

• I. S. D. S. P E R M I T •
 TO INSTALL, CONSTRUCT, ALTER OR REPAIR
 AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Permit: 99-32

New:	Yes
Repair:	No
Remodel:	No

ROUTT COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH • P.O. BOX 770087 • STEAMBOAT SPRINGS, CO • 870-5585

This permit effective only on premises located at: 28150 CR 14

Legal description of property: SEC 12 T4N R85W

Owner: Irwin Robbins	Address: PO Box 770940	Phone: 879-4113
Applicant: SAME	Address: SAME	Cell: 610-909-7771

As authorized and required by Chapter 25, Article 10 C.R.S., permission is hereby granted to the owner or a Routt County licensed ISDS installer to construct or repair an I.S.D.S. system at the property indicated above. All work must comply with the specifications on this permit and the Guidelines on Individual Sewage Disposal Systems - Revised 1988 - Colorado State Board of Health, 5 CCR 1003-6. This permit expires one year from date of issue.

SPECIFICATIONS

Percolation rate 25 MPI

Minimum Septic Tank Capacity: 1250 gallons

Concrete

Polyethylene

bedroom, etc. 4 Bedrooms, 1 Garbage Disposal, 1 Wash machine

size: leach field/infil.

Other comment: Engineer to certify construction according to design & provide as-built

Engineer Design Please see attached Engineers design

Notice: All Sewage *HOLDING* Tanks must be Concrete

Inspections required (24 hour advance notice required):

Environmental Health Officer _____ Date _____ of System Sizing

The above individual sewage disposal system installed by _____ has received a final inspection and is approved for use by a representative of the Routt County Department of Environmental Health.

Environmental Health Officer _____ Date _____

FEE: Percolation . N/A

Permit PD

*Final
 Nawcc
 9-2-99*

ROBBINS

BUILDING PERMIT # _____
PERMIT PDV # 537
PERC PD 3/1

APPLICATION FOR INDIVIDUAL SEWAGE SYSTEM PERMIT

NEW REMODEL _____ REPAIR _____ EMERGENCY USE _____

Name of Owner IRWIN ROBBINS P.O. Box 770940 Phone 879-4113
Mailing Address Stmbt Spgs, CO 80477
Name of Applicant IRWIN ROBBINS Mailing Address Same as above Phone 879-4113 777

LOCATION OF PROPOSED SYSTEM: Street Address Z8150 CR #14

Legal Description SEC 12 T4N R85W Parcel ID# _____
(Lot # and Subdivision if applicable)

Size of Lot 40 ACRES Type of Structure: () Single Family () Other (Describe) _____
(this # can be found in the Assessor's Office)

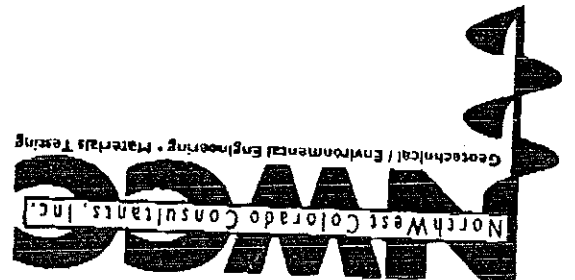
Number of: Bedrooms 4 Garbage Disposals 1 Automatic Wash Mach. 1

Water Supply: () Private Well
() Public (give name of supply) _____

An appropriate plot plan must accompany this application showing required information. Percolation tests and an on-site inspection must be arranged with the Routt County Department of Environmental Health after receipt of the application and plot plan. The permit, upon approval of this application, may be obtained at the Routt County Department of Environmental Health with payment of the required fee.

Application for an individual sewage disposal system is hereby submitted. The individual sewage disposal system will be constructed, installed and operated in accordance with the regulations governing individual sewage disposal systems within Routt County and will comply with applicable State Regulations adopted pursuant to Article 10 of Title 25, C.R.S. 1973, as amended. The undersigned acknowledges that the above information is true and that false information will invalidate the application or subsequent permit. The owner assumes all responsibility in case of failure or inadequacy of this sewage disposal system. (* Hot tubs and Jacuzzis shall not be connected to on-site sewage disposal systems.)

Signature of Applicant [Signature] Date _____



03/05/99 17:13 FAX 970 8797891

NWCC Inc.

01

Post-it® Fax Note	7871	Date	3/5	# of pages	2
To	Ed Beckin	From	Ed Beckin NWCC	Co.	NWCC
Co./Dept.	MAD	Phone #		Phone #	
Fax #		Fax #		Fax #	

March 5, 1999

Irv Robbins
934 Black Rock Road
The Gladwyne, PN 19035

Job No. 98-3837

Subject: Preliminary Septic System
Recommendations, Proposed Robbins Residence, A
Tract in Sec. 12, T4N, R85W, Routt County,
Colorado.

Gentlemen:

As requested, Northwest Colorado Consultants, Inc. has prepared this letter outlining our preliminary septic system recommendations for the proposed Robbins Residence to be constructed within a tract of land located in Section 12, Township 4 North, Range 85 West, in Routt County, Colorado. We understand that the proposed residence will be constructed with 4 bedrooms, as well as a clothes washer and garbage disposal.

To investigate the subsol conditions in the area of the proposed septic site, one profile pit was excavated on December 14, 1998 with a backhoe. A prospective septic site was located approximately 240 feet south and slightly east of the building site. The subsurface conditions in the profile pit consisted of approximately 42 inches of topsoil overlying natural clays and sandstone-siltstone bedrock. The clays were sandy, low to medium plastic, stiff, moist and light brown in color. The bedrock materials were encountered at a depth of approximately 6 feet and were low to nonplastic, hard to very hard, slightly moist and light brown in color. Groundwater seepage was not encountered in the profile pit at the time of the investigation.

The proposed septic site is located downhill of the building site in an open hay field which generally slopes gently down to southeast on the order of 5 percent. No significant drainages or other topographic features which would adversely affect construction or operation of the proposed septic system are located in the vicinity of the septic site.

Based on our experience with similar site and subsol conditions, it appears that the proposed septic site will be suitable for the construction of either a conventional seepage bed or a mounded fill seepage bed septic system located within the upper topsoil materials. The type and size of the system will depend on the results of the percolation testing which will be completed by our office in the coming months when snow and site conditions permit access. A suitable septic system design can then be completed at the client's request.

(970) 879-7888 • Fax (970) 879-7891
2063 Snow Bowl Plaza, P.O. Box 775226 • Steamboat Springs, CO 80477

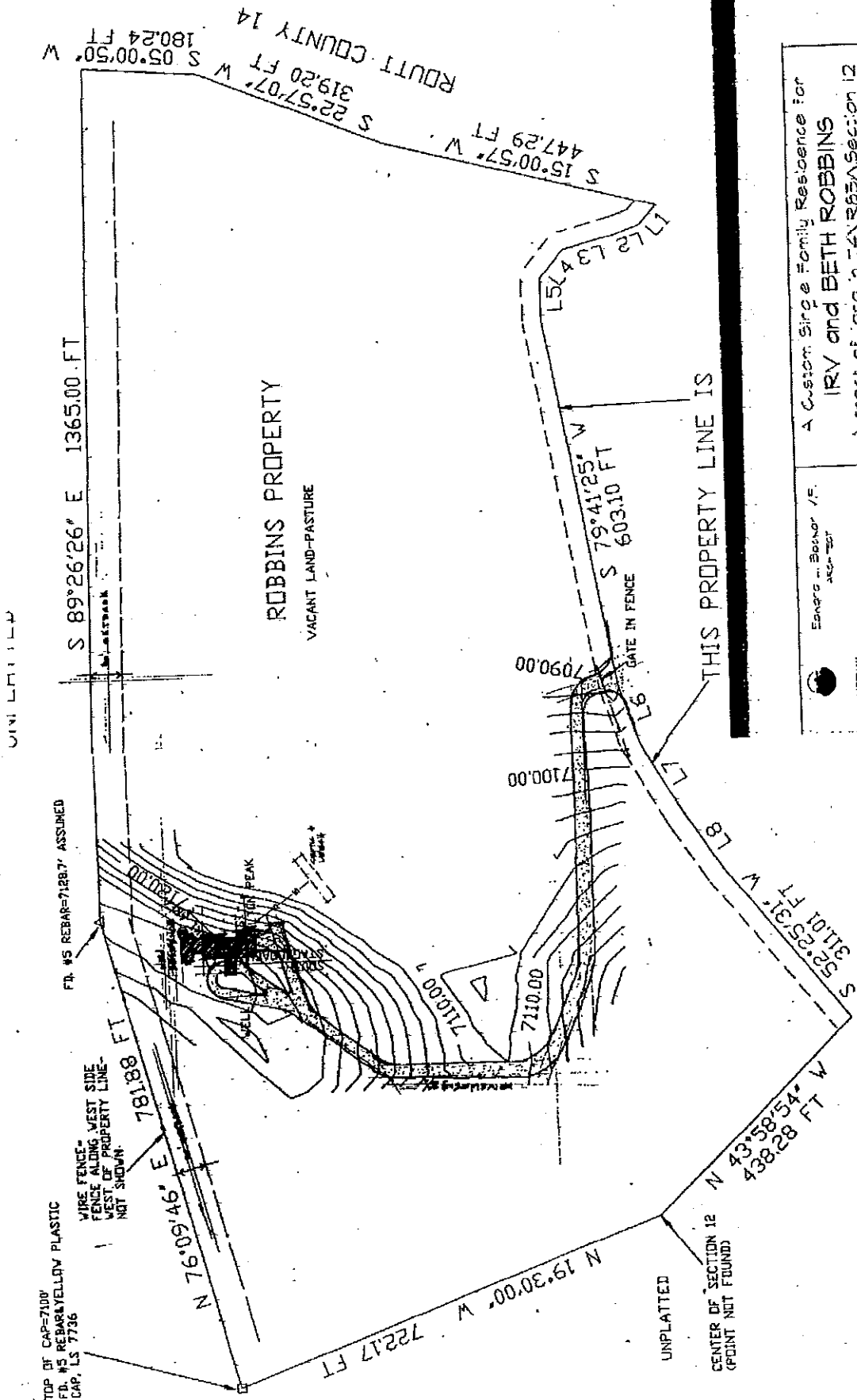
cc: Ed Becker - Mountain Architecture Design Group



 Harold N. Schleich, P.E.
 Ed Becker
 Northwest Colorado Consultants, Inc.

Sincerely,

If you have any questions regarding this letter, our observations or recommendations or if we may be of further service, please contact this office.



Engineers: Bohner / F.
1982-1987

MOUNTAIN
ARCHITECTURE
DESIGN
GROUP
P.C.

A Custom Single Family Residence for
IRV and BETH ROBBINS
A Tract of 60 Acres in T4N, R85E, Section 12
28:50 Road, Routt County Road #14
ROUTT COUNTY, COLORADO

Subject: On-Site Sewage Disposal System
Design, Robbins Residence, 28150 County
Road 14, Routt County, Colorado.

Gentlemen:

This report presents the results of an on-site sewage disposal system design for the Robbins Residence under construction at 28150 County Road 14 in Routt County, Colorado. We previously conducted a subsol investigation for the residence under this job number dated January 4, 1999.

Proposed Construction: We understand that the residence will be constructed with four bedrooms when completed.

Site Conditions: The project site is located west of County Road 14 and off the north side of Thorpe Mountain Road in Routt County, Colorado. The proposed septic system site consists of vacant, undisturbed land located southeast of the building site. The site is within open hay meadow and was well vegetated with grasses and weeds.

The topography of the proposed septic site is fairly consistent and generally slopes gently to moderately down to the north on the order of 5 percent.

Subsurface Conditions: To investigate the subsurface conditions at the site, one profile pit was excavated in the vicinity of the proposed septic system site at the time of the original subsol investigation for the residence on December 14, 1998. The subsurface conditions encountered in the profile pit generally consisted of approximately 33 inches of topsoil overlying natural clays and sandstone bedrock of the Browns Park Formation to the maximum depth investigated, 8 feet. The clays were sandy, medium plastic, stiff, moist and brown in color. Sandstone bedrock was encountered at a depth of approximately 6 feet in the profile pit. The sandstone was silty to clayey, low plastic, medium hard, fine grained, moist and light brown in color. Groundwater seepage was not encountered in the profile pit at the time of the investigation.

To investigate the percolation rate of the soils in the vicinity of the proposed system, six (6) percolation test holes were advanced and percolation tests were conducted. The percolation test holes varied in depth from approximately 15 to 33 inches in depth and the test results indicate that the natural soils exhibit percolation rates ranging from 11 to 34 minutes per inch (mpi) with an average rate of 25 mpi.

June 17, 1999

Irv Robbins
P.O. Box 770940
Steamboat Springs, CO 80477
Job Number 98-3837

Sincerely,
 Harold N. Schlicht, P.E.
 NORTHWEST COLORADO CONSULTANTS, INC.



Please be advised that Colorado law requires that a permit must be obtained prior to the construction, alteration or use of an on-site sewage disposal system. If you have any questions concerning this report or our recommendations, or if we may be of further service, please contact this office.

Limitations: The procedures and design criteria used in these designs were obtained from the EPA "Design Manual - On-site Wastewater Treatment and Disposal Systems", 1980, the Colorado Department of Health "Guidelines for Individual Sewage Disposal Systems" (rev. Sept. 1994) and the Routt County Guidelines for Individual Sewage Disposal Systems. The sewage disposal system design presented is based on currently accepted design procedures and the proposed features and usage of the residence. If the usage of the currently planned residence or addition of new facilities to those planned changes, the septic system design will also most likely change. It should also be noted that all on-site sewage disposal systems require periodic maintenance. The failure of the owner to provide proper periodic inspection and maintenance of the system can be the major cause of failure of the system.

In order to use the favorable percolation rates in the upper topsoil materials, we recommend that the system be constructed in a bed configuration no deeper than 1 foot below the existing ground surface. A septic tank with a minimum capacity of 1,250 gallons is also required for a four bedroom home. In addition, to intercept groundwater flow in the vicinity of the system we recommend a cutoff ditch be constructed in the upper topsoil materials. A general site plan is shown in Figure #1 and the system design and cutoff ditch detail are presented in Figures #2 and #3. The design calculations are shown in Appendix A and the specifications for the system are given in Appendix B.

The septic system design presented below is based on the total anticipated number of bedrooms and appurtenances, as well as the average percolation rate for the natural soils. Considering the anticipated construction we have calculated a peak effluent flow of 1050 gallons per day (gpd) for the system. Based on the percolation test results and the peak effluent flow rate, an absorption area of 1050 square feet will be required for a conventional trench or bed absorption system.

System Design: We recommend that the proposed septic system be constructed in a bed configuration with system constructed in the near surface topsoil materials. The system is designed to be installed mainly within the upper 1 foot of natural topsoil and backfilled with a minimum of 18 inches of the on-site topsoil materials. A compacted clay berm, a minimum of 2 feet in width, should be constructed along the side and downhill perimeter of the system where the absorption bed gravels are placed above the existing ground surface.

APPENDIX A

SUMMARY OF DESIGN CALCULATIONS

A. Sewage Volume Calculations

1) 4 Bedrooms: 4 x 150 gpd/bedroom..... 600 gpd

2) Total Average Flow..... 600 gpd

3) Peak Factor..... x 1.75

4) Peak Flow for Design..... 1050 gpd

B. System Sizing

1) Minimum absorption area = $Q^{(1/2)/5} = (1050)^{(25)/5} = 1050.0 \text{ ft}^2$

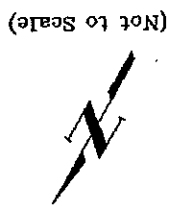
2) Bed Sizing: $1050.0 \text{ ft}^2 / 18 \text{ ft} = 59 \text{ ft} = >$ Use 59' x 18' Bed.

3) Minimum Water & Well Setback: 100'

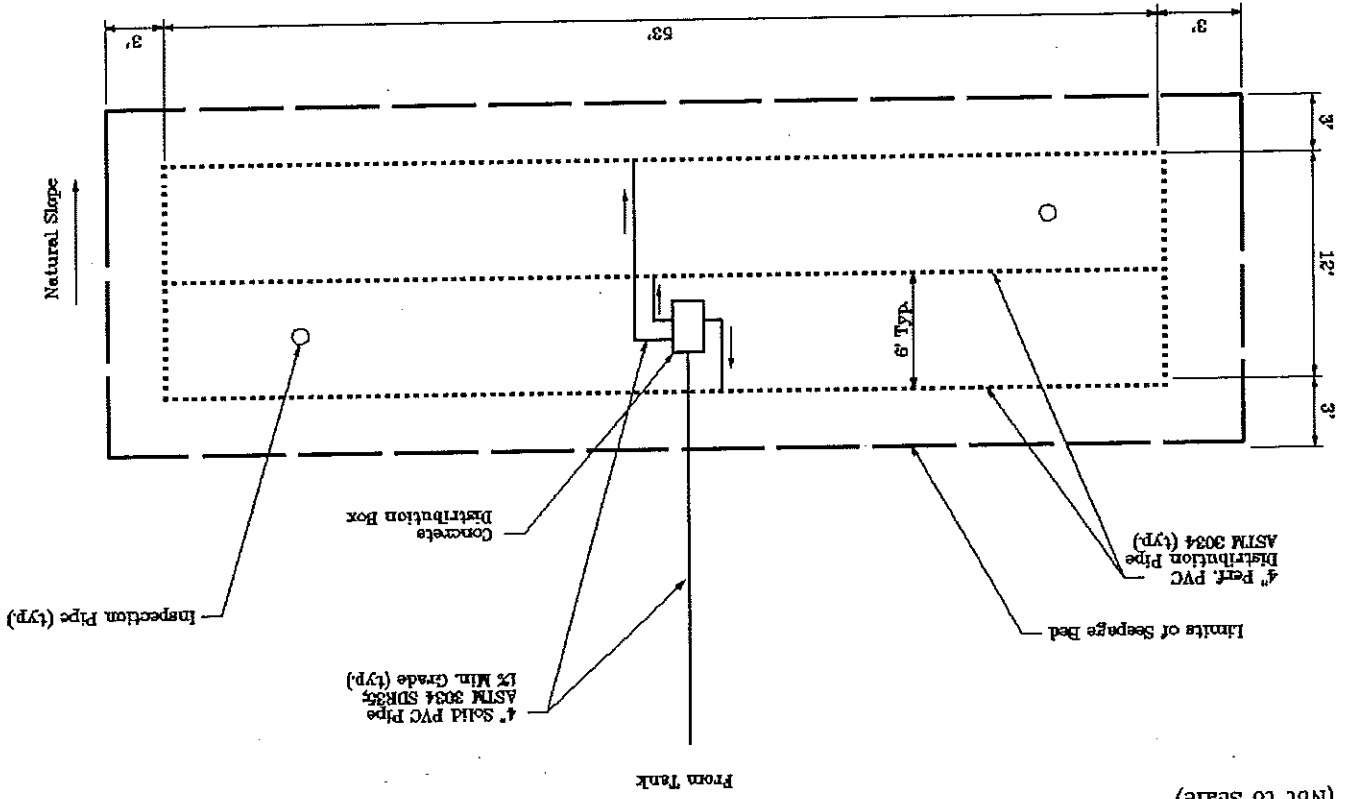
4) Septic Tank - per EPA and CDH Guidelines: Use a 1,250 gallon tank for a four bedroom residence.

- 1) All Regulations of the Routt County Department of Environmental Health must be complied with.
- 2) Periodic inspections must be made by the Engineer or County Sanitarian at the following points during Construction:
 - a. After subgrade excavation and septic tank installation.
 - b. After placement of gravel and pipes, but before pipes and gravel side slopes are covered.
 - c. Upon final completion of the project.
- 3) All PVC pipe, perforated or non perforated, shall conform to ASTM 3034 or better quality. All perforated pipe shall be set level.
- 4) Gravel for seepage beds shall consist of 3/4 to 1-1/2 inch clean, washed rock.
- 5) The soils beneath the pipes entering and leaving a septic or aeration tank which has been excavated shall be backfilled in 6 inch lifts and mechanically compacted. Cast iron pipe or pvc pipe meeting ASTM 3034 SDR 35 or schedule 40 shall be used for 5 feet on either side of the tank.
- 6) Provide a minimum of 12 inches of soil cover over the septic tank and 24 inches of soils cover over all pipes.
- 7) All surface drainage shall be ditched and diverted away from sewage disposal areas.
- 8) All disturbed surfaces, mounds and berms shall be covered with topsoil and heavily seeded.
- 9) Inspection pipes to be constructed of PVC pipe with the portion of the pipe penetrating the seepage bed being perforated.

APPENDIX B



(Not to Scale)



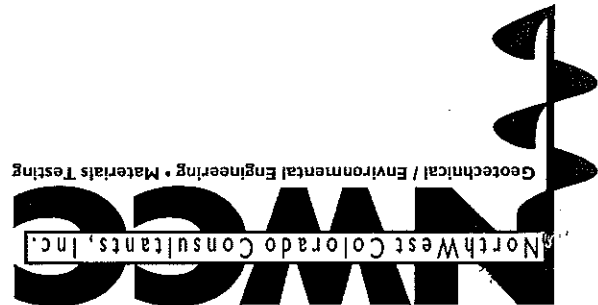
SEEPAGE BED PLAN

Job Name: Robbins Septic System

Location: 28150 County Road 14, Routt County, Colorado

Job No. 99-3837

Figure #2



Robbins
99-32

September 2, 1999

Irv Robbins
P.O. Box 770940
Steamboat Springs, CO 80477

Job No. 98-3837

Subject: On-Site Sewage Disposal System
Inspection, Robbins Residence, 28150 County Road
14, Routt County, Colorado.

Gentlemen:

As requested, NWCC, Inc. (Northwest Colorado Consultants, Inc.) visited the project site on August 30, 1999 to inspect the on-site sewage disposal system being constructed for the Robbins Residence under construction at 28150 County Road 14 in Routt County, Colorado. NWCC, Inc. previously designed the septic system for the residence under this job number dated June 2, 1999. The system design consists of a seepage bed absorption system constructed within the upper topsoil materials.

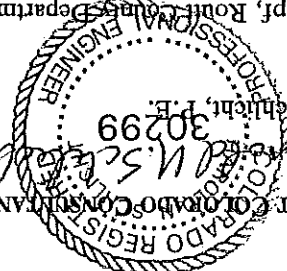
At the time of our visit, a 1,250 gallon concrete septic tank was in place and the inlet and outlet piping was connected. The absorption bed was also constructed and appeared to be keyed into the natural topsoil between approximately 12 inches on the uphill side of the bed. We verified that the bed and distribution piping had been placed to at least the plan dimensions. Measurements also indicate that the absorption bed was also constructed with washed rock thicknesses of at least 6 inches beneath the pipes. Adequate coverage of material was observed along the bed perimeter and over the top of pipes. We observed that the distribution box was placed near the center of the bed and verified that it was placed level with adequate grade for the outlet piping. On-site clay fill material had also been placed and compacted around the mound perimeter where the system daylighted to natural grade.

We verified that the piping used in the system consisted of 4-inch pvc conforming to ASTM 3034 SDR35 specifications and was checked for minimum grades. The distribution piping within the absorption bed was also checked and appeared to generally be constructed level. We also observed that the cutoff ditch had been constructed along the west side of the bed and the piping daylighted northeast of the bed. The contractor indicated that the ditch was excavated into the underlying clays and approximately 140 feet of perforated pvc pipe was placed in the ditch and covered with washed rock. The perforated pipe was connected to approximately 100 feet of solid pvc pipe which formed the drain daylight. A shallow surface ditch was also constructed over the trench.

We did not observe final grading of the bed surfaces. Some settlement of the fill placed over the bed surfaces can be expected, therefore, we recommend that the owner observe the mound for fill settlement and adequate drainage around the field. If excessive differential settlement occurs with time, ponding of

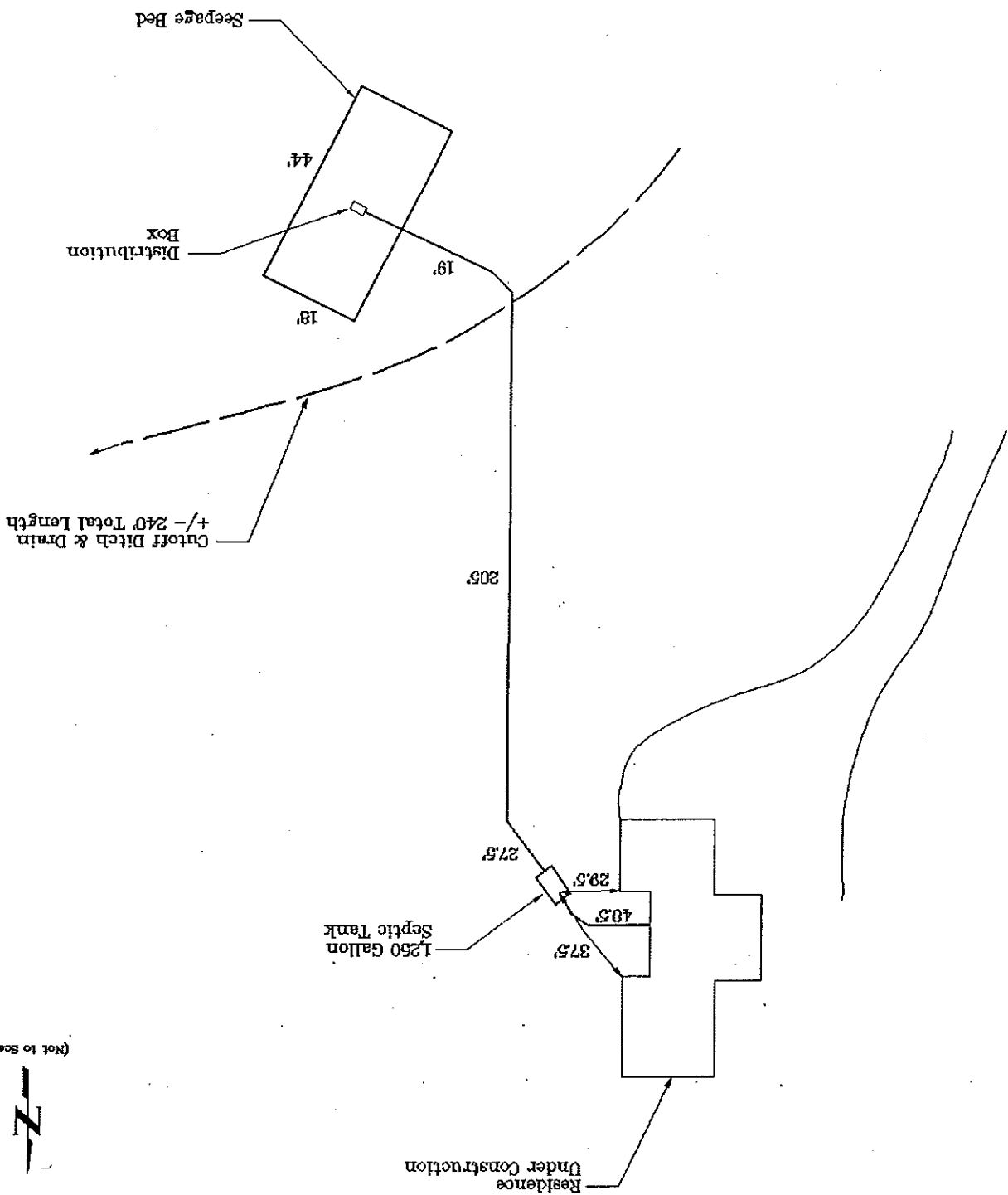
cc: Mike Zopf, Routh County Department of Environmental Health

Harold N. Schlicht, P.E.
 30299
 Harold N. Schlicht
 NORTHWEST COLORADO CONSULTANTS, INC.,
 Sincerely,



surface runoff may become a problem and additional fill or grading efforts may be required to maintain positive drainage away from the system. In addition, all disturbed areas around the field should be heavily seeded to promote revegetation. We also advised the contractor to use caution when backfilling the surface of the bed so that the piping would not be disturbed or damaged.

It appeared that the septic system had been constructed in general accordance with the plans and specifications. If you have any questions regarding this letter, our observations or recommendations or if we may be of further service, please contact this office.



SEPTIC SYSTEM AS-BUILT

Job Name: Robbins Septic System
Location: 28150 County Road 14, Routt County, CO

Figure #1

Job No. 98-3837