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2 messages

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**Mark Steen** <goldtontine@gmail.com>

Fri, May 10, 2019 at 5:02 PM

To: "Amy.Eschberger@state.co.us" <Amy.Eschberger@state.co.us>



### CMC Responses to DRMS AR NO. 3

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**Eschberger - DNR, Amy** <amy.eschberger@state.co.us>

Mon, May 13, 2019 at 8:13 AM

To: Mark Steen <goldtontine@gmail.com>

Mark,

I received your 10 emails sent Friday including an adequacy response letter and several maps for Gold Hill Mill AM-1. Do you intend to also submit a complete hard copy to our office?

Thanks,

**Amy Eschberger**  
Environmental Protection Specialist



**COLORADO**  
Division of Reclamation,  
Mining and Safety  
Department of Natural Resources

O: 303.866.3567 x 8129 | F: 303.832.8106 | C: 303.945.9014  
1313 Sherman Street, Room 215, Denver, CO 80203  
[Amy.Eschberger@state.co.us](mailto:Amy.Eschberger@state.co.us) | <http://www.mining.state.co.us>

[Quoted text hidden]

Amy Eschberger: Attached to this email are CMC's Responses to some of the Adequacy Review questions that you included in your letter dated January 14, 2019. I will be sending additional responses to you during the next few days.

Thank you,

Mark A. Steen for the Colorado Milling Company, LLC.

1) The operator's response to item no. 8 states the footbridge will no longer be installed, and that a field survey has disclosed a gap between the Mammoth MS No. 17576 and the Paris MS No. 5149A that will provide access to the pump station from Lickskillet Road. This open area is located entirely on the Gold Gulch unpatented lode mining claim owned by the operator. Please describe this new proposed access to the pump station. Is there an existing trail/road in this area? If so, will it need to be improved and/or widened for access by the operation? Will any vegetation need to be removed from this area? This information is needed for the Division to determine whether the access is considered affected land pursuant to Rule 1.1(4). Please show this proposed access on the E-1 – Mine Plan Map.

**CMC Response:** This lowermost access to the Gold Hill Mill Waterline will be a three (3) foot wide foot path between Lickskillet Road and the area below the location of the Pump Station. It will be located entirely on the Gold Gulch No. 3 unpatented lode mining claim. This foot path will be approximately two-hundred and fifty (250) feet long. The foot path will be located on a grassy slope for a distance of approximately one-hundred and twenty-five (125) feet, until it reaches the Southeast corner of the Mammoth Millsite, MS No. 17576, where the land flattens in the Left Hand Creek flood plain. Aside from this grassy slope, most of the foot path will be situated on sand and gravel deposited in this area by the fluvial activity of Left Hand Creek. The use of this foot path will not require the removal of any large pine trees or significant vegetation along the course of this access path to the lower end of the Gold Hill Mill Waterline. Most of the larger species of vegetation in this area consists of small deciduous trees such as Quaking Aspen, Narrow Leaf Cottonwood, Mountain Alder, and Rocky Mountain Maple trees. Some of these may have to be cut back to provide access to the lower segments of the Waterline, but it is not expected that any large trees will have to be removed for this purpose.

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2) The operator's response to item no. 9 includes a generalized cross-section of the Times Mine adit and a generalized cross-section of the Times-Wynona Mines. The Times-Wynona Mines cross section shows a different scenario than what is depicted in the cross-section of these

workings submitted with the December 11, 2018 response. Firstly, the new submittal shows the 50 foot winze dropping down at an angle to connect to the 100 foot level of the Wynona Mine, while the previous submittal shows the 50 foot winze dropping vertically to connect to this level. Secondly, the new submittal does not show the tunnels for each of the four levels in the Wynona Mine. Please explain the differences between these two cross-sections.

Additionally, please add more details to these cross-sections, including:

a. the elevation of the Times Mine portal b. the floor elevation at the bulkhead location c. the collar elevation of the 50 foot winze d. the collar elevation of the Wynona Mine shaft e. the proposed maximum water level to be maintained in the mine workings f. the length and diameter of the culvert installed in the Times Mine adit g. the dimensions of the concrete bulkhead in the Times Mine adit h. the distance to the bulkhead from the portal entrance i. the distance between the bulkhead and the winze opening j. the location of any equipment installed or to be installed in the Times Mine adit and/or Wynona Mine shaft

These details are needed to better depict the proposed water storage scenario, and thus help the Division determine whether disturbances to the prevailing hydrologic balance will be minimized, as required by Rule 3.1.6(1).

**CMC Response:** The exact attitude of the Times Mine winze was not determined prior to pumping water behind the bulkhead in the mine in 1987, but it was observed to be an inclined winze at the time that the mine was cleaned up by Gold Hill Ventures' miners. The generalized cross-section of the Times- Wynona Mines shows the location of the four known levels driven along the vein off the Wynona Mine shaft. None of these four levels connect with any other mine workings in this area, other than the Times Mine via the winze. The previously submitted cross-section of the underground mine workings in the Wynona Mine was drawn along the vein. The cross-section of the Times -Wynona Mines was drawn along the cross-cut that was driven at a right angle to access the Times vein, which has the same general attitude as the Wynona vein. Both of these veins are striking northeast-southwest. The internal shaft, or winze, was probably sunk to access the Wynona Mine for ventilation when both of these mines were last active.

These details will be added to the cross-section:

a. The elevation of the Times Mine portal is 8,340.80 feet.  
b. The floor elevation at the bulkhead location is 8,342.00 feet.  
c. The collar elevation of the 50 foot winze is 8,347.00 feet.  
d. The collar elevation of the Wynona Mine shaft is 8,444.98 feet.  
e. The proposed maximum water level to be maintained in the mine workings is 8,354.00 feet at the top of the Times Mine stope above the winze.  
f. The length and diameter of the culvert installed in the Times Mine adit is 60 feet in length by 5 feet in diameter.

- g. The dimensions of the concrete bulkhead in the Times Mine adit are approximately 6 feet in height by 4.5 feet in width by 3 feet in thickness.
  - h. The distance to the bulkhead from the portal entrance is 108.14 feet.
  - i. The distance between the bulkhead and the winze opening is 345.23 feet.
  - j. There will not be any equipment installed in the Times Mine adit and/or Wynona Mine shaft.
- 

3) The operator's response to item no. 10 states the operation will access the water pipeline easement using four historic mine roads. Please describe these existing roads. Will the roads need to be improved and/or widened for use by the operation? Will any vegetation need to be removed from these areas? This information is needed for the Division to determine whether the access roads are considered affected land pursuant to Rule 1.1(4). Please show these historic mine roads on the E-1 through E-5 maps.

**CMC Response:** The Gold Hill Mill Waterline will be accessed using four historic mine roads. The main access road to the Gold Hill Mill Pipeline Easement is located off of Lickskillet Road on the Paris Millsite, MS No. 5149B. This first access road connects with the historic mine road from Left Hand Canyon to Gold Hill. It provides access to the Pipeline Easement in both directions towards Left Hand Creek to the North, and as far as the Cold Spring No. 2 Lode Claim to the South. The second historic mine access road to the Pipeline Easement extends from Lickskillet Road with two branches to the Red Cloud and Cold Spring Mines, which are located in this area. The third historic access road to the Pipeline Easement also extends from Lickskillet Road with two branches to the Alamakee Mine. The fourth historic access mine road extends from Sunshine Canyon Road to the portal of the Times Mine. All of these historic mine access roads are shown on the Surface Ownership & Permit Area Map E-2, the Mine Reclamation Plan Map E-3, the Surface Ownership & Permit Area Map E-4, and the Access-Water Line and Easements Map E-6.

None of these historic mine access roads will need to be improved or widened for use by the Gold Hill Mill operation. The only vegetation that will need to be removed consists of dead trees that may have fallen across the roads and live tree branches that will need to be cut back to provide access to the Gold Hill Mill Waterline. These historic mine access roads have not been considered affected lands pursuant to Rule 1.1(4) in the past.

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4) The operator's response to item no. 10 states the operation will access the water pipeline easement using four historic mine roads. Please describe these existing roads. Will the roads need to be improved and/or widened for use by the operation? Will any vegetation need to be removed from these areas? This information is needed for the Division to determine whether the access roads are considered affected land pursuant to Rule 1.1(4). Please show these historic mine roads on the E-1 through E-5 maps.

**CMC Response:** The Gold Hill Mill Waterline will be accessed using four historic mine roads. The main access road to the Gold Hill Mill Pipeline Easement is located off of Lickskillet Road on the Paris Millsite, MS No. 5149B. This first access road connects with the historic mine road from Left Hand Canyon to Gold Hill. It provides access to the Pipeline Easement in both directions towards Left Hand Creek to the North, and as far as the Cold Spring No. 2 Lode Claim to the South. The second historic mine access road to the Pipeline Easement extends from Lickskillet Road with two branches to the Red Cloud and Cold Spring Mines, which are located in this area. The third historic access road to the Pipeline Easement also extends from Lickskillet Road with two branches to the Alamakee Mine. The fourth historic access mine road extends from Sunshine Canyon Road to the portal of the Times Mine. All of these historic mine access roads are shown on the Surface Ownership & Permit Area Map E-2, the Mine Reclamation Plan Map E-3, the Surface Ownership & Permit Area Map E-4, and the Access-Water Line and Easements Map E-6. None of these historic mine access roads will need to be improved or widened for use by the Gold Hill Mill operation. The only vegetation that will need to be removed consists of dead trees that may have fallen across the roads and live tree branches that will need to be cut back to provide access to the Gold Hill Mill Waterline. These historic mine access roads have not been considered affected lands pursuant to Rule 1.1(4) in the past.

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5) The operator's response to item no. 10 states the legal right to cross the property between the county roads and the waterline was preserved in the Water Pipeline Easement Deed with Boulder

County. The Easement for Water Line with Access agreement was submitted with the response. This agreement grants the operator a permanent and perpetual 12 foot wide easement with access for ingress and egress over a portion of the Eureka Millsite, MS 601B (from Licksillet Road, County Road 89). This appears to be the only access location covered by the agreement. However, the operator has stated the operation will use four historic mine roads to access the water pipeline easement. Does one or more of the historic mine roads cross the Eureka Millsite, MS 601B? Please describe the properties on which the four historic mine roads exist. Additionally, please provide demonstration the operator has a legal right to access/cross these properties as proposed.

**CMC Response:** There are two Water Pipeline Easement Deeds involved in this Application for an Amendment to the Gold Hill Mill Limited Impact Permit. The first Water Pipeline Easement was dated May 4, 2001, by and between Boulder County and the owner of all of the land included in the Gold Hill Mill Waterline. A copy of this Easement was attached to the Application for an Amendment to the Gold Hill Mill Permit filed on December 19, 2017. It provides for access to maintain, repair and improve the existing water pipeline for the purpose of supplying water from Left Hand Creek to the Gold Hill Mill for mining and processing ore. This included all of the existing historic mine access roads extending from the Boulder County Roads to the Water Pipeline Easement. The second Easement for a Water Line Easement was dated September 24, 2015 by and between the Stapp Brothers and the Colorado Milling Company, LLC. This Agreement grants access to the 12 foot wide Waterline Easement with ingress and egress over a portion of the Eureka Millsite, MS No. 601B. Both of these Water Pipeline Easements grant the operators of the Gold Hill Mill access to all of the access roads along the entire length of the Waterline.

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6) The operator's response to item no. 11 indicates the operation proposes retaining water behind the Times Mine bulkhead above the collar elevation of the 50 foot winze connecting the Times Mine to the Wynona Mine, potentially filling the Times Mine cross-cut with water. This appears to contradict the operator's response to item no. 12 which states the maximum elevation that water will be retained in the mine is 8,360 feet, the collar elevation of the 50 foot winze. Please explain this contradiction. Additionally, please explain how/when the collar elevation of the winze was obtained.

**CMC Response:** The operation proposes to retain water behind the Times Mine Bulkhead above the collar elevation of the winze that connects the Times Mine with the Wynona Mine. When the

water stored in the Wynona mine workings has been drawn down by pumping for milling operations, the water in the Times Mine will occasionally be below this collar elevation of the winze. When water is pumped from Left Hand Creek behind the Times Mine Bulkhead, it will replenish the water stored in the underground mine workings in both mines and rise above the back of the cross-cut into the stoped area along the Times vein. All of the elevations in the Times Mine are from the original 1986-1987 surveying work completed by Carl Swift, Registered Mineral Surveyor.

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7) The operator's response to item no. 13 indicates the Times Mine bulkhead is already impounding some water. Please provide demonstration the bulkhead is designed to impound water for the full height of the bulkhead, with completely flooded workings (Times Mine cross-cut filled with water). This demonstration must include certification by a professional engineer. Alternatively, the operator can commit to maintaining water levels in the mine workings below the collar elevation of the 50 foot winze (said to be 8,360 feet). In either case, please describe the monitoring system that will be utilized to monitor bulkhead pressure.

**CMC Response:** A certification by a professional engineer who has examined the Times Mine Bulkhead is being prepared for submittal to the DRMS as part of this Amendment to the Gold Hill Mill Limited Impact Permit.

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10) The operator's response to item no. 14 states the Wynona Mine water will be sampled on a quarterly basis (and analyzed for a total of 12 water quality parameters), when the operation begins storing water in the mine and when the mill is in operation. Firstly, please add the following parameters approved in Technical Revision No. 9 to the Winona Mine sampling parameter list: Manganese, Temperature, and Conductivity. Secondly, please commit to collecting a grab sample of the current mine-pool and providing the results to the Division a minimum of 60 days prior to pumping out the water for mill use or pumping any additional water behind the Times Mine bulkhead. Lastly, please commit to reporting the Wynona Mine water quality sampling results to the Division on a quarterly basis along with the other required water monitoring data for the site once operations have commenced.

**CMC Response:** The water stored in the Wynona Mine workings has been sampled and analyzed on a quarterly basis when the Gold Hill Mill was in operation during several different periods under four different permitted operators. However, the water in the Wynona Mine cannot be accessed for sampling and analysis at the present time, because the drill hole casing has shifted during the last two years. CMC will substitute the water stored in the Times Mine, which can be accessed from the drill hole situated above the winze or from the water behind the Times Mine Bulkhead. CMC will sample this water on a quarterly basis for the same parameters in mg/l (T) as it was previously when the mill was being operated, with the following elements: Arsenic, Cadmium, Copper, Iron, Lead, Mercury, Silver, Zinc and Manganese, along with pH, Solids (dissolved), Sulfate as SO<sub>4</sub>, mg/l, Temperature and Conductivity. These will be added to the approved Technical Revision No. 9 sampling parameter list for the Times Mine until the Wynona Mine water can be accessed for quarterly sampling. In addition, CMC will commit to collecting a grab sample of the current mine-pool water and providing the results to the DRMS a minimum of 60 days prior to pumping out the water for milling or pumping any water behind the Times Mine Bulkhead.

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12) The operator's response to item no. 17 states the Wynona Mine shaft has been caved from about 10 feet down to about 70 or 80 feet below the surface for many years, and no water has ever been observed flowing from the collar of the shaft.

The Division has the following questions/comments regarding the Wynona Mine shaft:

a. Please describe any work that will need to be done to the shaft prior to using it for the operation. b. How does the operator know the location of the collapse? Has the shaft been characterized since caving in? c. Will this collapse interfere with the operator's ability to obtain accurate water level readings or collect water quality samples from the shaft? d. How does the operator intend to install the necessary infrastructure through the collapsed shaft to pump water from the workings? Is there existing infrastructure that will be utilized?

CMC's Responses to these questions/comments regarding the Wynona Mine shaft are listed below:

a. Please describe any work that will need to be done to the shaft prior to using it for the operation.

**CMC Response:** No work will need to be done to the Wynona Mine shaft prior to using it for milling operations. However, the drill hole will need to be restored so that the water stored in the underground mine workings can be collected and sampled. The pump may have to be pulled and replaced prior to resuming milling operations.

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b. How does the operator know the location of the collapse? Has the shaft been characterized since caving in?

**CMC Response:** The Wynona Mine shaft was caved from approximately ten (10) feet down when the Cash Mine was originally permitted in 1984. ITEC Environmental backfilled the shaft to its present level, which is near the surface elevation. CMC has determined that the shaft is filled with material down to about sixty (60) feet. This would indicate that there was about fifty (50) feet of material in the shaft before it was backfilled to its present elevation.

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c. Will this collapse interfere with the operator's ability to obtain accurate water level readings or collect water quality samples from the shaft?

**CMC Response:** As described above, the drill hole will have to be restored before accurate water level readings and water quality samples can be collected from the Wynona Mine workings.

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d. How does the operator intend to install the necessary infrastructure through the collapsed shaft to pump water from the workings? Is there existing infrastructure that will be utilized?

**CMC Response:** The operator intends to repair the upper sixty (60) feet of the existing drill hole that extends through the collapsed shaft. The water pump may have to be pulled from the shaft and replaced before the water stored in the Wynona Mine workings can be used to process ore in the Gold Hill Mill.

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**Exhibit D – Reclamation Plan (Rule 6.3.4):**

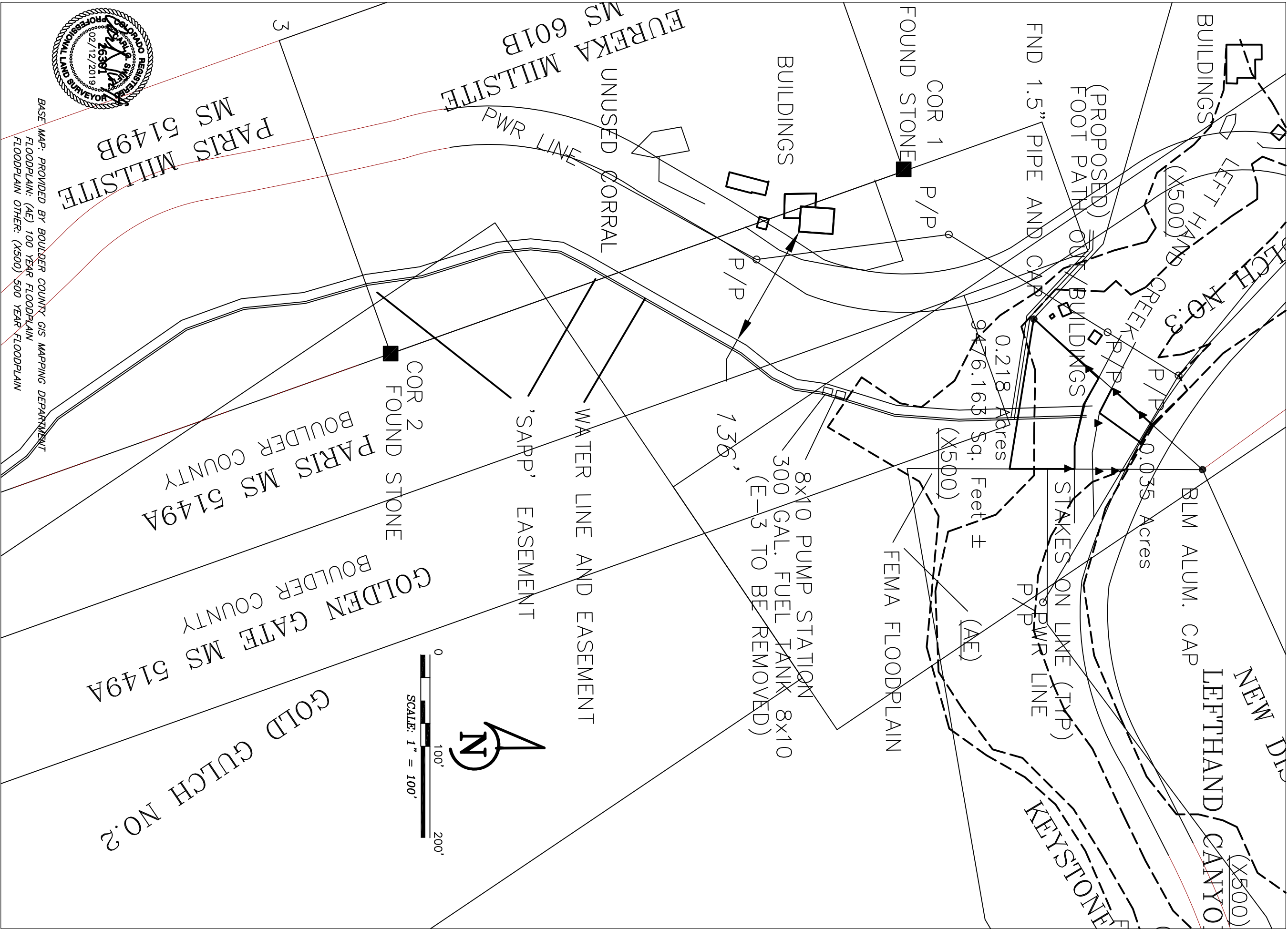
13) Please describe the proposed reclamation plan for the Wynona Mine shaft. Additionally, please be sure the closure costs for this shaft are included in the reclamation cost estimate.

Exhibit E – Map (Rule 6.3.5):

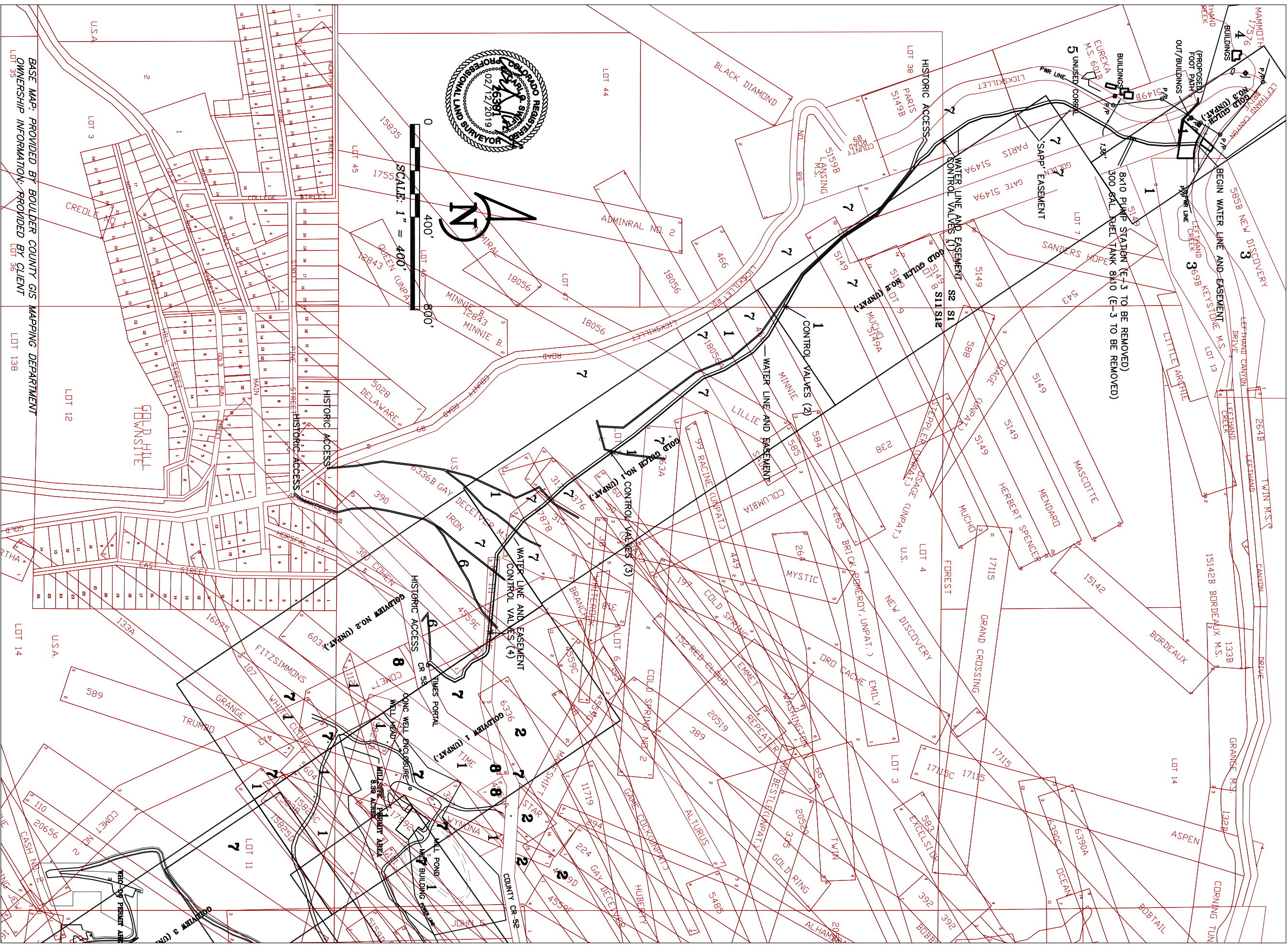
**CMC Response:** The Wynona Mine shaft will not be reclaimed. Neither will the Times Mine drill hole site. Both of these drill holes will be used by the Gold Hill Mill as a future source of emergency water in case of another forest fire similar to the Four Mile Canyon Fire that devastated the South side of the property now owned by CMC. A diesel or gasoline powered generator will be installed to provide electrical power to both of these drill hole sites, and a sprinkler system will be placed around the Millsite. This fire control system is necessary, because another large forest fire in this area is probably inevitable given the tremendous overgrown on the North side of this property from Sunshine Canyon Drive to Left Hand Creek. In that event, the water in these two mines will be needed to protect the Gold Hill Millsite from another forest fire in this area. This will obviate the closure costs for closing the Wynona Mine shaft and reclaiming the drill hole into the Times Mine workings.

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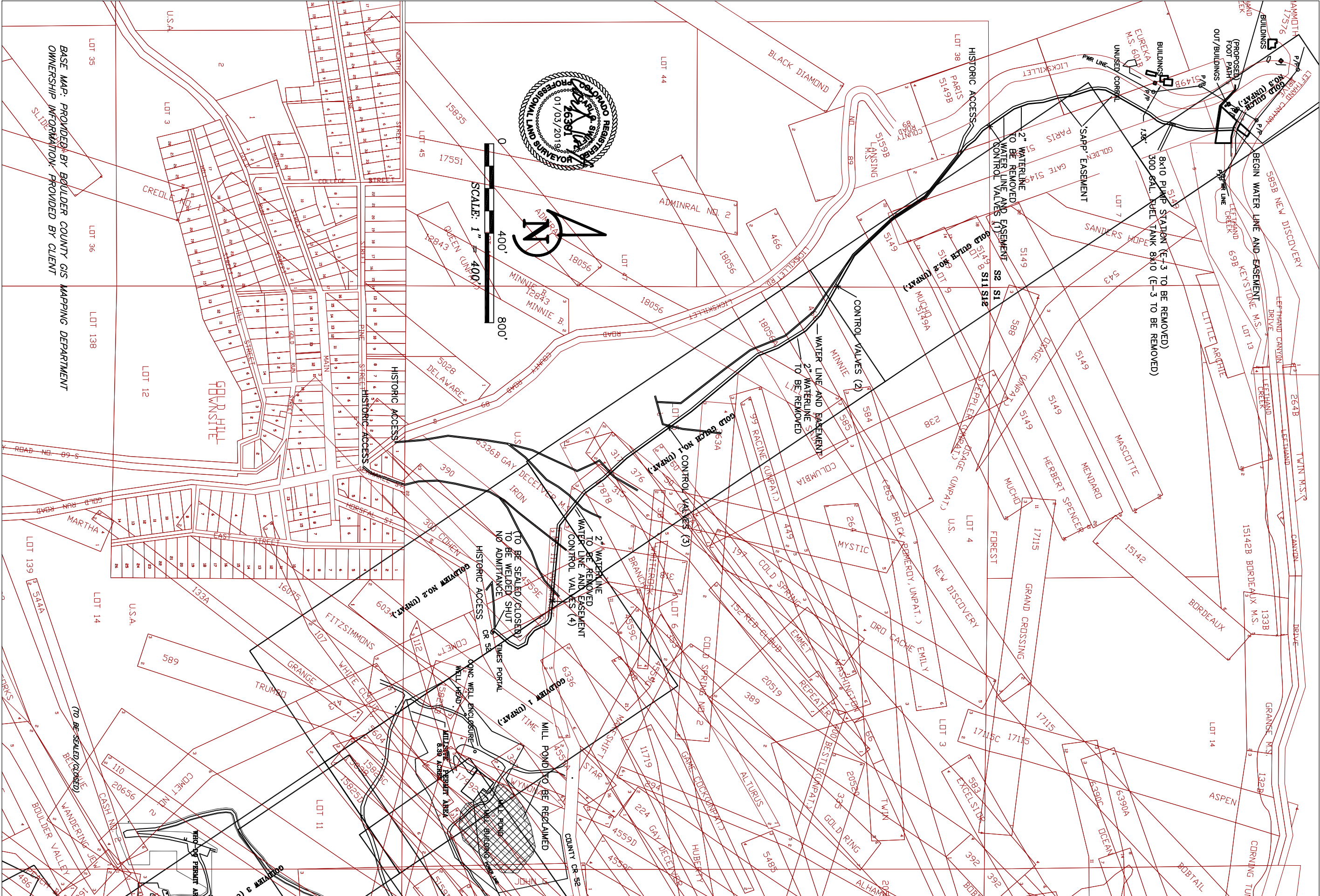
E-1 MINE PLAN - COLORADO MILLING CO.-GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO



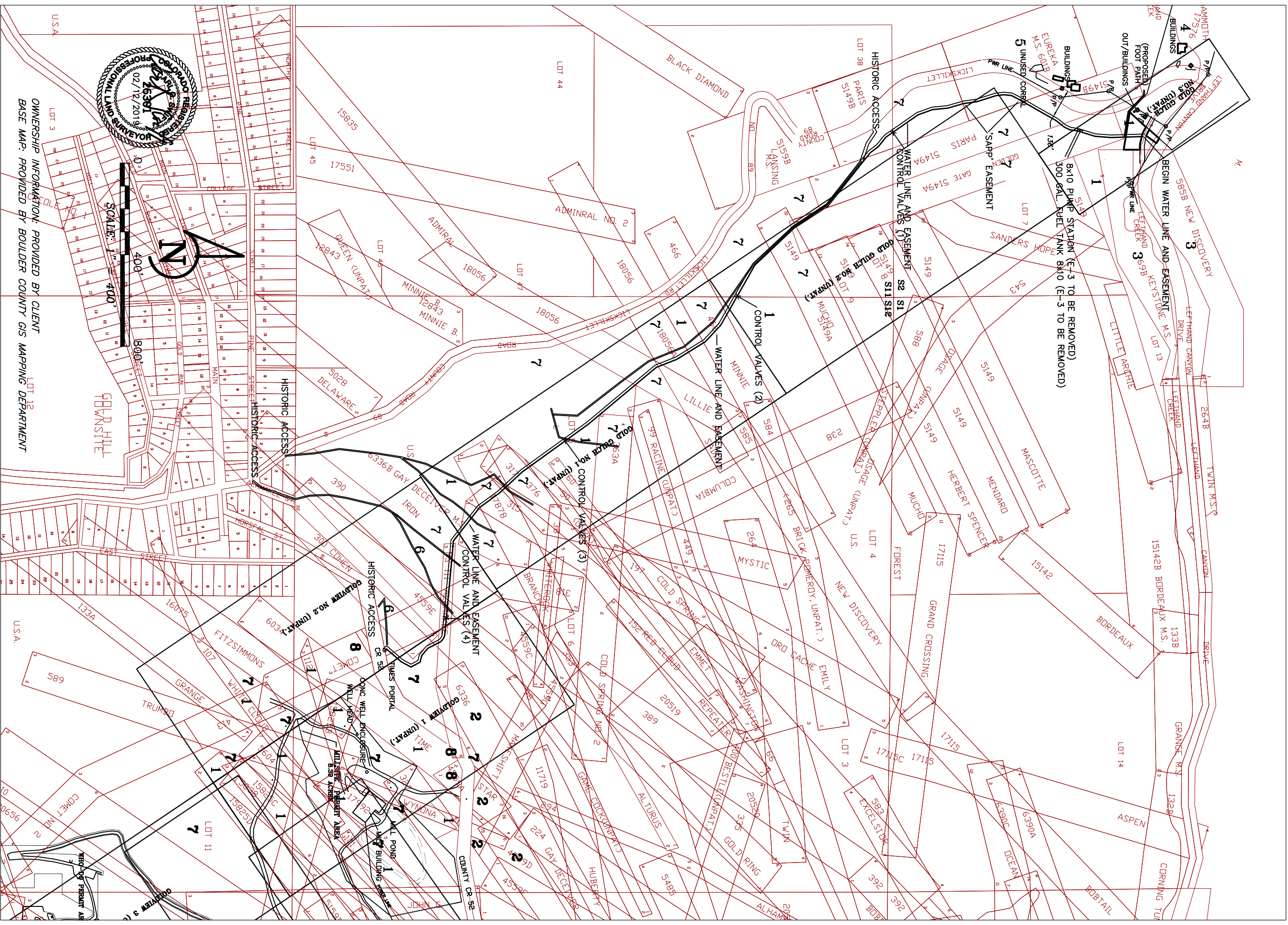
E-2 SURFACE OWNERSHIP & PERMIT AREA  
COLORADO MILLING CO. - GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO



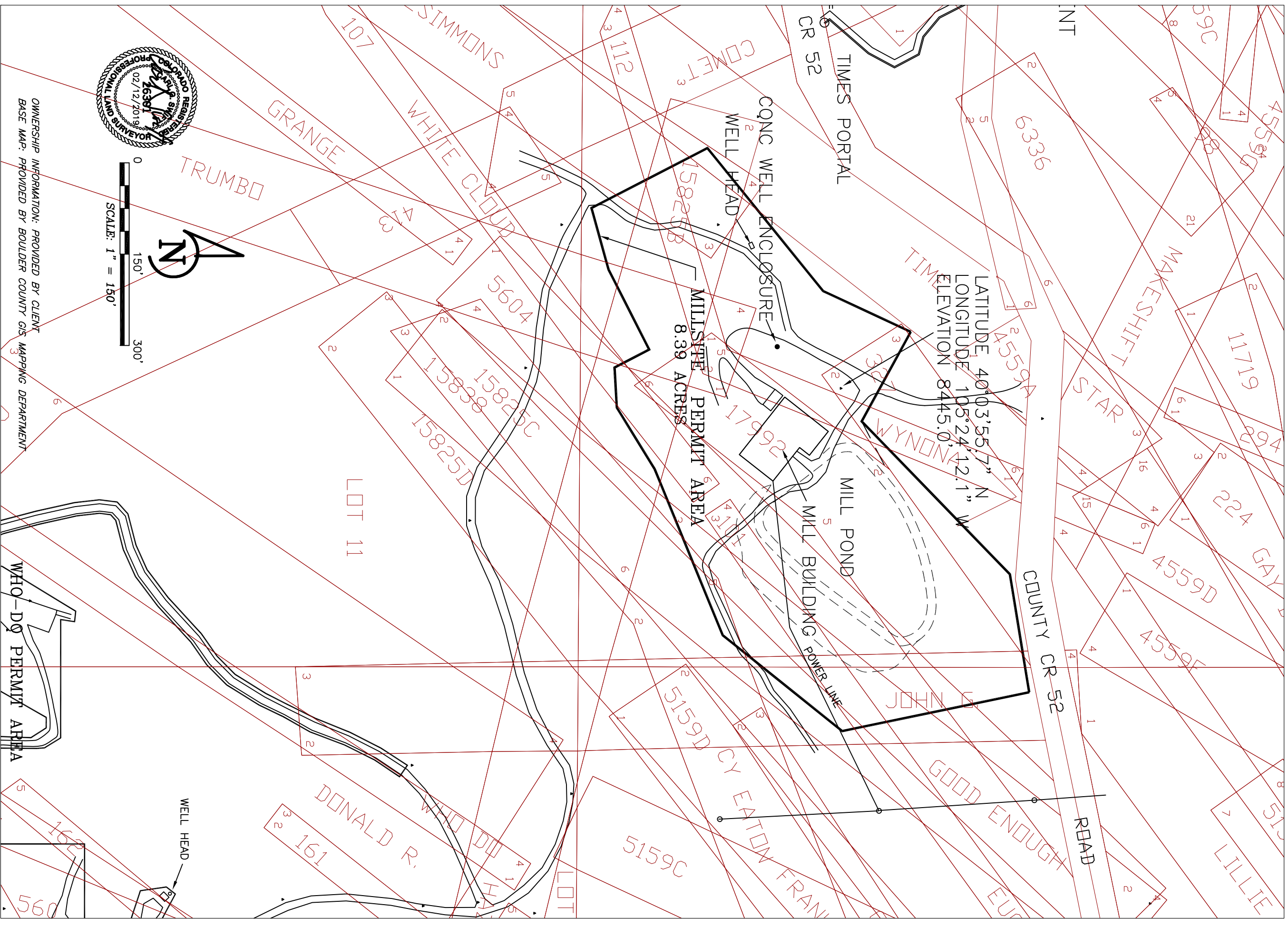
E-3 MINE RECLAMATION PLAN  
COLORADO MILLING CO.- GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO



E-4 SURFACE OWNERSHIP & PERMIT AREA  
COLORADO MILLING CO. - GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO

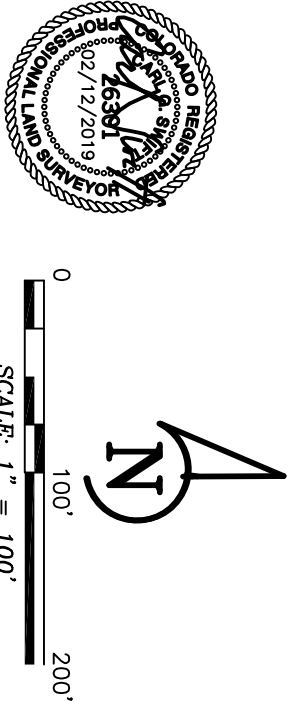
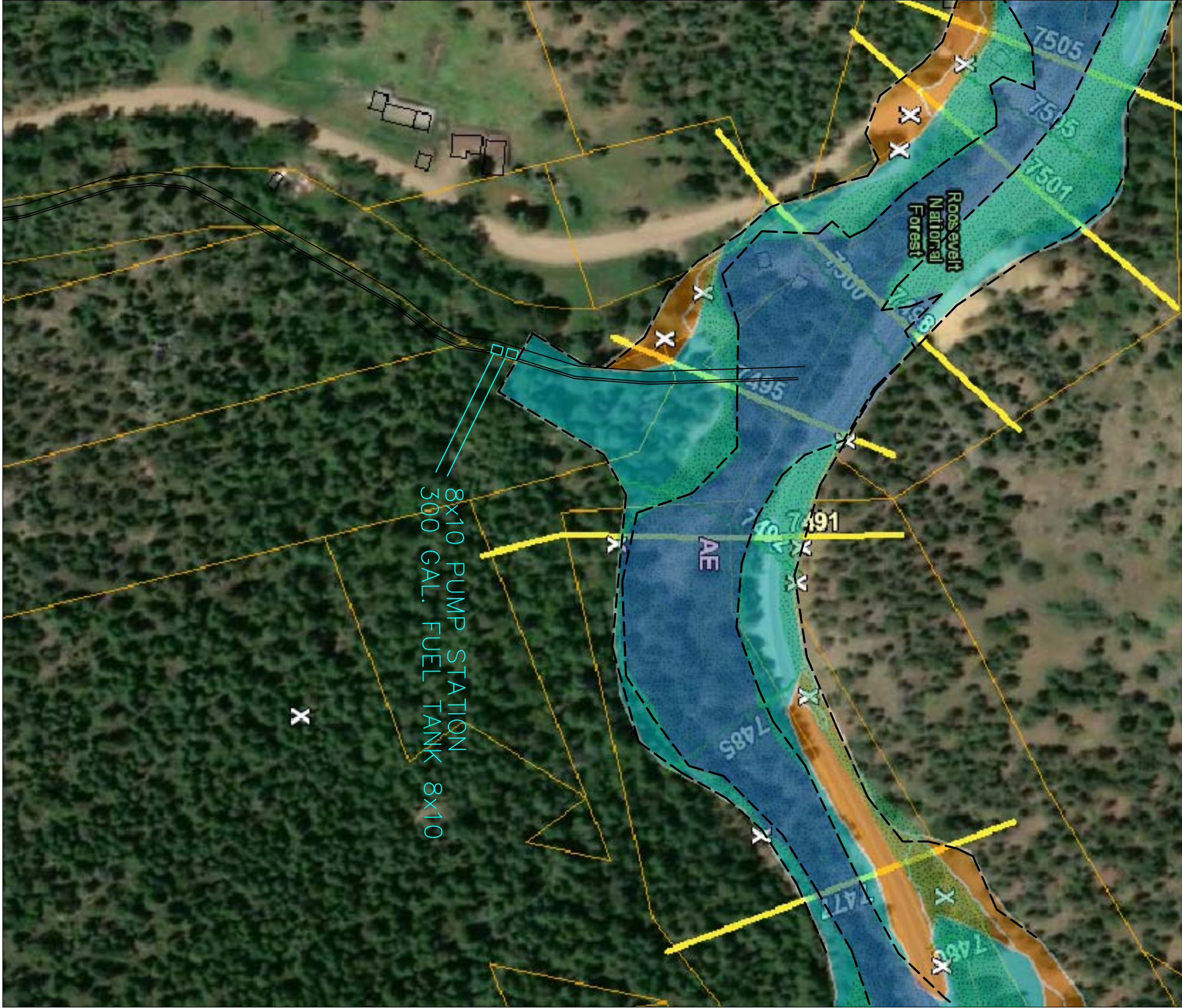


E-5 MILSITE - COLORADO MILLING CO. - GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO





FLOODPLAIN – FEMA – COLORADO MILLING CO.-GOLD HILL MILL WATERLINE  
LOCATED IN SECTIONS 2/11/12, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO



BASE MAP: PROVIDED BY BOULDER COUNTY GIS MAPPING DEPARTMENT  
FLOODPLAIN: (AE) 100 YEAR FLOODPLAIN  
FLOODPLAIN OTHER: (X500) 500 YEAR FLOODPLAIN

COLORADO MILLING CO.-PERMIT NO. N-1994-117-LOCATION MAP-GOLD HILL QUAD  
LOCATED IN SECTIONS 2/11/12 T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO

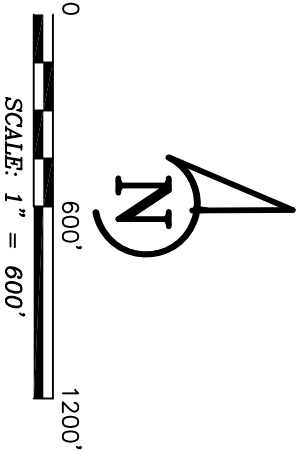
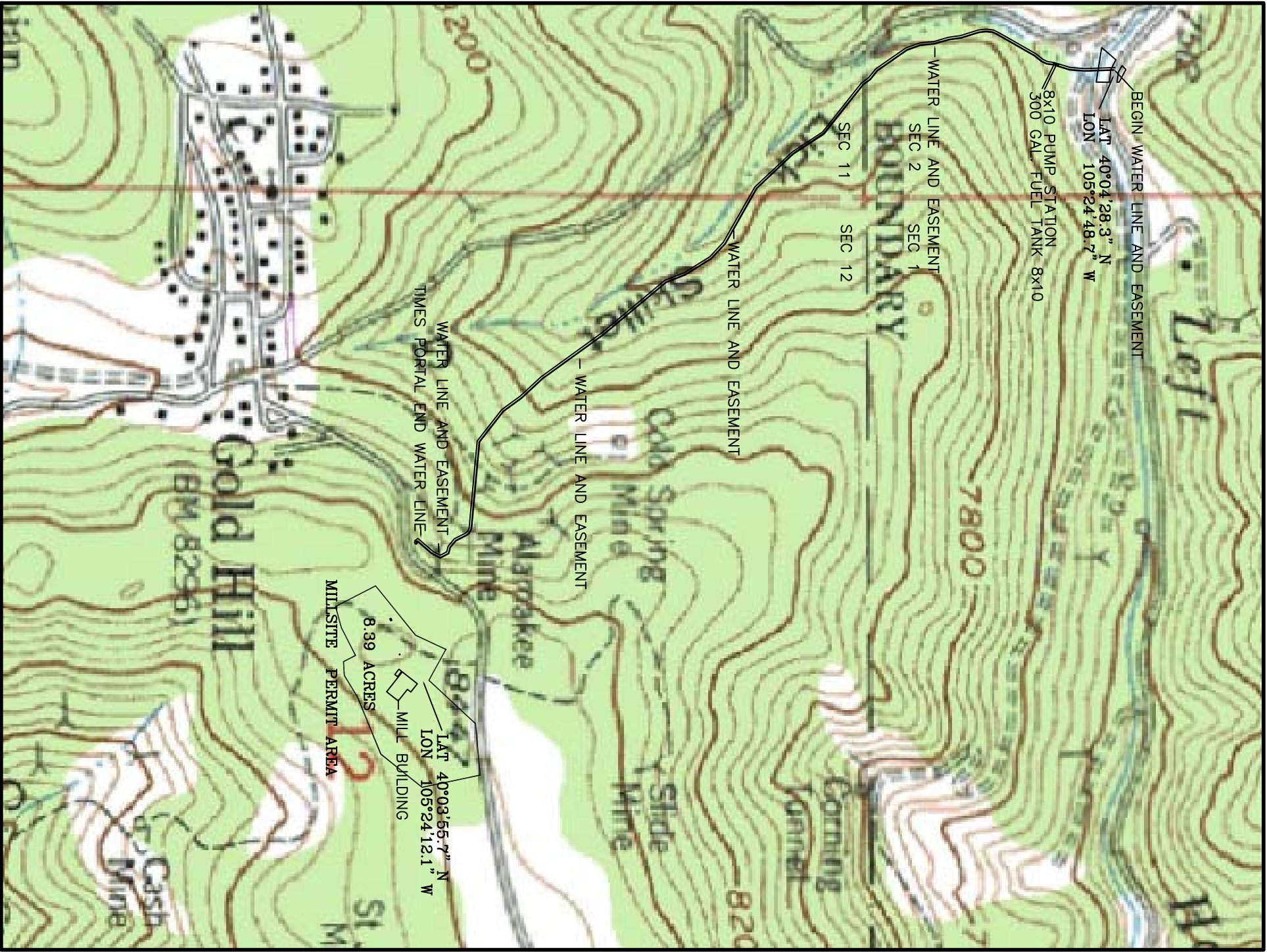


FIGURE 1  
A-2

COLORADO MILLING CO.-PERMIT NO. N-1994-117-LOCATION MAP-GOLD HILL QUAD  
LOCATED IN SECTIONS 2/11/12 T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO



FIGURE 1  
A-2