

Appendix G: Reclamation Plan

Changes between Draft and Final EIS:

- This entire appendix has been added.

Quarry Development Plan

Tamarack Quarry Expansion Project

Mt. Hood National Forest

**US Department of Agriculture, Forest Service
Mt. Hood National Forest**

September 2005

Table of Contents

1 INTRODUCTION.....	1
2 LOCATION.....	1
3 EXISTING QUARRY DEVELOPMENT.....	1
4 PROPOSED QUARRY EXPANSION.....	2
4.1 DEVELOPMENT PLAN.....	3
4.2 SPILL PLAN.....	4
4.3 REHABILITATION PLAN.....	4
5 INDIVIDUALS AND AGENCIES CONSULTED.....	5
6 LIST OF PREPARERS.....	5
7 REFERENCES CITED.....	5
FIGURE 1: EXISTING DEVELOPMENT.....	6
FIGURE 2: PROPOSED DEVELOPMENT - PLAN VIEW.....	7
FIGURE 3: PROPOSED DEVELOPMENT - CROSS SECTION VIEW.....	8
FIGURE 4: CONCEPTUAL FINAL CONTOURS.....	9
ATTACHMENT A.....	10
ODOT STANDARD SPECIFICATIONS.....	10
ODOT SUPPLEMENTAL SPECIFICATION 00160.40(d).....	11

1 INTRODUCTION

The US Forest Service (FS) requested that Thomas G. DeRoo, a Mt. Hood National Forest geologist, complete a development plan for the proposed Tamarack Quarry expansion. This report contains a general development plan, spill plan, and rehabilitation plan for the quarry. This report is part of the environmental impact statement prepared by David Evans and Associates, Inc. for the Tamarack Quarry Expansion Project on the Mt. Hood National Forest.

Although this general development plan, spill plan, and rehabilitation plan considers the total development of the quarry, it is important to note that these plans are required to be updated at each expansion of the existing quarry. As expansion occurs better information concerning topographic contours, source rock location, and rock quantity can be obtained that will further refine these plans. Therefore these plans, which are based on the best available information, are not intended to be the final plans for all future expansions. They are intended to be updated as expansion occurs.

The discussions, maps, and cross sections in this report apply directly to Alternative 2 of the DEIS because this is the area of the quarry that would be developed first under either of the action alternatives and is the area where the best current information is available. The discussions, maps, and cross sections would be very similar for Alternative 1, except that the area covered would be slightly larger. As expansion occurs better information on the additional area in alternative 1, which is the expansion furthest out into the future, would be obtained and the discussions, maps, and cross sections can be further refined.

2 LOCATION

Tamarack Quarry is located on the Mt. Hood National Forest, in the northern Oregon Cascade Range. The legal location is Section 2, Township 4 South, Range 8.5 East, Willamette Meridian. The quarry is 3.6 miles south of the town of Government Camp and about 4 road miles south from Oregon State Highway 26. FS Roads 2656 and 2656955 provide access to the quarry.

3 EXISTING QUARRY DEVELOPMENT

FS records suggest that the quarry was first opened in 1957 and an estimated 450,000 cubic yards of material have been removed during the last 48 years. The primary users have been the FS and the Oregon Department of Transportation (ODOT) for road projects.

The existing quarry was developed in a logical and orderly fashion that has facilitated safe quarry operations, minimized environmental impacts, and allowed for continued development. The development history of this quarry is a result of long-term cooperation between the FS, ODOT, and contractors working for each agency, all of whom recognize the value of following current best management practices regarding quarry development and erosion control.

The FS and ODOT have historically used this quarry to produce a wide variety of rock products: highway sand, paving rock, surfacing rock, and riprap. Different projects have different requirements for types of rock products.

Figure 1 contains a plan map of the quarry site at a 1:3000 scale, showing the existing quarry and the surrounding area. The quarry is accessed from the northwest by FS Road 2656955. The quarry consists of two operating or working levels: a lower working area at 3640 feet elevation and an upper working area at 3760 feet elevation. Two quarry roads connect the two working levels. A third quarry road goes east from the lower working area and then curves north to the top of the upper quarry face.

All quarry roads are water-barred to minimize soil erosion. Storm water is directed to and collects at the low area near the south end of the lower working area. Surface runoff from the quarry does not reach any stream. Mud Creek is the closest perennial stream and is one-quarter mile downslope from the southeast edge of the quarry.

Overburden soils have been stockpiled northeast of the upper quarry face and the upper quarry road.

Recent quarry operations have been concentrated at the east end of the upper working area. Quarry faces in this area have been excavated to create benches that are a minimum of 20 feet wide and a maximum of 30 feet high with a maximum backslope ratio of ¼:1.

The existing quarry is completely screened by natural vegetation and existing landforms from nearly all viewpoints and from the key observation point at Timberline Lodge.

4 PROPOSED QUARRY EXPANSION

With Alternative 2, the Tamarack Quarry would be expanded by approximately 21 acres for a total area of approximately 50 acres. Figure 2 contains a plan map of the proposed quarry expansion at a 1:3000 scale, showing the proposed development limits and the surrounding area. Figure 3 contains two cross sections that depict the excavation limits of the proposed expansion, also at a 1:3000 scale.

With Alternative 1, the quarry would be expanded by approximately 48 acres for a total area of approximately 70 acres. The additional expansion beyond the Alternative 2 proposal would occur to the northeast. The development plan, cross sections, and rehabilitation plan for Alternative 1 would be very similar to those items depicted in Figures 2, 3, and 4 for Alternative 2, with the only difference being an enlargement of the excavation area to the northeast.

The FS and ODOT would continue to use this quarry to produce a wide variety of rock products: highway sand, paving rock, surfacing rock, and riprap. Each project will require its own unique assortment of rock products.

The expansion of the quarry would occur over the next 20 years or longer, as rock is needed. The quarry would continue to be accessed from the northwest by FS Road 2656955.

4.1 DEVELOPMENT PLAN

Tamarack Quarry contains good quality rock with variable fracture spacing and patterns. The variable fracture pattern creates zones that can be exploited for various rock products. One portion of the quarry may have a wide fracture spacing that can be utilized for riprap. Another portion of the quarry may have a tighter fracture spacing that would best be utilized for highway sand. Before any detailed development plan is formulated, a program of exploratory core drilling will be completed by ODOT in coordination with the FS. This will allow subsurface mapping of rock quality variations that will be essential knowledge before the creation of a detailed overall development plan and individual project development plans.

The quarry will continue to consist of two operating or working levels to maintain flexibility in locating individual project operations. Two quarry roads that connect the two working levels will be maintained and relocated as the shape of the quarry changes. The third quarry road that provides access to the top of the upper quarry face will be rerouted as the location of the upper quarry face changes.

All quarry roads will be water-barred to minimize soil erosion. Storm water will be directed to an enlarged settling pond at the low area near the south end of the lower working area, as indicated on Figure 2. A vegetated storm water control berm, constructed from overburden, will be maintained along the southwest edge of the lower working area to provide erosion control.

Overburden soils will be placed in three overburden stockpile areas as indicated on Figure 2. These stockpile areas will be outside any planned excavation area and will serve as long-term storage sites for overburden soils. These overburden stockpiles will be revegetated to prevent erosion.

The general sequence of excavation will consist of the following:

- expand the upper working area and face to the southeast, to the expanded development limits, after removing and stockpiling overburden
- lower the upper working area by 30 feet
- rehab the portion of the southeast face that is at final contours
- repeat the previous two steps until upper working area reaches elevation of lower working area
- expand northeast quarry face to the northeast, to the expanded development limits, after removing and stockpiling overburden, establish a new upper working area
- lower the upper working area by 30 feet
- rehab the portion of the northeast face that is at final contours
- repeat the previous two steps until upper working area reaches elevation of lower working area
- expand northwest quarry face to the northwest to the expanded development limits, after removing and stockpiling overburden, establish a new upper working area
- lower the upper working area by 30 feet
- repeat previous step until northwest portion of quarry is at final contours
- final rehab of quarry

Each individual project will have its own development plan with specifications tailored to that project operation. The project development plan will be designed by either FS; ODOT, with review by FS; or a contractor, with review by ODOT and FS. Example ODOT specifications are contained in Attachment A.

Some of the relevant ODOT contract specifications that relate to development plans are included below. See Attachment A.

00160.40(d) Site Specific Requirements
00280.02 Erosion and Sediment Control Plan

FS projects would use contract specifications that are equivalent to the ODOT contract specifications listed above.

4.2 SPILL PLAN

Each individual project will have its own spill plan, included as part of the project development plan.

Some of the relevant ODOT contract specifications that relate to spill plans are included below. See Attachment A.

00160.40(d) Site Specific Requirements
00280.02 Erosion and Sediment Control Plan
00290.20 Hazardous Waste and Hazardous Substances
00290.30 Pollution Control
00290.30(b) Pollution Control Plan

FS projects would use contract specifications that are equivalent to the ODOT contract specifications listed above.

4.3 REHABILITATION PLAN

Figure 4 depicts the conceptual final contours of Tamarack Quarry after all excavation work has been completed. Actual final configuration of the quarry will be designed as the quarry is developed based on the horizontal and vertical extent of the rock resource in conjunction with site specific constraints related to noise, visuals, revegetation, erosion, reclamation, future use, and other factors.

Each individual project will have its own rehabilitation plan with specifications tailored to that project operation. The project rehabilitation plan will be designed by either FS; ODOT, with review by FS; or a contractor, with review by ODOT and FS.

As the quarry is expanded, more and more area will become available for reclaiming. As these areas become available a reclamation plan for that area will be included in the project plans and implemented as part of that project.

Three long-term overburden stockpiles are depicted on Figure 2. Some material from these stockpiles will be pushed back into the quarry benches and floor and be evenly

distributed over the quarry area as part of a project reclamation plan. Waste rock will be stacked against the base of the quarry face before being covered with overburden soils.

Reclaimed areas of the quarry will be stabilized against surface erosion by seeding, mulching, and tackifying as directed in the project reclamation plan. Plantings will be of native grasses and other native vegetation. Specialists will be engaged to plan and direct the revegetation portion of the reclamation.

The project reclamation plans will follow the water and erosion control, soil salvage and replacement, and land shaping and revegetation best management practices described in the Oregon Department of Geology and Mineral Industry (DOGAMI) Mineral Land Regulation and Reclamation Program's manual for aggregate mines (Open-File Report O-96-2). A project reclamation plan will be submitted to DOGAMI as part of the Division 30 Operating Permit application.

Some of the relevant ODOT contract specifications that relate to rehabilitation plans are included below. See Attachment A.

00160.40(d)	Site Specific Requirements
00280.02	Erosion and Sediment Control Plan
00290.30(b)	Pollution Control Plan
01030	Seeding
01040	Planting

FS projects would use contract specifications that are equivalent to the ODOT contract specifications listed above.

The reclaimed quarry will be only barely visible from the key observation point at Timberline Lodge. Nearly the entire expanded quarry is screened by natural vegetation and existing landform.

5 INDIVIDUALS AND AGENCIES CONSULTED

Russell Frost, ODOT, January 28 and March 9, 2005, electronic mail.

6 LIST OF PREPARERS

Thomas G. DeRoo, Mt. Hood National Forest geologist is the principal author of this report.

7 REFERENCES CITED

Department of Geology and Mineral Industries (DOGAMI), 1996. Manual for Aggregate Mines (Open-File Report O-96-2).

Oregon Department of Transportation (ODOT), 2002. Standard Contract Specifications.

Oregon Department of Transportation (ODOT), 2004. Supplemental Contract Specifications SP160.

ATTACHMENT A

Oregon Department of Transportation Standard Specifications

ODOT Standard Specifications are available on-line at:

<http://www.odot.state.or.us/tsspecs/2002-std-specs.htm>

The ODOT standard specifications that are relevant to the expansion of Tamarack Quarry are listed below:

Section 00160	Source of Materials
00160.40	Agency Furnished Sources
00160.40(d)	Site Specific Requirements*
00160.80	Requirements for Sources of Borrow and Aggregate
Section 00280	Erosion and Sediment Control
00280.02	Agency Controlled Erosion and Sediment Control Plan
Section 00290	Environmental Protection
00290.20	Hazardous Waste and Hazardous Substances
00290.30	Pollution Control
00290.30(b)	Pollution Control Plan
Section 00335	Blasting Methods and Protection of Excavation Backslopes
Section 01030	Seeding
Section 01040	Planting

* included on following pages

Oregon Department of Transportation Specifications

SP160 (09-23-04)

SECTION 00160 - SOURCE OF MATERIALS

Comply with Section 00160 of the Standard Specifications supplemented and/or modified as follows:

00160.40(d) Site Specific Requirements - The following Prospective Source(s) of materials that may warrant investigation and consideration for use by the Contractor on this Project is (are) as follows:

(Fill in the blanks with the appropriate information.)

- **Source Number** - OR-_____
- **Location** - Approximately _____ kilometers (_____ miles) _____ (insert location and direction here) _____ on Highway _____ in the ¼ of Section _____, T. _____ (insert N. or S.) _____, R. _____ (insert W. or E.) _____ W.M
- **Access** - Adjacent _____ (east, west, north, south) _____ of MP _____ of the _____ Highway
- **Available Area for Equipment Setup, Stockpiling, and Processing Aggregate:**
 - **Existing** - _____ hectares (_____ acres)
 - **Development** - _____ hectares (_____ acres)

If the Contractor elects to use the above-listed Agency furnished source(s), the following shall apply:

- Conduct operations within the source according to all applicable State, county, and federal mining laws.

(Fill in the blank with the appropriate agency. Select from the list below. Delete "Operating and Reclamation Plan" if not applicable. Remove the parentheses if used.)

- A copy of the _____, DOGAMI Permit, (Operating and Reclamation Plan,) and the material source narrative for this source are available for inspection at the office of the Project Manager. The Contractor is expected to examine and become familiar with all documents. Operations within this source shall conform to the stipulations and conditions within these documents and to all of the requirements of the development plan and these Special Provisions.

(Use this list to fill in the blank above. Delete the list when finished.)

*County Land Use Permit
Intergovernmental Agreement
Bureau of Land Management (BLM) Permit
United States Forest Service (USFS) Permit
DSL Permit
Oregon Department of Fish and Wildlife (ODFW) Permit*

- Hold a pre-work meeting at the material source prior to occupancy. Include the following owners or representatives:

(Fill in the blanks with the contact name(s) and phone number(s) as appropriate. Delete bulleted items that do not apply.)

- Engineer _____
- U.S. Forest Service representative(s) _____
- BLM representative(s) _____
- County _____
- Other _____

- Coordinate source occupancy with the Engineer.

(Fill in the blank with the appropriate source information. Select from the list below.)

- The source _____ shall be as shown and as staked.

(Use this list to fill in the blank above. Remove "(s)" or parentheses as appropriate. Delete the list when finished.)

*project boundary
excavation area(s)
reject fines stockpile
scalpings stockpile
oversize storage area
overburden storage area(s)
no work area(s)
storm-water control berm(s)
safety berm(s)
slash disposal area
log deck
bench and or access road(s)
stockpile and processing area*

- Do not operate beyond the source project boundary or no work area(s) as shown and as staked.

(Fill in the blank with the appropriate source information. Select from the list below.)

- Provide proposed development plan and specification changes in writing for approval before making any changes to the source _____.

(Use this list to fill in the blank above. Remove "(s)" or parentheses as appropriate. Delete the list when finished.)

*project boundary
excavation area(s)
reject fines stockpile*

scalpings stockpile
oversize storage area
overburden storage area(s)
no work area(s)
storm-water control berm(s)
safety berm(s)
slash disposal area
log deck
bench and or access road(s)
stockpile and processing area

- Develop a site-specific Erosion and Sediment Control Plan for the source and submit to the Engineer according to 00280.02 at the time of the pre-work meeting or before. Construct the storm-water control berm(s) as shown and as needed to control runoff. Do not allow any materials, including sediments, aggregate or crushing by-products to enter into any waterway or wetland.
- Develop a site-specific Pollution Control Plan for the source, according to 00290.30(b), and submit to the Engineer at the time of the pre-work meeting or before. Include additional details on how the following will be addressed:
 - Do not discharge waste or by-product if it contains any substance in concentrations that could contaminate soils or result in harm to fish, wildlife, or water sources.
 - Store bag-house sludge, lime, and other potentially hazardous materials and solid waste in a manner that prevents seepage into the ground or groundwater sources. Lined sumps or pits are allowable options for storage. If pits or sumps are used, construct an adequate berm or other measure so that breaching of the pit will not occur.
 - For materials capable of causing water pollution if discharged, locate storage facilities so as to prevent spillage into any waterway or wetland that would result in harm to fish and wildlife or water sources.
- Using existing, loose and non-stockpiled material, construct a safety berm along the top edge of the excavation as shown. Maintain a 3 m (10 foot) buffer between the top edge of the excavation and the toe of the safety berm. Construct the berm 1 m (3 feet) high, with side slopes of 1V:2H.
- All vehicles, upon entering the site for the first time, and each subsequent time if the vehicle has left the roadway outside the project site, must be steam cleaned of all debris (soil, dirt, plant parts and vegetative matter) prior to being brought to the site, to prevent the spread of noxious weeds. Notify the Engineer in writing, prior to moving each vehicle onto the site, certifying that the equipment has been steam cleaned.
- Comply with any and all federal and State fire laws in effect at the time of source occupancy. Provide, operate and maintain wildland fire fighting equipment on-site at all times during any source operations.
- Protect cultural resources according to 00290.50.

- Do not utilize, contaminate, or disperse any aggregate in the existing stockpiles. If the present location of any stockpile interferes with the Contractor's operations within the source, move the stockpile(s) to another location within the stockpile area, as directed, at no additional cost to the Agency.
- Apply water to source access, haul road(s), and crushing operations to control dust.

(Use the following bullet when blasting restrictions are required. Fill in the blanks with the appropriate times.)

- Restrict blasting to the hours of ___:00 a.m. to ___:00 p.m. Monday through Friday. Do not blast on Saturdays, Sundays, or legal holidays as defined in 00170.65.

(Use the following bullet when these specific restrictions are addressed in land use or other permits. Remove "including drilling" when drilling and blasting is not required.)

- Mineral and aggregate extraction processing and equipment operation activities including drilling are limited to daylight hours Monday through Saturday unless modifications to these hours are requested in writing and approved by the Engineer. Do not conduct any operation on Sundays or legal holidays.

(Use the following bullet when needed. Modify as needed.)

- Prior to stripping soil, clear and grub all trees from within the excavation area and from the area to be developed for stockpile and processing as well as from the to be developed access road(s). Place all logs in the log decks and other woody debris in the slash disposal area as shown on the Plans.

(Remove "(drilling and blasting and)" when drilling and blasting is not required. Remove the parentheses when it is required.)

- Prior to (drilling and blasting and) excavating, strip and stockpile all soil overburden from within the excavation area and from the area to be developed for stockpile and processing as well as from the to be developed access road(s). Incorporate grass and small shrubs into the stockpiles; do not remove. Place stockpiles in the overburden storage area(s). Maintain a minimum 3 m (10 foot) buffer strip between the toe of the overburden storage area(s) and the excavation area. Overburden stripped from the stockpile and processing area shall be stored as shown, a minimum of 3 m (10 feet) from the toe of the aggregate stockpiles so contamination does not occur. Smooth and contour overburden storage berms to form side slopes no steeper than 1V:2H.
- Realign and regrade or construct the bench access road as shown. Construct this road with a 4 m (12 foot) width and a reasonably uniform grade, no steeper than 50% (1V:2H), for access to the upper bench by tracked vehicles.
- Construct the slopes, bench(es), and floor of the excavation area(s) as shown.

(Use the following bullets when drilling and blasting is required.)

[Begin Optional Drilling and Blasting Bullets]

- Perform all blasting within the source according to Section 00335, modified as follows:

(Use the following bullet when successful blast history of the source is available, otherwise delete this bullet.)

- Delete subsection 00335.40(e).
- Replace subsection 00335.40(f) with the following:

00335.40(f) Blasting According to Plan - After the blasting plan has been reviewed, perform all blasting according to the plan.

(If specific fire precautions are required, fill in the blank with the name and phone number of the appropriate interagency notification centers. If specific fire precautions are not required, remove the third sentence.)

- Notify all adjacent residents and property owners a minimum of 48 hours prior to blasting. Give notice of the exact time of the blast to the Engineer a minimum of 48 hours in advance of the shot to schedule blasting activities. In addition, notify and obtain approvals from _____. Do not detonate the shot until the person videotaping the shot is prepared, or until the Engineer gives approval to proceed.

[End Optional Drilling and Blasting Bullets]

- Stockpile scalplings and reject fines in separate and accessible stockpiles as shown.

(Remove "(s)" when only one exception is required. Remove the parentheses when additional exceptions are added.)

- At the completion of the operation, leave no loose material on the site exceeding 0.3 m (1 foot) diameter, except as noted below. Process existing oversize material, and all material loosened in the source by the Contractor that meets quality requirements, with the following exception(s):

(Fill in the blank with the appropriate quantity. Add additional bullets as needed.)

- A maximum of _____ m³ (_____ cubic yards) of oversize material with a maximum dimension of 0.75 m (2.5 feet) may be stockpiled in the source on Agency property. All material shall be in a consolidated stockpile as shown.
-
- Place any excess produced aggregate remaining at the end of this operation in separate and accessible stockpiles on Agency property in an area of the site designated by the Engineer, at no additional cost to the Agency.
- Leave the source haul road and bench access road open. Do not rip or block, with the exception of utilizing a few large boulders to block off access to the upper bench via the bench access road.

- Prior to demobilizing from the site, pile and burn all construction slash and combustible debris resulting from use and development of the source, including the preexisting refuse identified at the pre-work meeting, and even if outside the source project boundary. The only exception to this is grass and small shrubs incorporated into the overburden. Comply with any and all open burning regulations in effect at the time of source occupancy. If burning is not allowed, this material becomes the property of the Contractor, to be treated as noncombustible and removed from Agency property.

(Use the following bulleted item when placing reject fines on slope. Fill in the horizontal blank with appropriate number. Modify as needed.)

- Upon completion of the operations and prior to any final seeding and mulching, place reject fine material against the excavated slope as shown on the cross section(s) to construct the final 1V:___H slope. After the slope has been constructed with reject fines cover it with a minimum of 150 mm (6 inches) of scalping material and then evenly distribute the stockpiled overburden over the slope(s). If inadequate reject fines exist to completely construct the slope(s) utilize additional scalplings over top the reject fines to finalize construction of the slopes prior to the redistribution of overburden.

(Fill in the blank with the appropriate area information. Select from the list below.)

- Upon completion of operations in the source, stabilize the _____ in addition to other areas within the site disturbed by the Contractor's operations, by seeding, mulching, and tackifying, as directed. Uniformly spread the following seed mixture:

(Use this list to fill in the blank above. Remove "(s)" or parentheses as appropriate. Delete the list when finished.)

excavation area(s) (if being reclaimed in the operation)
overburden storage area(s)
storm-water control berm(s)
safety berm(s)
soil/scalplings stockpile(s) as directed
bench and or access road(s)

(Insert seed mix and application rates here. Note: The seed mixture is almost always site specific. We do have four Agency approved generic lists based on geographic provinces that can be used (not shown here), but depending on what you are trying to accomplish, such as erosion control, wildlife forage, grazing, reforestation or something else, the mix may need to be developed specifically for the site. This can be accomplished by contacting a grass seed company and asking for assistance in developing a mix.)

(In the following bullet, include the second sentence when clover or alfalfa is required, otherwise remove it.)

- Utilize only certified weed free seed. Provide copies of the certification to the Engineer. Inoculate the clover and alfalfa prior to incorporation into the seed mixture.

- Straw mulch for non-hydroseeding applications (if this option is used) shall be grass straw from a certified field of bentgrass, bluegrass, fescue, ryegrass, or grain straw, singly or in combination. Provide copies of the certification to the Engineer. Straw shall not be moldy, caked, decayed, or otherwise of low quality. Straw shall be free of grass and weed seed.
- Ensure that no knapweed, thistle or other plant seed identified by the Oregon Department of Agriculture as a noxious weed appears in the mulch.
- Apply a commercial straw mulch tackifier according to the manufacturer's directions and at the recommended rate.
- Apply seed according to Section 01030.
- If the Contractor chooses, and conditions allow, this area may be stabilized by applying seed using a range drill with a roller attachment. Any areas seeded with the range drill and roller will not need to be subsequently covered with mulch and tackifier.
- Any variations require written approval.
- Prior to demobilizing from the site, remove all structures, noncombustible debris, and equipment from the site, even if preexisting. Bury nothing, with the exception of grass and small shrubs incorporated into the overburden.
- Prior to demobilizing from the site, remove solid waste and hazardous material from the site and dispose of properly. These include, but are not limited to, bag-house sludge or fines, lime, excess asphalt, materials placed in sumps, and truck cleanings. Provide documentary evidence of proper disposal and verify the amount of material removed.
- The Engineer will sample and test material after it is removed to assure compliance with DEQ regulations and to make sure that no material residue has been left behind. If test results show that material residue has been left behind, perform cleanup measures according to DEQ regulations.
- Prior to demobilizing from the site, hold a post-work meeting at the source to evaluate source rehabilitation work. Include the following owners or representatives:

(Fill in the blanks with the contact name(s) and phone number(s) as appropriate. Delete bulleted items that do not apply.)

- Engineer
- U.S. Forest Service representative(s) _____
- BLM representative(s) _____
- County _____
- Other _____
- No separate payment will be made for source development, source use, or source rehabilitation as it is understood that payment is included in the listed Pay Items.

(Use the following bullet when cattle guards or livestock gates are present. Fill in blank with the appropriate location(s).)

- Maintain the cattle guard and livestock gate _____ into the source at all times.

(Use the following bullet when fences are required to secure No Work Areas. Fill in the blanks with the length, type, and location of fencing.)

- Prior to any work, construct approximately _____ m (____ feet) of type _____ fencing along _____ the no work area as shown and as staked. Absolutely no disturbance will be allowed in the no work area.

(Use the following bullet when road access is to be constructed.)

- Develop and maintain an access road from the developed stockpile and processing area to the newly developed excavation floor. Construct this road with a 4 m (12 foot) width and reasonably uniform grade, no steeper than a 16% grade (1V:6H), for access to the quarry floor. An approximate location for development of this road is shown on the sketch map. The exact location should be determined in the field and approved by the Engineer prior to construction.

(Use the following bullet when storm water berm is to be constructed.)

- Prior to any work, using existing, loose and non-stockpiled material, construct the storm-water berm. Any areas of the source disturbed during construction of the storm-water berm shall be developed and left level. Construct the storm-water berm 2 m (6 feet) high, with side slopes of 1V:2H. To provide erosion control to the storm-water berm, place (with minimal separation) 1 m (3 feet) and larger oversize material along the creek-side toe of the berm. Maintain a minimum 3 m (10 foot) wide buffer strip between the oversize material of the storm-water berm and the creek, as detailed on the cross sections and discussed at the pre-work meeting. Immediately after completion of the berm, seed according to this subsection.

(Use the following bullet when realignment and/or widening of existing access road is required. Insert the road name or number in the first blank and road name or access location in the second blank.)

- Minor realignment and widening of _____, to accommodate the Contractor's operations in the source, are anticipated. Any activity related to the realignment or widening of source access road(s) must be reviewed and approved by the Engineer prior to any work taking place. Routine road maintenance activities such as grading and watering of the source access road(s) will not need prior approval. Perform maintenance of the cattle guard(s) and gates on _____ as part of the routine maintenance. Maintain or develop drain dips, water bars, road crowning, in-slopes and out-slopes during road maintenance.

(Use the following three bullets on county-owned sources. Fill in the blank or the first bullet with the name of the county. Fill in the blanks of the second bullet with the name of the contact person(s), the county name, and the phone number. Fill in the blank of the third bullet with the royalty fee amount and unit, i.e. m³, cubic yard, etc.)

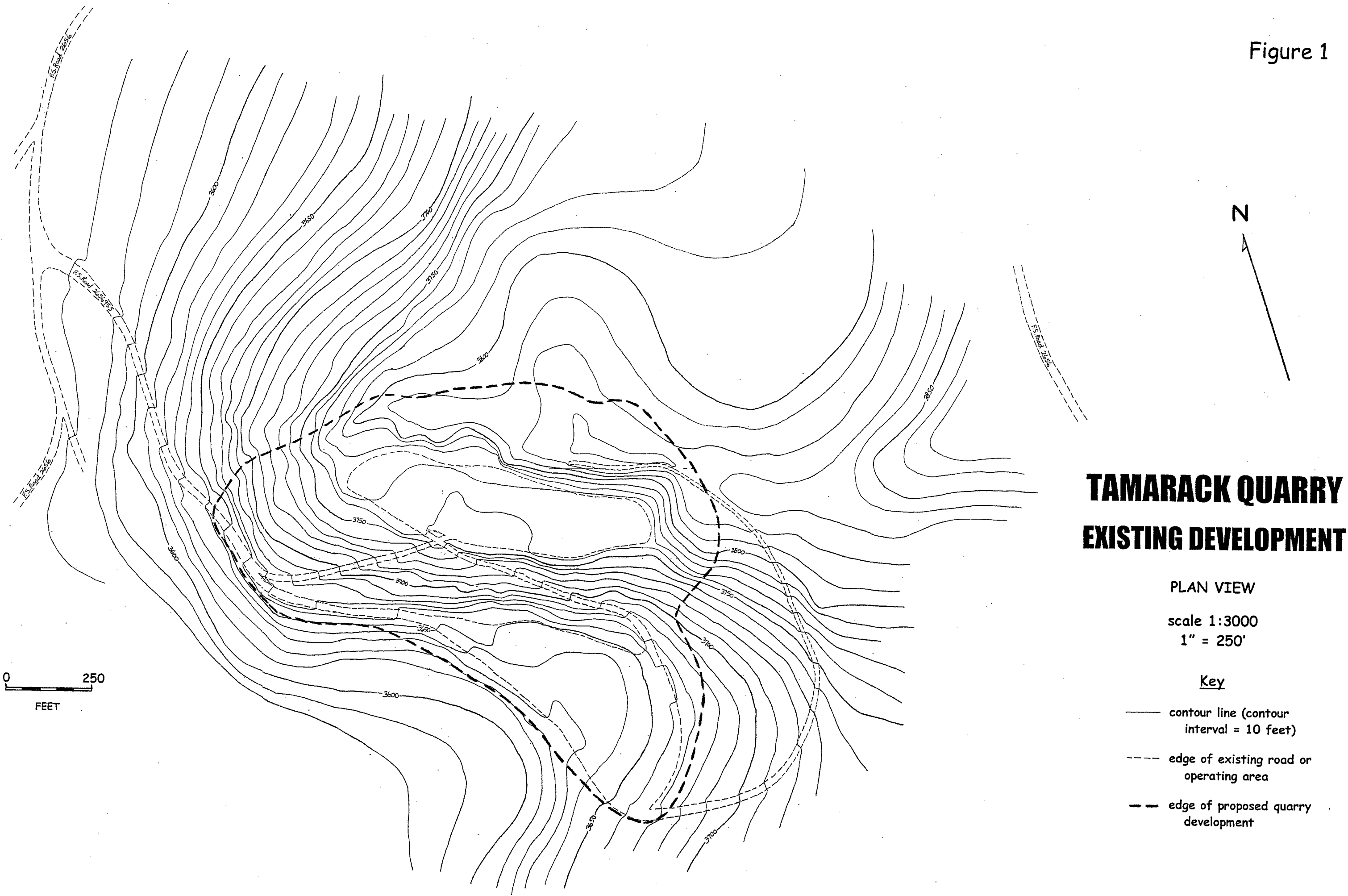
- This source is under Agency control through an agreement with the _____ County Department of Public Works. Operations within this source are subject to all conditions placed on the source by DOGAMI.
- For information contact _____ or _____ at the _____ County Department of Public Works, at _____, to make arrangements to visit the site.
- A \$ _____ per _____ royalty charge for all material removed from the prospective source will be deducted from monies due the Contractor in the progress payment.

Use the following four bullets on USFS owned and privately owned sources. Fill in the appropriate property owner in the blank of the first and third bullets. Fill in the royalty fee amount and unit in the fourth bullet.)

- This source is under Agency control through an agreement the "Contract for Sale of Mineral Material" with _____. All Contractor operations shall conform to the requirements of this agreement, the development plan, and these Special Provisions.
- A copy of the Contract for Sale of Mineral Materials for this source is available for inspection at Project Manager's office. The Contractor shall examine and become familiar with it, and shall comply with the stipulations and conditions of the Contract of Sale of Mineral Materials and any attachments.
- The \$ _____ per _____ royalty charge for produced aggregate obtained from the prospective source will be deducted from monies due the Contractor in the next progress payment, based on quantities of produced material.

[End Subsection .40(d)]

Figure 1



TAMARACK QUARRY EXISTING DEVELOPMENT

PLAN VIEW

scale 1:3000

1" = 250'

Key

- contour line (contour interval = 10 feet)
- - - edge of existing road or operating area
- - - edge of proposed quarry development

0 250
FEET

Figure 2

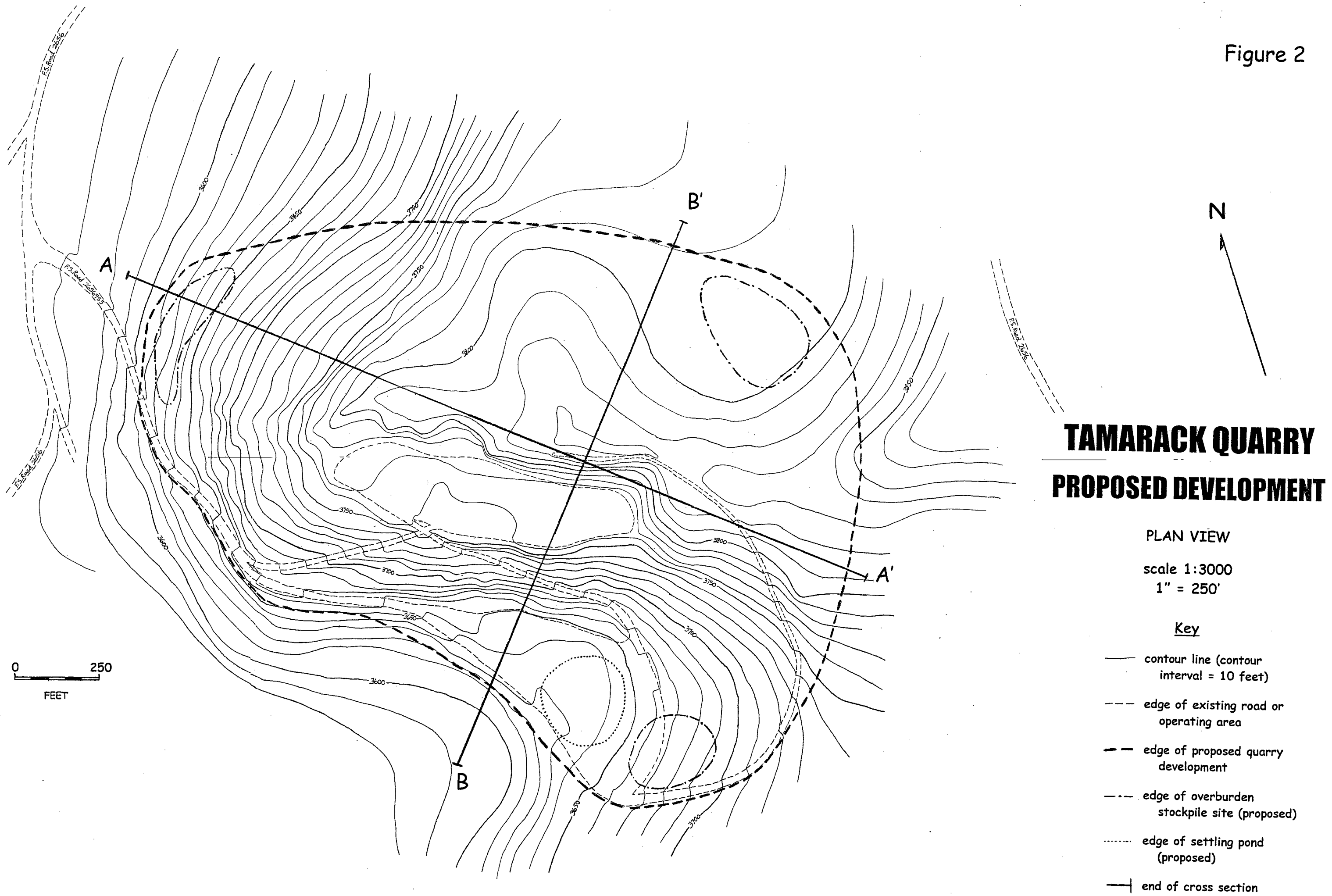
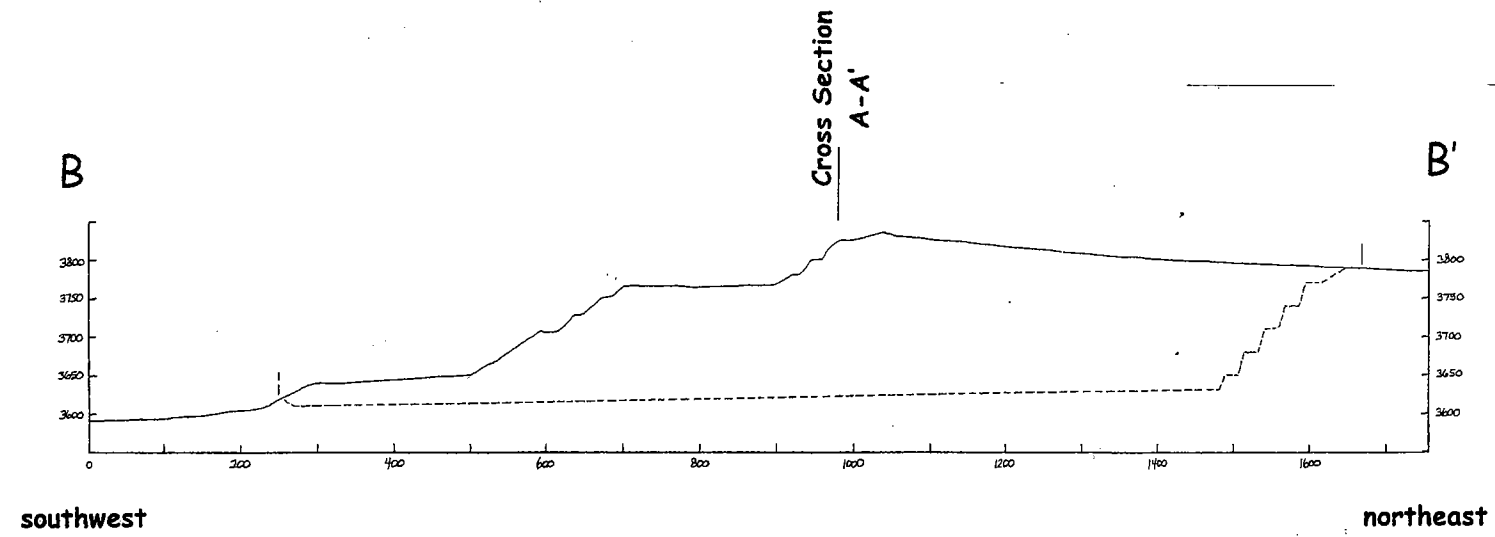
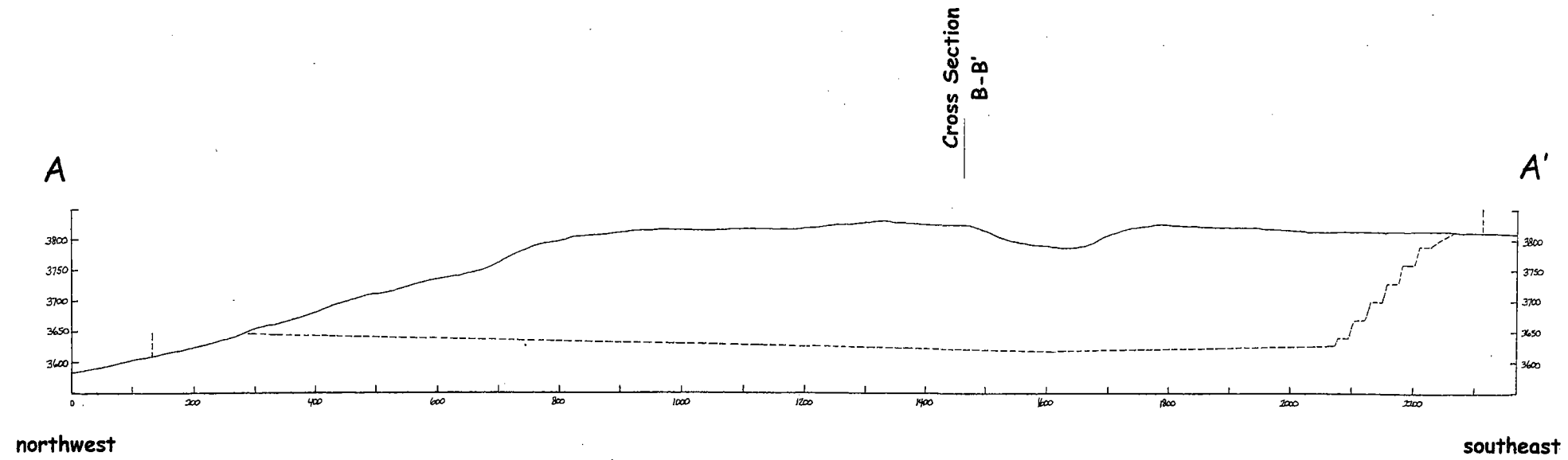


Figure 3



TAMARACK QUARRY PROPOSED DEVELOPMENT

CROSS SECTION VIEW

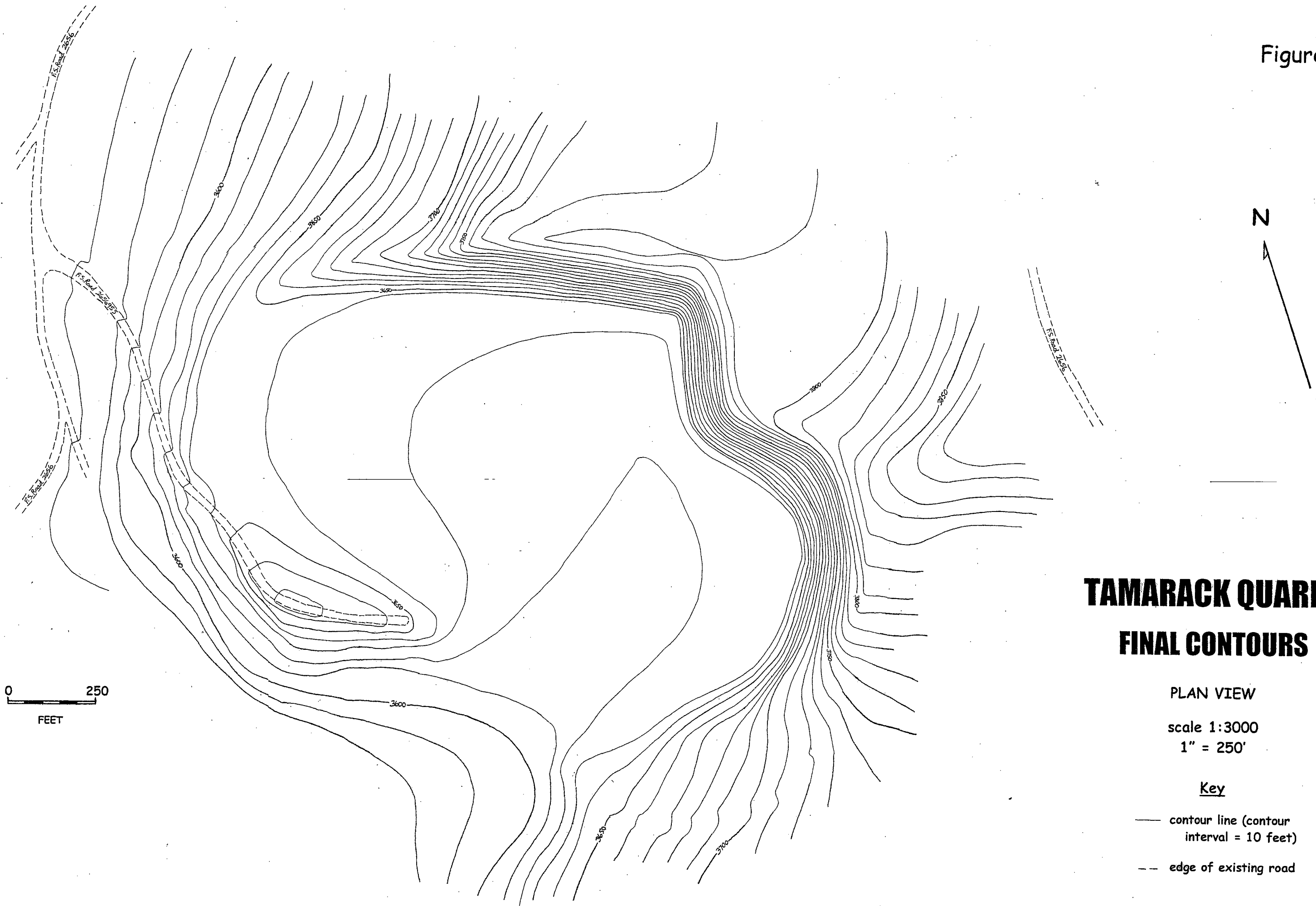
scale 1:3000

1" = 250'

Key

- existing ground surface
- - - edge of proposed quarry development

Figure 4



TAMARACK QUARRY

FINAL CONTOURS

PLAN VIEW

scale 1:3000

1" = 250'

Key

- contour line (contour interval = 10 feet)
- edge of existing road

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.