



January 26, 2021

John R. Aultman, P.E.
Vulcan Materials Company, LLC
201 Brown Road
Piedmont, S.C. 29673-8513

RE: Approval of Application and Reclamation Plan for a Mine Operating Permit
Issuance of Mine Operating Permit I-002297
Fairfield Quarry, Fairfield County

Dear Mr. Aultman,

The S.C. Department of Health and Environmental Control (DHEC) has approved the application and reclamation plan for the Fairfield Quarry as of January 26, 2021. DHEC has approved the reclamation bond submitted in the amount of \$1,171,500.00.

With the receipt of the reclamation bond and the approval of the application and reclamation plan, this letter serves as official notification that the Mine Operating Permit for the Fairfield Quarry is being issued as of the date of this letter. This permit will become effective after fifteen (15) days from the date of issuance unless otherwise noted. Enclosed are the permit document, reclamation plan, and mine and reclamation maps.

A guide to board review outlining the procedure for requesting a final review is enclosed. Should there be any questions or if we may be of further assistance, please do not hesitate to contact the project manager, Jeremy Eddy, at 803-898-7609 or by e-mail at eddyje@dhec.sc.gov. Mr. Eddy is also the mine inspector for quarries.

Sincerely,

Joseph M. Koon, Section Manager
Mining and Reclamation Section
Division of Mining and Solid Waste Management

cc Jeremy Eddy – BLWM
Brett Caswell – BOW
Mareesa Singleton – BOA
Jeffrey Phillips – MSHA (Phillips.Jeffrey@dol.gov)
Jason C. Taylor, Fairfield County (jason.taylor@fairfield.sc.gov)
Craig Kennedy, Consultant (craigkennedy.kcs@gmail.com)



S.C. Department of Health and
Environmental Control

MINE OPERATING PERMIT

PART I:

Fairfield Quarry Vulcan Materials Company, LLC

Vulcan Materials Company, LLC, a corporation, has been granted a Mine Operating Permit, Mine Permit Number I-002297, to operate the Fairfield Quarry in accordance with the S.C. Mining Act (S.C. Code Sections 48-20-10 *et seq.*, 1976) and Regulations 89-10 *et seq.* The operator shall conduct this operation as represented in documents submitted to support the issuance of this permit.

JOSEPH M. KOON, MANAGER
MINING AND RECLAMATION SECTION
DIVISION OF MINING AND SOLID WASTE MANAGEMENT

PERMIT NUMBER: I-002297
ORIGINALLY ISSUED: January 26, 2021
MODIFIED: N/A

In accordance with Section 48-20-60 of the South Carolina Mining Act, this Mine Operating Permit will remain valid unless it terminates as set forth in R.89-270 or is revoked in accordance with Section 48-20-160 and R.89-280. The anticipated mining completion date is shown on the *Schedule for Conservation and Reclamation Practices* in the *Reclamation Plan*.

The approved *Permit Application*, *Reclamation Plan*, and all supplemental information referenced herein, are an integral part of this permit. *Land Entry Agreements and Mine Maps* as identified in Part II and Part IV, respectively, are also a part of this permit.

I-002297

Vulcan Materials Company, LLC

Home Office Address: Vulcan Materials Company, LLC
201 Brown Road
Piedmont, S.C. 29673-8513

Local Office Address: Same as Home Office Address

Address for Official Mail: Same as Home Office Address

Company personnel and title to be the contact for official business and correspondence [South Carolina Department of Health and Environmental Control (DHEC) should be notified in writing immediately of any change in contact, address, telephone or fax numbers]:

John R. Aultman, PE	Telephone: 864-299-4785
Manager of Environmental Services	Email: aultmanj@vmcmail.com

LOCATION: The mine is located on the Flint Hill, SC U.S.G.S. 7.5' Topographic Map. The approximate geographic coordinates for the site are:

Latitude: 34.3886

Longitude: -80.9732

DESCRIBE LOCATION: The operation is located in Fairfield County, approximately 6.5 mile(s) east of Winnsboro, S.C. Specifically, the site is located less than one mile east of the I-77 Exit 41 on Old River Road (S-20-41).

Part II: MINE OPERATIONS

Vulcan Materials Company, LLC, also referred to as the operator, is permitted to mine granite at the Fairfield Quarry. The maximum depth to the pit floor will be 400 feet below ground surface (to an approximate elevation of -30 feet mean sea level) measured from the lowest ground surface elevation. Mining will take place on a portion of a tract of land leased by the referenced operator. This tract of land is identified in the submitted *Land Entry Agreements* (LEAs).

MINE/PIT CHARACTERIZATION:

The granite will be excavated, processed, and stockpiled on site. Ground clearing will be accomplished by heavy machinery (e.g., backhoe, excavator, bulldozer). Removed overburden will be placed in permanent storage areas at locations designated on the mine map. The exposed granite will be drilled, explosives loaded, and blasted to fragment stone into manageable sizes to facilitate loading in haul trucks and crushing by the primary crusher. Stone passing through the primary crusher will be transported to the processing plant by haul trucks for further processing. Only Quarry Pit Area Phase I (as shown on the mine map) is approved for excavation; any extension into Phase II will require a modification to this mine operating permit.

PROCESSING PLANT LOCATED ON MINE SITE:

The processing plant will consist of primary and secondary crushers, screens, conveyors, and loading and hauling machines. Waste screenings and other fines from crushing, washing, and screening the crushed stone will be stockpiled around the plant site or placed in overburden storage areas.

MINE DEWATERING:

Due to groundwater seepage from natural fractures/joints in the host rock, quarry dewatering will be necessary when the pit floor extends below the water table. Additionally, where feasible, stormwater runoff shall be diverted into the pit, collected into the sump, and discharged in the same manner as groundwater. Water discharged from the pit to a receiving stream must be discharged through an outfall regulated by an NPDES permit.

If the operator receives a complaint concerning adverse impacts to neighboring wells, the operator is to notify DHEC's Manager of the Mining and Reclamation Section, Columbia, SC, within 48 hours. After investigation, if DHEC determines dewatering activities at the mine are affecting a drinking water well or water supply well, the operator shall be responsible for repairing, deepening, or re-drilling such wells. Until a permanent water supply is re-established, the operator shall supply the owner with a temporary water supply (e.g., bottled water for drinking, provisions for laundry).

Active pumping and discharge of water shall cease if the dewatering discharge causes flooding conditions to property downstream of the mine site.

See Part X: *Additional Terms and Conditions #7 and #8.*

BLASTING:

Blasting is permitted at this site. Blasting activities shall be conducted in accordance with R.89-150.

Pursuant to R.89-150A., the operator shall conduct a pre-blast survey on inhabited structures within one-half mile of any blasting, prior to the commencement of any blasting activities. The survey shall be completed by a third-party consultant and a copy of the report sent to DHEC, the operator, and the landowner. Upon receipt of the required pre-blast survey(s), DHEC will then grant permission to begin blasting activities.

Pursuant to R.89-150E., the operator shall report any suspected incident of flyrock outside of the permitted area resulting from blasting operations. Pursuant to R.89-150J., the operator shall report if the peak particle velocity exceeds one (1.0) inch per second at the immediate location of any dwelling not owned by the operator (or where a waiver of damage has been submitted to DHEC). These incidents shall be reported to DHEC within 24 hours of the blast, and a written report shall be submitted to DHEC within five (5) business days.

Pursuant to R.89-150H., the operator shall maintain a minimum distance of 250 feet from contiguous property boundaries when conducting blasting. Additionally, pursuant to R.89-150I., the operator shall maintain a minimum distance as shown on the approved mine map between the nearest point of blasting and any structures not owned by the operator (at the time of the completed application date) or where a waiver of damage has been submitted to DHEC.

See Part X: *Additional Terms and Condition #9.*

SIGNIFICANT CULTURAL OR HISTORICAL SITES:

Two reports, *Cultural Resources Identification Survey Weyerhaeuser Tract Fairfield County, South Carolina* (S&ME, 2019) and *Cultural Resources Survey of the Fairfield Quarry Tract, Fairfield County, South Carolina* (Brockington, 2019) have been submitted to the State Historic Preservation Office. All archaeological sites and isolated finds are not eligible for listing in the National Register of Historic Places. No significant cultural or historical sites have been identified. Note Part X: *Additional Terms and Conditions #1* of this Mine Operating Permit.

VISUAL SCREEN:

To appropriately screen the operation from view, the operator shall maintain a minimum 100ft. undisturbed buffer between mining activity and all property lines.

NOISE MONITORING AND CONTROL: The operator shall use Best Management Practices (BMPs) to minimize noise from the mine site. These noise BMPs shall include, at a minimum, proper maintenance of mufflers on equipment (trucks, trackhoes, pumps, etc.) and consideration of special buffering measures if planning to operate equipment during nighttime hours.

OTHER STATE OR FEDERAL PERMITS: The operator must obtain, maintain, and update, as appropriate, all necessary State and Federal permits in order to construct and operate the mine.

LAND ENTRY AGREEMENTS: The operator is required to furnish and maintain up-to-date *Land Entry Agreements* on all lands covered under this permit. Any change in ownership on any portion of land covered by this permit, the operator is responsible for furnishing the appropriate and completed *Land Entry Agreements* (Forms MR-600 or MR-700) to DHEC within 30 days of the change of ownership.

Land Owner(s) as Listed on *Land Entry Agreement(s)*:
A portion of TMS #: 110-00-00-004.000, Weyerhaeuser Company

Total acres of the contiguous tract(s) of land for which the permit is granted:

OWNED 0.0 LEASED 924.1 TOTAL 924.1

Part III: PERMITTED LAND

This permit allows the operator to conduct mining operations within the permitted land as defined through the *Land Entry Agreement* submitted as part of the application. Permitted land as defined by Section 48-20-40(18) is "the affected land in addition to (a) lands identified for future mining to become affected land; (b) and undisturbed or buffer area that is or may become adjacent to the affected land." Therefore, this permit grants the operator the right to conduct active mining operations within the specified affected land, delineate land for future mine areas as future reserves, and to establish undisturbed buffer zones to mitigate any adverse effects to the surrounding environment.

AFFECTED LAND: 201.8 acres of land are to be affected by Vulcan Materials Company, LLC under the current mine plan; 201.8 of the affected acres are currently bonded. The affected acres are derived from the operator's response in the *Application for a Mine Operating Permit* and are shown on the approved mine map(s).

FUTURE RESERVES: 522.9 acres are identified as future reserves and are specified on the mine site map. Prior to the initiation of activity in future reserves, the operator shall submit detailed mine and reclamation plans to DHEC for approval.

BUFFER AREAS: 199.4 acres are identified as buffer area, setbacks, or areas that will not be disturbed beyond the pre-mine natural state. These buffer areas are identified on the mine site map. Acres designated as buffer areas are not bonded under the reclamation bond. Any activity within the buffer areas (e.g. removal of timber) shall require **prior** notification and approval by DHEC.

TOTAL PERMITTED AREA: 924.1 acres as submitted on the *Land Entry Agreement(s)*.

Part IV: MAPS

The mine site maps were prepared by synTerra. These maps are further identified with the following SCDHEC map numbers and are part of the operating permit:

SM-2297-1V1	Mine Map	Dated: February 19, 2020
SED-2297-1V1	Erosion and Sed Control	Dated: February 19, 2020
SED-2297-2V1	Erosion and Sed Control	Dated: February 19, 2020

The reclamation maps were prepared by synTerra. These maps are further identified with the following SCDHEC map numbers and are part of the operating permit.

RM-2297-1V1	Reclamation Map	Dated: February 19, 2020
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Part V: RECLAMATION BOND

The Reclamation Bond is based upon the total affected acres. Pursuant to Section 48-20-70 and R.89-200, the reclamation bond for this mining permit is set at \$1,171,500.00. The reclamation bond shall remain in force and continuous throughout the life of the mining operation and shall only be released, partially or in full, back to the operator after the operator has completed reclamation in accordance with the approved *Reclamation Plan* and the minimum standards in R.89-330.

Part VI: PROTECTION OF NATURAL RESOURCES

1. Describe the area of and around the mine site. Specify topography, surface water systems, wildlife habitats, residential houses, commercial properties, recreational areas, and/or public roads.

Prior to mining activities, this site's land use type was managed timberland; the immediate area around this site is mostly managed timberland with a few rural residences, mainly to the east. The topography of this area is moderately variable (i.e., several hills and dales), with surface elevation ranging from 300 - 475 ft. MSL. This site is bordered on the west by Horse Branch Creek and on the south and west by an unnamed tributary to Horse Branch Creek. Several smaller tributaries flow across the site. Horse Branch Creek flows to the north and eventually connects to Lake Wateree. Common wildlife typical to this area can be found in and around this site; there are no threatened or endangered species believed to inhabit this area.

2. Methods used to prevent physical hazards to persons and to any neighboring dwelling, house, school, church, hospital, commercial or industrial building, or public road.

A gate shall be installed at the entrance to the mine site and kept locked during inactive periods. *Warning* and/or *Danger* signs shall be posted around the perimeter of the property.

Operator shall use BMPs to prevent accumulation of sediment/soil on public roads carried by trucks and other vehicles exiting the mine site; any accumulations shall be removed by the operator on a daily basis or more frequently if needed. To reduce the potential of trackout on public roads, the operator shall construct a crushed stone "mud mat" or paved road that extends the width of the haul road and stretches a minimum of one hundred (100) feet in length.

The operator shall establish a protected area or establish procedures to minimize fuel spillage or incidental spillage of other petroleum products during storage, refueling of equipment or in the performance of routine maintenance on equipment. Contaminated materials resulting from contact with petroleum products shall be removed from the site and disposed of properly to prevent contamination to ground and surface water resources.

3. Methods used to prevent an adverse effect on the purposes of a publicly owned park, forest, or recreation area.

There are no publicly owned parks, forests, or recreation areas near this mine site.

4. Measures taken to insure against substantial deposits of sediment in stream beds or lakes.

The operator shall comply with the Erosion and Sediment Control Plan (SED-2297-1V1 and SED-2297-2V1), NPDES General Permit for Non-metallic Mineral Mining, and the Stormwater Pollution Prevention Plan developed for the mine.

5. Measures taken to insure against landslides or unstable mine walls.

To maintain stable mine walls, the unconsolidated saprolite shall be sloped to a stable configuration no steeper than 2H:1V during active mining. Per the Mine Safety Health Administration (MSHA) requirements, the hard rock pit walls shall be benched to maintain stability and provide safety.

6. Measures taken to insure against acid water generation at the mine site that may result in pollution on adjacent property.

Acid water is not anticipated to be generated from the oxidation of existing minerals currently found on this site.

7. Measures taken to minimize or eliminate fugitive dust emissions from the permitted area.

The mine operator will use appropriate measures (e.g. water truck, dust suppressants) to control fugitive dust created by moving equipment along haul roads. The operator, where feasible, shall establish vegetation in non-active mine areas barren of vegetation to stabilize the soil and reduce potential for wind erosion and dust emissions.

Part VII: STANDARD CONDITIONS OF MINE OPERATING PERMIT

1) SURVEY MONUMENTS: In accordance to R.89-130, the operator shall install and maintain the two required permanent survey monuments, or control points, within the permitted area as shown on the mine site map. At the discretion of DHEC, the operator may be required to mark the area to be affected with flagging or other appropriate measures.

2) RIGHT OF ENTRY: Pursuant to Section 48-20-130 and R.89-240, the operator shall grant DHEC and/or duly appointed representatives access to the permitted area for inspection to determine whether the operator has complied with the reclamation plan, the requirements of this chapter, rules and regulations promulgated hereunder, and any terms and conditions of this permit.

3) RECORDS RETENTION: All records are to be maintained through additional terms and conditions of this permit or by regulations. Records shall be kept on site or at the office identified for receipt of official mail and open for inspection during normal business hours. The records shall be maintained for a minimum of three (3) years or as specified by DHEC. The operator shall furnish copies of the records upon request to DHEC.

4) PERMIT MODIFICATIONS: Pursuant to Section 48-20-80, the operator may modify the permit and/or *Reclamation Plan* upon approval by DHEC. Requests for permit and/or *Reclamation Plan* modifications may be made to DHEC on Form MR-1300. The operator shall submit any requested supporting data for consideration during DHEC's evaluation of the modification request. If a modification request is determined to be substantial by DHEC, the modification request will be public noticed pursuant to R.89-100 and a modification fee will be required as specified in R.89-340. If DHEC determines activities proposed under the *Reclamation Plan* and other terms and conditions of the permit are failing to achieve the purpose and requirements of the S.C. Mining Act and Regulations, DHEC shall notify the operator of its intentions to modify the permit and/or *Reclamation Plan* pursuant to Section 48-20-150.

5) TRANSFER OF PERMIT: Pursuant to Section 48-20-70, this permit may be transferred to another responsible party. The transfer of the permit must be conducted in accordance with R.89-230. The transferor of the permit will remain liable for all reclamation obligations until all required documents, plans, and the replacement reclamation bond have been submitted and approved by DHEC. The transfer will be considered complete when all parties have received notification by certified letters of the approval of the transfer by DHEC.

6) DURATION OF MINE OPERATING PERMIT: In accordance with Section 48-20-60, this Mine Operating Permit will remain valid unless this permit terminates as set forth in R.89-270 or is revoked in accordance with Section 48-20-160 and R.89-280. The proposed anticipated mining completion date is shown on the *Schedule for Conservation and Reclamation Practices* in the *Reclamation Plan*.

Pursuant to R.89-80(B), the operator shall conduct reclamation simultaneously with mining whenever feasible. Reclamation shall be initiated at the earliest practicable time, but no later than 180 days following termination of mining of any segment of the mine, and shall be completed within two years after completion or termination of mining on any segment of the mine.

Part VIII: ENFORCEMENT ACTIONS

Pursuant to Section 48-20-30 of the S.C. Mining Act, "DHEC has ultimate authority, subject to the appeal provisions of this chapter, over all mining, as defined in this chapter, and the provisions of the chapter regulating and controlling such activity." This allows DHEC to assist, cooperate with, or supersede other State agencies in taking enforcement action on violations of the State Regulations or violations of the S.C. Mining Act to ensure the purposes of this Act are enforced.

COMPLIANCE: The operator shall comply at all times with all conditions of this mine operating permit. Non-compliance with this mining permit, statute, or regulations could lead to permit revocation and bond forfeiture pursuant to Sections 48-20-160 and 48-20-170 or other enforcement action allowed by law.

Compliance with the Mine Operating Permit requires the operator to conduct the mining operation as described in the approved *Application for a Mine Operating Permit*. Variance from the *Application for a Mine Operating Permit*, this permit, statute or regulation, without first receiving DHEC approval, shall be deemed non-compliance with the permit.

An operator or official representative of the mine operator who willfully violates the provisions of the S.C. Mining Act, rules and regulations, or willfully misrepresents any fact in any action taken pursuant to this chapter or willfully gives false information in any application or report required by this chapter shall be deemed guilty of a misdemeanor and, upon conviction, shall be fined not less than one hundred dollars nor more than one thousand dollars for each offense. Each day of continued violation after written notification shall be considered a separate offense.

The operator is responsible for all mining activity on the permitted mine site.

Part IX: REPORTS

1) ANNUAL RECLAMATION REPORTS: The operator shall comply with Section 48-20-120 and Regulation 89-210 and submit an *Annual Reclamation Report* on Form MR-1100 as supplied by DHEC. The form for the report will be sent by regular mail to the operator to the mailing address shown on the previous year's *Annual Reclamation Report*. The operator should receive the report form from DHEC by July 1 of each year; however, the operator is ultimately responsible for obtaining the *Annual Reclamation Report* form and is not excused from penalty fees for failure to submit the report on time.

The Annual Operating Fee is a part of the *Annual Reclamation Report*. Failure to submit a complete *Annual Reclamation Report* and fee, in accordance with Section 48-20-120 and R.89-340, will result in a late penalty payment. The *Annual Reclamation Report* and Annual Operating Fee are required if there is any permitted land not fully reclaimed and released by DHEC by June 30 of each year.

2) SPECIAL REPORTS: DHEC may at any time request information, data, or explanations from the operator as to conditions relating to the permitted mine site. Such requests from DHEC shall be made in writing to the operator with an appropriate time frame stated for the submittal of the requested information to DHEC. The operator must produce the information requested within the timeframe specified by DHEC.

Part X: ADDITIONAL TERMS AND CONDITIONS

1. If archaeological materials are encountered prior to or during the construction of mine facilities or during mining, the S.C. Department of Archives and History and DHEC should be notified immediately. Archaeological materials consist of any items, fifty years or older, which were made or used by humans. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, oyster shell, worked wood, bone and stone, metal and glass objects, human skeletal remains, and concentrations of charcoal and stones below the ground surface. These materials may be present on the ground surface and/or under the surface of the ground.

2. Temporary or permanent placement of refuse and debris (e.g., concrete, brick, asphalt) from off-site locations is prohibited without approval by DHEC. Topsoil fill approved by DHEC may be brought in from off-site sources only for the purposes of mine land reclamation.

3. In the future, if determined to be necessary by DHEC, an appropriate fence will be installed around the affected area.

4. The operator shall maintain a minimum 75ft. undisturbed buffer between all land disturbance activity and any USACE jurisdictional wetlands or delineated stream channels. This buffer shall be permanently flagged prior to the initiation of any mine activity. The flags shall be maintained throughout the active mine operation of the site. The operator is allowed to discharge accumulated stormwater—that meets NPDES permit limits—into wetlands through a regulated NPDES outfall.

5. Before entering into Future Reserves, a wetland and stream channel delineation—certified by the USACE—must be completed prior to any land disturbance activity. A copy of the delineation map and the USACE certification must be received and approved by DHEC.

6. An MR-1300, revised mine map, reclamation map, and reclamation schedule must be submitted and approved by DHEC prior to initiating any mining activity in Future Reserves.

7. Prior to any dewatering activities, four groundwater monitoring wells shall be constructed in the areas delineated on map SM-2297-1V1. The monitoring wells shall be installed by a certified well driller in accordance with R.61-71: *Well Standards and Regulations*. The surveyed elevation of the measuring point, relative to an established benchmark, must be submitted with the driller/geologist's log for each well.

Groundwater monitoring wells shall be measured monthly. Groundwater elevations shall be normalized to mean sea level. The report should include a record of monthly precipitation measurements. These data shall be submitted quarterly to the Division of Mining and Solid Waste Management by the 28th of the first month following the quarter via e-mail to miningreports@dhec.sc.gov and/or by physical mail.

8. An inventory of all water wells for domestic or agricultural purposes within the pre-blast survey area shall be conducted prior to the initiation of mining. Additional inventories at a greater distance from the pit may be required during mining if deemed necessary by DHEC. The information collected at each well shall be used to establish the existence, condition, and productive use(s) of the well. The inventory shall include the following information where available, as able to be determined without opening the well, and as access is allowed by the property owner:

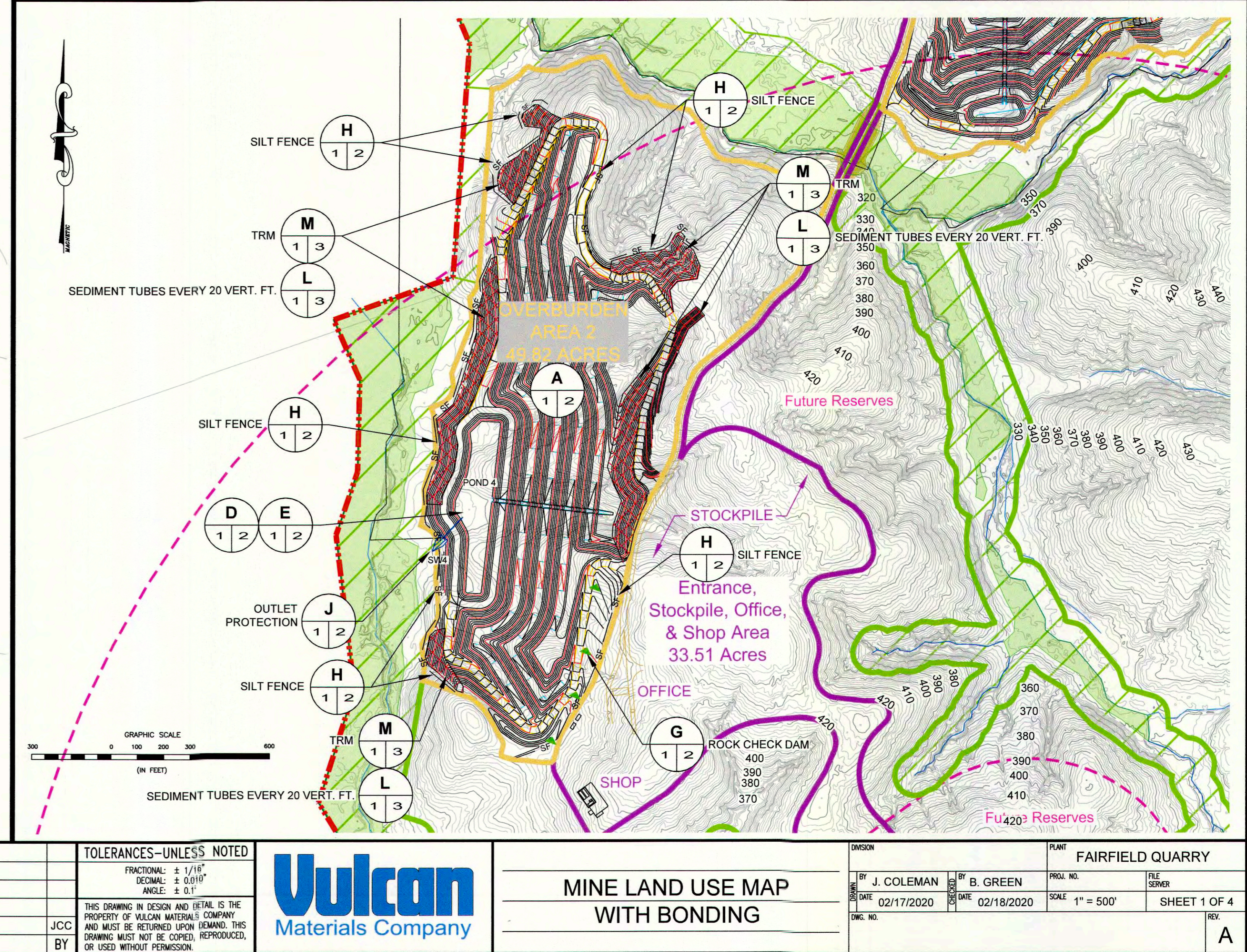
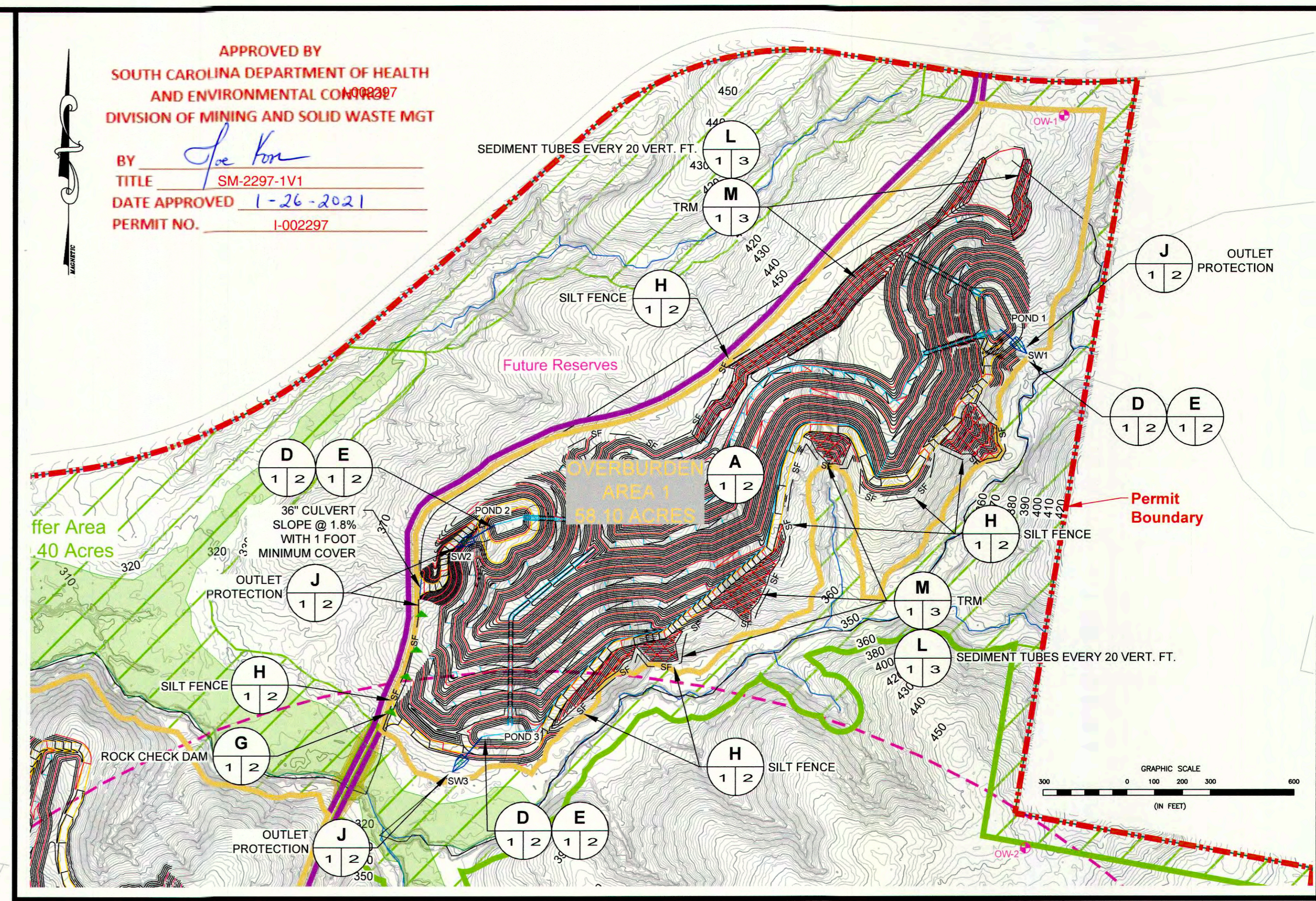
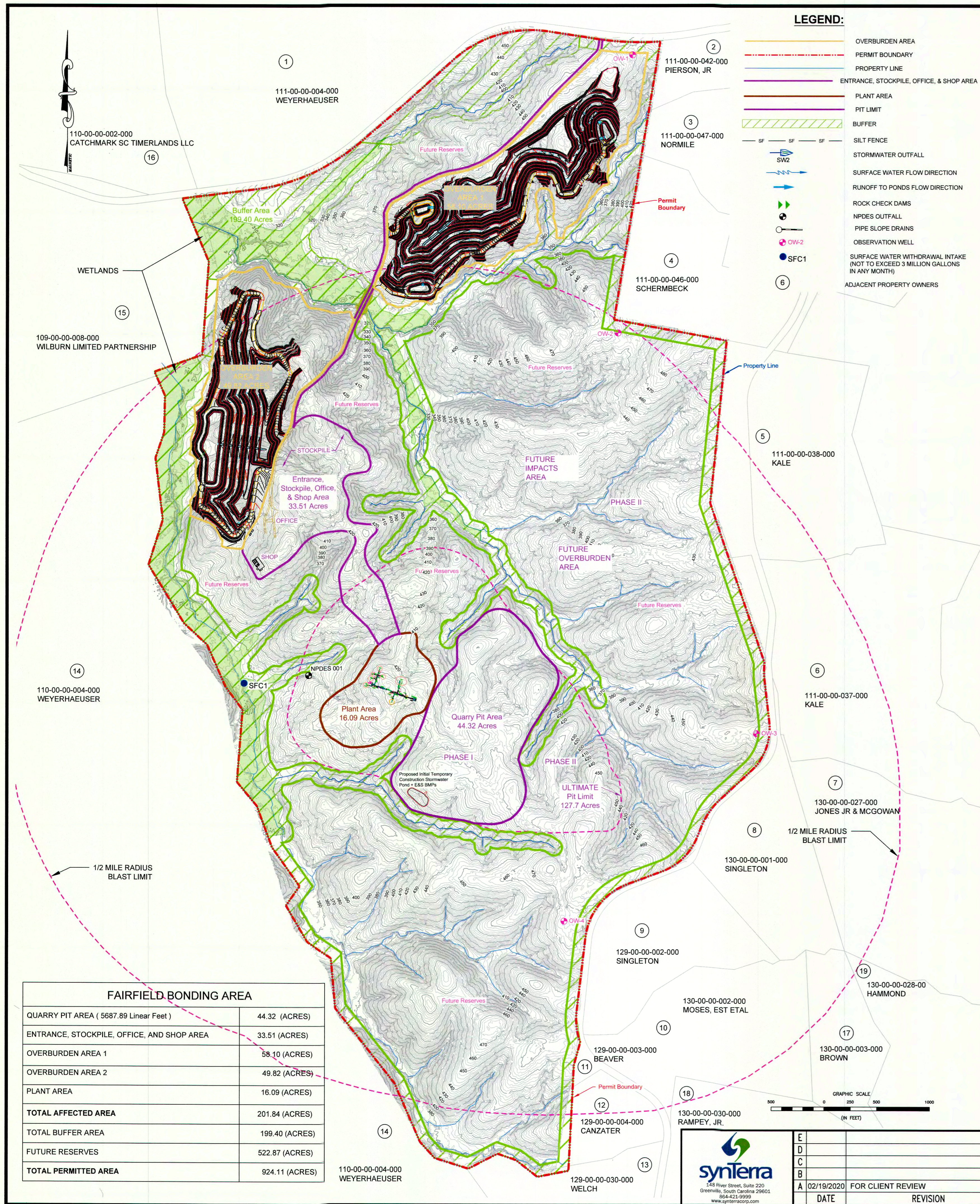
- A. Location of well.
- B. Name and address of property owner, use of the well water, use of property.
- C. Well completion details as documented from drillers logs or DHEC well form 1903.
- D. Pump details such as type and depth as documented.

9. At no time is flyrock permitted to fall outside the permitted area. Any instance of flyrock falling outside the permitted area shall be reported to DHEC within 24 hours and a written report sent to DHEC within five (5) business days.

APPENDIX A

MODIFICATIONS TO MINE PERMIT I-002297

NUMBER	DATE	DESCRIPTION OF MODIFICATION (PA= Permitted Acreage; AA= Affected, Bonded Acreage; FR= Reserves Acreage, B= Buffer Acreage)
Initial	1/26/21	Permit issued; PA = 924.1ac., AA = 201.8ac., FR = 522.9ac., B = 199.4ac.



E			
D			
C			
B			
A	02/19/2020	FOR CLIENT REVIEW	JCC
DATE		REVISION	BY

TOLERANCES—UNLESS NOTED

FRACTIONAL: ± 1/16"
 DECIMAL: ± 0.010"
 ANGLE: ± 0.1°

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MINE LAND USE MAP WITH BONDING

DESIGN	BY J. COLEMAN	DATE 02/17/2020	FILE SERVER	PRJ. NO.	SCALE 1" = 500'	SHEET 1 OF 4	REV. A
PLANT	BY B. GREEN	DATE 02/18/2020	FILE SERVER	PRJ. NO.	SCALE 1" = 500'	SHEET 1 OF 4	REV. A

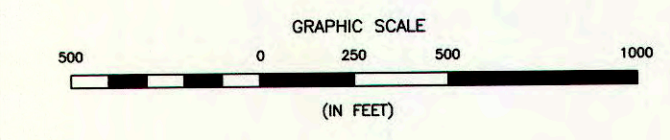
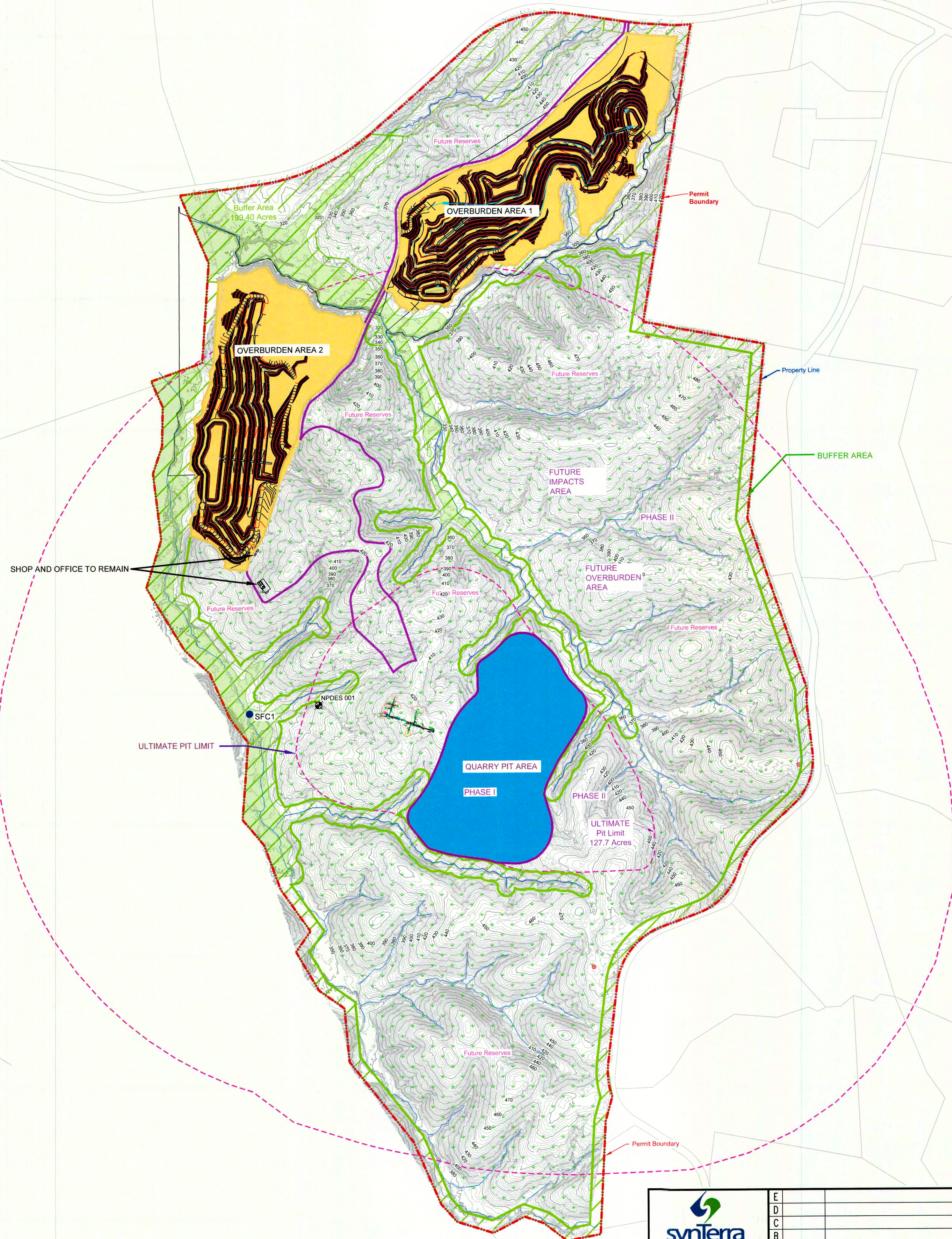
APPROVED BY
SOUTH CAROLINA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL CONTROL
DIVISION OF MINING AND SOLID WASTE MGT

BY J. Coleman
TITLE RM-2297-1V1
DATE APPROVED 1-26-2021
PERMIT NO. I-002297



LEGEND:

- OVERBURDEN AREA
- PERMIT BOUNDARY
- PROPERTY LINE
- PIT LIMIT
- AFFECTED LAND
- AREAS WHERE SURFACE GRADIENT OF NO STEEPER THAN 3H:1V WILL BE ACHIEVED BY GRADING AND WILL BE VEGETATED WITH GRASS.
- FUTURE POND AREA
- AREAS WILL BE VEGETATED WITH GRASS
- BUFFER AREA



E			
D			
C			
B			
A	02/19/2020	FOR CLIENT REVIEW	JCC
	DATE	REVISION	BY

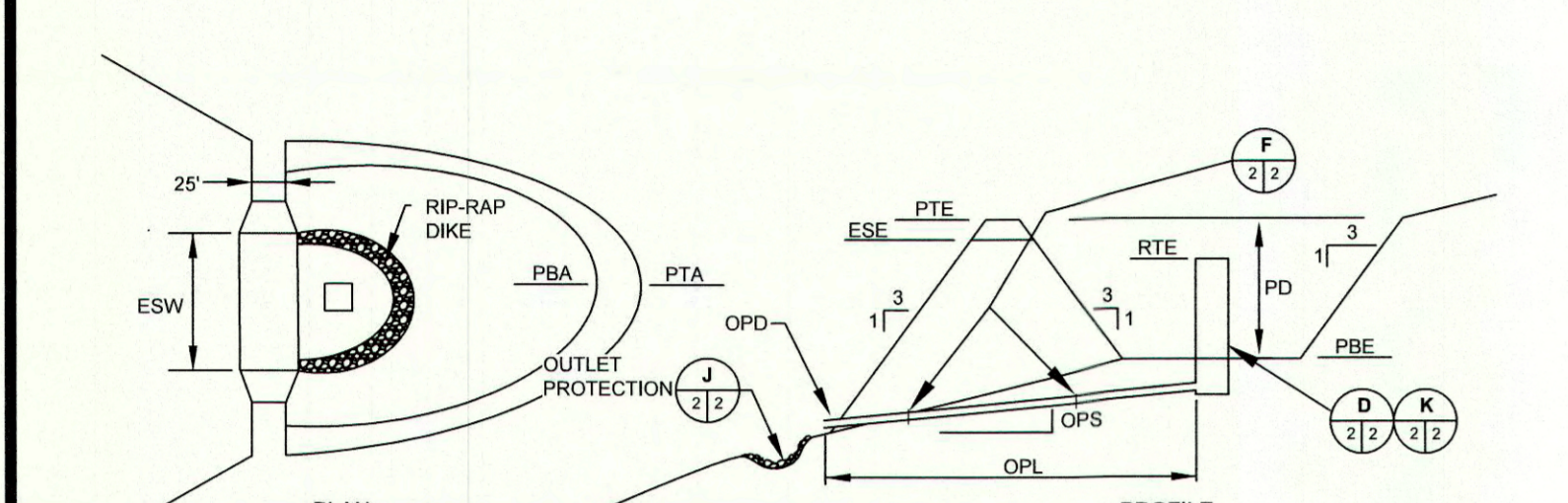
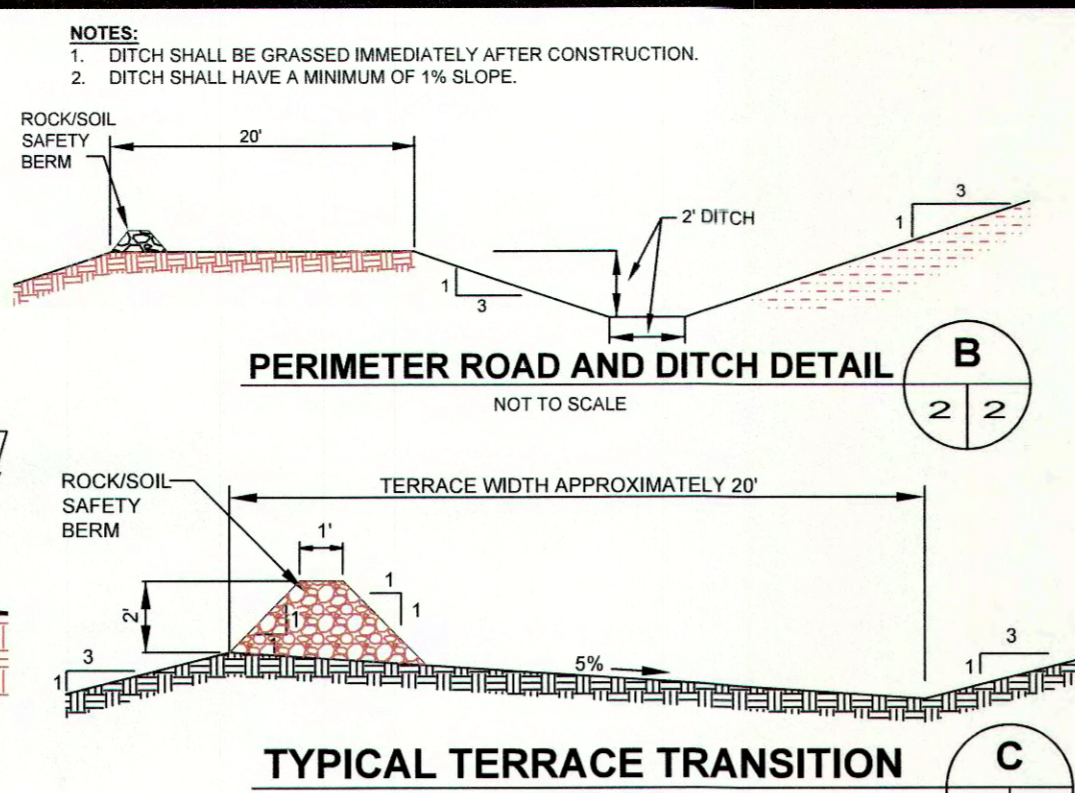
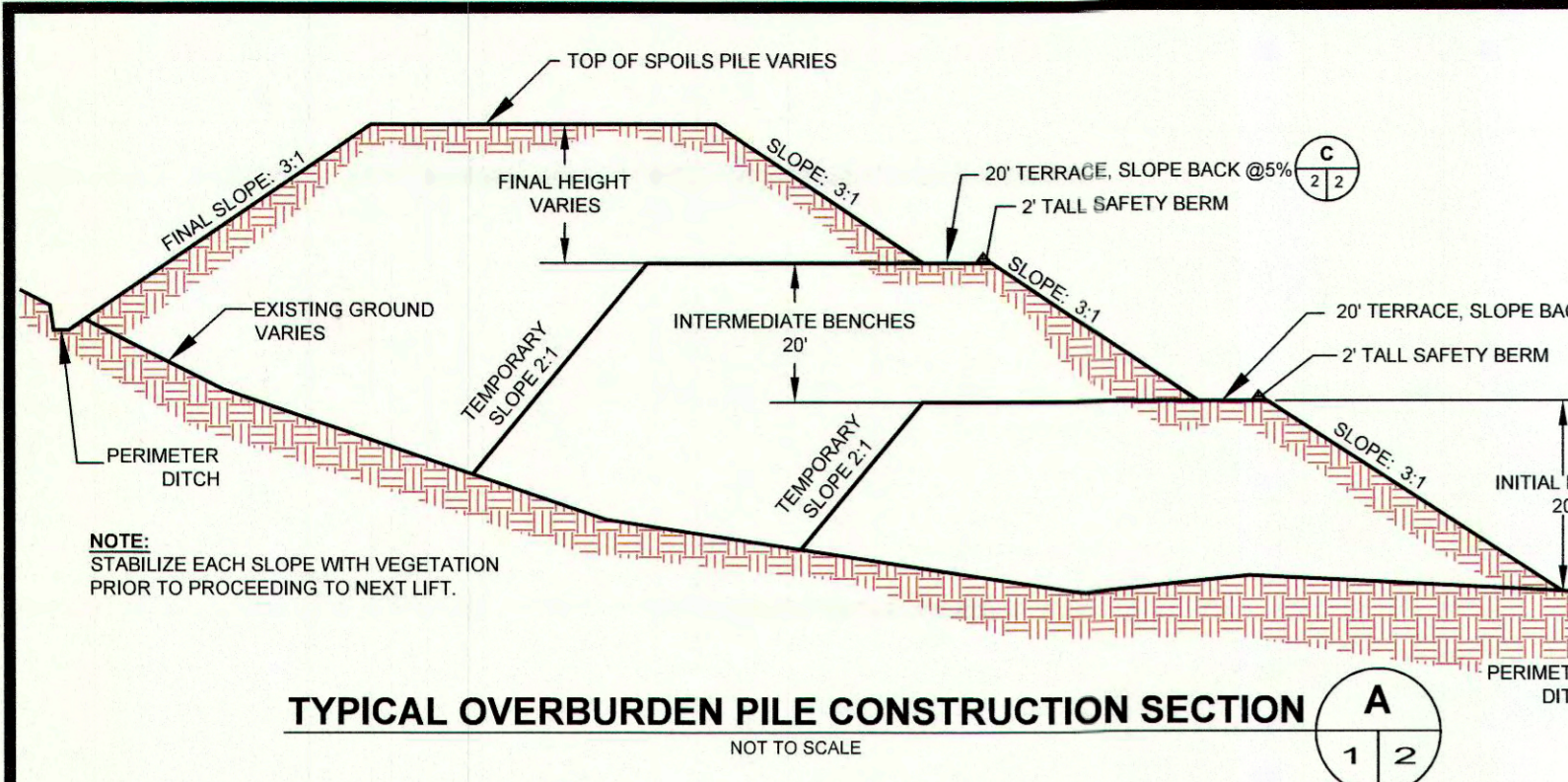
TOLERANCES—UNLESS NOTED
 FRACTIONAL: ± 1/16"
 DECIMAL: ± 0.010"
 ANGLE: ± 0.1°

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RECLAMATION MAP

DIVISION		PLANT	
BY J. COLEMAN		FAIRFIELD QUARRY	
DATE	02/18/2020	BY	B. GREEN
DATE	02/19/2020	SCALE	1" = 500'
DWG. NO.		FILE	SENKER
		SHEET	4 OF 4
		REV.	A



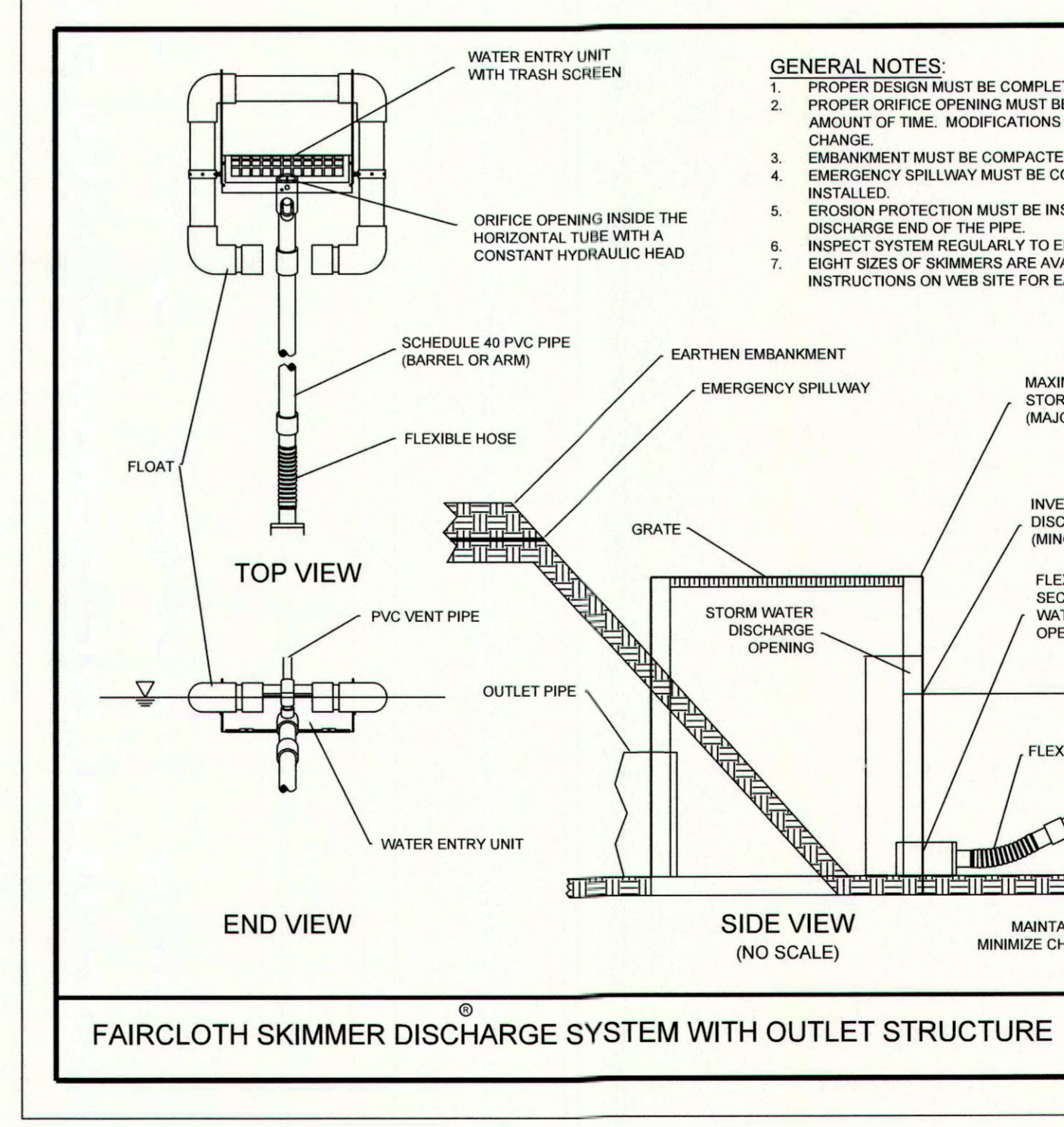
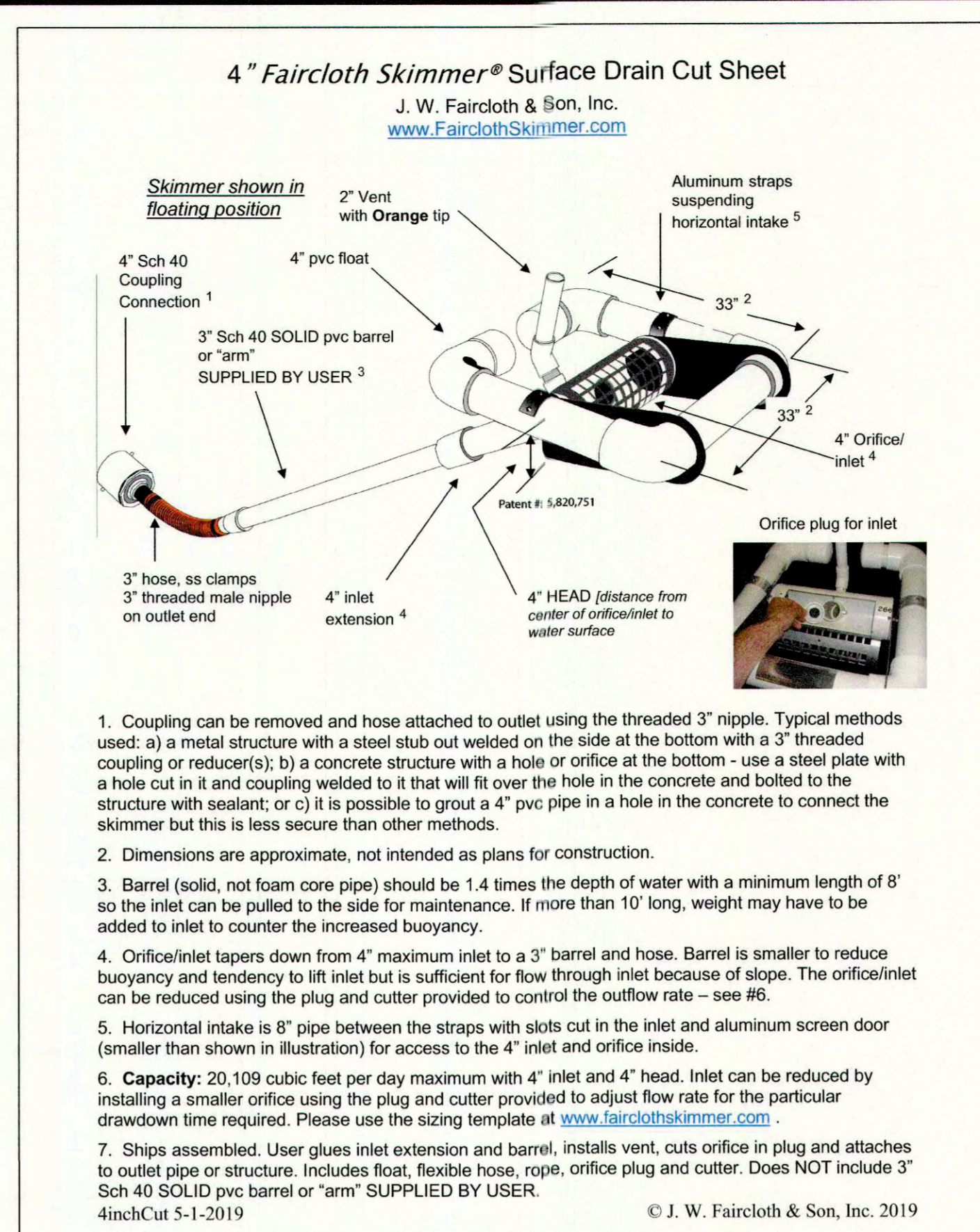
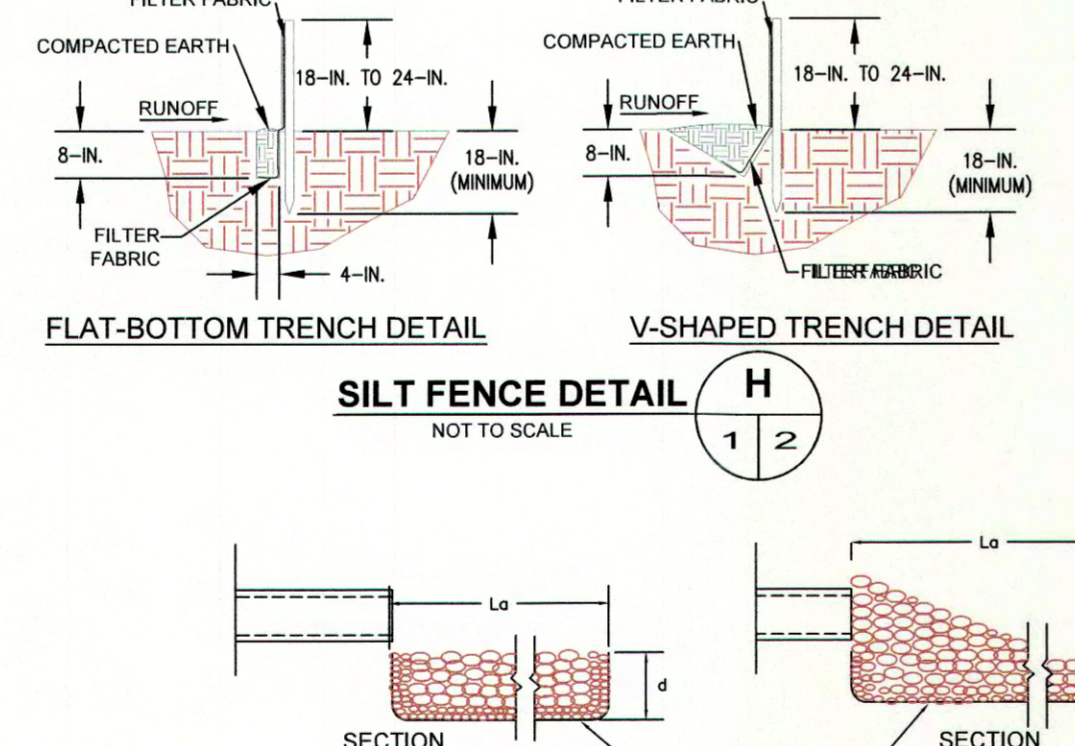
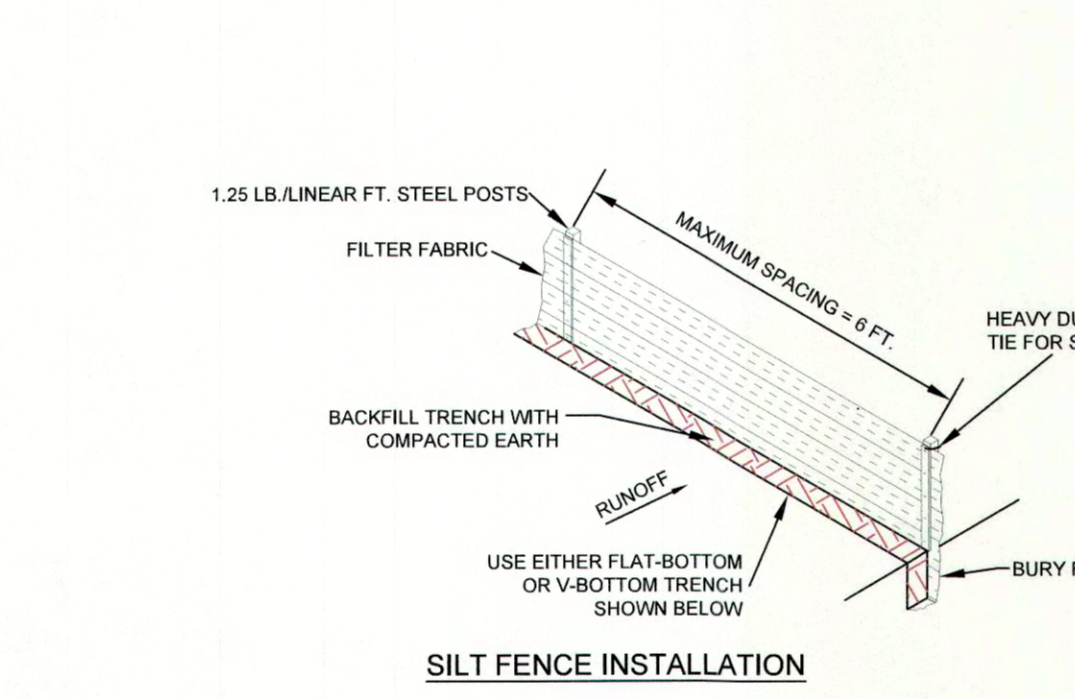
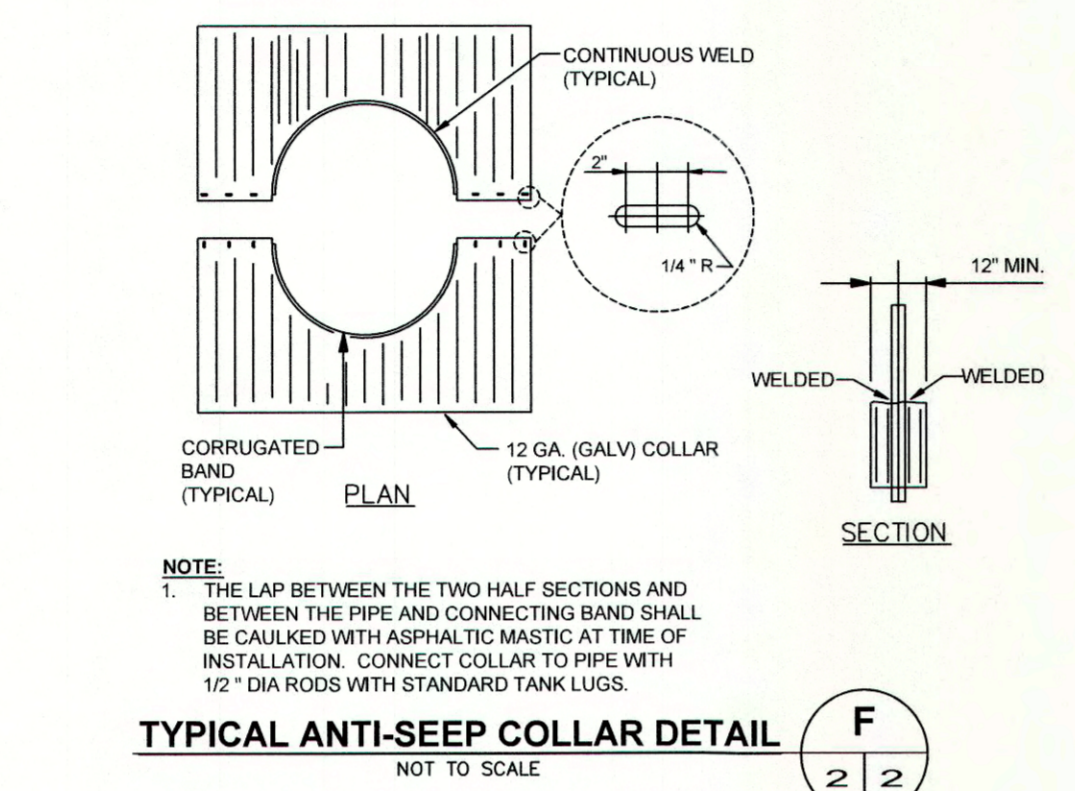
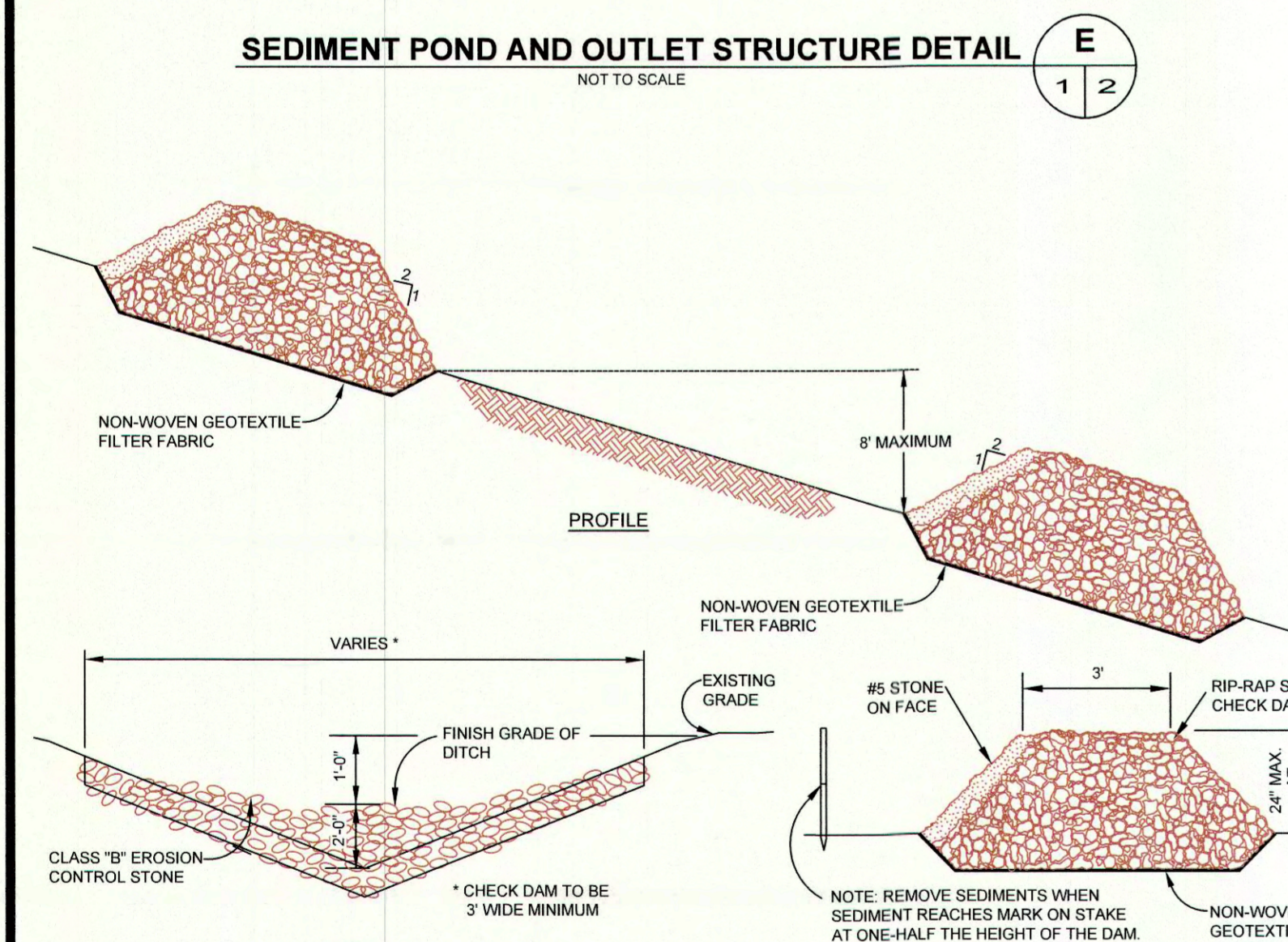
ABBREVIATIONS

PTE POND TOP ELEVATION
 ESE EMERGENCY SPILLWAY ELEVATION
 RTE RISER TOP ELEVATION
 PD POND DEPTH
 PBE POND BOTTOM ELEVATION
 ESW EMERGENCY SPILLWAY WIDTH
 PBA POND BOTTOM AREA
 PTA POND TOP AREA
 OPL OUTLET PIPE LENGTH
 OPS OUTLET PIPE SLOPE
 OPD OUTLET PIPE DIAMETER

	PONDS			
	1	2	3	4
PTE	396.0'	382.0'	342.0'	338.0'
ESE	395.0'	381.0'	341.0'	337.0'
RTE	384.0'	380.0'	340.0'	336.0'
PD	10'	10'	10'	10'
PBE	386.0'	372.0'	332.0'	328.0'
ESW	20'	38.3'	20'	20'
PBA	0.156 ac	0.103 ac	0.200 ac	1.387 ac
PTA	0.560 ac	0.381 ac	0.640 ac	2.455 ac
OPL	117'	161'	188'	106'
OPS	1.7%	1.2%	1.06%	1.80%
OPD	24"	24"	24"	24"

RISERS

1. 388.5' 4" SKIMMER
 2. 374.5' 4" SKIMMER
 3. 334.0' 4" SKIMMER
 4. 330.0' 4" SKIMMER



APPROVED BY
 SOUTH CAROLINA DEPARTMENT OF HEALTH
 AND ENVIRONMENTAL CONTROL
 DIVISION OF MINING AND SOLID WASTE MGT

BY *[Signature]*
 TITLE SED-2297-1V1
 DATE APPROVED 1-26-2021
 PERMIT NO. I-002297

RIP RAP OUTLET PROTECTION

	POND 1	POND 2	POND 3	POND 4
D ₀	24 in.	24 in.	24 in.	24 in.
3D ₀	6 ft. (72 in.)	6 ft. (72 in.)	6 ft. (72 in.)	6 ft. (72 in.)
D ₀ + L _a	28 ft.	22 ft.	29 ft.	18 ft.
L _a	26 ft.	43 ft.	27 ft.	16 ft.
d	2.7 ft. min.	1.13 ft. min.	2.7 ft. min.	1.13 ft. min.

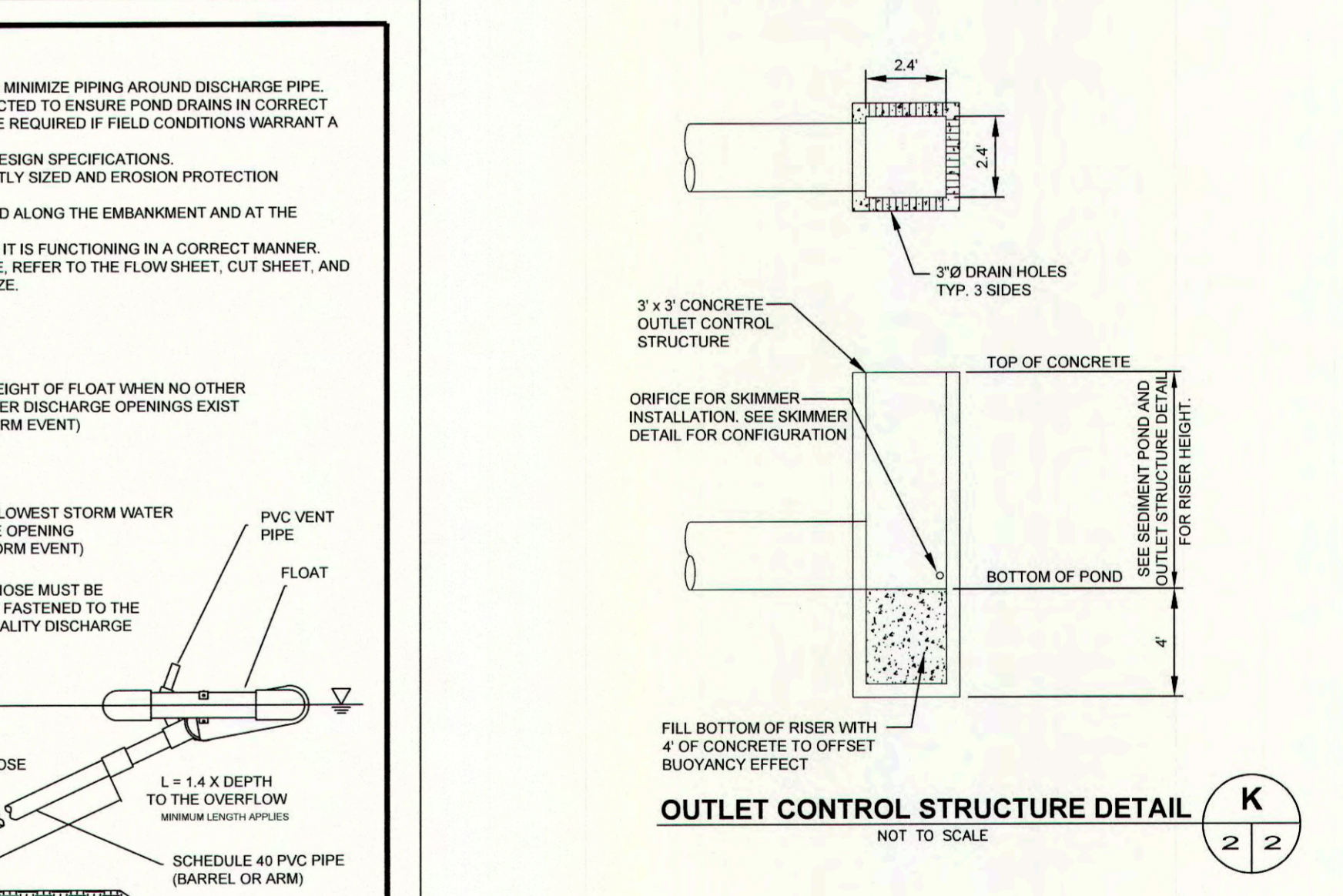


TABLE 1: PERENNIALS

COMMON NAME*	BOTANICAL NAME	APPROVED SITE(S)	PLANTING RATE (Seeds/ft ²)	PLANTING LOCATION	Planting Dates
TALL TYPE GRASSES (SELECT ONE)					
Bahia grass	Paspalum notatum	Slopes	30	Upper/State	
Common Bermudagrass (rolled + full apron)	Cynodon dactylon	Shoulders, Slopes, or Medians	25	Upper/State	
Common Bermudagrass (unrolled + full apron)	Cynodon dactylon	Shoulders, Slopes, or Medians	20	Lower/State	
Carpet Grass	Axonopus affinis	Shoulders, Slopes, or Medians	15	Upper/State	
Tall Fescue	Festuca arvensis	Shoulders, Slopes, or Medians	30	Upper/State	
Centipede grass	Eriochloa fasciculata	Shoulders	10	Upper/State	
GRASSES					
Winged Lovegrass	Eriochloa fasciculata	Slopes	5	Upper/State	
Indiangrass	Sorghastrum nutans	Slopes	10	Upper/State	
Little Bluestem	Andropogon scoparius	Slopes	10	Upper/State	
Coastal Panicgrass	Panicum maritimum	Slopes	20	Upper/State	
Switchgrass	Panicum virgatum	Slopes	10	Upper/State	
Perennial Ryegrass*	Lolium perenne	Shoulders, Slopes, or Medians	15	Upper/State	
Virginia Wild Rye	Elymus virginicus	Shoulders, Slopes, or Medians	5	Upper/State	
LEGUMES*					
White Clover	Trifolium repens	Shoulders, Slopes	5	Upper/State	
Sericea Lepidolobos (Scarlet clover)	Lepidolobos sericea	Slopes	50	Upper/State	
Sericea Lepidolobos (Lemon-clover)	Lepidolobos sericea	Slopes	80	Upper/State	

synterra 2418 River Street, Suite 220 Greenville, South Carolina 29601 864-421-9999 www.synterra.com

Vulcan Materials Company

EROSION AND SEDIMENT CONTROL DETAILS

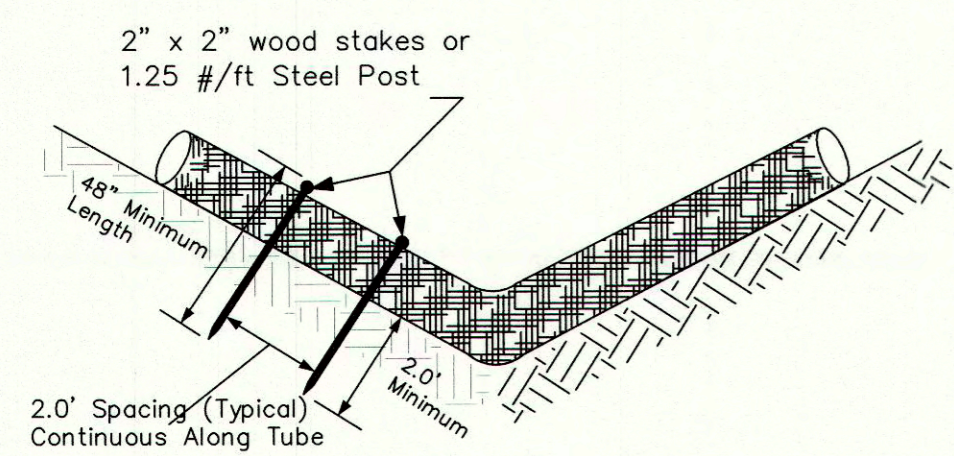
DATE: 02/19/2020 FOR CLIENT REVIEW
 REVISION: JCC
 TOLERANCES—UNLESS NOTED: FRACTIONAL: ± 1/16", DECIMAL: ± 0.010", ANGLE: ± 0.1°

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PLANTING SCHEDULE

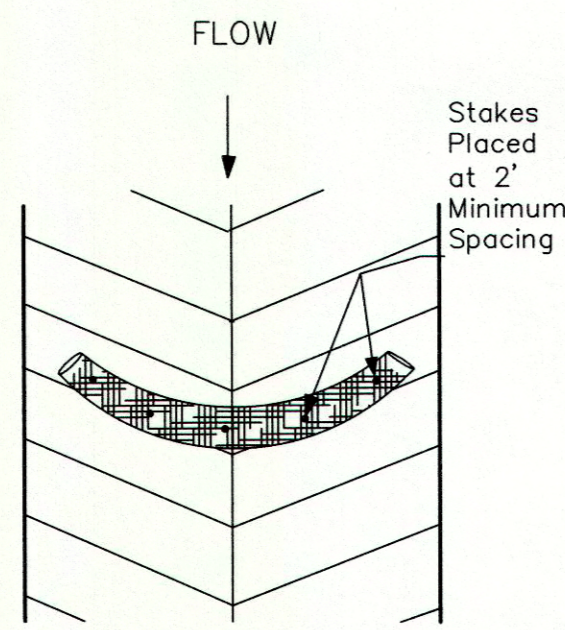
BY: J. COLEMAN DATE: 02/18/2020
 BY: B. GREEN DATE: 02/18/2020
 PROJ. NO.:
 FILE NUMBER:
 SCALE: N.T.S.
 SHEET 2 OF 4

SEDIMENT TUBE INSTALLATION



SEDIMENT TUBE SPACING

SLOPE	MAX. SEDIMENT TUBE SPACING
LESS THAN 2%	150- FEET
2%	100- FEET
3%	75- FEET
4%	50- FEET
5%	40- FEET
6%	30- FEET
GREATER THAN 6%	25- FEET



PLAN SYMBOL



SEDIMENT TUBES - GENERAL NOTES

- Sediment tubes may be installed along contours, in drainage conveyance channels, and ground inlets to help prevent off-site discharge of sediment-laden stormwater runoff.
- Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
- The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
- Sediment tubes, when used as checks within channels, should range between 18-inches and 24-inches depending on channel dimensions. Diameters outside this range may be allowed where necessary when approved.
- Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
- Sediment tubes should be staked using wooden stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
- Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
- The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
- Sediment tubes should not be stacked on top of one another, unless recommended by manufacturer.
- Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
- Sediment tubes should continue up the side slopes a minimum of 1-foot above the design flow depth of the channel.
- Install stakes at a diagonal facing incoming runoff.

SEDIMENT TUBES - INSPECTION & MAINTENANCE

- The key to functional sediment tubes is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of sediment tubes shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the sediment tube.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Large debris, trash, and leaves should be removed from in front of tubes when found.
- If erosion causes the edges to fall to a height equal to or below the height of the sediment tube, repairs should be made immediately to prevent runoff from bypassing tube.
- Sediment tubes should be removed after the contributing drainage area has been completely stabilized. Permanent vegetation should replace areas from which sediment tubes have been removed.

South Carolina Department of Health and Environmental Control

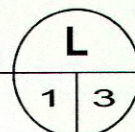
SEDIMENT TUBES

STANDARD DRAWING NO. FEBRUARY 2014

GENERAL NOTES DATE

TYPICAL SEDIMENT TUBE DETAIL

NOT TO SCALE



Turf Reinforcement Mats

Turf Reinforcement Mats (TRMs)

Plan Symbol

Description

Turf Reinforcement Mats are products composed primarily of nondegradable products that enhance the ability of living plants to stabilize soils. They bind with roots to reinforce the soil matrix with longevity greater than 5-years.

When and Where to Use It

Use TRMs where vegetation alone will not hold a slope or streambank. TRMs enable the use of "green" solutions in areas where only "hard" solutions such as riprap or concrete linings were viable in the past.

TRM Categories

- Type 1, Type 2, Type 3, and Type 4.

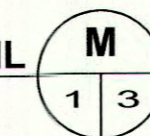
Types 1 & 2 TRMs are a strong three-dimensional stable net structure. A degradable fiber matrix may be included to provide immediate coverage for bare soil.

- Type 1** matting should be placed on slopes **2H:1V or flatter** or in channels where the calculated design shear stress is **4.0 lb/ft² or less** and the design flow velocity is **up to 10 fps**.
- Type 2** matting should be placed on slopes **1.5H:1V or flatter** or in channels where the calculated design shear stress is **6.0 lb/ft² or less** and the design flow velocity is **up to 15 fps**.
- Type 3** TRMs are a strong three-dimensional stable net structure providing sufficient thickness, strength, and void space to capture and retain soil and allow for the development of root growth and vegetation within the matrix. Matting of this type should be placed on slopes **1H:1V or flatter** or in channels where the calculated design shear stress is **8.0 lb/ft² or less** and the design flow velocity is **up to 20 fps**.
- Type 4** (High Survivability) TRMs are specially designed geosynthetics for erosion control applications on steep slopes and vegetated waterways.
 - All components of Type 4 TRMs should be 100% synthetic and resistant to biological, chemical, and ultraviolet degradation.
 - Matting of this type should be placed on slopes **1H:1V or greater** or in channels where the calculated design shear stress is **up to 12 lb/ft²** and the design flow velocity is **up to 25 fps**.
 - This category is used when field conditions exist with high loading and/or high survivability requirements such as maintenance, structural backfills protecting critical structures, utility cuts, potential traffic areas, abrasion, higher factors of safety and/or general durability concerns.

July 31, 2005 South Carolina DHEC Storm Water Management BMP Handbook 18

TURF REINFORCEMENT DETAIL

NOT TO SCALE



Turf Reinforcement Mats

All primary TRM matrix materials are defined as long-term, non-degradable materials designed to reduce soil erosion and assist in the growth, establishment, and protection of vegetation for a period of time exceeding 5 years. The major structural components of Type 1 and Type 2 TRMs are 100% synthetic and resistant to biological, chemical, and ultraviolet degradation. A degradable fiber matrix may be included to provide immediate coverage for bare soil. All components of Type 3 and Type 4 TRMs are 100% synthetic and resistant to biological, chemical, and ultraviolet degradation.

Installation

Grade and compact areas to be protected with TRMs as indicated on the plans.

Remove large rocks, soil clods, vegetation, and other sharp objects that could keep the TRM from intimate contact with subgrade.

Prepare seedbed by loosening 2 to 3 inches of soil above final grade.

The proper installation of TRMs is different for each product, therefore the recommended installation procedure from the specific manufacturer should be followed.

When requested, a Manufacturer's Representative may be required to be on-site to oversee and approve the initial installation of the TRM. When requested, a letter from the Manufacturer approving the contractor installation may be required.

Inspection and Maintenance

- Check areas protected by TRMs for dislocation or failure every 7 calendar days and within 24-hours after each storm that produces 1/2-inch or more of rain.
- Conduct regular inspections until grasses are firmly established.
- Adhere to the pinning or stapling pattern as shown on the Manufacturer's installation sheet. If there is evidence that the TRM is not securely fastened to the soil, install extra pins or staples to inhibit the TRM from becoming dislodged.
- If washout or breakage occurs, repair all damaged areas immediately by restoring the soil on slopes or channels to its finished grade, re-apply fertilizer and seed, and replacing the appropriate TRM material as needed.

TRM Channel Design Criteria

When designing a permanent conveyance with a grassed or vegetative lining, the design should address the bare condition prior to vegetation being established. A geotextile lining may be applied to protect the conveyance during this period. It is important to use both the tractive force and the permissible velocity methods to determine the level of protection that is required.

The design of TRMs is based on the anticipated shear stresses and maximum flow velocities the fabric will encounter. Once the design shear stresses and maximum flow velocities are known, a corresponding TRM that meets the conditions may be selected from the SCDOT approved products list.

July 31, 2005 South Carolina DHEC Storm Water Management BMP Handbook 19

APPROVED BY
SOUTH CAROLINA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL CONTROL
DIVISION OF MINING AND SOLID WASTE MGT

BY *Joe Kim*
TITLE SED-2297-2V1
DATE APPROVED 1-26-2021
PERMIT NO. I-002297



E	D	C	B	A
				02/19/2020
				DATE
				FOR CLIENT REVIEW
				REVISION
				BY
				JCC

TOLERANCES—UNLESS NOTED

FRACTIONAL: ± 1/16"
DECIMAL: ± 0.010"
ANGLE: ± 0.1°

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EROSION AND SEDIMENT CONTROL DETAILS

DRAWN				PLANT			
BY J. COLEMAN	BY B. GREEN	PROJ. NO.	FILE NUMBER	FAIRFIELD QUARRY			
DATE 02/18/2020	DATE 02/18/2020	SCALE N.T.S.	SHEET 3 OF 4				
DWG. NO.	REV.			A			



Mining Form MR-500

S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
DIVISION OF MINING AND SOLID WASTE PERMITTING
2600 BULL STREET, COLUMBIA, SC 29201
PHONE:803-898-1362 FAX: 803-4-898-1426 EMAIL: AskMines@dhec.sc.gov

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
DIVISION OF MINING AND SOLID WASTE PERMITTING
2600 Bull Street; Columbia, SC 29201

RECLAMATION PLAN
FORM MR-500 DATE VERSION ADOPTED: 7/1/94

As required in Section 48-20-90 of the South Carolina Mining Act, "An operator shall submit with his application for an operating permit a proposed reclamation plan. The reclamation plan for an operating permit only must be furnished to the local soil and water conservation district in which the mining operation is to be conducted. The plan must include as a minimum each of the elements specified in the definition of 'reclamation plan' in Section 48-20-40 and information required by the department. The reclamation plan must provide that reclamation activities, particularly those relating to control of erosion, to the extent feasible, must be conducted simultaneously with mining operations and be initiated at the earliest practicable time after completion or termination of mining on a segment of the permitted land. The plan must provide that reclamation activities must be completed within two years after completion or termination of mining on each segment of the area for which an operation permit is requested unless a longer period specifically is permitted by the department."

I. APPLICANT INFORMATION

1. Name of Company: Vulcan Construction Materials, LLC

2. Name of Proposed Mine: Fairfield Quarry County: Fairfield

3. Home Office Address: 201 Brown Road (Street and P.O. Box) (864) 299-4785 (Telephone No.)

Piedmont SC 29673-8513 (864) 299-0610 (City) (State) (Zip Code) (Fax. No.)

4. Local Office Address: Same (Street and P.O. Box) Same (Telephone No.)

Same (City) (State) (Zip Code) Same (Fax. No.)

5. Designate to which office Official Mail is to be sent:

Home Office: x Local Office:

6. Name of company personnel and their title to be the contact for official business and

correspondence: John R. Aultman, PE - Manager of Environmental Services

II. ENVIRONMENTAL PROTECTION

1. Describe practices to protect adjacent resources such as roads, wildlife areas, woodland, cropland and others during mining and reclamation.

The mine permit area is located in a rural setting with land cover consisting of hardwood and managed pine forests for timber products. Several rural residential homes are located east the permit area. Of the 924.1 acres of permitted land, 199.4 acres will be undisturbed buffer. The nearest highways to the permit area are I-77 2,000 feet west and S-20-41 (Old River Rd.) adjacent and north. Based on a survey, there are no threatened and/or endangered species or sensitive habitats on-site that would be potentially affected by mining and reclamation (Kleinfelder "Threatened & Endangered Species Survey" June 2019 report attached). Wetlands on-site will be avoided first and where direct impacts to wetlands are unavoidable, the impacts will be minimized to the degree practical. Wetlands or waters of the U.S. directly impacted will be permitted through the U.S. Army Corps of Engineers' Nationwide Permit or Individual 404 permitting process. If needed, a 401 Water Quality Certification will be obtained from DHEC to certify water quality will not be adversely impacted due to loss of jurisdictional waters of the US.

2. Describe proposed methods to limit significant adverse effects on adjacent surface water and groundwater resources.

Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, immediate cleanup of any of petroleum products spillage, removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to surface water resources during and after mining. Due to the geology, groundwater resources will only be minimally drawn down from dewatering in the pit. Once mining is terminated, groundwater levels will rebound to approximate original levels. The mining process will not use chemicals in the mining or processing of crushed stone; consequently, no potential for chemical contamination to groundwater resources. Coagulants may be used to assist in removing suspended solid, but must be approved by DHEC prior to use.

3. Describe proposed methods to limit significant adverse effects on known significant cultural or historic sites within the proposed permitted area.

A cultural and historic resources survey of the proposed mine permit area was conducted to determine if any such resources would be adversely affected. Of the sites investigated on the mine permit area, none were determined to be eligible for listing in NRHP.

4. Describe method to prevent or eliminate conditions that could be hazardous to animal or fish life in or adjacent to the permitted area.

Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, clean-up of any spillage of petroleum products, removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to fisheries in nearby streams. Establishing 3:1 slopes in the overburden along the edge of the pit and overburden storage areas and establish fencing around the pit at final reclamation where exposed highwalls may be present will remove hazardous conditions for the public and indigenous animal populations.

5. Describe how applicant will comply with State air quality and water quality standards as established by the S.C. Department of Health and Environmental Control.

To operate the quarry and processing plant, the applicant will complete the application process to obtain the Air Quality Construction Permit and ultimately the Air Quality Operating Permit. These permits set the quantity of air particulates that can be emitted to be protective of air quality standards. Also, compliance with the NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG730000) will ensure water quality standards are met.

With the termination of mining all mobile mine equipment and processing plant equipment will be removed from site. Once the process plant equipment is removed from site, the Air Quality Operating Permit can be terminated. Stone stockpiles, fines and barren soils, potential sources of dust after mining, will be either removed (stone stockpiles) or stabilized with vegetation to eliminate windblown dust.

Complete site reclamation with proper grading to reduce slopes on unconsolidated materials to 3:1 and establishment of vegetation to stabilize soils will prevent erosion and sediment runoff after mining. Also, the removal equipment will eliminate potential for contamination of ground and surface water on site after mining.

III. RECLAMATION OF AFFECTED AREA

6. State useful purpose(s) the affected land is being proposed to be reclaimed to. More than one purpose may be checked, but information should be submitted to support the feasibility for each proposed purpose.

- | | |
|---|--|
| a. Lake or pond <input checked="" type="checkbox"/> | f. Grassland <input checked="" type="checkbox"/> |
| b. Agriculture _____ | g. Recreation _____ |
| c. Woodlands _____ | h. Wetlands _____ |
| d. Residential _____ | i. Park _____ |
| e. Commercial _____ | j. Other _____ |

7. State the final maximum surface gradient(s) (slope) in soil, sand, or other unconsolidated materials on reclaimed land. Surface gradients steeper than 3H:1V (18 degrees or 33 percent) may be required to submit geotechnical data and studies to demonstrate that the steeper slopes will remain stable following final reclamation.

The final maximum surface gradient for slopes in overburden storage areas and slopes in overburden in the pit will be 3:1.

8. How will the final slopes in unconsolidated material be accomplished? If the slope will be by backfilling, demonstrate that there is adequate material to accomplish the stated final gradient. If gradient is to be achieved by bring in material from outside the permitted area, state the nature of the material and approximate quantities. If the gradient is to be achieved by grading, show that there is adequate area for grading to achieve gradient (ie. adequate distance between the property line and edge of highwall). Operator should show calculations or other appropriate information to demonstrate that there is adequate materials in backfilling and grading to meet the requirements for final slope.

Overburden may be backfilled in to areas within the pit but not for the purpose of achieving 3:1 slope along pit highwalls. Slopes in the overburden surrounding the pit will be cut slopes to 3:1 gradient.

9. Describe the plan for revegetation or other surface treatment of affected area(s). The revegetation plan shall include but not be limited to the following: (a) planned soil test; (b) site preparation and fertilization; (c) seed or plant selection; (d) rate of seeding or amount of planting per acre; (e) maintenance.

Vulcan will follow soil test, seed bed preparation, seed mix selection, soil amendments (fertilizer, lime, growth stimulants, etc.), cover and seeding rates based upon SC DOT's *Supplemental Technical Specification (SC-M-810-2(04/11)) for Seeding*.

Revegetated sites will be maintained with periodic inspections to detect areas with significant erosion, seed germination failure or significant plant die off. Site will be inspected after significant storm events to detect wash outs or gullies in planted areas. Damaged area will be repaired where necessary by fixing erosion damage and reseeding as necessary.

- 10. Provide, as a separate document, a closure plan of the mine and permitted facilities to prevent a release of contaminants from being harmful to the environment. A closure plan is not necessary for all mines, but is required where the possibility exist for (a) acid rock drainage; (b) where the National Pollutant Discharge Elimination Systems (NPDES) Permit have discharge limitation parameters other than pH and Total Suspended Solids (TSS); (c) chemically treated tailings or stockpiles (excludes fertilizer or lime for revegetation purposes).**

Reclamation for the quarry will not require a closure plan. A) The granite may contain minor amounts of pyrite as an accessory mineral, but not in quantities to create acid mine drainage. B) This quarry qualifies for coverage under the *NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG-730000)* with no additional parameters other than pH and TSS. C) NO chemicals will be used in the mining or process (i.e., leaching agents, acids, etc.). However, coagulants may be used to increase the settling efficiency of suspended solids from waste water discharges to Waters of the State or internally on recycled process wash water.

- 11. Method of control of contaminants and disposal of mine waste soil, rock, mineral, scrap, tailings, slimes, and other material directly connected with the mining, cleaning, and preparation of mineral substances mined and includes all waste materials deposited on or in the permit area from any source.**

Granite fines created from processing the mined stone will accumulated in the clarification ponds of the wash circuit and periodically removed and stockpiled. The granite fines, once dried, can be sold as a product. Any granite fines remaining at the end of mining that was not sold, will be covered in topsoil and vegetated.

- 12. Method of reclaiming settling and/or sediment ponds.**

Settling and/or sediment ponds will not be removed from service and reclaimed until all soils within the sediment pond drainage is stabilized with vegetation and erosion controlled. Sediment basin receiving water from overburden storage areas will remain in place and converted for "post-mine development" as detention ponds.

- 13. Describe method of restoration or establishment of stream channels, stream banks and site drainage to a condition minimizing erosion, siltation and other pollution.**

The identified wetlands within the mine permit area will be avoided where possible; and, if not possible to avoid, the direct impacts will be minimized to the degree practical. Where wetlands must be directly impacted, the loss of wetlands will be mitigated following prescribed US Army Corps of Engineer procedures. Avoided wetlands will be protected with a 75-foot wide upland buffer.

- 14. What are the maintenance plans to insure that the reclamation practices established on the affected land will not deteriorate before released by the Department?**

Areas that have undergone final reclamation practices will be maintained through periodic inspections and conducting any necessary repairs in a timely manner.

- 15. For final reclamation, submit information about practices to provide for safety to persons and to adjoining property in all excavations. Identify areas of potential danger (vertical walls, unstable slopes, unstable surface on clay slimes, etc.) and provide appropriate safety provisions. These provisions can include but are not limited to setbacks, fencing, signs, benching, guardrails and boulders.**

The following mine segments will be reclaimed to provide safety to persons and adjoining areas.

Highwalls -- Any portion of exposed granite within the pit area with vertical highwalls that cannot be sloped to a 3h:1v gradient and in excess of 10 feet in height will be fenced.

Unstable Slopes -- All unconsolidated soils, e.g., saprolite overlying hard rock and overburden storage areas will be sloped to 3h:1v gradient and vegetated. Soils place to 3:1 gradients are stable and are not prone to landslides. Granite highwalls are inherently stable. However, any unstable boulders or zone near the saprolite overburden will be removed to ensure miner safety and for long term stability.

16. What provisions will be taken to prevent noxious, odious, or foul pools of water from collecting and remaining on the mined area? For mines to be reclaimed as lakes or ponds, provide supporting information that a minimum water depth of four (4) feet on at least fifty percent (50%) of the pond surface area can be maintained.

The final pit will be reclaimed as a pond/lake and will meet the above referenced regulatory requirement for sufficient depth. Sediment basins established to trap sediment in storm water runoff to mine construction and operation will be evaluated at time of performing reclamation work to determine if basin(s) are suitable to convert to freshwater ponds that will meet the regulatory requirement. Sediment pond not converted to ponds, will be removed, soil stabilized by grading and vegetation to prevent noxious pools of water from forming. Areas of the affected land not reclaimed to ponds will be properly graded to prevent unwanted pools of water from collecting and prevent foul water from forming.

17. Identify any structures (e.g. buildings, roads) that are proposed to remain as part of final reclamation. Provide justification for leaving any structures.

The office building and other support buildings may be left upon final reclamation. Also, some of the haul roads may be left to provide access to the property. All areas will be sloped and stabilized to prevent erosion and control sediment. Final justification for allowing structures or roads to remain as part of final reclamation will be provided at the end of mining when use of post reclamation property will be better understood.

18. Attach two (2) copies of a map of the area (referred to as the RECLAMATION MAP) that shows the reclamation practices and conservation practices to be implemented. The following should be shown:

- A. The outline of the proposed final limits of the excavation, during the number of years for which the permit is requested.
- B. The approximate final surface gradient(s) and contour(s) of the area to be reclaimed. This would include the sides and bottoms of mines reclaimed of ponds and lakes.
- C. The outline of the tailings disposal area.
- D. The outline of disposal areas for spoil and refuse (exclusive of tailings ponds).
- E. The approximate location of the mean shore line of any impoundment or water body and inlet and/or outlet structures which will remain upon final reclamation.
- F. The approximate locations of access roads, haul roads, ramps or buildings which will remain upon final reclamation.
- G. The approximate locations of various vegetative treatments.
- H. The proposed locations of re-established streams, ditches or drainage channels to provide for site drainage.
- I. The proposed locations of diversions, terraces, silt fences, brush barriers or other Best Management Practices to be used for preventing or controlling erosion and off-site siltation.
- J. Proposed locations of the measures to provide safety to persons and adjoining property.
- K. Segments of the mine that can be mined and reclaimed as an ongoing basis.
- L. The boundaries of the permitted area.
- M. The boundaries of the affected area for the anticipated life of the mine.
- N. The boundaries of the 100-year floodplain, where appropriate.
- O. Identify sections of mine where the final surface gradient will be achieved by grading and/or backfilling.
- P. A legend showing the name of the applicant, the name of the proposed mine, the north arrow, the county, the scale, the date of preparation and the name and title of the person who prepared the map.

THE REQUIRED RECLAMATION MAP SHALL HAVE A NEAT, LEGIBLE APPEARANCE AND BE OF SUFFICIENT SCALE TO CLEARLY SHOW THE REQUIRED INFORMATION LISTED ABOVE. THE BASE FOR THE MAP SHALL BE EITHER A SPECIALLY PREPARED LINE DRAWING, AERIAL PHOTOGRAPH, ENLARGED USGS TOPOGRAPHIC MAP OR A RECENTLY PREPARED PLAT. RECLAMATION MAP SHOULD BE THE SAME SCALE USED FOR THE SITE MAP.

IV. SCHEDULE FOR IMPLEMENTATION OF CONSERVATION AND RECLAMATION PRACTICES

19. As stated in Section 48-20-90 of the S.C. Mining Act, reclamation activities, to the extent feasible, must be conducted simultaneously with mining operations. Identify which areas or segments of the mine are not feasible to reclaim simultaneously with mining. Provide reasons why reclamation can not proceed simultaneously with mining in these areas.

Quarries are not feasible to conduct reclamation simultaneously with mining. Typically the pit, plant area and overburden storage areas are active throughout the mine life of a quarry.

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Construct access road from Hwy 41 to process plant – establish sediment & erosion control BMPs	Access Road	~5,000 ft	2022			
Locate & mark boundaries of Overburden Area 1	Ovbn Area 1 Phase I	58.1 ac	2020-21			
Locate & establish 75' upland wetland buffers for wetlands NOT to be impacted south to Ovbn Area 1	Wetland A & Ovbn 1	~6,200 lft	2020-21			
Locate & mark boundaries of Overburden Area 2	Ovbn Area 2 Phase I	49.8 ac	2020-21			
Locate & establish 75' upland wetland buffers for wetlands NOT to be impacted west & north of ovbn area 2	Wetland B & Ovbn 2	~5,000 lft.	2020-21			
Construct overburden storage areas - Establish brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.)	Ovbn Areas 1 & 2 Phase I	Varies	2021-23			Place BMPs where needed
Construct Sediment Pond 1	Ovbn Area 1	0.56 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 2	Ovbn Area 1	0.38 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 3	Ovbn Area 1	0.64 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 4	Ovbn Area 2	2.45 ac	2021-23			Initial Mine Construction
Locate & mark boundaries of Office, Shop and Stockpile Area	Office, Shop and Stockpiles	33.5 ac	2020-21			
Establish temporary; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) during construction	Office, Shop and Stockpiles	33.5 ac	2020-21			Where and as necessary
Locate and mark Pit Boundary	Pit Phase I	44.3 ac	2020-21			
Locate & establish 75' upland stream buffers	Adjacent to Pit Phase I	5,600 lft.	2020-21			
Establish temporary sediment pond; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) where necessary	Pit Phase I	As necessary	2022			Initial Pit Development
AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;						

* Completed by the Department

Schedule Continued --

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

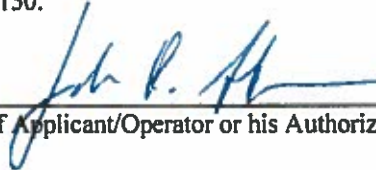
Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Route Stormwater into pit	Pit	44.3 ac	Life of Mine			Adjust diversions as pit develops to ensure stormwater is diverted into pit
Construct Plant site - Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Process Plant	Varies	2021-23			
Establish temporary; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) during construction	Process Plant	Varies	2021-23			
Install Groundwater Observation Wells	OW 1, 2, 3 & 4	4	2020-21			
Overburden revegetated after placement, as soon as feasibly possible, to increase sediment control efficiency	Ovbn Areas 1 & 2		Ongoing			Overburden is periodically stripped from pit as mining advances.
Locate and mark Ultimate Pit Boundary for Phase II	Ultimate Pit Phase II	127.7 ac	TBD			
Locate & mark boundaries for additional Overburden area; Ovbn design along with S & E plan design	Overburden Future Impact Phase II	TBD	TBD			Wetland delineations and buffers established for future overburden area;
Permit Tributary crossing – Compliant with Corps’ permitting requirements	Phase I/Phase II	TBD	TBD			
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate cut slope around pit w/permanent vegetation	Pit	Various	Ongoing			Where cut slope is final and will not be disturbed by future mining.
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Ovbn Areas 1 & 2	Various	Ongoing			Once overburden reaches final elevation
Remove plant equipment, stockpiles - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Process Plant		End of Mining			
Allow pit to fill with water to final pool elevation	Pit		End of Mining			
Remove all equipment from site, remove all petroleum products, remove scrap materials, etc,	Permit Area		End of Mining			
Monitor vegetation growth, repair/reseed as necessary	Affected area	2	End of Mining			Continue through 2-yrs after mining.

AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;

* Completed by the Department

YOU ARE NOTIFIED THAT:

- 1) you, the operator, must file an application to modify the reclamation plan in the event actual reclamation varies from the set forth hereinabove, and
- 2) if at any time it appears to the Department that the activities under the reclamation plan are failing to achieve the purposes and requirements of the S.C. Mining Act, the Department may modify the RECLAMATION PLAN in accordance to Section 48-20-150.



Signature of Applicant/Operator or his Authorized Representative

John R. Aultman on behalf of Vulcan Materials Company

Printed Name of Applicant/Operator or his Authorized Representative

Manager of Environmental Services

Title

03/10/2020

Date

Department Use Only

Permit No. I-002297 Date Application Approved 1/26/21 Date Bond Rec'd 1/19/21

Bond Amount \$1,171,500.00 Blanket or (Single Bond) Permit Issuance Date 1/26/21

ACTION TAKEN ON THIS RECLAMATION PLAN

_____ Approved _____ Denied Approved with Additional Terms and Conditions

By: 
SECTION MANAGER

Date: 1/26/21