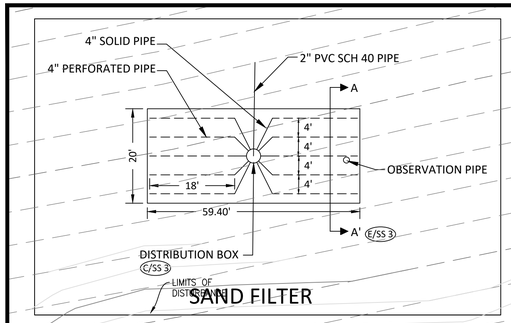
G:\Shared drives\Westex Project Files\WESTEX Project Files\2204.001-B 2410 La Mancha Dr-Septic (Jon Rabe)\02 Plans\2410 La Mancha -Septic-REV 9-26-22.dwg, 9/26/2022 12:59:33 PM, OWNER




811 Know what's below. Call before you dig.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SHEET 1 OF 3 | SS 1 | APPROVALS | RABE RESIDENCE<br>2410 LA MANCHA DRIVE<br>SS 1<br>SITE OVERVIEW<br>WASHOE COUNTY NEVADA<br>WESTEX PROJECT#: 2204.001-B 8/30/2022 | WESTEX Consulting Engineers<br>220 S. Rock Blvd, Ste 12; Reno, NV 89502 | SEPTIC ONLY | PROFESSIONAL ENGINEER STATE OF NEVADA<br>BLAKE D. CARTER<br>No. 22231<br>Digitally signed by Blake D. Carter, PE<br>Date: 2022.10.04 11:58:07 -07'00' | PREPARED FOR:<br>JON RABE<br>0" 1/2" 1"<br>INCH@FULL SCALE | REVISIONS | NO | DESCRIPTION | DATE | BY | CHK'D |




APN 076-381-53
10.025 Acres

grade and landscape

APN 076-38

667.56'

LIMITS OF DISTURBANCE

4' MAX WALL

LIMITS OF DISTURBANCE & SILT FENCE

EXTEND STEMWALL TO PROVIDE FG IDENTIFIED

EXTEND FOOTING TO PROVIDE FG IDENTIFIED

(2)6" STEPS

2" STEP

(8)6" STEPS

4" PVC SDR 35 PIPE
SLOPE 2% min

CLEANOUT D/SS 3

RESIDENCE
UPPER FF:65.25
LOWER FF:53.00

PROPOSED
7 BEDROOM RESIDENCE

FLUSH

1" STEP

(4)6" STEPS

6" STEP

WET WELL B/SS 3

CLEANOUT D/SS 3

2,000 GALLON SEPTIC TANK A/SS 3

(9)6" STEPS

(15)6" STEPS

6" MAX WALL

retaining daylight dw

LIMITS OF DISTURBANCE & SILT FENCE

TEST PIT

LIMITS OF DISTURBANCE & SILT FENCE

LA MANCHA DR
(PRIVATE)

100'

2" PVC SCH 40 PIPE

10'min

PRIMARY SEPTIC DISPOSAL SYSTEM:
20 feet wide by 45 Feet long
Engineered "T" Sand Filter

REPAIR SEPTIC DISPOSAL SYSTEM:
20 feet wide by 45 Feet long
Engineered "T" Sand Filter

N

0' 10' 20'
SCALE: 1"=20'

811 Know what's below. Call before you dig.

| NO | DESCRIPTION | DATE | BY | CH'D |
|---|---|---|---|---|
| | REVISIONS | | | |

PREPARED FOR:
JON RABE

0" 1/2" 1"
INCH@FULL SCALE

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
BLAKE DOUGLAS CARTER
CIVIL
Digitally signed by Blake D. Carter, PE 12312
Date: 2022.10.04 11:04:47 -07'00'
NO. 22331

SEPTIC ONLY

WESTEX
Consulting Engineers
220 S. Rock Blvd, Ste 12; Reno, NV 89502

RABE RESIDENCE
2410 LA MANCHA DRIVE
SS 2
SEPTIC PLAN
WASHOE CONTY
WESTEX PROJECT#: 2204.001-B
NEVADA
8/30/2022

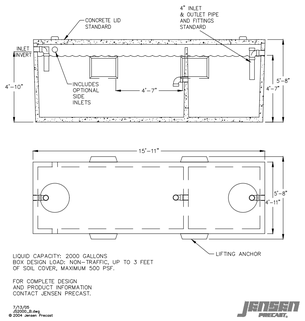
APPROVALS

SS 2
SHEET 2 OF 3

G:\Shared drives\Westex Project Files\2204.001-B 2410 La Mancha Dr-Septic (Jon Rabe)\00 Plans\2410 La Mancha - Septic-R0 8-26-22.dwg, 8/26/2022 12:58:03 PM, OWNER

## 2000 GALLON RESIDENTAL SEPTIC TANK

MODEL JS2000
ACCEPTED BY UPC®



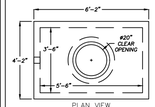

LIQUID CAPACITY: 2000 GALLONS
BOX DESIGN LOAD: NON-TRAFFIC, UP TO 3 FEET OF SOIL COVER, MAXIMUM 500 PSF.

FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.


9/25/08
JENSEN PRECAST
© 2004 Jensen Precast


JENSEN PRECAST

# 2,000 GALLON SEPTIC TANK (A/SS3)



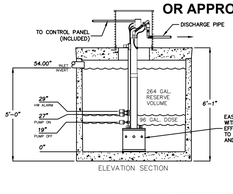

PLAN VIEW
(COVER NOT SHOWN)

## PUMP AND LIFT STATION DEMAND DOSE-RESIDENTIAL

DESIGNED TO MEET MOST RESIDENTIAL PUMPING DOSE REQUIREMENTS. CALL JENSEN PRECAST WITH YOUR TRANSPORT PIPE LENGTH, SIZE, AND LIFT TO VERIFY PUMP SELECTION.

300 GPD BIOTUBE® EASYPAK® PUMP PACKAGE

**OR APPROVED EQUAL**




ELEVATION SECTION

- 4" TURBINE EFFLUENT PUMP, WITH 5 YEAR WARRANTY, LASTS FOUR TIMES LONGER THAN CENTRIFUGAL PUMPS.
- FLOATS CAN BE EASILY ADJUSTED TO CHANGE DOSE VOLUME.
- SIMPLEX ELECTRO-MECHANICAL CONTROL PANEL WITH AUDIO AND VISUAL ALARM.
- POWER REQUIREMENTS: 120 VOLT, SINGLE PHASE AT 60 HZ.
- 360 GALLON OPERATING CAPACITY. 12 GALLONS PER VERTICAL INCH.
- DESIGN LOAD: NON-TRAFFIC WITH 5 FOOT MAXIMUM SOIL COVER WITH WATER TABLE BELOW BOTTOM OF STRUCTURE. TRAFFIC RATED DESIGNS ARE AVAILABLE.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

| MODEL | DISCHARGE | BASE FLOW RATE | DISCHARGE PIPE SIZE |
|---|---|---|---|
| PSB20-1000-1/4PC | STANDARD | 10 | 1.00" |
| PSB20-1000-1/4PC | 2PAIR BACK | 10 | 1.00" |
| PSB20-1000-1/4PC | COLD WEATHER | 10 | 1.00" |
| PSB20-1000-2B | STANDARD | 10 | 1.00" |
| PSB20-1000-2B | 2PAIR BACK | 10 | 1.00" |
| PSB20-1000-2W | COLD WEATHER | 10 | 1.00" |
| PSB20-3000 | STANDARD | 40 | 1.25" |
| PSB20-3000-2W | 2PAIR BACK | 40 | 1.25" |
| PSB20-3000-2W | COLD WEATHER | 40 | 1.25" |
| PSB20-5000 | STANDARD | 65 | 2.00" |
| PSB20-5000-2W | 2PAIR BACK | 65 | 2.00" |
| PSB20-5000-2W | COLD WEATHER | 65 | 2.00" |

*VAULT DOSE VOLUME TO INCLUDE TRANSPORT PIPE VOLUME


BIOTUBE AND EASYPAK® ARE TRADEMARKS OF ORENCO SYSTEMS, INC.
Jensen Precast reserves the right to make changes to product design and specifications without notice. Jensen Precast disclaims responsibility for misinformation or advice on product design.



6/25/2018
2432 LA MANCHA - SEPTIC-REV 9-26-22.DWG

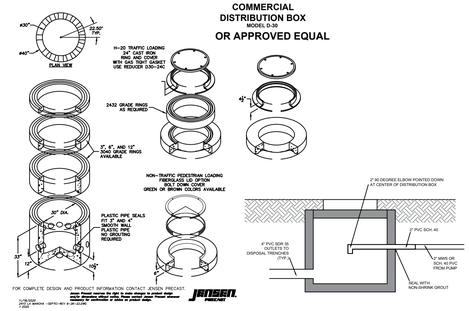

JENSEN PRECAST

# WET WELL (B/SS3)

## COMMERCIAL DISTRIBUTION BOX

MODEL D-30

**OR APPROVED EQUAL**





Jensen Precast reserves the right to make changes to product design and specifications without notice. Jensen Precast disclaims responsibility for misinformation or advice on product design.

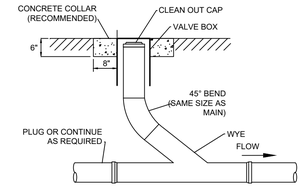


10/28/2020
2432 LA MANCHA - SEPTIC-REV 9-26-22.DWG


JENSEN PRECAST




# DISTRIBUTION BOX (C/SS3)



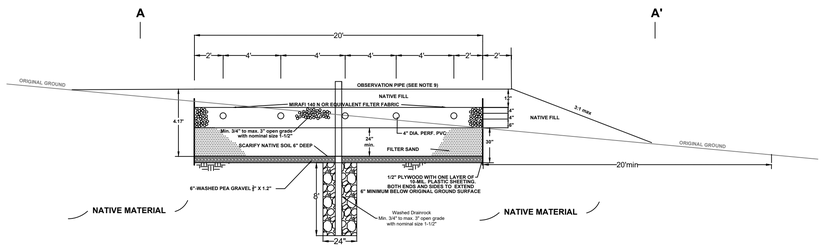

# CLEAN OUT (D/SS3)

Know what's below.
Call before you dig.

| NO | DESCRIPTION | DATE | BY | CHK'D |
|---|---|---|---|---|
| | REVISIONS | | | |

PREPARED FOR:
JON RABE

0" 1/2" 1"
INCH@FULL SCALE




NOTES:
(A.) CLEAN/WASHED GRAVEL IS IMPERATIVE IN THE GRAVEL LAYER OVERLYING THE FILTER SAND. GRAVEL WITH FINE-GRAINED MATERIAL ("DIRTY" GRAVEL) CAN CLOG THE SAND FILTER AND WILL BE REJECTED DURING INSPECTION.

1) THE DISPOSAL SYSTEM SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE GUIDELINES FOR INTERMITTENT SAND FILTERS (SECTION 100.105, WASHOE COUNTY DISTRICT HEALTH DEPARTMENT "REGULATIONS GOVERNING SEWAGE, WASTEWATER, AND SANITATION", EFFECTIVE FEBRUARY 27, 1995, AS AMENDED MAY 23, 2013).
2) SEAL SEPTIC TANK AND WET WELL OR DOSING CHAMBERS AND UTILIZED INTERMITTENT DOSING SYSTEM
3) AT INLET TO DISPOSAL FIELD, PROVIDE A WATERTIGHT SEAL BETWEEN THE DISTRIBUTION LINES AND IMPERMEABLE MEMBRANE.
4) ENGINEERED FILL COMPACTED TO 95% RELATIVE COMPACTION: THE MATERIAL TO BE FREE OF ORGANIC MATTER AND DEBRIS, CONFORMING TO THE FOLLOWING GRADATION:

| SIEVE SIZE | PERCENT PASSING (BY DRY WEIGHT) |
|---|---|
| 4 INCH | 100 |
| 3/4 INCH | 75-90 |
| NO. 200 | 20-40 |

PLASTICITY INDEX: 15 MAXIMUM LIQUID LIMIT 30 MAXIMUM

5) DISTRIBUTION LINES SHOULD BE SLOPED A MINIMUM OF 2 INCHES TO A MAXIMUM OF 4 INCHES PER 100 FEET. THE BOTTOM OF THE TRENCH SHOULD BE LEVEL.
6) FILTER SAND SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 100.105, WASHOE COUNTY DISTRICT HEALTH DEPARTMENT "REGULATIONS GOVERNING SEWAGE, WASTEWATER, AND SANITATION", AS AMENDED MAY 23, 2013.
7) A REPRESENTATIVE SAMPLE OF THE SAND SHALL BE TESTED BY A RECOGNIZED TESTING FACILITY TO DOCUMENT CONFORMANCE WITH THE GRADATION REQUIREMENTS PRIOR TO HAULING. THE SUPPLIER SHALL PROVIDE CERTIFICATION OF THE MATERIAL QUALITY.
8) PERIMETER FILL SHALL BE OF MATERIAL NATIVE TO THE AREA OR SIMILAR TO NATIVE SOILS.
9) INSTALL VERTICAL, 4 INCH DIAMETER OBSERVATION PIPE AT THE MIDPOINT OF THE BED. THE PIPE SHALL BE SLOTTED WITHIN THE GRAVEL AND SAND LAYERS AND EXTEND AT LEAST 6 INCHES ABOVE THE SURFACE OF THE BED AND TO A DEPTH OF 6 INCHES BELOW THE ORIGINAL GROUND SURFACE. A 1/8 INCH DIAMETER HOLE SHALL BE DRILLED IN THE 6 INCH PORTION OF THE PIPE WHICH PROTRUDES ABOVE THE SURFACE. PROVIDE A TIGHT FITTING, REMOVABLE PIPE CAP.
10) TO MAINTAIN 2' SEPARATION FROM MAXIMUM SEASONAL HIGH GROUNDWATER LEVEL, PLACE THE BOTTOM OF THE DISPOSAL SYSTEM ON THE EXISTING GROUND SURFACE.
11) THE SINGLE PLY IMPERMEABLE MEMBRANE SHALL NOT HAVE ANY PENETRATIONS THROUGH THE MEMBRANE BELOW 6 INCHES FROM THE FINISH GRADE.
12) THE SAND UNDERNEATH THE DISTRIBUTION BOX WILL BE COMPACTED TO MITIGATE AGAINST SETTING.




NOTES:
(A.) TWO ROWS OF 1/2" DIA. HOLES.
(B.) EACH ROW OF HOLES SHALL BE SPACED APPROX. 5" CENTER-TO-CENTER.
(C.) HOLES SHALL BE ON THE BOTTOM HALF OF THE PIPE AS SHOWN.
(D.) USE 6" PVC SCH 35 FACTORY PERFORATED PIPE BY JM EAGLE OR PACIFIC PLASTICS (OR APPROVED EQUAL).

PERFORATED PIPE DETAIL

# CROSS SECTION A-A' SAND FILTER DETAIL (E/SS3)

GIVEN: Proposed 7 bedroom residence with a 2,000 gallon per day septic tank. The design percolation rate is 40 minutes per inch. The primary and repair disposal system are to be engineered "T" sand filter.

USE: $Q = \frac{5}{\sqrt{t}}$ where Q = rate of application, gallons per day per square foot (gpd/sqft); t = design percolation rate, minutes per inch (mpi)

$Q = \frac{5}{\sqrt{40}} = 0.79$ gpd/sqft

REQUIRED AREA: $\frac{2{,}000 \text{ gpd}}{0.79 \text{ gpd/sqft}} = 2{,}532$ sqft $\qquad \frac{2{,}532 \text{ sqft}}{3^*} = 844$ sqft

* Per WCDHD Section 100.105(10)

A) DOSING CYCLE: $V = (\pi)(R)^2(L)(0.70)$

$\pi = 3.14$
R= Radius of pipe (2" for 4"ø pipe)
L= length of perforated pipe (180 ft.)
V= 70% of the volume of the perforated pipe
62.4 $\frac{\text{lbs.}}{\text{ft.}^3}$ = Weight of water per cubic foot
8.33 $\frac{\text{lbs.}}{\text{gal.}}$ = Pounds per gallon of water

$(3.14)(2 \text{ in./}12\frac{\text{in.}}{\text{ft.}})^2(200 \text{ ft.})(0.70) = 10.99 \text{ ft.}^3$

$\frac{(10.99 \text{ ft.}^3)(62.4\frac{\text{lbs.}}{\text{ft.}^3})}{8.33 \frac{\text{lbs.}}{\text{gal.}}} = 82$ gallons

The total dose of 96 gallons is 70% of the volume of the perforated pipe at 82 gallons and 14 gallons for drain back of the transport line.

REQUIRED DIMENSIONS:
Primary and Repair Systems: 20 ft. wide by 45 ft. long engineered "T" sand filter bed (900 sqft)

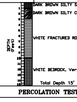
# CALCULATIONS

HOLE NO. 1 (#1)
LOCATION: 2432 La Mancha Drive
FIELD TECHNICIAN: MD
SOIL TESTED: DARK BROWN SILTY CLAY WITH GRAVEL (CL)
DIMENSION: 6" Wide X 12" Deep
DATE: Set-Up 5/12/22, Run 5/13/22

LOG

| TIME (Hours/Minutes) | MEASURED DROP (Inches) | REMARKS |
|---|---|---|
| 09:12 | 0.00 | Add initial water 3AV 096260 |
| | | Presoak 3AV 096260 (4 Hours) |
| 09:13 | 0.00 | Readjust water to 6" Over Gravel 3AV 096270 |
| 9:30 | 0.38 | Proceed 3AV 096275 |
| 9:36 | 0.13 | |
| 9:30 | 1.88 | |
| 9:30 | 1.75 | |
| 9:30 | 1.06 | |
| 9:36 | 1.44 | |
| 9:30 | 1.38 | Terminate 3AV 096275 |
| | | PERCOLATION RATE: 31.7 MPI |
| | | TEST PERFORMED AS: 6 FEET |
| | | PIT EVALUATED BY:Wilson Mountjoy (vCWD) |

Location: 39.453036, -119.660879



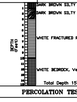

| File No. 2204.001-B | PERCOLATION TEST RECORD | Date: 5/13/22 |
|---|---|---|
| WESTEX Consulting Engineers | 2432 La Mancha Drive APN 025-241-01 Washoe County, Nevada | Plate No. 1 |

HOLE NO. 2 (#2)
LOCATION: 2432 La Mancha Drive
FIELD TECHNICIAN: MD
SOIL TESTED: WHITE FRACTURED ROCK
DIMENSION: 6" Wide X 12" Deep
DATE: Set-Up 5/12/22, Run 5/13/22

LOG

| TIME (Hours/Minutes) | MEASURED DROP (Inches) | REMARKS |
|---|---|---|
| 09:12 | 0.00 | Add initial water 3AV 096260 |
| | | Presoak 3AV 096260 (4 Hours) |
| 09:13 | 0.00 | Readjust water to 6" Over Gravel 3AV 096270 |
| 9:30 | 1.63 | Proceed 3AV 096275 |
| 9:36 | 1.44 | |
| 9:30 | 1.25 | |
| 9:30 | 1.13 | |
| 9:30 | 0.94 | |
| 9:36 | 0.81 | |
| 9:30 | 0.75 | Terminate 3AV 096275 |
| | | PERCOLATION RATE: 40 MPI |
| | | TEST PERFORMED AS: 6 FEET |
| | | PIT EVALUATED BY:Wilson Mountjoy (vCWD) |

Location: 39.453065, -119.660879




| File No. 2204.001-B | PERCOLATION TEST RECORD | Date: 5/13/22 |
|---|---|---|
| WESTEX Consulting Engineers | 2432 La Mancha Drive APN 025-241-01 Washoe County, Nevada | Plate No. 2 |

# PERCOLATION TEST

1. PIPING BETWEEN THE HOUSE AND SEPTIC TANK, AND SEPTIC TANK AND WET WELL SHALL HAVE A MINIMUM OF 2% SLOPE.
2. NO COMMUNITY SEWER AVAILABLE WITHIN 400' OF THE PROPERTY.
3. DESIGN PERCOLATION RATE IS 40 MINUTES PER INCH.
4. BASED ON COMMUNITY PARCEL NO. 32031C2870G, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, DATED MARCH 16, 2009, THE ENITE PROPERTY IS LOCATED IN ZONE X (UNSHADED). THIS FLOOD ZONE IS OUTSIDE AREAS OF 0.2% ANNUAL CHANCE FLOODS (100-YEAR FLOOD).
5. NO PUBLIC WELL WITHIN 200' OF THE PROPERTY.
6. DRAINAGE AROUND RESIDENCE SHALL COMPLY WITH APPLICABLE BUILDING CODES.
7. GRADING MAY BE REQUIRED IN THE PRIMARY AND REPAIR SYSTEM AREAS TO ENSURE EQUAL DISTRIBUTION AND FLAT BOTTOMS FOR THE SAND FILTER BEDS.
8. SEPTIC SYSTEM MAINTAINENCE IS RECOMMENDED. VISIT THE EPA WEBSITE AT Http://cfpub.epa.gov/owm/septic/homeowners.cfm FOR MAINTAINENCE PROTOCOLS.
9. VEHICULAR TRAFFIC, LARGE ANIMAL CONFINEMENT, MATERIAL STORAGE, AND PAVING ARE PROHIBITED IN THE DISPOSAL FIELD AREA.

# SEPTIC NOTES

OWNER:
JONATHAN & AMANDA RABE
6295 MOHAVE COURT
SUN VALLEY, NEVADA 89433

ENGINEER:
WESTEX CONSULTING ENGINEERS
P.O. BOX 18871
RENO, NEVADA 89511
775-771-9539




# VICINITY MAP

REGISTERED PROFESSIONAL ENGINEER, STATE OF NEVADA
BLAKE DOUGLAS CARTER
CIVIL
Digitally signed by Blake D. Carter
Date: 2022.10.04 11:04:33 -07'00'
NO. 22331

SEPTIC ONLY

WESTEX Consulting Engineers
220 S. Rock Blvd, Ste 12; Reno, NV 89502

RABE RESIDENCE
SITE IMPROVEMENTS
SS 3
SEPTIC DETAILS
CARSON CITY NEVADA
WESTEX PROJECT#: 2204.001-B 8/30/2022

APPROVALS

SS 3
SHEET 3 OF 3

G:\Shared drives\Westex Project Files\WESTEX Project Files\2204.001-B JON\1-Jo Manchs Dr-Septic\Jos Rabe\03 Plans\2410-Jo Manchs Septic-REV 9-26-22.dwg, 8/26/2022 12:55:43 PM, OWNER