

JEFFERSON COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT
260 S KIPLING ST. LAKEWOOD, CO 80226 (303) 239-7175 FAX (303) 239-7076

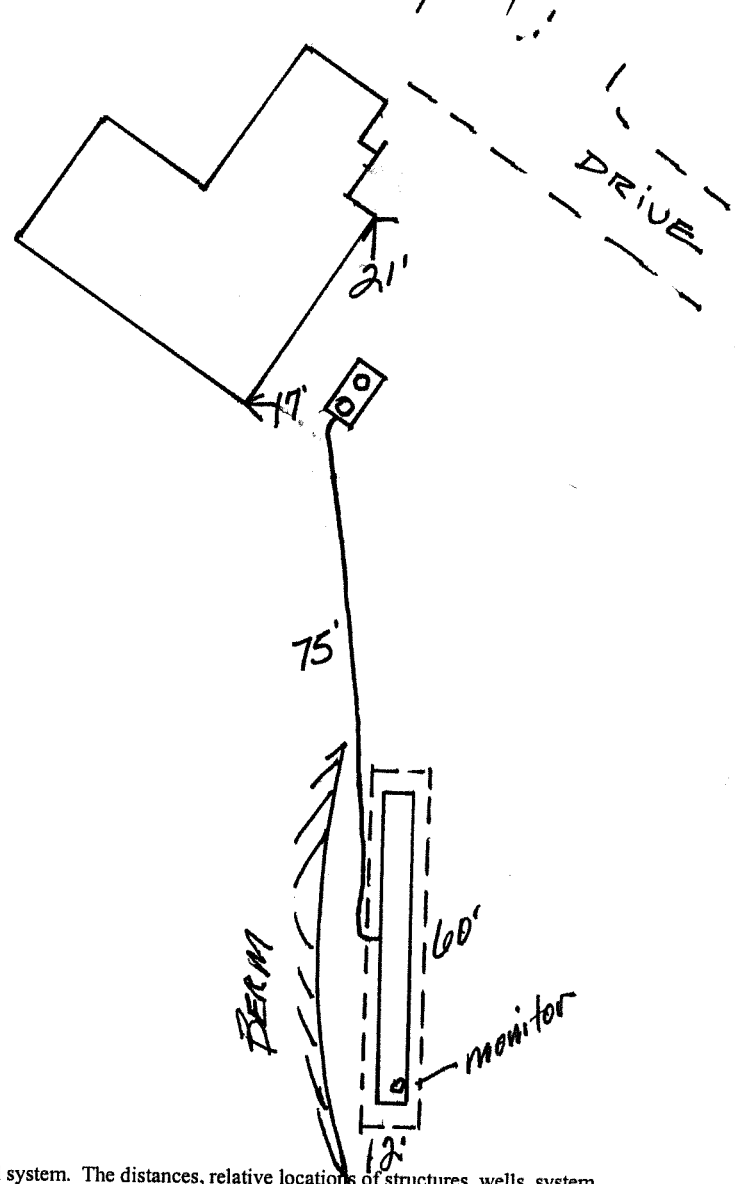
INDIVIDUAL SEWAGE DISPOSAL SYSTEM SITE INSTALLATION PLAN

PERMIT NUMBER: 18270
ADDRESS: 2085 S. Grapevine Road
LEGAL: NE1/4, Sec 29, T4S, R70W (1st,2nd,3rd Parcels, Riefenberg Parcel
Enlargment)
OWNER/APPLICANT: John Koehler
SYSTEM DESIGNED FOR: 3 Bedroom Single Family Dwelling

SEPTIC TANK SIZE (gal) 1000 ABSORPTION BED SIZE (ft²) 720

The individual sewage disposal system on this property was installed in accordance with the permit conditions and the Individual Sewage Disposal System Regulations of Jefferson County, Colorado.

INSPECTOR Victor Finkbeiner FINAL APPROVAL DATE 1/25/00
WELL - ⊙



NOTE: This drawing is an "as built" sketch of the individual sewage disposal system. The distances, relative locations of structures, wells, system components and compass directions are approximate.

JEFFERSON COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT
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INDIVIDUAL SEWAGE DISPOSAL SYSTEM PERMIT NO. 18270

ADDRESS: 2085 S. Grapevine Road
LEGAL: NE1/4, Sec 29, T4S, R70W (1st,2nd,3rd Parcels, Riefenberg Parcel
Enlargment)
DESIGNED FOR: 3 Bedroom Single Family Dwelling
DATE OF ISSUANCE: August 12, 1999 (expires one year from this date)
ISSUED TO: John Koehler
P.O. Box 151
Idledale, CO 80453

INSPECTION(S) REQUIRED: **FINAL INSPECTION**

INSPECTION DAYS: **TUES., THURS & FRI. (CALL 239-7070 BEFORE 9:00 A.M.)**

The installation of this system is to be governed by the Individual Sewage Disposal System Regulations of Jefferson County in its entirety. Your attention is called to the following:

SIZE OF SEPTIC TANK (gal): 1000 ABSORPTION AREA (ft²): 720

Unless **SPECIFICALLY** noted below, a minimum separation of at least 200 shall be maintained between all wells and absorption systems, on-or off-site, existing or proposed.

Maintain the following minimum separation distance(s) between the on-site absorption bed and the following well(s): **ONSITE, 100'**.

BLASTING IS NOT PERMITTED WITHIN 200 FEET OF ANY EXISTING WELL.

INSTALL BERM TO DIVERT SURFACE RUNOFF AROUND ABSORPTION BED.

The above conditions represent the minimum requirements as set forth in the Regulations and the engineer's design. Please be aware that the engineer may have *recommended* components such as dosing siphons or larger septic tanks. While not required, the engineer recommends their installation. Consult the engineering report for these optional recommendations.

REQUIRED ENGINEER CERTIFICATION: OPEN HOLE, Final Inspection

This sewage disposal system was installed by owner and has been inspected and approved by the Jefferson County Department of Health and Environment. The owner assumes all responsibility in case of failure or other inadequacy of this sewage disposal system.

INSPECTOR Victor Finkhaus DATE 1/25/00

ENG.JOB/PROJ.#11463

SUBJECT TO 1999

I.S.D.S. REGULATIONS



CHURCH & Associates, Inc.

ENGINEERS & GEOLOGISTS

August 3, 1999

John "J.R." Koehler
2085 S. Grapevine Road
Idledeale, Colorado 80453

Subject: Subsurface Investigation and OWS Design
Riefenberg Parcel Enlargement
First, Second, and Third Parcels within the NE ¼ of Section 29, T4S, R70W
2085 S. Grapevine Road, Jefferson County, Colorado
Job No. 11463

Dear Mr. Koehler,

As requested, we have investigated subsurface conditions and prepared an Onsite Wastewater System (OWS) design for the subject site.

SITE CONDITIONS

The investigated site is a 2.27-acre lot as indicated on Figure 1. The subject site is located in a rural mountain area where OWS and wells are required. The site slopes moderately the southeast. The slope at the proposed drain field is 2% to the east. There is a moderate cover of native grasses at the drain field site.

EXISTING AND PROPOSED CONSTRUCTION *JRK*

A ^{*one*}~~two~~-bedroom addition is proposed for the existing ^{*SRV*}~~one~~-bedroom single-family residence that is located in the north central portion of the site as indicated on Figure 1. The property is served water by an existing well located north west of the residence. An existing OWS installed by the previous owner is located south of the residence. A search of the Jefferson County Health Department Records found no file regarding the existing OWS. The existing 1000-gallon plastic septic tank meets the minimum requirements and can be used in the upgrade design, but the existing trench will be abandoned and not used in the new design.

A repair drain field is proposed south of the residence, 200 feet or greater to the existing well. The soil conditions found at the site allow for a Case 1 distance reduction to a minimum of 100 feet between the field and well. No other wells are known to exist within 200 feet of the proposed field. The average sewage load for a three-bedroom residence is 450 gallons per day (GPD) based on Jefferson County Individual Sewage Disposal System (ISDS) Regulations. The design peak loading is 675 GPD.

SUBSURFACE CONDITIONS

Subsurface conditions were exposed in test pits excavated in the drain field location. The excavation indicated the site is underlain by 4.5 feet of silty sand, underlain by silty clayey sand to 8.5 feet, the depth of the excavation. Percolation tests performed in the drain field area at 24, 30, and 36 inches below ground surface indicate the soil has a percolation rate averaging 12 minutes per inch (MPI). No free water was encountered in the test pit excavation, although iron staining of the soil 8 feet below ground surface may indicate seasonal high water exists at this depth. Additionally, the silty clayey sand may have a slower percolation rate than the silty sand thereby limiting the maximum excavation depth at 3 feet below grade.

RECOMMENDATIONS

The results of our investigation indicate an OWS can be installed at the location presented on Figs. 1 and 2 with the use of a "standard" drain field. The OWS design is based on a sewage load of 450 GPD, and an application rate of 0.95 gallons per day per square foot (GPD/SF). A septic tank capacity of 1000 gallons is required. The existing 1000-gallon, two-compartment, plastic septic tank can be used. We recommend a 12 feet by 60 feet drain field, for an area of 720 square feet, be installed.

No over-excavation of the drain field is required nor should be done. Drain field excavation is to be with a backhoe to prevent vehicular movement over the receiving soils. Activity over the drain field area during construction should be kept at a minimum to minimize compaction of the receiving soils. The bottom and lower 1-foot of the sides of the field are to be scarified with a rake, pick, shovel, or backhoe bucket teeth prior to the addition of dispersal gravel. Final grading is to be such that drainage is directed away from the field. Field excavation will be 2 feet deep with the placement of 1 foot of dispersal gravel. The drain field should be installed similar to the details presented in Figs. 2 and 3.

INSTALLATION OBSERVATIONS

The installation of the OWS is to be observed by the design engineer. Observations are required on the "open hole" excavation and prior to final backfill. The "open hole" observation should be performed prior to installation of dispersal gravel. The final observation should be performed prior to backfill, after placement of dispersal gravel and distribution pipes. Plumbing can be observed during either visit.

OPERATION AND MAINTENANCE

The owner must realize an OWS is different from public sewer service. The owner must be aware of and assume responsibility for continued maintenance of the system. We recommend the septic tank be pumped every two years. There are daily considerations such as not putting plastic or other nonbiodegradable materials into the septic system. Garbage disposal use should be minimized. Water use must be monitored so toilets are not allowed to run when seals malfunction. To illustrate the point, a running toilet can use in excess of 1000 GPD. An additional 1000 GPD loading may flood and irreparably harm the system.

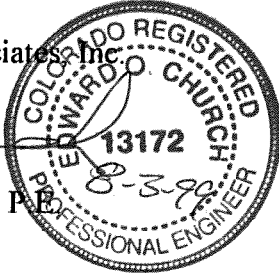
LIMITATIONS

Our investigation, layout, design, and recommendations are based on data submitted. If conditions considerably different from those described in this report are encountered, we should be called to observe the conditions. If proposed construction is changed, we should be notified to evaluate the effect of the changes on the wastewater system. All construction is to be in accordance with the ISDS regulations. Pipe type and size, burial requirements, septic tank construction, and other specifications, which are not

depicted in our report, are to conform to the requirements of the ISDS regulations. The installer of the system is to be approved by the County Health Department, and is to have demonstrated knowledge of the ISDS regulations and requirements.

If there are question, please call. The project engineer for this project is Jean Ernstberger.
Sincerely,

CHURCH & Associates, Inc.



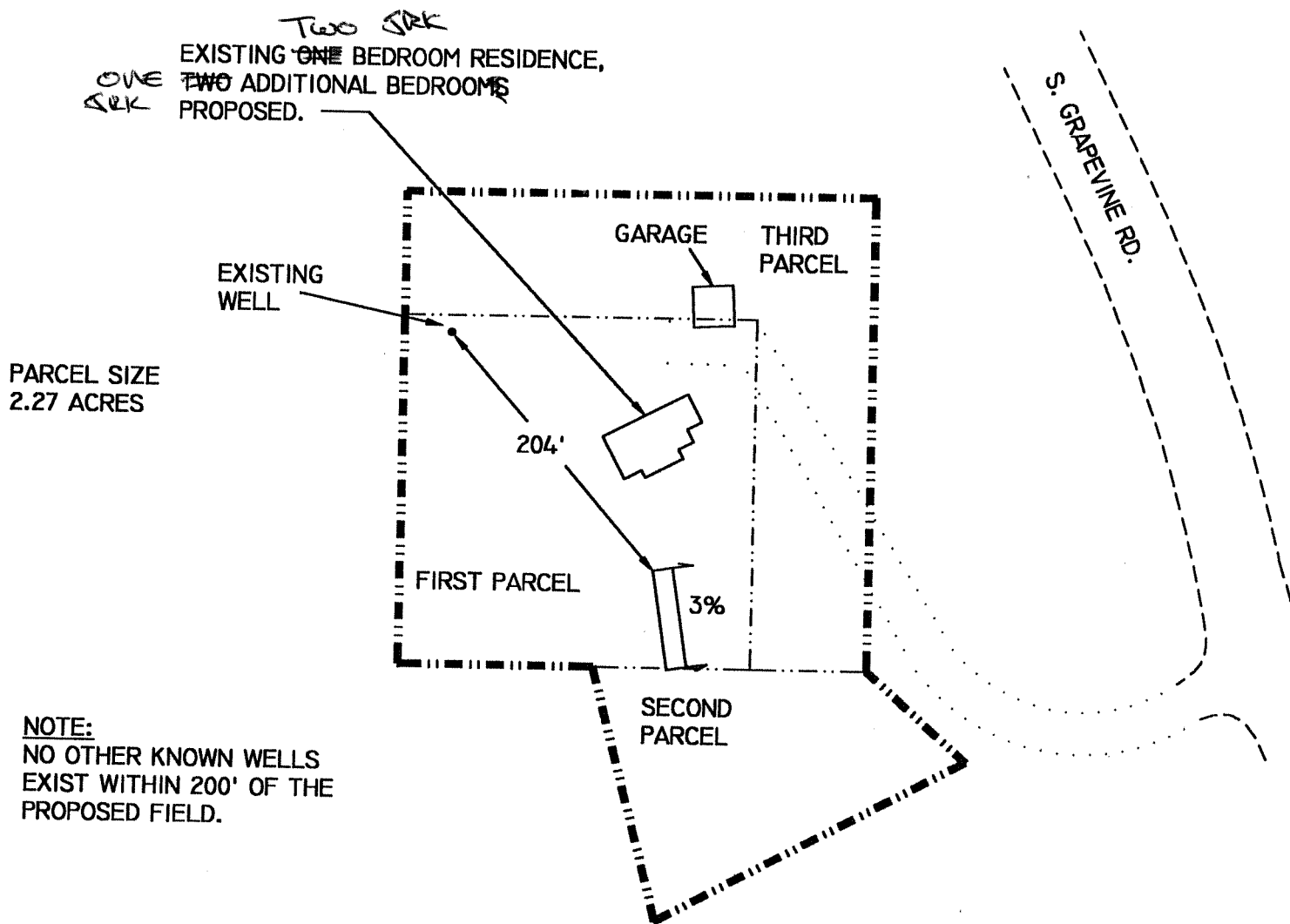
Edward O. Church, P.E.

EOC\jje

3 copies sent

HEIFENBERG PARCEL ENLARGEMENT
FIRST, SECOND, AND THIRD PARCELS WITHIN THE NE1/4 OF
SECTION 29, T4S, R70W
2085 S. GRAPEVINE ROAD
JEFFERSON COUNTY, COLORADO

SCALE
1" = 100'



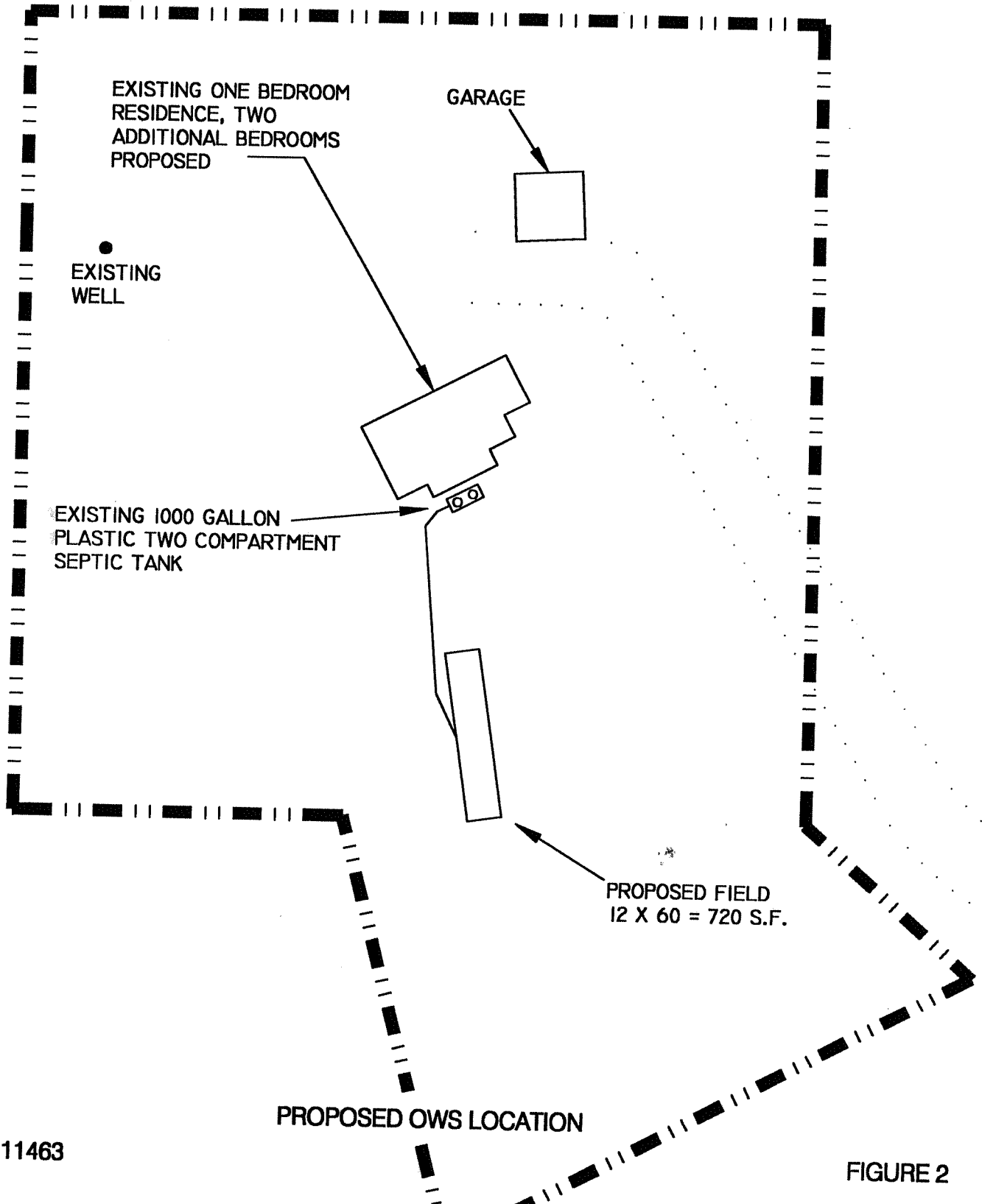
NOTE:
NO OTHER KNOWN WELLS
EXIST WITHIN 200' OF THE
PROPOSED FIELD.

THE LOCATION OF EXISTING AND PROPOSED IMPROVEMENTS SHOWN HEREIN; AND THE WELL AND/OR DRAIN FIELD LOCATIONS STAKED AT THE SITE; ARE NOT THE RESULT OF A PROPERTY SURVEY. IMPROVEMENT LOCATIONS ARE APPROXIMATE. IT IS THE PROPERTY OWNERS RESPONSIBILITY TO DEFINE PROPERTY BOUNDARIES AND ENSURE ALL ONSITE IMPROVEMENTS ARE LOCATED WITHIN THE PLATTED SITE AND OUT OF INAPPROPRIATE EASEMENTS. ALL SEPARATION DISTANCES ARE TO BE VERIFIED PRIOR TO EXCAVATION.

VICINITY SITE PLAN

HEIFENBERG PARCEL ENLARGEMENT
FIRST, SECOND, AND THIRD LEVELS WITHIN THE NE1/4 OF
SECTION 29, T4S, R70W
2085 S. GRAPEVINE ROAD
JEFFERSON COUNTY, COLORADO

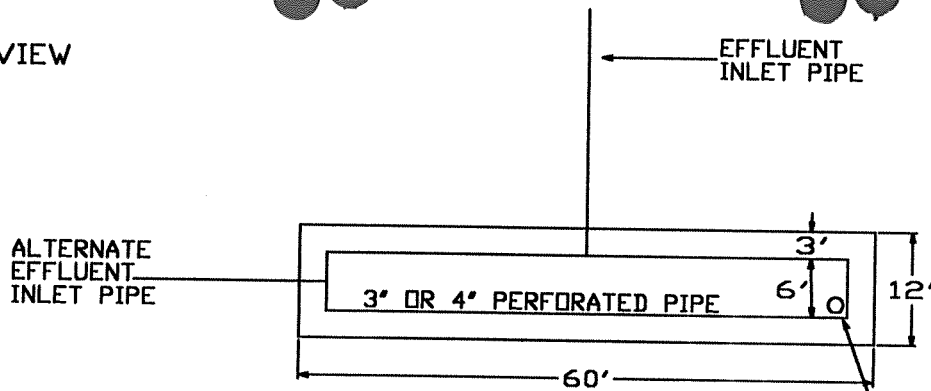
SCALE
1" = 50'



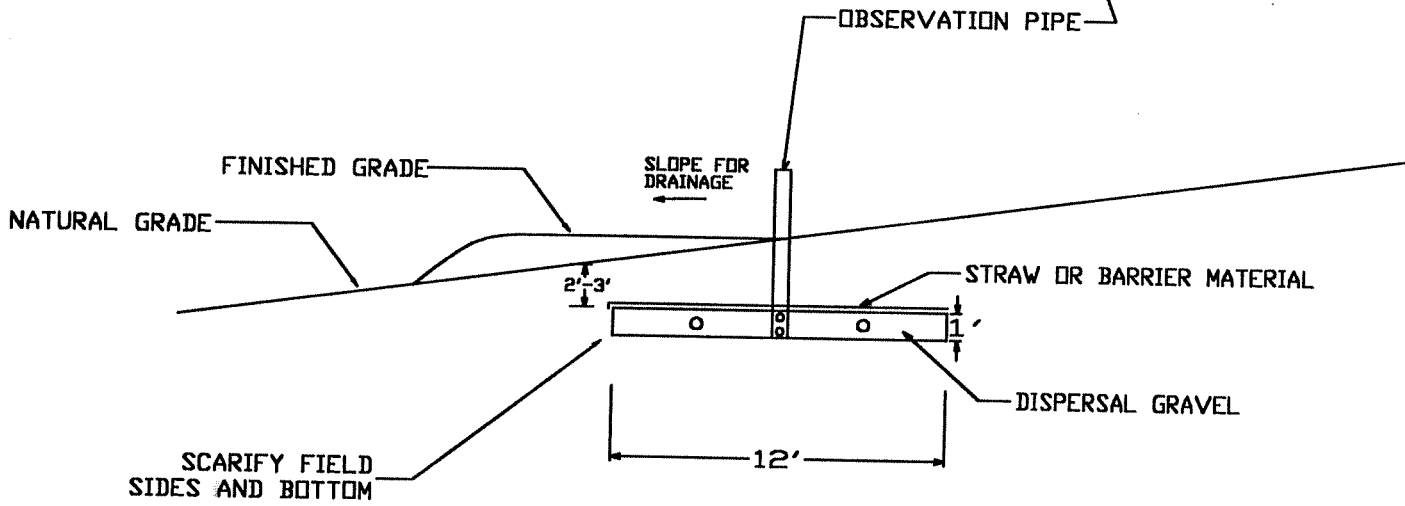
JOB NO. 11463

FIGURE 2

PLAN VIEW



END VIEW

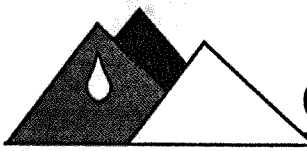


DESIGN CALCULATIONS

3 BEDROOM SINGLE FAMILY DWELLING
 LOAD $q = 450$ GPD AVERAGE
 SAND FILTER APPLICATION RATE = 0.95 GPD/SF
 $AREA = (1.5 \times 450) / 0.95$
 AREA REQUIRED = 710 SQUARE FEET

FIELD LENGTH = 60 FEET
 FIELD WIDTH = 12 FEET
 AREA PROPOSED = 720 SQUARE FEET
 DISPERSAL GRAVEL - $1/2'' - 2 1/2''$

FIELD DETAILS



CHURCH & Associates, Inc.

ENGINEERS & GEOLOGISTS



January 19, 2000

John "J.R." Koehler
2085 S. Grapevine Road
Idleedale, Colorado 80453

Subject: Installation Observations – Jefferson County ISDS Permit #18270
First, Second and Third Parcels, Riefenberg Parcel Enlargement
NE ¼ of Section 29, T4S, R70W
2085 South Grapevine Road
Jefferson County, Colorado
Job No. 11463

Dear Mr. Koehler,

We observed the installation of the onsite wastewater system (OWS) at the subject site. On August 19, 1999 we performed an "open hole" observation. On August 26, 1999 we performed a final observation of the installation of the OWS by the owner. At the time of the final observation the new drain field was installed and ready for backfill.

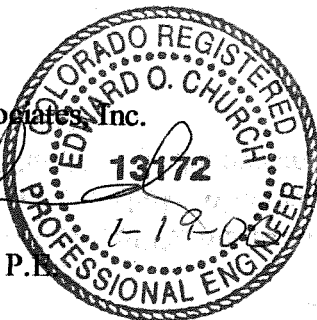
The system includes the use of the existing 1000-gallon, two-compartment, plastic septic tank and the installation of a new 12-foot by 60-foot "standard" drain field for an absorption area of 720 square feet. On August 26, 1999 septic tank risers and effluent lines had not been installed.

The components of the OWS appeared to be installed in general conformance with our plans and specifications. Our installation observations do not imply a guarantee or warranty of materials or workmanship.

If there are any questions or if we can be of further service, please call. The project manager is Jean Ernstberger.

Sincerely,

CHURCH and Associates, Inc.

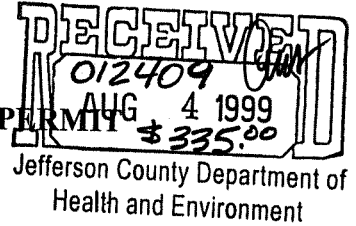


Edward O. Church, P.E.

EOC/jje

Copy to Jefferson County Department of Health and Environment

APPLICATION FOR INDIVIDUAL SEWAGE DISPOSAL SYSTEM PERMIT



Jefferson County Department of Health and Environment
260 S. Kipling, Lakewood, CO 80226
Phone: 239-7075 Fax: 239-7076

FEE: \$335.00 NEW-ADDITION-REPAIR \$110.00 RENEWAL-TANK REPLACEMENT

I. PROPERTY INFORMATION:

COMPLETE PROPERTY ADDRESS 2085 S. Grapevine Road IDLEDALE, CO 80453

LEGAL DESCRIPTION Riefenberg Parcel Enlargement, First, Second, Third Parcels within the NE1/4 of Section 29, T4S, R70W

SIZE OF PARCEL 2.27 ACRES DATE SUBDIVIDED Prior to 1972

II. APPLICANT/OWNER INFORMATION:

APPLICANT NAME: John Koehler

MAILING ADDRESS P.O. BOX 151 IDLEDALE, CO 80453
2085 S. Grapevine Rd. CIYY/ST/ZIP Idledale, Colorado 80453

PHONE (HOME) (303) 697-5607 (WORK) SAWE

OWNER NAME, IF NOT APPLICANT: N/A PHONE: —

III. STRUCTURE: (X) 3 BEDROOM SINGLE FAMILY DWELLING
() _____

IV. WATER SERVICE (specify one)

() PUBLIC WATER (district name): _____

or

(X) WELL (Colorado well permit number): _____ attach copy

V. SANITATION DISTRICT:

Is this property within a Sanitation District? () YES (X) NO. If yes, you must attach written statement from the District stating that they have no objection to this installation.

Application for a permit to install an individual sewage disposal system permit is hereby submitted. The individual sewage disposal system will be installed in accordance with the Regulations covering such systems in Jefferson County. I hereby acknowledge that the above information is true and that false information will invalidate this application or subsequent permits.

John Koehler
APPLICANT/OWNER/RESPONSIBLE PARTY

8/4/99
DATE

MAIL () PICKUP (X) isds/newapp97

RECORD OF INSPECTIONS

FIELD NOTES/COMMENTS	8/9/99 CASE SOILS

DATE	COMMENTS	DATE	COMMENTS
		8/26/99	field, lines o.k. Well 7' 100' (T). Hold for eng. certif.
		1/25/00	eng. certif. o.k.

ENGINEERING CHANGES

APPLICANT/OWNER CALL

DATE	COMMENTS	DATE	COMMENTS

TECHNICAL REVIEW (staff)

() LOT SIZE () P/L FORM () ADJ DEV () ENGR OK () GEO OK () SLOPE OK

2.27

PERMIT CONDITIONS

INSPECTIONS:

() OPEN EXCAVATION AT FEET

(X) FINAL GRADE

(X) CE () S () N

TANK SIZE: 1000 GALS ABSORPTION AREA: 720 SQ. FT

()04 REDUCTIONS FROM ONSITE WELL: lot, distance: ONSITE/100'

()08 REDUCTIONS FROM ONSITE ABS. BED: lot, distance:

()06 ALL WELLS 100 FEET FROM ON-SITE GREYWATER/ADVANCED TREATMENT ABS. BED

()07 ALL WELLS 60 FEET FROM LINED ET BED

- ()09 ABD ONSITE WELL
- ()10 SLOPE CONDITIONS
- ()11 ROAD CUT SETBACK
- ()12 FRENCH DRAIN
- ()13 WATER-SEWER
- ()20 ALARM INSTLN
- ()15 LINE-WELL
- ()16 OLD TANK
- ()17 DRY GULCH
- ()18 TANK-WELL
- ()19 SURFACE WATER
- ()27 PROPERTY
- ()21 SUBMINIMUM DISTANCES
- ()22 CONTAMINATED SOIL
- ()23 ABANDON PRIVY
- *(X)24 NO BLASTING
- *()25 BLASTING OK
- ()30 DWELLING

(X) INSTALL BERM TO DIVERT SURFACE RUN OFF AROUND ABS. BED

ENGINEER CERTIFICATION(S)

() _____ () _____

()26 FILTER MATERIALS ()29 BLASTING (X)28 PUMPS/SIPHONS/ALARMS (X)37 FINAL INSPECTION

WATER AND SEWER CERTIFICATE - SPECIAL CONDITIONS

SEWER: _____

WATER: _____

INSPECTOR: ~~8/10/99~~ [Signature] DATE: 8/10/99

CERTIFICATE OF WATER AND SEWER AVAILABILITY

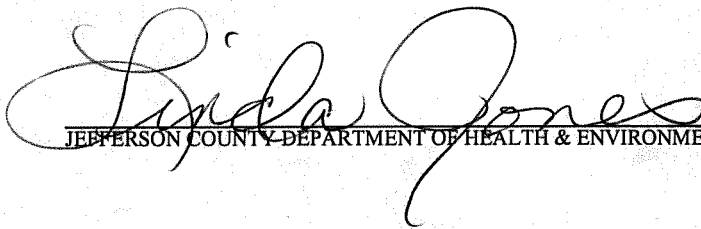
ADDRESS: 2085 S. Grapevine Road
LEGAL: NE1/4, Sec 29, T4S, R70W (1st,2nd,3rd Parcels, Riefenberg Parcel
Enlargment)
OWNER/APPLICANT: John Koehler

SEWER SERVICE

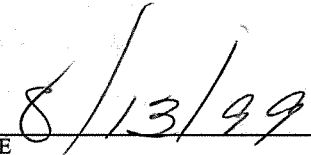
PUBLIC SEWER SERVICE IS NOT AVAILABLE FOR THIS PROPERTY; AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM (ISDS) WILL BE UTILIZED.

ISDS PERMIT NUMBER: 18270
THIS PERMIT ISSUED ON: August 13, 1999
SYSTEM IS DESIGNED FOR: 3 Bedroom Single Family Dwelling

SPECIAL CONDITIONS:



JEFFERSON COUNTY DEPARTMENT OF HEALTH & ENVIRONMENT



DATE

WATER SERVICE

() WATER SERVICE AVAILABLE

() WATER SERVICE NOT AVAILABLE

DISTRICT:

WELL PERMIT:

SPECIAL CONDITIONS:

I hereby certify the availability of water service listed above:

AGENT FOR WATER DISTRICT

DATE

JEFFERSON COUNTY HEALTH AND ZONING REVIEW

DATE