



AGENDA

The Columbia Board of Zoning Appeals will meet on Thursday, August 11th, 2022 at 9:00 a.m. in the Council Chambers on the basement level of City Hall, 700 N. Garden Street to consider the following:

1. Roll Call

2. Approval Of Minutes

3. New Business

3.I. 22-0200 - 200 Overlook Place - Conditional Use

Request from Chardelle Smith for conditional use approval to operate a licensed childcare facility in a residential zone at [200 OVERLOOK PLACE](#).

Documents:

[22-0200_CHILDCARE_CU_STAFF REPORT.PDF](#)
[22-0200 APPLICATION.PDF](#)
[22-0200 DESCRIPTION PICTURE.PDF](#)
[22-0200_ZONEMAP_0727.JPG](#)

3.II. 22-0183 Vulcan Quarry Conditional Use

Request from Jimmy Fleming, Jr. on behalf of Vulcan Land Inc. for Conditional Use approval in order to permit the expansion of an existing extractive use (a mining operation) at [TAX MAP 66 PARCELS 20.25 AND 20.26](#).

Documents:

[22-0183_VULCAN QUARY_CU_STAFF REPORT_07082022.PDF](#)
[22-0183_CRASH DATA.PDF](#)
[22-0183_ZONEMAP_0621.JPG](#)
[22-0183_APP_0621.PDF](#)
[22-0183_EXHIBITSA-I_0621.PDF](#)
[22-0183_EXHIBITJ_0621.PDF](#)
[22-0183_DEFERRAL LETTER_07122022.PDF](#)

4. Other Business

5. Adjourn

Anyone requesting accommodations due to disabilities should contact the City's ADA Coordinator at 931-560-1570 prior to the meeting.

The [2022 meeting schedule](#) can be found on the City of Columbia Board of Zoning Appeals [webpage](#).

For other questions, please contact the [Department of Development Services](#) at 931-560-1560.



**CITY OF COLUMBIA TENNESSEE
BOARD OF ZONING APPEALS
STAFF REPORT**

CONTACT INFORMATION

Kevin C. McCarthy, AICP, Planning Associate II, kmccarthy@columbiatn.com 931-560-1531

**DOCKET/CASE/APPLICATION
NUMBER**
22-0200

APPLICANT/ PROPERTY OWNER
**Chardelle Smith / Chardelle & Mike
Smith**

PUBLIC HEARING DATE
August 11, 2022

PROPERTY ADDRESS/LOCATION
**200 Overlook Place/Tax Map 1001
Parcels 3.00**

REQUEST: Conditional Use (Childcare Facility)

The applicant requests the Board’s approval of a Conditional Use permit to allow a homebased childcare facility in a residential district.

The subject property is zoned RS-6 (CD-3 under the new Zoning Code). The application was received on July 8, 2022, prior to adoption of the current Zoning Code. The standards in effect at the time of application, Zoning Ordinance 3638. Under Section 8.1.1 of the Ordinance, a childcare facility requires conditional use approval in an RS-6 zone.

Section 8.3.1.C. of the Zoning Ordinance prescribes specific standards for extractive uses. In addition to these standards, the Board may impose restrictions and conditions which ensure compatibility with surrounding properties.



EXISTING ZONING	EXISTING LAND USE	SURROUNDING ZONING & LAND USE	SITE IMPROVEMENTS	SIZE OF PROPERTY
RS-6 (CD-3)	Single-Family Home	RS-6 & RM-1 (CD-3 & CD-4) /Single-Family Homes	N/A	± 0.29 acres

DEVELOPMENT STATUS & HISTORY:

Previous Requests/Approval: N/A

Conditions of Previous Approval: N/A

REVIEW & ASSESSMENT:

Subject Site:

The subject site is comprised of a single-family home on a ± 12,691 square foot lot. The structure, a 1,586 square foot residence, was constructed in 1996. All adjacent parcels are single family homes. The current owners acquired the property in April 2022 and use it as their residence.

Zoning Ordinance:

Staff reviewed the request for a Conditional Use permit for conformity with the City of Columbia Zoning Ordinance. The relevant provisions of the Ordinance are listed below; the most applicable standards are **bolded** and underlined. Staff comments follow in the next section.

3.15.8 ACTION BY BOARD OF ZONING APPEALS

- A. The Board of Zoning Appeals shall conduct a public hearing.
- B. After conducting the public hearing, and considering the recommendations of the Zoning Administrator and the requirements listed below (Conditional Use Permit- Sec. 3.15.9, Variance- 3.15.10), the Board of Zoning Appeals shall:
 1. Approve the request;
 2. Approve the request with conditions.
 3. Deny the request; or
 4. Continue the hearing.

3.15.9 REQUIREMENTS CONDITIONAL USE PERMIT

- A. General Requirements
 1. The proposed use is listed as a permitted Conditional Use within the district applied to the property in question.
 2. **Conforms to any additional standards listed in Sec. 8.3**, Conditional Use Standards, for the proposed use;
 3. Is so designed, located, and proposed to be operated that the public health, safety, and welfare will be protected;
 4. **Will not adversely affect other property in the area in which it is located;**
 5. Is within the provision of “Conditional Uses” as set forth in this ordinance;
 6. Conforms to all applicable provisions of this ordinance for the district in which it is to be located.

- B. Additional Requirements

The Board may impose such **other conditions and restrictions upon the premises benefited by a conditional use permit** as may be **necessary to reduce or minimize the injurious effect** of such conditional use **upon [surrounding properties] and ensure**



compatibility with surrounding properties. The Board may establish dates for the expiration of any conditional use permit as a condition of approval.

8.3.3.G DAY CARE FACILITIES

Family day care facilities shall be permitted in accordance with the use table in Sec. 8.1, subject to the following:

1. A maximum of 12 clients may be served at any one time. Overnight accommodation shall not be permitted.
2. No outdoor public address systems shall be allowed.
3. The facility shall contain twice the minimum lot area for the underlying district.
4. When the facility is located within a nonresidential area, the Fire Marshall shall review the proposal prior to approval and make a recommendation.
5. Drop off areas shall be provided consistent with Article 10. All required parking should be in the rear or side yards; however, required parking may be located in the street yard if the Zoning Administrator finds that such parking is safe, not detrimental to the neighborhood, accessible, and compatible with surrounding properties.
6. All other standards of the district shall be met.

Staff Comment:

Section 3.15.9 of the Zoning Ordinance tasks the Board with confirming that the limited use standards are met; ensuring that the proposed use is designed, located and operated in a manner that protects the public health, safety and welfare; and, to impose any other conditions necessary to ensure compatibility with surrounding properties and minimize any injurious effect to neighbors. Staff analysis and recommendation is provided below to assist the Board in its review of the proposed expansion of the existing mining operation.

General Requirements (3.15.8.A)

The Use Table at Section 8.1.1 of the Zoning Ordinance lists “Day Care Facilities” as a Conditional Use in a RS-6 zone.

Section 8.3.3.G of the Ordinance imposes limited use standards on Extractive Uses. Those standards are discussed below.

The proposed use poses no known harm to the public health, safety, and welfare.

The use is not expected to adversely affect other properties in the area, provided the applicant arranges for orderly pick-up and drop-off of children.

Additional Requirements (8.3.3.G)

Criteria 2 and 4 are not applicable to the subject property.

The subject property contains more than twice the minimum lot area for the underlying district (6,000 square feet).

The existing driveway is 21.25 feet wide at its widest point and conforms to the standards of Article 10. The home has a garage for resident vehicles and the applicant indicates that the driveway is adequate for pick-up and drop-off of children. The Board may condition its approval on modifications to ensure that pick-up and drop-off is orderly and not detrimental to the neighborhood or surrounding properties.

All other standards of the district are met. If the Board grants the Conditional Use approval the Zoning Administrator may approve a home occupation permit which will allow the applicant to establish the use, subject to licensure by the Tennessee Department of Human Services.

RECOMMENDATION:

Approval of Conditional Use Request.

Recommended Motion:

Move to find that the proposed Conditional Use conforms to the requirements listed at Section 3.15.9 of the City of Columbia Zoning Ordinance and approve Conditional Use 22-0200.

Alternative Motions:

Alternative Motion [Approve Subject to Conditions]:

Move to find that the proposed Conditional Use conforms to the requirements listed at Section 3.15.9 of the City of Columbia Zoning Ordinance and approve Conditional Use 22-0200 subject to the following conditions: *[list conditions of approval]*.

Alternative Motion [Deny]:

Move to deny the proposed Conditional Use having found *[list reasons for denial]*.

Alternative Motion [Defer]:

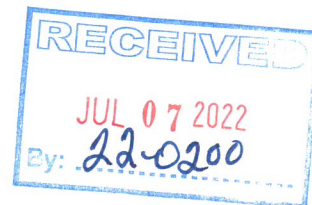
Move to find that there is insufficient information to make a decision, continue the hearing, and request that the [applicant/staff] provide: *[list additional information]* for review at a future meeting.

BOARD OF ZONING APPEALS APPLICATION COLUMBIA, TENNESSEE					
SUBDIVISION:			LOT:		
LOT ADDRESS: 200 Overlook Pl., Columbia, TN 38401					
ZONING:		LAND USE:		LOT ACREAGE: 0.29	
LOT SQUARE FOOTAGE: 12,632.4 sqft			BUILDING SQUARE FOOTAGE: 1,449 sqft		
ESTABLISHED/EXISTING SETBACKS: FRONT: _____ ft. SIDE: _____ ft. REAR: _____ ft.					
OTHER INFORMATION:					

TYPE OF REQUEST

COMPLETE APPLICABLE REQUEST FOR BOARD TO CONSIDER

APPEAL OF ADMINISTRATIVE DECISION
Indicate the decision/interpretation under appeal, including the City Official with Title and Department, and the applicable section(s) of the <i>Zoning Ordinance</i> in question.
APPEAL OF:
ZONING ORDINANCE SECTION:
CITY OFFICIAL WITH TITLE AND DEPARTMENT:



APPEAL OF ADMINISTRATIVE DECISION

1. If requesting a **Setback Variance**, indicate below which yard the setback variance is located within and provide an exact measure of the distance of the new setback in feet.
2. If requesting a **Sign Variance**, indicate below which type of sign the variance is for and provide the permitted signage, in addition to the requested amount of signage.
3. If requesting a **Variance** of any other provision of the *Zoning Ordinance*, provide a detailed explanation below in "Other Variance Request."

SETBACK VARIANCE <i>Check applicable yard</i>	<input type="checkbox"/> FRONT YARD <input type="checkbox"/> SIDE YARD <input type="checkbox"/> REAR YARD	REQUESTED SETBACK (<i>ft</i>):
SIGN VARIANCE <i>Check applicable sign</i>	<input type="checkbox"/> FREESTANDING SIGN <input type="checkbox"/> WALL SIGN <input type="checkbox"/> GASOLINE PUMP SIGN <input type="checkbox"/> OTHER SIGN	PERMITTED SIGNAGE (<i>ft or ft²</i>):
		REQUESTED SIGNAGE (<i>ft or ft²</i>):
OTHER VARIANCE REQUEST	ZONING ORDINANCE SECTION:	
	REASON FOR REQUEST:	

CONDITIONAL USE PERMIT

If requesting a **Conditional Use Permit**, indicate the requested use.

REQUESTED USE (*be detailed*):

In-home licensed Child care with unloading and loading in the designated driveway. My property is fully fenced in.

DOES THE REQUESTED USE HAVE REQUIRED PARKING?

Designated driveway and Street Parking.

HOURS OF OPERATION:

7a.m. - 5p.m.

*FOLD ALL SUBMITTALS LARGER THAN 8½"x11"

APPLICANT

NAME	Chardelle Smith	PHONE	909 744-7280
ADDRESS	200 Overlook Pl.	EMAIL	Csmith91314@gmail.com

PROPERTY OWNER

NAME	Chardelle + Mike Smith	PHONE	909 744-7280
ADDRESS	200 Overlook Pl.	EMAIL	Csmith91314@gmail.com

In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Chardelle Smith
APPLICANT NAME


APPLICANT SIGNATURE

7/6/22
DATE

Chardelle Smith
PROPERTY OWNER NAME


PROPERTY OWNER SIGNATURE

7/10/22
DATE

STAFF USE ONLY

DOCKET NO.	22-0200	FEE PAID	\$200.00
RECEIPT NO.	10077730	REQUESTED AGENDA	

DATE NOTICES SENT TO ADJACENT PROPERTY OWNERS	
DATE OF PUBLIC NOTICES IN DAILY HERALD	

BOARD ACTION	
--------------	--

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

5. That the granting of the variance will not be detrimental to the public welfare, injurious to other property or improvements in the area in which the subject property is located, or a substantial impairment to the intent and purpose of the general provisions of this Zoning Ordinance.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

6. That the purposed variance will not impair an adequate supply of light and air to the adjacent property, or substantially increase the congestion in the public streets, or increase the danger of fire, or endanger the public safety.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

7. That the alleged difficulty or hardship has not been knowingly and intentionally created by any person having an interest in the property after the effective date of this ordinance.

.....

.....

.....

.....

.....

.....

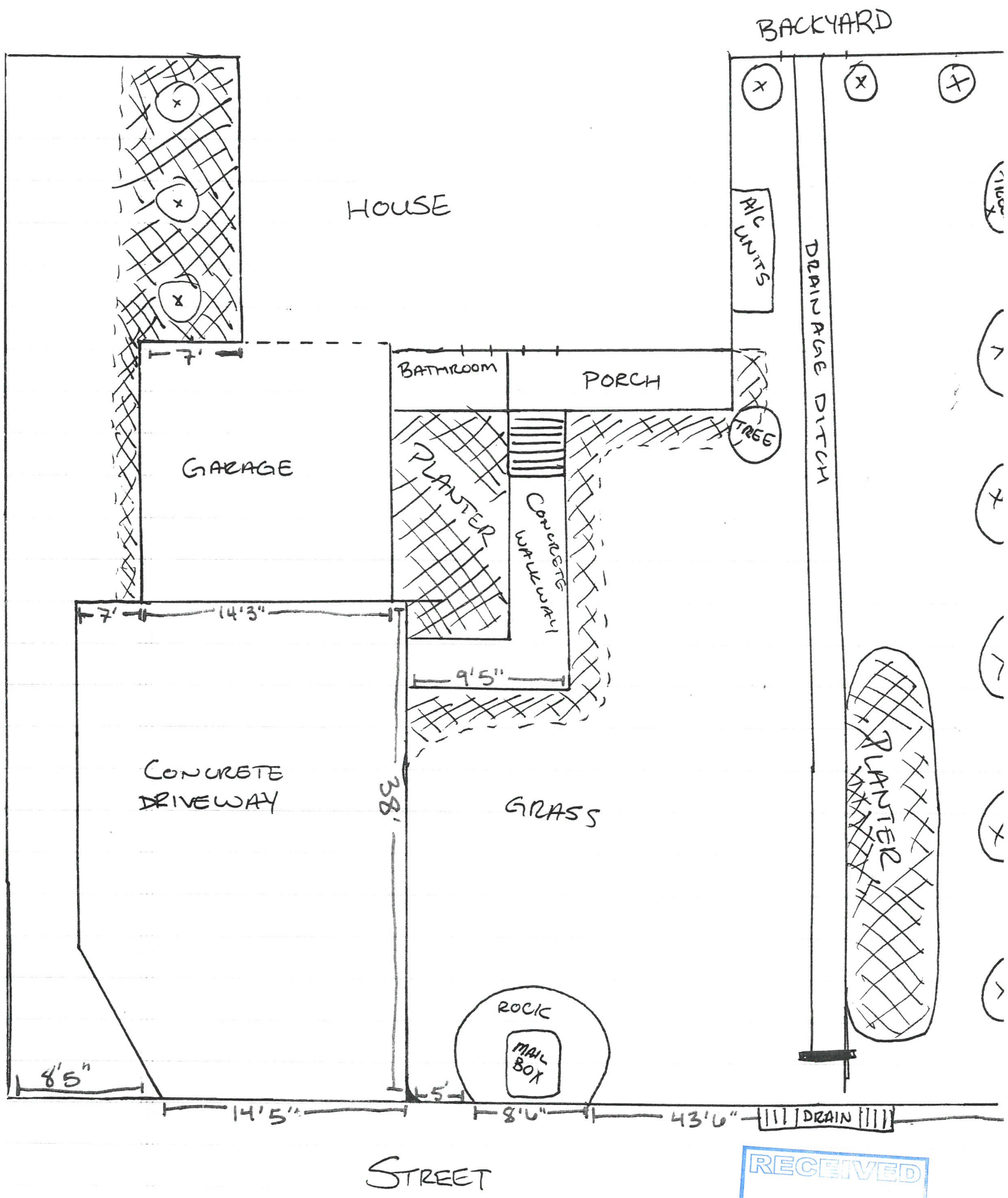
.....

.....

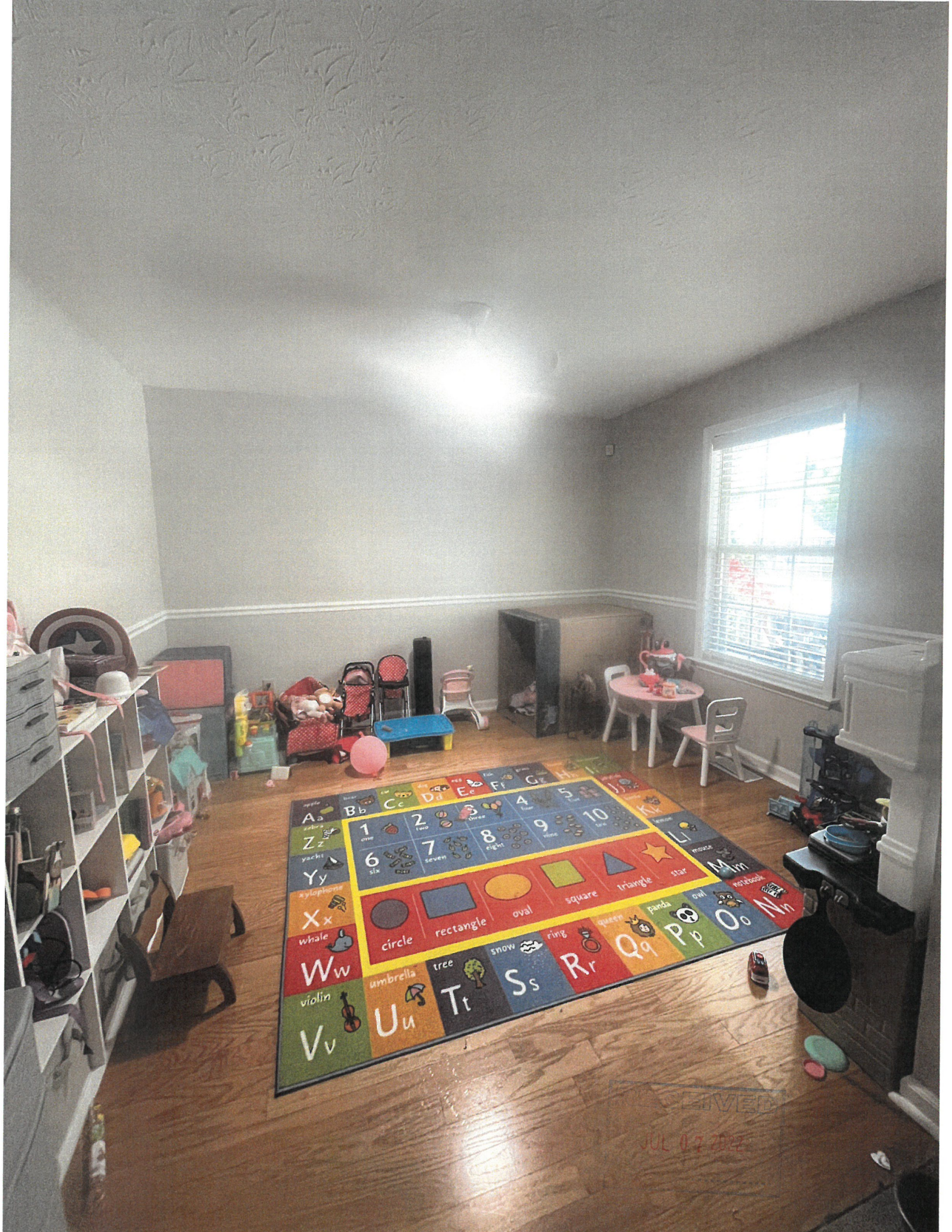
.....

.....

.....



RECEIVED
 JUL 07 2022
 By:



RECEIVED
JUL 07 2022



Zoning Distr

New_Zone



CD-2



CD-3L



CD-3



CD-4



CD-4C



CD-5



CITY OF COLUMBIA TENNESSEE
BOARD OF ZONING APPEALS
STAFF REPORT

CONTACT INFORMATION

Kevin C. McCarthy, AICP, Planning Associate II, kmccarthy@columbiatn.com 931-560-1531

DOCKET/CASE/APPLICATION NUMBER
22-0183

APPLICANT/ PROPERTY OWNER
Jim Fleming Jr./ Vulcan Lands Inc. & CalMat Co.

PUBLIC HEARING DATE
July 14, 2022

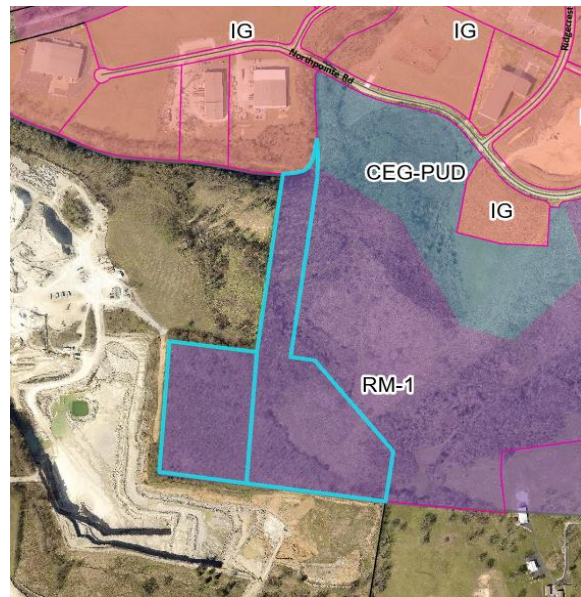
PROPERTY ADDRESS/LOCATION
Tax Map 66 Parcels 20.25 & 20.26

REQUEST: Conditional Use (Extractive Use in an RS-40 Zone)

The applicant requests the Board’s approval of a Conditional Use permit to allow expansion of an existing mining facility into a low-density residential zone. The subject property is located immediately adjacent to the existing mine and inside the City. The City Council approved a comprehensive Plan Amendment and Rezoning of the subject property earlier in 2022. The existing facility is located in Maury County outside the corporate limits of Columbia.

The subject property is zoned RS-40. Extractive uses are not permitted by right in any zone district; they are only permitted in an RS-40 zone as a Conditional Use. Extractive uses are prohibited in every other zone district.

Section 8.3.1.C. of the Zoning Ordinance prescribes specific standards and technical requirements for extractive uses. In addition to these standards, the Board may impose restrictions and conditions which ensure compatibility with surrounding properties and minimize any injurious effect of the land use.



EXISTING ZONING	EXISTING LAND USE	SURROUNDING ZONING & LAND USE	SITE IMPROVEMENTS	SIZE OF PROPERTY
RS-40 (Single Family Low Density Residential)	Vacant	General Industrial/ RM-1 (Vacant)/CEG-PUD (Vacant)/County	Expansion of Quarry	31 ± acres

DEVELOPMENT STATUS & HISTORY:

Previous Requests/Approval:	Comprehensive Plan Amendment and Rezoning February 2022 – Planning Commission Recommended Approval April 2021 – City Council Approved
Conditions of Previous Approval:	N/A

REVIEW & ASSESSMENT:

Subject Site:

The subject site is comprised of two undeveloped parcels acquired by the current owner in 2020 and 2021. The parcels are immediately adjacent to an existing quarry operated by Vulcan Materials. Surrounding properties consist of an existing quarry under the control of the applicant, commercial uses, and vacant land. The site is currently zoned low-density residential (RS-40) with a future land use classification of Rural Countryside. Prior to April of 2022, the property was zoned High-Density Residential with a future land use classification of Employment District.

The subject site is immediately adjacent to incompatible land uses. The property immediately to the east of the subject is zoned High Density Residential (RM-1). Although the site is currently vacant, there is a high likelihood that it will be developed as a residential use during the life of the proposed mining operation. The immediate adjacency of a high-density residential land use and an extractive land use creates the greatest risk of incompatibility. This is discussed in greater detail below. Other adjoining properties have established industrial and extractive uses which are likely to continue.

Rutherford Creek flows along the northern boundary of the subject parcel. Consequently, a small portion of the property is within an AE flood zone with a 1% chance of annual flooding. The Ordinance requires additional review procedures when a requested conditional use is located in a floodplain. These requirements are discussed under Other Considerations below.

The subject parcel does not abut a public right of way and the creek limits potential access to the site from the north. The site can only be accessed via the existing quarry. Theta Pike and Columbia Rock Road provide vehicle access to the existing quarry. Trucks exiting the site primarily utilize Columbia Rock Road to access Nashville Highway (US 31) and the regional roadway network. Residential construction is currently underway on either side of Columbia Rock Road near the intersection with Nashville Highway. Expansion of the quarry will extend the life of the mining operation and the related impacts to local roadways.



Zoning Ordinance:

Staff reviewed the request for a Conditional Use permit for conformity with the City of Columbia Zoning Ordinance. The relevant provisions of the Ordinance are listed below; the most applicable standards are **bolded** and underlined. Staff comments follow in the next section.

3.15.8 ACTION BY BOARD OF ZONING APPEALS

- A. The Board of Zoning Appeals shall conduct a public hearing.
- B. After conducting the public hearing, and considering the recommendations of the Zoning Administrator and the requirements listed below (Conditional Use Permit- Sec. 3.15.9, Variance- 3.15.10), the Board of Zoning Appeals shall:
 - 1. Approve the request;
 - 2. Approve the request with conditions.
 - 3. Deny the request; or
 - 4. Continue the hearing.

3.15.9 REQUIREMENTS CONDITIONAL USE PERMIT

- A. General Requirements
 - 1. The proposed use is listed as a permitted Conditional Use within the district applied to the property in question.
 - 2. **Conforms to any additional standards listed in Sec. 8.3**, Conditional Use Standards, for the proposed use;
 - 3. **Is so designed, located, and proposed to be operated that the public health, safety, and welfare will be protected;**
 - 4. **Will not adversely affect other property in the area in which it is located;**
 - 5. Is within the provision of “Conditional Uses” as set forth in this ordinance;
 - 6. Conforms to all applicable provisions of this ordinance for the district in which it is to be located.
- B. Additional Requirements

The Board may impose such **other conditions and restrictions upon the premises benefited by a conditional use permit** as may be **necessary to reduce or minimize the injurious effect** of such conditional use **upon [surrounding properties] and ensure**



compatibility with surrounding properties. The Board may establish dates for the expiration of any conditional use permit as a condition of approval.

8.3.1.C EXTRACTIVE USES

Extractive uses may be permitted in accordance with the use table in Sec. 8.1, subject to the following:

1. The application for the use shall include a plan for restoration procedures once the operation ceases.
2. When the use is located within a Residential district, the requirements of Sec. 6.3.6, Neighborhood Commercial shall not apply.
3. The location of such an activity shall be in an area sparsely developed **during the length of time the mining or quarrying activity is anticipated;**
4. Any permit issued hereunder shall be based on a site plan or other documents submitted with an application which shall provide for the following:
 - a. Existing contours of the site and up to 100 feet beyond the site boundary. Contour intervals shall be at two-foot intervals.
 - b. Location of the area in which the proposed quarrying activity is to be conducted.
 - c. Location of all proposed buildings, crusher and screening equipment, roadways, and other facilities proposed on the site.
 - d. Proposed method of drainage of the quarry area.
 - e. **Proposed fencing of the quarry area.** Fencing shall be provided around all open excavations.
 - f. **Methods proposed for blasting. Open blasting commonly referred to as “pop shots” shall be prohibited.**
 - g. **Methods proposed to control noise, vibration and other particulate matter** in order to meet the performance standards as set out in this ordinance.
 - h. Finished contours of the site after the quarrying operation has been terminated. The site shall be graded and / or filled so as to be in substantial conformity with the topography of the surrounding lands. All fill material shall be nontoxic, nonflammable, and noncombustible solids. All areas that are back – filled shall be left so that adequate drainage is provided.
5. Approval for mining and quarrying activity may also include accessory concrete batching plants, asphaltic cement mixing plants and/ or rock crushing activities on the same zone lot or adjoining zone lots which may have directly opposing frontages on the same public street. If such accessory activities are included on the quarry site, the total site must meet all the special condition requirements for mining and quarrying activities; however, in conditions of multiple zone lots, the outer perimeter of the site shall be considered the lot line;
6. **Before issuing a permit** the Board of Appeals shall require the owner of the quarry facility to **execute a bond not less than \$1,000 per acre or more than \$2,000 per acre**

of active quarry throughout a five-year period to restore the lands in the manner prescribed herein, including the removal of all structures and machinery;

7. **Any permit issued hereunder shall not be for a period exceeding five years.** After the expiration date of such special permit, the Board may review and grant an extension of time in the manner and procedure as prescribed for an original application.

Staff Comment:

Section 3.15.9 of the Zoning Ordinance tasks the Board with confirming that the limited use standards are met; ensuring that the proposed use is designed, located and operated in a manner that protects the public health, safety and welfare; and, to impose any other conditions necessary to ensure compatibility with surrounding properties and minimize any injurious effect to neighbors. Staff analysis and recommendation is provided below to assist the Board in its review of the proposed expansion of the existing mining operation.

General Requirements (3.15.8.A)

The Use Table at Section 8.1.1 of the Zoning Ordinance lists “All Extractive Uses” as a Conditional Use in a low density residential (RS-40) zone. Section 8.2.2.B defines an Extractive Use as those which “extract minerals and other solids or liquids from the earth.” The Ordinance provides the specific example of “sand, stone, or gravel quarrying” as a principal use within this category.

Section 8.2.2.B also makes clear that “stockpiling of sand, gravel, and or aggregates” is not a principal or accessory use within the Extractive Use classification. The Ordinance classifies storage of these materials as a Warehouse and Freight Movement use, which is prohibited in an RS-40 zone. The site plan provided by the applicant depicts these uses on other parts of the larger site, outside of the city. Staff recommends that the Board make clear that these activities may not occur on the subject site.

Section 8.3.1.C of the Ordinance imposes limited use standards on Extractive Uses. Those standards are discussed below.

Attributes of the use which may harm the public health, safety, and welfare are discussed below.

Expansion of the use is may adversely affect other properties in the area. The use is well established on the existing quarry site. However, the subject site is immediately adjacent to a parcel zoned for high-density residential development. It is likely that homes will be built on the site before the expanded quarry is exhausted. This will result in immediately adjacent incompatible land uses. Staff recommends that the Board craft conditions of



approval to ensure the expanded mining operation is designed and operated to mitigate harm to the adjacent RM-1 zoned property.

Additional Requirements (8.3.1.C)

Restoration of the Site

The Zoning Ordinance requires that every mining operation established in the city provide a plan for restoration of the site (8.3.1.C.1). The applicant's plan is illustrated at Exhibit I of the submittal and further described in the letter from the applicant's representative. Specifically, the applicant proposes to reduce the slope of the site using fill materials. The remaining "pit" will become a water feature and the site will be planted with native foliage. The Ordinance does not prescribe technical requirements for restoration of the site. The applicant's proposal appears to be in keeping with industry standard and the common practice for retiring exhausted quarries across Tennessee.

Buildings and Improvements

The applicant does not propose to erect any permanent structures on the subject site; therefore, bulk standards are not applicable.

Sparsely Developed Area

The Ordinance requires that extractive uses be located in sparsely developed areas for the duration of the quarrying activity (8.3.1.C.3). This provision is clearly intended to ensure that extractive uses are not established where they will conflict with incompatible surrounding land uses. The applicant anticipates the mining operation will continue for at least 25 years. The existing quarry borders the site to the west and south. The property to the north is likely to continue to be utilized for warehouse and industrial uses. It is also separated from the subject by Rutherford Creek. The property immediately to the east is zoned High-Density Residential (RM-1).

The area is not likely to remain sparsely developed for the duration of the quarrying activity. The applicant describes the property as "undeveloped and agricultural in nature." However, the RM-1 district "is designed to provide suitable areas for high density development" (Zoning Ordinance 5.5.5). The property is one of few large tracts remaining in the city already zoned for high-density residential development with access to urban services. It is likely that homes will be built on the site long before the quarry is exhausted. Consequently, the quarry will be located immediately adjacent to the least compatible land use, high-density household living. This could be a basis for denial. Alternatively, the Board may craft conditions of approval to alleviate the incompatibility. Specifically, staff recommends that the Board require the applicant to provide a high-opacity landscape buffer.

Article 11 of the current Zoning Ordinance provides a standard for landscape buffers with widths and opacities which vary based on the degree of incompatibility between adjacent land uses. In general, buffers are installed over time as the City approves vertical



improvements on each site. The Ordinance permits multiple buffering alternatives. Developers may elect different approaches to accomplish the required opacity level. Staff recommends that the Board prescribe the 0.80 opacity Alternative 3 at 11.2.7.B of the Ordinance. This will require the applicant to construct a solid 6-foot wall along the eastern boundary of the property with a 15-foot side heavily planted buffer on the eastern side of the wall.

Detailed Site Plan

The Ordinance requires that a detailed site plan accompany every request to establish or expand a quarry operation (8.3.1.C.4). The applicant has provided a site plan comprised of Exhibits A through I of the submittal. The plan depicts the existing contours of the site and its vicinity at 2-foot intervals (8.3.1.C.4a and b), the method of drainage (8.3.1.C.4d), and the plan for restoring the site (8.3.1.C.1 and 8.3.1.C.4d).

The Ordinance requires that all open excavations be fenced (8.3.1.C.4e). The applicant indicates that barbed wire fencing will be used. The Zoning Ordinance prohibits barbed wire fencing in all residential districts (12.4.2.B). Staff recommends the use of a solid 6-foot wall and other permissible fence types.

Blasting

The letter submitted with the application described the methods proposed for blasting (8.3.1.C.4f). The Ordinance prohibits open blasting (“pop shot”) methods. The applicant’s standards and procedures for blasting are detailed in Exhibit J. All blasting is conducted according to state and federal regulations. The seismographic impacts on residences are monitored by a third party. This may be a matter for discussion between the Board and the applicant to craft appropriate conditions of approval. Staff recommends that the Board require the applicant to share the seismographic data it collects with City of Columbia Department of Development Services.

Noise, Dust, Pollution

The Ordinance requires quarry operations to provide detailed plans for the control of noise, vibration, and pollution (8.3.1.C.4). The applicant’s letter describes Vulcan’s processes for avoiding and mitigating pollution. The subject site will be included under the applicant’s existing permits with the Tennessee Department of Environmental Conservation (TDEC). The operation is regularly monitored and inspected by TDEC. Staff recommends that the Board require the applicant to provide results of this monitoring and to inform the City Engineer of any incident of non-compliance with state or federal regulations.

Surety

The Ordinance requires the applicant to provide a surety in an amount between \$1,000 and \$2,000 per acre to guarantee that the land will be restored after the mining operation ceases (8.3.1.C.6). The applicant has agreed to this requirement. Restoration of the land may cost much more than \$2,000 per acre in the event that the applicant becomes insolvent or



prematurely abandons the site. Therefore, staff recommends the Board require the maximum bond amount of \$62,000. The Ordinance requires that the Board impose this requirement before issuing a Conditional Use permit. Accordingly, staff recommends establishing the effective date of approval as August 1, 2022 and directing staff to coordinate with the applicant to receive the financial surety.

Expiration

The Ordinance establishes a maximum duration of 5 years for any Conditional Use permit associated with an extractive use. The applicant must request an extension of the Conditional Use approval from the Board before the expiration date. Staff recommends that the approval expire on July 31, 2027. The Board may establish a shorter duration if it finds that circumstances are likely to change prior to that date.

Other Considerations

Rutherford Creek

A small portion of the property is within an AE flood zone with a 1% chance of annual flooding. The applicant intends to leave this portion of the property undisturbed and is not requesting a variance from the floodplain protections under Article 9 of the Ordinance. However, the Zoning Ordinance also includes special requirements for all requests for approval of a conditional use within a floodplain. The Zoning Administrator or his designee must forward a copy of the application and all supporting documents to the City Engineer for comment related to flood protection, erosion, drainage, and other technical matters. Moreover, the Ordinance requires that the Board consider the technical evaluation of the City Engineer and the criteria listed at 3.15.8.C.3. These criteria are all redundant with the protections of the City's floodplain protection ordinance (Article 9 of the Zoning Ordinance). Staff will apply these standards through a process of administrative review should the applicant ever proposes to erect structures in the floodplain. The City engineer has reviewed the application and advised Planning staff on the recommended conditions of approval. However, if the Board finds that the proposed Conditional Use increases the risk of flooding or otherwise poses a special risk to Rutherford Creek, it may impose additional conditions of approval to mitigate those impacts.

Roadway Impacts

The proposed expansion of the quarry will have a significant impact on Columbia's roadways. Extending the life of the quarry, and related truck traffic, will reduce the level of service at the intersection of Columbia Rock Road and Nashville Highway. Currently, trucks exiting the quarry primarily utilize Columbia Rock Road to access Nashville Highway (US 31) and the regional roadway network. A significant portion of this traffic turns left in order to travel north on Nashville Highway. Left turns at the intersection are uncontrolled.



CITY OF COLUMBIA TENNESSEE
BOARD OF ZONING APPEALS
STAFF REPORT

The current condition is unsafe. The intersection is the site of frequent traffic accidents, some fatal. Trucks leaving the quarry and entering Nashville Highway have been involved in traffic incidents at the intersection. Residential construction is currently underway on either side of Columbia Rock Road near the intersection with Nashville Highway. Expansion of the quarry will extend the life of the mining operation and the related impacts to the intersection.

Historically, the quarry has operated outside the corporate limits of the city and has not been subject to its development standards. If the original quarry had been established within the jurisdiction of Columbia, the city would have required off-site improvements to protect public safety and maintain an acceptable level of service at the intersection.

The city plans to realign the intersection and install a traffic light at the intersection of Columbia Rock Road/Baker Road and Nashville Highway. Other land users, in order to mitigate the impacts of their developments, have already installed the roadbed required to realign Columbia Rock Road. Staff strongly recommends that the Board require the applicant to complete the realignment of Columbia Rock Road and install the signal necessary to control northbound left turns from Columbia Rock onto Nashville Highway, as well as any ancillary improvements deemed necessary by the City Engineer. Extending the life of the quarry without these improvements will inevitably result in avoidable traffic incidents.

RECOMMENDATION:

Approval of Conditional Use Request Subject to Conditions.

Recommended Motion:

Move to find that the proposed Conditional Use conforms to the requirements listed at Section 3.15.9 of the City of Columbia Zoning Ordinance and approve Conditional Use 22-0183 subject to the following conditions:

1. That no Warehouse and Freight Management uses, including stockpiling of sand, gravel, and aggregate, be performed on the subject site;
2. That the applicant installs a solid wall and landscape buffer along the eastern boundary of the site that equals or exceeds the 0.80 opacity Alternative 3 described at Section 11.2.7.B of the Zoning Ordinance;
3. That no barbed wire fencing be used on the subject site;
4. That, upon request of the City Engineer, the applicant provides updates on the status of permits issued by the Tennessee Department of Environmental Conservation;
5. That, for the duration of the Conditional Use permit, the applicant reports any incident of non-compliance with state and federal regulations pertaining to the quarry's operation to the City Engineer;
6. That, upon request of the City Engineer, the applicant provide the results of all water quality monitoring;
7. That, for the duration of the Conditional Use Permit, the applicant provides the Zoning Administrator with the results of any seismographic data collected in connection with blasting activities at the site; data shall include decimal degree coordinates to the 6th decimal place in a format acceptable to the Zoning Administrator;
8. That the applicant provides an automatically-renewing bond in the amount of \$62,000 no later than July 29, 2022 that is deemed satisfactory by the City Attorney and the City Engineer in form, sufficiency, and manner of execution;
9. That the applicant ensures the bond does not expire prior to July 31, 2027;
10. That the applicant executes an agreement to make all improvements necessary to realign Columbia Rock Road and install a signal at the intersection of Nashville Highway before July 31, 2023; the applicant shall coordinate with the City Engineer, Zoning Administrator, and City Attorney to establish the exact scope of work and financial commitment; the applicant shall provide financial surety in a form acceptable to the City Engineer and City Attorney to ensure these improvements are completed;
11. That the Conditional Use approval shall become effective on August 1, 2022, provided the Zoning Administrator or his designee determine that all other conditions of approval have been met; execution of a binding Memorandum of Understanding to perform required tasks shall be sufficient to establish the proposed use; and
12. That the Conditional Use approval shall expire on July 31, 2027 at which time the mining operation must cease, absent approval of an extension by the City of Columbia Board of Zoning Appeals.

Alternative Motions:

Alternative Motion [Approve Subject to Conditions]:

Move to find that the proposed Conditional Use conforms to the requirements listed at Section 3.15.9 of the City of Columbia Zoning Ordinance and approve Conditional Use 22-0183 subject to the following conditions: *[list conditions of approval]*.

Alternative Motion [Approve]:

Move to find that the proposed Conditional Use conforms to the requirements listed at Section 3.15.9 of the City of Columbia Zoning Ordinance and approve Conditional Use 22-0183.

Alternative Motion [Deny]:

Move to deny the proposed Conditional Use having found *[list reasons for denial]*.

Alternative Motion [Defer]:

Move to find that there is insufficient information to make a decision, continue the hearing, and request that the [applicant/staff] provide: *[list additional information]* for review at a future meeting.

Crash Data

Proximity of Columbia Rock Products Road & Nashville Highway

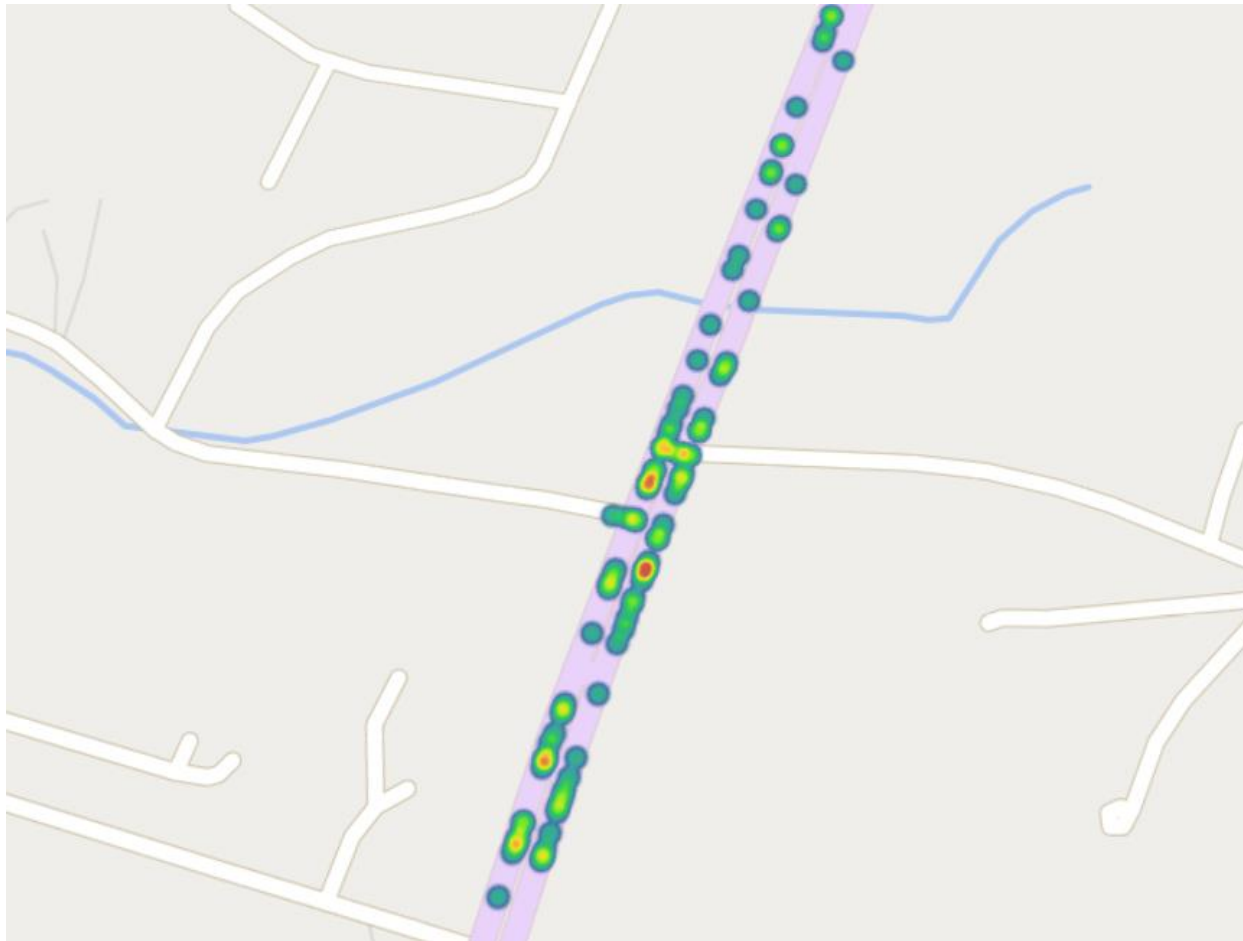
Source: Columbia Police Department

Types of Crashes	
Possible Injury	23
Property Damage > \$400	95
Minor Injury	8
Serious Injury	1
Grand Total	127

Number of Crashes by Year	
2011	5
2012	9
2013	4
2014	6
2015	15
2016	12
2017	12
2018	16
2019	9
2020	18
2021	15
2022	6
Grand Total	127

Manner of Collision	
Angle	15
Front to Rear	81
Not Collision with Motor Vehicle in Transport	16
Other	1
Rear to Rear	1
Sideswipe, Same Direction	12
Unknown	1
Grand Total	127

Row Labels	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
Possible Injury		1	1	1	3	1	4	4	2	3	1	2	23
Property Damage > \$400	4	8	3	5	11	11	7	12	6	13	11	4	95
Suspected Minor Injury	1				1		1		1	1	3		8
Suspected Serious Injury										1			1
Grand Total	5	9	4	6	15	12	12	16	9	18	15	6	127



Case #22-0183
Vulcan Quarry
TM 66 Parcels 20.25 & 20.26



BOARD OF ZONING APPEALS APPLICATION <i>COLUMBIA, TENNESSEE</i>					
SUBDIVISION:			LOT:		
LOT ADDRESS: Tax Map 066 Parcels 20.25 & 20.26					
ZONING: RS-40		LAND USE: Agricultural		LOT ACREAGE: Approximately 32 acres	
LOT SQUARE FOOTAGE: None			BUILDING SQUARE FOOTAGE: None		
ESTABLISHED/EXISTING SETBACKS: FRONT: <u>30</u> ft. SIDE: <u>15</u> ft. REAR: <u>30</u> ft.					
OTHER INFORMATION:					

TYPE OF REQUEST

COMPLETE APPLICABLE REQUEST FOR BOARD TO CONSIDER

APPEAL OF ADMINISTRATIVE DECISION
Indicate the decision/interpretation under appeal, including the City Official with Title and Department, and the applicable section(s) of the <i>Zoning Ordinance</i> in question.
APPEAL OF: -----
ZONING ORDINANCE SECTION:
CITY OFFICIAL WITH TITLE AND DEPARTMENT:

APPEAL OF ADMINISTRATIVE DECISION

1. If requesting a **Setback Variance**, indicate below which yard the setback variance is located within and **provide an exact measure of the distance of the new setback in feet.**
2. If requesting a **Sign Variance**, indicate below which type of sign the variance is for and **provide the permitted signage, in addition to the requested amount of signage.**
3. If requesting a **Variance** of any other provision of the *Zoning Ordinance*, provide a **detailed explanation below in "Other Variance Request."**

SETBACK VARIANCE <i>Check applicable yard</i>	<input type="checkbox"/> FRONT YARD <input type="checkbox"/> SIDE YARD <input type="checkbox"/> REAR YARD	REQUESTED SETBACK (ft):
SIGN VARIANCE <i>Check applicable sign</i>	<input type="checkbox"/> FREESTANDING SIGN <input type="checkbox"/> WALL SIGN <input type="checkbox"/> GASOLINE PUMP SIGN <input type="checkbox"/> OTHER SIGN	PERMITTED SIGNAGE (ft or ft ²):
		REQUESTED SIGNAGE (ft or ft ²):
OTHER VARIANCE REQUEST	ZONING ORDINANCE SECTION:	
	REASON FOR REQUEST:	

CONDITIONAL USE PERMIT

If requesting a **Conditional Use Permit**, indicate the requested use.

REQUESTED USE (be detailed):

See attached letter for detailed description of requested use for extractive uses, pursuant to Section 8.3.1(C) of the Columbia Zoning Code.

DOES THE REQUESTED USE HAVE REQUIRED PARKING?

No

HOURS OF OPERATION:

Regular business hours

***FOLD ALL SUBMITTALS LARGER THAN 8½"x11"**

APPLICANT

NAME	Jimmy Fleming, Jr.	PHONE	(770) 454-3622
ADDRESS	800 Mt. Vernon Hwy NE, Suite 200 Atlanta, GA 38328	EMAIL	flemingj@vmcmail.com

PROPERTY OWNER

NAME	Vulcan Lands Inc. & CalMat Co.	PHONE	(770) 454-3622
ADDRESS	c/o Vulcan Materials Company 1200 Urban Center Dr. Birmingham, AL 35242	EMAIL	flemingj@vmc.com

In filling out this application, I attest that (1) I am familiar with the rules, regulations, and procedures of the City of Columbia & (2) all information contained herein is accurate & true to the best of my knowledge.

Jimmy Fleming, Jr.
APPLICANT NAME


APPLICANT SIGNATURE

6/21/22
DATE

Jimmy Fleming, Jr.
PROPERTY OWNER NAME


PROPERTY OWNER SIGNATURE

6/21/22
DATE

STAFF USE ONLY

DOCKET NO.	22-0183	FEE PAID	
RECEIPT NO.		REQUESTED AGENDA	
DATE NOTICES SENT TO ADJACENT PROPERTY OWNERS			
DATE OF PUBLIC NOTICES IN DAILY HERALD			
BOARD ACTION			

Legend

Streets

City Limits

COLUMBIA
MT PLEASANT
SPRING HILL

Urban Growth Boundary



Site Location
MAURY COUNTY
COLUMBIA, TENNESSEE

LEGEND

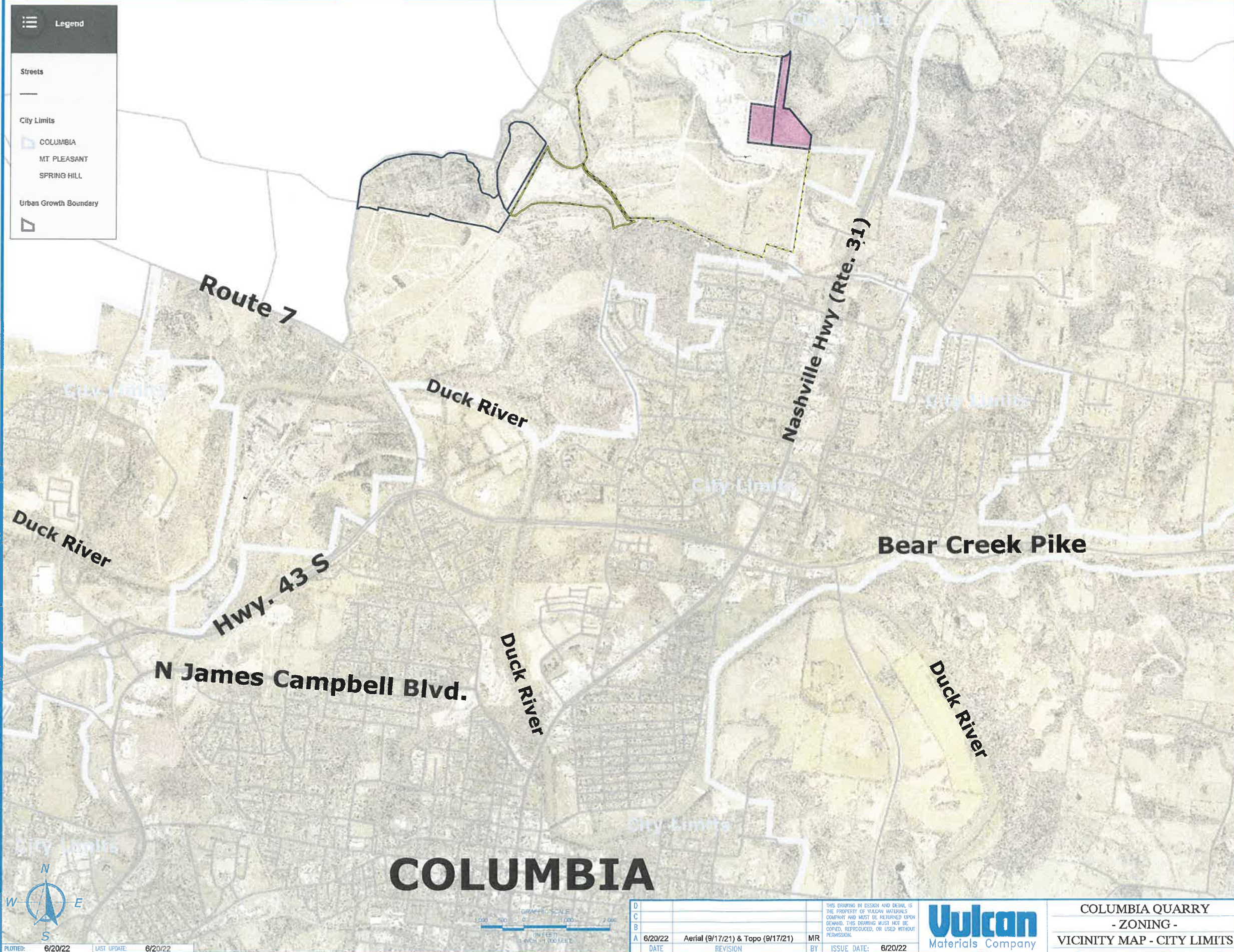
Property Lines ———

Vulcan Owned Property - - - - -

Vulcan Leased Property - - - - -

City Limits ———

Zoning Modification Area [Pink Box]



Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project .
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



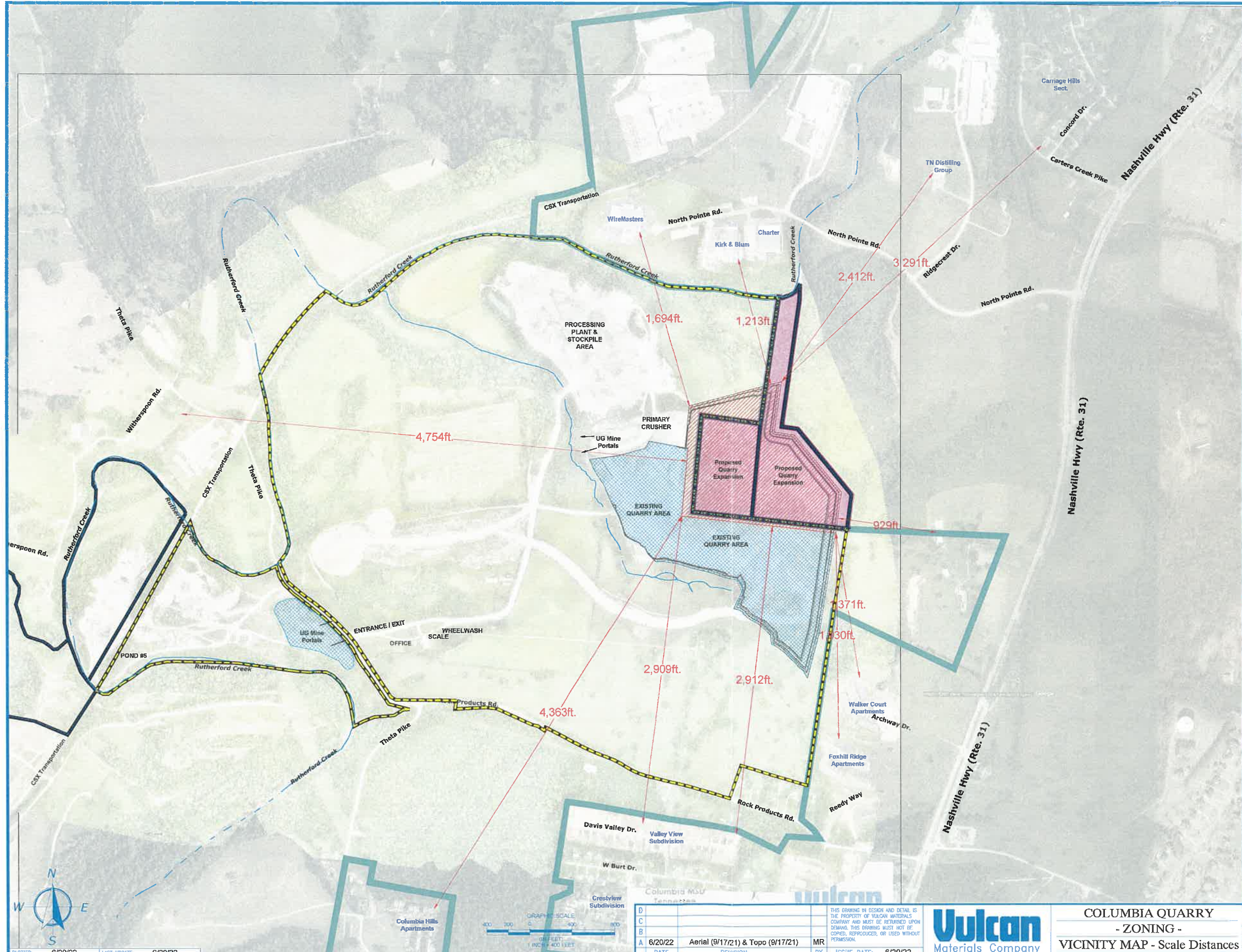
COLUMBIA

D			
C			
B			
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR
	DATE	REVISION	BY
			ISSUE DATE: 6/20/22



COLUMBIA QUARRY
- ZONING -
VICINITY MAP - CITY LIMITS

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
	CENTRAL DIVISION		
OWN BY	MR	DATE	6/20/22
DRAWN BY	JD	SCALE	1"=1,000'
JOB NO.	1222		
			Vicinity Map-01



Site Location
MAURY COUNTY
COLUMBIA, TENNESSEE

LEGEND

- Property Lines ———
- Vulcan Owned Property - - - - -
- Vulcan Leased Property - - - - -
- City Limits ———
- Zoning Modification Area [Pink Box]
- Proposed Quarry Expansion [Red Box]
- Existing Quarry Boundary [Blue Box]
- Overburden Storage Areas [Orange Box]
- Ponds / Creeks / Streams [Blue Dashed Line]
- Quarry/Pit Boundary [Black Dashed Line]

Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D					
C					
B					
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR	ISSUE DATE: 6/20/22	
	DATE	REVISION	BY	ISSUE DATE:	



COLUMBIA QUARRY
- ZONING -
VICINITY MAP - Scale Distances

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
CENTRAL DIVISION			
DATE	MR 6/20/22	SCALE	1"=400'
JOB NO.	1222		
UNIVERSITY OF TENNESSEE		COLUMBIA QUARRY	



Site Location
 MAURY COUNTY
 COLUMBIA, TENNESSEE

LEGEND

- Property Lines ———
- Vulcan Owned Property - - - - -
- Vulcan Leased Property - - - - -
- City Limits ———
- Zoning Modification Area ———
- Contours (2 ft.) ———
- Contours (10 ft.) ———



Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D					
C					
B					
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR	ISSUE DATE: 6/20/22	
	DATE	REVISION	BY	ISSUE DATE:	



COLUMBIA QUARRY
 - ZONING -
 EXISTING CONTOURS

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
CENTRAL DIVISION			
DWG. NO.			Zoning - 02
DATE	6/20/22	SCALE	1"=300'
ISSUE DATE	6/20/22		

PLOTTED 6/20/22 LAST UPDATE 6/20/22



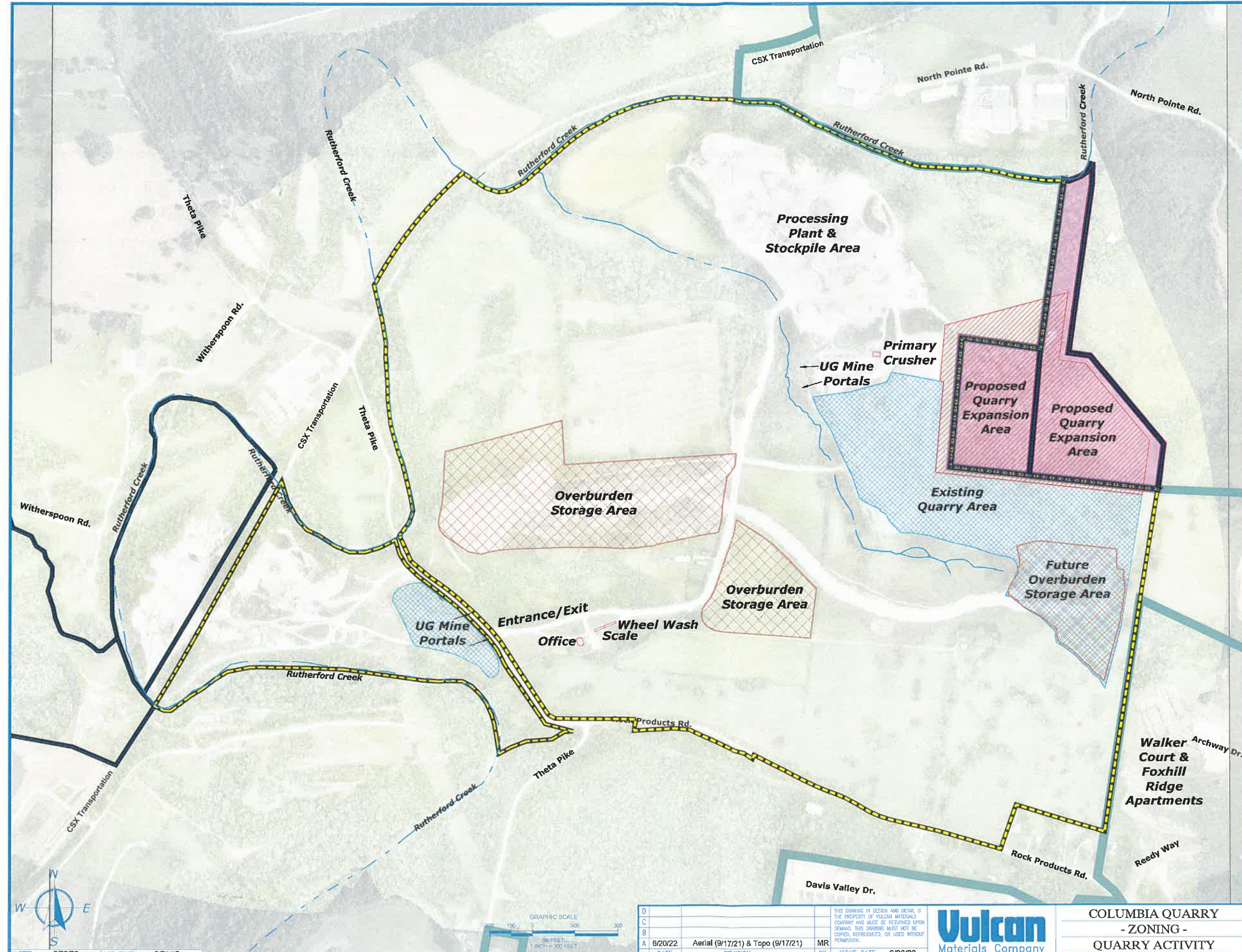
Site Location
 MAURY COUNTY
 COLUMBIA, TENNESSEE

LEGEND

- Property Lines ———
- Vulcan Owned Property - - - - -
- Vulcan Leased Property - - - - -
- City Limits ———
- Zoning Modification Area [Pink Box]
- Proposed Quarry Expansion [Red Hatched Box]
- Existing Quarry Boundary [Blue Dotted Box]
- Overburden Storage Areas [Orange Hatched Box]
- Ponds / Creeks / Streams [Blue Dotted Line]
- Primary Crusher [Red Line]
- Office / Scale House / Buildings [Red Line]

Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project .
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D			
C			
B			
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR
	DATE	REVISION	BY
			ISSUE DATE: 6/20/22



COLUMBIA QUARRY
 - ZONING -
 QUARRY ACTIVITY

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
CENTRAL DIVISION			
DWG. NO.	1222	DWG. NO.	Zoning - 03
DATE	6/20/22	SCALE	1" = 300'

PLOTTED: 6/20/22 | LAST UPDATE: 6/20/22

THIS DRAWING IN DESIGN AND DETAIL IS THE PROPERTY OF VULCAN MATERIALS COMPANY AND MUST BE RETURNED UPON DEMAND. THIS DRAWING MUST NOT BE COPIED, REPRODUCED, OR USED WITHOUT PERMISSION.



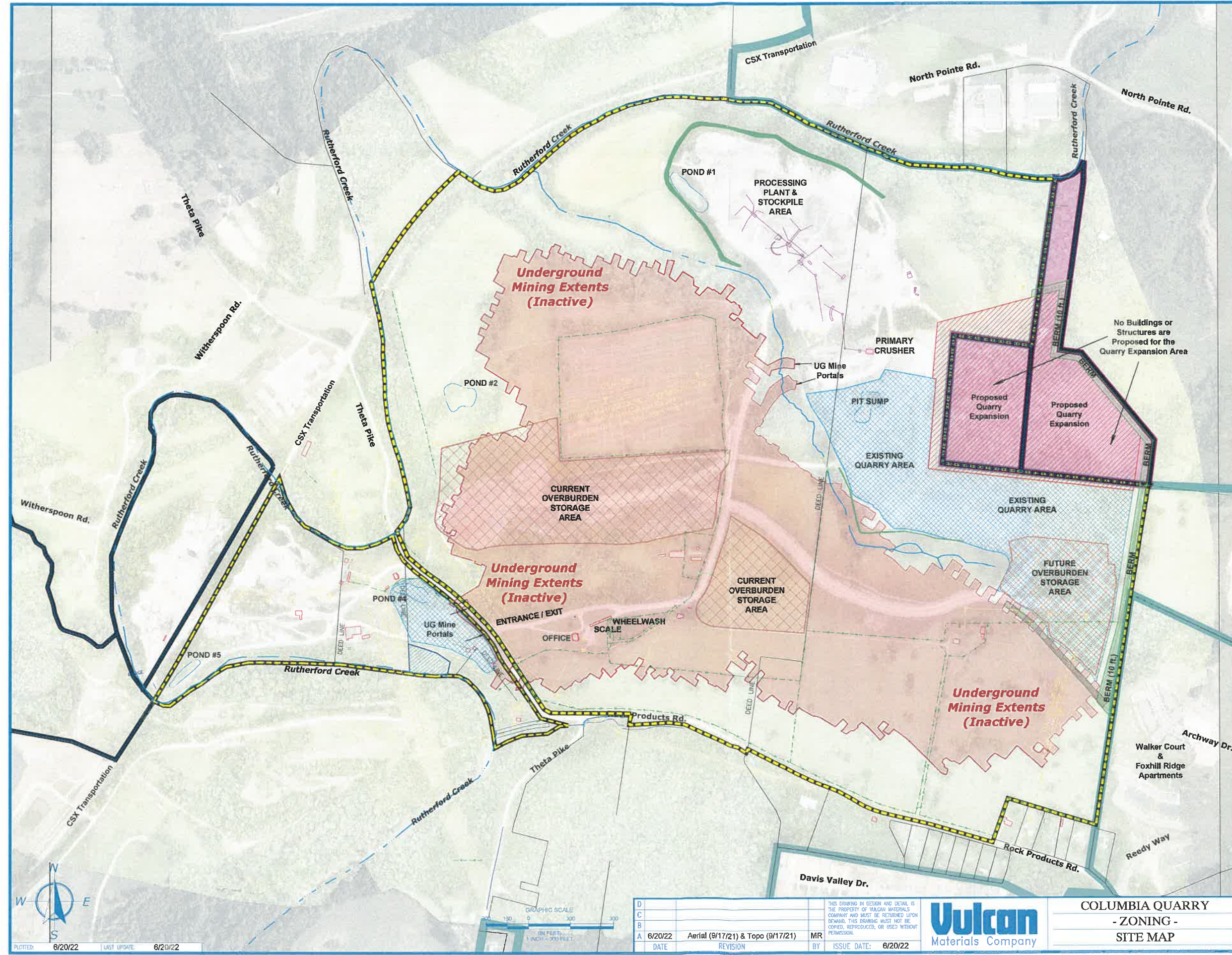
Site Location
 MAURY COUNTY
 COLUMBIA, TENNESSEE

LEGEND

- Property Lines ———
- Vulcan Owned Property ———
- Vulcan Leased Property ———
- City Limits ———
- Zoning Modification Area ———
- Proposed Quarry Expansion ———
- Existing Quarry Boundary ———
- Overburden Storage Areas ———
- Ponds / Creeks / Streams ———
- Primary Crusher ———
- Office / Scale House / Buildings ———
- Underground Mining Extents ———
- Prod. & Stripping Road Access ———
- Electric Utilities ———
- Fencing ———
- Plant Equipment ———
- Berms ———
- Culvert ———

Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D				
C				
B				
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR	6/20/22
	DATE	REVISION	BY	ISSUE DATE:



COLUMBIA QUARRY
 - ZONING -
 SITE MAP

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
CENTRAL DIVISION			
DATE	6/20/22	DATE	
SCALE	1"=300'	SCALE	
JOB NO.	1222	JOB NO.	
DATE		DATE	
			Zoning - 04

PLOTTED: 6/20/22 LAST UPDATE: 6/20/22



Site Location
MAURY COUNTY
COLUMBIA, TENNESSEE

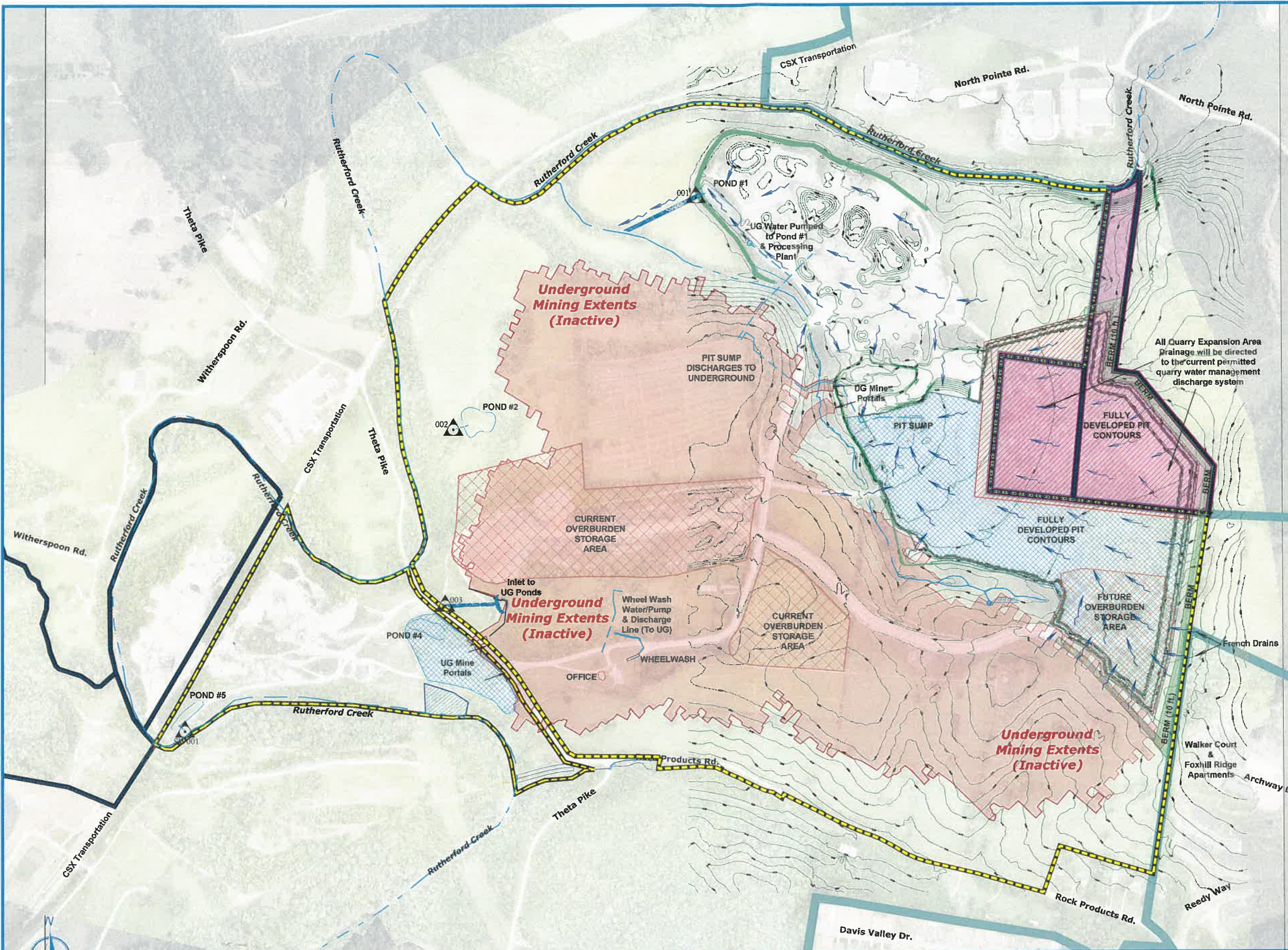
LEGEND

- Property Lines ———
- Vulcan Owned Property ———
- Vulcan Leased Property ———
- City Limits ———
- Zoning Modification Area ———
- Proposed Quarry Expansion ———
- Existing Quarry Boundary ———
- Overburden Storage Areas ———
- Quarry/Pit Boundary ———
- Ponds / Creeks / Streams ———
- Contours (10 ft.) ———
- Berms ———
- Future Pit Benches ———
- Pipe ———
- Drainage / Water Flow ———
- Discharge Point ———
- Filter Berms ———
- Culvert ———
- Underground Mining Extents ———
- Prod. & Stripping Road Access ———

All Quarry Expansion Area drainage will be directed to the current permitted quarry water management discharge system

Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D				
C				
B				
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR	6/20/22
DATE	REVISION	BY	ISSUE DATE:	6/20/22

THIS DRAWING IN DESIGN AND DETAIL IS THE PROPERTY OF VULCAN MATERIALS COMPANY AND MUST BE RETURNED UPON DEMAND. THIS DRAWING MUST NOT BE COPIED, REPRODUCED, OR USED WITHOUT PERMISSION.



COLUMBIA QUARRY
- ZONING -
DRAINAGE

SECTION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
CENTRAL DIVISION			
MR	6/20/22	DR	JD
1222	SCALE	1"=300'	
Zoning - 05			



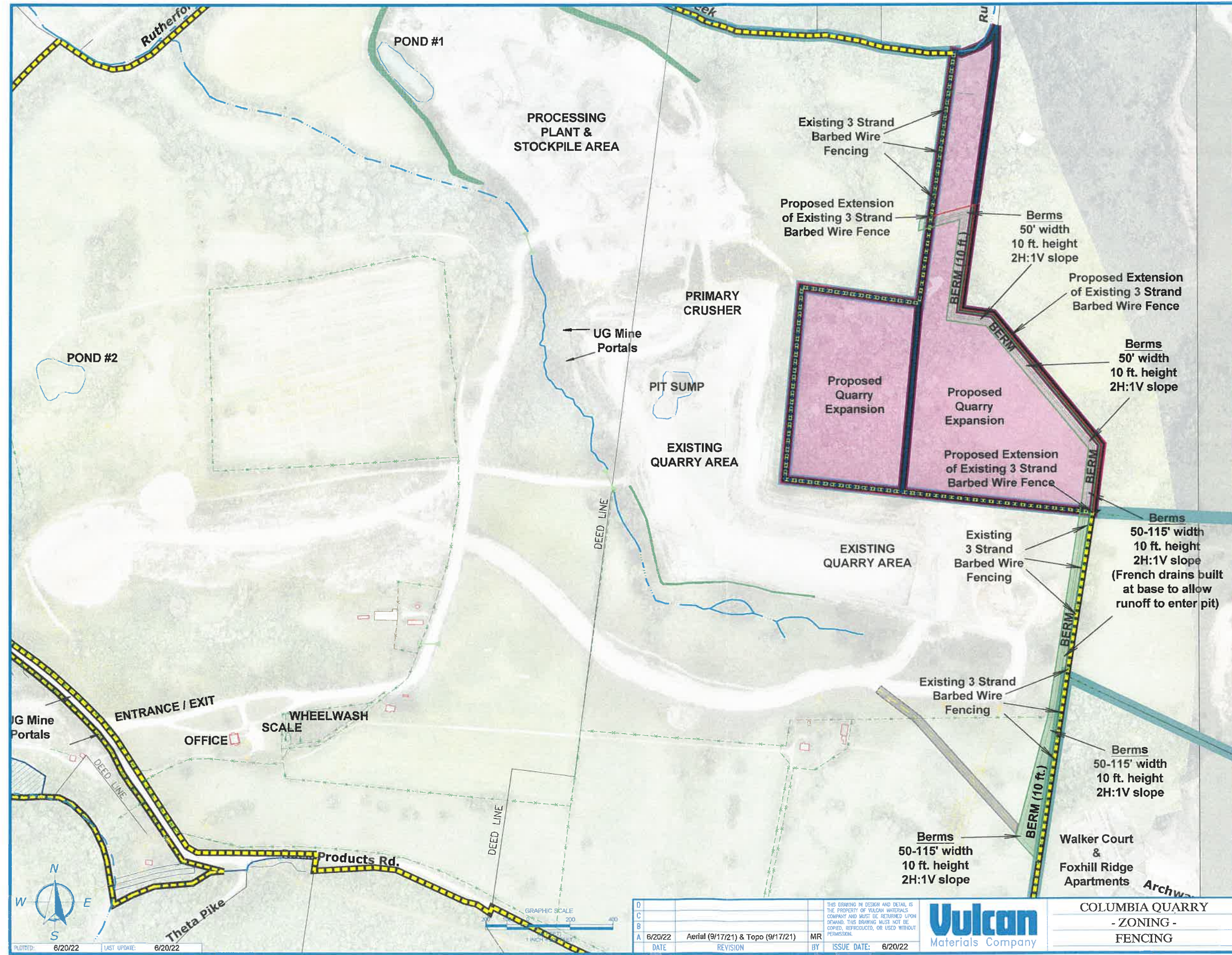
Site Location
MAURY COUNTY
COLUMBIA, TENNESSEE

LEGEND

- Property Lines
- Vulcan Owned Property
- Vulcan Leased Property
- City Limits
- Zoning Modification Area
- Ponds / Creeks / Streams
- Office / Scale House / Buildings
- Underground Mining Extents
- Prod. & Stripping Road Access
- Electric Utilities
- Berms
- Culvert
- Existing Fencing
- Proposed Fencing

Notes / Disclaimers

- Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
- Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
- Aerial Mapping shown hereon provided by Firmatek.
- Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
- The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
- Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D			
C			
B			
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MR
DATE		REVISION	BY
			ISSUE DATE: 6/20/22

THIS DRAWING IN DESIGN AND DETAIL IS THE PROPERTY OF VULCAN MATERIALS COMPANY AND MUST BE RETURNED UPON DEMAND. THIS DRAWING MUST NOT BE COPIED, REPRODUCED, OR USED WITHOUT PERMISSION.



COLUMBIA QUARRY
- ZONING -
FENCING

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
	CENTRAL DIVISION		
DRAWN BY	MR	DATE	6/20/22
CHECKED BY	JD	SCALE	1"=200'
JOB NO.	1222		
			Zoning - 06



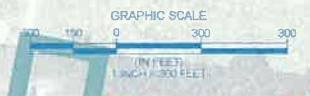
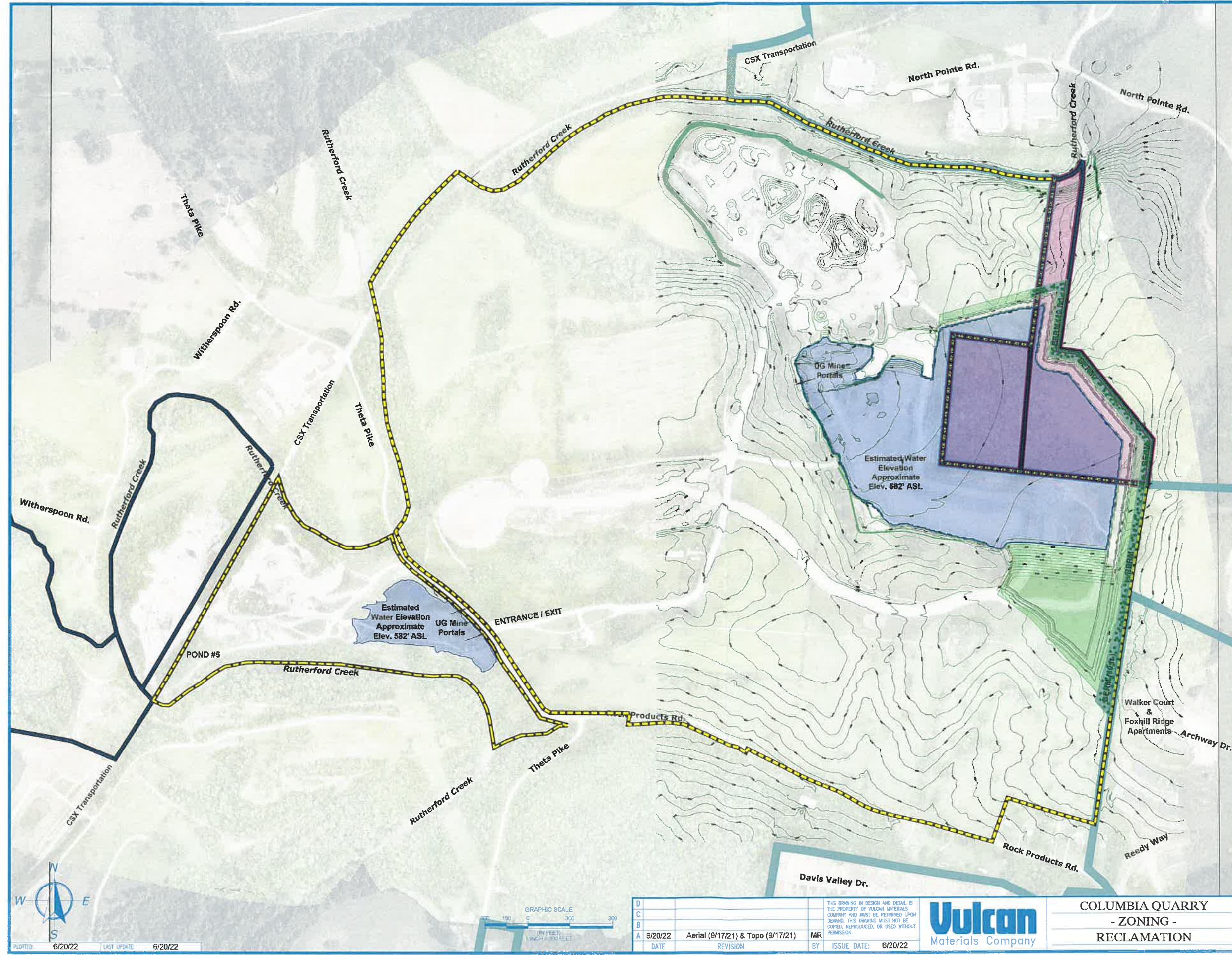
Site Location
MAURY COUNTY
COLUMBIA, TENNESSEE

LEGEND

- Property Lines ———
- Vulcan Owned Property ———
- Vulcan Leased Property ———
- City Limits ———
- Zoning Modification Area ———
- Quarry/Pit Boundary ———
- Ponds / Creeks / Streams ———
- Berms ———
- Contours (10 ft.) ———
- Trees/Vegetation *

Notes / Disclaimers

1. Property lines shown hereon provided by Civil and Environmental Consultants, LLC and Carroll Land Surveying.
2. Topography shown hereon provided by Firmatek in addition to State of TN Elevation LIDAR Project.
3. Aerial Mapping shown hereon provided by Firmatek.
4. Property lines and data shown hereon are provided for informational and planning purposes only and are not intended to be used for description, conveyance, and authoritative definition of legal boundary or property title.
5. The construction design for proposed overburden storage areas will be done using good engineering practices to ensure structure and slope stability while preventing slips / erosion. The location and configuration of the proposed overburden storage areas shown hereon are merely for information and planning purposes only.
6. Prior to any mining on site and placement of material in proposed overburden storage areas, Vulcan will obtain authorization for development from TDEC Division of Water - Mining Section.



D				
C				
B				
A	6/20/22	Aerial (9/17/21) & Topo (9/17/21)	MIR	6/20/22
	DATE	REVISION	BY	ISSUE DATE

THIS DRAWING IN DESIGN AND DETAIL IS THE PROPERTY OF VULCAN MATERIALS COMPANY AND MUST BE RETURNED UPON DEMAND. THIS DRAWING MUST NOT BE COPIED, REPRODUCED, OR USED WITHOUT PERMISSION.



COLUMBIA QUARRY
- ZONING -
RECLAMATION

DIVISION	VULCAN MATERIALS COMPANY	PLANT	#1222 - Columbia
	CENTRAL DIVISION		
DATE	6/20/22	DATE	JD
REV. NO.	1222	SCALE	1"=300'
UNGeologicalServices/PMC, Site#TennesseeColumbia_1222			

Zoning - 08

Vulcan Construction Materials, LP

**COLUMBIA QUARRY
SURFACE DRILLING & BLASTING
STANDARDS**

Vulcan Print Shop Form #2220

TABLE OF CONTENTS

	<u>PAGE</u>
I. SCOPE, APPLICATION, AND PURPOSE	1-2
II. SAFETY	3
III. BLAST DESIGNS	3
IV. DRILLING	4-11
A. DRILLING SUPERVISION	4
B. SHOT LAYOUTS	4-6
C. PRE-DRILLING INSPECTIONS	6-7
D. DRILL OPERATING PRACTICES	7-8
E. POST-DRILLING INSPECTIONS	8-9
F. GENERAL DRILLING SAFETY	9-10
G. ELECTRICAL HAZARDS	10-11
V. EXPLOSIVES	12-18
A. QUALIFICATIONS	12
B. INITIATION SYSTEMS	12
C. TYPE OF EXPLOSIVE	12
D. STORAGE OF EXPLOSIVES	12-14
E. ON SITE TRANSPORT OF EXPLOSIVES	14-15
F. ELECTRIC DETONATORS AND RF ENERGY HAZARDS	16
G. GENERAL HANDLING OF EXPLOSIVES	16-17
H. QUALITY CONTROL	17
I. AUGERS, STORAGE, HANDLING & MIXING SYSTEMS	18-19
VI. BLASTING	19-30
A. SURVEY	PRE-CHARGING 19-20
B. CHARGING PROCEDURES	20-22
C. BLAST MONITORING: SEISMOGRAPHS	22-23
D. BLASTING PROCEDURES	24-25
E. GENERAL SAFETY PRACTICES	25-27
F. SPECIAL BLASTING PRACTICES	27-28
G. POST-SHOT EVALUATION	27-31
VII. SAFETY AND ENVIRONMENTAL	32-33
A. SHOTGUARDING	31
B. HANDLING	COMPLAINT 32-33
C. ENVIRONMENTAL	33
APPENDIX A	



Randy Dies
*AREA MANAGER

12/14/2007
DATE

*It is recognized that different titles are used by the divisions for essentially the same position. In those cases where the titles shown on this page are not appropriate, then they should be changed to conform to the titles used by that division. In the event there is a change in the supervisor(s) signing this document, the newly appointed supervisor(s) shall sign a copy of this page acknowledging their familiarity and agreement with these Standards.

The following forms are included in these standards as examples:

Form A – Standard Blast Design (VMC-1981)

Form B – Quarry Standard Blasting Procedures (must be made quarry specific) (VMC-1979)

Form C – Vulcan Materials Company Drill Log (VMC-4117)

Form D – Vulcan Materials Company Blasting Report (VMC-3874)

Form E – Vulcan Materials Company Complaint Form (VMC-1969)

Form F – Blasting Checklist (VMC-2289)

Form G – Drilling and Blasting Standards Audit (VMC-2292)

The divisions may use substitute forms if they provide at least the same information that is requested in the samples.

Vulcan Materials Company
Surface Drilling & Blasting Standards
Designee List

1. Doug Britt
2. Mike Melson
3. Jimmy Denton
4. Phil Threet
5. Danny Sisk
6. Chad McCain
7. Barry Sims
8. Tim Reeves
10. Kevin Connors
11. Brandon Bournes
12. Brian Duke

- h. Types and quantities of explosives used.
 - i. The Standard Blast Design to be used.
4. If there are alternatives for the direction of the shot, choose the shot direction and face which minimizes the potential to cause injury or damage.
 5. Measurements will be taken to assure that the burden is correct on the front row of holes. The method to be used at this location is:
Burden Pole and/or laser profiler
The remaining holes will be laid out according to the approved blast design.
 6. Accurate measurement of the face height and determination of each hole elevation will be made so that the individual hole depth required is known. A level or other device should be used at least quarterly to determine actual ground elevations.
 7. Recognizing that a straight line of holes is the best condition for shot design, an effort will be made to ensure that the resultant face crest will be as straight as possible unless purposely planned otherwise.
 8. Each hole position will be marked by an elevated marker. The front row will be distinctively marked; subsequent rows will be distinctively marked differently than the front row. Angle holes should be uniquely identified.

At this operation, front rows will be identified by: Orange
Subsequent rows will be identified by: Blue
Angle holes will be identified by: Green
 9. The driller will ensure that the hole numbers on the drill log correspond with the numbers on the shot diagram.
 10. Holes with light burden and/or poor relief will be minimized, noted and reported to the Plant Superintendent. The shot loading will be customized to conform to the burden.
 11. Before persons work near the outside edge of a highwall, a distinguishing marker, tape or painted line will be placed no less than 7 feet from and parallel to the highwall edge. In the case of unstable ground due to cracks, etc., the marker will extend no less than 7 feet from the edge of unstable ground.
 12. Persons laying out or inspecting shots, checking burden, loading holes, or performing any other work on foot will tie off with a safety harness and lifeline if the marker is crossed. Lifeline length will be shorter than the distance to the edge. Self-retracting lifelines are acceptable.
 13. For fall prevention, lifelines will be attached to secure anchorages capable of supporting 3 times the weight of persons using them. For fall arrest, anchorages must support 5,000

pounds per person. Persons may tie off to equipment that is locked out as follows provided the lifeline is short enough to prevent falling off the wall:

- a. Turn engine off.
- b. Place tag on steering column stating: Do Not Operate.
- c. Transmission is in park or gear.
- d. Tied off person has ignition key.
- e. Park brake is engaged.
- f. Wheels are chocked.
- g. Vehicle is parked a safe distance from the edge, on stable ground, and in a parallel position to the highwall.

C. PREDRILLING INSPECTIONS

1. No person will operate, or allow to be operated, any drill rig for which that person has not been specifically trained. Trainees must be under the direct supervision of a qualified operator.
2. No person will operate, or allow to be operated, any drill rig, which is known to be in an unsafe working condition.
3. Drillers will inspect their rigs at least at the start and end of every shift and, in particular, ensure that:
 - a. The brakes are in good working condition.
 - b. The clutch or transmission is in good working order.
 - c. Any required safety guards, chains, or other devices are in position.
 - d. Dust control equipment is operating properly.
4. Before commencing work, the driller will make and record a thorough examination of the work place for potential hazards. These hazards shall be secured or removed. The hazards to be considered include, but are not limited to:
 - a. Loose, unconsolidated material in the face area, which will not adequately support the weight of the drill.
 - b. Mud, snow, ice or an unlevel site that may create a sliding hazard.
 - c. Debris, uneven ground, or other obstructions that might hinder drill movement.

- b. The drill crew will remove themselves and their equipment from the pit to a safe area as determined by the Plant Superintendent or their designee and blaster in charge.
 - c. The drill crew will not enter the Blast Area until the all-clear signal has been given, the smoke has cleared, and all the debris has been removed to provide safe re-entry.
2. At the end of the shift, the drill must be parked in a safe position and chocked. Unless unavoidable, the drill must not be left within 50 feet of the face and the drill steel will not be left in the hole overnight.
 3. Drillers that are employees of VMC must conduct an end ofshift inspection of the drill. Defects in the drilling equipment affecting safety will be brought to the attention of the drilling supervisor and corrected prior to being put back in service.
 4. If a Vulcan-owned drill is to travel on public highways, the drill must be road worthy and in compliance with all Department of Transportation (DOT) requirements. Any individual who operates a drill on a public highway will obtain all licenses required by local, state, and DOT regulations before such operation. Drills should be cleaned of loose stone or other debris prior to traveling on a public highway.
 5. Prior to leaving the shot, the driller will remove all used drill materials from the blast site (i.e., drill bits, grease cans, etc.).

F. GENERAL DRILLING SAFETY

1. No person, including the operator, will ride on the drill unless it is specifically designed by the manufacturer to carry passengers. Any person riding in or on a drill will wear seat belts as required by regulation.
2. In any situation where the drill operator is unable to see clearly the area in which he is operating, a helper (drill spotter) will be provided to ensure that the drill can be positioned safely.
3. No drill will be operated under a highwall where the face cannot be visually examined due to obstructions or overhangs.
4. If the driller will be away from the drill for less than 30 minutes, the drill steel will be raised to a level such that it can be secured. If the driller is to be away from the drill for more than 60 minutes, the drill steel will be removed from the hole and the drill shut down.
5. When moving between holes, when tramming, and when parked, the mast of the drill will be fully lowered to the cradle position. The only exception will be when the manufacturer has specifically designed the drill to be moved with the mast raised and only when conditions permit.

6. The locking bar must be inserted into the rod storage rack before lowering the mast. Make sure when raising the mast that air lines, hydraulic lines, and hoist cables do not become snagged during raising. If there are any overhead obstructions, do not raise the mast.
7. Effective dust and noise controls must be utilized for drilling to proceed.
8. The drill head is not to be used as an elevator.
9. Do not stand under the drill or rotation head where danger could arise if the hoist chain snapped.
10. Do not re-collar any previously loaded hole.
11. During loading, if it is necessary to clear out or re-drill a fresh hole, a clear and safe path must be cleared for the drill. No fresh holes will be drilled within 50 feet of loaded holes, or 30 feet if the perimeter of the loaded hole is demarcated with a barrier.
12. When required, lifelines worn by the drill crew must be used in a manner that prevents possible contact with rotating or moving components.
13. When pumping fuel into the drill, observe at all times the fill opening to prevent overflow.
14. To avoid disturbance of blast hole location markers and drill cuttings around blast holes, the only vehicles that will be permitted on a drill site are those associated with the drilling or blasting operation.
15. The drill operator will ensure that there is no loose equipment, clothing, or other material in the cab or at the drill controls that would interfere with the operation of the controls.
16. During the hours of darkness, no drill will be operated under a highwall or on the front row of holes on a highwall unless adequate lighting is provided.
17. Drill brake systems will be steam cleaned and inspected monthly. Brake airlines on truck drills will be replaced in accordance with manufacturer's recommendation.
18. Drillers will not wear any loose clothing, jewelry, or have exposed long hair that may become tangled with rotating elements of the drill.
19. Drillers are required to obey all traffic rules.

G. ELECTRICAL HAZARDS

1. Overhead Electrical Lines

Always LOOK UP when tramming or parking the drill. Overhead wires are not a normal hazard in the pit and may be forgotten when the drill is moved out of its normal working environment. Do not park under overhead lines. Prior to operating around overhead electrical lines, consult the local utility for the minimum operating distance, which should be maintained.

current federal regulations, and the division Managers of Safety and Health shall be responsible for communicating the current federal, state and local regulations to the plant supervisors.

3. The keys to magazines that contain a vendor's explosives will be in the exclusive custody of such vendor. All magazines that contain Vulcanowned explosives will be under the direct control of a person at least 21 years of age, specifically appointed by the plant supervisor for that purpose. The keys for such magazines will be in the custody of the plant supervisor(s) or their designated person(s).

Name: Brian Duke, Andy Sanders, Jr.

Address: 580 Theta Pike, Columbia, TN 38401

Telephone No.: (931) 388-7254

4. Detonators, class "C" explosives, and blasting agents will be stored separately in accordance with applicable regulations (see Title 27, Code of Federal Regulations, Part 555, Subpart K, and IME Publication #14, Part II Storage).
5. Magazines will be separated in accordance with applicable federal, state and local regulations.
6. The overall location of the magazines will be in accordance with the distances required from buildings and highways in the vicinity.
7. The construction and locking mechanism of the magazines will be as required by applicable federal, state and local regulations, and no sparking metal will be present in the magazine where it could come into contact with explosives. Padlocks for all magazines and explosive storage facilities shall be changed each time there is a change in the designated custodian of the keys pursuant to Paragraph 3, above. Padlocks for all magazines and explosive storage facilities shall be changed annually. All Type 5 and similar bulk storage bins and tanks must have ATFE approved security measures or be granted the proper variances from that agency.
8. Approaches to the magazines will be adequately posted with signs to warn unauthorized persons.
9. All explosive storage sites must be fenced, and secured according to any applicable federal, state, and or local requirements. The fence must be chain linked, at least 6 feet high, and grounded.
10. Distribution of explosives from magazines will be controlled so that the stock is regularly rotated.
11. During periods of inactivity at a quarry exceeding thirty (30) days (other than inactivity due to normal, seasonal shutdowns), explosives will not be stored at a quarry. All entrances to the quarry will be securely locked when the quarry site is unattended.
12. A visual inspection of the magazines will be conducted each work day.

13. Except when explosives are being issued or returned, the magazines will be kept locked at all times. All explosives in day boxes shall be returned to magazines at the end of each work shift during which the explosives are used.

14. Explosives will be stored in permitted facilities with notification to the local police and fire departments, as required. Any theft or loss of explosives will be reported immediately to the local police department and the Federal Bureau of Alcohol, Tobacco & Firearms. At this operation, the contacts to be made are:

POLICE: 911

ATF: #1800-800-3855

DIVISION: 423-718-5646 (24 hour)

15. Any intended change in location or type or any other modification of a magazine will be reported to, and approval will be received from, the division Manager of Safety and Health in order to ensure compliance with applicable laws and Company policies before the change is implemented.
16. The Plant Superintendent will designate two competent persons to keep a record of daily summary transactions for each Vulcan owned magazine. Each daily summary will contain a record of the manufacturer's name or brand name, the total quantity received in and removed from each magazine during the day, and the total remaining on hand at the end of the day. The persons designated at this facility are:

N/A

N/A

Any shortage of explosives materials will be reported immediately to the Plant Superintendent, Area Manager and Vice President in charge of that operation. Simultaneously, the ATF and other appropriate agencies will be notified.

17. The Plant Superintendent will be responsible for seeing that an annual explosives inventory is conducted for Vulcan owned magazines in accordance with Federal and State regulations.
18. All powder and cap magazines and day boxes must be kept dry, clean and orderly. No other materials, supplies, or equipment may be stored in or around the magazines or day boxes. All explosives and caps must be stored in their original boxes and have a lid and label showing the code date of manufacture.

E. ON SITE TRANSPORT OF EXPLOSIVES

1. Company vehicles will not be used to transport explosives on public highways.

3. Clear the Blast Area and implement blasting procedures before using transmitters to coordinate blasting operations.
4. When transporting electric detonators:
 - a. Keep them in their original containers because the wires are coiled or folded to effectively guard against current induction.
 - b. Use an IME-22 container since the barrier laminate construction includes a layer of steel or sheet metal to shield electric detonators from RF energy. (or)
 - c. Transport electric detonators in a closed metal box that is lined with wood (MSHA requires detonators to be separated from explosives by 4 inches of hardwood or equivalent or a laminated partition as per IME-22 standards).
5. Avoid large loops in blasting wiring by running lead wires parallel to each other and close together. Keep wires on the ground in blasting layouts. Elevate bare connecting points slightly to prevent current leakage. Keep lead lines out of the beam of directional devices such as radar or microwave relay stations.
6. Cellular Telephones – Keep cell phones at least 8 feet from a blasting circuit to prevent physical contact with detonator wires or the leads of a blasting circuit. Cover charging jacks or points to prevent direct contact with a detonator or blasting circuit.
7. Radar – Do not use electric detonators at facilities located near airports or military installations using radar unless the potential hazard is investigated and experts agree that such use is safe.

G. GENERAL HANDLING OF EXPLOSIVES

1. At all times, explosives will be handled with care and respect. Dropping, sliding or any rough handling will be avoided.
2. Explosives will be handled in shipping containers as required by regulation.
3. At any one time, only sufficient amounts of explosive will be handled to meet the immediate requirements of the shot being charged.
4. Explosives will not be left unattended at any time.
5. Immediately after charging operations are concluded, all surplus explosives will be returned to the magazine.
6. No person within 50 feet of explosives will be permitted to smoke or carry smoking materials or flame producing devices.
7. Where Vulcan owns and stores explosives, only ATF designated “responsible persons” can sign for explosive purchases.

8. When contract blasting is performed, Vulcan employees are not permitted to handle explosives, detonators or boosters during the loading of a shot. Vulcan employees may assist with the stemming process under the supervision of the explosive blaster.

H. QUALITY CONTROL

1. AGE

As explosive performance deteriorates with age, the following practices will be followed:

- a. Detonators will be purchased and used from the same batch number when at all possible. The date code on detonator boxes will be spot checked by the Plant Superintendent or designee to ensure this practice is being enforced.
- b. Package explosives and boosters will be used within one year of manufacture. No explosives will be brought to the site that have exceeded these criteria.

2. DENSITY

Upon request, or when a problem is perceived by the Superintendent or designee, the delivered or packaged density of a product will be checked to that of the manufacturer's data sheet by the supplier. The same applies during bulk loading. Deviations from the specification will require notification to Vulcan and corrective action by the supplier.

3. ANFO/FUEL OIL CONTENT

Upon request, or when a problem is perceived by the Superintendent or designee, ANFO samples should be tested by the supplier to check fuel oil content. The sample should be 6% plus or minus 1/2% fuel oil. Deviations from the specification will require notification to Vulcan and corrective action by the supplier.

4. PRILL FRAGILITY

Upon request, or when a problem is perceived by the Superintendent or designee, a sample of prills should be taken and sieved by the supplier. There should not be greater than 10% prills passing 20 mesh. Deviations from the specification will require notification to Vulcan and corrective action by the supplier.

5. DOT SENSITIVITY TESTS

Upon request, the supplier will supply the results of periodic standard DOT sensitivity tests on blasting agents verifying that results are within DOT's acceptable limits.

I. AUGERS, STORAGE, HANDLING & MIXING SYSTEMS

7. Charging will be carried out according to the shot diagram prepared in the pre-blast survey. No significant changes will be made without the approval of the Plant Superintendent or if absent, the designee.
8. Charging operations will be carried out in a sequence that will allow safe detonation of all charged holes if charging operations must be terminated before the whole round is charged.
9. Do not drive over loaded holes with any type of vehicle.
10. The loading of explosives into the hole will be measured continuously with a tape to ensure proper column rise and to avoid high concentrations of explosives in cavities.
11. When loading bulk materials, if a cavity is discovered or if explosives accumulate in a cavity, all operations will cease until the situation has been reviewed by the Plant Superintendent or if absent, the Area Manager.
12. In unconsolidated material, use the depth of planned stemming, plus 50% of the depth of loose material for stemming depth. In any case, the depth of stemming should not be less than the unconsolidated material.
13. Care will be taken that the correct stemming is maintained. If explosives are placed higher in the hole than planned, no stemming will be placed in that hole until the situation is reviewed by the Plant Superintendent or if absent, the Area Manager.
14. Blaster is responsible for directing stemming operations and ensuring that persons performing stemming have proper instructions and follow correct procedures. Document the task training on the appropriate MSHA Task Training Form.
15. Before the shot is detonated, setbacks will be placed to indicate the burden of the next shot. At this operation, painted rocks will be used for setbacks.
16. In the event that special or extraordinary precautions are required to ensure that a blast can be carried out safely, the blast will not be detonated without the approval of at least the Area Manager.
17. All holes will be charged, empty containers removed, unused explosives and detonators accounted for and removed, spilled blasting agents cleaned up, and nonessential personnel cleared from the site before any surface initiator is attached to a down line.
18. After the surface connections are complete, the blaster in charge will perform a visual and physical check of the whole circuit to ensure that all holes are connected; that the correct delays and connections have been made; and that any delay elements are pointing in the right direction. When electric detonators are used, continuity and resistance tests of the detonators and/or blasting circuit shall be performed as required by federal, state, and local regulations. Non electric systems shall be inspected and the connections taped, or otherwise effectively marked as inspected.

19. All surface delays and connectors, unless otherwise designed, will be covered to minimize noise and surface line cutoff.
20. The shot detonator will not be connected to the blast lead line until the working area is cleared and Blasting Procedures are in effect.
21. Except for testing, blasting line shall be kept shunted until immediately before blasting. The Blaster shall check this before charging begins.
22. Where electric caps are used, continuity testing of the total blasting circuit and detonator will not take place until the working area is clear and Blasting Procedures are in effect.
23. When the shot is charged, the blast site must be adequately guarded until the shot is detonated.
24. Only approved non sparking powder punches will be used to install the cap in the primer stick.

C. BLAST MONITORING: SEISMOGRAPHS

1. Seismograph reading(s) will be completed for every shot. All seismic monitoring performed for compliance purposes will be done by a third party consultant. The consultant should have technical support staff to include but not limited to: geophysicists, engineers, and seismologists. 10 years field monitoring experience is preferred.
2. The acceptable practices employed for seismograph utilization will conform to the standards outlined in the International Society of Explosive Engineers handbook under the section titled, "Blast Vibrations and Seismograph Section—Proposed Field Guidelines" (Ref. ISEE Blaster's Handbook 1998 – Appendix K pp. 731-734).
3. The monitoring locations for seismographs will be determined by considering the following criteria:
 - a. Site-specific geologic characteristics and/or unique geologic structures.
 - b. At neighboring structures as designated by VMC personnel such as the Plant Superintendent, Business Relations Manager, division technical staff or other designated personnel within the division.
 - c. Following a complaint to determine validity.
 - d. Following a significant change in a blast design parameter.
 - e. Where mandatory based on local or state regulations.
4. GENERAL REQUIREMENTS:

- c. Radio remote blasting machines should be considered as a way of removing blasters from the blast area when initiating shots. If used, the following precautions should be taken: do not make connection with caps until the blast area is cleared, and the machine should not be powered on until the blaster has reached a safe position to initiate the shot. Blaster must confirm it is safe to power remote blasting unit on.
- d. Sufficient sentries have been safely posted so that all danger areas can be monitored and persons prevented from having inadvertent access to the Blast Area.
- e. All required notification to residents or others has been made.
- f. Any monitoring device is in position and operating.
- g. Radio contact is set up to ensure constant communication with the blaster and any other personnel involved in the shot.
- h. A siren warning signal will be given by the Plant Superintendent or their designated representative. This warning signal must be heard throughout the affected area.

The siren warning sequences for this location are:

Blast Initiation: Three (3) Short Alarms
All Clear: One (1) Long Alarm

OR: The warning sequences for this location are:

Blast Initiation: Same as above

All Clear: Same as above

(Exceptions to this procedure require Division President approval per page 1.)

- i. Authorization to shoot will be given by radio contact from the Superintendent or the designated representative directly to the blaster. The Superintendent or the designated representative will announce a warning such as "initiating countdown," and radio silence will be maintained for 10 seconds allowing the blast to be suspended if necessary. The Superintendent or the designated representative will then announce a warning such as "fire in the hole" and the shot will be detonated.
- j. No sentry will leave a post, or any person leave a position of shelter, until the shot has been checked for misfired and undetonated explosives as outlined by the Post Shot Evaluation guidelines and an all-clear has been given by the blaster.

- 2. The specific blasting procedures to be followed at this operation are to be stated on FORM B, and copies of this form are to be displayed at all appropriate notice boards.

E. GENERAL SAFETY PRACTICES

- 1. All smoking materials must be extinguished prior to entering the Blast Site. No flame producing devices are permitted within 50 feet of any explosive.
- 2. When using electric or non-electric detonators, loading procedures must stop when static electricity or stray current is detected. Loading shall be suspended upon the approach of any electrical storm, and personnel shall be withdrawn from the Blasting Area.
- 3. Avoid blasting in areas with sources of extraneous electrical current.
- 4. When measuring hole depth with a weighted tape, the weight must be of non-sparking material.
- 5. Detonating cord shall not be used if it has been kinked, bent sharply, or handled in such a manner that the train of detonation may be interrupted. Any damaged detonating cord should be disposed of properly.
- 6. Care will be used in the handling and use of shock tube to ensure it is not bent, crushed, caught on or struck by vehicles, or pulled in a manner that could cause premature detonation.
- 7. Electric detonators of different brands will not be used in the same shot.
- 8. The cap wire must be threaded through the primer and looped around so that the wire provides support when lowering the primer into the borehole. The detonator must be contained securely and completely within the explosive charge or within a suitable tunnel or cap well. If the detonator is stuck in the primer, do not try to pull it out or force it into the primer.
- 9. Do not attempt to clear plugged primer holes. Only wooden or non-sparking implements shall be used to make holes in an explosive cartridge. Do not tamp directly on a primer.
- 10. When using electric detonators, only a blasting galvanometer or blasting multimeter shall be used to test the continuity of each blasting cap in the borehole prior to the addition of the stemming. The blasting galvanometer should not be laid on the ground. An improperly functioning unit could create a safety hazard by giving a false reading. At no time should an electrician's multimeter be used.
- 11. Tamping poles shall be made of wood or other material acceptable to MSHA.

- b. Sections of a shot that generate flyrock.
 - c. Movement of each row in the shot and the effectiveness of timing.
 - d. Abnormal shot behavior.
 - e. Abnormal plume characteristics.
2. VIDEOTAPE
- All reasonable effort, when practical, should be made to record shot results, utilizing unmanned remote video equipment, to promote continuous improvement. Video should be retained for a maximum of 30 days, unless otherwise directed.
3. MUCK PILE
- a. Inspect the blast area for any detonation gases and note the color and area of origin.
 - b. Examine the muck pile for obvious misfires and undetonated explosives.
 - c. Examine the muck pile distribution. This includes height, size of fragmentation, location of oversized material, etc.
 - d. The condition of the resulting wall and crest for backbreak, backshatter, etc.
4. MISFIRES
- a. A misfire has occurred when there is a complete or partial failure of explosive material to detonate as planned.
 - b. When a misfire is suspected, persons shall not enter the Blast Area:
 - 1. For 1 hour when using cap and fuse; or
 - 2. For 30 minutes if electric caps or electronic initiators are used; or
 - 3. For 15 minutes if any other type detonators are used.
 - c. Only approved and necessary personnel to remove a misfire shall be permitted in the Blast Area until the misfire has been disposed.
 - d. The Blast Area will be guarded or barricaded and posted or flagged to prevent unnecessary personnel or equipment from entering the Blast Area. During the hours of darkness, the existence of a misfire will require guarding as well as posting or flagging the Blast Area.

- e. The Superintendent, Area Manager and Safety Manager will be notified immediately in order to assess the existing conditions and develop a plan for resolution.
 - f. If a surface or down hole delay is recovered, which is suspected to have potentially caused the misfire, do not cut portions of the shock tube but send the entire cap, tube, date and shift codes to the manufacturer for failure analysis. The cap manufacturer should be notified to determine the proper procedure for returning the cap(s).
 - g. Do not pull with excessive force on the shock tube of surface or down hole delays since a snapping of the tube could result in static electricity sufficient to set off the blasting cap resulting in detonation of the remaining explosives.
 - h. The explosive manufacturer should be contacted to determine the best method to dispose of any undetonated explosives. This would include methods to recover and/or desensitize the explosives or to detonate the misfire in place.
 - i. If it is determined to detonate the misfire in place, all open faces should be checked for burden with a laser profiler, burden pole, or other effective means. If existing burden or stemming is insufficient to prevent flyrock, material should be placed in front of the open face(s) as well as on top of the shot if necessary. The re-established burdens should be rechecked with a laser profiler to ensure adequate burden exists prior to detonation.
 - j. If using cap and fuse, never re-light the fuse. It is essential that the hole be reprimed.
 - k. No attempt will be made to detonate misfired explosives without approval of the Vice President in charge of that operation or their designee.
 - l. If misfired explosives are not detonated or desensitized within 72 hours, the Division Safety Representative shall notify the appropriate MSHA office.
 - m. If explosives are desensitized or removed, the original Blasting Report will contain the appropriate documentation. If the misfired explosives are detonated, the original Blasting Report will be prepared for all explosives detonated in the original shot and an additional Blasting Report will be prepared for the detonation of the misfire.
 - n. The appropriate Blasting and Blast Monitoring Procedures will be implemented for detonation of a misfire.
5. RESIDUAL POWDER
- a. If residual powder is found during the loading process, loading should cease and the muck pile and face should be thoroughly inspected to determine if any unfired caps or boosters could be found.

VII. SAFETY AND ENVIRONMENTAL

A. SHOTGUARDING

1. Each plant should maintain a list of neighbors who should be contacted prior to blasting, and all neighbors on that list will be contacted prior to the blast. A log shall be maintained for each neighbor contacted.
2. If special circumstances dictate telephone contact and it cannot be achieved, a personal visit by supervisory personnel must be made.
3. Designated roads and highways will be blocked and cleared prior to firing.
4. Verbal verification by all personnel acting as sentries that no third parties are within the Blasting Area and all neighbors have been contacted must be obtained prior to shot firing. All shot guarding personnel must be in radio contact at all times.
5. The FORM B document outlines the shot guarding procedure at this operation.

B. COMPLAINT HANDLING

1. The method to be used for handling complaints is given below:
 - a. Record the date and time the complaint is received on an approved division complaint form; also record the name, address, and phone number of the person making the complaint.
 - b. Record the date and time the shot was allegedly detonated per the complainant.
 - c. Record the date and time of the blast that was closest to the date of the complaint.
 - d. Each division should determine the procedure to be followed for initial and follow-up visits to complainant's property.
 - e. Record specifics of the complaint, including the type of complaint, the structure allegedly damaged, the part of the structure allegedly damaged, exterior versus interior damage, and type of damage (e.g., wall cracks, broken windows, items falling off cabinets/shelves, etc.). Have the complainant describe every item/content of the structure that was allegedly damaged. The correct form for this operation is shown on FORM E.
 - f. Record a brief history of the structure allegedly damaged, including age, construction, etc.
 - g. Send copies of the completed complaint report, shot report, and seismograph record to the designated division operations and staff personnel.
 - h. Obtain seismic information to determine the validity of the complaint.

2. All completed complaint reports and any difficult-to-handle situations will be sent/notified to designated division representatives. In this division, that is:

Division Safety and Health Department

3. Ensure that all personnel in contact with the public about blasting concerns are sufficiently educated to adequately explain initial questions from neighbors and to address initial complaints. Also, educate plant clerical staffs about the importance of proper record keeping for blasting related activities.
4. Any media requests should be directed to the appropriate division media contact. At this location, the contact is: Division Safety and Health. If a blasting incident results in fly rock, injury, or property damage, the Corporate Incident Notification Team must be notified promptly.

C. ENVIRONMENTAL

1. Details concerning on-site explosive storage should be included in the Emergency Response Information provided to local authorities.
2. No burning or on-site disposal of old explosives is to be done on company property. Old explosives will not be disposed of off site except in accordance with all local, state, and federal regulations. At this operation, the disposal method will be:

As Mandated by the SPI
3. Any explosives shipped off-site for disposal will be properly manifested.
4. Old explosives must be disposed of according to specifications set by the manufacturer.
5. Any empty boxes, bags, etc., from blasting activities must be disposed of by the blasting company, or explosives supplier. The blasting company or explosives supplier must ensure that the materials are disposed of in a manner that does not violate federal, state, or local laws or regulations.
6. Ammonium nitrate, in combination with cement and water, will produce vast quantities of ammonia gas. The storage of ammonium nitrate and cement in the same area is prohibited.

Table 3

**Recommended Distances of Mobile Transmitters
Including Amateur and Citizens' Band
MINIMUM DISTANCE (Feet)**

Transmitter Power (Watts)	MF 1.6 to 3.4 MHz Industrial	HF 28 to 29.7 MHz Amateur	VHF 35 to 36 MHz Public Use 42 to 44 MHz Public Use 50 to 54 MHz Amateur	VHF 144 to 148 MHz Amateur 150.8 to 161.6 MHz Public Use	UHF 450 to 470 MHz Public Use Cellular Telephones Above 800 MHz
1	15	47	37	12	8
5	33	105	82	27	18
10	46	148	116	38	25
50	102	331	259	85	55
100	144	468	366	120	78
180 (2)	193	627	491	161	104
200	204	661	518	170	110
250	228	739	579	190	123
500 (3)	322	1045	818	268	174
600 (4)	353	1145	897	294	190
1,000	455	1,478	1,157	379	245
1,500(5)	557	1,810	1,417	464	300
10,000 (6)	1,438	4,673	3,659	1198	775

Citizens Band, Class D Transmitters, 26.965 MHz (Channel 1) - 27.405 MHz (Channel 40)

Type	Recommended Minimum Distance	
	Hand-Held	Vehicle-Mounted
Double Sideband – 4 watts maximum transmitter power	5 ft.	65 ft.
Single Sideband – 12 watts peak envelope power	20 ft.	110 ft.

- (1) Power delivered to antenna.
- (2) Maximum power for two-way mobile units in VHF (150.8 or 161.6 MHz range) and for two-way mobile and fixed station units in UHF (450 to 460 MHz range).
- (3) Maximum power for major VHF two-way mobile and fixed station units in 35 to 44 MHz range.
- (4) Maximum power for two-way fixed station units in VHF (150.8 to 161.6 MHz range).
- (5) Maximum power for amateur radio mobile units.
- (6) Maximum power for some base stations in 42 to 44 MHz band and 1.6 to 1.8 MHz band.

Madison C. Haynes

Attorney
mhaynes@bradley.com
615.252.2383 direct



July 12, 2022

City of Columbia

RE: Application No. 22-0183 – Conditional Use (Extractive Use)
Tax Map 66, Parcels 20.25 and 20.26

Dear Austin,

Our firm represents Vulcan Construction Materials, L.P. and its subsidiaries (collectively, “Vulcan”) in connection with its conditional use permit application seeking to allow expansion of an existing mining facility in the City of Columbia. Vulcan respectfully wishes to seek a one-month deferral of its application in order to consider the conditions proposed in the Board of Zoning Appeals Staff Report.

Sincerely,

A handwritten signature in blue ink that reads "Madison C. Haynes". The signature is fluid and cursive, written over the typed name and title.

Madison C. Haynes
Attorney

MCH

Enclosure