



US Army Corps
of Engineers
Alaska District

Public Notice of Application for Permit

FAIRBANKS FIELD OFFICE
Regulatory Division (1145)
CEPOA-RD
P.O. Box 35066
Fort Wainwright, Alaska 99703

PUBLIC NOTICE DATE: February 11, 2022
EXPIRATION DATE: March 13, 2022
REFERENCE NUMBER: POA-2019-00381
WATERWAY: Ketchum and Mary Louise Creeks

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this Public Notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the Project Manager's email as listed below or to regpagemaster@usace.army.mil. All comments should include the Public Notice reference number listed above.

All comments should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Laurel Gale at (907) 347-6496, or by email at Laurel.A.Gale@usace.army.mil if further information is desired concerning this notice.

APPLICANT: Mr. Jack Phipps, JVP Construction, Incorporated, 692 Eton Boulevard, Fairbanks, Alaska 99709

LOCATION: The project site is located within Sections 1, 7, & 12, T. 7 N., R. 14 7 15 E., Fairbanks Meridian; USGS Quad Map Circle B-2; Latitude 65.457497° N., Longitude 144.756348° W.; near Central, Alaska.

PURPOSE: The applicant's stated purpose is gold recovery by the use of placer mining.

PROPOSED WORK: All access roads are pre-existing and located within uplands. The applicant's proposed work is to mine gold from the 6.0-acre project site by using a placer mining system consisting of an eight feet long trammel with a sluice box and a three-foot-wide oversized conveyer. The project would involve the placement of approximately 48,000 cubic yards of gravel fill, consisting of approximately 40,000 cubic yards of rock, cobble, and gravel fines, and approximately 8,000 cubic yards of organic overburden annually, via mechanized land clearing in 6.0 acres of wetlands. Additional work includes an approximately 880 feet long by 15 feet wide by 6 feet deep temporary stream diversion of Ketchum Creek which was constructed in 2019 to present. The physical wash plant would remain in the same location and project plans from 2019 and would not change for the plant. Pay gravels would be delivered to the location from the new mining cuts to be processed. The project has been designed to occur in phases. All work from the 2019-2021 mining seasons have been reclaimed by utilizing a rolling footprint, and reclamation work has been accepted. During the 2022 mining season the remaining cuts of Ketchum Creek near the confluence of Upper Ketchum and Mary Louise Creeks will be completed. Upon completion of work the stream diversion in Ketchum Creek will be reclaimed prior to starting work in Mary Louise or Upper Ketchum Creeks. Next, from 2022 to 2023, the operation will proceed with work within Mary Louise Creek. An approximately 2,000 feet long by 15 feet, wide by 6 feet deep temporary stream diversion would be constructed. Mining would consist of work within the streambed and also within previously mined ground along the Mary Louise Creek mining areas. Once work at Mary Louise Creek is finished, and the stream bypass and mining cuts reclaimed, work would advance to Upper Ketchum Creek. Mining of the Upper Ketchum Creek area is expected to occur from 2023 to 2025. Test trenches, sized approximately 500 feet long by 5 feet wide by 15 feet deep will be excavated to survey for profitable gold resources. Ground at the Upper Ketchum Creek location has also been previously mined, and additional work will include an approximately 660 feet long by 15 feet, wide by 5 feet deep temporary stream diversion. The planned cuts and would be reclaimed after the completion of the mining process. All work would be performed in accordance with the enclosed plan (sheets 1-20), dated February 8, 2022.

ADDITIONAL INFORMATION:

The operation is currently permitted under the Regional General Permit for Placer Mining (RGP-08). However, the operation can no longer work under the limitations of the RGP as Ketchum Creek has been classified as an Alaska Department of Environmental Conservation (ADEC) 4a Impaired Waterbody. Therefore, the project must be permitted under a Corps of Engineers Standard Permit for work to continue Mary Louise Creek is not classified as an ADEC Impaired Waterbody.

APPLICANT PROPOSED MITIGATION: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

a. Avoidance: The applicant states that the camp is located in uplands on previously disturbed land. The access road to the project site is pre-existing and will avoid further damage which would occur by the creation of a new roadway. Bulk sampling of the site was completed in 2019 and will occur again in 2023 prior to mining within the Upper Ketchum Creek area, to provide an accurate picture of gold quantities within the cuts. Additionally, the applicant states long cuts which host uneconomic gold content will not be stripped and mined, also acting to avoid unnecessary impacts. There are no wetlands abutting the waterways and the valley is very narrow. The only wetland areas are located along the narrow riparian areas of Ketchum, Upper Ketchum, and Mary Louise Creeks. The streams are not anadromous. Fuel storage will be limited to two fuel tanks kept in the upland area at the camp, and additional fuel will be purchased off site as needed to avoid possible fuel spillage from entering the streams. The overburden (rock, soil, and organic matter) from the stripped areas will be separated and stockpiled in upland areas, and will be utilized to backfill, contour, and revegetated the disturbed land during the reclamation process. All sluice water will be caught in holding ponds and will be 100% recycled. Streambeds will be reconstructed within their natural channels in a manner to slow and collect water by constructing bends and pools to allow sediment to settle out. Additionally, the floodplain of the creeks will be widened in order to avoid increased hydraulic speed which leads to erosion and overflow, and to reclaim historic mining impacts to the stream channels. Mined cuts will be restored to their near natural slope and grade, and straw waddles, silt fencing, and coir logs will be utilized where necessary to avoid sediment transport and erosion. The disturbed land and stream channel areas will be revegetated with naturally occurring plant species to reclaim aquatic habitat and to avoid impacts due to erosion.

b. Minimization: The applicant states mining sequence has been planned to be as small as possible to minimize impacts to jurisdictional areas. The overburden will be removed, separated, and stockpiled in upland areas in such a way the piles are easily accessible and will not cause additional disturbance or runoff. The applicant will utilize the organic soils, rock and cobble and gravel fines in the reclamation of the mined areas and minimize the risk of introducing invasive plant species by the use of off-site soils. Additionally, the project will utilize survey trenches to located profitable gold quantities and avoid and minimize unnecessary impacts to jurisdictional areas. Areas which are mined will be reclaimed on a yearly basis and immediately after the mining process, which will act to help re-establish riparian areas and aquatic habitat as soon as possible.

c. Compensatory Mitigation: The applicant proposes on-site mitigation. After the mining process, the applicant will redeposit the overburden and organic matter, and then revegetated the affected areas. The new growth created during the reclamation process will provide enhanced wildlife habitat. Shallow off creek ponds will be created by contouring slopes and allow for shallow littoral zones to attract wildlife. The applicant states other such ponds located at similar operations provide diverse habitat and display increased visits by wildlife populations. On-site reclamation will be on going on a yearly basis to maintain a minimal footprint.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRs) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are cultural resources in the vicinity of the permit area. The permit area has been determined to be the areas of fill in waters of the U.S. and the directly affected adjacent uplands. Consultation of the AHRs constitutes the extent of cultural resource investigations by the Corps at this time, and we are otherwise unaware of the presence of such resources. The Corps has made a No Historic Properties Affected (No Effect) determination for the proposed project. This application is being coordinated with the State Historic Preservation Office (SHPO). Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work. The Corps is requesting the SHPO's concurrence with this determination.

The State Historic Preservation Office (SHPO) responded with concurrence of "No Historic Properties Affected", dated August 9, 2019, for the project (File Number: 3130-IRCOER-2019-01000) which included the entire area the mine leases within the application.

ENDANGERED SPECIES: No threatened or endangered species are known to use the project area.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

No EFH species are known to use the project area.

We have determined the described activity would not adversely affect EFH in the project area.

TRIBAL CONSULTATION: The Alaska District fully supports tribal self-governance and government-to-government relations between Federally recognized Tribes and the Federal government. Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Alaska District on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This Public Notice serves as notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal right or resource. Consultation may be initiated by the affected Tribe upon written request to the District Commander during the public comment period.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

AUTHORITY: This permit will be issued or denied under the following authorities:

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings a Notice of Application for State Water Quality Certification are enclosed with this Public Notice.

District Commander
U.S. Army, Corps of Engineers

Enclosures



PUBLIC NOTICE

Alaska Department of Environmental Conservation (DEC)
Wastewater Discharge Authorization Program/401 Certification
555 Cordova Street, Anchorage AK 99501-2617
Phone: 907-269-6285 | Email: DEC-401Cert@alaska.gov

Notice of Application for State Water Quality Certification

Any applicant for a federal license or permit to conduct an activity that might result in a discharge into navigable waters, in accordance with Section 401 of the Clean Water Act (CWA) of 1977 (PL95-217), also must apply for and obtain certification from the Alaska Department of Environmental Conservation that the discharge will comply with the CWA, the Alaska Water Quality Standards, and other applicable State laws.

Notice is hereby given that a request for a CWA §401 Water Quality Certification of a Department of the Army Permit application, Corps of Engineers' Reference Number POA-2019-00381, Ketchum Creek, has been received for the discharge of dredged and/or fill materials into waters of the United States (WOUS), including wetlands, as described in the Corps public notice and project figures/drawings (18 AAC 15.180).

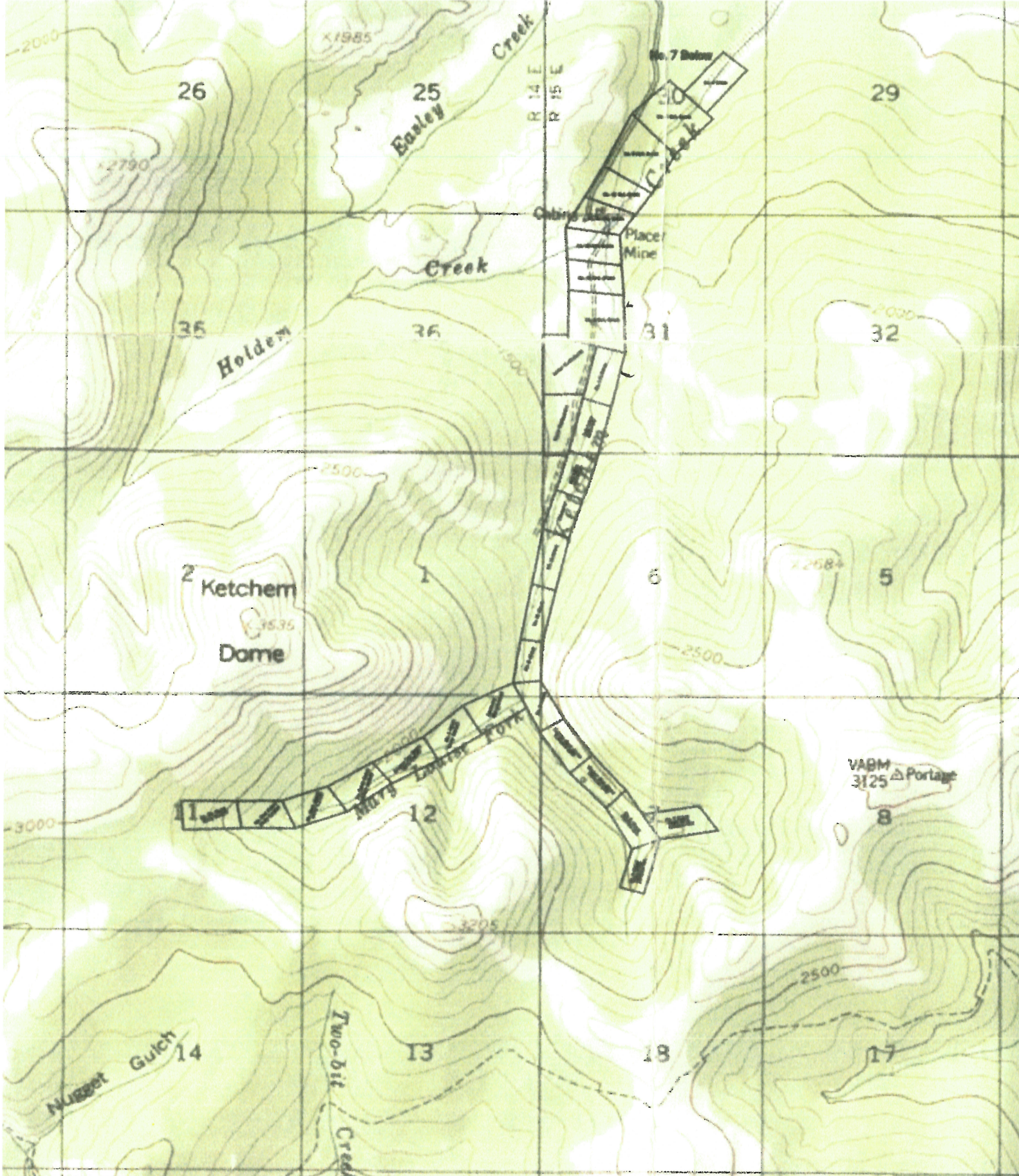
Any person desiring to comment on the project with respect to water quality, may submit comments electronically via email to DEC-401cert@alaska.gov by the expiration date of the Corps of Engineer's public notice. All comments need to include the Corps public notice reference number in the subject heading. Physically mailed comments must be postmarked on or before the expiration date of the public notice.

After reviewing the application, the Department may certify there is reasonable assurance the activity, and any discharge that might result, will comply with the CWA, the Alaska Water Quality Standards, and other applicable State laws. The Department also may deny or waive certification.

The permit application and associated documents are available for review. For inquiries or to request copies of the documents, contact dec-401cert@alaska.gov, or call 907-269-6285.

Disability Reasonable Accommodation Notice

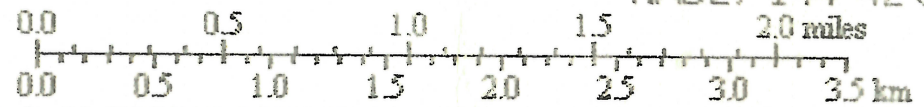
The State of Alaska, Department of Environmental Conservation complies with Title II of the Americans with Disabilities Act (ADA) of 1990. If you are a person with a disability who may need special accommodation in order to participate in this public process, please contact ADA Coordinator Brian Blessington at 907-269-6272 or TDD Relay Service 1-800-770-8973/TTY or dial 711 within 5 days of the expiration date of this public notice to ensure that any necessary accommodations can be provided.



144°48'00" W

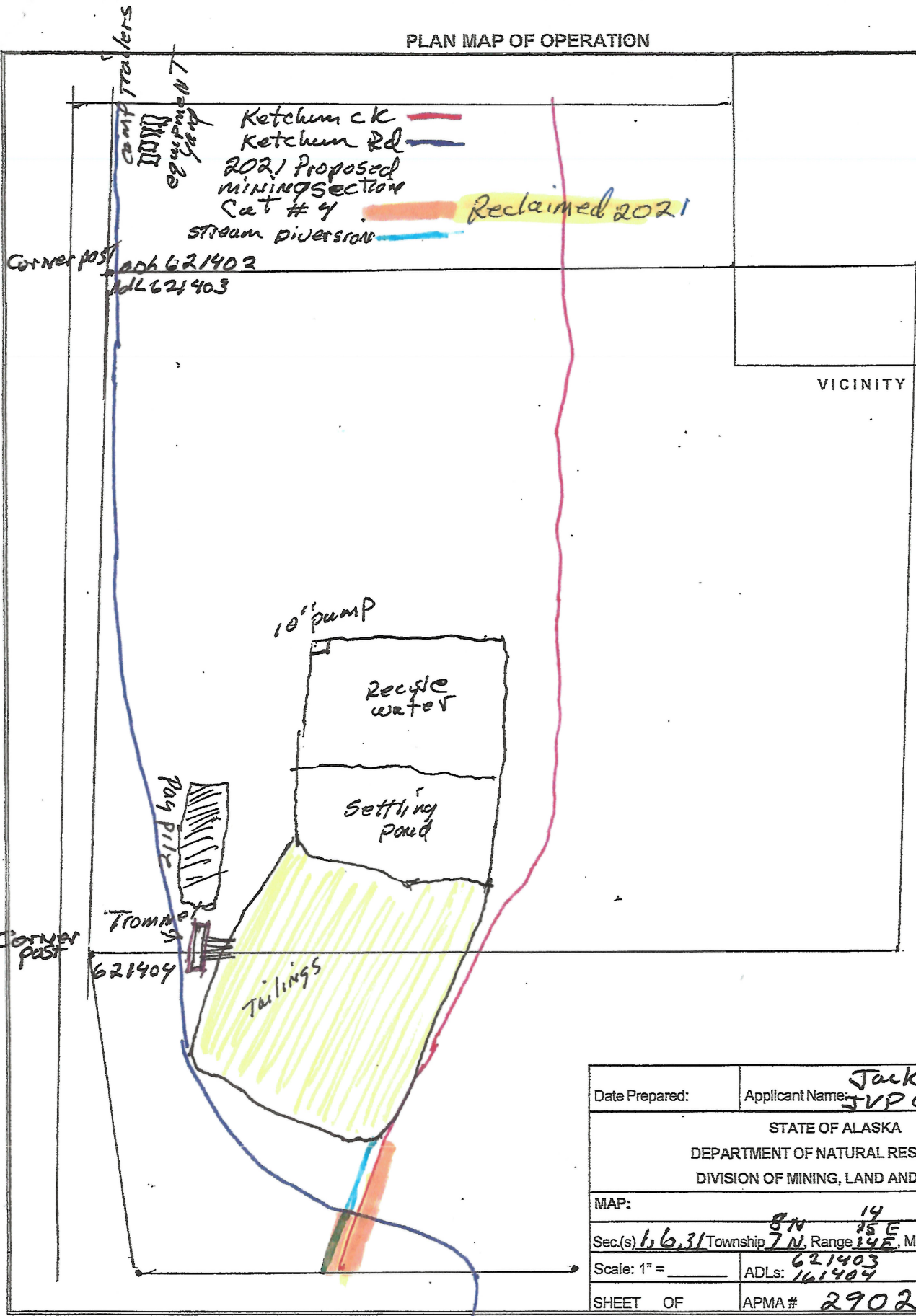
NAD27 144°42'00" W

MN
3°



PLAN MAP OF OPERATION

(29)



VICINITY MAP

| | |
|---|--|
| Date Prepared: | Applicant Name: Jack Phipps, JVP Construction |
| STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND AND WATER | |
| MAP: | |
| Sec.(s) 16.31 Township 8 N 14 E , Range 14 E , Meridian F B K S | |
| Scale: 1" = _____ | ADLs: 621403 161405 |
| SHEET OF _____ | APMA # 2902 |

(Attach additional sheets, along with detailed explanations as necessary)

Cut #4 Reclaimed 2021

Ketchum Rd

Ketchum ck

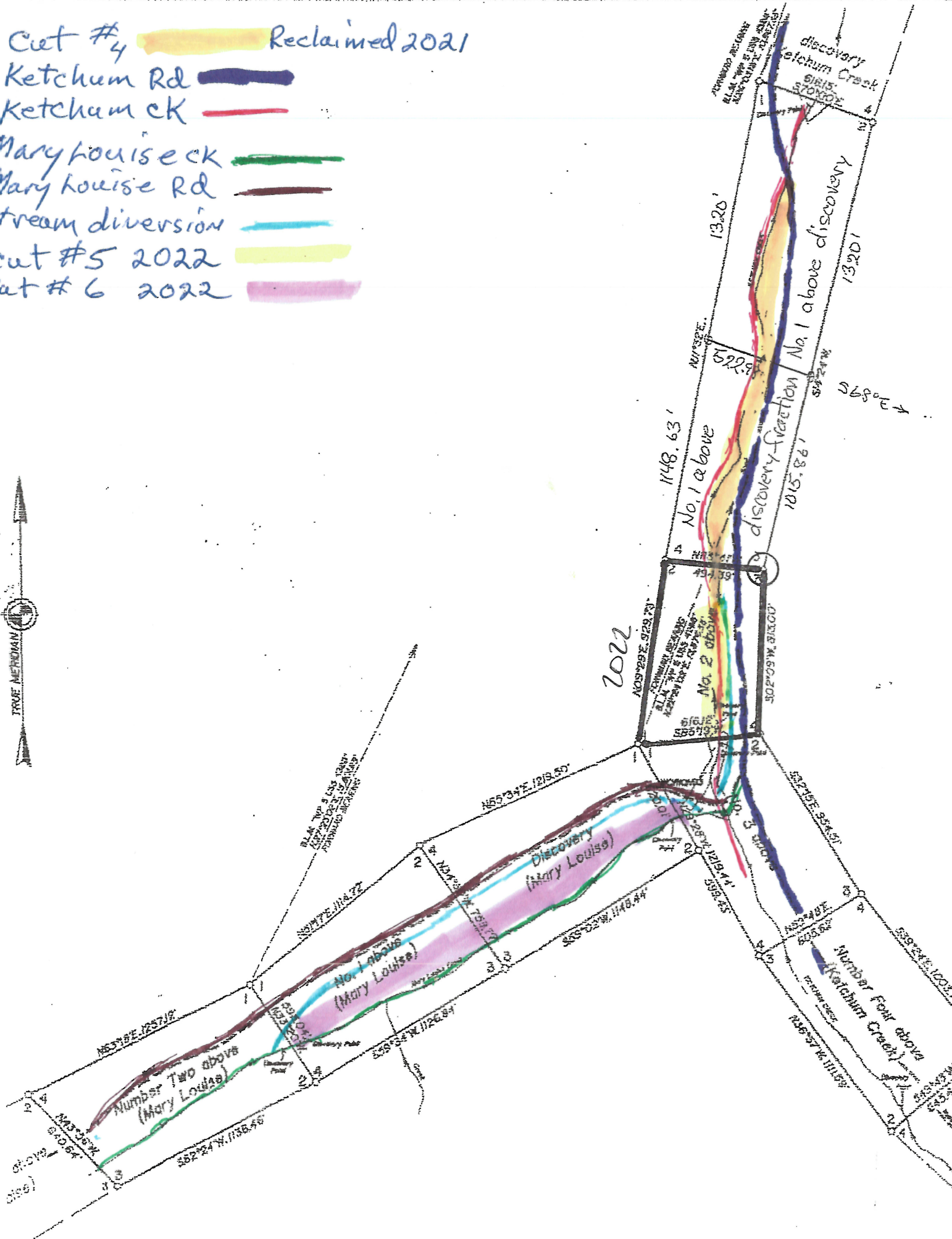
Mary Louise ck

Mary Louise Rd

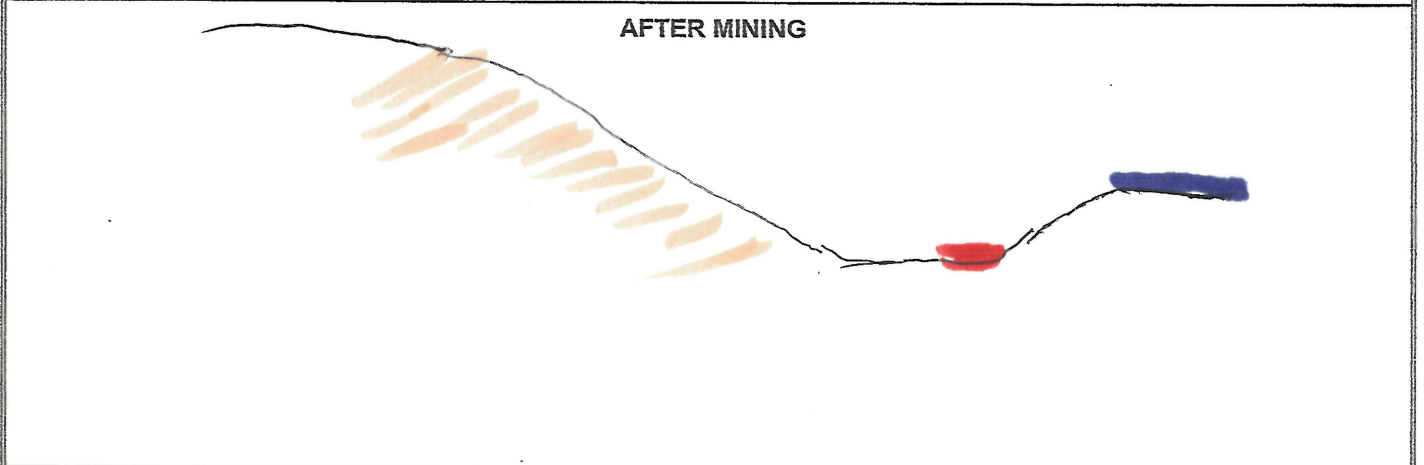
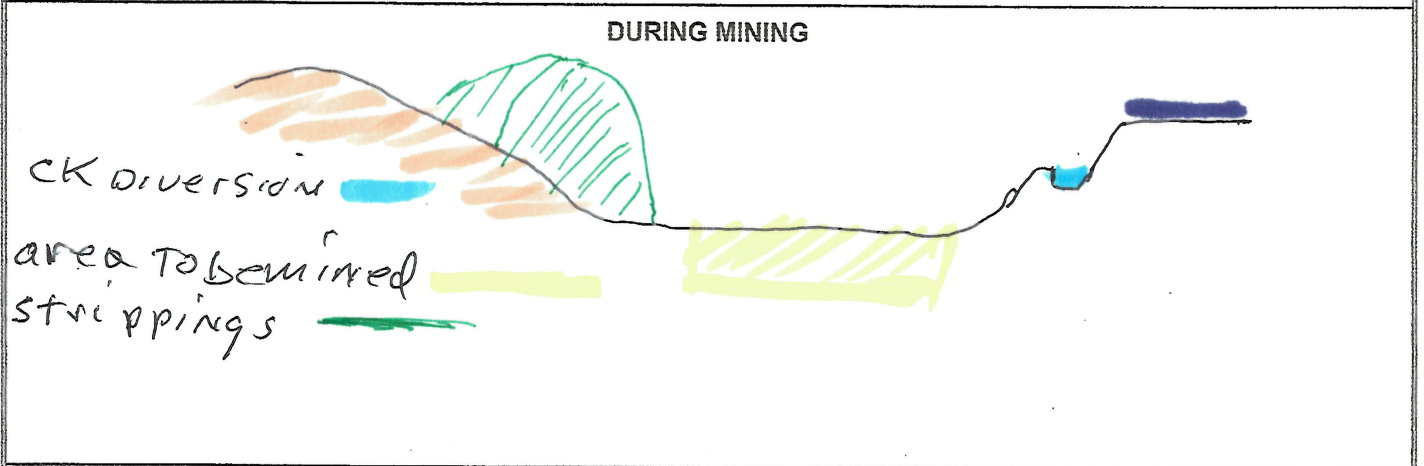
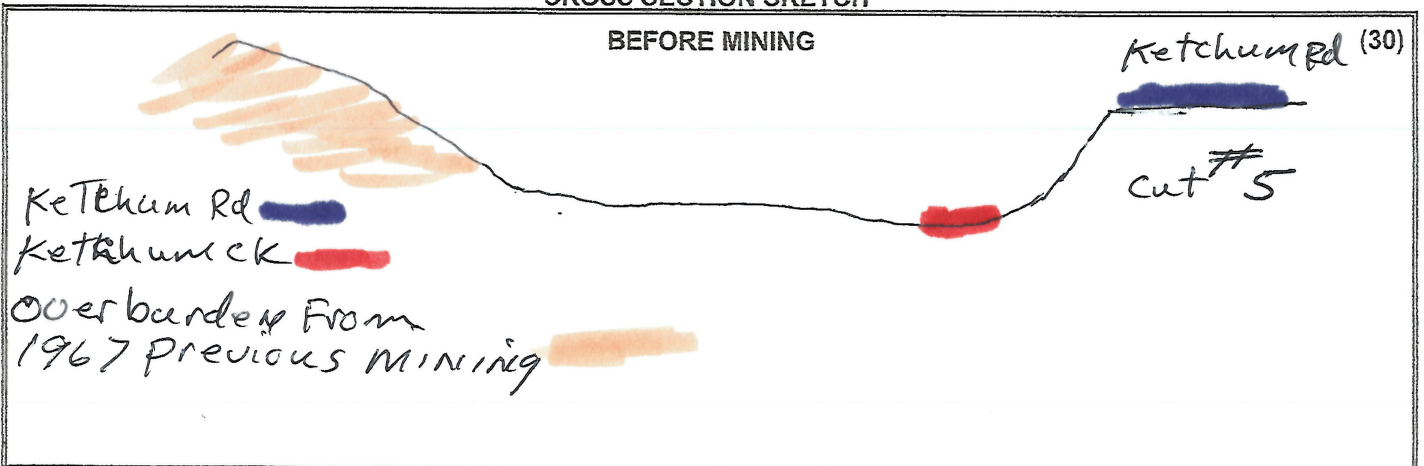
stream diversion

cut #5 2022

cut #6 2022



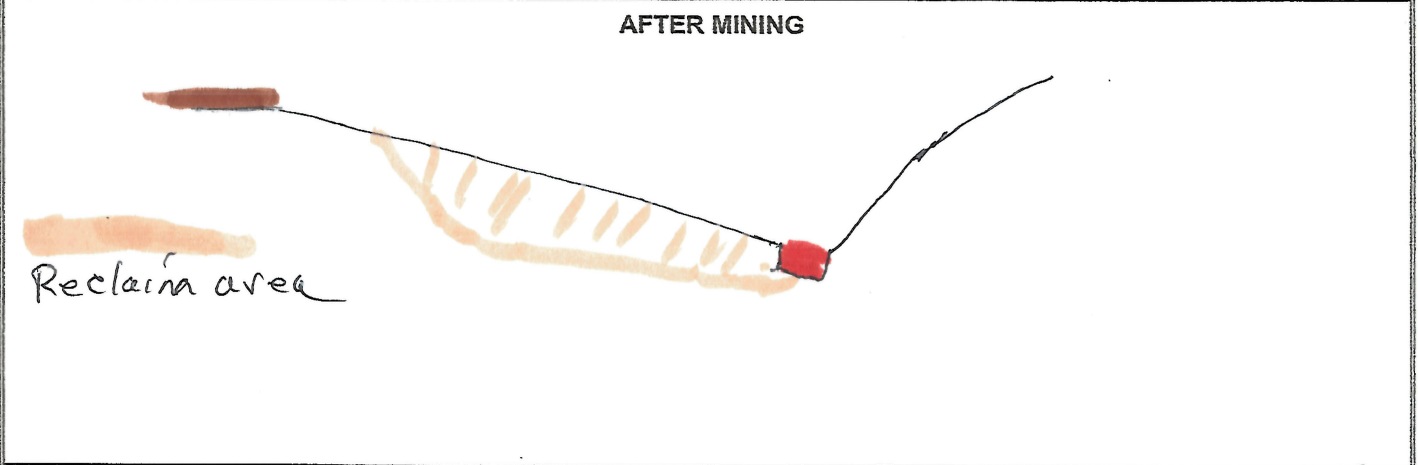
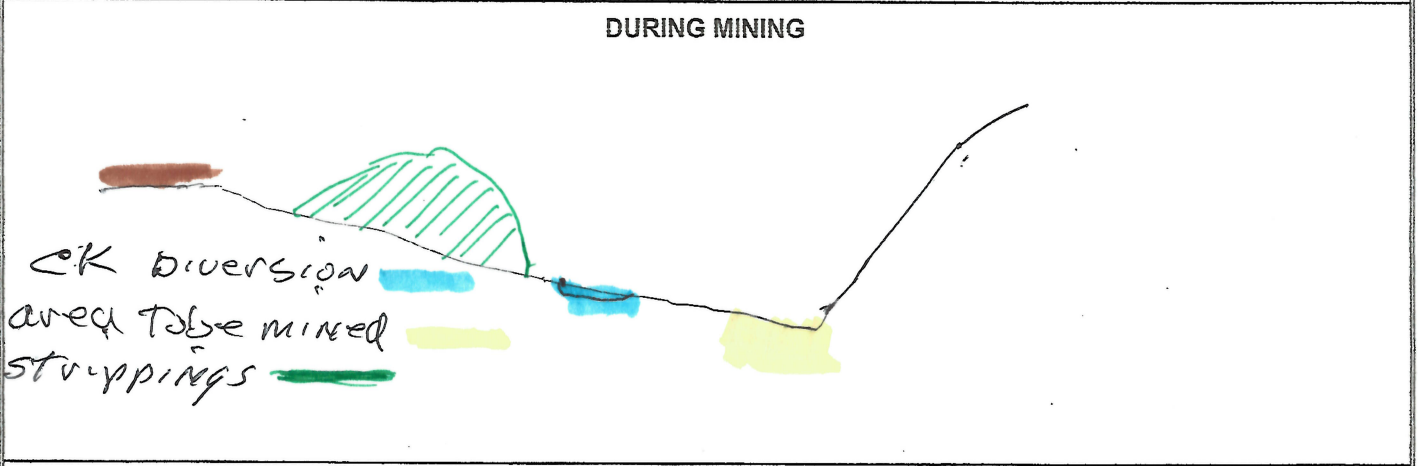
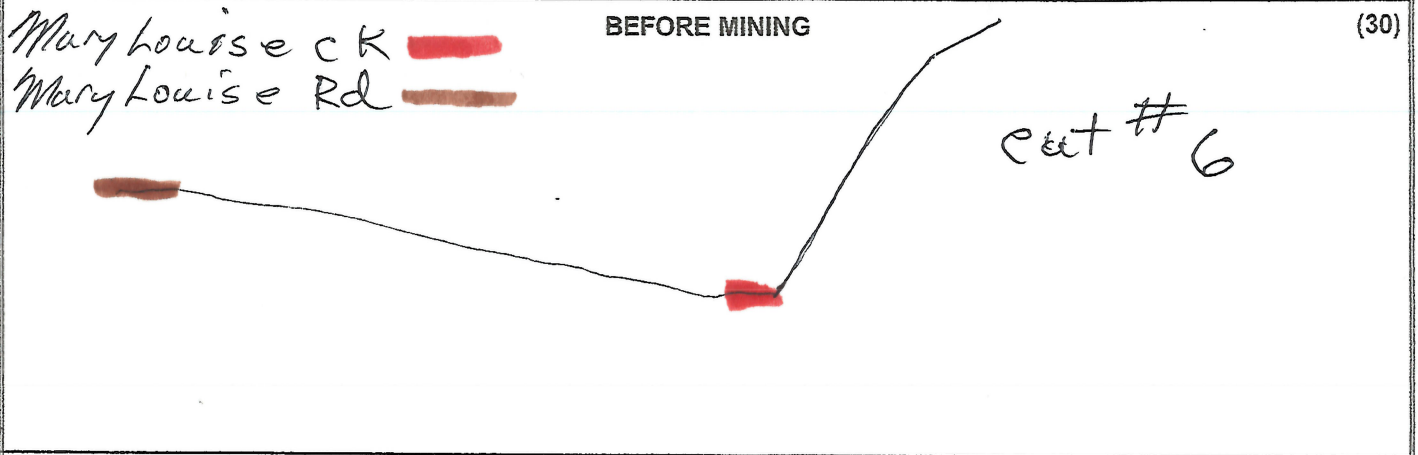
CROSS SECTION SKETCH



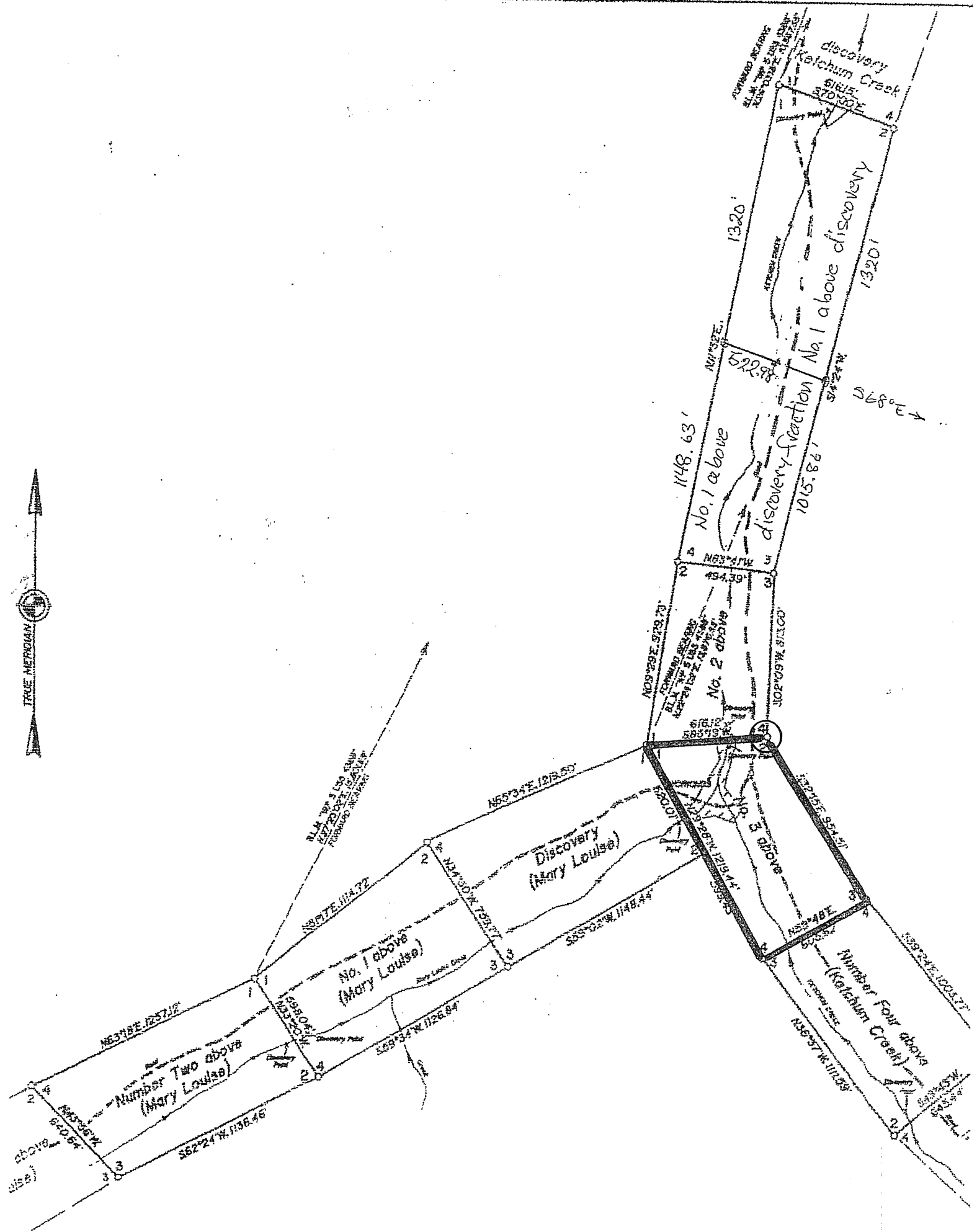
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| 10-30-21 Date Prepared: | Applicant Name: Jack Phipps |
| STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND AND WATER | |
| MAP: | |
| Sec.(s) 1 | Township 7N, Range 14E Meridian FBKS |
| Scale: 1" = _____ | ADLs: 621406 |
| SHEET OF | APMA # 2902 |

CROSS SECTION SKETCH

(30)



| | |
|--|--------------------------------------|
| Date Prepared: 10-30-21 | Applicant Name: Jack Phipps |
| STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND AND WATER | |
| MAP: | |
| Sec(s) 12 | Township 2N, Range 14E Meridian FBRS |
| Scale: 1" = _____ | ADLs: 621414 & 621415 |
| SHEET OF _____ | APMA # 2902 |



N53°18'E 1237.17'

Number Two above (Mary Louise)

S62°24' W 1138.46'

No. 1 above (Mary Louise)

Discovery (Mary Louise)

1148.63'

No. 1 above

111°52'E.

1320'

discovery fraction No. 1 above discovery

1320'

30875

discovery Ketchum Creek

61615 37090E

FORWARD BEARING
BLM. W. P. 5. 2011
KAS 012121 P. 11 12

N03°29'E 379.73'

No. 2 above

N02°09'W 8100'

N72°05' 844.51'

Number Four above (Ketchum Creek)

N59°24'E 1005.27'

N56°37' W 11128'

N52°15' W 1137.1'

81612 53519 E

N55°34'E 1219.85'

BLM. W. P. 5. 2011
KAS 012121 P. 11 12

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N03°29'E 379.73'

No. 2 above

N02°09'W 8100'

N72°05' 844.51'

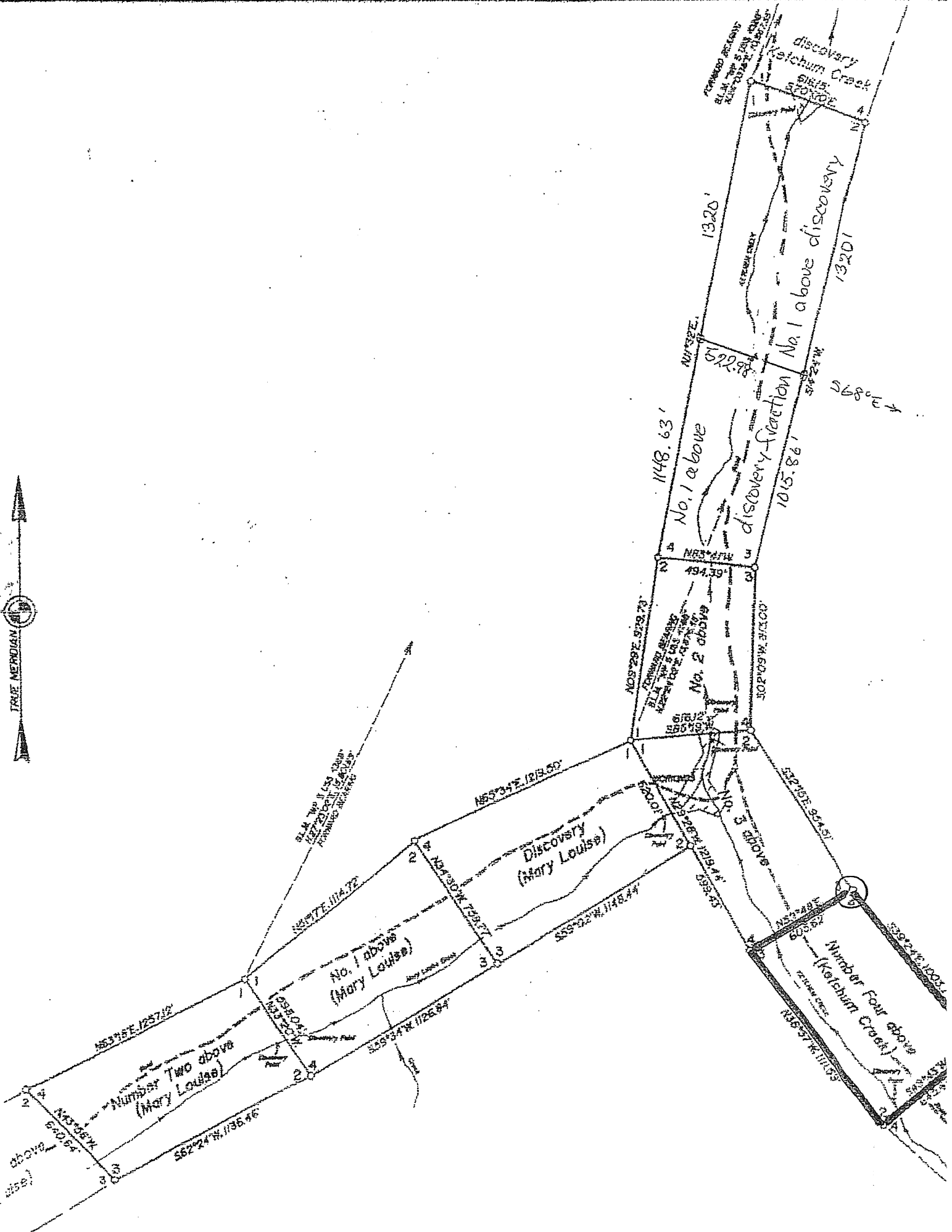
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N56°37' W 11128'

N52°15' W 1137.1'

81612 53519 E

BLM. W. P. 5. 2011
KAS 012121 P. 11 12



Number Two above
(Mary Louise)

No. 1 above
(Mary Louise)

Discovery
(Mary Louise)

No. 1 above

No. 2 above

No. 3 above

Number Four above
(Ketchum Creek)

discovery fraction
No. 1 above discovery

discovery
Ketchum Creek
SIRIS
570702

BLA. TWO IS LESS THAN
BEARING OF BLA. ONE
FORWARDS MEASURING

FORWARD BEARING
BLA. TWO IS LESS THAN
BEARING OF BLA. ONE
FORWARDS MEASURING

4 2.875

9

1148.63'

1320'

1320'

1015.86'

494.39'

S55°34'E 1219.50'

S55°22'W 1148.44'

S52°15'E 944.51'

S39°24'E 1025.1'

S63°55'E 1257.12'

S55°34'W 1126.84'

S62°24'W 1136.46'

S55°22'W 1148.44'

S52°15'E 944.51'

S39°24'E 1025.1'

S63°55'E 1257.12'

S62°24'W 1136.46'

S55°34'E 1219.50'

S55°22'W 1148.44'

S52°15'E 944.51'

S39°24'E 1025.1'

S63°55'E 1257.12'

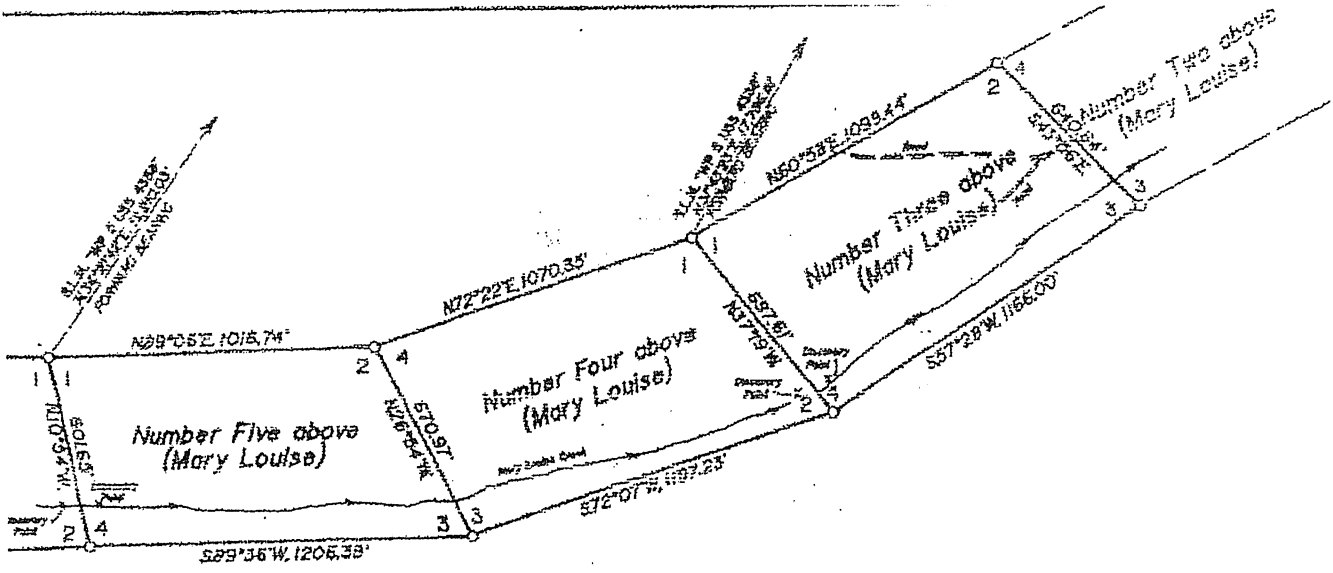
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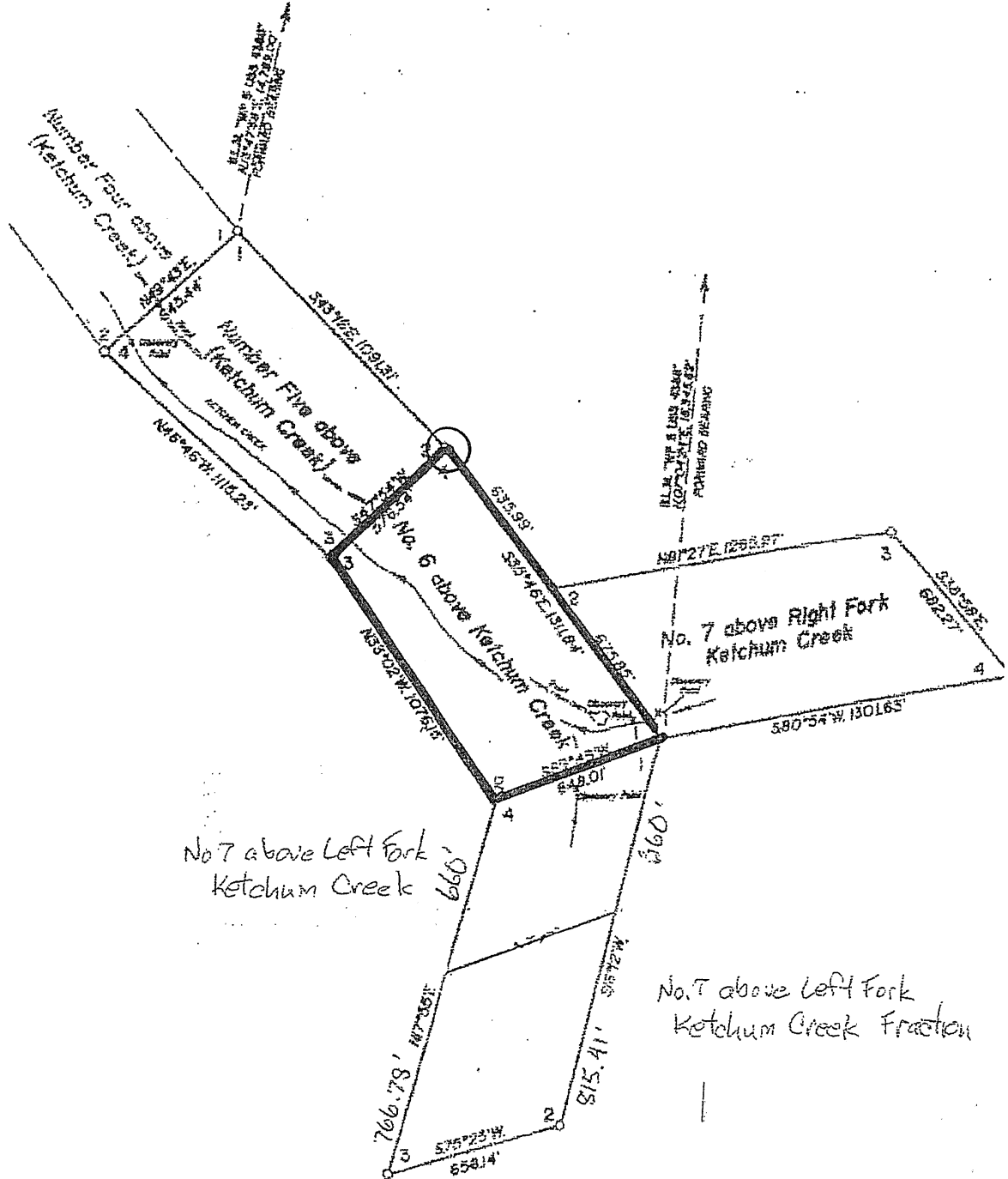
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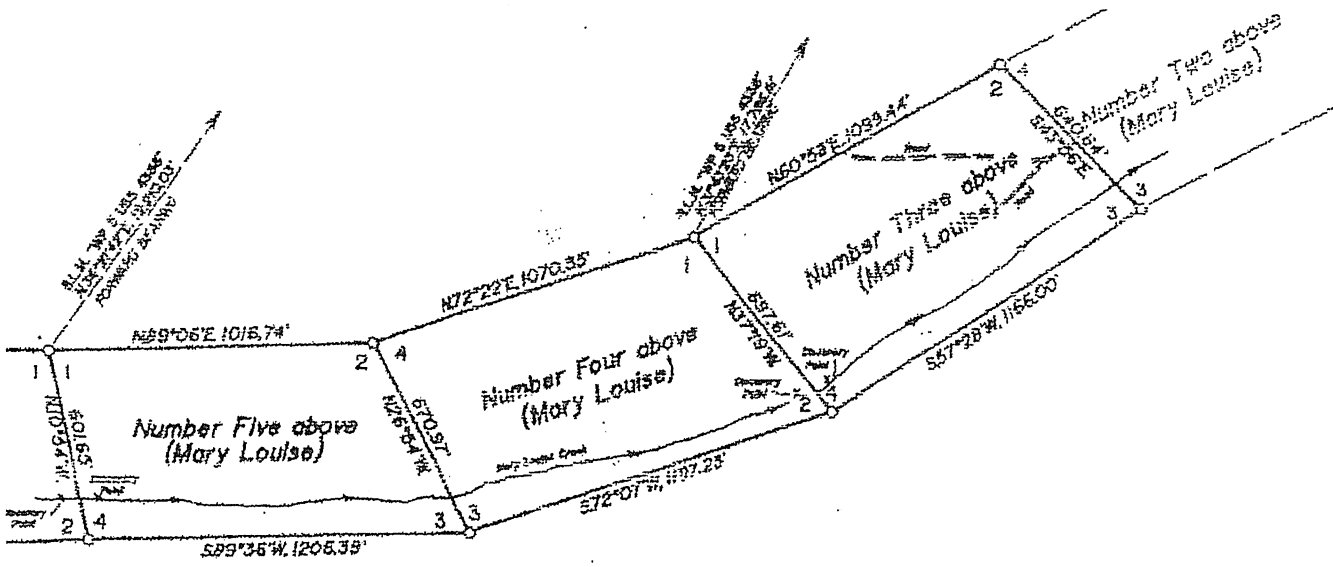
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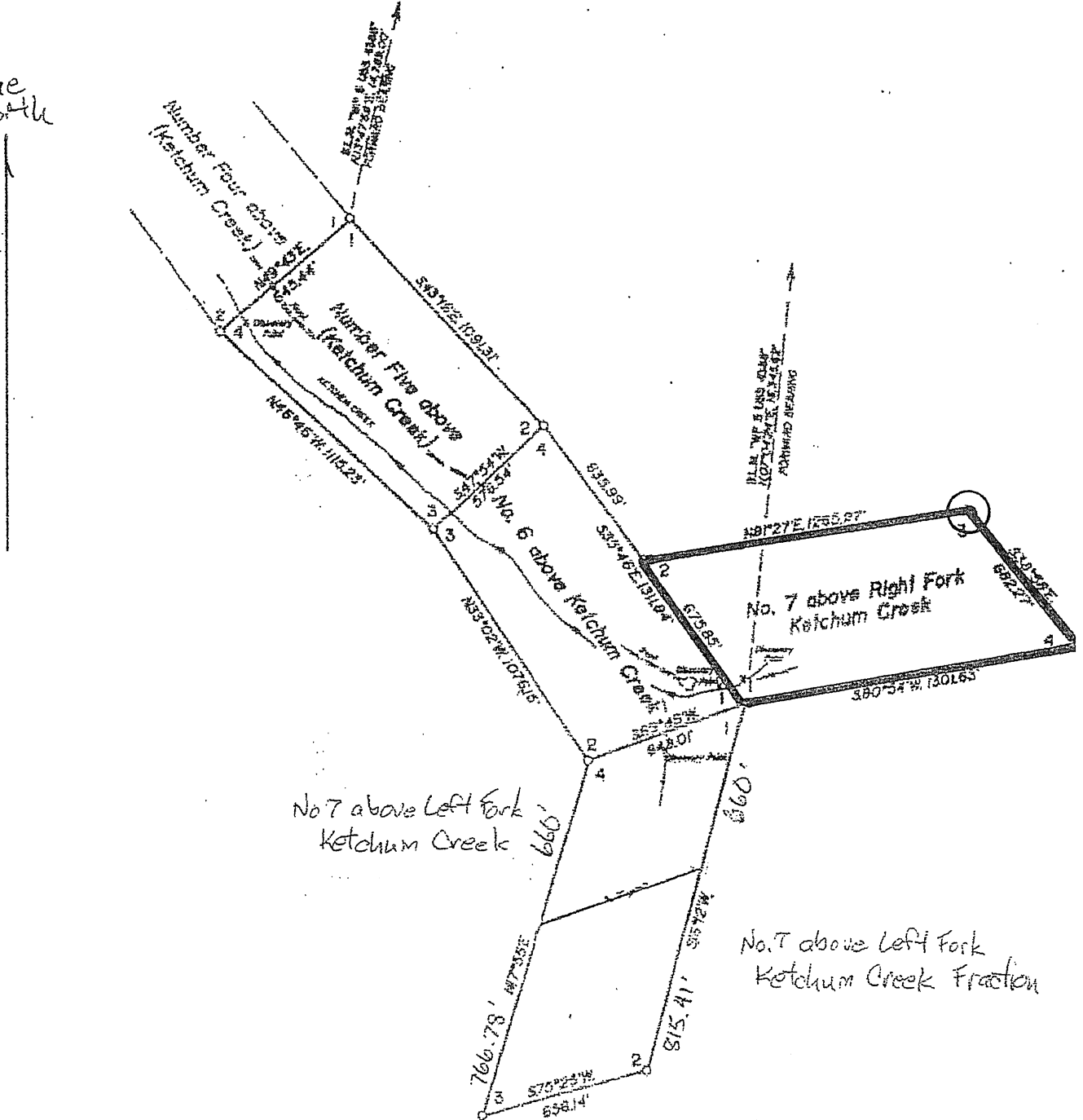


True North



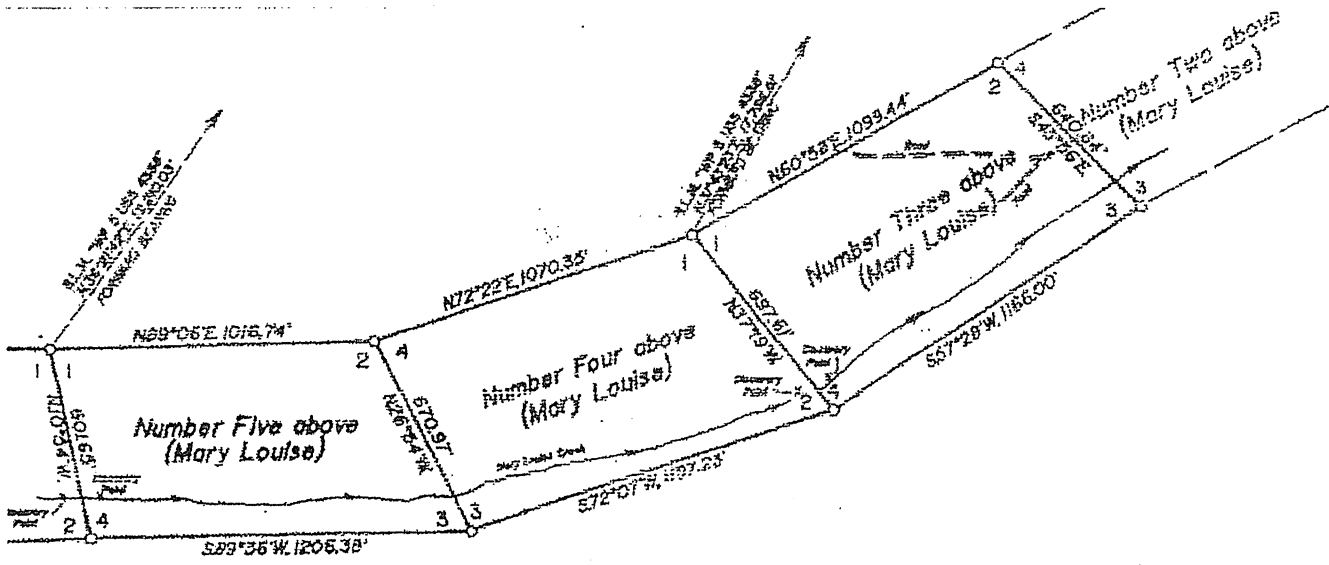


True North

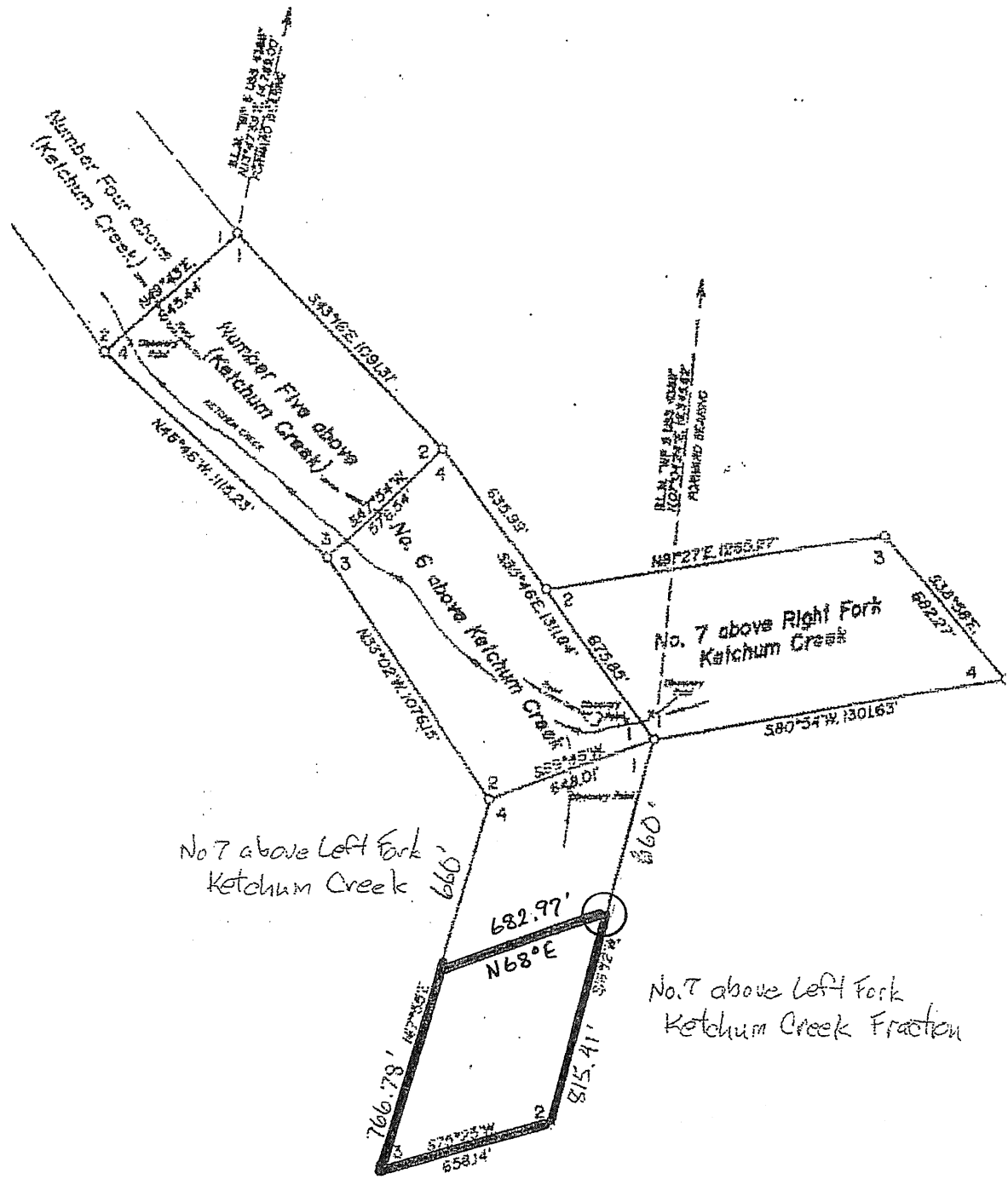


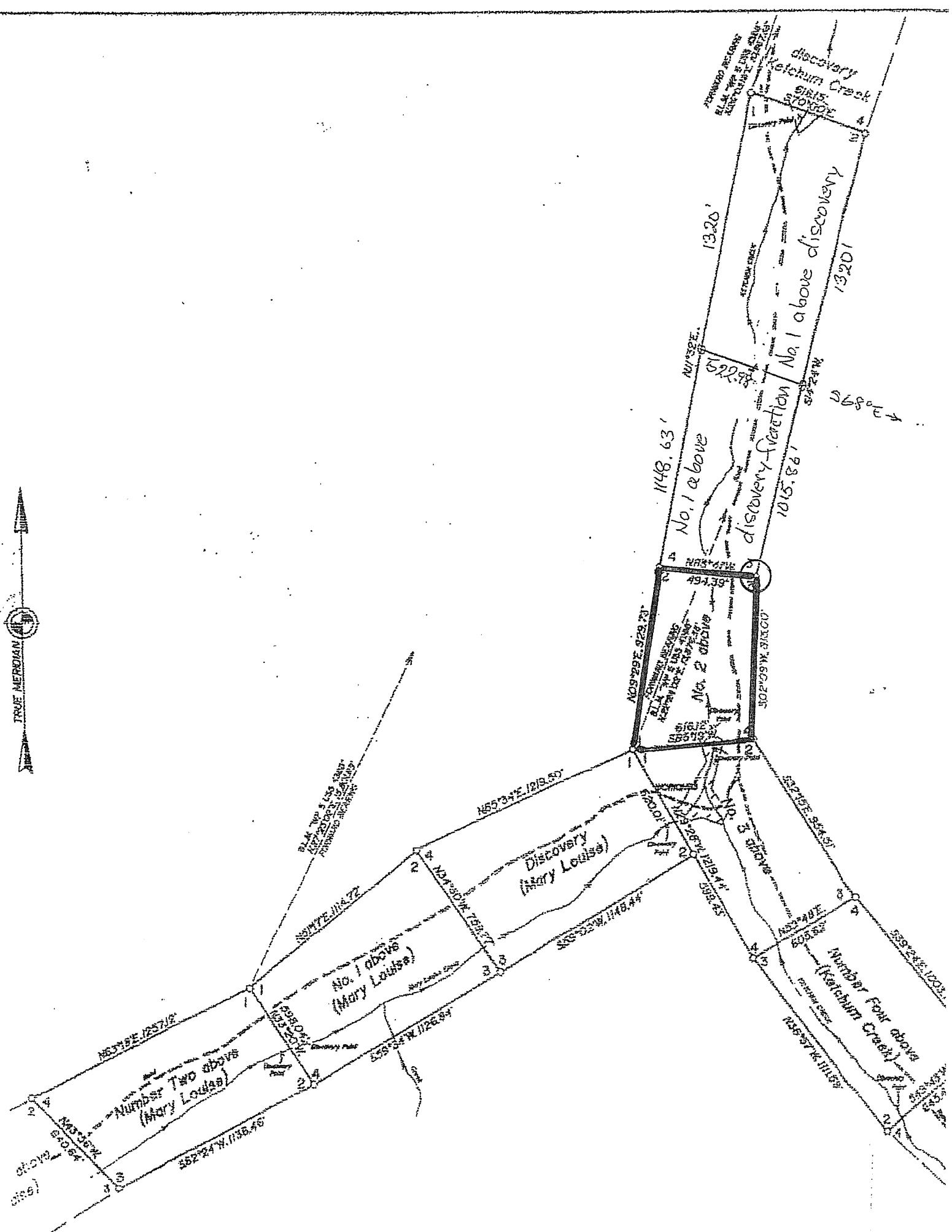
No. 7 above Left Fork Ketchum Creek

No. 7 above Left Fork Ketchum Creek Fraction



True North





Number Two above
(Mary Louise)

No. 1 above
(Mary Louise)

Discovery
(Mary Louise)

No. 2 above

No. 1 above

discovery fraction
No. 1 above discovery

Number Four above
(Ketchum Creek)

CONVEYANCE AGREEMENT
B.L.A. No. 2155
Ketchum Creek
No. 2 above

discovery
Ketchum Creek
BLA No. 2156
S.P. 1115

N63°45'E 1257.12'

N59°01'W 1213.22'

S62°24'W 1138.66'

S04°17'E 1164.72'

N44°30'W 1212.72'

N55°34'E 1219.50'

S65°22'W 1148.44'

N23°06'W 1219.44'

S62°19'E 944.91'

1320'

1320'

1148.63'

1015.86'

N17°32'E 571.22'

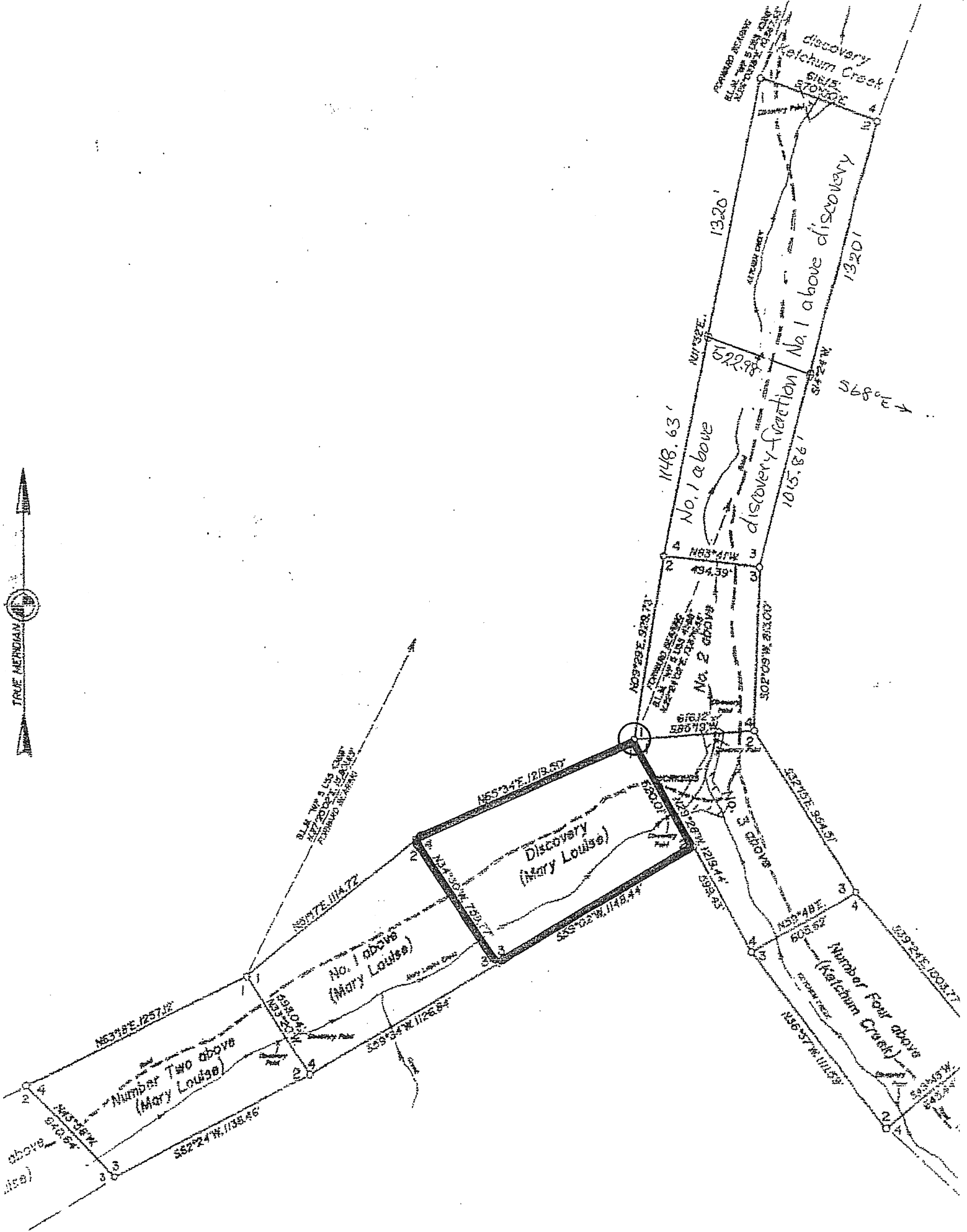
S70°59'W 420.89'

N09°29'E 922.73'

S02°00'W 818.00'

above
discovery

above
discovery



N63°18'E. 1257.18'

Number Two above
(Mary Louise)

S52°24'W. 1135.46'

No. 1 above
(Mary Louise)

S53°34'W. 1126.84'

N55°34'E. 1219.57'

Discovery
(Mary Louise)

S55°52'W. 1148.44'

No. 1 above

1148.63'

No. 2 above

N03°29'E. 918.71'

194.39'

1320'

discovery fraction No. 1 above discovery

1015.86'

1320'

5686'

discovery
Ketchum Creek
616.15'
570.50'

Number Four above
(Ketchum Creek)

S52°16'E. 1002.17'

S55°48'E. 1035.52'

S56°57'W. 1111.52'

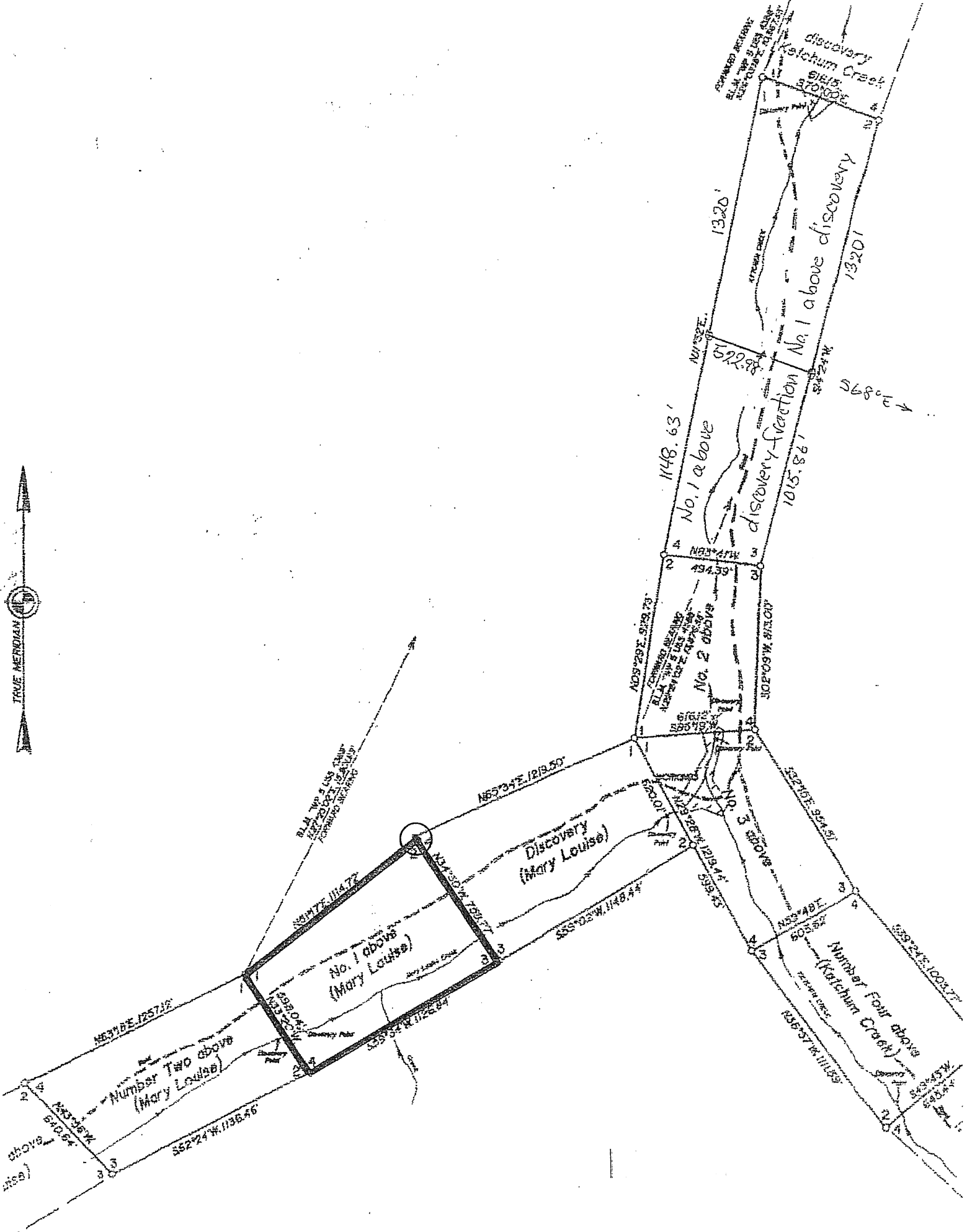
S52°45'W. 1024.17'

S52°45'W. 1024.17'

BLK. TWP 4 S. 33 E. R. 24 S. 1/4 S. 1/4 S. 1/4
FURNISHED FOR REFERENCE

BLK. TWP 4 S. 33 E. R. 24 S. 1/4 S. 1/4 S. 1/4
FURNISHED FOR REFERENCE

BLK. TWP 4 S. 33 E. R. 24 S. 1/4 S. 1/4 S. 1/4
FURNISHED FOR REFERENCE



N63°16'E 1257.20'

Number Two above
(Mary Louise)

S52°24'W 1136.56'

No. 1 above
(Mary Louise)

Discovery
(Mary Louise)

No. 1 above

1148.63'

1320'

discovery
Ketchum Creek

Number Four above
(Ketchum Creek)

568°

1320'

B.L.M. TWP 2 S, R. 10 E, S. 14 N
SEC. 20, 21, 22, 23, 24, 25, 26, 27, 28
TOWNSHIP 2 NORTH, RANGE 10 EAST, SECTION 20, 21, 22, 23, 24, 25, 26, 27, 28

B.L.M. TWP 2 S, R. 10 E, S. 14 N
SEC. 20, 21, 22, 23, 24, 25, 26, 27, 28
TOWNSHIP 2 NORTH, RANGE 10 EAST, SECTION 20, 21, 22, 23, 24, 25, 26, 27, 28

CHURNED BEARING
B.L.M. TWP 2 S, R. 10 E, S. 14 N
SEC. 20, 21, 22, 23, 24, 25, 26, 27, 28
TOWNSHIP 2 NORTH, RANGE 10 EAST, SECTION 20, 21, 22, 23, 24, 25, 26, 27, 28

10732'E.

622.88'

N53°29'E 875.73'

N55°34'E 1219.50'

S55°12'W 1148.44'

S52°24'W 1136.56'

N53°29'E 875.73'

discovery
Ketchum Creek

No. 2 above

No. 3 above

No. 4 above
(Ketchum Creek)

10732'E.

10732'E.

N53°29'E 875.73'

N55°34'E 1219.50'

S55°12'W 1148.44'

S52°24'W 1136.56'

N53°29'E 875.73'

1320'

10732'E.

N53°29'E 875.73'

N55°34'E 1219.50'

S55°12'W 1148.44'

S52°24'W 1136.56'

N53°29'E 875.73'

discovery
Ketchum Creek

1320'

10732'E.

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S52°24'W 1136.56'

N53°29'E 875.73'

discovery
Ketchum Creek

1320'

10732'E.

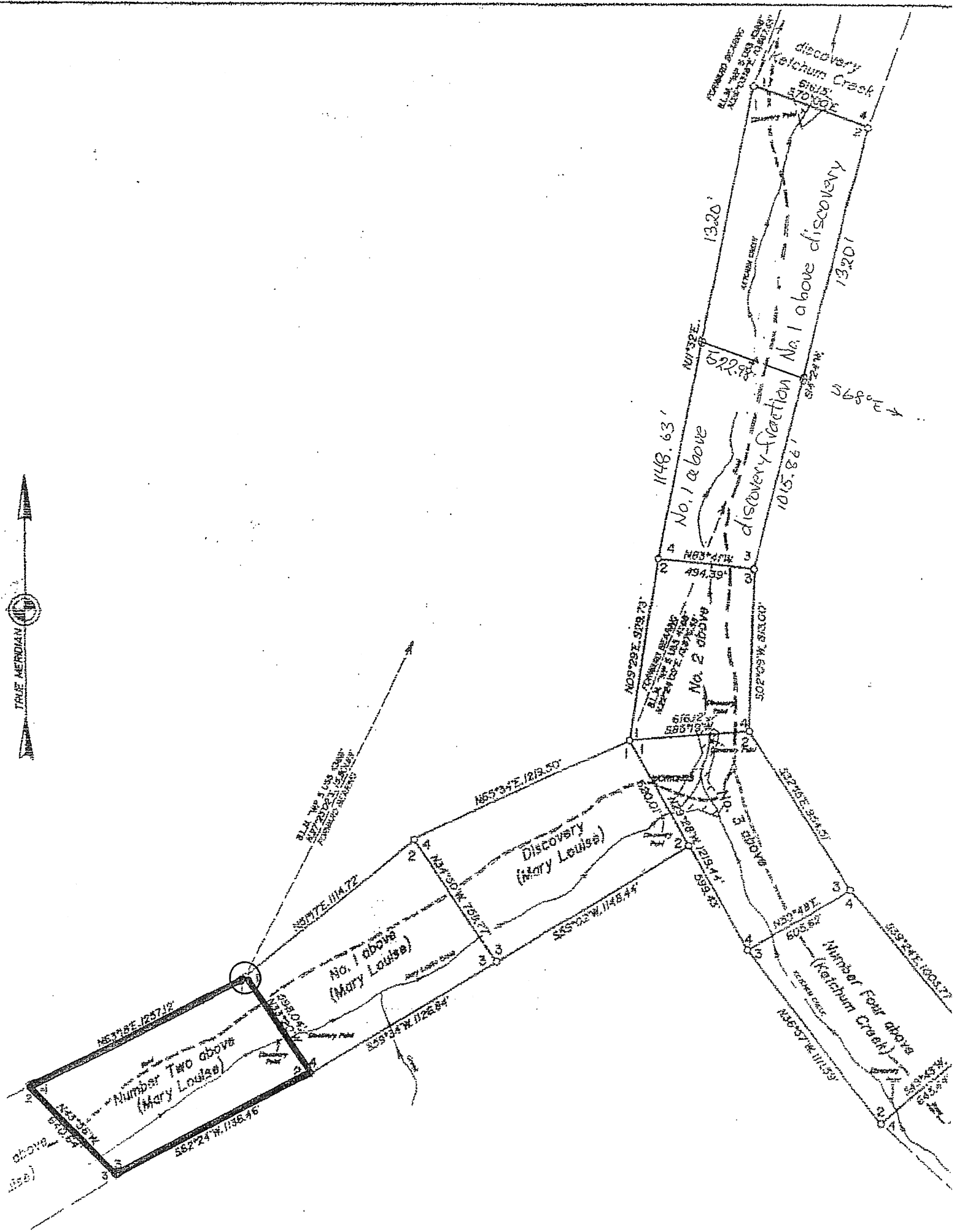
N53°29'E 875.73'

N55°34'E 1219.50'

S55°12'W 1148.44'

S52°24'W 1136.56'

N53°29'E 875.73'



N87°17'E 111.72'

Number Two above
(Mary Louise)

S82°24'N 1136.46'

BLM No. 1 and 2
Survey of 1880
P. 100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000

Discovery
(Mary Louise)

No. 1 above
(Mary Louise)

No. 1 above

No. 2 above

Number Four above
(Ketchum Crank)

discovery-fraction
No. 1 above discovery

discovery
Ketchum Crank
8815'
570502'

1148.63'

1320'

1320'

1015.86'

522°15'E 324.51'

522°15'E 1005.27'

N45°57'W 111.59'

N07°32'E
622.88'

N03°29'E 579.79'

S02°09'W 818.07'

N55°34'E 1219.50'

S55°22'W 1148.44'

N03°48'E
806.82'

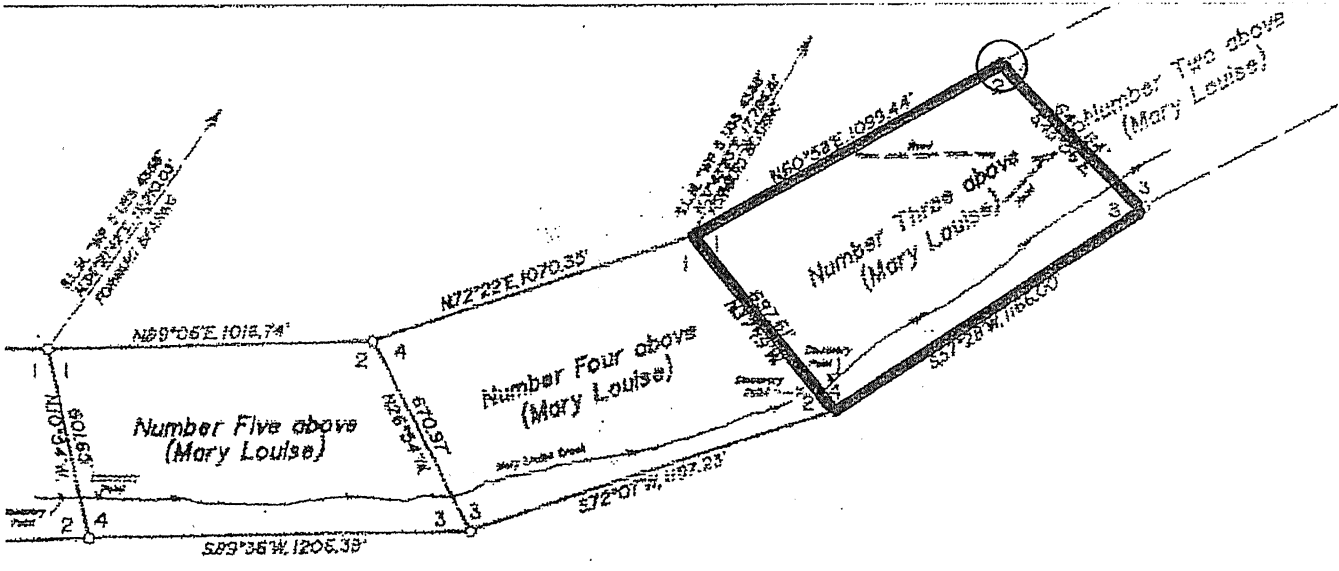
N45°57'W 111.59'

568°5'

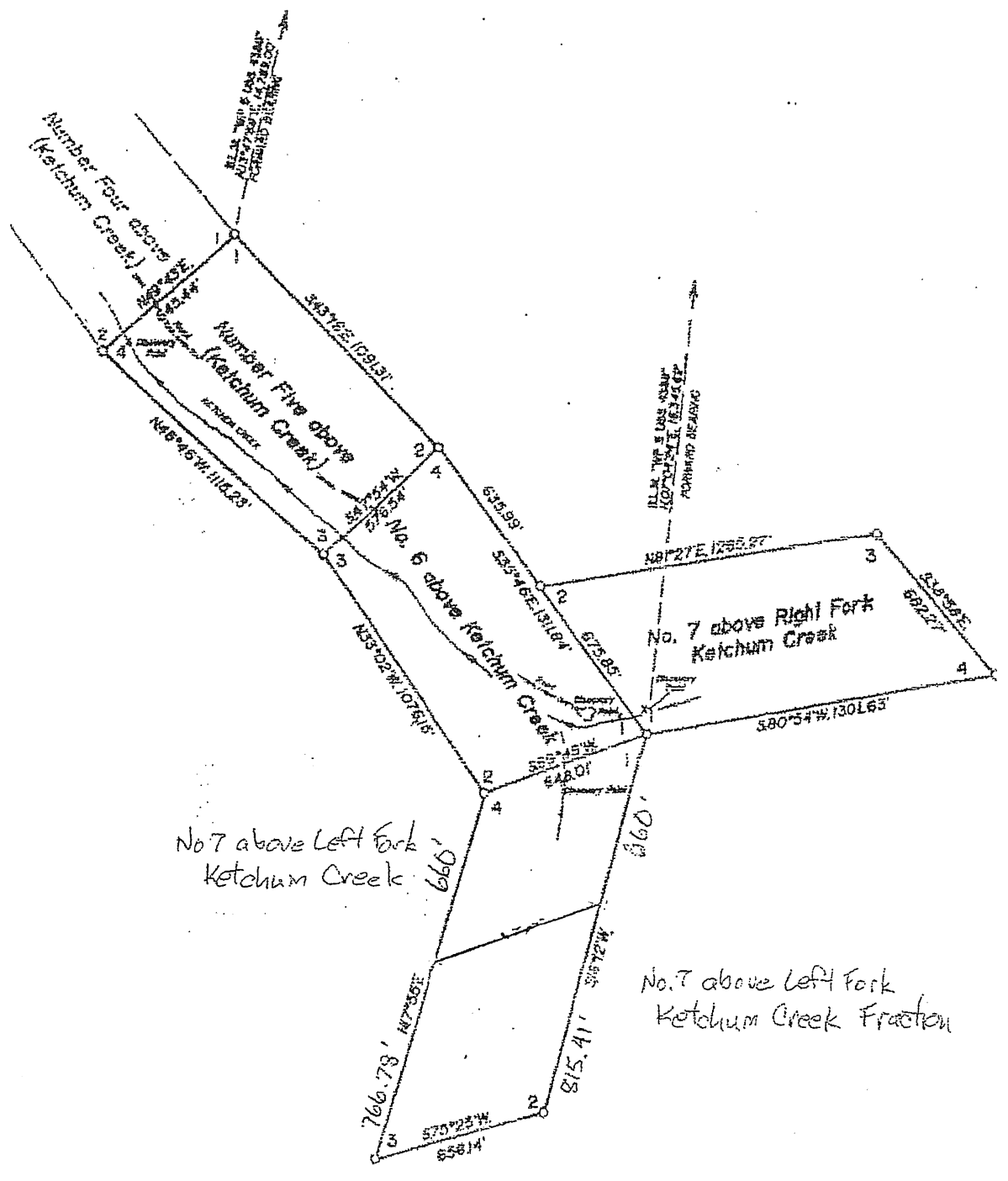
above
(use)

1015.86'

570502'

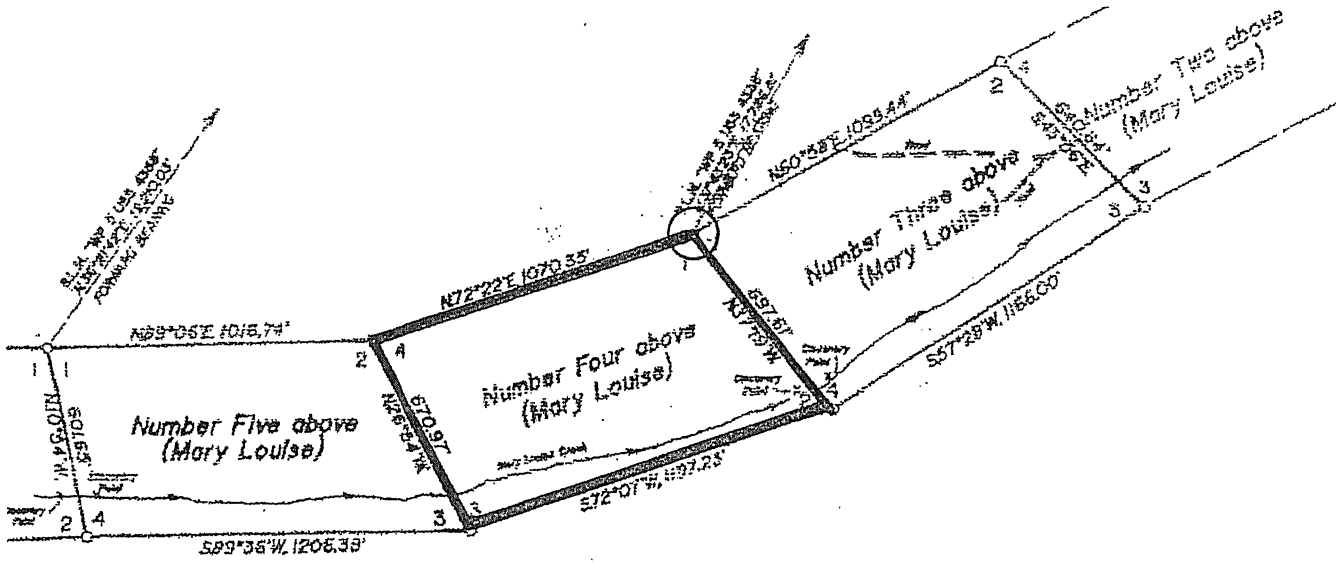


True North

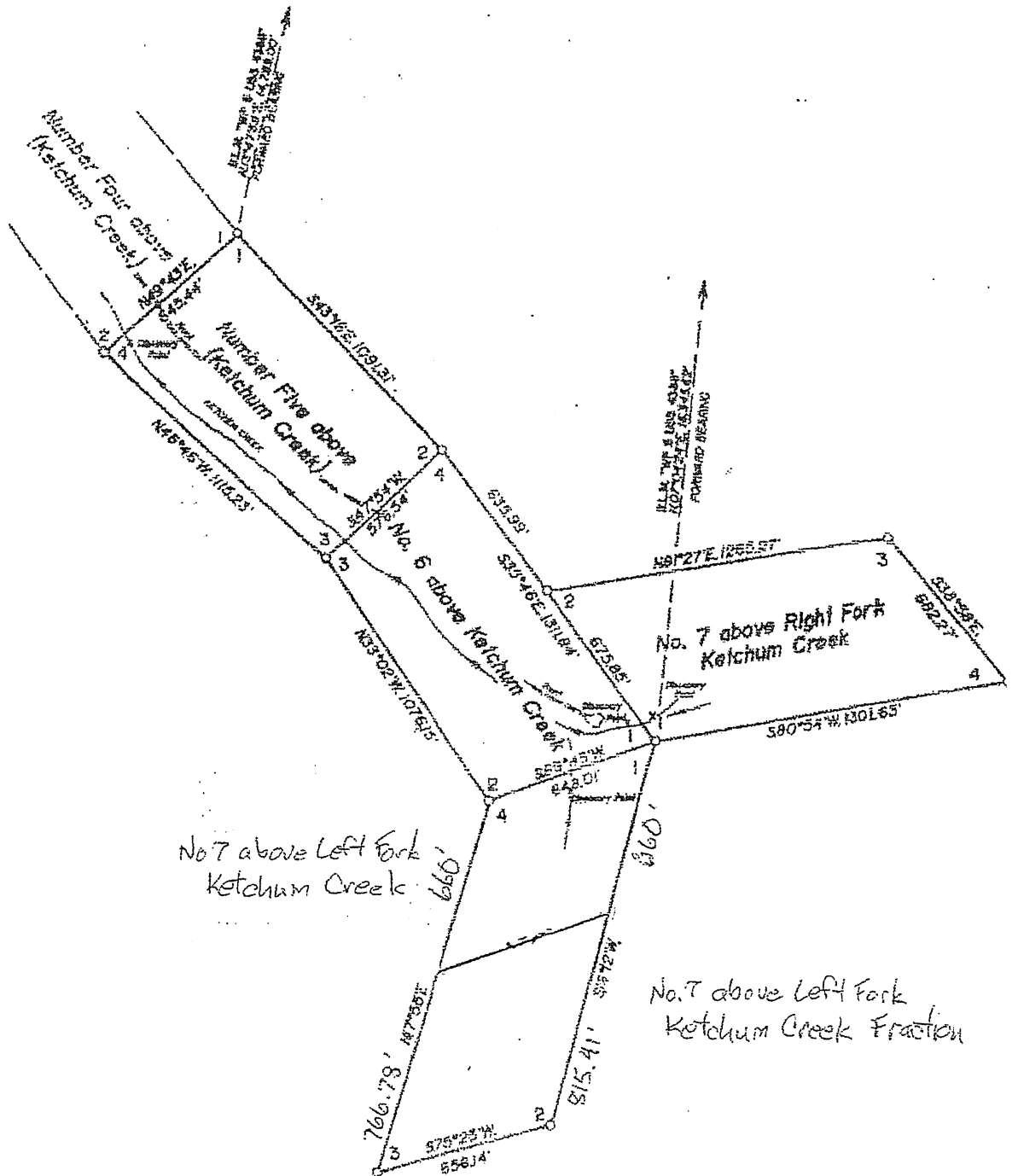


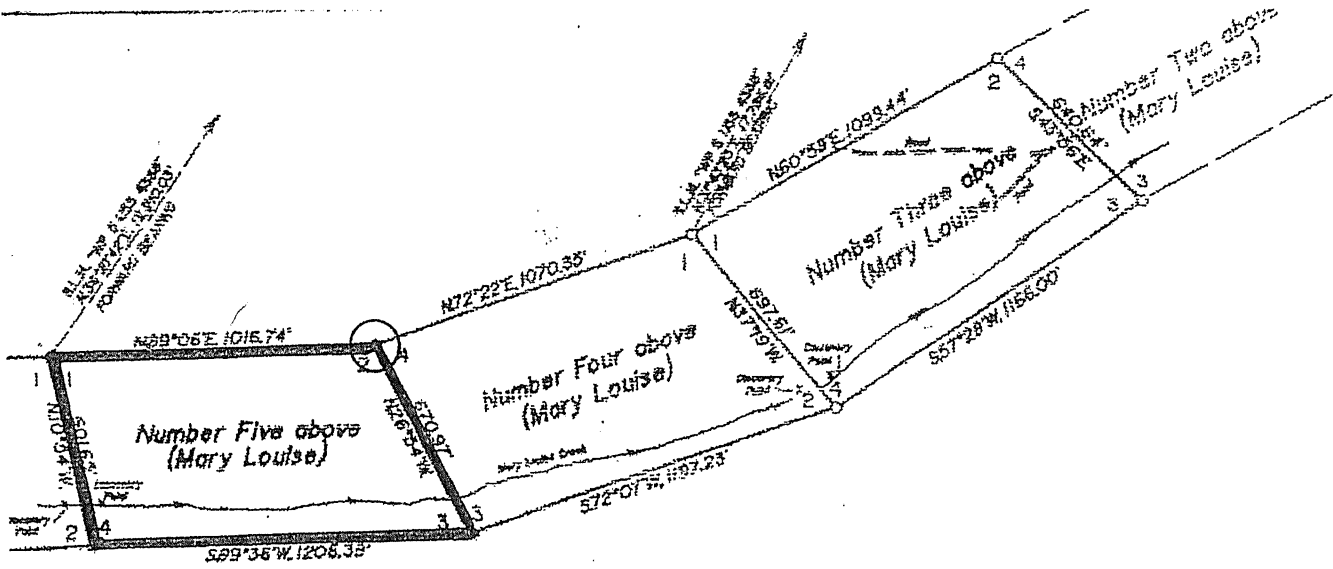
No 7 above Left Fork Ketchum Creek 660

No. 7 above Left Fork Ketchum Creek Fraction



True North





True North

