Information for File #2012-00631-CLJ

Applicant:	**Jeff Hatlewick, Mark Sand and Gravel Co.**
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Primary County :	Lake of the Woods
Sec/Township/Range:	Sec. 24 T. 159N., R. 31W.
Information Complete On:	**April 2, 2013**
Posting Expires On:	**May 3, 2013**
Authorization Type:	LOP-05-MN (B)

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 07-01. We have made a preliminary determination that the aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act. The jurisdictional review determines the scope of the projects regulated impacts and compensatory mitigation requirements.

PROJECT PURPOSE & NEED: The project purpose is to mine 500,000 tons of granite from a proposed quarry to provide aggregate materials for local highway construction projects. The exposed granite bedrock at the site is mapped as granite and granodiorite of the Vermilion Granitic Complex which has a high specific gravity making the material highly desirable for use in concrete and bituminous pavements. The hardness and density of the material is less susceptible to freeze/thaw cycles, eliminates deleterious rock issues in concrete, increases the strength and density of bituminous pavement, and increases the life span of roadways. The material produced from the quarry would be crushed rock eliminating washing of the material prior to use in concrete and bituminous mixes significantly reducing overall construction costs.

According to the applicant, the aggregate material produced from this quarry would be utilized for local construction projects within an immediate area of approximately 15 miles. Due to the lack of aggregate resource in the area, material from this quarry may service projects within a 30 mile radius and beyond. Lake of the Woods County Highway Department has requested 120,000 tons of aggregate materials from the applicant for proposed 2013 road projects as well as future projects identified in the County's 5-year plan. Lake of the Woods County has also requested that the applicant have material stockpiled for the County's use for maintenance re-gravelling on county roads and for possible emergency repairs. In addition to the materials requested by local highway departments, materials from this quarry may be provided to a ready mix plant in Baudette, MN.

PROJECT DESCRIPTION: The proposed quarry (mine area) would encompass the 2.68 acre upland bedrock outcrop and surrounding 2.99 acres of wetland for a total quarry area of 5.67 acres. The quarry area of 5.67 acres mined to a depth of 30 feet would yield the 500,000 tons of aggregate materials. Mining operations would begin at the northern edge of the exposed bedrock and progress to the south as needed. The 2.99 acres surrounding the exposed bedrock would be utilized for mining of the shallow bedrock and to accommodate the quarry road. The associated mining infrastructure (crusher, aggregate storage, mining equipment) would be located within the mine area closest to the drilling and blasting operations as possible and would move south with the progression of mining activities (progression shown on attached drawings labeled 2012-00631-CLJ LOP Notice 3 of 7 through 5 of 7). The crusher and aggregate storage are placed as close as possible (50 feet) to the drilling and blasting area for efficient mining operations. Ultimately, the entire 5.67 acre mine area with the exception of the perimeter quarry road would be mined and the

associated infrastructure would be located in the existing upland area to the south of the mine area. Mining activities would be completed intermittently (two months per year) and are expected to be completed within 5 years. The mine area of 5.67 acres is the minimum size required to meet the required material tonnage and provide for safe and efficient operation of the quarry site.

Site preparation would involve removing vegetation, shrubs, trees, and topsoil (overburden) which would be stockpiled for use when the land is reclaimed. The overburden which has an average depth of 1 – 2 feet would be removed in phases as mining progresses and stockpiled in the immediate area. The drilling and blasting would begin on the exposed granite outcrop and would proceed to a depth of 30 feet below grade. Upon the completion of mining activities, any loose or excess material would be returned to the mine area to slope the quarry edges, topsoil replaced and seeded with native grasses.

There is an existing private access road that heads southwest from County Road (CR) 374 to a historic gravel pit. The existing private access road is insufficient to handle the load limits and size of the project equipment and would be widened to accommodate tractor trailer vehicle traffic. The existing upland in the area of the private access road is wide enough to accommodate the road improvements and wetlands would not be impacted. The private access road would be extended to create a loop around the west end of the proposed quarry and back to CR 374. Due to the limited upland surrounding the proposed mine area, there is insufficient upland available for tractor trailers to turn around; therefore, a loop road is necessary to accommodate vehicle traffic around the site and maintain a safe and efficient working environment. The access road is designed to be 27 feet wide (20 foot wide road top with side slopes) which is the appropriate size to safely operate the site equipment. Even though the access road is designed to act as a loop, it would need to function as a two-way road for several reasons. Equipment breakdowns and tractor trailers waiting to load may be backed up and vehicles would need to be able to pass safely. Fuel service and maintenance vehicles would also be using this road in both directions. The ability to pass safely on this access road is especially necessary considering that there would be a 30 foot deep mine pit within several feet of the road edge. Best Management Practices to minimize erosion would be utilized during construction of the site access road. At the completion of mining activities, the private access road within wetland areas would be reclaimed along with the quarry area. Fill materials used in the construction of the access road would be removed from the wetland areas and placed in the mine pit. The topsoil would be replaced and seeded with native grasses.

CONNECTED ACTIONS: Should the quarry receive a CWA Section 404 authorization, the existing CR 374 would need to be upgraded to minimum design standards to allow for heavy equipment and large vehicles to access the quarry site. The current condition of CR 374 is insufficient to handle the expected vehicle and equipment size, and load limits. Lake of the Woods County Highway Department has agreed to reconstruct the existing roadway to meet the Lake of the Woods Unorganized Township Road Construction Policy specifications. The reconstruction of CR 374 will be reviewed through the Letter of Permission (LOP) procedures and has been assigned Regulatory number **2013-00259-CLJ**.

NAME, AREA AND TYPES OF WATERS (INCLUDING WETLANDS) SUBJECT TO LOSS: The wetlands within the proposed footprint of the site include 0.72 acres of scrub-shrub (Type 6) wetland and 2.27 acres of forested (Type 7) wetland. The wetlands on the east and north sides of the proposed quarry are the Type 7 forested wetlands dominated by aspen, poplar, and bluejoint. Wetlands on the south and west sides of the proposed quarry area are Type 6 – scrub-shrub and are dominated by alders, willows, sedges, goldenrods, and grasses. Wetlands at the project site are part of a very large wetland complex within the Rainy River Baudette watershed.

The applicant has indicated that the probability of indirect wetland impacts from this project is very low. The high rock quality designation (very few fractures) of the bedrock and the shallow, very low permeability clays observed throughout the site would prevent indirect impacts to the surrounding wetlands.

ALTERNATIVES CONSIDERED:

Alternative 1: No-build:

A no-build alternative would result in no wetland impacts at the site, but would not meet the project purpose of providing local roadway projects a source of aggregate material. The no-build alternative would also increase fuel consumption and greenhouse gases due to increased hauling distances from existing resources.

No alternative upland sites are available in the local area (15 – 30 miles) that would meet the project purpose and need.

Alternative 2: Mining Available Resource

Drilling determined that the minable resource in this area is approximately 40 acres. The 40 acres includes aggregates and bedrock material. Depth to bedrock in the minable area varied from 2 to 12 feet below grade. The applicant purchased this property with the expectations of mining the total 40 acres of available resource. Mining the full extent of resource would result in approximately 36 acres of wetland impact.

Alternative 3: Purchasing material from another open quarry operation

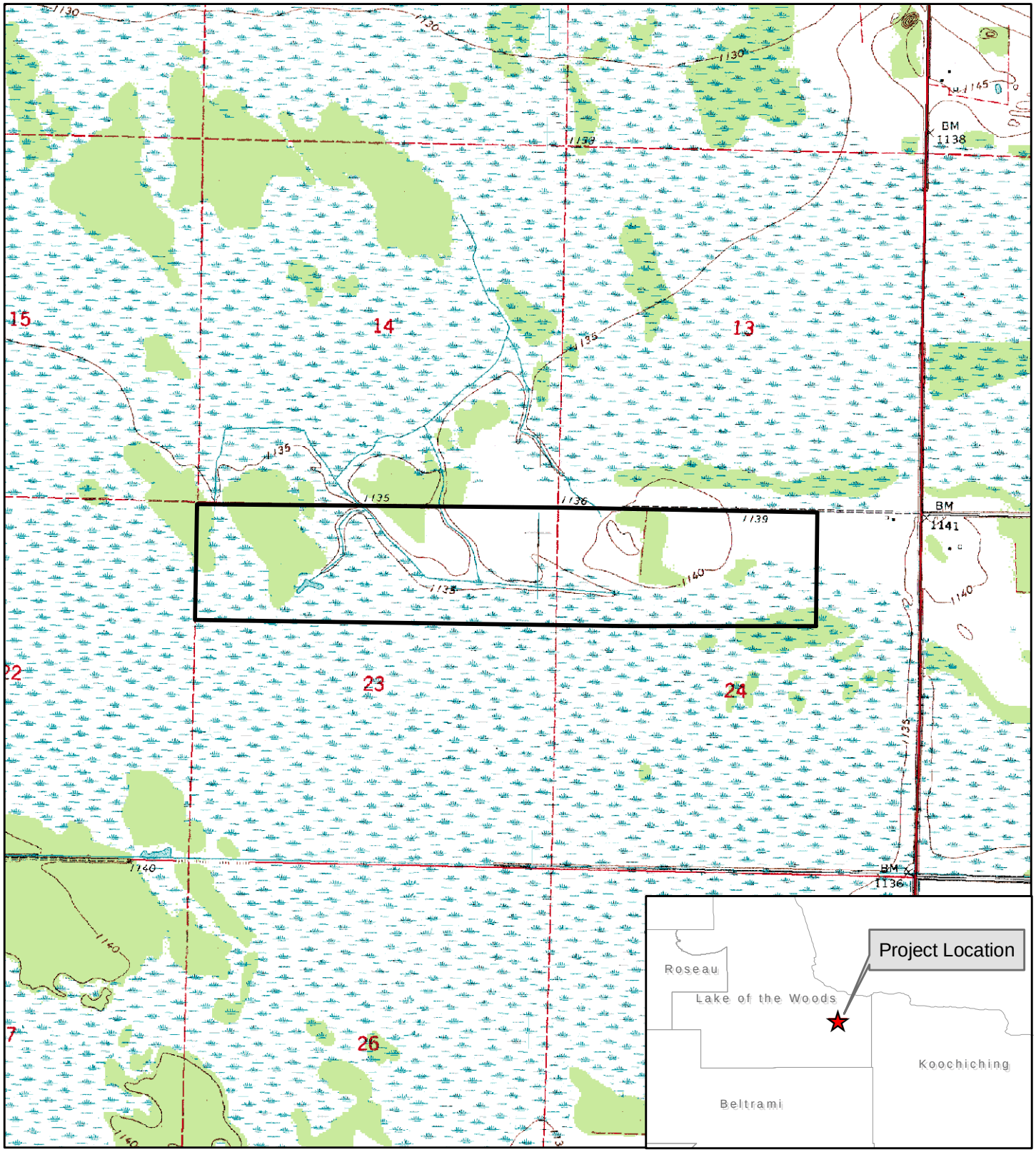
According to the applicant, open quarry operations are very limited and most of the local resource is depleted. The only other identified quarries with similar material are outside the local area and are located 17 miles northeast in Koochiching County and over 40 miles northwest near Roosevelt, MN.

The Koochiching County quarry is very limited in size, would not provide enough material to meet the demands of Lake of the Woods County, and is too far away to be economically feasible. The quarry near Roosevelt has depleted the available material and would likely need to be expanded in the future. This quarry is also too far away to be economically feasible for projects in the local area.

Using other open quarries would significantly increase the cost of aggregate materials for Lake of the Woods County public works projects. On average, for every 10 to 14 miles of haul distance the cost of aggregate doubles in price. Increasing the haul distance by 10 miles on the 120,000 tons requested by Lake of the Woods County would increase the cost of materials by $1,200,000.00. Hauling material from the quarry near Roosevelt would increase the cost of the same material by a minimum of $2,400,000.00. The additional distance from County projects would create longer hauls, more fuel use, and additional trucks causing a greater environmental impact. Quarry rock is extremely expensive to purchase and the applicant would still be responsible for the processing of the material to ensure proper specifications are met.

COMPENSATORY MITIGATION: The applicant is proposing to purchase wetland bank credits as compensation for the 2.99 acres of wetland impacts associated with the project. The applicant is proposing to purchase credits at a 1:1 ratio from the Hasbargen wetland bank #1505 located in BSA 2.

Drawings: 2012-00631-CLJ LOP Notice 1 of 7 through 7 of 7. See attached



Map Source: USGS 24K topo, MN GEO, WMS server

Mark Sand & Gravel Co.
LOW Pit, +/- 120 acres
T159N, R31W, Sec. 23 & 24
Lake of he Woods County, MN

Project Boundary

N

0 0.25 0.5 Miles

WCEC
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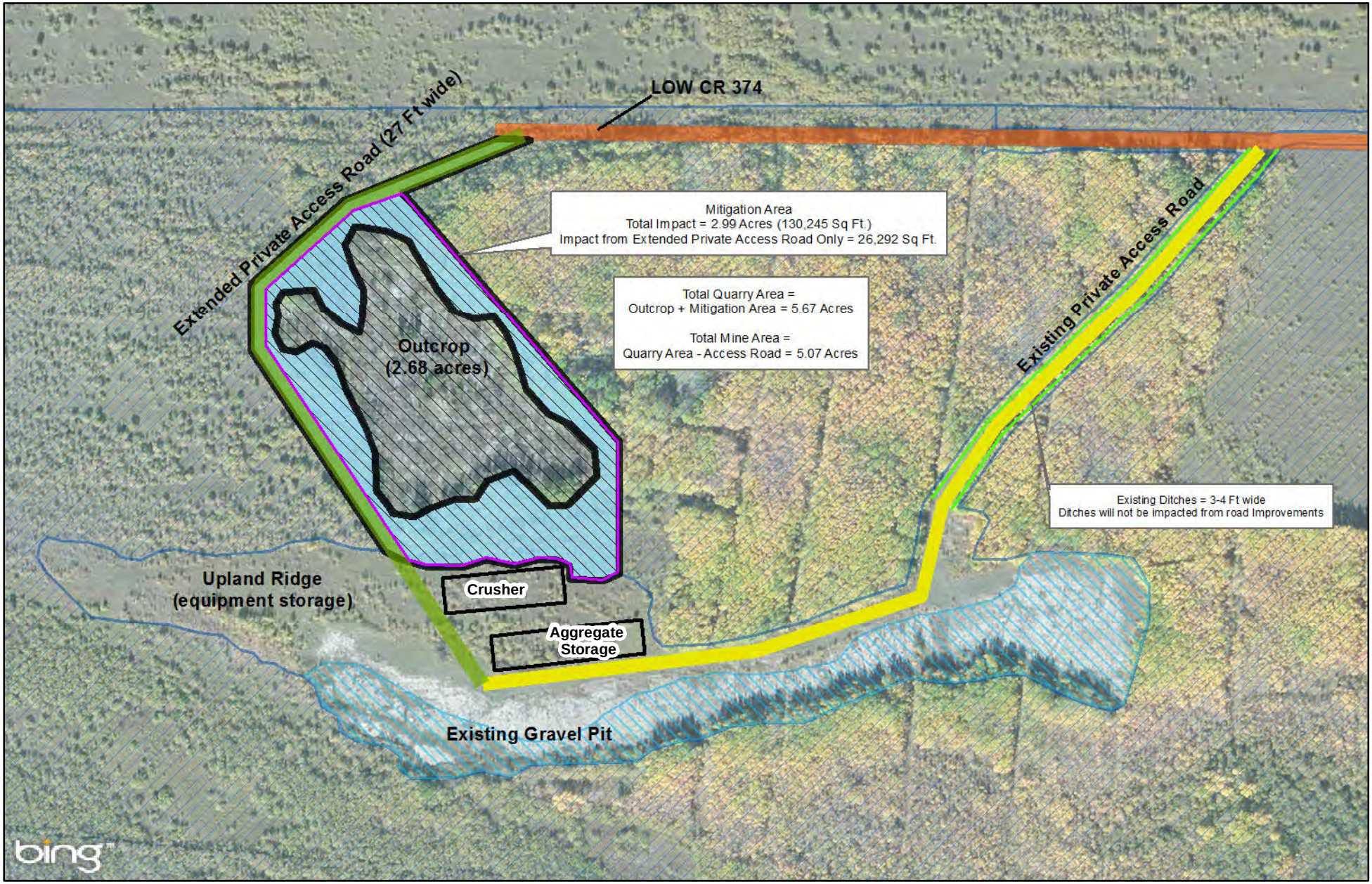
Project No. 12-8687-30
Map Created By: MP
April 2012

Figure A: Site Location Map



Lake of the Woods County, MN
Mark Sand & Gravel Quarry Project
T159N, R31W, Sec 24

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12-8687-30
Map Created By: RP
March 2013

Figure B: Project Site Plan

- Mitigation Area
- Proposed Extended Access Road
- Existing Access Road
- CR374
- Mine Area and Extent of Overburden removal

Wetland Boundary

Type

- Excavated
- Wetland
- Existing Ditches

N

0 250 500 Feet

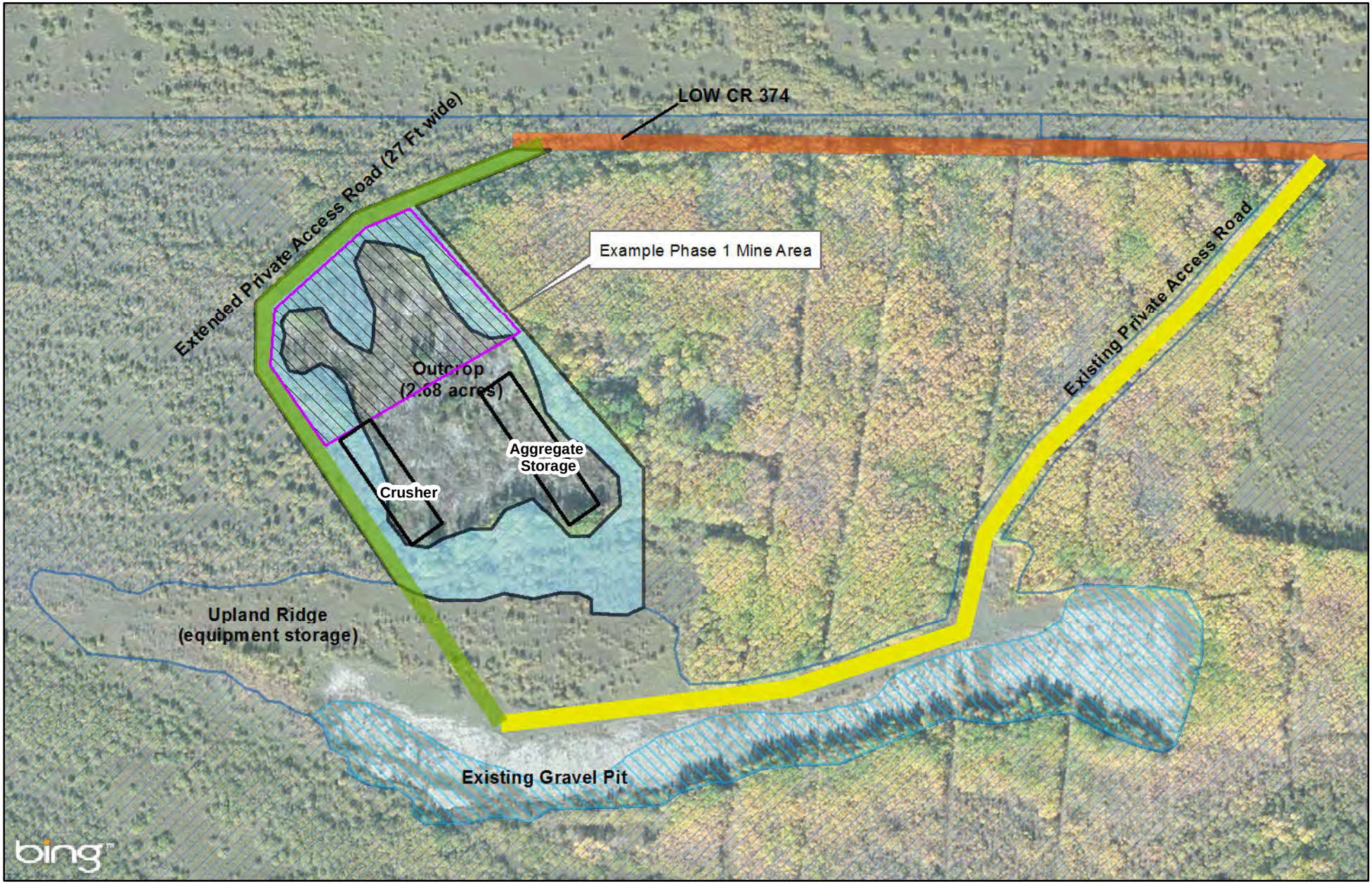

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Figure C1: Hypothetical Project Phase 1

Hypothetical Phase Maps are intended to illustrate the progressive nature of this project and do not represent actual mining layouts.

- Mitigation Area
- Proposed Extended Access Road
- Existing Access Road
- CR374
- Mine Area and Extent of Overburden removal

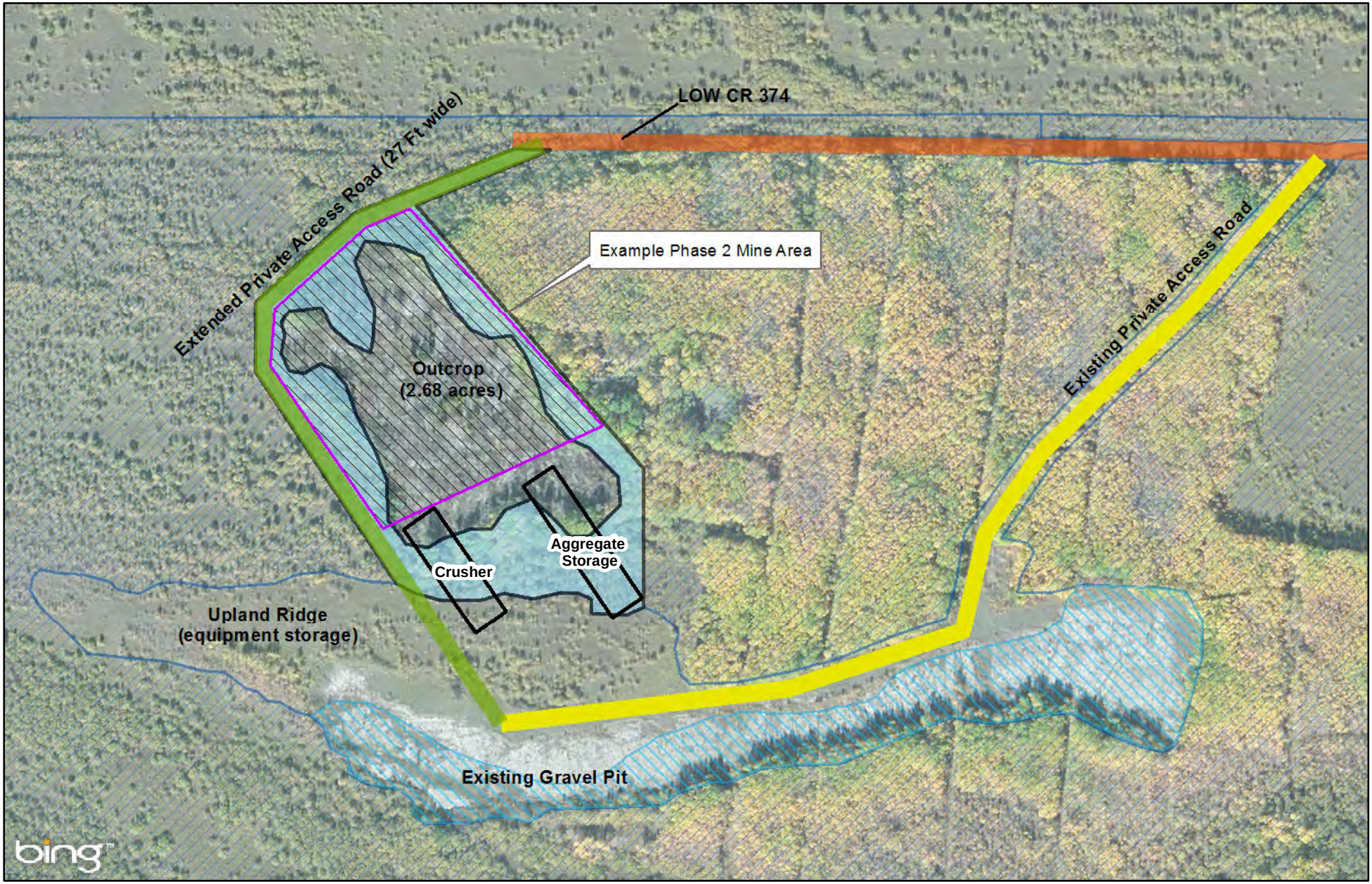
Wetland Boundary

Type

- Excavated
- Wetland

N

0 250 500 Feet



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March 2013

Figure C2: Hypothetical Project Phase 2

Hypothetical Phase Maps are intended to illustrate the progressive nature of this project and do not represent actual mining layouts.

- Mitigation Area
- Proposed Extended Access Road
- Existing Access Road
- CR374
- Mine Area and Extent of Overburden removal

Wetland Boundary

Type

- Excavated
- Wetland

N

0 250 500 Feet

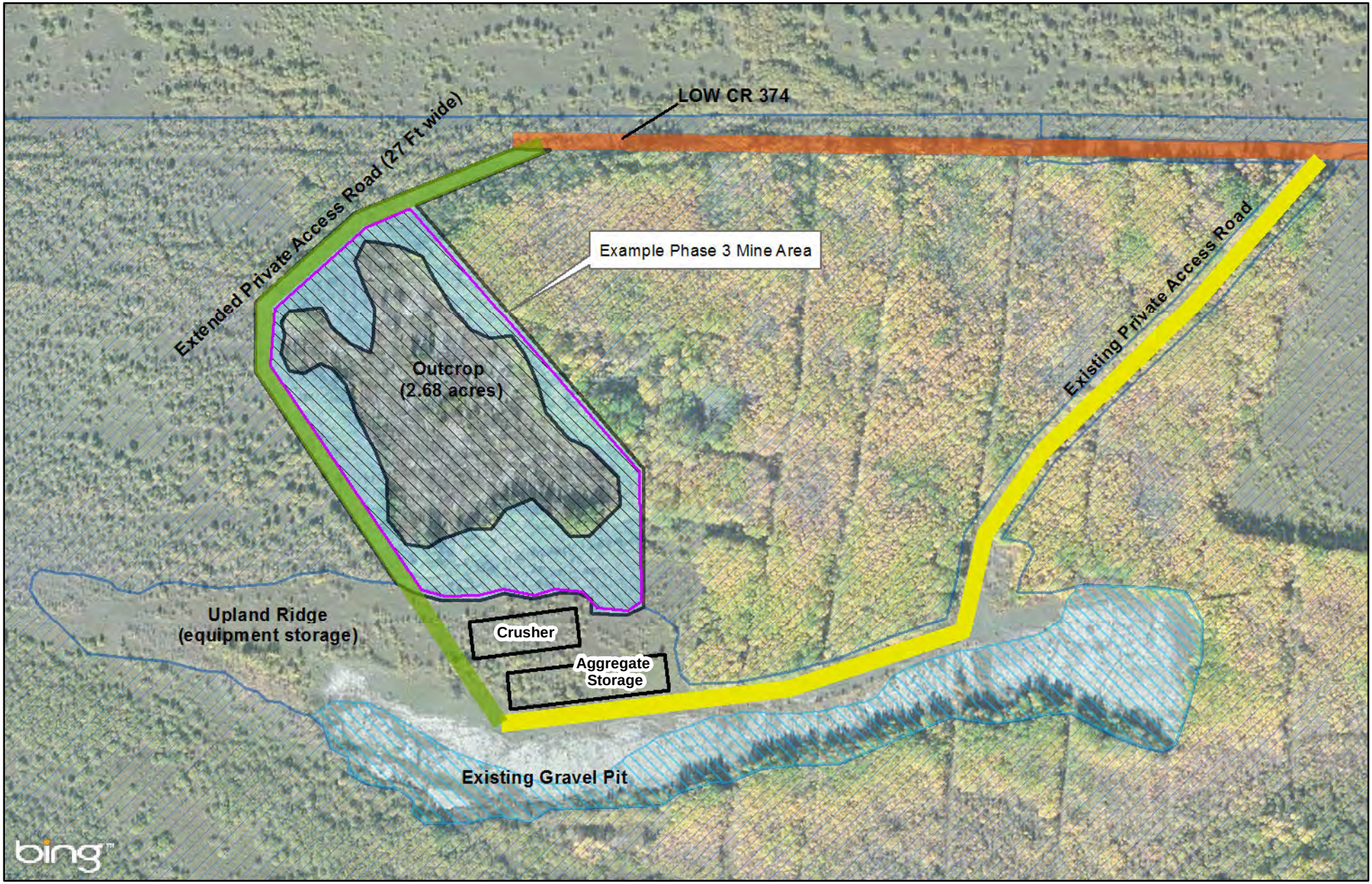

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Figure C3: Hypothetical Project Phase 3

Hypothetical Phase Maps are intended to illustrate the progressive nature of this project and do not represent actual mining layouts.

- Mitigation Area
- Proposed Extended Access Road
- Existing Access Road
- CR374
- Mine Area and Extent of Overburden removal

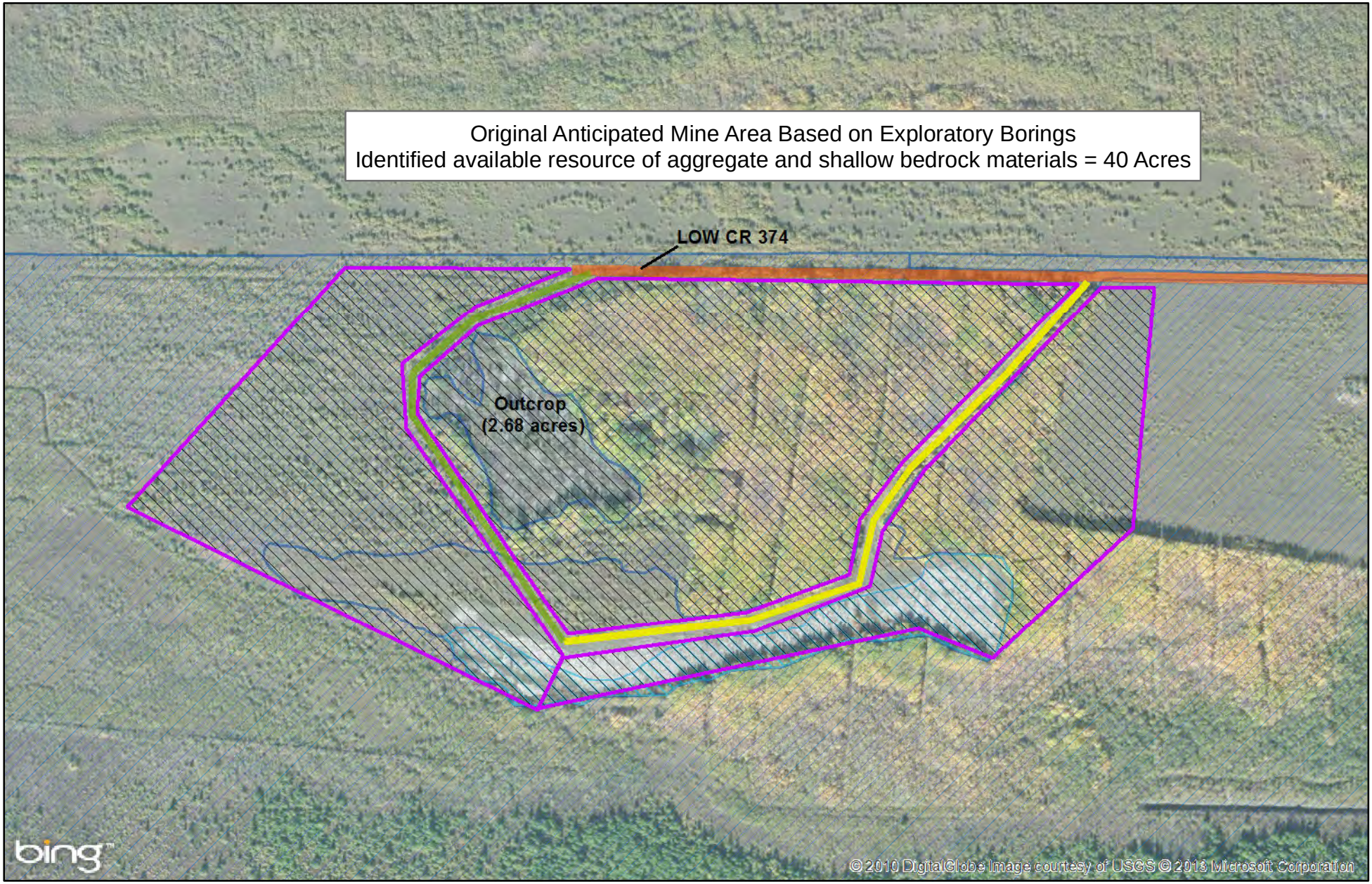
Wetland Boundary

Type

- Excavated
- Wetland

N

0 250 500 Feet



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March 2013

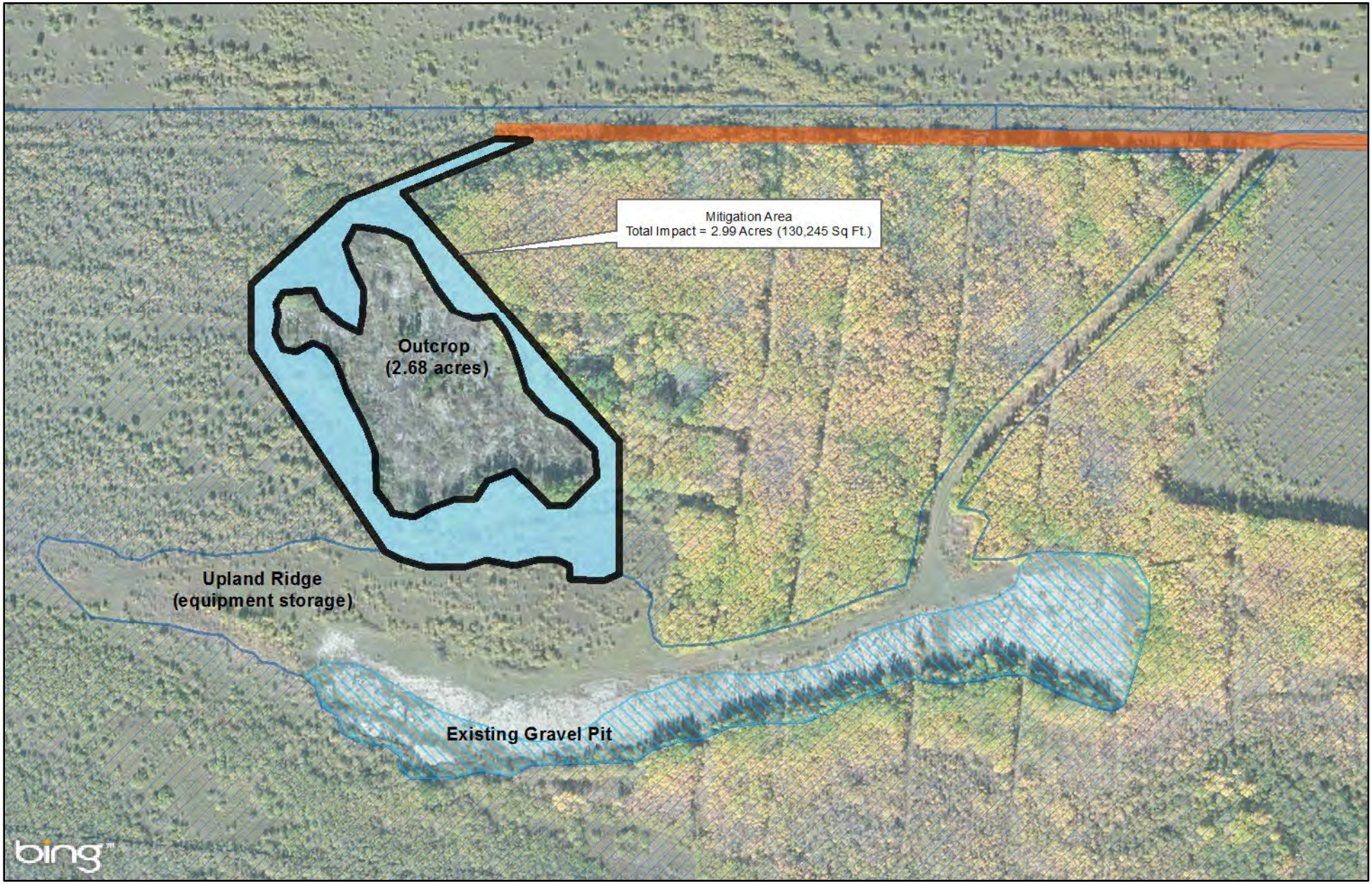
Figure D: Original Mine Area

Proposed Extended Access Road
Existing Access Road
CR374
Previous Planned Mine Area

Wetland Boundary
Type
Excavated
Wetland

N

0 250 500 Feet



Lake of the Woods County, MN
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March 2013

Figure E: Mitigation Area Detail

Mitigation Area
CR374

Wetland Boundary

Type

Excavated
Wetland

N

0 250 500 Feet