Vicinity Map
NOT TO SCALE

SITE DATA

REQUIRED PARKING:	LODGING	112 (1 PER ROOM)
	RESTAURANT	13 (1 PER TABLE)
	TOTAL	125
PROPOSED PARKING:	184 STALLS PROVIDED (6 A.D.A.)	
PARCEL AREA:	1,526,422 S.F. (35.04 ACRES)	
BUILDING AREA:	55,693 S.F.	8.3%
PAVEMENT AREA:	125,806 S.F	3.6%
LANDSCAPE AREA:	1,344,930 S.F.	88.1%

UT-39

AASHTO 55 MPH SIGHT TRIANGLES

RIVER PROTECTION AREA 97.00'

SOUTH OGDEN RIVER

LODGE 16 UNITS

LODGE 16 UNITS

LODGE 16 UNITS

LODGE 16 UNITS

LODGE 16 UNITS

LODGE 16 UNITS

EXISTING BRIDGE

RIVER PROTECTION AREA 100.00'

MAINTENANCE BUILDINGS

WELL

WELL PROTECTION AREA 100.00'

POOL

CLUBHOUSE

PICKLEBALL & BASKETBALL

CARETAKER HOUSING

WATER TANK

HORSESHOE (TYP)

5300 5275 5250 5225 5200 5175 5150 5125 5115 5110 5095 5090 5080 5075

60 0 60 120 180
Scale: 1" = 60'

Project Contact:
Chris Cave
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

Reeve & Associates, Inc.
5160 SOUTH 1500 WEST, RIVERDALE, UTAH 84405
TEL: (801) 621-3100 www.reeve.co
LAND PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS
DESCRIPTION | DATE

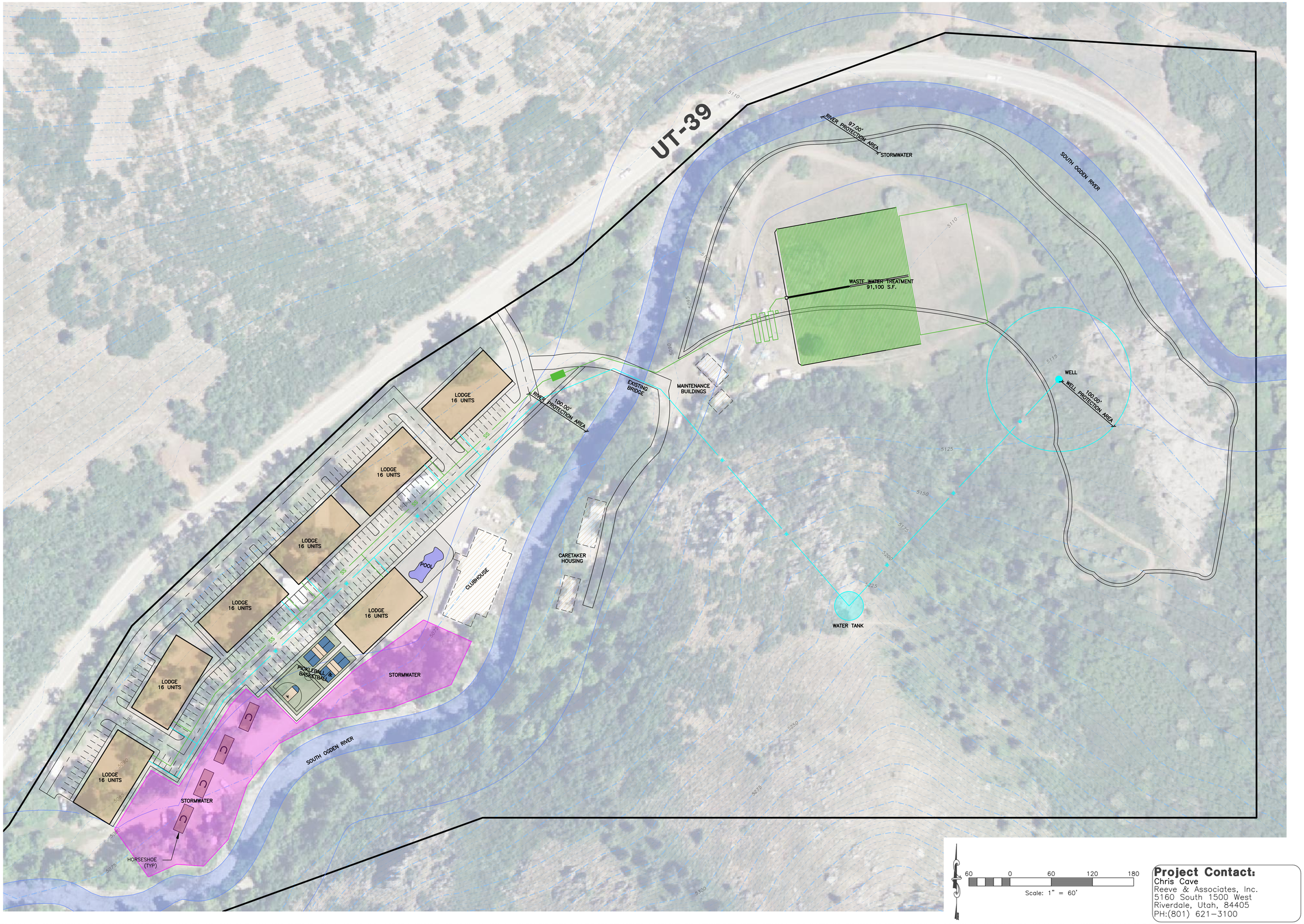
Ruby Resort
10909 UT-39
HUNTSVILLE CITY, WEBER COUNTY, UTAH

Condition Use Permit Site Plan

PRELIMINARY NOT FOR CONSTRUCTION

Project Info.
Engineer: N. Reeve
Planner: C. Cave
Designer: J. Meyers
Date: October 2023
Name: Ruby Resort
Number: 8036-01

1
4 Total Sheets



60 0 60 120 180

Scale: 1" = 60'

Project Contact:
Chris Cave
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

Reeve & Associates, Inc.
5160 SOUTH 1500 WEST, RIVERDALE, UTAH 84405
TEL: (801) 621-3100 www.reeve.co
LAND PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS

DATE	DESCRIPTION

Ruby Resort
10909 UT-39
HUNTSVILLE CITY, WEBER COUNTY, UTAH

Conditional Use Permit Utility Plan

PRELIMINARY NOT FOR CONSTRUCTION

Project Info.
Engineer: N. Reeve
Planner: C. Cave
Designer: J. Meyers
Date: October 2023
Name: Ruby Resort
Number: 8036-01

2
4 Total Sheets

AIR VENTS / VACUUM RELIEF VALVES

Standard Kinetic Air/Vacuum Relief Valve - Mushroom Top

Description

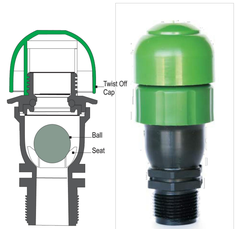
Air release occurs when air escape the system at startup and vacuum relief allows air to enter during shutdown. The air vent vacuum breakers are installed at the highest points in the drip field to keep soil from being sucked into the emitters due to back siphoning and back pressure. This is an absolute necessity with underground drip systems. They are also used for proper drainage of the supply and return manifolds. Use one on the high point of the supply manifold and one on the high point of the return manifold and any high points of the system.

Features

Geoflow's kinetic air vacuum breakers have a twist off cap that is easy to take apart for cleaning. The large clear passageway allows lots of air to flow in and out easily. The elbow cap design is ideal for directing wastewater spray, directing spray downward. With the ball removed, these airvents can easily be used as a flush port. These can be used in freezing climates to capture warmer air that can be found below ground, in a sump during vacuum.

Specification

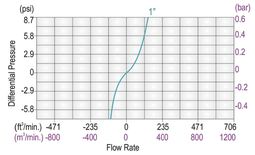
The Air Vacuum Breaker shall provide vacuum relief and non-continuous air relief. Both the body and the ball shall be made of molded plastic. The ball shall be removable for easy cleaning. The air vacuum breaker shall be part number APVBK100M as supplied by Geoflow, Inc.



APVBK100M

Part No.	APVBK100M
Inlet	1"
Max Pressure	80 psi/185 ft.
Max Temp	140º F
Height	5.5"
Weight	1.2 oz.

Air and Vacuum Flow Rate



GEOFLOW
SUBSURFACE DRIP
www.geoflow.com
800-898-3388

ProductSheets/Airvents15A23

Septic System Sizing

PACKED BED MEDIA WITH DRIP IRRIGATION ABSORPTION AREA

HYDRAULIC LOADING RATE = 0.70 GAL/DAY/SF
MAX ABSORPTION DEPTH 8–10 INCHES
LATERAL LENGTH = SEE LAYOUT
SPACING FROM DRIP LINE TO DRIP LINE = 2 FT

DAILY WASTEWATER FLOW 17,750 GPD TOTAL
SEE WASTEWATER DEMAND SIZING REPORT

17,750 GAL/DAY
17,750 GAL/DAY / 0.70 GAL/DAY/SF = 25,357 SF
25,357 SF x .7 PACKED BED REDUCTION = 17,750 SF
17,750 SF/2 FT LINE SPACING = 8,875 L.F. LINE LENGTH
8,875 LF/2 FT EMITTER SPACING = 4,438 EMITTERS

TANK SIZING TO PROVIDE 1.5 TIMES THE DAILY DESIGN FLOW
17,750 X 1.5 = 26,625 GALLONS
EFFLUENT TO TANK IS TO BE PUMPED. TANK SIZED TO BE INCREASED TO ALLOW ADDITIONAL TIME FOR SOLIDS TO SETTLE DUE TO THE EMULSIFICATION OF THE SEPTIC FLOWS FROM THE PUMP UNITS.
USE MINIMUM TANK SIZE OF 30,000 GALLONS

Pump Calculations

STATIC HEAD = 5.5'
RESIDUAL HEAD (DRIP LATERALS) = 20'

TDH = 25.5'
FLOW = 150.9 GPM
PROVIDE 2 ZONES PER FIELD TO REDUCE FLUSHING FLOW REQUIREMENT TO 75.46 GPM
ACTUATE ZONES WITH A TWO-WAY MECHANICAL DISTRIBUTION VALVE IN EACH FIELD

(OR APPROVED EQUIVALENT)

Absorption Field

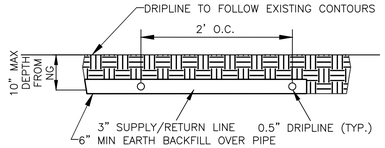
ABSORPTION FIELD 1 & 2
TRANSPORT PIPE (3") = 34 LF
SUPPLY PIPE (3") = 90 LF
DRIP IRRIGATION LINE (.5") = 100 LF
EMITTER SPACING = 2 FT
EMITTER DISCHARGE RATE = 1.16 GPH/EMITTER
OF EMITTERS = 4,438 EMITTERS
TOTAL DOSE FLOW = 5,148 GPH (85.80 GPM)
FLUSH VELOCITY = 1 FT/S
0.74 X 88 = 65.1 GPM FLUSHING FLOW
FLOW = 150.9 GPM
DOSAGE VOLUME = 436 GAL

Buoyancy Calculations

IT IS POSSIBLE GROUNDWATER WILL BE ENCOUNTERED DURING THE SEPTIC TANK AND PACKED BED MEDIA TREATMENT EXCAVATION. DEPENDING ON THE CONDITIONS DISCOVERED DURING EXCAVATION, ANCHORING MAY BE REQUIRED FOR THE PACKED BED MEDIA TREATMENT UNITS. CONTACT THE MANUFACTURER/SUPPLIER FOR ANCHORING DETAILS AND DESIGN. DEPENDING ON THE SEPTIC TANK SELECTED ANCHORING MAY ALSO BE REQUIRED, SUCH AS FOR NON-CONCRETE TANKS. CONTACT THE ENGINEER OF RECORD FOR ADDITIONAL ANCHORING INFORMATION IF NEEDED.

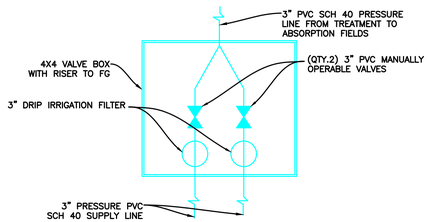
Large Underground Wastewater System Notes

1. SYSTEM INSTALLATION TO COMPLY WITH WEBER-MORGAN HEALTH DEPARTMENT AND STATE ADMINISTRATIVE RULES.
2. INSTALL SEDIMENTATION AND EROSION CONTROL MEASURES. TEMPORARY DRAINAGE SWALES/BERMS MAY BE INSTALLED TO PROTECT THE SITE DURING RAINFALL EVENTS.
3. IT IS BEST TO MOUND SEVERAL INCHES OF SOIL OVER THE FINISH GRADE TO ALLOW FOR SETTLING. THIS ALSO ENSURES THAT RUNOFF WATER IS DIVERTED AWAY FROM THE SYSTEM.
4. AFTER THE SYSTEM IS COVERED, THE SITE SHOULD BE SEEDED OR SODDED TO PREVENT EROSION.
5. SYSTEMS SHALL BE MONITORED PERIODICALLY EVERY 6 MONTHS.
6. REPAIRS MUST BE MADE AS SOON AS POSSIBLE AFTER A MALFUNCTION IS DISCOVERED.
7. NO TREES, CONCRETE, STRUCTURES, LIVESTOCK, OR ACTIVITY OVER THE SYSTEM, NOR ANY REPLACEMENT AREAS.
8. SURFACE WATER TO BE DIRECTED AWAY FROM THE SYSTEM.
9. SITE SHALL BE CLEARED OF VEGETATION AND SCARIFIED WITH FURROWS RESULTING FROM SCARIFICATION BEING PERPENDICULAR TO SLOPE OF SITE.
10. CHECK FOR PROPER SOIL MOISTURE PRIOR TO CONSTRUCTION. SOIL IS TOO WET IF IT FORMS INTO A RIBBON.
11. CUT OFF ALL GRASS, BRUSH AND TREES JUST ABOVE GROUND SURFACE AND REMOVE, BUT DO NOT REMOVE LARGE TREE STUMPS. RAKE OFF DEAD VEGETATION IF OVER AN INCH THICK.
12. TILL THE AREA TO A DEPTH OF 6 INCHES. THE TILLED AREA SHOULD BE AT LEAST THE TOTAL LENGTH AND WIDTH OF THE SYSTEM.
13. TILL WITH A MOLDBOARD PLOW, CHISEL PLOW, OR CHISEL TEETH MOUNTED ON A BACKHOE BUCKET. NORMAL TEETH ON A BACKHOE ARE NOT SATISFACTORY AND SHOULD NOT BE USED. A ROTOTILLER SHOULD NOT BE USED.
14. AVOID TRAFFIC ON TILLED AREA, ESPECIALLY BENEATH THE ABSORPTION AREA.
15. IF COMPACTION OR RUTS OCCUR DURING CONSTRUCTION, RE-TILL THE COMPACTED OR RUTTED AREA.



Detail-Absorption Field

SCALE: NONE



Valve Box Detail

SCALE: NONE

20 0 20 40 60
Scale: 1" = 20'

Project Contact:
Chris Cave
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

Reeve & Associates, Inc.
5160 SOUTH 1500 WEST, RIVERDALE, UTAH 84405
TEL: (801) 621-3100 www.reeve.co
LAND PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS
DESCRIPTION
DATE

Ruby Resort
10909 UT-39
HUNTSVILLE CITY, WEBER COUNTY, UTAH

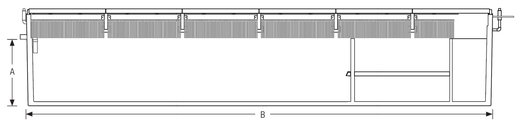
Conceptual Large Underground Wastewater Disposal System Design

PRELIMINARY NOT FOR CONSTRUCTION

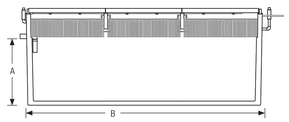
Project Info.
Engineer: N. Reeve
Planner: C. Cave
Designer: J. Meyers
Date: October 2023
Name: Ruby Resort
Number: 8036-01

3
4 Total Sheets

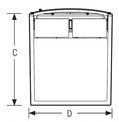
Orenco® *Technical Data Sheet*



AdvanTex AX-MAX275-42, side view



AdvanTex AX-MAX150-21, side view



AdvanTex AX-MAX, end view (all models)

Specifications

Nominal Dimensions*

Model	AX-MAX100-14	AX-MAX150-21	AX-MAX200-28	AX-MAX250-35	AX-MAX300-42
A, ft (m)	variable	variable	variable	variable	variable
B, ft (m)	14.0 (4.2)	21.0 (6.4)	28.0 (8.5)	35.0 (10.7)	42.0 (12.8)
C, ft (m)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)
D, ft (m)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)
Footprint, ft² (m²)	112.0 (10.4)	168.0 (15.6)	224.0 (20.8)	280.0 (26.0)	336.0 (31.2)
Model	**AX-MAX075-14**	**AX-MAX125-21**	**AX-MAX175-28**	**AX-MAX225-35**	**AX-MAX275-42**
A, ft (m)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)
B, ft (m)	14.0 (4.2)	21.0 (6.4)	28.0 (8.5)	35.0 (10.7)	42.0 (12.8)
C, ft (m)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)
D, ft (m)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)
Footprint, ft² (m²)	112.0 (10.4)	168.0 (15.6)	224.0 (20.8)	280.0 (26.0)	336.0 (31.2)

**See AdvanTex® AX-Max Treatment System drawings for exact dimensions and specific treatment configurations.*

Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4449 • www.orenco.com

WORKSHEET:

The following worksheet is a simplistic guideline and is available as an Excel spreadsheet. It can be downloaded from Geoflow's homepage at www.geoflow.com. To calculate the area required for your drip dispersal system you must know:

1. the quantity of effluent to be disposed of (in gallons per day) and
2. the soil acceptance rate (i.e. gallons per day per square foot).

Make a sketch of the dispersal area with contour lines.

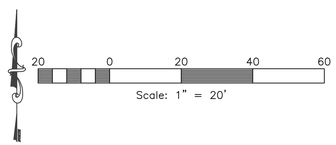
WORKSHEET 1 - DISPERSAL FIELD DESIGN FOR SINGLE ZONE

Worksheet Dispersal Field	Formula
A. Quantity of effluent to be dispersed per day 17,750 *gpd*	
B. Soil type or hydraulic loading rate 0.70 *loading rate (gal/ sq. ft./ day)*	*Based on soil analysis* *Refer to State or Local regulations. If none, refer to Table 2 on page 10*
C. Determine the total area required (17,750/.70)X.70 = 17,750 ft2 _____ *square ft* (Packed Bed Reduction)	*Divide gpd by loading rate. A/B*
D. Choose the spacing between each WASTEFLOW line and each WASTEFLOW emitter *i)* 2 *ft. between WASTEFLOW lines* *ii)* 2 *ft. between WASTEFLOW emitters*	*Standard spacing is 2 ft.*
E. How many linear feet of dripline in the total area? 8,875 *ft.*	*(Area / 2) for 2ft. line spacing, C/2.0 or* *(Area / 1) for 1 ft. line spacing., C/1.0 or* *(Area / 1.5) for 1.5ft line spacing, C/1.5*
F. Calculate the number of emitters 4,438 *emitters*	*(Linear ft. of dripline / 2) for 2 ft emitter spacing, E/2 or* *(Linear ft. of dripline / 1) for 1 ft emitter spacing, E/1 or* *(Linear ft. of dripline /1.5) for 1.5 ft emitter spacing E/1.5*
G. Choose pressure compensating or Classic dripline x *WASTEFLOW Classic dripline or* _____ *WASTEFLOW PC ½ gph dripline* _____ *WASTEFLOW PC 1 gph dripline*	*See page 4 and Appendix 1 for details*

Sketch a layout of the WASTEFLOW lines in the dispersal plot to make sure that the maximum lateral length of each WASTEFLOW line is not exceeded. Count number of laterals for use in flushing velocity below.	*See Maximum Length of Run table in Appendix 1.*
H. Determine dripfield pressure 20 *psi*	*Standard pressure is 20 psi.* *WASTEFLOW Classic systems need between 15 and 45 psi (34.7 and 104 ft.) at the start of the dripfield.* *WASTEFLOW PC systems need between 10 and 45 psi (23.1 ft. to 104 ft.) at the start of the dripfield.*
I. Determine feet of head required at dripfield 46.20 *ft. of head*	*Multiply pressure by 2.31 to get head required.* *H x 2.31*
J. What is the flow rate per emitter? 1.16 gph / emitter	*See WASTEFLOW flow rates in Appendix 1.*
K. Determine total dose flow for the area 5,148 *gph* 85.80 *gpm*	*Number of emitters multiplied by the emitter flow rate at the design pressure.* *Gph = No of emitters (F) x gph per emitter (J)* *Gpm = gph/ 60*
L. Count dripline laterals in the zone 88 *laterals*	*1 lateral = connection form supply line to return line regardless of the number of loops*
M. Determine additional flow required to flush the zone 1 ft/s flush velocity _____ *gph* 65.1 *gpm*	*Number of dripline laterals (L) multiplied by flush velocity multiplier:* *Flush Velocity Multiplier* *½ ft/ sec 0.37* *1 ft/ sec 0.74* *2 ft/ sec 1.48*
N. Total Flow required to flush zone 150.9 gpm PROVIDE 2 ZONES PER FIELD, 150.9/2 = 75.46 GPM FLSUH PER ZONE	*M + K in gpm*

PSI = Ft. of head divided by 2.31

DAILY DOSE:
DRIPLINE LATERAL VOLUME: 0.99 GAL/LATERAL
DOSAGE: (0.99 GAL/LATERAL)*(88 LATERALS)*(5) = 436 GAL



Project Contact:
Chris Cave
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

Reeve & Associates, Inc.
5160 SOUTH 1500 WEST RIVERDALE, UTAH 84405
TEL: (801) 621-3100 www.reeve.co
LAND PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS
DESCRIPTION
DATE

Ruby Resort
10909 UT-39
HUNTSVILLE CITY, WEBER COUNTY, UTAH

Conceptual Large Underground Wasstewater Disposal System Design

PRELIMINARY NOT FOR CONSTRUCTION

Project Info.
Engineer: N. Reeve
Planner: C. Cave
Designer: J. Meyers
Date: October 2023
Name: Ruby Resort
Number: 8036-01

4
4 Total Sheets