Dmea-2750

TUNGSTEN-LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

October 17, 1952

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

We are herewith submitting for your consideration and approval our Application For Aid In An Exploration Project, Pursuant To DMEA Order 1, Under The Defense Production Act of 1950, As Amended and As Revised April 1952.

Four copies are enclosed, each with maps and charts. We have endeavored to make this application as complete as possible, both as to general Company information, and work estimates and costs. However, any additional information will be readily available.

A government access road was built in 1942-43 for a distance of 5.3 miles through Pole Canyon to the property, which at that time, and until 1950 was known as the Red Hawk. During the past summer various extensions and additions to this road have been built by the current management at their own expense.

Following is a summary of costs as brought out in detail in the application as compiled in Part 6:

a.	Independent Contracts	$16,379.25
b.	Labor, supervision and consultants	20,731.25
c.	Operating materials and supplies	6,783.00
d.	Operating equipment	2,738.12
e.	Rehabilitation and repairs	1,650.15
f.	New buildings, improvements	- - - - -
g.	Miscellaneous	8,185.00
h.	Contingencies	6,474.24
	Estimated total cost of Project	$62,941.01

We are very anxious that there shall not be any delays in the processing of the loan which we can avoid, and we therefore stand ready at all times to assist you in any way.

Respectfully,

TUNGSTEN-LEAD COMPANY

By William Berger

William Berger, President

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. Dmea - 2750
Metal or Mineral
Date Received 10-27-52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: **Tungsten-Lead Company**
Room 7 Professional Building
Winnemucca, Nevada
Incorporated in Nevada

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. **See note attached**

(*d*) If a partnership, add to the above statement the names and addresses of all partners. **Not applicable**

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract **Tungsten-Lead Company claims numbered 1 to 16 inclusive, Section 16, T 34N, R 34E, Old Central Mining District, Pole Canyon, Pershing County, Nevada.**

(*b*) State any mine name by which the property is known. **Tungsten-Lead: Formerly known as the Red Hawk**

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise **Claimant of unpatented claims; Tungsten-Lead 1 to 16 inclusive**

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. **Not applicable**

(*e*) If you own the land, describe any liens or encumbrances on it **None**

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. **See note attached**

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

Please refer to attached notes for all answers beginning with No. 4

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Scheelite (Calcium Tungstate - $CaWO_4$

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within 7 days and be completed within 11 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

[x] Money [x] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper. See notes attached

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated October 17, 1952

TUNGSTEN-LEAD COMPANY
(Applicant)

By William Berger
President

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

TUNGSTEN-LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

Part 1 Section c

(c) Titles, names and addresses of officers:

William Berger
Sonoma Inn, Winnemucca, Nevada - - - - - - - - - - President

Henry Reynaud
100 Santa Rosa Avenue, Santa Rosa, California - - - Vice-President

Pierre Dick
American Trust Co. Bldg., Santa Rosa, California - Secretary-Treasurer

Part 3 Section f

(f) The land consists of unpatented claims:

Mining claims designated Tungsten-Lead No's. 1 to 8 inclusive are officially recorded at Lovelock, Pershing County, Nevada, as follows:

Book 13, pages 7 to 12 inclusive.

Mining claims designated Tungsten-Lead No's. 9 to 16 inclusive are recorded in the same Book No. 13 on pages 489 to 492 inclusive.

TUNGSTEN-LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

Part 4 Section a

(a) There have been three phases of past mining and exploration activity on the Tungsten-Lead properties, and these phases are being pursued during current operations. These phases have been conducted on topographic prominences known as the North Hill, Middle Hill, and South Hill, and will be discussed in that order. These three locations are all on Tungsten-Lead mining claims as enumerated in Paragraph 3 (a), and are currently the complete and exclusive operations of the Tungsten-Lead Company.

North Hill:

Former operations on the North Hill consisted of driving 104 feet of drift, and sinking eight prospect cuts to a depth of five feet. Current operations by the applicant on the North Hill have consisted of making 1.1 miles of road from the Middle Hill to the North Hill; removing 750 cubic yards of earth and rock with a bulldozer as surface prospecting; opening the portal of the aforementioned drift and cleaning it for accessibility and inspection; and sinking one old prospect cut to a depth of ten feet. There are no production facilities on the North Hill.

Middle Hill:

Former operations on the Middle Hill have consisted of sinking 25 feet of shaft and drifting an unknown distance west and south from this shaft at the 25-foot level. These drifts are now caved and are therefore inaccessible. Current operations have consisted of the installation of an adequate surface plant; realigning and timbering the shaft; and sinking the shaft to a depth of 45 feet. In addition, 200 cubic yards of earth and rock have been removed from the Middle Hill with a bulldozer for surface prospecting. Production facilities on the Middle Hill consist of the following:

1. 15 hp LeRoi double drum, gas engine driven hoist complete with cables and two eight cubic foot buckets.

2. 60 cubic foot air receiver.

3. 160 cubic foot Gardner-Denver gas engine driven portable air compressor.

4. Shaft house, shown in detail on plate (a).

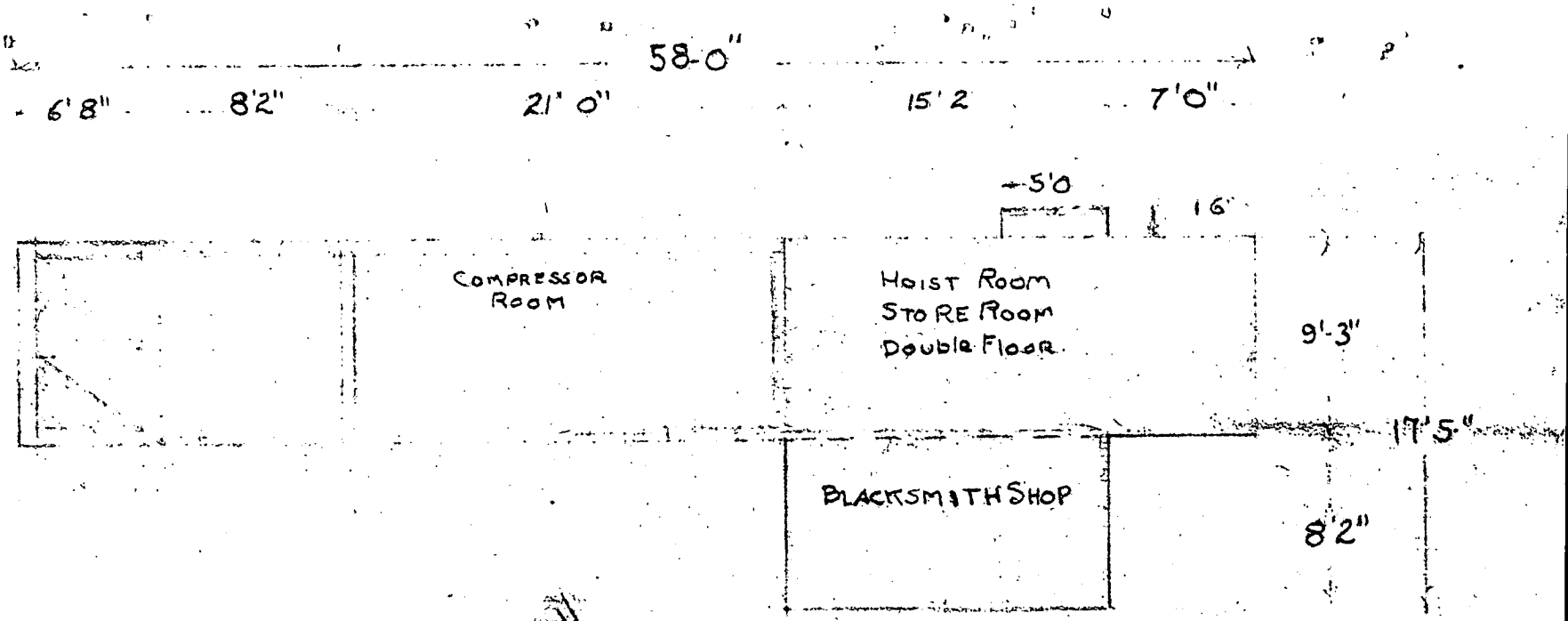
5. 50 ton ore bin.

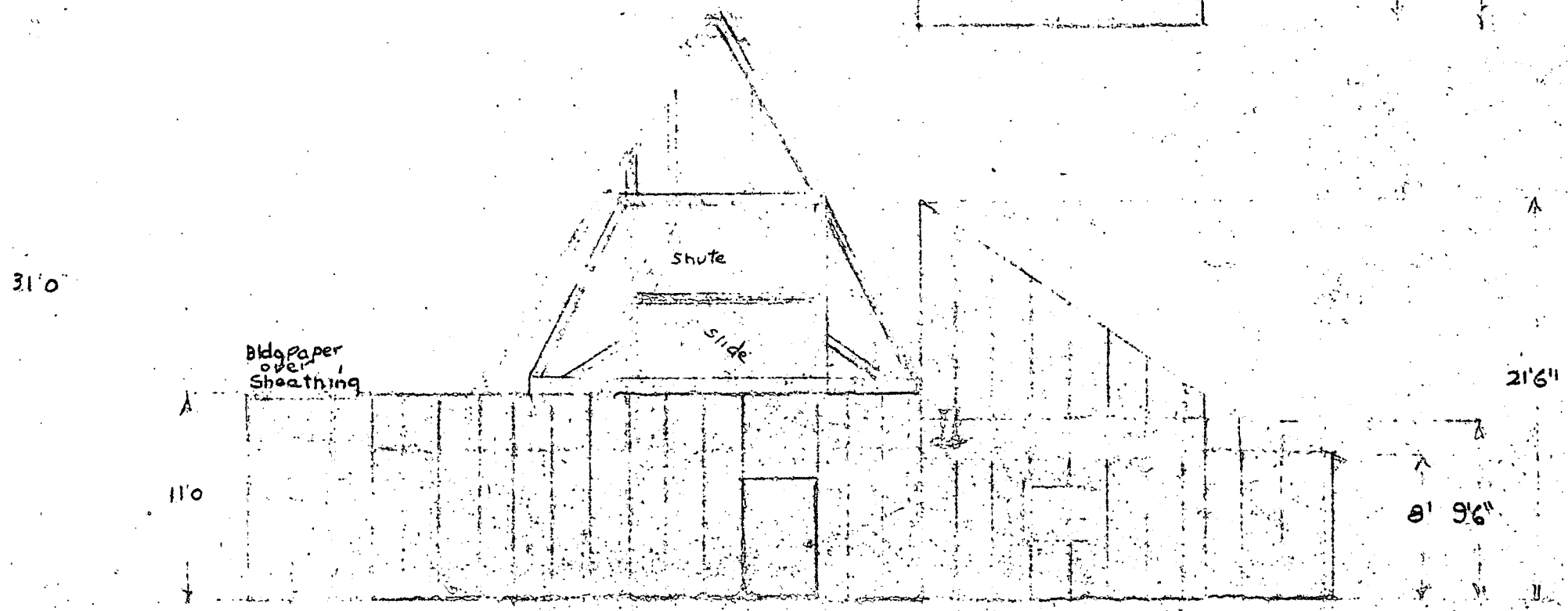
6. Timbered underground tool storage room, accessible from surface.

7. Timbered underground powder magazine, accessible from surface.

Plate (a)

Scale 1' = 1/8"





SIDE ELEVATION

SCALE 1' = 1/8"

PLATE (a)

8. Blacksmith shop and hand tools including complete acetylene welding outfit.

9. Gardner-Denver model S55 jackhammer complete with column, shell, air hose, water hose, and 15 gallon pressure tank.

10. 16 cubic feet Matteson mine car with dump track.

11. Complete set of hand mining tools.

These facilities have all been installed or rehabilitated by the applicant during current operations.

All workings except the drifts at the 25-foot level from the shaft are open and accessible for examination.

South Hill:

Former operations on the South Hill have consisted of sinking four surface prospect cuts. Current operations by the applicant on the South Hill have consisted of removing 600 cubic yards of earth and rock with a bulldozer for surface prospecting, and driving and timbering 102 feet of drift. Track (12-pound rail), 2-inch air line, and half-inch water line have been installed in this drift. Twenty-four feet of drift have been timbered. Production facilities at the South Hill include a 16 cubic foot Matteson mine car and a 20-ton ore bin, all installed during current operations. Additional production facilities are as follows:

Atlas-Diesel jackhammer complete with pneumatic pusher leg, drill steel, air hose, water hose, and 25 gallon pressure tank.

Complete set of hand mining tools.

Part 4 Section b

(b) There is no available record of past production from the Tungsten-Lead properties. There are no measurable reserves of ore in the Tungsten-Lead workings, but all workings show commercial grade mineral in bodies of varying widths. Additional exploration work is required to block this ore out. The ore bodies showing range from six inches to five feet in width, and samples taken from these bodies vary in grade from 0.30% WO3 to 4.79% WO3.

(c) General Geology: The area encompassed bythe Tungsten-Lead properties is a west-dipping monocline of highly metamorphosed early Mesozoic sedimentary rocks. The original beds have been altered to a slate, slaty-shale, quartzite, and marble. These beds, generally baren, are collectively referred to as a hornfels. The strike of these beds ranges from N 10 degrees E to N 30 degrees E, and the dip averages about 55 degrees W. These beds have been instruded by granitic and granodiorite dikes and sills which are believed to be the source of the mineralizing solutions.

Mineral deposits have been formed where the intrusions came in contact with the calcareous beds in the section, and the resultant contact metamorphism has produced scheelite-bearing tactite lenses with a suite of gangue minerals consisting of pyrite, powellite, quartz, garnet, epidote, and chlorite mica. The scheelite is massive in places, but generally consists of disseminated crystals throughout the rocks. Individual crystals vary in size up to 1/8 inch in diameter.

The mineralized area extends from the northern boundry of Section 16 along strike to the southwest corner. All prospects and workings show evidence of commercial grade mineralization at or near the surface, and it is desired to prospect the structure at depth.

(d) Accessibility to the Tungsten-Lead properties is as follows:

> Beginning at Mill City, Nevada, thence 7.6 miles over improved all-weather road to the Nevada-Massachusetts Tungsten Mine; thence northeast over 2.8 miles of unimproved county road to the mouth of Pole Canyon; thence northwest over 4.7 miles of unimproved road in Pole Canyon to the Tungsten-Lead camp.

These roads are shown in Figures 1 and 2. The road to the camp is readily passable during favorable weather, but will require some maintenance and snow removal during the winter. This road has an excellent base and frequent turnouts, but will require occasional grading.

From the camp the roads radiate to the workings as shown on Figure 3. These roads are also readily passable but currently require grading. They will also require maintenance and snow removal during the winter. All grades are moderate, and the road has recently accommodated 10-wheel (12 1/2 ton) diesel ore hauling rigs.

TUNGSTEN-LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

Part 4 Section d (continued)

The following table gives mileage and road data to shipping, supply, and residence points:

Mileage Table

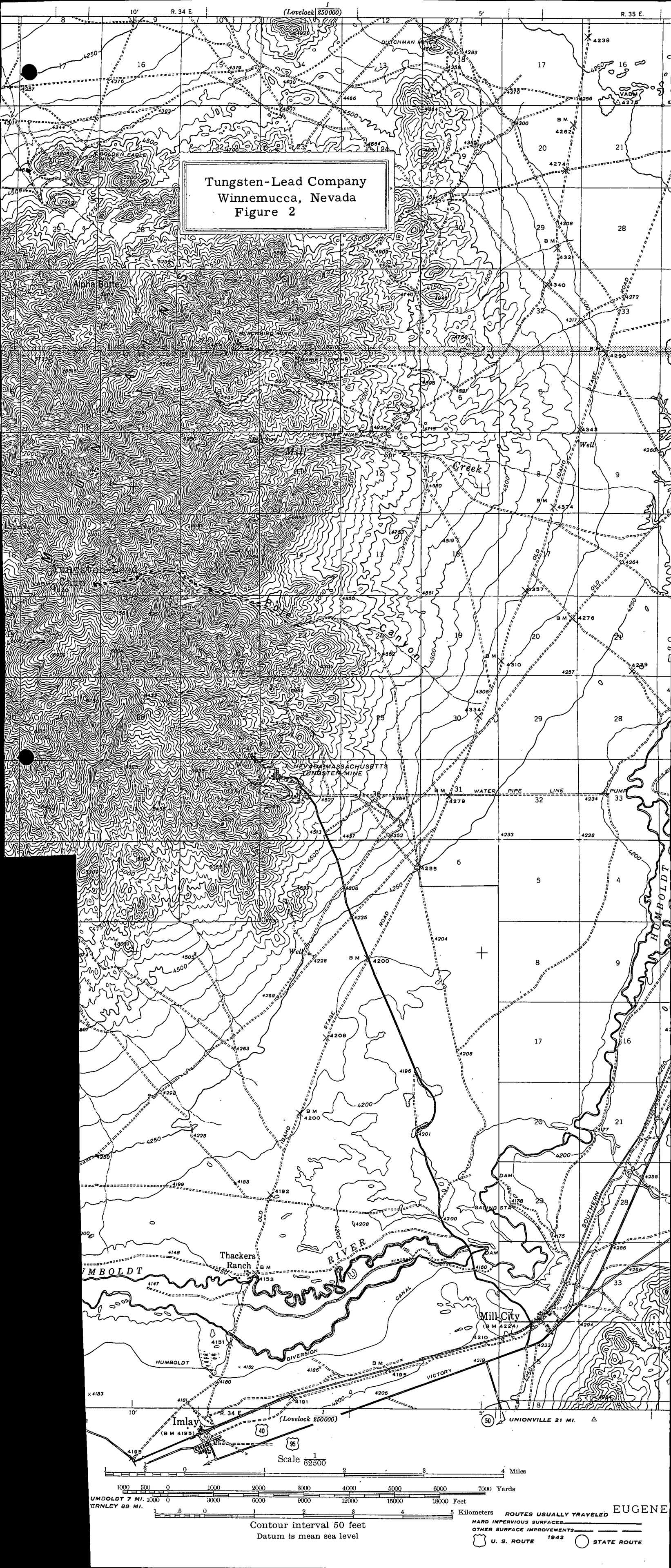
From	To	Distance	Road Data
North Hill	Middle Hill	0.7 Mi.	Unimproved; needs widening and grading; will require maintenance and snow removal during winter.
Middle Hill	Tungsten - Lead Camp	0.5 Mi.	Unimproved; needs grading; will require maintenance and snow removal during winter.
South Hill	Tungsten- Lead Camp	0.5 Mi.	do
Tungsten-Lead Camp	Mouth of Pole Canyon	4.7 Mi.	do
Mouth of Pole Canyon	Nev-Mass. Tungsten Mine	2.8 Mi.	do. Will require less maintenance and snow removal than will roads previously described.
Nev.-Mass. Tungsten Mine.	Mill City Nevada	7.6 Mi.	Improved all-weather road. New grade currently completed. Will be oiled.
Mill City Nevada	Toulon Mill	58.5 Mi.	Nevada - U. S. 40.
Mill City Nevada	Golconda Jct. (U.S. 40, Nev. 18)	47.3 Mi.	Nevada - U. S. 40.
Golcon da Junction	Getchell Mill	24.0 Mi.	Nevada 18. 17.0 miles oiled; 7.0 miles improved gravel.

Composite mileages to marketing points:

From:	To:	Distance:
Tungsten-Lead Camp	Toulon Mill	74.2 miles
Tungsten-Lead Camp	Getchell Mill	86.0 miles

OREGON
CALIFORNIA
Mc Dermitt
Denio
Ashdown
Defense Mine
Warner Lake
New Pine Creek
Willow ranch
Ft Bidwell
Upper Lake
Lake City
Cedarville
Eagleville
Middle Alkali Lake
Tule Lake
Ravendale
Viewland
Mapes
Wendel
Amedee
Honey Lake
Stacy
Milford
Sand Pass
Flanigan
Doyle
Vinton
Hawley
Chilcoot
Antelope
Purdy
Loyalton
Sierraville
Verdi
Lawton
Reno
Sparks
Floriston
Reno Hot Springs
Steamboat
Washoe
Truckee
Brockway
Carnelian Bay
Tahoe City
Lake Tahoe
Carson City
Stewart
Glenbrook
Zephyr Cove
Genoa
Stateline
Minden
Gardnerville
Al Tahoe
Centerville
Camp Richardson
Meyers
Picketts
Woodfords
Holbrook
Markleeville
Topaz Lake
Wellington
Smith
Central
Hudson
Simpson
Mason
Western Nevada Mines
Yerington
Northern Lights
Schurz
Nolan
Walker Lake
Wassuk Range
Desert Creek Pk 9020
Wabuska
Weeks
Dayton
Silver City
Virginia City
Gold Hill
Franktown
Lakeview
Carson River
Old Fort Churchill
Walker River
Fernley
Wadsworth
Hazen
Leeteville
Fallon
Fallon Indian Res
Stillwater
Slowpoke
Lahontan Reservoir
Carson Lake
Salt Wells
Frenchman
East Gate
Carroll Summit
Wonder
Broken Hills
Quartz Mountain
Gabbs
Brucite
Rawhide
Sherman Pk 10319
Nixon
Hot Springs
Romolo
Sutcliffe
Pyramid
Pyramid Lake
Tohakum Pk 8174
Winnemucca Lake (Dry)
Pershing Mine
MGL Mine
Toy
Granite Pt
Humboldt Sink
Carson Sink
Humboldt Salt Marsh
Long Mine
Lovelock
Lower Rochester
Rochester
Oreana
Rye Patch
Rye Patch Res
Unionville
Humboldt
Vernon
Placeritas
Rabbithole
Rosebud
Scossa
Sulphur
Jungo
Pronto
Rose Creek
Tungsten
Mill City
Imlay
Straub
Winnemucca
Golconda
Herno
Valmy
Battle Mountain
Copper Basin
Copper Canyon
Betty Oneal
Mc Coy
Kennedy
Segerstrom and Heizer Mine
Buffalo Mt 8196
Granite Mt 8461
Mt Tobin 9779
Mt Lewis 9760
Mt Calla 10200
Austin
Austin Summit 7484
Stokes Castle
Hicks Summit
Bunker Hill 11477
Railroad Pass 5431
No Shoshone Pk 10322
Millett
Iona
Toiyabe Range
Big Smoky Valley
Arc Dome 11775
Mt Jefferson 11807
Round Mountain
Wildcat 10534
Toquima
Quinn River Crossing
Sod House
Davey Town
Orovada
Rebel Creek
Paradise Valley
Red Dog Mine
Leadville Mine
Mud Flat
Empire
Gerlach
Mud Lake
Swan Lake
Massacre Lake
Alkali Lake
Middle L
West L
Vya
Summit Lake
High Rock Lake
Boulder Lake
Pahute Pk 8618
Mahogany Pk 11000
Division Pk 8555
Granite Pk 8990
Kumiva Pk 7340
Pah-Rum Pk 7800
Trident Pk 9400
Capitol Pk 8341
Spring Pk 9400
Sonoma Pk 9421
Adam Pk 8400
Star Pk 9835
Bidwell Mt 8551
Granite Range
Black Rock Desert
Smoke Creek Desert
Mud Meadow Cr.
Thousand Cr.
High Rock Creek
Quinn River
Kings River
Santa Rosa Mts
Paradise Valley
Sonoma Range
Humboldt River
Humboldt Mountains
Spring Creek
Reese River
Truckee River
Carson River
Walker River
Tungsten-Lead Company
Winnemucca, Nevada
Figure 1

Great Salt Lake
Salt Lake City
Ogden
Provo
Utah Lake
GREAT SALT LAKE DESERT
BONNEVILLE SALT FLATS RACE-TRACK
WORLD RECORD SPEEDWAY
NEVADA
PACIFIC STANDARD TIME
MOUNTAIN STANDARD TIME
DUGWAY PROVING GROUNDS (CLOSED TO THE PUBLIC)
WASATCH NATL FOREST
FISHLAKE NATL FOREST
Sevier Bridge Reservoir
Sevier Lake (Dry)
LEHMAN CAVES NATL MONUMENT
OLD STATE HOUSE (FIRST CAPITOL) STATE PARK
EXTINCT VOLCANO
DESERT RANGE EXPERIMENTAL FARM HEADQUARTERS
TIMPANOGOS CAVE NATL MON
BRIGHAM YOUNG UNIVERSITY
BIRD REFUGE
INDIAN CAVES
Bear River Bay
Fremont Island
Antelope Island
Montello
Cobre
Shafter
Wendover
Knolls
Delle
Timpie
Grantsville
Tooele
Stockton
Bingham Canyon
Copperton
Lake Point
Garfield
Magna
Murray
Midvale
Sandy
Draper
Riverton
Alpine
Lehi
Pleasant Grove
Lindon
Orem
Springville
Mapleton
Spanish Fork
Salina
Payson
Santaquin
Eureka
Mammoth
Goshen
Mona
Nephi
Fountain Green
Levan
Leamington
Moroni
Manti
Gunnison
Centerfield
Mayfield
Sterling
Ephraim
Sugarville
Oak City
Delta
Deseret
Hinckley
Abraham
Woodrow
Sutherland
Holden
Fillmore
Meadow
Kanosh
Hatton
Scipio
Redmond
Salina
Aurora
Richfield
Central
Elsinore
Joseph
Sevier
Monroe
Annabella
Sigurd
Venice
Glenwood
Burville
Plateau Jct
Cove Fort
Sulphurdale
Black Rock
Clear Lake
Bloom
Flowell
Burbank
Garrison
Shoshone
Osceola
Baker
Gandy
Uvada
Nielson Ranch
Goshute
Callao
Ibapah
Gold Hill
Lucin
Promontory Pt
Saline
Lakeside
Bert
Bootle
Brigham
Perry
Willard
Plain City
Warren
Reese
Kaysville
Fermington
Centerville
Bountiful
Woods Cross
Huntsville
Eden
Liberty
Pleasant View
North Ogden
Roy
Sunset
Clearfield
Syracuse
West Point
Layton
Kanesville
Hooper
Morgan
Milton
Richville
Porterville
Coalville
Hoytsville
Peterson
Enterprise
Stoddard
Mt Green
So. Ogden
Uintah
So. Weber
Saltair
Arthur
Garfield
Magna
Bacchus
Mills Jct
Erda
Bauer
Copperton
Bingham Canyon
Copperfield
Herriman
Bluffdale
Draper
Riverton
Alpine
Camp Williams
Lehi
Pleasant Grove
Lindon
Orem
American Fork
Geneva
Vineyard
Saratoga Springs
Springville
Mapleton
Spanish Fork
Salina
Payson
Santaquin
Spring Lake
Genola
Elberta
Goshen
Dividend
Mammoth
Silver City
Eureka
Boulter
Lofgreen
Benmore
Vernon
Dunbar
Topliff
Fairfield
Mercur
Cedar Valley
Ophir
St John
Clover
Willow Spring
Iosepa
Indian Springs
Dugway
Gold Hill
Ibapah
Callao
Goshute
Uvada
Nielson Ranch
Joy
Lynndyl
Leamington
Mills
Levan
Fountain Green
Nephi
Moroni
Freedom
Wales
Sugarville
Woodrow
Sutherland
Abraham
Hinckley
Delta
Oasis
Deseret
Harding
Oak City
Fool Creek Res
Delta Res
Holden
Fillmore
Meadow
Kanosh
Hatton
Scipio
Redmond
Salina
Gooseberry
Aurora
Sigurd
Venice
Richfield
Glenwood
Central
Elsinore
Joseph
Sevier
Monroe
Annabella
Austin
Cove Fort
Sulphurdale
Black Rock
Clear Lake
Bloom
Flowell
Burbank
Garrison
Shoshone
Osceola
Baker
Gandy
Uvada
Nielson Ranch
Goshute
Callao
Ibapah
Gold Hill
Lucin
Montello
Cobre
Shafter
Wendover
Knolls
Delle
Timpie
Grantsville
Tooele
Stockton
Bingham Canyon
Copperton
Lake Point
Garfield
Magna
Murray
Midvale
Sandy
Draper
Riverton
Alpine
Lehi
Pleasant Grove
Lindon
Orem
Springville
Mapleton
Spanish Fork
Salina
Payson
Santaquin
Eureka
Mammoth
Goshen
Mona
Nephi
Fountain Green
Levan
Leamington
Moroni
Manti
Gunnison
Centerfield
Mayfield
Sterling
Ephraim
Sugarville
Oak City
Delta
Deseret
Hinckley
Abraham
Woodrow
Sutherland


Tungsten-Lead Company
Winnemucca, Nevada
Figure 2
R. 34 E.
R. 35 E.
(Lovelock 250000)
DUTCHMAN MINE
GOLDEN EAGLE
Alpha Butte
BLACKBIRD MINE
MARLITTA MINE
KEYSTONE MINE
Spr
Mill
Creek
Spr
Well
Tungsten-Lead
Bird
Canyon
NEVADA-MASSACHUSETTS TUNGSTEN MINE
WATER PIPE LINE
PUMP
Well
STAGE
ROAD
IDAHO
OLD
Thackers Ranch
HUMBOLDT
RIVER
CANAL
DIVERSION
VICTORY
SOUTHERN
DAM
GAGING STA
Mill City
(B M 4224)
Imlay
(B M 4195)
UNIONVILLE 21 MI.
Scale 1/62500
Miles
Yards
Feet
Kilometers
Contour interval 50 feet
Datum is mean sea level
ROUTES USUALLY TRAVELED
HARD IMPERVIOUS SURFACES
OTHER SURFACE IMPROVEMENTS
U. S. ROUTE
STATE ROUTE
1942
EUGENE

THE TOPOGRAPHIC MAPS OF THE UNITED STATES

l Survey is making a series of
:over the United States. This
1882, and the published maps
ıe country, exclusive of outlying

ıeets that measure about 16½ by
l plan adopted the country is
led by parallels of latitude and
e quadrangles are mapped on
for each map being that which
the development of the country,
andard maps are of nearly uni-
represent are of different sizes.
map are printed graphic scales
ers, miles, and kilometers. In
shown by a fraction expressing
ısurements on the map and cor-
ound. For example, the scale
ıp (such as 1 inch, 1 foot, or 1
ıme units on the earth's surface.
eyed and some maps are com-
scales for special purposes, the
ıd the resulting maps have for
differentiated as follows:

ı there are problems of great
example, to mineral develop-
of swamp areas—are made with
the publication of maps on a
ile) or $\frac{1}{24,000}$ (1 inch = 2,000 feet),
100 feet, according to the relief

there are problems of average
of the basin of the Mississippi
h sufficient detail to be used in
scale of $\frac{1}{62,500}$ (1 inch = nearly 1
10 to 100 feet.

h the problems are of minor
ıch of the mountain or desert
o, and the high mountain area
sufficient detail to be used in
cale of $\frac{1}{125,000}$ (1 inch = nearly 2
miles), with a contour interval

g used in mapping. From the
hotographs, planimetric maps,
ılture, have been made for some
the use of stereoscopic plotting
e utilized also in the making of
which show relief as well as

ka has been in progress since
its area has now been mapped.
ry has been covered by maps
ly 8 miles). For most of the
the maps published are on a
niles). For some areas of par-
ering about 4,300 square miles,
of $\frac{1}{62,500}$ (1 inch = nearly 1 mile)
a covered by topographic maps,
southeastern Alaska has been
scales of $\frac{1}{125,000}$ and $\frac{1}{250,000}$.
een surveyed, and the resulting
$\frac{1}{62,500}$.

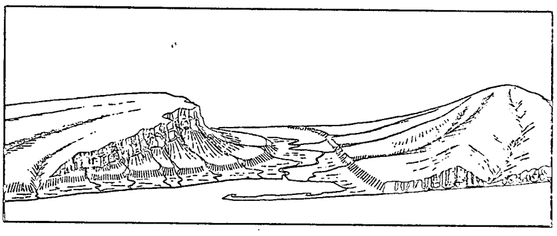
A survey of Puerto Rico is now in progress. The scale of the published maps is $\frac{1}{30,000}$.

The features shown on topographic maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The symbols used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

All the water features are represented in blue, the smaller streams and canals by single blue lines and the larger streams by double lines. The larger streams, lakes, and the sea are accentuated by blue water lining or blue tint. Intermittent streams—those whose beds are dry for a large part of the year—are shown by lines of blue dots and dashes.

Relief is shown by contour lines in brown, which on a few maps are supplemented by shading showing the effect of light thrown from the northwest across the area represented, for the purpose of giving the appearance of relief and thus aiding in the interpretation of the contour lines. A contour line represents an imaginary line on the ground (a contour) every part of which is at the same altitude above sea level. Such a line could be drawn at any altitude, but in practice only the contours at certain regular intervals of altitude are shown. The datum or zero of altitude of the Geological Survey maps is mean sea level. The 20-foot contour would be the shore line if the sea should rise 20 feet above mean sea level. Contour lines show the shape of the hills, mountains, and valleys, as well as their altitude. Successive contour lines that are far apart on the map indicate a gentle slope, lines that are close together indicate a steep slope, and lines that run together indicate a cliff.

The manner in which contour lines express altitude, form, and grade is shown in the figure below.



The sketch represents a river valley that lies between two hills. In the foreground is the sea, with a bay that is partly enclosed by a hooked sand bar. On each side of the valley is a terrace into which small streams have cut narrow gullies. The hill on the right has a rounded summit and gently slop-

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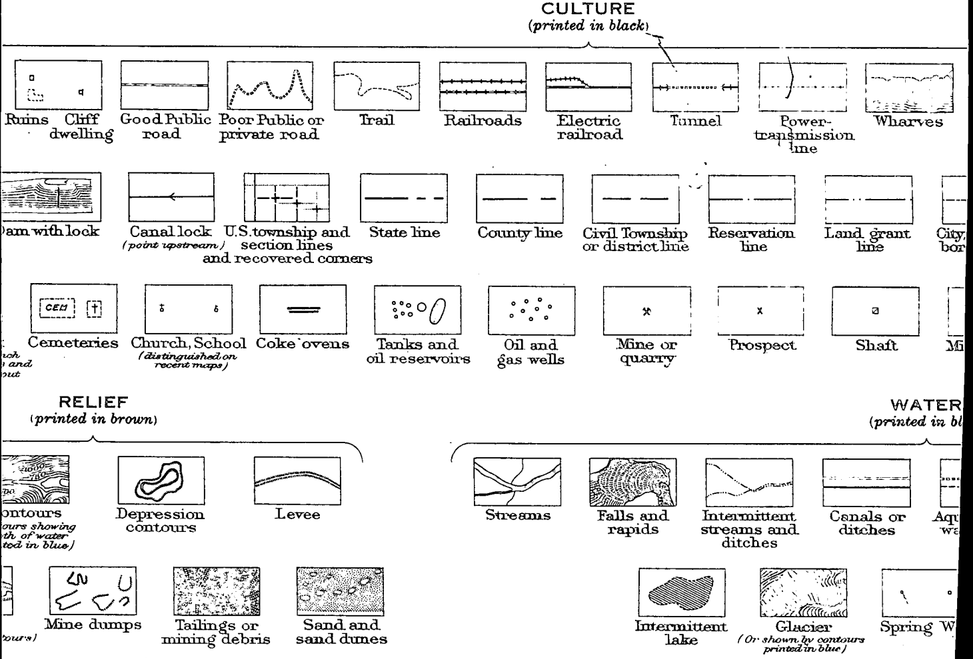
STANDARD SYMBOLS



Part 4 (continued)

(e) Manpower, Materials, Supplies, Equipment, Water and Power:

1. Manpower: Adequate manpower is available. Hiring in the past has been done through the Winnemucca office of the Nevada State Employment Service with satisfactory results.

2. Materials and Supplies: Necessary materials and supplies have, for the most part, been readily available in Winnemucca or Lovelock. Special Greyhound bus one-day delivery service is available from Reno or Salt Lake City, Utah.

3. Equipment: All of the equipment necessary for the completion of the work proposed by this application, other than independent contracts, is owned by the applicant and will be made available for the project.

4. Water: Adequate water is available from springs in Pole Canyon and the North Fork of Pole Canyon. Flow is estimated at 33 gallons per minute at the time of writing this report. All waters are potable.

5. Power: Existing facilities for power at the Tungsten-Lead camp consist of two 1500 watt, 110 volt gasoline-driven plants for lighting. The nearest source of electric power is from the Sierra-Pacific Electric Company, and this could be obtained by constructing a suitable line to the Nevada-Massachusetts Tungsten Mine, a straight line distance of three miles.

TUNGSTEN LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

Part 5 Sections a and b

(a) The mineral for which it is desired to conduct exploration work is Scheelite (calcium tungstate $CaWO_4$).

(b) The proposed exploration work is to augment past and current work in exploring the North Hill, Middle Hill and South Hill. A description of this work is as follows:

North Hill:

1. Lay track and air line in existing drift, and extend this drift 5' x 7' approximately 60 feet to a point where it will intersect the downward projection of the high grade ore bodies showing at the surface. At the point of intersection, cross cut 100 feet north and 100 feet south, following the ore. From the south crosscut drive a 5' x 7' ventilation raise 85 feet to the surface following the dip of the beds. This work is shown on Figure 3. All drifts, raises and crosscuts are 5' x 7'.

2. From the points marked on Figure 3 and shown on the North Hill cross section, drill a three-hole spread to probe the downward extension of the virgin outcrops shown at the eastern point of the North Hill. The north hole will be approximately 275 feet in length; the middle hole 300 feet; and the south hole 250 feet in length. All will be 1 1/8" core.

3. From the points marked on Figure 3, drill a two-hole spread to probe the downward extension of the wide virgin outcrop occurring at the foot of the North Hill along the North Fork of Pole Creek. The north hole will be approximately 225 feet in length and the south hole 190 feet in length. Both will be 1 1/8" core.

4. Fifty hours additional stripping to bedrock on the south side of the North Hill with a heavy bulldozer (Caterpillar D-8 or equivalent) to establish the projection of the high grade ore bodies showing atop the North Hill to the southward, along strike.

Middle Hill:

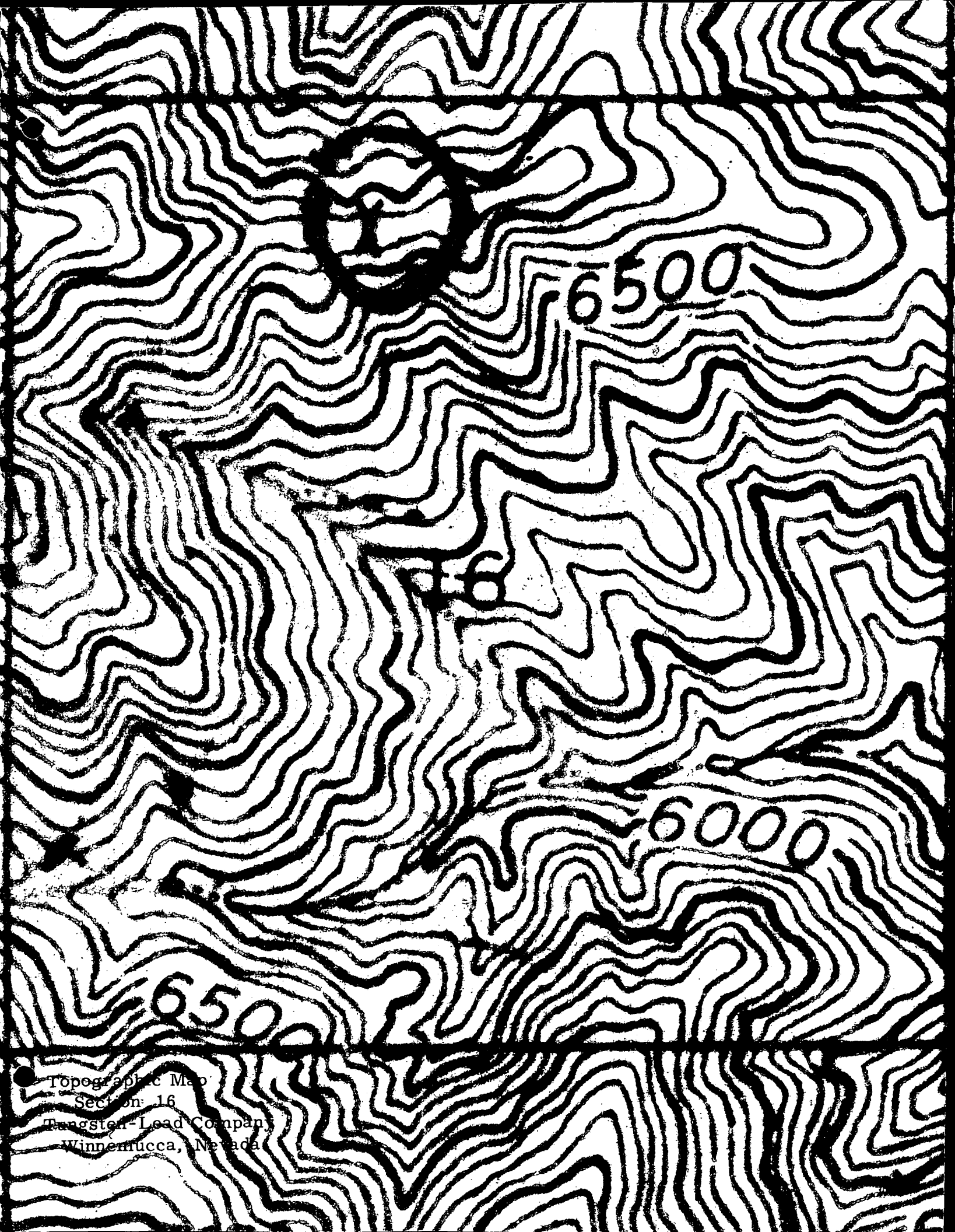
1. Sink existing 6' x 9' shaft an additional 80 feet, following the ore, to a depth of 125 feet.

2. Cut station and skip pocket at 110 foot level and raise an inclined raise 50 feet into the hanging wall, perpendicular to the dip of the beds, so as to explore the mineralized hanging wall beds.

3. Fifty hours additional stripping with a heavy bulldozer (Caterpillar D-8 or equivalent) on the north side of the Middle Hill. This stripping will show the northward extension of the mineralized beds now showing in the shaft, and also the southward extension of the several mineralized beds showing in the North Hill. This proposed stripping is plotted on Figure 3.

A
A'

B
B'



Topographic Map
Section: 16
Tungsten-Lead Company
Winnemucca, Nevada

Part 5 Sections a and b (continued)

South Hill:

1. Extend present 5' x 7' south tunnel 300 feet following the mineralized bed now showing in the face.

2. At the 350 foot station, crosscut 50 feet into the hanging wall to check for mineralization in the footwall beds.

3. At 400 foot station crosscut 30 feet into the footwall to check for mineralization in the hanging wall beds. Both crosscuts to be 5' x 7'.

(c) The work will begin within 7 days and be completed within 11 months from the date of an exploration project contract.

(d) The background of the applicant is as follows:

The present administration of the applicant Company, including all officers and directors, became operative May 20, 1952, through the acquisition of a clear majority of the outstanding stock. None of the old management remains.

Since the change in management the six new directors, including the three new officers, have put into the company sufficient of their own money to supply working capital for the purpose of exploring and developing the property in accordance with the aforementioned program. The property now shows increased promise and consequently it is believed Government assistance under DMEA is entirely warranted.

William Berger, president, general manager and director of the Company, was, until moving to Winnemucca, Nevada, last May, to coordinate and supervise the Company's operations, for twenty-three years in the investment banking business and an investment counselor in Santa Rosa, California.

Henry Reynaud, vice president and director of the Company, is a veteran automobile dealer of Santa Rosa, California, and is a substantial property holder and adviser with the Bank of America. His address is 100 Santa Rosa Avenue, Santa Rosa, California.

Pierre Dick, secretary-treasurer and director of the Company, who directly controls the finances of the company, is a prominent restaurateur and ranch owner of Santa Rosa, California. He is also a director of the Wire Specialties Corporation of San Jose, California. His address is American Trust Company Building, Santa Rosa, California.

Leon Reynaud, director, is a substantial real estate owner, semi-retired and city councilman of Santa Rosa, California. His address is 925 Macdonald Avenue, Santa Rosa, California.

Part 5 Sections a and b (continued)

Ralph Vesper, director, is a used car dealer and owner of Frozen Foods Service in Santa Rosa, California.

Hudson Auberlin, director, is owner and operator of the Lakeside Dairy, Vallejo, California.

Marion E. Price, whose background follows, was engaged as superintendent incharge of operations on the property:

Educational background:

One year Colorado A & M.
Graduate, U. S. Naval Academy, Anapolis, Maryland.
Graduate, Colorado School of Mines, Golden, Colorado.
Geological Engineer (Mining).
Graduate work, Colorado School of Mines.

Practical experience:

Experience in mining has been practical as well as technical, and has consisted of consulting, contracting, leasing, and owning and operating.

TUNGSTEN-LEAD COMPANY
PHONE 144
PROFESSIONAL BUILDING
WINNEMUCCA, NEVADA

Part 6

1. INDEPENDENT CONTRACTS:

Bulldozer stripping and trenching, including preparation for drilling operations:

(a) Caterpillar D-8, or equivalent, complete with operator and all supplies - 120 hours @ $20 per hour	$2400.00
(b) Surveying, supervision, and sampling	$ 500.00
(c) Assaying, estimated 100 samples @ $4 each, with postage and sample sacks	m $ 475.00
Subtotal for bulldozing	$3,375.00

Core Drilling, cored diamond drill hole 1 1/8".

(a) 1240 feet @ $8 per foot	$9,920.00
(b) Supervisor (sampling, splitting, logging, and panning), 124 days (estimated), 5 days per week, @ $2.75 per hour	$2,728.00
(c) Assaying, estimated 75 samples @ $4 each, with postage and sample sacks	$ 356.25
Subtotal for drilling	$13,004.25

TOTAL FOR INDEPENDENT CONTRACTS	$16,379.25

COMPANY
PROFESSIONAL BUILDING
MINNEMUCCA, NEVADA

Part 6 (continued)

2. Drifting, crosscutting, ventilation and prospect raises: Total 775 feet, 6-day week, 3 1/2 foot per day advance. Total 222 days or 37 weeks or 9 months.

(a) Wages - One miner @ $1.75 per hour, and two muckers @ $1.50 per hour, average 3 1/2 feet per shift, including 18 1/2 days @ 1 1/2 time pay. Cook, 9 months @ $250 per month	$ 14.64/ft
(b) Insurance, social security, FICA, etc., including (h) and (i) below	2.30/ft
(c) Blasting supplies	2.23/ft
(d) Timber	2.07/ft
(e) Compressor fuel and supplies	1.85/ft
(f) Steel and bits	1.41/ft
(g) Miscellaneous repairs to equipment	1.20/ft
(h) Engineering, accounting, office, telephone, assaying	5.34/ft
(i) Supervisor, 9 months @ $500 per month	5.81/ft
(j) Repairs to housing	0.73/ft
(k) Equipment rental	2.89/ft
Total Cost per Foot	$40.47

3. Sinking 80 feet 6x9 shaft, 6-day week, 1 1/3 feet per day advance. Total 60 days or 10 weeks.

(a) Wages - One miner @ $1.75 per hour, two muckers @ $1.50 per hour, and one hoist engineer @ $1.75 per hour, including 5 days at 1 1/2 time pay. Cook, 2 months @ $250 per month	$48.50/ft
(b) Insurance, social security, FICA, etc., including (h) and (i) below	5.68/ft
(c) Blasting supplies	3.34/ft

Part 6 (continued)

(d)	Timber	3.35/ft.
(e)	Compressor and hoist fuel and supplies	2.75/ft.
(f)	Steel and bits	2.11/ft.
(g)	Miscellaneous repairs to equipment	1.93/ft.
(h)	Engineering, accounting, office, telephone, assaying	22.62/ft.
(i)	Supervisor, 2 months @ $500 per month	12.50/ft.
(j)	Repairs to housing (charged to drifting)	0.00/ft.
(k)	Equipment rental	6.22/ft.
	TOTAL COST PER FOOT	$109.00

The following equipment is to be furnished by the operator:		Cost
1.	Gardner-Denver 160 cu. ft. portable gasoline engine driven air compressor with 60 cu. ft. air receiver	$4,550.00
2.	Model S55 Gardner-Denver jackhammer complete with drill steel, column, air and water hose, and 15 gallon pressure tank	702.50
3.	Atlas-Diesel jackhammer complete with pneumatic pusher leg, drill steel, spare parts, air and water hose, 25 gallon pressure tank, and air-driven carbide bit grinder	849.00
4.	15 h.p. LeRoi gasoline engine driven double drum hoist	1,250.00
5.	Willys Jeep truck, 1/2 ton, model 1949	995.00
6.	Chevrolet pickup truck, 3/4 ton, model 1952	1,915.00
7.	1500 watt Powerlite gasoline engine driven electric plant	375.00
8.	1500 watt Onan gasoline engine driven electric plant	330.00
9.	2-16 cu. ft. Matteson mine cars	310.00
10.	1-10 cu. ft. mine car	105.00

Part 6 (continued)

11.	3-ultra-violet lamps for mineral examination	118.00
12.	35 lb. jackhammer, dry type, complete with moil and chisel points, for cutting samples	185.00
13.	Victor-American industrial type acetylene gas welding outfit, complete	125.00
14.	Track, complete with ties, rail splice plates, bolts, and spikes	750.00
15.	2" air line, complete with fittings	220.00
16.	1/2" water line, complete with fittings	85.00
17.	Hand tools, including blacksmith outfit	596.00
18.	8 cu. ft. skip	175.00
19.	Office equipment	275.00
20.	Camp and kitchen equipment	1,025.00
	Total cost of Equipment furnished by Operator	$14,935.50

Computation of monthly rental on equipment furnished by operator:

Monthly rental $= \frac{\$14,935.50}{60} = \$248.93$ per month

$248.93 x 9 months ÷ 775 feet = $2.89 per foot of drifting, cross-cutting and raising

$248.93 x 2 months ÷ 80 feet = $6.22 per foot of sinking

Total rental for 11 months $2,738.12

New Buildings, improvements, or installations:

The existing buildings and installations with the necessary repairs and rehabilitation itemized in Part (c) are considered adequate, and no new buildings, improvements, or installations will be required in order to pursue the work prescribed by this application. 0.00

Part 6 (continued) and
Part 7

Contingencies

1. Widening 0.7 miles of road from Middle Hill to North Hill to a width of 12 feet, constructing one 18-foot turnout, and sloping bank.
   (a) Bulldozer (Caterpillar D-6 or equivalent) 11 hours @ $12.50 per hour — $137.50

2. Initial grading and ditching 5.9 miles of road from North Hill to Mouth of Pole Canyon.
   (a) 16 hours patrol (caterpillar 12 or equivalent) @ $8 per hour — 128.00

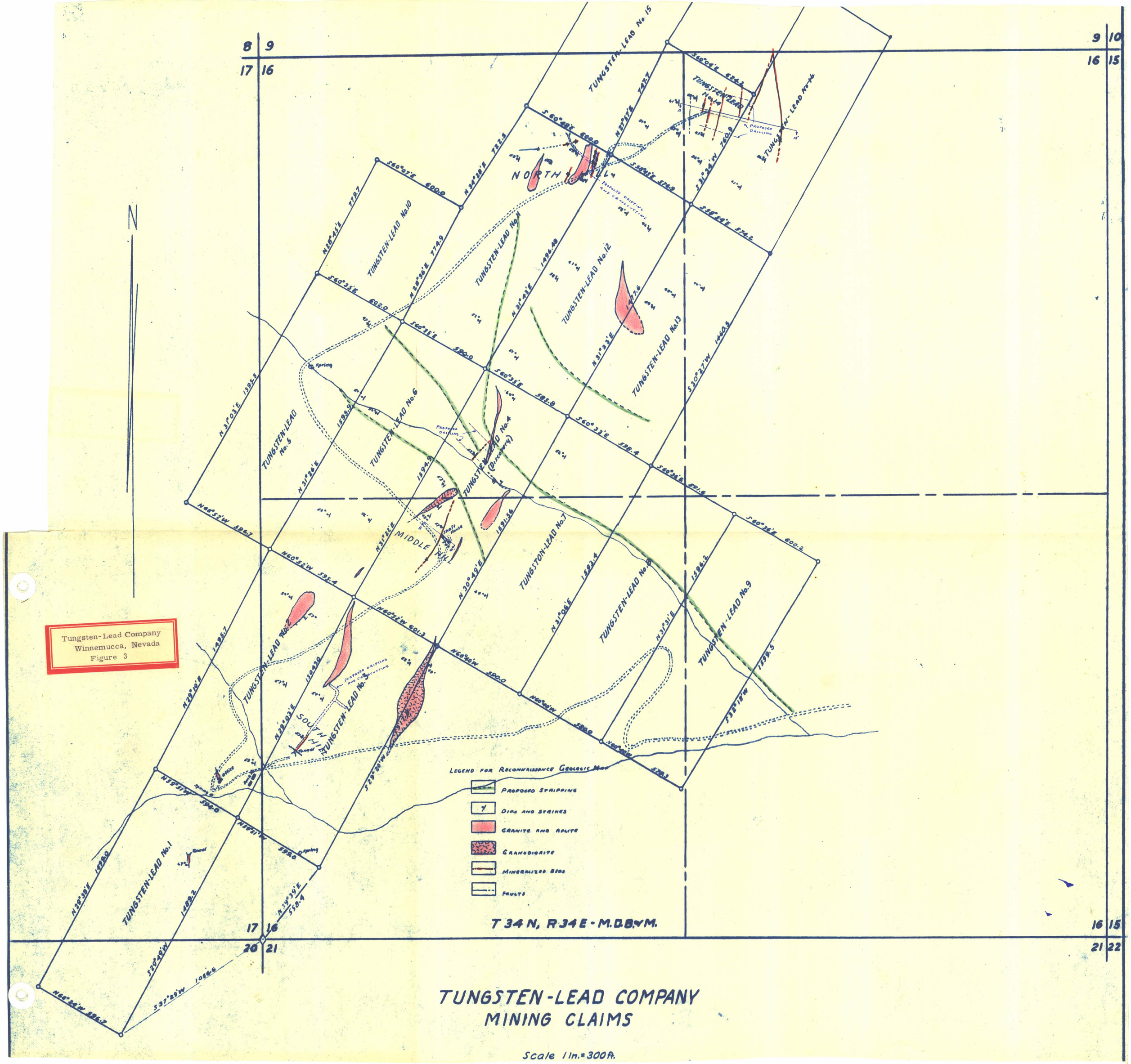
3. Initial grading 2.8 miles of road from Mouth of Pole Canyon to Neveda Massachusetts Tungsten Mine
   (a) 6 hours patrol (Caterpillar 12 or equivalent) @ $8 per hour — 48.00

4. Snow removed on 5.9 miles of road from North Hill to Mouth of Pole Canyon
   (a) Bulldozer (Caterpillar D-4 or equivalent) estimated 15 hours per month for months of December, January, February and March. Total 60 hours @ $10 per hour — 600.00

5. For unforeseen accidents and breakdowns, unseasonably severe weather; anticipated upward revision of wage scale; inflationary and other cost increasing influences, 10% of total of above — 5,560.74

Total Contingencies	$6,474.24
GRAND TOTAL	$62,941.01

The estimated rental credit on operating equipment owned by the applicant as shown in Part 6 is $2,738.12. The balance is assured from the existing management as listed in Part 5, Section (d) and/ or other present stockholders.


Tungsten-Lead Company
Winnemucca, Nevada
Figure 3
N
NORTH HILL
MIDDLE
SOUTH HILL
TUNGSTEN-LEAD No.1
TUNGSTEN-LEAD No.2
TUNGSTEN-LEAD No.3
TUNGSTEN-LEAD No.4 (Discovery)
TUNGSTEN-LEAD No.5
TUNGSTEN-LEAD No.6
TUNGSTEN-LEAD No.7
TUNGSTEN-LEAD No.8
TUNGSTEN-LEAD No.9
TUNGSTEN-LEAD No.10
TUNGSTEN-LEAD No.11
TUNGSTEN-LEAD No.12
TUNGSTEN-LEAD No.13
TUNGSTEN-LEAD No.14
TUNGSTEN-LEAD No.15
Proposed Drilling
Proposed Drifting and Cross-cutting
Shaft House
Tunnel
Spring
Office
LEGEND FOR RECONNAISSANCE GEOLOGIC MAP
Proposed Stripping
Dips and Strikes
Granite and Aplite
Granodiorite
Mineralized Beds
Faults
T 34 N, R 34 E - M.D.B.&M.
TUNGSTEN-LEAD COMPANY
MINING CLAIMS
Scale 1 In. = 300 ft.