# EAST KNOXVILLE STONE

## Flint Gap Road, Knox County

# MINING PLAN OF OPERATIONS

## USE ON REVIEW

**RGCA PROJECT NUMBER 20059**

**MAY 2020**

Robert G. Campbell & Associates
*Engineering Better Communities, Together.*

**Prepared by:**
**Robert G. Campbell & Associates**
**7523 Taggart Lane**
**Knoxville, TN 37938**
**(865) 947-5996**

**PLANNING SERVICES FILE: 6-F-20-UR**

Revised: 5/26/2020

# TABLE OF CONTENTS



**FIGURES:**

## Company Information

East Knoxville Stone is a joint venture between two long standing business owners in the Knoxville area, Mike Malicote and Ted Hunsaker.

Ted Hunsaker is the operator of Keck Enterprises which has a mailing address of P.O. Box 50152, Knoxville, TN 37950 with a business office at 110 Cedar Lane, Andersonville, TN 37705. The business was established in 1998 by Ted Hunsaker & Sandra Keck, provides land preparation construction, and maintains a workforce of about 20 employees. Keck Enterprises has conducted site development work on numerous projects in the region including site excavation and grading, drainage infrastructure improvements, detention ponds, water and sewer utilities. Ted is also very familiar with mining, beginning at a young age operating various equipment and eventually operating his own surface coal mines prior to Keck Construction.

Since 1982, Mike Malicote with Dixie Roofing has installed over 300 million square feet of warranted roof systems in the Knoxville region for residential and commercial buildings. With locations at 1703 Depot Street in Powell and at 672 Fox Den Lane in LaFollette, the business employees about 250 people.

## Quarry Industry – Necessity & Benefits

The limestone products that quarries produce are a vital part of modern life. Quarrying is essential for production of stone, gravel, and sand that are essential in the construction industry. Crushed stone goes into many structures that are a part of daily life including sidewalks, roadways, bridges, parking lots, building foundations, walls, floors, rip-rap for erosion control, bank stabilization, water treatment filter media, agricultural lime, and many other uses.

Limestone quarrying creates numerous economic and social benefits in addition to simply providing construction materials. Employees can find long-lasting, viable, and valuable employment, and their wages return to the local economy, with purchases from local business, and tax revenues. After mining is completed, the land can be converted to the public for various recreational uses including a park or greenway with a nature center and trails for walking, hiking, or biking. Quarries also can often provide sources for clean fresh water.

The cost of stone products has risen in recent years due to the increase in demand with the improved economy both nationally and locally. This has contributed to overall higher costs for site development, housing, roads, bridges, sidewalks, and other infrastructure. Alternative sources and healthy competition are necessary to prevent inflation from rising costs for stone products. Virtually all existing quarries in the region are owned by large corporations, which typically have high overhead expenses. This smaller locally owned quarry will help provide lower cost stone for developers and contractors in Knox County and adjoining areas, which will reduce costs for housing and infrastructure.

## Quarry Location and Access

Flint Gap Road Quarry will be an extension and continuation of an old abandoned quarry located on the north side of Flint Gap Road approximately 1750 feet east from the intersection of Thorngrove Pike and Kennedy Road. This abandoned quarry first began to appear on historical USGS quad maps in 1940 and makes up 3.5 acres of the proposed site. The proposed mining area includes four parcels with a total of 31.9 acres. The total area available for mining is 16.4 acres including the area of the old quarry.

The properties are zoned agricultural and designated as rural area under the growth plan. Usage of the land is very limited due to the existing topography and presence of rock outcroppings. Agricultural usage is virtually impossible, and residential development is extremely limited. Therefore, a quarry is the most logical and achievable use.

The site has direct access to John Sevier Highway (State Route 168) along Flint Gap Road and Thorngrove Pike. The Major Road Plan for Knox County classifies Flint Gap Road as a minor collector, and Thorngrove Pike as a minor arterial roadway. These roads are more than adequate for the anticipated traffic from the quarry. The existing entrance on Flint Gap Road will be widened with acceleration and deceleration lanes. Clearing will be conducted to provide maximum sight distance in both directions.

Blue Water Industries has operated a quarry for many years located to the west less than one mile from the proposed site. A Use on Review (5-A-18-UR) for expansion of this site for an additional 25.8 acres was approved in May 2018.

## Landscape Screening

Existing vegetation in the perimeter buffer zones will be preserved to provide natural screening. A security fence will be installed around the perimeter of the property to restrict access and protect the existing foliage. Some minor clearing will be necessary for installation of the fence. High visibility fencing will be installed to mark the edge of the buffer zone at the mining extents. The existing vegetation consists of a dense mix of hardwoods with some evergreens, mostly Eastern Red Cedar trees. Supplemental landscape screening will be provided where there are gaps in the existing evergreens using the Type “C” guidelines. Clearing will be needed at the entrance to the site to provide adequate site distance. Type “A” landscape screening will then be provided with new plantings of a double row of evergreens located outside of the sight distance envelope, along the frontage at the site entrance and yard area. The gate and security fence in this area will include opaque privacy screening.

## Geology

The presence of the existing abandoned quarry, the active mining to the west, and the numerous rock outcroppings indicate that the site is underlain by layers of limestone and dolomite. The area is characterized by thin layers of topsoil and weathered rock with steep rocky slopes, rolling hills, valleys, and sinkholes. There are no flowing streams or pools of water, stormwater percolates into the ground. Aerial photos show that the abandoned open pit does not retain water. Geologic maps show that rocks dip to the southeast at 15 to 20 degrees.

## Sequence & Methods

Phase 1: The existing quarry will be used to as the yard area for processing equipment, conveyors, stockpiles, office, scales, parking, fueling, and Sediment Pond No. 1. Clearing and excavation will be conducted to ensure sight distance in both directions, fill in the pit from the old quarry, and create level areas for the processing facilities. A security fence will be installed around the extent of the property boundary, some minor clearing will be necessary for the fence installation. Type "A" landscape screening will be installed at the entrance, and the fence and gate will include privacy screening. Excavation from Sediment Pond No. 2 will provide material for leveling the yard area while also creating sediment storage volume for future phases. The raw material area will be configured for dumping and loading into a hopper feeding the primary crusher. The primary crusher will be set up to convey material to the secondary crusher facility which will further size, screen, and stockpile the material into various finished product grades.

Phase 2: The area for Sediment Pond No.2 will be excavated to provide sediment and stormwater retention. High visibility fencing will be installed using surveying methods to mark the limits of the mining buffer. Type "C" landscape screening will be installed along the length of security fencing wherever the natural vegetation does not provide effective screening. Mining will continue with pits adjoining Sediment Pond No. 2 with widths of about 100 feet roughly following the existing contours.

Phases 3-4: Mining phases will continue as shown. The phases have been configured to advance to the west toward Kennedy Road. Pit excavations will continue to create additional storage volume for stormwater runoff and sediment. Actual time required for mining of each phases will vary depending on several factors, mainly the economy and the demand for stone.

## Health & Safety

The U.S. Mine Safety and Health Administration (MSHA) regulates and inspects mining operations with regard to safety and health aspects. Hazards of concern include noise and dust exposure, conditions and operation of machinery and equipment, pit development, overburden removal and placement, petroleum storage and fueling, employee training, general housekeeping, and other safety related items.

## Blasting

Rock material must first be blasted so that it can be excavated and removed in smaller loose sizes. Without blasting, it would be impossible to run modern limestone operations, and dramatically increase the cost of local building materials and raise prices on anyone who lives in a home, shops at a store, or drives on a road. Blasting has become a very specialized science in recent years. Technological advances, including sophisticated electronics and micro-seismographs, have greatly increased control, limited vibrations, increased the effectiveness, and reduced the frequency of blasting. Many people would be surprised to learn that everyday activities such as door slamming and hammering nails can cause greater vibrations in a home than blasting. Vibrations are a normal part of blasting operations and are heavily regulated by the government. Blasting will be conducted only on weekdays during daylight hours and will be performed and monitored in accordance with local, state, and federal regulations.

## Air Quality

Permits will be obtained from the Tennessee Department of Environment and Conservation (TDEC) and Knox County Department of Air Quality Management (KDCAQM) for construction and operation of crushed stone operating equipment. Emissions of dust from crushers, screens, stockpiles, and roadways can be managed by water spray nozzles and water trucks.

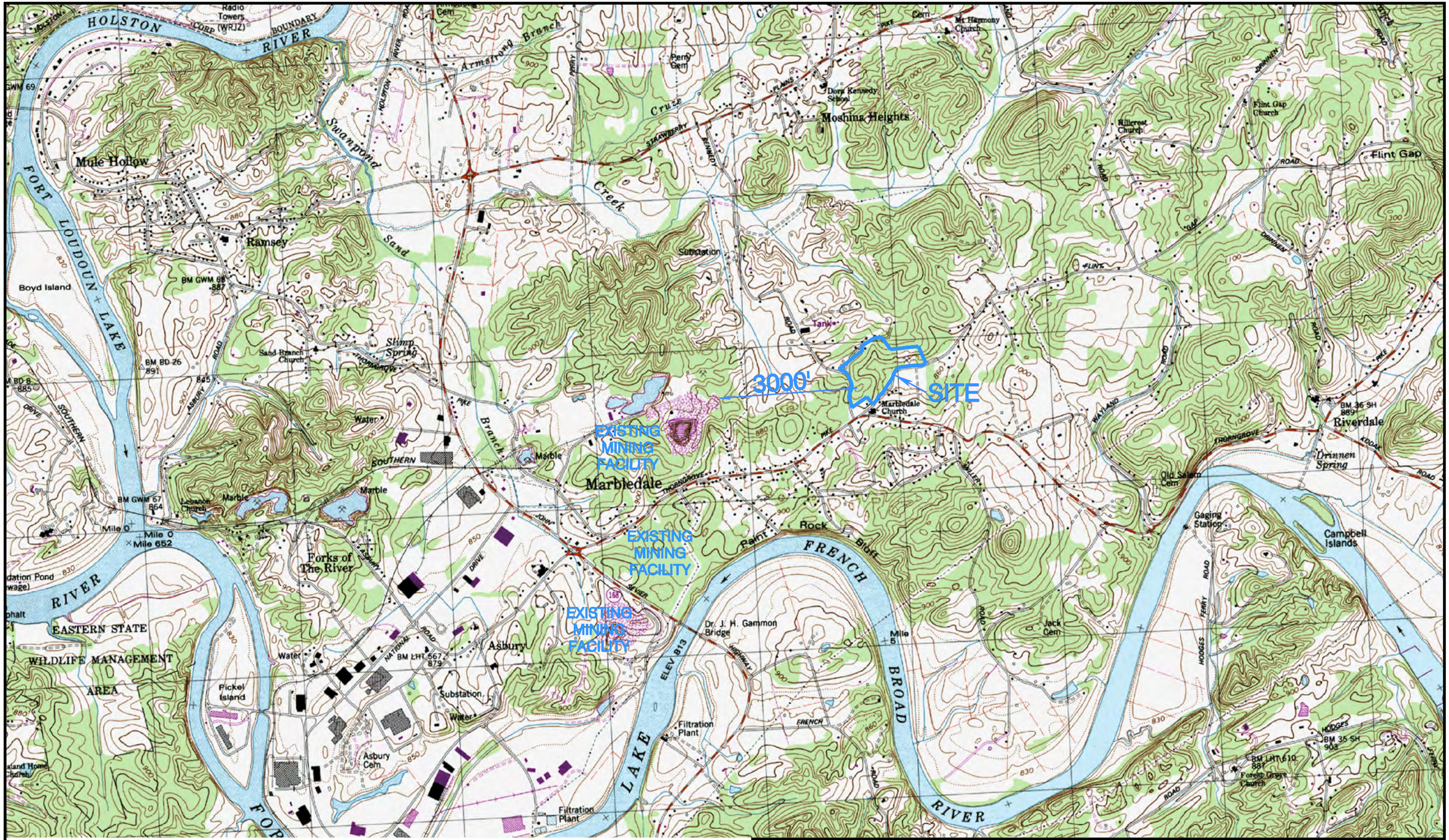
## Water Quality

A National Pollutant Discharge Elimination System (NPDES) permit will be required from TDEC for the mining and quarry operation. The NPDES permit will include designs for sediment basins for collection and treatment of runoff from the active quarry areas. Possible sources of pollutants include plant and yard runoff, plant and equipment wash water, and pit pump-out. In addition to sediment, oil and grease, also raised or lowered pH levels are potential pollutants. Sediment ponds will provide treatment during the initial mining phase. As mining progresses, the storage volume created in the pits will be adequate to contain and hold all water with no discharges from the site.

## Summary

There is an ongoing need for limestone quarry products in the Knox County area and the nearby region. The cost of these materials has risen in recent years and can be expected to continue with further growth and economic expansion. The addition of a new quarry will help meet this higher demand and keep costs from dramatically increasing, and impacting construction costs, including housing development. There are many concerns with any mining operation, and there are also many laws and regulations in place to protect the public welfare and safety. Although there are always negative perceptions, with adherence to the mining laws, this proposed mining operation will not adversely impact the nearby community, and it is the most logical use for the land.

# FIGURES




GRAPHIC SCALE 1"=2,000'

0 2,000 4,000 6,000

**DEVELOPER:** EAST KNOXVILLE STONE
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MIKE MALICOTE
(865) 740-2708

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KNOXVILLE, TN

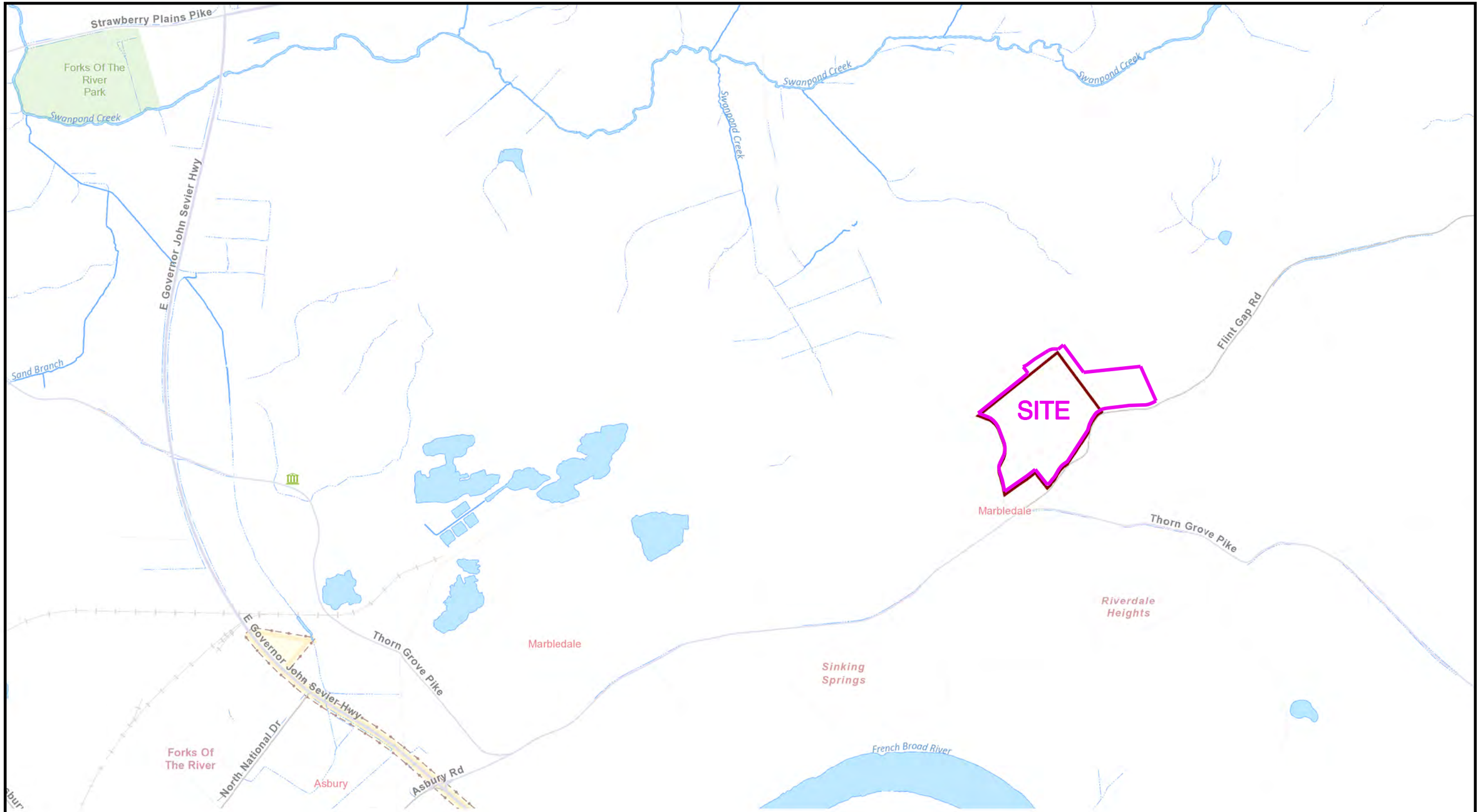
SCALE: 1"=2000'
DATE: 5-26-20
FILE NO.: 20059

DESIGNED BY: GMT
CHECKED BY: RGC
DRAWN BY: GMT

# EAST KNOXVILLE STONE
# FLINT GAP QUARRY

## LOCATION MAP
## SHOOKS GAP USGS QUAD

FIGURE 1




GRAPHIC SCALE 1"=1,000'

0 1,000 2,000 3,000

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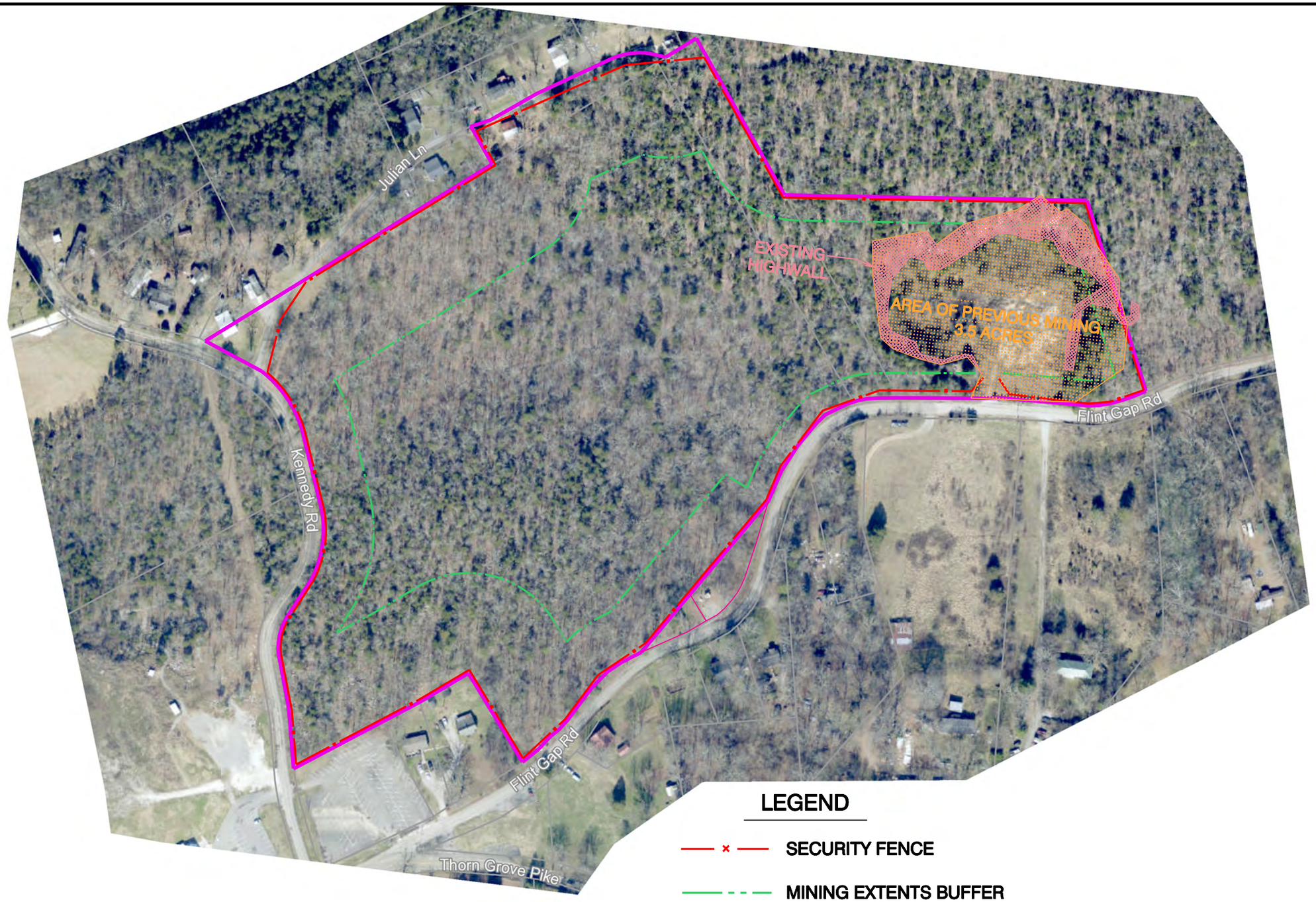
# EAST KNOXVILLE STONE
# FLINT GAP ROAD QUARRY

## KGIS LOCATION MAP

FIGURE 2

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OWNERS:
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MICHAEL MALICOTE
DEBORAH MALICOTE
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KNOXVILLE, TN 37950

N

## LEGEND

- SECURITY FENCE
- MINING EXTENTS BUFFER
- PROPERTY BOUNDARY

GRAPHIC SCALE 1"=200'

0 200 400 600

CLT MAP: 097
PARCELS: 148, 150, 154, 155

DEED REFERENCE:
20190920-0020304
20180724-0005169
20190422-0061464

PROPERTY ZONED: A

TOTAL AREA: 31.90 ACRES

Revised: 5/26/2020

PLANNING SERVICES FILE NUMBER: 6-F-20-UR

| | | | |
|---|---|---|---|
| RGC&A ROBERT G. CAMPBELL & ASSOCIATES, L.P. KNOXVILLE, TN | | EAST KNOXVILLE STONE FLINT GAP ROAD QUARRY | FIGURE 3 |
| SCALE: 1"=200' DATE: 5-26-20 FILE NO.: 20059 | DESIGNED BY: GMT CHECKED BY: RGC DRAWN BY: GMT | PROPOSED MINING AREA K.G.I.S AERIAL | |

**USE ON REVIEW**

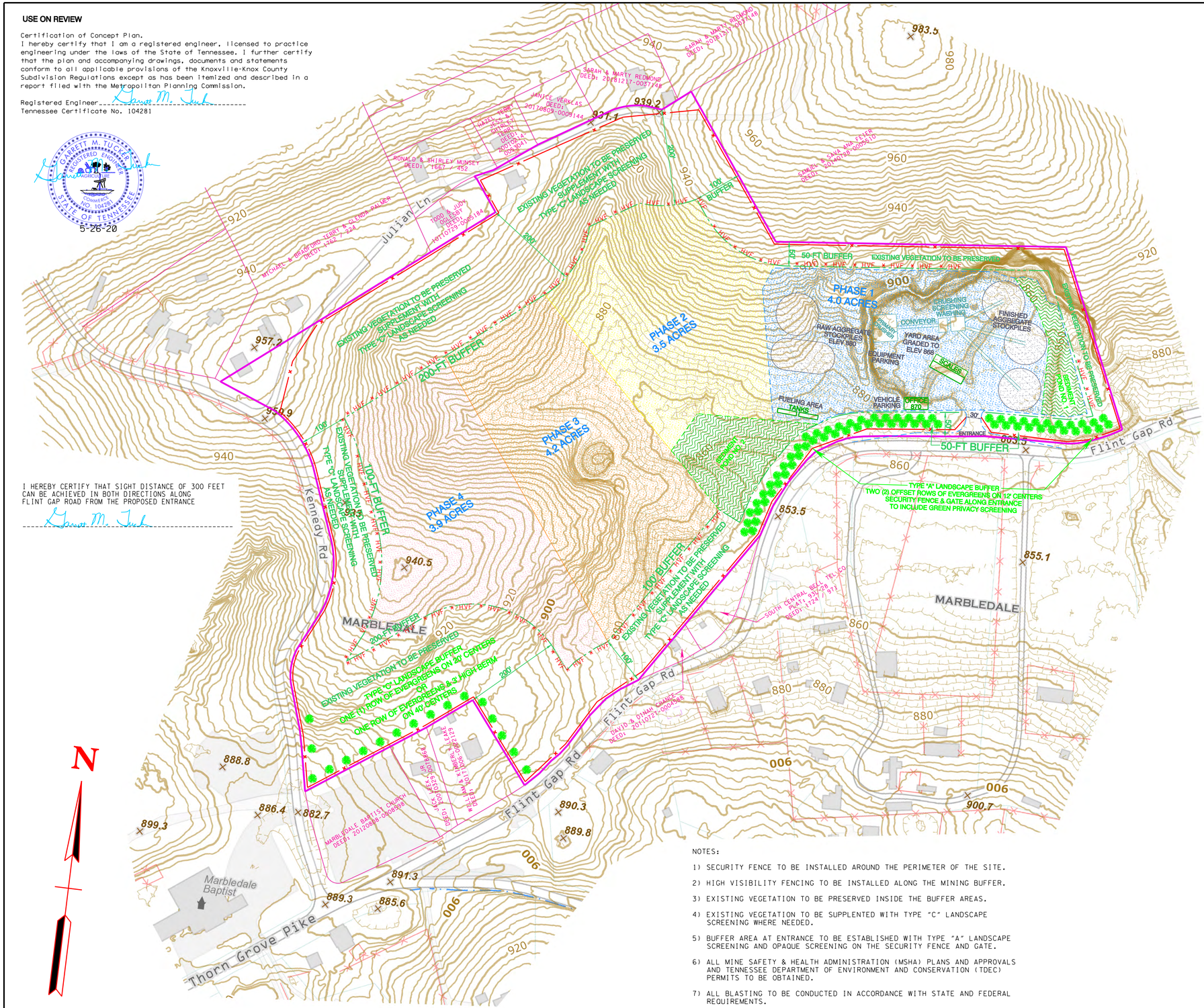
Certification of Concept Plan.
I hereby certify that I am a registered engineer, licensed to practice engineering under the laws of the State of Tennessee. I further certify that the plan and accompanying drawings, documents and statements conform to all applicable provisions of the Knoxville-Knox County Subdivision Regulations except as has been itemized and described in a report filed with the Metropolitan Planning Commission.

Registered Engineer_____
Tennessee Certificate No. 104281

GARRETT M. TUCKER
REGISTERED ENGINEER
104281
COMMERCE
STATE OF TENNESSEE
5-26-20

I HEREBY CERTIFY THAT SIGHT DISTANCE OF 300 FEET CAN BE ACHIEVED IN BOTH DIRECTIONS ALONG FLINT GAP ROAD FROM THE PROPOSED ENTRANCE

_____







GRAPHIC SCALE 1"=100'
0 100 200 300

NOTES:

1) SECURITY FENCE TO BE INSTALLED AROUND THE PERIMETER OF THE SITE.
2) HIGH VISIBILITY FENCING TO BE INSTALLED ALONG THE MINING BUFFER.
3) EXISTING VEGETATION TO BE PRESERVED INSIDE THE BUFFER AREAS.
4) EXISTING VEGETATION TO BE SUPPLENTED WITH TYPE "C" LANDSCAPE SCREENING WHERE NEEDED.
5) BUFFER AREA AT ENTRANCE TO BE ESTABLISHED WITH TYPE "A" LANDSCAPE SCREENING AND OPAQUE SCREENING ON THE SECURITY FENCE AND GATE.
6) ALL MINE SAFETY & HEALTH ADMINISTRATION (MSHA) PLANS AND APPROVALS AND TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) PERMITS TO BE OBTAINED.
7) ALL BLASTING TO BE CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS.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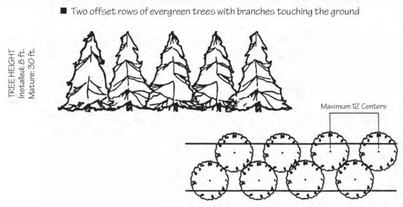
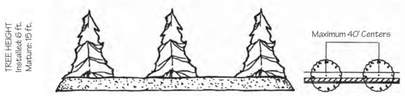
■ Two offset rows of evergreen trees with branches touching the ground

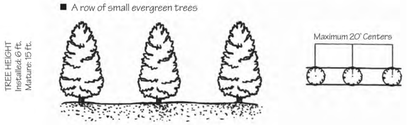



**TYPE "A" LANDSCAPE SCREENING TYPICAL DETAIL**

■ A row of evergreen conifers with a 3 ft. high earth berm or solid fence or wall




■ A row of small evergreen trees




**TYPE "C" LANDSCAPE SCREENING TYPICAL DETAILS**

**LEGEND**

- SECURITY FENCE
- HVF HVF HIGH VISIBILITY FENCING
- MINING EXTENTS BUFFER
- PROPERTY BOUNDARY
- TREE PLANTING (TYPICAL)

CLT MAP: 097
PARCELS: 148, 150, 154, 155

DEED REFERENCE:
20190920-0020304
20180724-0005169
20190422-0061464

PROPERTY ZONED: A

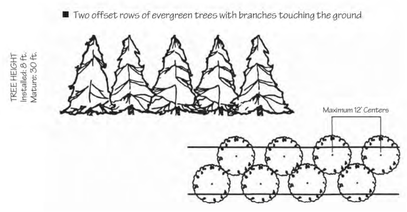
TOTAL AREA: 31.9 ACRES

MINING AREA: 11.6 ACRES

Revised: 5/26/2020

PLANNING SERVICES FILE NUMBER: 6-F-20-UR

| | | | |
|---|---|---|---|
| RGC&A ROBERT G. CAMPBELL & ASSOCIATES, L.P. KNOXVILLE, TN | | EAST KNOXVILLE STONE FLINT GAP ROAD QUARRY | FIGURE 4 |
| SCALE: 1"=200' | DESIGNED BY: GMT | USE ON REVIEW MINE OPERATIONS PLAN | |
| DATE: 5-26-20 | CHECKED BY: RGC | | |
| FILE NO.: 20059 | DRAWN BY: GMT | | |




## TYPE "A" LANDSCAPE SCREENING TYPICAL DETAIL

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LEGEND

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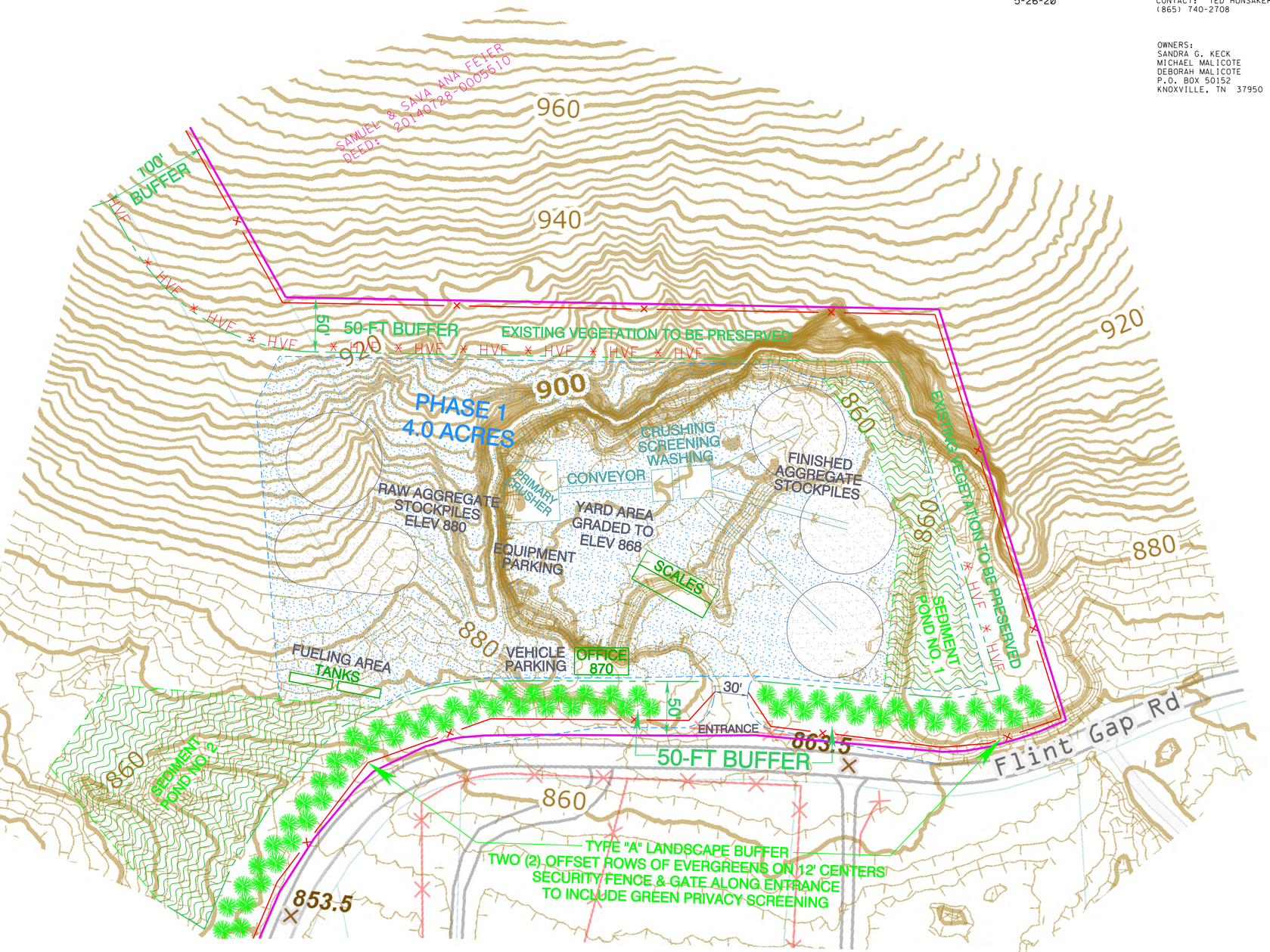
- MINING EXTENTS BUFFER
- PROPERTY BOUNDARY
- TREE PLANTING (TYPICAL)
- MINING EXTENTS BUFFER




N

GRAPHIC SCALE 1"=50'
0 50 100 150

GARRETT M. TUCKER REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 104281 STATE OF TENNESSEE
5-26-20

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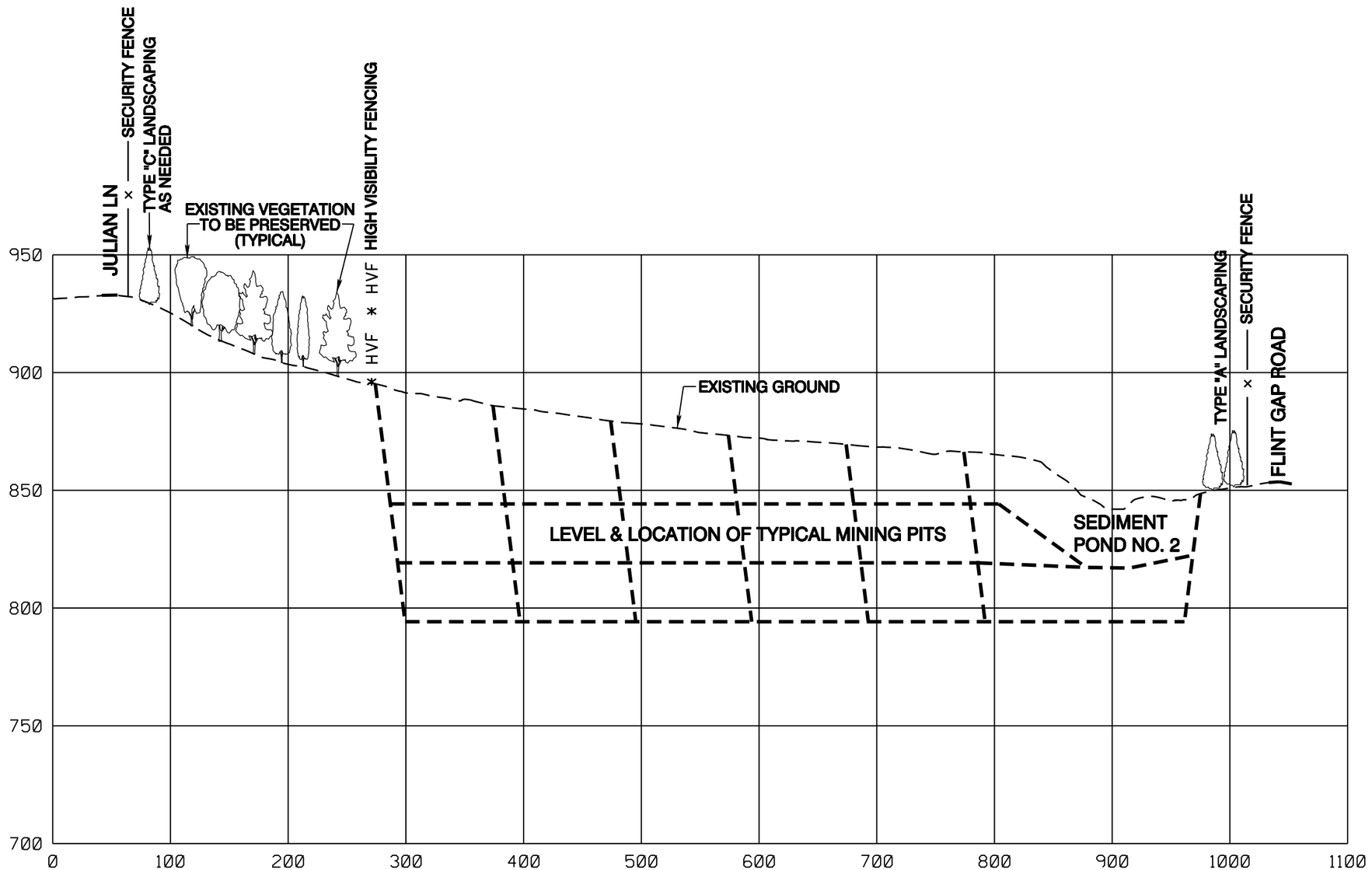
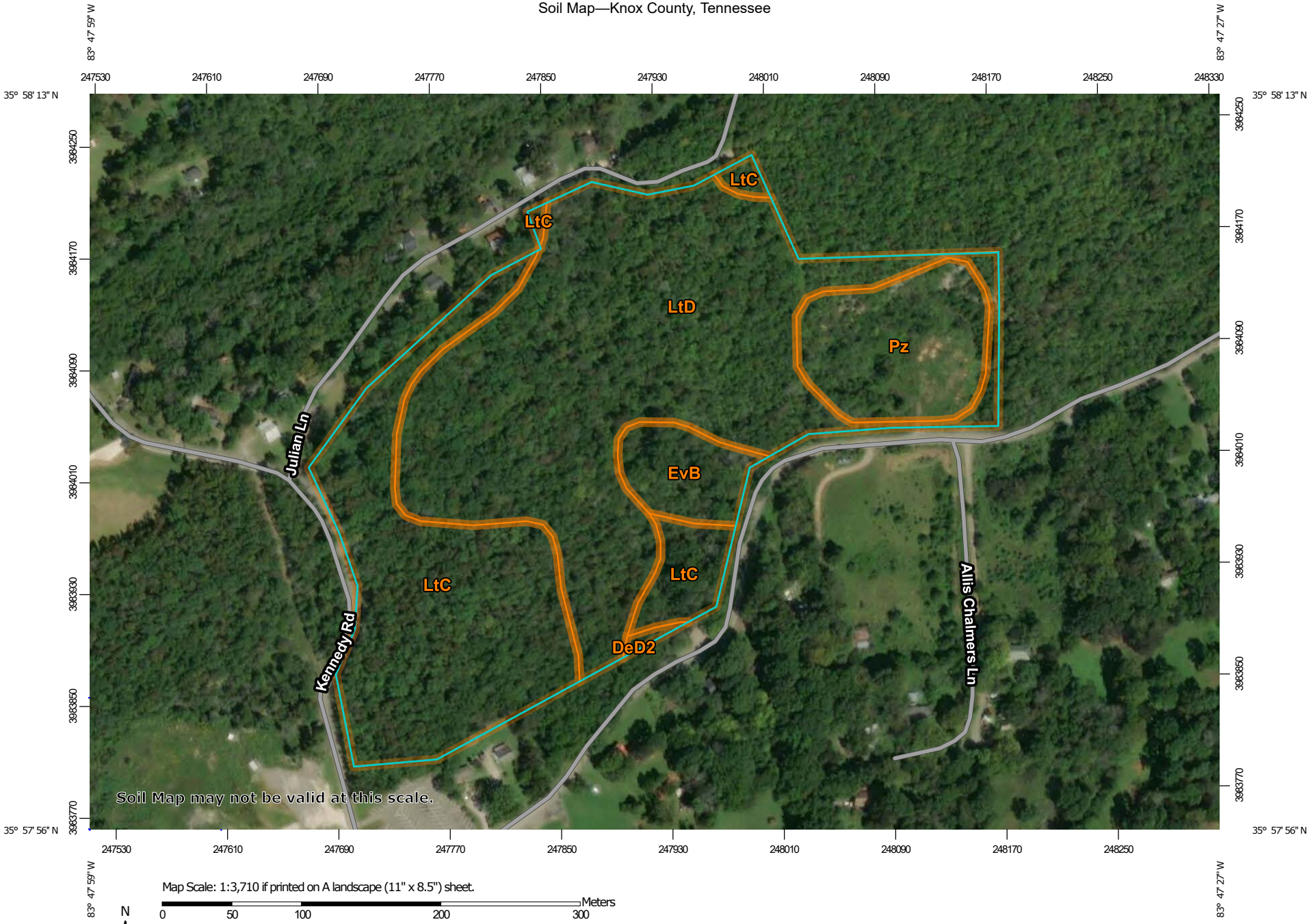
| RGC&A | ROBERT G. CAMPBELL & ASSOCIATES, L.P. KNOXVILLE, TN | EAST KNOXVILLE STONE FLINT GAP ROAD QUARRY | FIGURE 5 |
| SCALE: 1"=50' | DESIGNED BY: GMT | MINE OPERATIONS PLAN SITE ENTRANCE DETAIL | |
| DATE: 5-26-20 | CHECKED BY: RGC | | |
| FILE NO.: 20059 | DRAWN BY: GMT | | |




Revised: 5/26/2020

| | | | |
|---|---|---|---|
| RGC&A ROBERT G. CAMPBELL & ASSOCIATES, L.P. KNOXVILLE, TN | | EAST KNOXVILLE STONE FLINT GAP ROAD QUARRY | FIGURE 6 |
| SCALE: AS SHOWN<br>DATE: 5-26-20<br>FILE NO.: 20059 | DESIGNED BY: GMT<br>CHECKED BY: RGC<br>DRAWN BY: GMT | MINE OPERATIONS PLAN TYPICAL SECTION | |

Soil Map—Knox County, Tennessee




Map Scale: 1:3,710 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Revised: 5/26/2020

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Knox County, Tennessee
Survey Area Data: Version 15, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 8, 2016—Oct 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Revised: 5/26/2020

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| DeD2 | Dewey silt loam, 15 to 25 percent slopes, eroded | 0.1 | 0.3% |
| EvB | Etowah-Minvale complex, 2 to 5 percent slopes | 1.4 | 4.8% |
| LtC | Loyston-Talbott-Rock outcrop complex, 2 to 15 percent slopes | 9.0 | 31.3% |
| LtD | Loyston-Talbott-Rock outcrop complex, 15 to 50 percent slopes | 15.1 | 52.5% |
| Pz | Pits, Mines, and Dumps | 3.2 | 11.1% |
| **Totals for Area of Interest** | | **28.8** | **100.0%** |

Revised: 5/26/2020