

Date Received
RECEIVED
AUG 15 1984
Environmental Conservation

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REQUEST FOR SEWER APPROVAL ONLY
APPLICATION FOR ON-SITE WATER AND SEWER
SYSTEM APPROVAL

I. GENERAL INFORMATION		
Legal Description of the Location Lot 1 Block 3 Wasilla Heights Add. #1		
Applicant Name Dennis Illies	Applicant is: (Check one) <input type="checkbox"/> Bank <input type="checkbox"/> Certified Installer No. <input checked="" type="checkbox"/> Owner/Builder	
Address (Street or P. O. Box) SRA Box 3076	Type of Residence <input type="checkbox"/> Single Family <input type="checkbox"/> Multi-Family <input checked="" type="checkbox"/> Commercial	Total No. of Bedrooms N/A
City, State and Zip Code Wasilla, Alaska 99687	Telephone 376-6532	
Send Approval to: <input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Other: (Give Name & Address)		

II. WATER SUPPLY SYSTEM					
Source of Water and Containment (Check all that Apply) <input checked="" type="checkbox"/> Well (Drilled or Driven) <input type="checkbox"/> Surface (Identify) _____ <input type="checkbox"/> Roof Catchment <input type="checkbox"/> Other (Identify) _____ <input type="checkbox"/> Holding Tank _____		Type of Water Supply System <input type="checkbox"/> Private <input checked="" type="checkbox"/> Public (Serves more than one family)	Treatment of Water (Check all that Apply) <input type="checkbox"/> None <input type="checkbox"/> Chlorination <input type="checkbox"/> Filtration <input type="checkbox"/> Mineral Removal <input checked="" type="checkbox"/> Other: Unknown		
Well Data					
Is the Height of the Well Casing more than 12" above the Ground?				<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is a sanitary seal installed on the well casing?				<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is drainage directed away from or around the casing within a radius of 10 feet of the well casing?				<input type="checkbox"/> Yes <input type="checkbox"/> No	
Date Drilled	Depth of Well (Feet)	Static Water Level (Feet)	Yield (If Available) Gal/Min	Pump Rate (If Available) Gal/Min	
Separation Distances from the Well Casing to each of the Following Sources of Contamination:					
Septic/Holding Tank on Lot		Sewer Lines on Lot		Absorption Area on Lot	
Closest Septic/Holding Tank on Adjacent Lot		Closest Sewer Lines on Adjacent Lot		Closest Edge of an Absorption Area on Adjacent Lot	
If toxic materials are stored on the property, including fuel tanks, paints, lubricants and other petroleum based materials, pesticides, fungicides or herbicides, indicate distance from contaminants to well casing:			On Lot	On Adjacent Lot	
Water Sample Taken by: Name			Sampler Is:		
Address			<input type="checkbox"/> Buyer <input type="checkbox"/> Engineer	<input type="checkbox"/> Banker <input type="checkbox"/> Government Official	
Water Sample Results: Attach Copy <input type="checkbox"/> Satisfactory - Date: _____			<input type="checkbox"/> Unsatisfactory - Date: _____		
Comments/Recommendations:					

I certify that the above information is correct:			
Signature	Typed/Printed Name	Title	Date

NOTE: Must be signed by a Certified Installer, Professional Engineer, Department of Environmental Conservation or the Owner/Builder

1. WASTEWATER DISPOSAL

<input checked="" type="checkbox"/> Septic Tank/Absorption System		<input type="checkbox"/> Package Treatment: (Specify Brand Name or Process)	
<input type="checkbox"/> Holding Tank - Specify:	Capacity of Tank	Where Waste is Disposed	Frequency of Pumping
<input checked="" type="checkbox"/> Septic Tank Outfall Discharged To: Subsurface		<input type="checkbox"/> Other (Specify): (Outhouse, Incinerator, etc.)	

New System

Name of Installer Big Dipper Excavating			Date Installed 7/20/84	
<input type="checkbox"/> Owner/Builder	<input type="checkbox"/> Certified Installer No. _____	<input checked="" type="checkbox"/> Other: Installer	Type/Manufacturer Steel/ Anchorage tank	
Septic Tank Size (Gallons) 1500		Number of Compartments Two (2)		Soil Type or Rating 2.0 gpd/sf
Type Soil Absorption System Deep Seepage Trench		Dimensions/Size Soil Absorption System 390 eff. sf.		Type/Quantity Backfill Material used for Soil Absorption System -3" septic rk./20 cu. yds
Percolation Test Results Not required		Percolation Test by: (Name) N/A		
Minimum Ground Cover over Absorp- tion area 4 Feet	Minimum Ground Cover over Septic Tank 4 Feet	Cleanout Pipes/Caps Installed on Septic Tank <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Cleanout Pipes/Caps Installed on Absorption System <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Separation Distance to:	Water Supply Source on Lot Over 150 Feet	Nearest Water Supply Source on Adjacent Lot 148 Feet	Nearest Body of Water over 100 Feet	Water Table/Bedrock Over 4/6 Feet
Lot Line Over 10 Feet				
Comments/Recommendations Representatives of Gilfilian Engineering logged a test hole, designed and inspected the installation of the sewage disposal system.				

I certify that the above information is correct:

Signature <i>Bob Gilfilian</i>	Typed/Printed Name Bob Gilfilian	Title, Reg. /Cert. No., Inst. No. Professional Engineer	Date 8/9/84
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NOTE: Must be signed by a certified installer, professional engineer or DEC Staff.

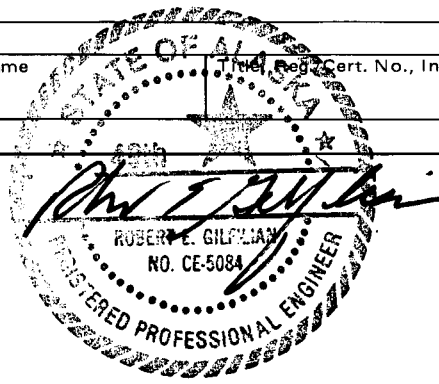
Existing System

Name of Installer			Date Installed	
<input type="checkbox"/> Owner/Builder	<input type="checkbox"/> Certified Installer No. _____	<input type="checkbox"/> Other:	Type/Manufacturer	
Septic Tank Size (Gallons)		Number of Compartments		Soil Type or Rating
Type Soil Absorption System		Dimensions/Size Soil Absorption System		Type/Quantity Backfill Material used for Soil Absorption System
Adequacy Test Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail		Adequacy Test Performed By: (Attach Copy of Report)		Date Septic Tank Pumped (Attach Copy of Receipt)
Minimum Ground Cover over Absorp- tion Area Feet	Minimum Ground Cover over Septic Tank Feet	Cleanout Pipes/Caps Installed on Septic Tank <input type="checkbox"/> Yes <input type="checkbox"/> No	Cleanout Pipes/Caps Installed on Absorption System <input type="checkbox"/> Yes <input type="checkbox"/> No	
Separation Distance to:	Water Supply Source on Lot Feet	Nearest Water Supply Source on Adjacent Lot Feet	Nearest Body of Water Feet	Water Table/Bedrock Feet
Lot Line Feet				
Comments/Recommendations				

I certify that the above information is correct:

Signature <i>[Signature]</i>	Typed/Printed Name	Title, Reg. /Cert. No., Inst. No.	Date
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NOTE: Must be signed by a professional engineer.



SEAL
Registered Professional
Engineer



Gilfillan Engineering &
Environmental Services
P.O. Box 871868
Wasilla, Alaska 99687

FIELD LOG Test Hole No. <u>1</u>	DATE <u>7/20/84</u>
	INITIALS <u>CPC</u>
	SHEET <u>1</u> OF <u>1</u>

PROJECT NUMBER 184053 RIG TYPE & NO. _____
 PROJECT NAME L1 B3
 LOCATION WASILLA HEIGHTS No 1
 METHOD USED EXCAVATION / BACKHOLE DATE BEGUN 7/20/84
 WEATHER OVERCAST DATE COMPLETED 7/20/84
 FIELD PARTY _____ ENGINEER P. Curtis

GROUND WATER TABLE		
W.D.: White Drilling	A.B.: After Boring	
Depth in Ft.		
Time		
Date		

Sampling				Depth in Feet	% Ice Content	Frozen?	Soil Graph	Moisture	Consistency	DESCRIPTION Soil type, color, texture, estimated particle size, sampler driving notes, depths circulation lost, notes on drilling case, bits used, etc.	Location Diagram: <u>SEE MAPS IN FILE</u>
Sample No	Blow Count	Location Sampled	Recovery								
Collar Elevation <u>100.00</u>											Reference <u>INVERT OF TANK OUTLET</u>
				0							
				1						<u>GREY GRAVEL w/ TRACE OF SILT</u>	
				2						<u>SOME SEEMS OF CLEANER GRAVEL</u>	
				3						<u>2'-6", LESS THAN 6" WIDE</u>	
				4						<u>NO COBBLES OVER 8"</u>	
				5							
				6							
				7							
				8							
				9							
				10							
				11						<u>WATER</u>	<u>NOTE - groundwater encountered at 11.0' below outlet invert on septic tank.</u>
				12							
				13							
				14							
				15							
				16							
				17							
				18							
				19							
				20							

RATED SOILS @ 2.0 gpd/ft.



376-5038
P.O. Box 871064
Wasilla, Alaska
99687-9998

September 14, 1984

Mr. Dennis Illies
SRA 3076
Wasilla, Alaska 99687

RE: Lot 1, Block 3, Wasilla Heights #1 (Convenience Store, Apartment
and Office Building) On-site Wastewater Disposal System

Dear Mr. Illies:

The Department approved construction plans for the subject property on
July 3, 1984.

WASTEWATER DISPOSAL SYSTEM

Based on the information submitted by Gilfilian Engineering on August 15,
1984 the wastewater disposal system was installed essentially according
to plans approved in writing by the Department.

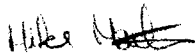
This letter constitutes approval of the wastewater disposal system.

DRINKING WATER SUPPLY SYSTEM

The water system is not approved. See my letter dated July 3, 1984, for
requirements to obtain approval to operate.

Thank you for your cooperation with this Department. If you have any
questions please call me.

Sincerely,


Mike Mathews
Environmental Field Officer

MM/bkr

376-5038
P.O. Box 871064
Wasilla, Alaska
99687-9998

July 3, 1984

Mr. Dennis Illies
SRA Box 3076
Wasilla, AK 99687

RE: Lot 1, Block 3 Wasilla Heights #1, (Convenience Store, Apartment & Office Bldg.)
Class C Public Water System and On-site Wastewater Disposal System

Dear Mr. Illies:

This is in response to your request for review, by means of submittal of plans on June 19, 1984, for the water supply and wastewater disposal systems, which are to serve the proposed, referenced facility. I have completed my review and have the following comments.

Water Supply

As noted on the plans the convenience store, apartment, and office building will be served by a well, which, as proposed, would be a Class C Public Water System source. This well requires a minimum 150 foot separation from any wastewater disposal system, and 75 feet separation from private sewerlines. Based on the location of the well, as shown by the plan, these requirements will be met. It is emphasized that careful control of the specific siting must be maintained to insure that these minimum separation distances are obtained. Subject to these comments, the plans are approved in accordance with provisions of 18 AAC 80, Drinking Water. A Construction Certificate, constituting this approval, is enclosed. Prior to providing any drinking water to the public (residents), the operation portion of this certificate must also be issued by this Department. This will require submittal of satisfactory test results for total coliform bacteria on a sample from the well and a copy of the well log. Pump sizing and storage requirements must also be determined and submitted to this office for review and approval prior to the installation of these system components.

Wastewater Disposal

Based on the intended use of the facility (460 gpd estimated flow), and your assumption of subsurface soil conditions, as detailed in the submitted data, my review reveals that the wastewater disposal system for the facility is adequately sized (1500 gallon, 2 compartment septic tank and a ³⁵⁰ ~~250~~ ft. ² soil absorption system) as noted on your plans.

JPL

Therefore, subject to a requirement for a preburial inspection by a Professional Engineer, including verification of soil conditions watertable separation, and subject to submittal of unqualified "as-builts" under your stamp as a Professional Engineer, these plans are approved for concerns of this Department, in accordance with provisions of 18 AAC 72, Wastewater Disposal.

A copy of this plan approval letter and a copy of the signed Construction Certificate for the water supply system must be conspicuously posted on-site during the period of installation of these systems.

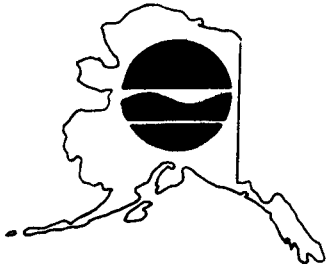
Thank you for your coordination with this Department. If you have any questions, please do not hesitate to contact me.

Sincerely,


Mike Mathews
Environmental Field Officer

cc: Gilfilian

1 Enclosure (as stated)
MM/rc



Gilfilian Engineering & Environmental Services

Bob Gilfilian, P.E. P.O. Box 871868, Wasilla, Alaska 99687 (907) 376-3005

RECEIVED
JUN 19 1984

Environmental Conservation

ENGINEER REPORT

FOR

DENNIS ILLIES' CONVENIENCE STORE AND GAS STATION

LOCATED ON

LOT 1, BLOCK 3 WASILLA HEIGHTS NO. 1

CORNER OF LUCAS ROAD AND THE PARKS HIGHWAY

PREPARED FOR

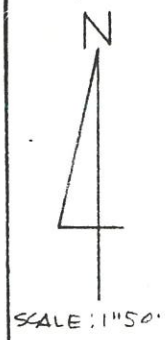
MR. DENNIS ILLIES (OWNER)
SRA BOX 3076
WASILLA, ALASKA 99687
907-376-6532

or Lee Riley
SRA BOX 6104
Palmer ALASKA
99645

907 745-2921

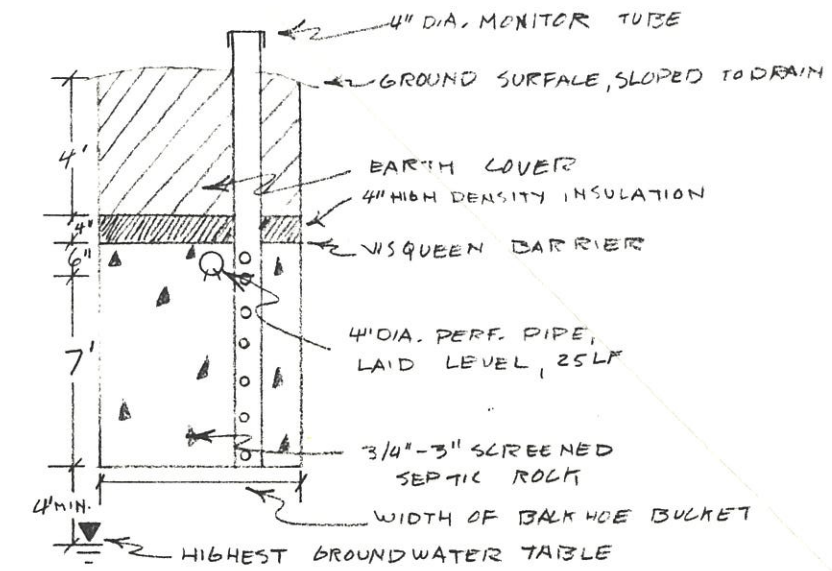
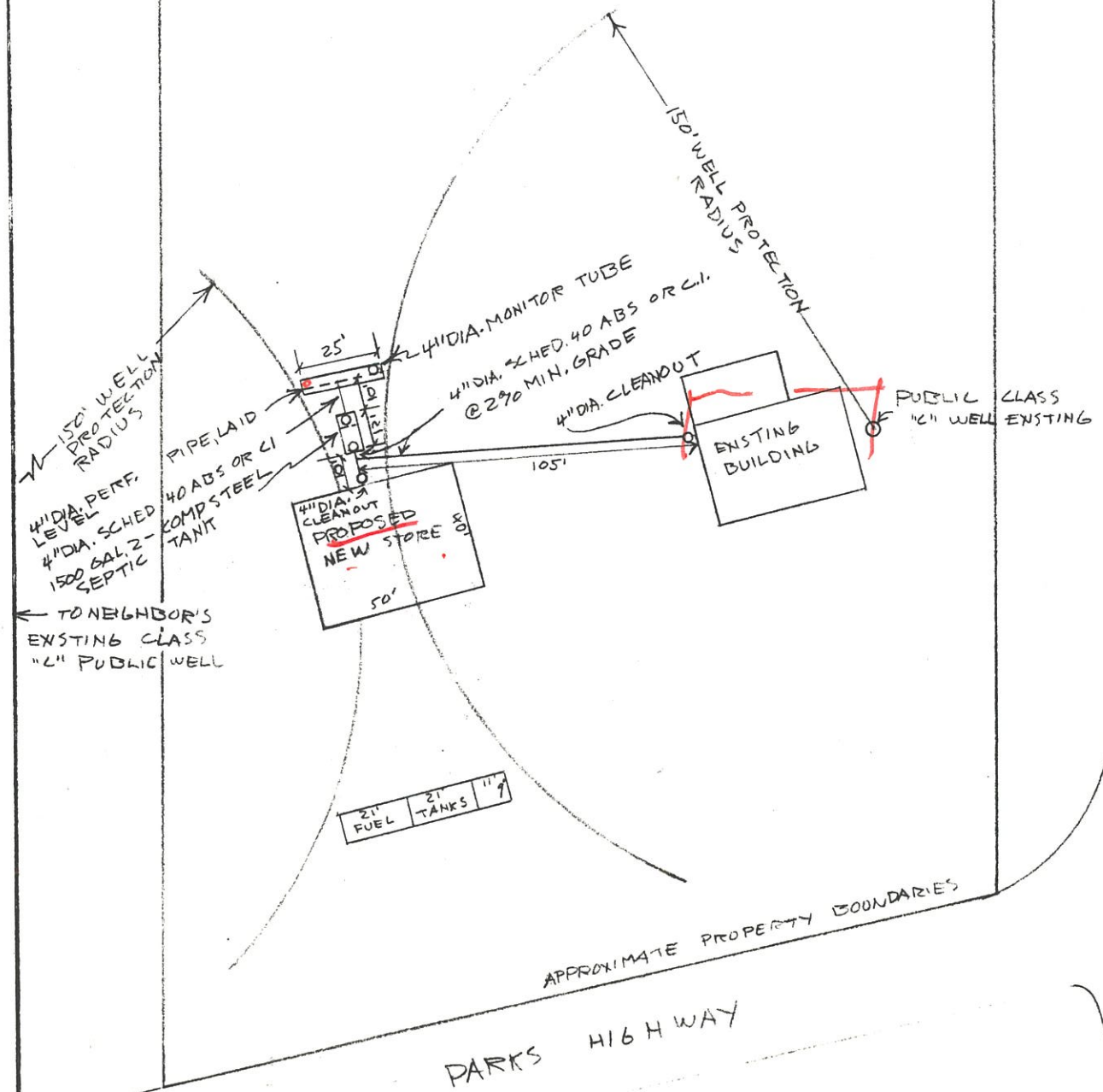
PROJECT NUMBER 184053

FEBRUARY 27, 1984



APPROXIMATE PROPERTY BOUNDARIES

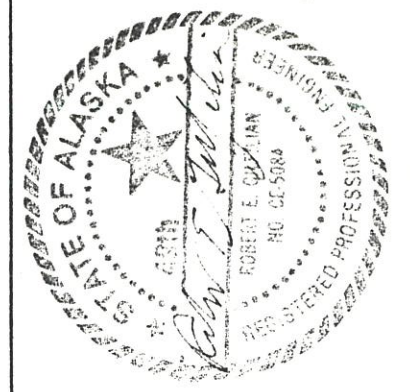
LOT 1, BLOCK 3



TYPICAL CROSSSECTION A-A'
SEEPAGE TRENCH
(NTS)

NOTES:

1. WELL LOCATION DOES NOT PROHIBIT DEVELOPMENT OF ADJOINING PROPERTIES.
2. NO KNOWN SEWAGE DISPOSAL SYSTEMS LOCATED WITHIN 150' OF THE WELL SITE.
3. FIELD MEASUREMENTS MADE WITH HANDHELD EQUIPMENT, NOT BY SURVEY METHODS.
4. INSTALLATION OF THE SEWAGE DISPOSAL SYSTEM SHALL BE DONE IN ACCORDANCE WITH A.D.E.C. STANDARDS.
5. NO KNOWN WELLS EXIST WITHIN 150' OF THE PROPOSED SEWAGE DISPOSAL SYSTEM LOCATION.
6. REFER TO ENGINEER'S REPORT DATED Feb. 27, 84, FOR NARRATIVE DESCRIPTION, ADDITIONAL DETAILS, AND SPECIFICATIONS.

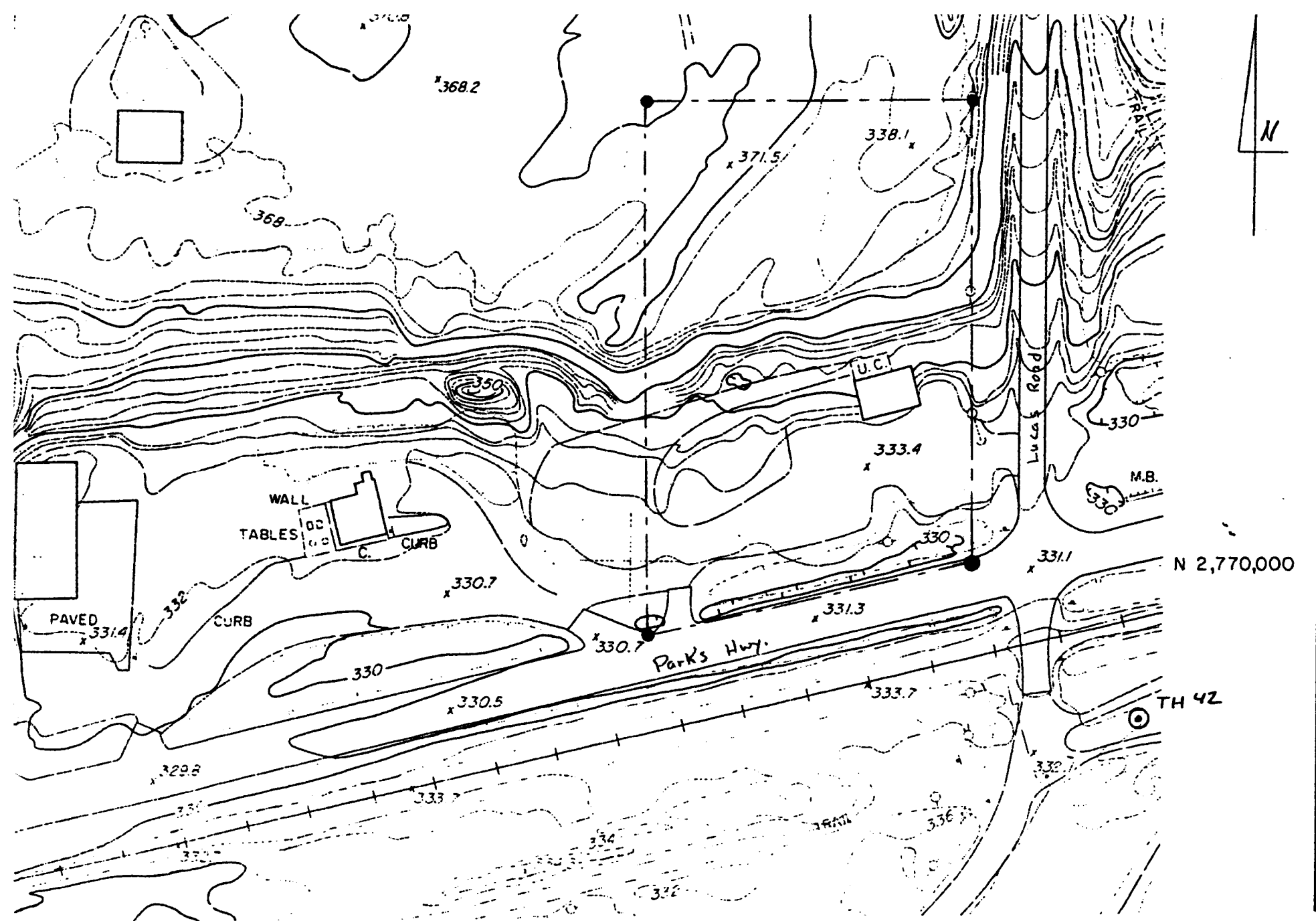


PROPOSED SITE DEVELOPMENT PLAN
 LOT 1, BLOCK 3, WASILLA HEIGHTS #1
 DENNIS ILLIES CONVENIENCE STORE AND GAS STATION
 PROJECT NO: 184053 SCALE: 1"=50' DATE: 2/27/84
 DRAWN BY: CL DESIGNED BY: KV SHEET 1 OF 1

Gibilian Engineering &
 Environmental Services
 P.O. Box 871868
 Wasilla, Alaska 99687



Attachment "B" Proposed Site Plan



Attachment "A" Site Location Map

I. PURPOSE

The purpose of this report is to request an approval from the Alaska Department of Environmental Conservation (ADEC) for a water supply and sewage disposal system proposed to serve the subject facilities as described herein.

This report is respectively submitted in accordance with the provisions given in 18 AAC 72.60 and 118 AAC 80.100, Plan Review Sections.

Attached and a part of this report are:

1. ATTACHMENT A - "Project Location Map"
2. ATTACHMENT B - "Proposed Site Layout Plan"

II. PROJECT DESCRIPTION

Mr. Dennis Illies of Wasilla, Alaska desires to build a 40' x 50' wood construction convenience store with gasoline filling facilities. There is an existing office building and apartment on the subject site. He will have three (3) petroleum storage tanks on site. The proposed building site is on Lot 1, Block 3 Wasilla Heights, No. 1, located at the corner of Lucas Road and the Parks Highway. For project location refer to ATTACHMENT A, "Project Location Map".

III. SITE CONDITIONS

The project site is approximately 2.0 acres in size, located on the northwest corner of the intersection of Lucas Road and the Parks Highway. The site is gently sloping to the south over the area to be utilized for the subject development. A steep slope exists immediately behind the existing structure, running in an east-west direction.

A restaurant (Farinas) is located approximately 400 feet west of the existing building site. Test hole data is on record with ADEC for the restaurant area. Based on the results of the test hole on Farinas' property and this firm's soils experience in this area, it is anticipated that the groundwater table will be approximately 16.0 feet below ground surface and overlain with sandy gravel soils at the project site. A test hole will be provided at the time of installation to verify subsurface conditions.

IV. DESCRIPTION OF WATER SUPPLY SYSTEM

A. SUPPLY SOURCE: It is proposed to utilize an existing six (6) inch diameter steel cased well at the location noted on "Proposed Site Layout Plan", ATTACHMENT B. The well would be classified as a public water supply Class C source as per ADEC's regulation 18 AAC 80. This well has served the existing commercial office building and apartment for a number of years with no known problems.

B. WELL LOCATION: In accordance with the aforementioned regulations, a Class C public water supply well requires a minimum 150 foot horizontal protection radius. Refer to the attached site plan for proposed well location and minimum separation distances to sources of contamination.

V. DESCRIPTION OF WASTEWATER DISPOSAL SYSTEM

A. WASTEWATER FLOWS: Typical wastewater flow rates for this type of facility are referenced in the 1980 EPA Manual titled "On-Site Wastewater Treatment & Disposal Systems" and the New York State DEC 1980 standards. The owner plans to install one (1) non-public restroom. Anticipated wastewater flows are:

Convenience Store
Employees - 5 at 20 gpd each = 100 gpd

Apartment
Bedrooms - 2 at 150 gpd each = 300 gpd

Office Building
Employees - 3 at 20 gpd each = 60 gpd

TOTAL ESTIMATED FLOW = 460 GPD

Allowing for a safety factor for possible future flow increase, the daily wastewater flow can be taken as 1000 gallons.

B. SEPTIC TANK DESIGN: The above computed daily wastewater flow necessitates the use of a minimum 1500 gallon (liquid capacity) double compartment, septic tank. The septic tank should have a manhole access and a four (4) inch diameter clean-out pipe for each tank compartment.

C. SOIL ABSORPTION SYSTEM: Based on the above described well-drained soil conditions, it is recommended an absorption rating of 3.0 gallons per day per square foot be used for design purposes. Hence, the total absorption area for the facilities computes as:

$$1000 \text{ gpd} \div 3.0 \text{ gpd/sq.ft.} = 333 \text{ square feet}$$

It is proposed to utilize a seepage trench for the soil absorption system. Allowing for an effective sidewall height of 3.5 feet, the minimum length of the trench sidewall required to satisfy the absorption area equates to:

$$333 \text{ sq. ft.} - 2 \text{ sidewalls} - 7.0 \text{ feet} = 25 \text{ lineal feet}$$

It is recommended at the time of installation, a deep test hole be provided to verify the soil and groundwater conditions. Dependent on those findings, the design of the soil absorption system may require field modifications.

D. SEWER LINES: A minimum four (4) inch diameter cast iron sewer pipe is recommended for installation between the building and the septic tank. A minimum slope of 2% (1/4" per foot) and a minimum burial of four (4) feet is also recommended. Sewer line clean-out pipes should be provided near the locations shown on the attached Layout Plan.

E. FROST PROTECTION: All components of the above described wastewater disposal system should be buried at a minimum of four (4) feet below the ground surface. Vehicular traffic, parking and snow removal are possibilities in the future. Four (4) inches of high density polyurethane insulation should be placed over the entire system.

VI. CLOSURE

It is recommended that the owner practice routine preventative maintenance for the care and operation of the septic tank system. The owner should periodically check the disposal system and have the septic tank pumped approximately every twelve (12) months - and in doing so, one can expect to receive satisfactory service from this on-site disposal system for several years.

Dennis Illies' Convenience Store
Project Number 184053
Page 4, February 27, 1984

The preparation of this report was based on our understanding of the intended use of the facility. Deviation from this use could alter the recommendation and design given hereinabove. We would appreciate the opportunity to review and evaluate any design changes. It is recommended that the installation of the wastewater disposal system be closely inspected.

Sincerely,

GILFILIAN ENGINEERING & ENVIRONMENTAL SERVICES

Bob Gilfilian, P.E.
Principal

Attachments
BEG:ktp/184053.rpt