

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

Permit #: 97-840

New:	yes
Repair:	no
Remodel:	no

ROUTT COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH • P.O. BOX 770087 • STEAMBOAT SPRINGS, CO • 879-0185

This permit effective only on premises located at: Top of Stagecoach ski area

Legal description of property: SW ¼, NE ¼ SEC 13 T3N R85W OF 6TH PM

Owner: Stagecoach - Wittemyer Address: PO Box 4944 Phone: 879-8814

Applicant: Stagecoach Ski Corp Address: PO Box 4575, Boulder CO 80306-4575 Phone: 3034438782

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

Minimum Septic Tank Capacity:

Concrete	# bedrooms, etc.
Polyethylene	size: leach field/infl.
	Other comments:
	Engineered Design Please see attached engineered design

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

Environmental Health Officer *[Signature]*

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 Billed 10/6/97
 PD 11/3/98 (2)

APPLICATION FOR INDIVIDUAL SEWAGE SYSTEM PERMIT

Stagercoach
Wiffhemyer

PERMIT NO. _____ NEW _____ REMODEL _____ EMERGENCY USE _____

Name of Owner Stagercoach / Wiffhemyer Mailing Address P.O. Box 4944 Phone 871-0795 (r)
874-8874 (w)

Name of Applicant Stagercoach Ski Corp. Mailing Address P.O. Box 4575 Phone 80306-4575
803-493-8782

Location of Proposed System: Legal Description S1/2 1/4, NE 1/4 S13 T30D, R85W E4th P.M. Street Address Top of Stagercoach Ski Area

Size of Lot 4/2 ac. Type of Structure: () Single Family (x) Other (Describe) Commercial Cabin

Number of: Bedrooms _____ Garbage Disposals N/A Automatic Wash Mach. N/A

Water Supply: (x) 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 W. Wiffhemyer Date Oct. 15, 1987



October 13, 1997

Stagecoach Ski Corporation
P.O. Box 4575
Boulder, CO 80306-4575

Job Number 97-3286

Subject: On-Site Sewage Disposal System
Design, Warming Hut, Stagecoach Ski Area,
Routt County, Colorado.

Gentlemen:

This report presents the results of an on-site sewage disposal system design for the Warming Hut under construction at the Stagecoach Ski Area in Routt County, Colorado. We previously conducted an openhole investigation and foundation recommendations for this site under our job number 96-2745, dated July 3, 1996.

Proposed Construction: We understand that the warming hut will be a recreational/seasonal use facility used by approximately 12 to 15 people per day/night and an additional 20 to 30 people for day use only. It is also our understanding that the facility will have three toilets, two urinals, two to three wash sinks with the possibility of adding a shower and a kitchen at a later date. We recommend that low flow fixtures be used at the facility.

Site Conditions: The project site is located south of Routt County Road #212 at the top of the Stagecoach Ski Area in Routt County, Colorado. The septic system site will be located approximately 200 feet southwest of the warming hut. The vegetation at the site of the septic system had been cleared. The area surrounding the septic site was a pine forest and the surface vegetation consisted of grasses and weeds.

The topography of the site in this area is variable and generally slopes moderately down to the west on the order of 6 to 8 percent.

Subsurface Conditions: To investigate the subsurface conditions at the site, one profile pit was excavated near the proposed septic system site on October 6, 1997. The subsurface conditions encountered in the profile pit generally consisted of approximately 3 to 4 inches of topsoil overlying natural sands and gravels to the maximum depth investigated, 8 1/2 feet. The natural sands and gravels encountered below the topsoil were silty to clayey, fine to coarse grained, low to non-plastic, dense, moist and brown in color. A free groundwater table was not encountered in the test pit at the time it was excavated.

A set of 6 percolation test holes ranging from 12 to 34 inches in depth were advanced within the anticipated limits of the proposed sewage disposal system and tests were conducted by our office to determine the percolation rate of the natural soils. The percolation tests conducted indicate that the upper

12 inches of topsoil, near the north side of the proposed septic field, yielded a percolation rate in excess of 80 minutes per inch. The natural sands and gravels exhibited percolation rates of 20 to 40 minutes per inch with an average percolation rate of 25 minutes per inch.

System Design: Based on the percolation test results of the natural sands and gravels, we have designed a trench absorption system utilizing standard Infiltrator chambers placed in the natural sands and gravels.

The septic system design presented below is based on the total anticipated use of the structure, as well as the average percolation rate for the natural soils. Considering the anticipated construction we have calculated a peak effluent flow of 1800 gallons per day (gpd) for the system. Based on the percolation results, this results in a required absorption area of 1800 square feet for conventional trench or bed absorption systems.

Using a 40% reduction in the required absorption area with infiltration chambers, we have calculated that the system should be constructed using 70 standard Infiltrator chambers. We recommend that the trenches for the chambers be placed a minimum of 14 inches below the existing ground surface on the downhill side of the trench and a maximum of 24 inches below the existing ground surface. In addition, we recommend that a distribution box be installed to ensure that equal flow is distributed to all of the chambers. A minimum of 18 inches of soil cover should be provided over the chambers. A septic tank with a minimum capacity of 2,250 gallons is required for this system. We recommend that two 1,250 gallon septic tanks can be connected in series with the baffle removed from the upstream tank.

The system design is presented in Figures #1, #2 and #3. The design calculations are shown in Appendix A and the specifications for the system are given in Appendix B.

If the system is not activated within 30 days of installation, we recommend that the infiltrator chambers be periodically flooded with water to prevent rodents from nesting and burrowing in the chambers.

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, as well as the Colorado Department of Health "Guidelines for Individual Sewage Disposal Systems" (rev. Sept. 1993). The sewage disposal system designs presented are based on currently accepted design procedures and the existing features and usage of the facilities. If the usage of the current facilities or addition of new facilities to those currently in use in the building 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.

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

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.

Sincerely,

NORTHWEST COLORADO CONSULTANTS, INC.

Timothy [Signature], P.E.

Reviewed by Brian D. Len, P.E.

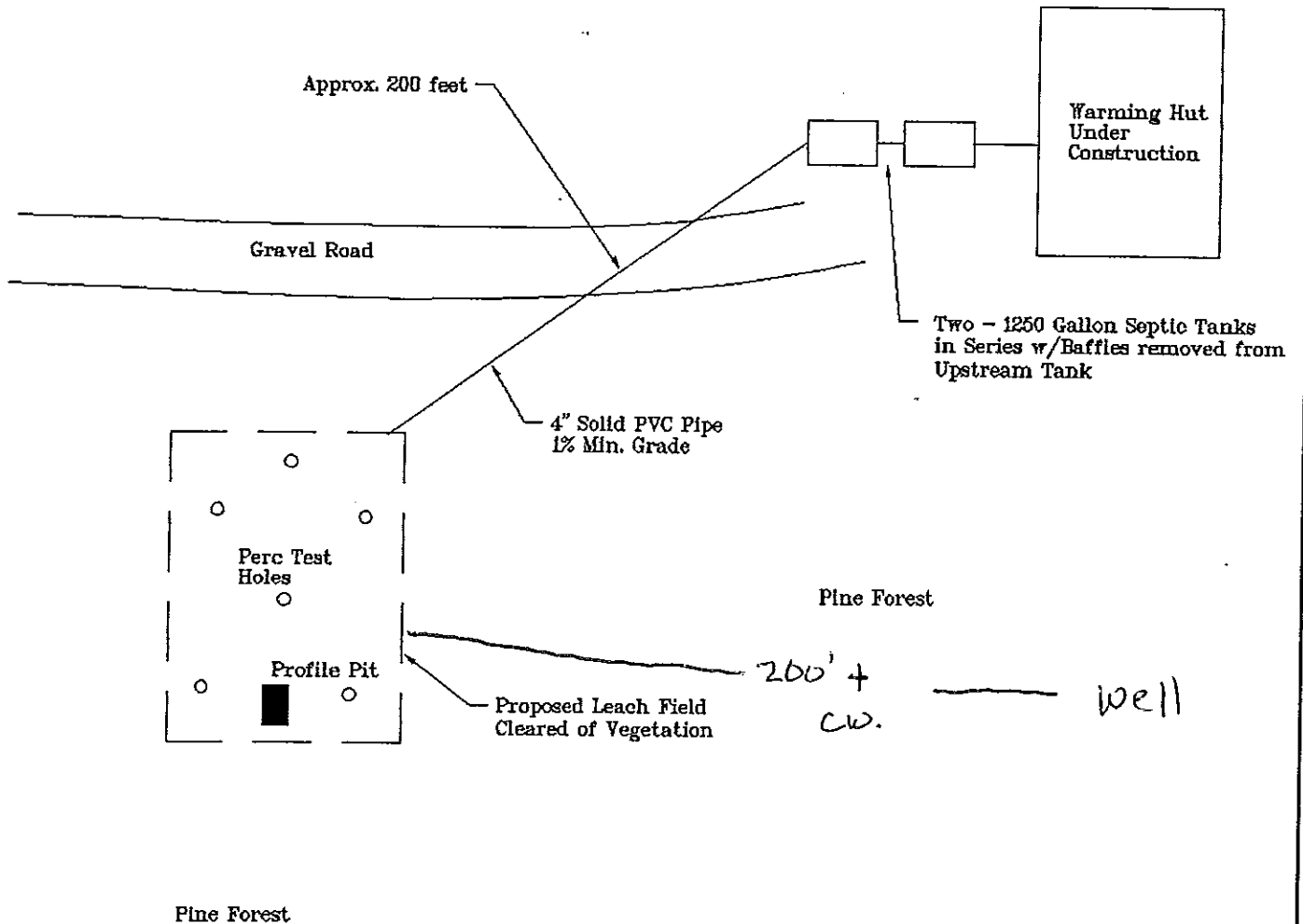


NORTHWEST COLORADO CONSULTANTS
 STEAMBOAT SPRINGS COLORADO



(Not to Scale)

Pine Forest



SITE PLAN

Job Name: Warming Hut Septic System

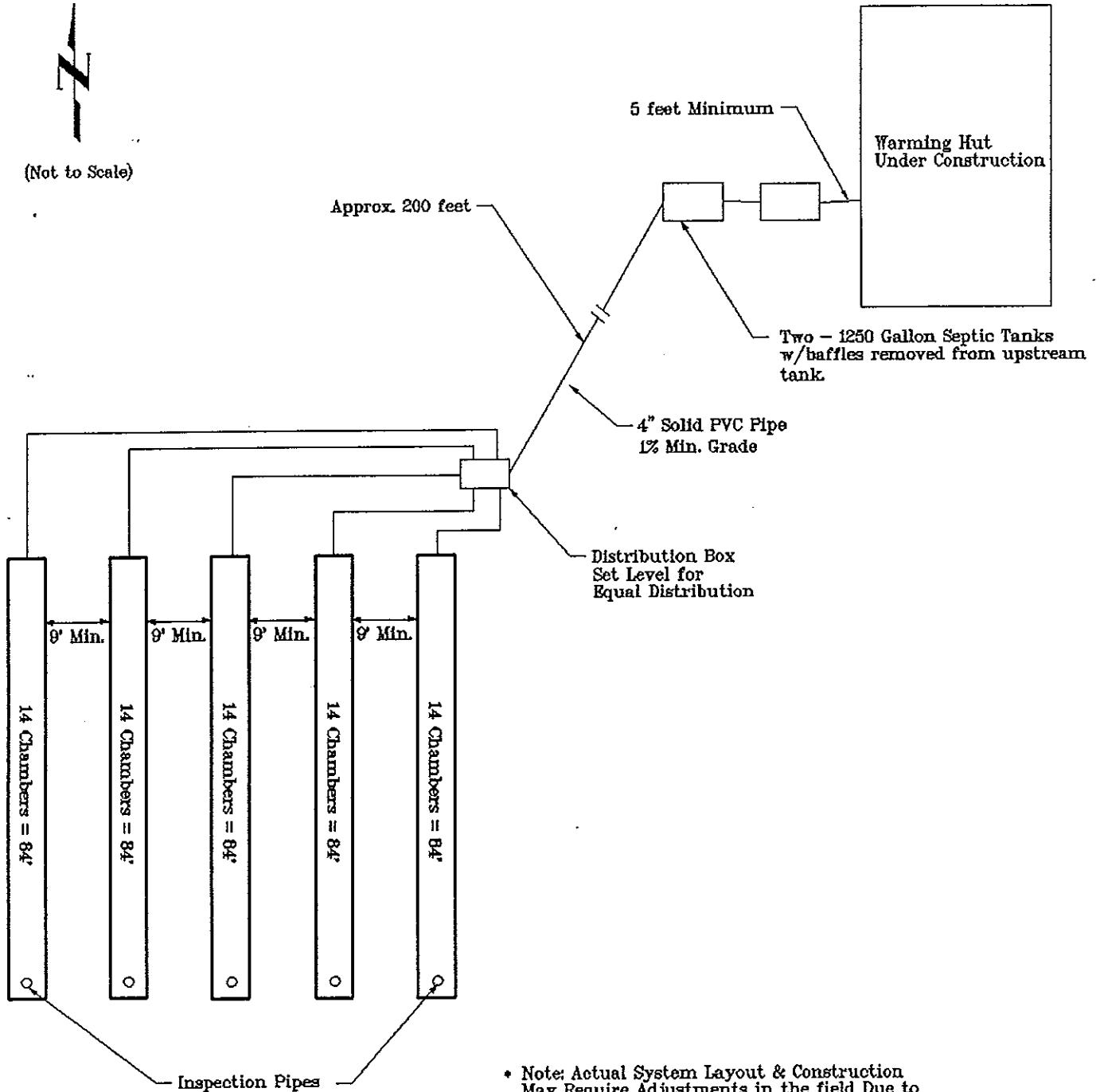
Job No. 97-3286

Location: Stagecoach Ski Area, Routt County, Colorado

Figure #1



(Not to Scale)



• Note: Actual System Layout & Construction May Require Adjustments in the field Due to Variations in Topography & Vegetation

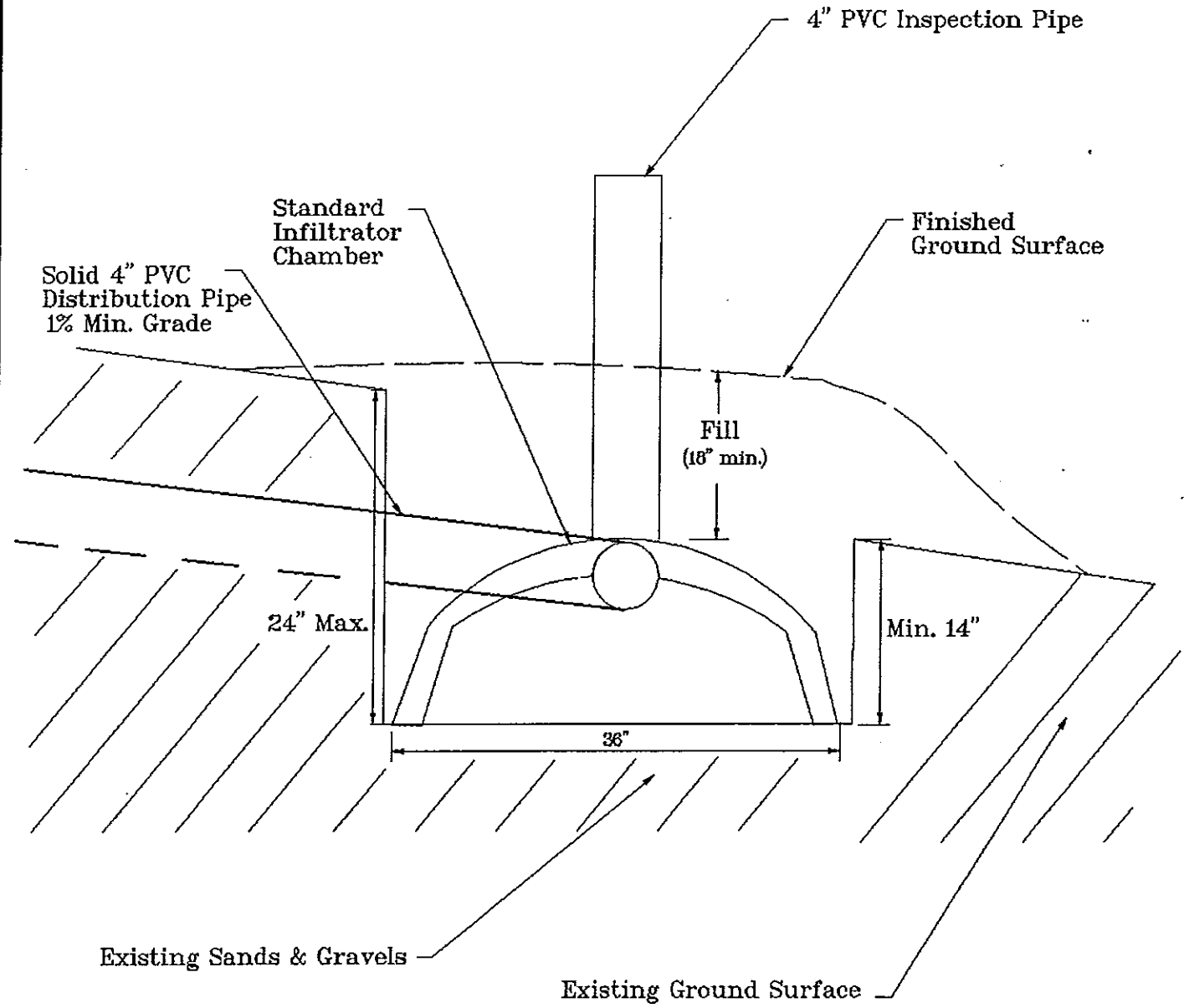
SEPTIC SITE PLAN

Job Name: Warming Hut Septic System

Job No. 97-3286

Location: Stagecoach Ski Area, Routt County, Colorado

Figure #2



SEPTIC SYSTEM CROSS SECTION

Job Name: Warming Hut Septic System	Job No. 97-3286
Location: Stagecoach Ski Area, Routt County, Colorado	Figure #3

APPENDIX A

SUMMARY OF DESIGN CALCULATIONS

A. Sewage Volume Calculations

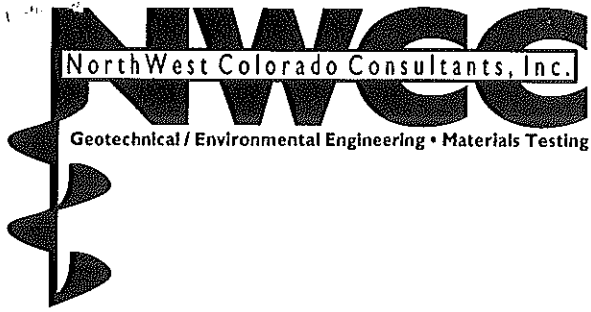
- 1) 15 people (overnight): $15 \times 50 \text{ gpd/person} \dots\dots\dots 750 \text{ gpd}$
- 2) 30 people (day use): $30 \times 15 \text{ gpd/person} \dots\dots\dots 450 \text{ gpd}$
- 3) Total Average Flow $\dots\dots\dots 1200 \text{ gpd}$
- 4) Peak Factor $\dots\dots\dots \times 1.5$
- 5) Peak Flow for Design $\dots\dots\dots 1800 \text{ gpd}$

B. System Sizing

- 1) Minimum absorption area = $Q(t^{1/2})/5 = (1800)(25)^{1/2}/5 = 1800 \text{ ft}^2$
- 2) Less 40% for Infiltrator Chambers: $1800 \times 0.60 = 1080 \text{ ft}^2$
- 3) No. of Infiltrator Chambers: $1080 \text{ ft}^2/15.5 \text{ ft}^2/\text{chamber} = 69.7 \text{ chambers} \Rightarrow \text{use } 70 \text{ chambers.}$
- 4) Septic Tank - per EPA and CDH Guidelines: Use a 2,250 gallon tank.

APPENDIX B

- 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 chambers, but before chambers 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 chambers shall be set 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. 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.
- 5) Provide a minimum of 12 inches of soil cover over the septic tank and 24 inches of soils cover over all pipes.
- 6) All surface drainage shall be ditched and diverted away from sewage disposal areas.
- 7) All disturbed surfaces, mounds and berms shall be covered with topsoil and heavily seeded.
- 8) Inspection pipes to be constructed of PVC pipe with the portion of the pipe penetrating the infiltrator chamber being perforated.



NOV 10 1997

November 6, 1997

Stagecoach Ski Corporation
P.O. Box 4575
Boulder, CO 80306-4575

*97-86
TOP of SW
area*

Job No. 97-3286

Subject: On-Site Sewage Disposal System
Inspections, Warming Hut, Stagecoach Ski Area,
Routt County, Colorado.

Gentlemen:

As requested, Northwest Colorado Consultants, Inc. visited the project site on October 27 and November 6, 1997 to inspect the on-site sewage disposal system being constructed for the Warming Hut which is under construction at the Stagecoach Ski Area in Routt County, Colorado. Northwest Colorado Consultants, Inc. previously designed the septic system for the residence under this job number, dated October 13, 1997. The system design incorporates infiltration chambers placed in the natural sands and gravels.

At the time of our first visit, the contractor had installed a 2,500 gallon concrete septic tank to the southwest of the warming hut. The inlet connection had been properly made to the tank with 4-inch solid PVC pipe (ASTM 3034 SDR 35) and the piping met minimum grades.

At the time of our second visit, the contractor had installed a concrete distribution box and five runs of 14 infiltrator chambers. The infiltrator runs were placed from 24 to 30 inches below the existing ground surface, with the majority of the chambers placed in the upper 24 inches. Measurements indicated that the required number of chambers had been installed and the piping to the runs met minimum grades. The inspection pipes at the end of the infiltrator runs had not been installed at the time of our inspection. We also inspected the outlet connection at the septic tank. The connection had been made properly and the piping to the distribution box met the minimum grade. An as-built drawing, taken from field measurements, is presented in Figure #1.

It appears that the system had been constructed in general accordance with the approved plans and specifications and should function properly with proper care and maintenance. As stated in the design report, if the system is not to be activated within 30 days, we recommend periodic flooding of the infiltrator chambers to prevent rodents from burrowing and nesting within the chambers.

*Stagecoach
Warming
Hut*

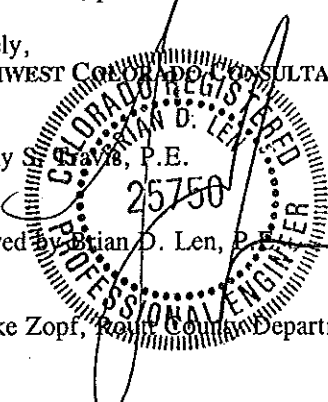
If you have any questions regarding this letter, our observations or recommendations or if we may be of further service, please contact this office.

Sincerely,
NORTHWEST COLORADO CONSULTANTS, INC.,

Timothy [Signature], P.E.

Reviewed by Brian D. Len, P.E.

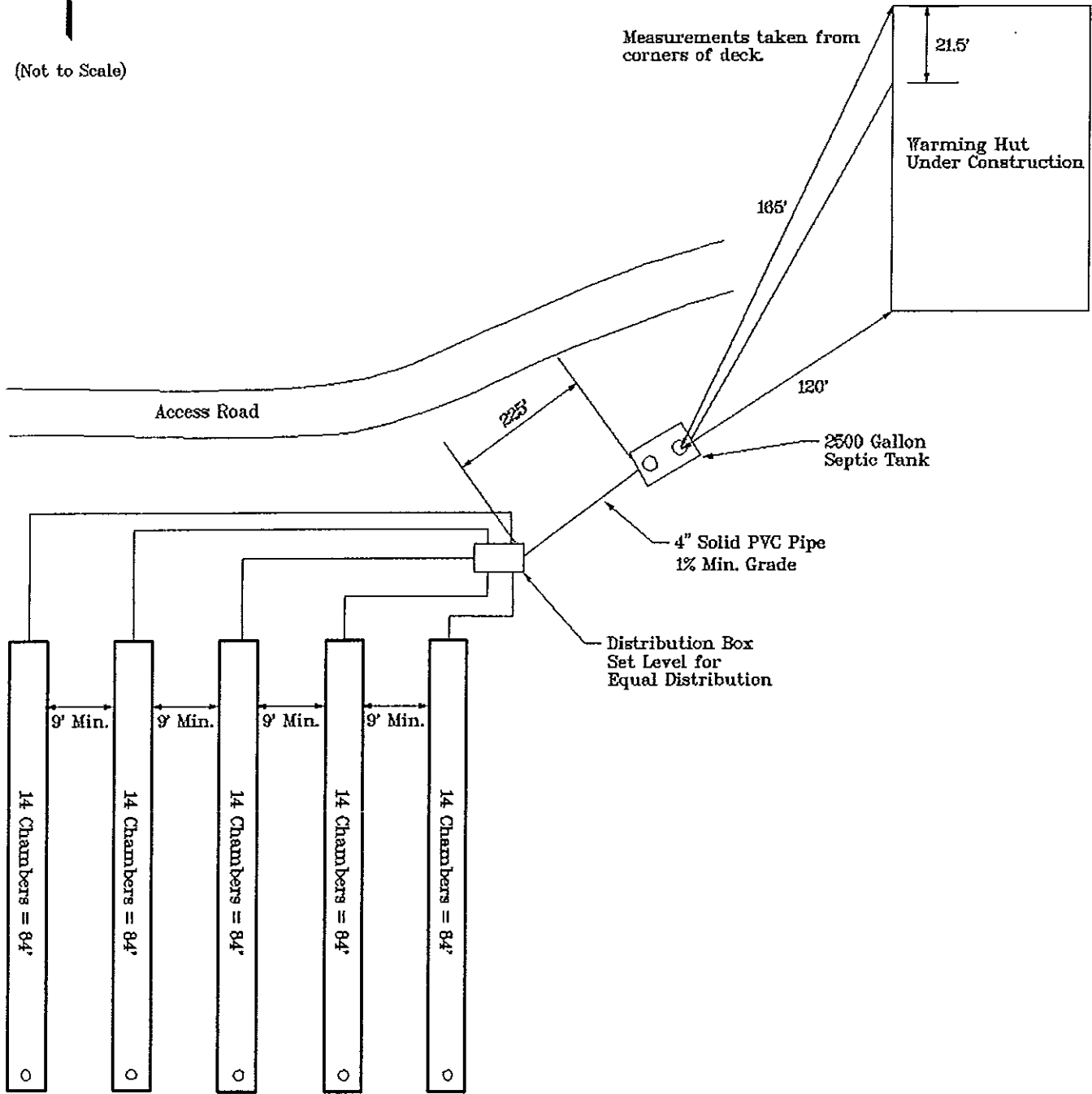
cc: Mike Zopf, Routt County Department of Environmental Health



NORTHWEST COLORADO CONSULTANTS
STEAMBOAT SPRINGS COLORADO



(Not to Scale)



Inspection pipes had not been installed.

SEPTIC SITE PLAN

Job Name: Warming Hut Septic System

Job No. 97-3286

Location: Stagecoach Ski Area, Routt County, Colorado

Figure #2