE.
8. ATTACH TO DISCHARGE PIPE, VALVES, AND CONNECT ELECTRICAL AND SPECIFIED.



TYPICAL PUMP TANK & HYDRAULIC UNIT DETAIL

OAKSON, INC. STANDARD DETAIL NOT TO SCALE



TYPICAL MANIFOLD CONNECTION

OAKSON, INC. STANDARD DETAIL NOT TO SCALE

DRAWING ISSUED FOR:

- CONCEPT
- CONSTRUCTION
- PERMIT
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SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE

PERC-RITE CONSTRUCTION DETAILS & SPECIFICATIONS

4 PHALEN STREET ACTON, MA

PREPARED FOR:
BILL AHERN
4 PHALEN STREET
ACTON, MA 01720

DES. BY: AAA	DATE: JULY 2015	JOB 151008	3 OF 3
CHK. BY: NMP			

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