

• I.S.D.S. PERMIT •
TO INSTALL, CONSTRUCT, ALTER OR REPAIR
AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Permit: EH-09-025

New: Y
Repair: N
Alteration: N
Addition: N

ROUTT COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH • P.O. BOX 770087 • STEAMBOAT SPRINGS, CO • 970-870-5588

This permit effective only on premises located at: 29550 COUNTY ROAD 14D C

Legal description of property: TR IN TR 74 IN SE4SW4 SEC 25-5-85 □ TOTAL 14.82A

Parcel Id.: 946253003 Lot No.:

Owner: HEITER, MELISSA L.

Address: 359 E BAYAUD AVE

DENVER CO 80209-1707

Phone: 303-521-8399

Applicant: NEW MOUNTAIN CARPENTER, INC.

Address: ATTN: SCOTT KEMP P.O. BOX 770313

STEAMBOAT SPRINGS CO 80477

Phone: 970-846-7207

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

Y Residential N Commercial Other (Describe) _____

Number of bedrooms: 4

Percolation Rate: 30 MPI

Minimum Septic Tank Capacity: 1250 gallon

Tank Material: Y Concrete N Polyethylene

Design: 1: Engineer shall certify that construction complies with permitted design.

Comments: SG 06/23/2009 THIS IS A 4 BEDROOM HOUSE BUT THE

SYSTEM IS DESIGNED FOR 5 BEDROOMS.

Notice: All Sewage *HOLDING* Tanks must be Concrete. Inspections required (24 hour advanced notice required).

Environmental Health Specialist: Jason

Strike

Date of Issue:

6/24/09

The above individual sewage disposal system installed by _____ has received a final inspection. The system is hereby approved for use.

Environmental Health Specialist:

Date

State fee \$23.00

Fee: Percolation \$0.00

Permit \$252.00

R0900000755

RECEIPT NUMBER:

Routt County Environmental Health Department

P.O. Box 770087 Phone 970-870-5588

Steamboat Springs, CO 80477

APD #: BH-09-025
SITE ADDRESS: 29550 COUNTY ROAD 14D C
PARCEL: 9462533003
TYPE: EH-Ind. Sewage Disp Sys

May include fees collected within the jurisdiction.

TRANSACTION DATE: 06/23/2009
TOTAL PAYMENT: 275.00
TOTAL PAID FROM TRUST: .00
TOTAL PAID FROM CURRENCY: 275.00

TRANSACTION LIST:
Type Method Description Amount
Payment Check #1772
TOTAL: 275.00

ACCOUNT ITEM LIST:
Description Account Code Current Pmts
I.S.D.S. Permit Fee 01-20-22-000-568 252.00
State Surcharge for ISDS 01-20-22-000-546 23.00
TOTAL: 275.00

RECEIPT ISSUED BY: SG
INITIALS: SAG
ENTERED DATE: 06/23/2009
TIME: 09:31 AM

ck Full perm. +
JS 6/23/09

44-09-025

BUILDING PERMIT # CB-09-158
PERMIT PD 275-00 ch #
PERC PD 1772

APPLICATION FOR INDIVIDUAL SEWAGE SYSTEM PERMIT New Mountain-Carpenter
6/22/09
NEW ☒ REMODEL _____ REPAIR _____ EMERGENCY USE _____

Name of Owner Darin & Melissa Heiter

Mailing Address 239 E. Bayaud Ave. (209) 521-8399

Name of Applicant Darin & Melissa Heiter Mailing Address Denver Co 80209 Phone _____

LOCATION OF PROPOSED SYSTEM:

Street Address 2950 Routh Cnty Rd 14

Legal Description R in TR 74 in SE 43W 4 Sec 26S-85 Parcel ID# 946253003
(Lot# and Subdivision if applicable) (this# can be found in the Assessor's Office)

Size of Lot 14.82

(X) Residential

() Commercial

() Other (Describe) _____

Number of:

Bedrooms 4

designed for 5

Project manager

Water Supply:

(X) Private Well

() Public (give name of supply) _____

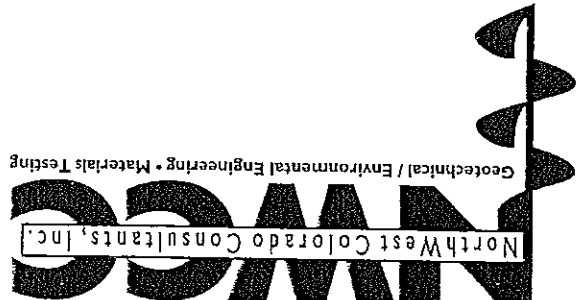
Scott Kemp 846-7207

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 on-site sewage disposal systems.)

Signature of Applicant Scott Kemp Agent

Date 6/22/09



April 27, 2009

Darin Heiter
395 E. Bayaud Avenue
Denver, CO 80209
Job Number: 09-8295

Subject: On-Site Wastewater System Design,
Heiter Residence, 29550 County Road 14D, Routt
County, Colorado.

Ladies and Gentlemen:

This report presents the results of an On-site Wastewater System (OWS) design for the Heiter Residence to be constructed at 29550 County Road 14D in Routt County, Colorado. NWCC, Inc. previously completed a Subsoil and Foundation Investigation report for the proposed residence under this job number and dated March 24, 2009.

Proposed Construction: NWCC, Inc. has not received or reviewed plans for this project. It is our understanding, based on our conversations with the client and the architect, that the existing residence will be removed from the site and the existing septic system will be abandoned. It is also our understanding that the proposed residence will be constructed with a total of five bedrooms when completed. The new absorption field for the OWS will be placed to the northwest of the proposed residence.

Site Conditions: The proposed residence is situated north of County Road 14D in Routt County, Colorado. The vegetation in the area of the proposed OWS consists of grasses, weeds, and sagebrush.

The topography in the area of the proposed OWS is variable and generally slopes gently down to the west-southwest on the order of 3 to 5 percent. A site plan showing the approximate location of the proposed structures, existing features and proposed OWS is shown in Figure #1.

Subsurface Conditions: A profile hole was drilled in the vicinity of the proposed OWS at the time the field investigation was completed for the Subsoil and Foundation Investigation. The subsurface conditions encountered in the profile hole consisted of approximately 12 to 18 inches of topsoil and organic materials overlying natural sands to the maximum depth investigated, 6 feet. The natural sands were clayey to very clayey, fine to coarse grained, low to moderately plastic, medium dense, slightly moist and brown in color. Groundwater seepage was not encountered in the profile pit at the time of drilling and no evidence of a seasonal high groundwater table was observed in the profile hole.

Percolation testing was conducted in the area of the proposed OWS on April 22, 2009. A set of 6-percolation test holes ranging from 12 to 36 inches in depth were advanced in the vicinity of the proposed

OWS to determine the percolation rate of the natural, near surface soils. The percolation tests conducted indicate that the upper 36 inches of natural topsoil and organic materials in this portion of the site yielded percolation rates of 10 to 40 minutes per inch (mpi) with an average percolation rate of 30 mpi.

System Design: Based on the percolation test results of the natural topsoil and organic materials encountered at the site, we recommend that the OWS design consist of a modified seepage bed soil absorption system constructed in the upper 6 to 12 inches of natural topsoil and organic materials.

The OWS design presented below is based on the total anticipated number of bedrooms and appurtenances for the structures, as well as the average percolation rate for the natural soils. Considering the anticipated construction, we have calculated a peak effluent flow of 1,313 gallons per day (gpd) for the system. Based on the percolation test results, a minimum absorption area of 1,439 square feet is required for a bed absorption system. Any fill materials required to level the site on the downhill side should consist of a granular material approved by NWCC, Inc. prior to placement. A minimum of 18 inches of topsoil should be placed over the seepage bed and a layer of compacted clay fill materials should be placed along the sides of the gravel bed constructed above the existing ground surface.

A septic tank with a minimum capacity of 1,500-gallons is required for a five-bedroom residence. Due to the subsurface conditions encountered at the site, we recommend that a concrete septic tank be used. We also recommend that an effluent filter be installed in the outlet of the septic tank.

A dosing system should be used to distribute effluent to the seepage bed. The dosing system should consist of either a float activated pump system or an automatic dosing siphon, if sufficient grade is available. The pump or siphon dosing system should be installed in a minimum 300-gallon concrete dosing tank installed downstream of the septic tank. An alternate would be to use a 2,000-gallon three-compartment septic tank with the pump installed in the last compartment. The effluent pump should consist of an approved commercial grade, float-activated effluent pump installed in the dosing tank. The dosing siphon should consist of a Fluid Dynamics FD417 automatic dosing siphon. Either system should have a high water alarm system installed in the residence to warn the owner in the event of a pump or siphon malfunction. A secondary or backup pump installed in the dosing tank is also recommended in the event of a pump failure.

We recommend that the tank be placed to allow access for pumping. Generally a septic tank can be pumped from 100 feet away with a maximum lift of 10 feet; however, a local pump contractor should be consulted in the location of the maintenance access.

The system design for the seepage bed system is presented in Figures #1 through #3. The design calculations are shown in Appendix A and the specifications for the system are given in Appendix B.

Operation and Maintenance: Observing the operation and performing routine maintenance of the OWS is essential to allow proper, long term functioning of the system. We recommend that the operation be monitored and a qualified, licensed maintenance contractor performs maintenance of the system.

1) Septic Tank: The scum and sludge accumulation in the septic tank should be monitored yearly. Once the scum or sludge thickness reaches 25% of the chamber depth, the septic tank should be pumped. A pumping frequency of 1 to 3 years is likely at the design flows used in this design. However, depending on the anticipated use, pumping may only be required every 3 to 5 years.

2) Effluent Filter and Pump System: The effluent filter at the septic tank outlet should be cleaned when the septic tank is inspected or as required. The effluent pumps should be checked semi-annually to ensure the pumps are functioning properly. If the high water alarm sounds, the system should be inspected and serviced immediately.

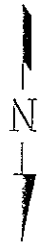
3) Absorption Field: We recommend that the absorption field be fenced off to vehicular traffic and livestock. The surface area around the absorption field should be observed monthly for signs of failure, such as lush vegetation growth or ponding. Liquid levels in the absorption bed should be observed through the inspection pipes.

4) Treated Water: We do not recommend that the water softeners or water treatment systems be connected to the OWS. The chemical and hydraulic loading from the backwash of these treatment systems may be detrimental to the OWS. If a treatment system is used, a separate dry well should be constructed for the backwash waste. In addition, chemically treated water from a swimming pool or spa must not be discharged into the OWS.

5) General Notes: The owner should be aware that the operation of the OWS is different from a public sewer service. Plastic and other non-biodegradable materials should not be placed into the system. Water use should be monitored so fixtures are not allowed to run if a seal malfunctioning. Allowing fixtures to flow continuously to prevent water lines from freezing or a malfunctioning faucet or toilet can consume in excess of 1,000 gallons per day. Excessive flows could flood and cause premature failure of the system. No plastic or landscaping that require additional irrigation, should be placed over the absorption field.

Limitations: The procedures and design criteria used in this design were obtained from the EPA "Design Manual - On-site Wastewater Treatment and Disposal Systems", 1980, as well as the Colorado Department of Health "Guidelines on Individual Sewage Disposal Systems", revised 2000, and the Routt County Individual Sewage Disposal Regulations, February 1999. The OWS design presented is based on currently accepted design procedures, the proposed structures and usage of the facilities. If the usage of the structure or addition of new facilities to those currently planned in the building changes, the OWS design will also most likely change. It should also be noted that all on-site wastewater systems require periodic maintenance as noted above. The failure of the owner to provide periodic inspection and maintenance of the system can lead to premature system failure.

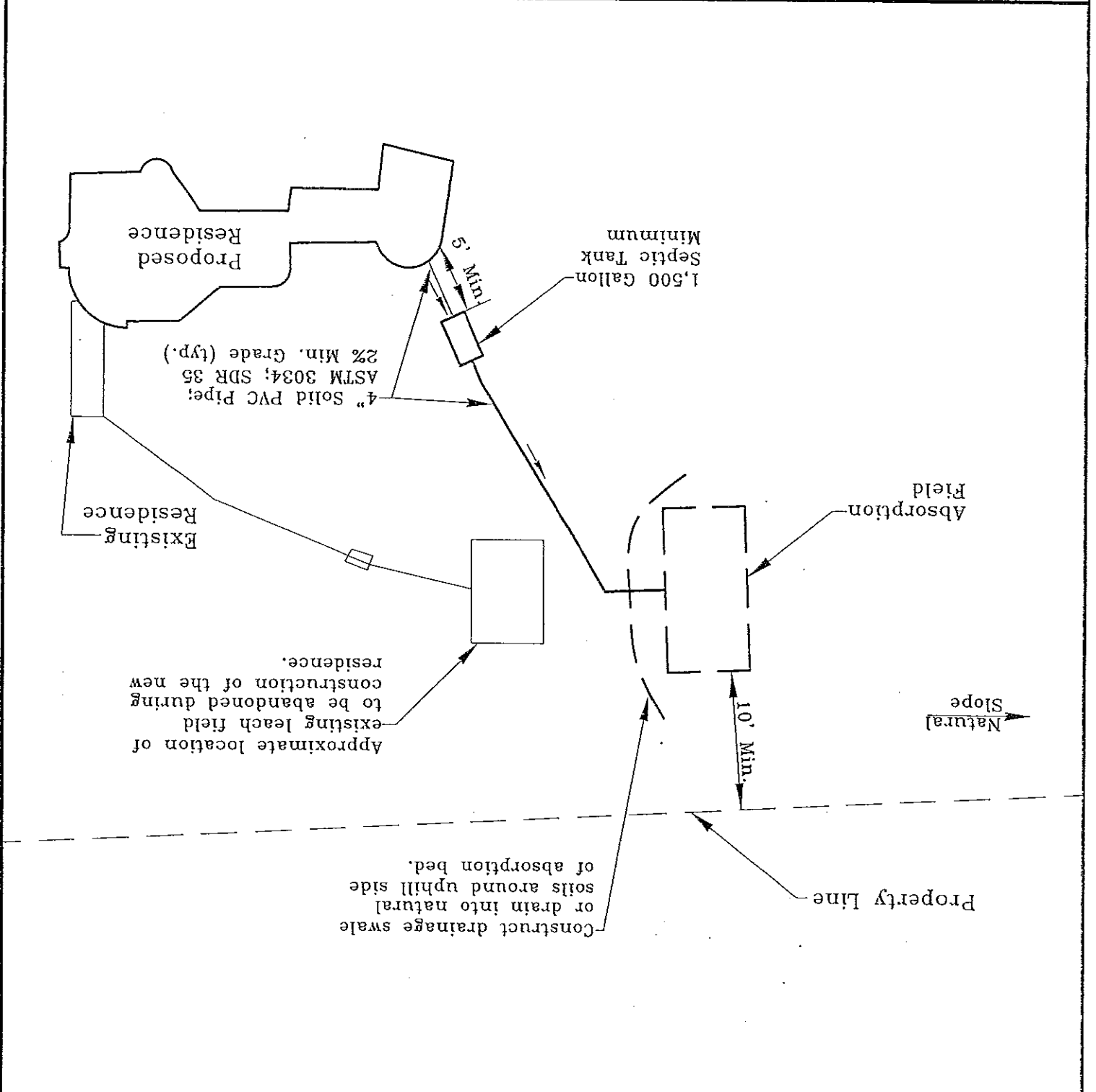
Please be advised that Colorado law requires that a permit must be obtained prior to construction, alteration or use of an on-site wastewater system. In addition, this office must be retained by the client to observe the construction/installation of the OWS and to provide an as-built report to the Routt County Department of Environmental Health.



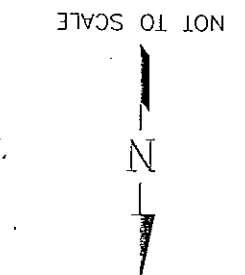
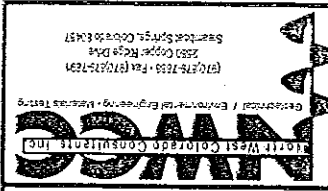
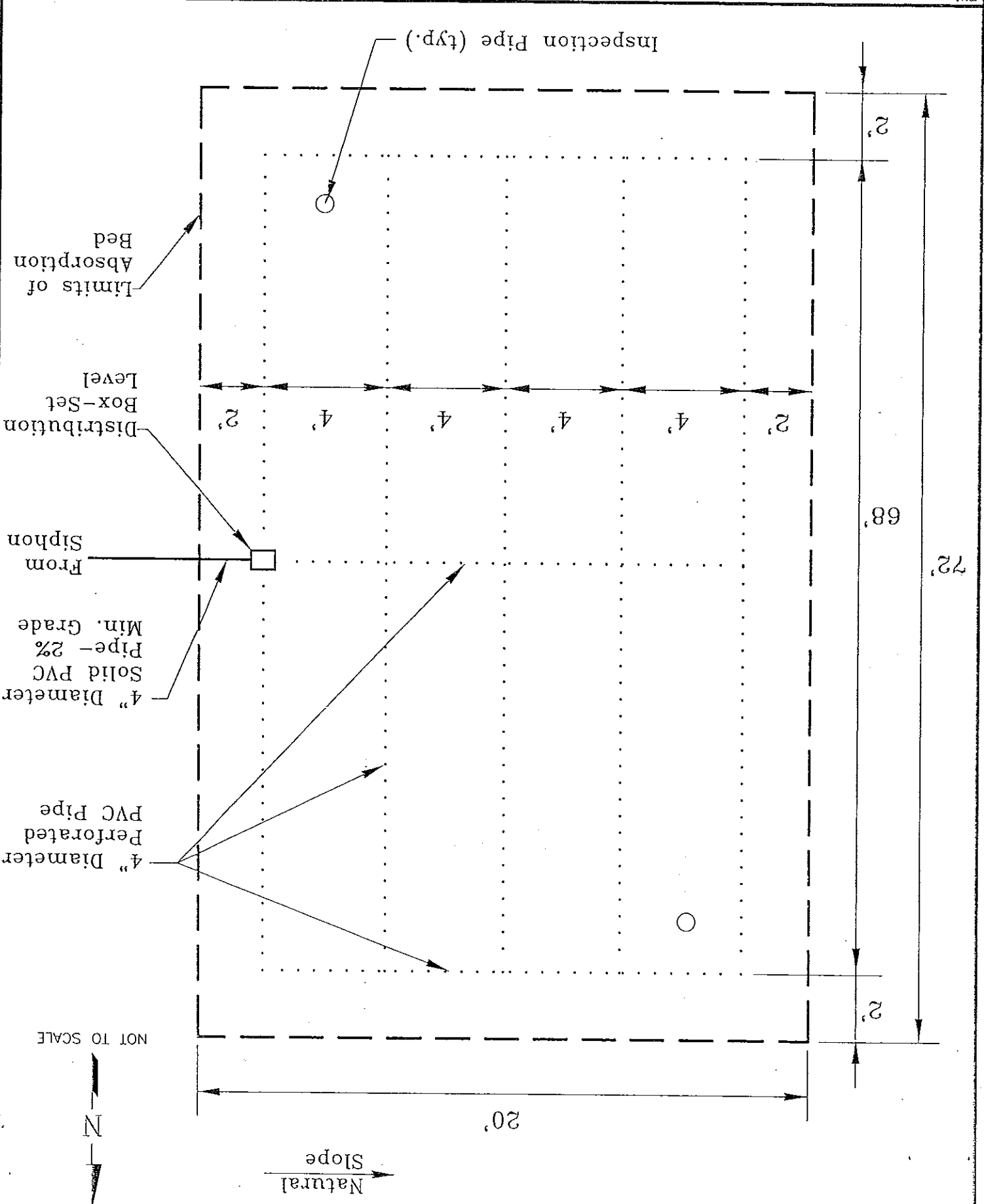
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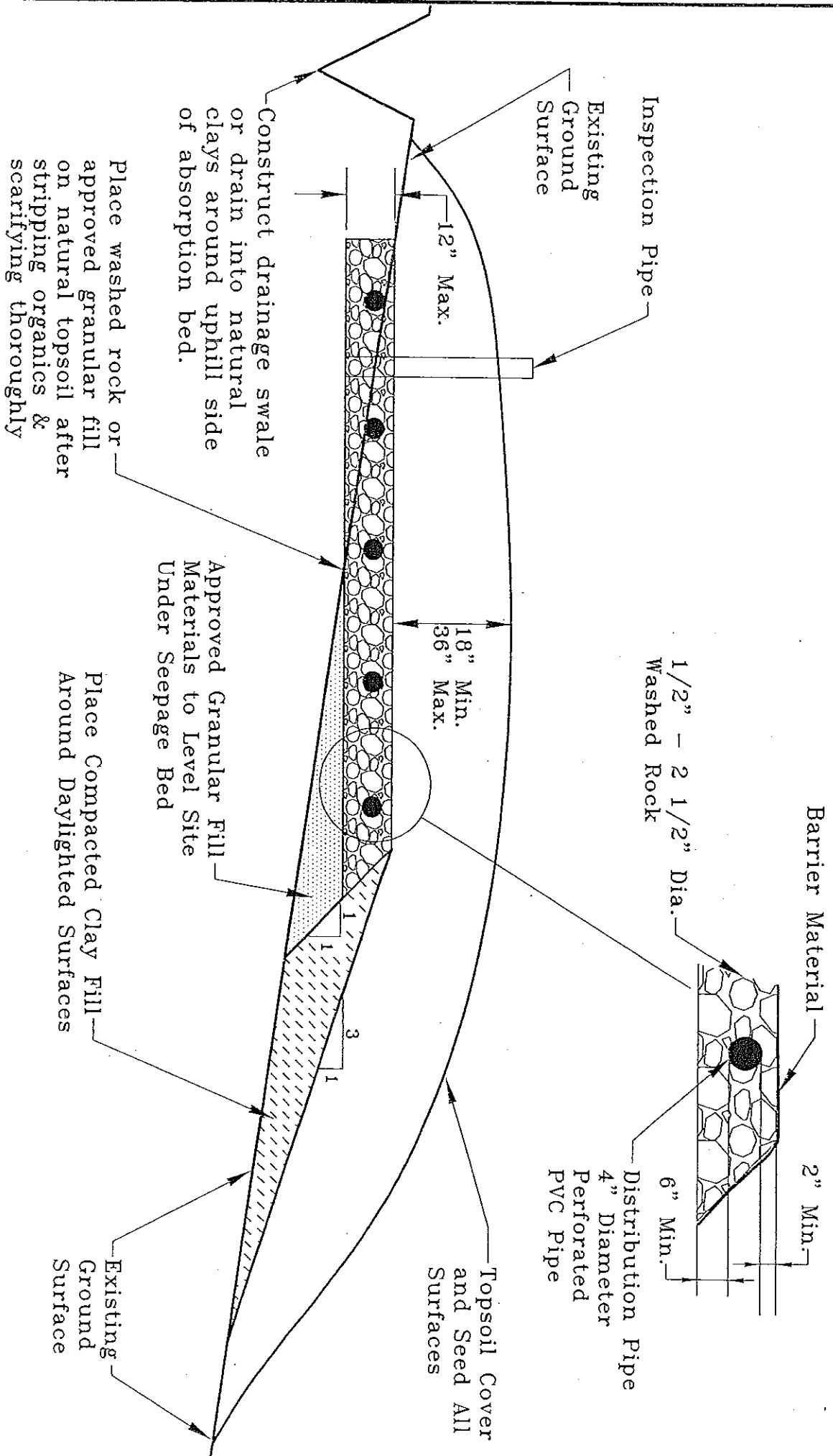
Title: O.W.S.-SITE PLAN		Job Name: Proposed Heiter Residence	Location: 29550 County Road 14D, Routt County, CO
Date: 4/27/09	Job No. 09-8295	Figure #1	

NWCC
North West Colorado Consultants Inc.
Geotechnical / Environmental Engineering - Materials Testing
2630 Cooper Ridge Drive
Steamboat Springs, Colorado 80487
(970) 875-7155 • Fax (970) 875-7631



Title: SEEPAGE BED PLAN		Date: 4/27/09	Job No.: 09-8295	Location: 29550 County Road 14D, Routt County, CO
Job Name: Proposed Heiler Residence		Figure #2		





SEEPAGE BED CROSS SECTION

Title: _____

Job Name: Proposed Heiter Residence

Location: 29550 County Road 14D, Routt County, CO

Date: 4/27/09

Job No. 09-8295

Figure #3

WVCE
 North West Colorado Consultants, Inc.
 Geotechnical / Environmental Engineering • Material Testing
 (970) 675-7800 • Fax (970) 675-7801
 2600 Copper Ridge Drive
 Steamboat Springs, Colorado 80427

APPENDIX B

- 1) The Rules and Regulations of the Routt County Department of Environmental Health must be complied with during the installation/construction of the system.
- 2) Periodic inspections must be made by the Design Engineer from NWCC, Inc. at the following points during construction:
 - a. After subgrade excavation and septic tank and solid PVC pipe installation.
 - b. After placement of gravel and perforated PVC pipe, prior to backfilling.
 - c. Upon final completion of the project.
- 3) The PVC pipe, perforated or non perforated, shall conform to ASTM 3034 or better quality. The perforated pipe should be constructed level.
- 4) 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 to a minimum of 95% of the maximum standard Proctor density. Cast iron pipe or pvc pipe meeting ASTM 3034-SDR 35 or schedule 40 shall be used for 5 feet on the inlet and outlet sides of the tank.
- 5) Provide a minimum of 12 inches of soil cover over the septic tank, 18 inches of soil over the absorption bed and 24 inches of soils cover over all pipes. Any piping placed under a driveway or other ploved areas should have a minimum of 48 inches of soil cover or be protected from freezing using insulation or other approved means. A layer of compacted clay fill materials should be placed along the sides of the seepage bed that are constructed above the existing ground surface. The clays should be compacted to at least 95% of the maximum standard Proctor density and have at least 70% passing the No. 200 sieve. Special care should be taken when backfilling the system to prevent disturbance/crushing of the distribution lines. In addition, the distribution lines should be carefully bedded to minimize the settlement in these lines.
- 6) The surface drainage shall be ditched and diverted away from absorption bed areas.
- 7) The disturbed surfaces, mounds and berms shall be covered with topsoil and heavily seeded. Vehicular traffic and livestock should be fenced or kept off of the seepage bed area.
- 8) The washed rock shall be covered with straw and untreated building paper or synthetic filter fabric before overlying soils layers are placed. The washed rock will consist of gravel from 0.5 to 2.5 inches in size.
- 9) Inspection pipes to be constructed of PVC pipe with the portion of the pipe penetrating the gravel bed being perforated. Cleanouts must be placed in the solid distribution line at maximum intervals of 100' downstream of the septic tank and at a maximum interval of 50' upstream of the septic tank.
- 10) It is the responsibility of the owner and the installer to comply with all of the minimum setback requirements.
- 11) The fill materials placed below the bed must be approved prior to use by the design engineer and consist of a clean, well graded sand or sand and gravel mixture with less than 7 percent passing the No. 200 sieve.