Yavapai County Development Services Department
Environmental Services Unit

1120 Commerce Dr.
Prescott, AZ 86305
(928) 771-3214

10 S. 6th St.
Cottonwood, AZ 86326
(928) 639-8151

ALTERNATE SYSTEM PERMIT APPLICATION

(Notice of Intent to Discharge)

P52018000370

Date of Application: 12/13/2017

Residential **Alternate System**

I. Property/Project Description:

Property Owner:	Current Address:
Phone Number:	

Subdivision: XX Lot no.: Acres:

Property Street Address:

Longitude and Latitude of Disposal Area: 34.525366 N 112.276090 W Parcel: 402-04-276L

Proposed Number of Bedrooms: 6 Fixture Count: 41

Disposal Type: Alternate Engineered Pad

Tank Size 1500/750 Disposal Area 1011 Linear Length 68 Pads

Basic Description of System:

402-04-276L. ALTERNATE SEPTIC FOR 7-BDRM RESIDENCE.
R18-9-E309. Installation of a new septic tank and Engineered pad treatment and disposal works to service a 6-bedroom residence with 41 fixture units. Design flow is 900-gallons per day. 5/5 TSS & BOD. System to consist of:
1-1500 gallon Septic Tank
1-750 gallon septic tank
68 Eljen B43 Modules
83 CY ASTM C-33 washed sand
Sewage pump used to pump sewage from workshop to onsite wastewater system will be reviewed and permitted by the applicable Building Department.

II. Proposed Septic System Design:

Width: 5 Aggregate Depth: 19-inch Cover: 23-inch

Total Depth: 42-inch Sq. Ft./Linear Ft.: Perc Rate:

SAR (g/day/sq. ft.): 0.89 SARa

IV. Applicant Information: Permit Number: P52018000370

ADAM GOLDENSTEIN
602-626-0980

11136 HAVASUPAI TRL
DEWEY AZ 86327

APPROVAL TO CONSTRUCT (Provisional Verification): This means that approval is given to build or repair the septic system as shown on the attached site plan.

See attached documents for special issues and requirements.

Yavapai County Development Services

Prescott Office
1120 Commerce Drive, Prescott, AZ 86303
(928) 771-3214 Fax: (928) 771-3432

Cottonwood Office
10 S. 6th Street, Cottonwood, AZ 86326
(928) 639-8151 Fax: (928) 639-8153

Addressing – Building Safety – Customer Service & Permitting – Environmental –Land Use – Planning

Construction Authorization for an Engineered Pad, R18-9-E309.4.09 General Permit: Less Than 3000 GPD Design Flow Alternative On-site Wastewater System

APN:402-04-276L
Date: February 15, 2018

Construction Authorization for the above-described facilities as represented in the approved plan documents on file with the Environmental Unit of the Yavapai County Development Services Department signed by Adam Goldenstein and dated February 15, 2018, is hereby given, subject to the following provisions:

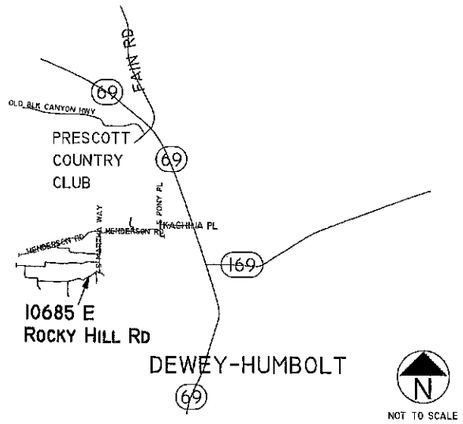
- Construction shall be in accordance with plans and specifications stamped "CONSTRUCTION AUTHORIZATION (APPROVAL TO CONSTRUCT)," which are dated and signed by the authorized the Environmental Unit staff.
- Arizona Administrative Code Title 18, Chapter 9, Article 3. State Law (ARS 49-104, B.10) requires that the construction of the project must be in accordance with the rules and regulations of the Arizona Department of Environmental Quality.
- The wastewater treatment and disposal system shall be installed and constructed in strict conformance with the approved plans and specifications. SIGNIFICANT DEVIATION FROM THE APPROVED PLANS AND SPECIFICATIONS MAY RESULT IN WITHDRAWAL OF THE CONSTRUCTION AUTHORIZATION OR MAY REQUIRE MAJOR MODIFICATIONS TO THE SYSTEM TO MEET ADEQ AND YAVAPAI COUNTY STANDARDS. If changes from the approved plans and specifications are anticipated, the designer is urged to contact the Environmental Unit of the Yavapai County Development Services Department for possible approval of the changes or re-permitting of the disposal system.
- Approved system shall not serve more than the number of bedrooms or gallons per day noted on the first page of this permit.
- Effluent disposal area shall be located as per approved plans and contain the minimum disposal area as noted on the front page of this permit.
- Wastewater treatment plant effluent shall be contained within the owner's property line.
- The effluent disposal system shall be properly maintained and operated in accordance with ADEQ and Yavapai County policies.
- Systems designed by a non-registrant will be subject to construction inspections at key points of the installation as follows:
    - Components and geotextile material in place but not backfilled
    - Sand to the top of the Pad
    - Water tightness test
    - Final grade and drainage diversion
- Upon completion, the applicant shall submit three sets of signed, sealed and certified "as-built" plans for the system, the original Certificate of Completion (EEC), all testing data necessary for

system approval, and an Operation and Maintenance (O&M) Manual for the sewage disposal system. The certificate of completion and one set of "as-built" plans shall bear the original designer's seal and signature. The "as-built" plans submitted by the designer shall ACCURATELY represent the installed treatment unit and disposal system location, components and configuration, and shall include all additional information necessary to issue a Discharge Authorization (Approval to Operate).

- The applicant shall ensure that the following tasks are performed, as applicable.
    - Components are installed on a firm foundation that supports the components and operating loads;
    - The site is prepared to protect native soil beneath the soil absorption area and in adjacent areas from compaction, prevent smeared absorption surfaces, minimize disturbances from grubbing, and otherwise preclude damage to the disposal area that would impair performance;
    - Components are protected from damage at the construction site and installed in conformance with the manufacturer's instructions if consistent with this Article;
    - Treatment media is placed to achieve uniform density, prevent differential settling, produce a level inlet surface unless otherwise specified, and avoid introduction of construction contaminants;
    - Backfill is placed to prevent damage to geotextile, liner materials, tanks, and other components;
    - Soil cover is shaped to shed rainfall away from the backfill areas and prevent ponding of runoff; and
    - Anti-buoyancy measures are implemented during construction if temporary saturated backfill conditions are anticipated during construction.
- Engineered Pad installation requirements
    - In addition to the applicable requirements in R18-9-A313(A) an applicant shall place sand media to obtain a uniform density of 1.3 to 1.4 grams per cubic centimeter.

If construction has not started within two years of the date of issue this certificate will be VOID and a new application and fees will be required.

VICINITY MAP

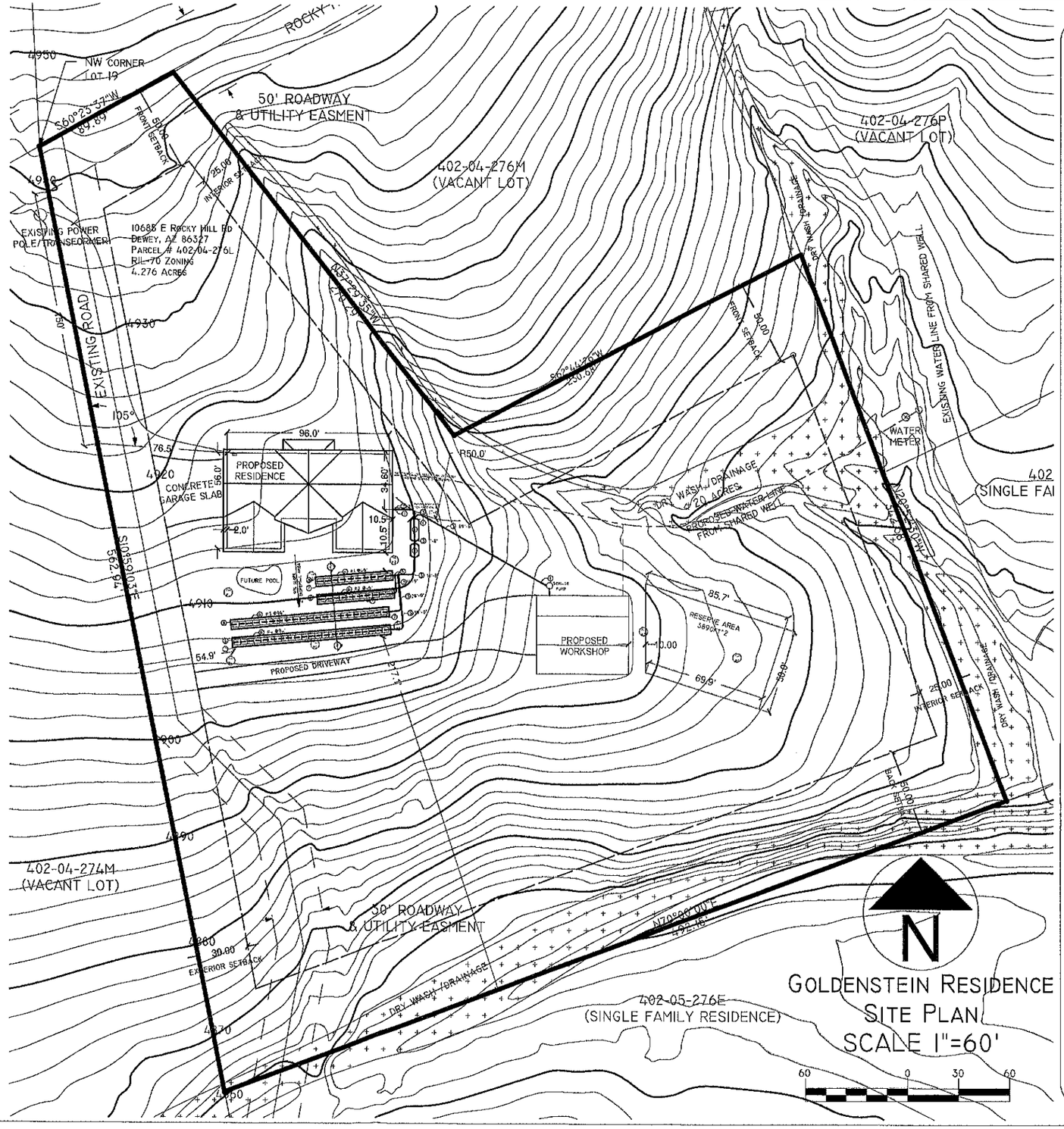


GENERAL NOTES

1. SYSTEM DESIGN AND INSTALLATION SHALL COMPLY WITH ARIZONA ADMINISTRATIVE CODE R18-9-A314 AND ELJEN GSF ARIZONA DESIGN & INSTALLATION MANUAL SEPTEMBER 2010, WWW.ELJEN.COM
2. HOMEOWNERS MANUAL AND RECOMMENDED MAINTENANCE AVAILABLE FROM HTTP://WWW.ELJEN.COM/LITERATURE

SITE PLAN NOTES

1. THERE IS NO PUBLIC SEWER WITHIN 400' OF THE PROPERTY.
2. THERE ARE NO WELLS WITHIN 100' OF THE SEPTIC.
3. WATER TO BE PROVIDED BY SHARED WELL LOCATED ON ADJACENT PARCEL 402-05-276Q.
4. THERE ARE NO WATER LINES WITHIN 10' OF THE SEPTIC.
5. ALL SETBACKS ARE MAINTAINED AS SPECIFIED IN TABLE OF R-18-9-A312c.
6. SETBACK LIMITATIONS CLOSER THAN 200' AS SPECIFIED IN ARE INDICATED ON SITE MAP R18-9-A312c
7. SURFACE LIMITING CONDITION IDENTIFIED IN R18-9-A310(C)(2): WASHES TO THE EAST AND SOUTH.
8. SUBSURFACE LIMITING CONDITION IDENTIFIED IN R18-9-A310(D)(2): 5-12' DEEP TEST HOLES.
9. CLEAN OUTS SHALL BE PROVIDED IN THE 4" SEWER SERVICE 2' FROM THE HOUSE AND WORKSHOP.
10. ALL EASEMENTS AND RIGHT OF WAYS ARE SHOWN ON SITE PLAN.
11. DRAINAGE FROM ROOFTOPS OF STRUCTURES SHALL BE DIVERTED FROM THE ABSORPTION AREA
12. TRENCHES SHALL BE COVERED WITH A MINIMUM OF 12" OF SOIL BACKFILL.
13. PROPERTY CORNERS ARE MARKED WITH STEAKS AND SURVEY TAPE BY A RECENT SURVEY.
14. ALL CC&R REQUIREMENTS ARE MET.



General Notes
REV 1 ADD MILESTONES EDITED LINE DIAGRAM ADD HYDRAULIC ANALYSIS CHANGE TANKS CHANGE DESIGN FLOW & TRENCH LENGTH REV 2 BILL OF MATERIALS: EFFLUENT FILTER FOR SECOND TANK VS FIRST

No.	Revision/Issue	Date

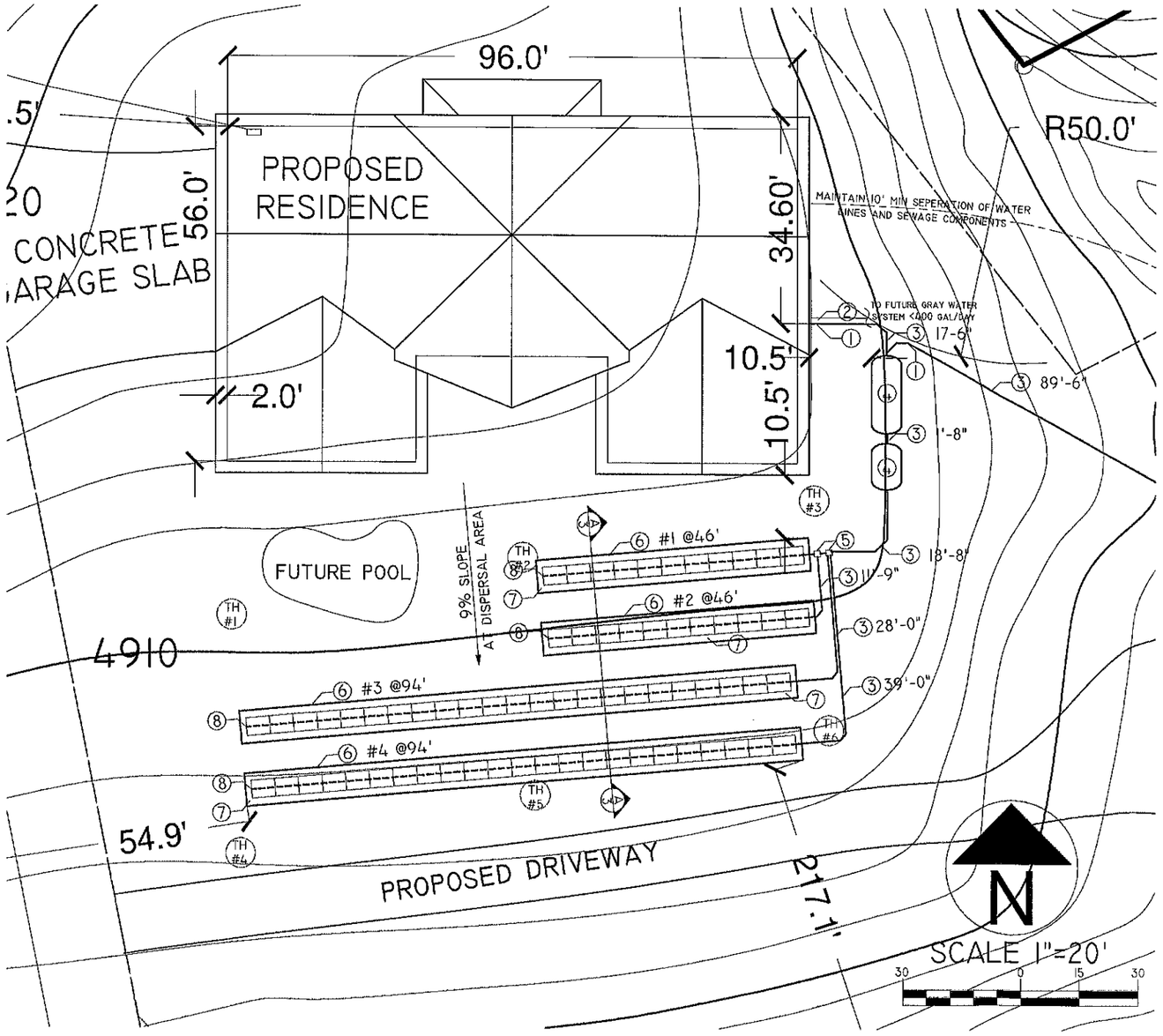
Sheet Title: SITE PLAN AND COMPONENT LOCATIONS

YCDS-EU

Construction Authorization
(Approval To Construct)
Date: 2/15/2018 By: [signature]
Permit No. R2018000310

Project Name and Address: SEPTIC PLANS FOR GOLDENSTEIN RESIDENCE
10685 E ROCKY HILL RD
DEWEY, AZ 86327

Drawn By	Sheet
ADAH GOLDENSTEIN	1 OF 3
Date: 2/15/18	
Scale: 1"=60'	



SEPTIC COMPONENT KEYNOTES

① 2-WAY CLEANOUT
② GRAY WATER VALVE
③ 4" SDR-35 OR SCHD-40* SEWER PIPE
④ 1500 / 750 GAL SINGLE COMPARTMENT SEPTIC TANKS** MEETING ALL REQUIREMENTS OF R18-9-A314
⑤ DISTRIBUTION BOX SET ON LEVELED MASONRY SURFACE
⑥ ELJEN ENGINEERED PAD TRENCH PER TRENCH DRAWINGS
⑦ INSPECTION PIPES
⑧ 4" VENT PIPE AT END OF EACH TRENCH

*SDR-35 "HIGH STRENGTH" PIPE SHALL BE USED WHEN PIPE IS GREATER THAN 2' BELOW GRADE.
**POLYTANK SHOWN: SNYDER NEXGEN D2 1500 / 750 ONE COMPARTMENT TANK

DESIGN CALCS

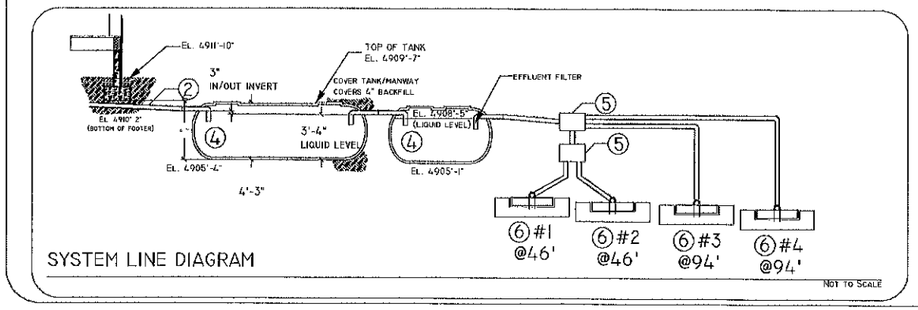
SAR (SITE INVESTIGATION)	0.4
DESIGN TSS/BOD	5/5
SARA (R18-9-A312.D.3)	0.885
DAILY DESIGN FLOW (GAL)	900
MIN DESIGN LIQ CAP (GAL)	2000
REQ. ABSORPTION AREA (FT^2)*	1016.6
B43 AREA PER EACH (FT^2)*	20
B43 UNITS NEEDED CALC.*	50.8
B43 UNITS USED	68
TRENCH LENGTH CALC. (FT)*	203.3
TRENCH LENGTH USED (FT)	280
SAND CS AREA (FT^2)	8.02
SAND VOLUME (FT^3)	2246
SAND DENSITY (LB/FT^3)	100
SAND (TON)	112

*DESIGN CALCULATIONS BASED ON ELJEN GSF ARIZONA DESIGN & INSTALLATION MANUAL SEPTEMBER 2010, WWW.ELJEN.COM

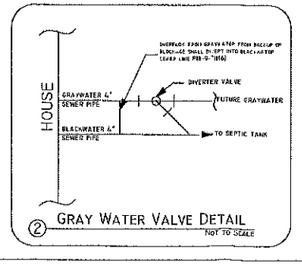
TEST HOLES

TH	DEPTH*	GRADE EL.*	BOTTOM EL.	NOTES
#1	12'	4909.0'	4897.0'	TH#1-8 SIMILAR BUT VARY TO ROCK REFUSAL. 0-1' TOPSOIL, 1-8' 70% ROCK WITH SCL IN MATRIX EVIDENCE OF MOTTLING PRESENT THROUGHOUT INDICATING SEASONAL SATURATION
#2	12'	4909.5'	4897.5'	
#3	9'	4907.5'	4898.5'	
#4	5'	4904.5'	4899.5'	
#5	6'	4903.5'	4897.5'	
#6	12'	4903.5'	4891.5	
#7	12'	4890.0'	4878.0'	
#8	8'	4884.5	4876.5'	

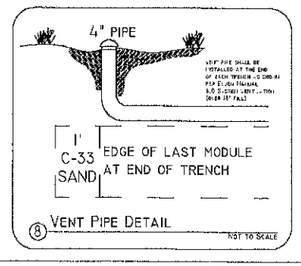
*TEST HOLE DEPTH IS FROM ORIGINAL GRADE BEFORE FINAL GRADING.



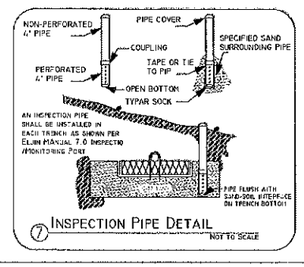
SYSTEM LINE DIAGRAM
NOT TO SCALE



② GRAY WATER VALVE DETAIL
NOT TO SCALE



⑧ VENT PIPE DETAIL
NOT TO SCALE



⑦ INSPECTION PIPE DETAIL
NOT TO SCALE

General Notes

REV 1
ADD MILESTONES
EDITED LINE DIAGRAM
ADD HYDRAULIC ANALYSIS
CHANGE TANKS
CHANGE DESIGN FLOW & TRENCH LENGTH

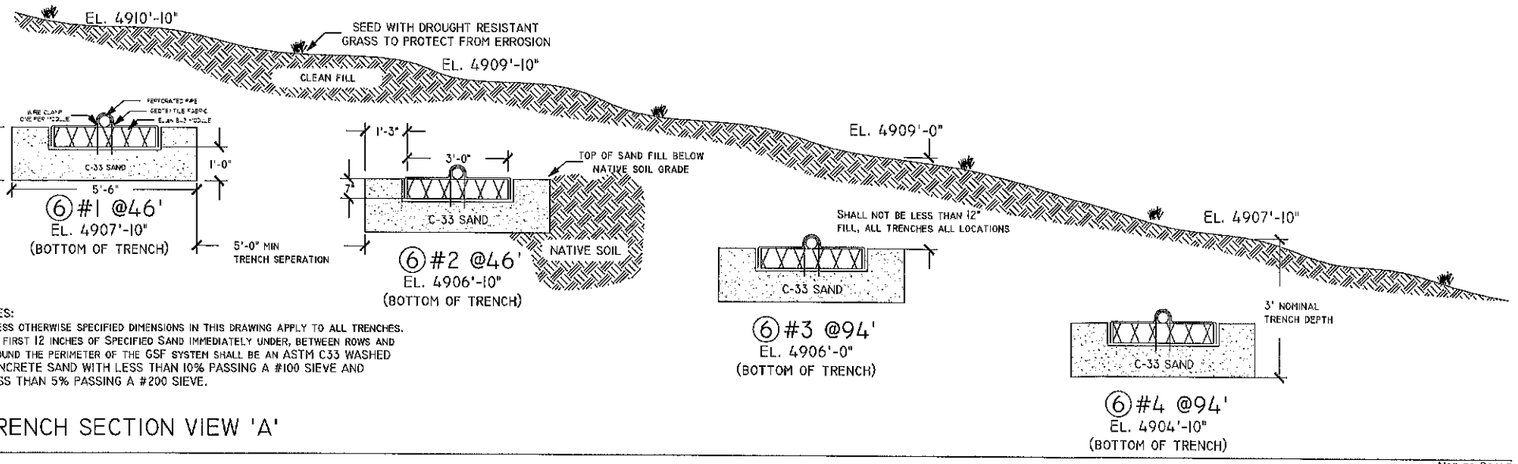
REV 2
BILL OF MATERIALS: EFFLUENT FILTER FOR SECOND TANK VS FIRST

No.	Revision/Issue	Date

Sheet Title: SYSTEM COMPONENTS AND DETAIL DRAWINGS

Project Name and Address:
SEPTIC PLANS FOR
GOLDENSTEIN RESIDENCE
10685 E ROCKY HILL RD
DEWEY, AZ 86327

Drawn By: ADAM GOLDENSTEIN
Date: 2/15/18
Scale: 1"=20'
Sheet: 2 OF 3



NOTES:
-UNLESS OTHERWISE SPECIFIED DIMENSIONS IN THIS DRAWING APPLY TO ALL TRENCHES.
-THE FIRST 12 INCHES OF SPECIFIED SAND IMMEDIATELY UNDER, BETWEEN ROWS AND AROUND THE PERIMETER OF THE GSF SYSTEM SHALL BE AN ASTM C33 WASHED CONCRETE SAND WITH LESS THAN 10% PASSING A #100 SIEVE AND LESS THAN 5% PASSING A #200 SIEVE.

TRENCH SECTION VIEW 'A'

NOT TO SCALE

HYDRAULIC ANALYSIS METHOD

THE FOLLOWING HYDRAULIC ANALYSIS USED THE METHODOLOGY PRESENTED IN:
"ON-SITE WASTEWATER TREATMENT PROCEEDINGS OF THE NINTH NATIONAL SYMPOSIUM ON INDIVIDUAL AND SMALL COMMUNITY SEWAGE SYSTEMS"
MARCH 11-14, 2001, EDITED BY: KAREN MANCL, PUBLISHED BY: AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS 2950 NILES ROAD, ST JOSEPH, MICHIGAN 49085-8659 USA

SITE SOIL CHARACTERISTICS

TEXTURE: SCL, STRUCTURE: 8K, GRADE: 2, BOD<30 MG/L, SLOPE: 6-9%, INFILTRATION DISTANCE: 24-48"

ACCORDING TO TABLE I OF REFERENCED MATERIAL: INFILTRATION LOADING RATE: 0.6 GAL/DAY/FT^2 AND HYDRAULIC LINEAR LOADING RATE: 3.3 GAL/DAY/FT

TRENCH LENGTH

DIVIDE WASTEWATER VOLUME (900GPD) BY THE HYDRAULIC LINEAR LOADING RATE (3.3 GPD/FT) TO OBTAIN THE LENGTH OF THE DISPERSAL TRENCH:
900GPD / 3.3 GPD/FT^2 = 272.7FT

TRENCH WIDTH

DIVIDE WASTEWATER HYDRAULIC LINEAR LOADING RATE (3.3GAL/DAY/FT) BY THE INFILTRATION LOADING RATE (0.6GAL/DAY/FT^2):
3.3GAL/DAY/FT / 0.6GAL/DAY/FT^2 = 5.5FT

CONCLUSION

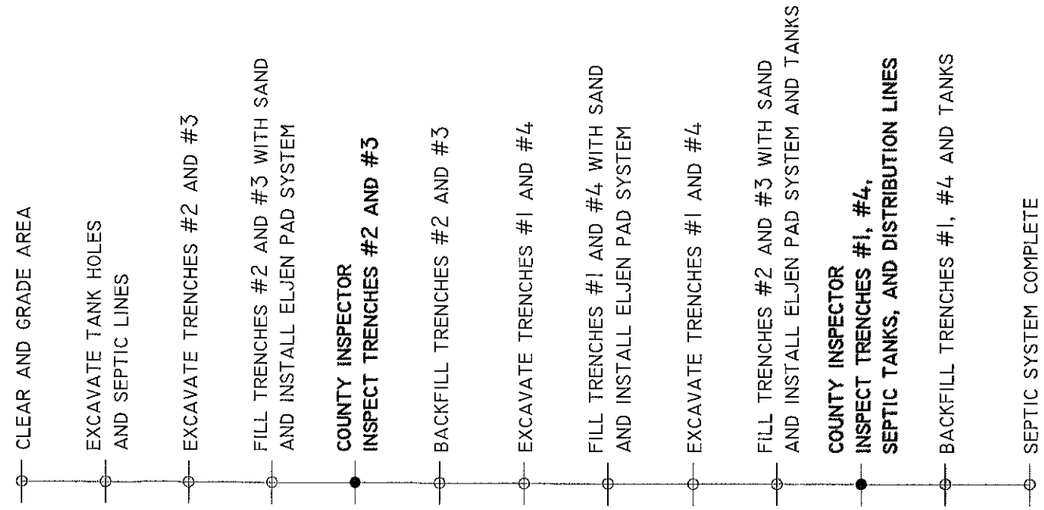
LIMITING TRENCH LENGTH OF HYDRAULIC ANALYSIS (272.7FT) < TRENCH LENGTH USED (280FT)
LIMITING TRENCH WIDTH OF HYDRAULIC ANALYSIS (5.5FT) = TRENCH WIDTH USED (5.5FT)
THEREFORE IT IS RECOMMENDED THE SITE CONDITIONS ARE SUFFICIENT TO SUPPORT THE PROPOSED DESIGN FOR RELIABLE OPERATION

HYDRAULIC ANALYSIS

LIST OF MATERIALS

1 EA	1500 GAL SEPTIC TANK: SNYDER NEXGEN D2 SINGLE COMPARTMENT
1 EA	750 GAL SEPTIC TANK: SNYDER NEXGEN D2 SINGLE COMPARTMENT
1 EA	EFFLUENT FILTER FOR SECOND SEPTIC TANK
3 YD^3	PEA GRAVEL FOR SEPTIC BEDDING
83 YD^3	ASTM C33 WASHED CONCRETE SAND
252 FT	4" DISTRIBUTION PIPE SDR-35 OR SCHD-40*
272 FT	4" PERFORATED PIPE
1 EA	2-OUTLET DISTRIBUTION BOX WITH SEALS
1 EA	3-OUTLET DISTRIBUTION BOX WITH SEALS
68 EA	B43 ELJEN PAD UNITS WITH GEOTEXTILE COVER AND WIRE CLAMPS
4 EA	TYPAR SOCK AND TAPE
8 EA	4" PIPE CAPS
_ EA	4" PIPE SDR-35 OR SCHD-40* FITTINGS AND CLEANOUTS AS NEEDED
_ EA	PIPE CEMENT GLUE AS NEEDED

*SDR-35 "HIGH STRENGTH" PIPE SHALL BE USED WHEN PIPE IS GREATER THAN 2' BELOW GRADE.



CONSTRUCTION EVENT TIMELINE

○ CONSTRUCTION EVENT ● INSEPCTION MILESTONE

General Notes

REV 1
ADD MILESTONES
EDITED LINE DIAGRAM
ADD HYDRAULIC ANALYSIS
CHANGE TANKS
CHANGE DESIGN FLOW & TRENCH LENGTH

REV 2
BILL OF MATERIALS: EFFLUENT FILTER FOR SECOND TANK VS FIRST

No.	Revision/Issue	Date

Sheet Title: HYDRAULIC ANALYSIS, MATERIAL LIST, INSPECTION MILESTONES

Project Name and Address: SEPTIC PLANS FOR GOLDENSTEIN RESIDENCE
10685 E ROCKY HILL RD
DEWEY, AZ 86327

Drawn By: ADAM GOLDENSTEIN
Date: 2/15/18
Scale: 1"=30'
Sheet: 3 OF 3