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September 5, 2002

Alvaro A. Linero, PE
Professional Engineer Administrator
New Source Review Section
Bureau of Air Regulation
Division of Air Resource Management
Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

Subject: Florida Rock Industries, Inc. – Thompson S. Baker Cement Plant
Newberry, Alachua County, Florida
DEP File No. 0010087-006-AC (PSD-FL-228)
Response to Request for Additional Information dated July 12, 2002

Dear Mr. Linero:

This letter provides a response to your letter requesting additional information related to the application for an air construction permit for the existing Florida Rock Industries, Inc. – Thompson S. Baker Cement Plant.

All of the information request items have been reproduced, preserving your numbering. Responses follow each item.

1. **Please note that in accordance with Page 2 of the application, we will act only on the changes requested in the air construction permit, but not on those requested in the Title V Operation permit (see pages 12 and 38). Please list the requested changes in accordance with the numeration in the original air construction permit. A separate Title V Operation Permit application may be required following final action on this construction permit application.**

Response: The requested changes are listed below in accordance with the numeration in the original air construction permit (AC01-267311), issued in 1996. The requested changes to the referenced Tables I and II are shown in accordance with the revised tables issued in 2001.

FROM

3. The kiln clinker production rate shall not exceed 95.8 tons per hour (TPH) and 2300 tons per day (TPD). On an annual basis, the clinker production rate shall not exceed 712,500 tons per year (TPY). The clinker production rate will be determined as a function of the preheater dry feed rate. The preheater dry feed rate is limited to 149.9 TPH and 1,114,350 TPY. Continuous operation is allowed (8,760 hours per year) as long as the 712,500 TPY clinker limit is not exceeded. [Rule 62-210.200(225), F.A.C.]

TO

3. The kiln clinker production rate shall not exceed 110.42 tons per hour (TPH, 24-hour rolling average), 115.0 TPH (maximum per hour) and 2650 tons per day (TPD). On an annual basis, the clinker production rate shall not exceed 800,000 tons per year (TPY). The preheater dry feed rate will be determined as a function of the clinker production rate. The preheater dry feed rate is

limited to 1,360,000 TPY. Continuous operation is allowed (8,760 hours per year) as long as the 800,000 TPY clinker limit is not exceeded.

FROM

5. Emissions from the facility shall comply with the pollutant limits specified in attached Tables I and II. Following completion of the performance tests required herein, the interim SO_2 emission limit may be revised downward based on the test results (and continuous emission monitoring data) such that overall control attained for all air pollutants including, SO_2, NO_X, VOC, and CO, is optimized. The Department shall issue the final SO_2 emission limits within 120 days following receipt of all test results required by this permit. Any changes will be publicly noticed. FRI will install any additional control equipment during the two year optimization period to insure compliance with the NO_X limit of 2.8 lb/ton clinker by the end of the period.

TO

5. Emissions from the facility shall comply with the pollutant limits specified in attached Tables I and II.

FROM

Table I Allowable Opacity Limitations
Florida Rock Industries

Stack #	Description	Grain Loading	OPACITY
	Emission Unit 1: Raw Material Process Rate = 1,211,250 TPY Processed		
Fugitive	Material Processing		10
Fugitive	Handling and Storage		10
Fugitive	Crusher		15
	Emission Unit 2: Raw Mill System Process Rate = 212 TPH Raw Materials		
E-28	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
G-07	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
H-08	Raw meal + recycle dust to preheater	0.01 gr/dscf	5
	Emission Unit 3: Kiln System Process Rate = 364 MMBTU/heat input		
E-21	Kiln Operations (ESP)		10
E-21	In-process fuel: coal		10
E-21	In-process fuel: tires		10
	Tires (30 % of total heat input)		
	Emission Unit 4: Clinker Handling Process Rate = 95.83 TPH Clinker		
L-03	Clinker cooler discharge and breaker	0.01 gr/dscf	5
L-06	Clinker into clinker silos	0.01 gr/dscf	5
K-15	Clinker Cooler (ESP)		10
	Emission Unit 5: Finish Grinding Operations Process Rate = 136 TPH Cement Output		
M-08	Clinker to finish mill	0.01 gr/dscf	5
N-09	Finish mill air separator	0.01 gr/dscf	5
N-12	Finish mill	0.01 gr/dscf	5
N-19	Cement handling in finish mill	0.01 gr/dscf	5
Q-25	Cement storage silos	0.01 gr/dscf	5
Q-26	Cement storage silos	0.01 gr/dscf	5
	Emission Unit 6: Cement Handling Process Rate = 500 TPH Cement Unloading		
Q-14	Cement silo loadout	0.01 gr/dscf	5
Q-17	Cement silo loadout	0.01 gr/dscf	5
Q-21	Cement silo loadout	0.01 gr/dscf	5
R-12	Cement bagging operation	0.01 gr/dscf	5
	Emission Unit 7: Coal Handling and Grinding Process Rate = 14 TPH Pulverized Coal		
S-17	Coal Mill	0.01 gr/dscf	5
S-21	Pulverized coal storage bin	0.01 gr/dscf	5
Fugitive	Coal Handling and Storage		5/20

TO

Table I Allowable Opacity Limitations
Florida Rock Industries

Stack #	Description	Grain Loading	OPACITY
Emission Unit 1: Raw Material			
Fugitive	Material Processing		10
Fugitive	Handling and Storage		10
Fugitive	Crusher		15
Emission Unit 2: Raw Mill System			
E-28	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
G-07	Recycle dust + raw meal to homogenization silo	0.01 gr/dscf	5
H-08	Raw meal + recycle dust to preheater	0.01 gr/dscf	5
Emission Unit 3: Kiln System			
E-21	Kiln Operations (ESP)		10
E-21	In-process fuel: coal		10
E-21	In-process fuel: tires		10
	Tires (30 % of total heat input)		
Emission Unit 4: Clinker Handling			
L-03	Clinker cooler discharge and breaker	0.01 gr/dscf	5
L-06	Clinker into clinker silos	0.01 gr/dscf	5
L-08	Clinker into clinker silos	0.01 gr/dscf	5
K-15	Clinker Cooler (ESP)		10
Emission Unit 5: Finish Grinding Operations			
M-08	Clinker to finish mill	0.01 gr/dscf	5
N-09	Finish mill air separator	0.01 gr/dscf	5
N-12	Finish mill	0.01 gr/dscf	5
N-19	Cement handling in finish mill	0.01 gr/dscf	5
Q-25	Cement storage silos	0.01 gr/dscf	5
Q-26	Cement storage silos	0.01 gr/dscf	5
Emission Unit 6: Cement Handling			
Q-14	Cement silo loadout	0.01 gr/dscf	5
Q-17	Cement silo loadout	0.01 gr/dscf	5
Q-21	Cement silo loadout	0.01 gr/dscf	5
R-12	Cement bagging operation	0.01 gr/dscf	5
Emission Unit 7: Coal Handling and Grinding			
S-17	Coal Mill	0.01 gr/dscf	5
S-21	Pulverized coal storage bin	0.01 gr/dscf	5
Fugitive	Coal Handling and Storage		5/20

FROM

Table II

Allowable Emissions
Florida Rock Industries

Pollutant	Bact Emission Limit		Emission Rate *		Basis
	lb/ton clinker	lb/ton dry feed	lb/hr	ton/yr	
PM (kiln)	0.31	0.20	30.00	110.50	BACT
PM_{10} (kiln)	0.26	0.17	25.50	93.93	BACT
PM (cooler)	0.16	0.10	14.99	55.70	BACT-NSPS
PM_{10} (cooler)	0.13	0.09	12.71	47.34	BACT
SO_2 (kiln)+	0.28	0.18	28.82	108.55	BACT
NO_x (kiln)**	2.80	1.80	268.30	1018.00	BACT
H_2SO_4 (kiln)	**0.0025**	**0.0016**	**0.25**	**1**	BACT
CO (kiln)	3.60	2.30	346.38	1288.60	BACT
VOC (kiln)	0.12	0.08	11.55	42.90	BACT
Beryllium	TO BE DETERMINED BY FUTURE STACK TESTS				BACT

Notes:

* The kiln emission rate includes fuel oil combustion emissions from the raw mill air heater.

** After startup and until December 31, 2001, the kiln shall not exceed a NO_X limit of 3.8 lb/ton clinker and 2.8 lb/ton clinker thereafter (30-day rolling average). A compliance demonstration with the 2.8 lb/ton limit for the first 30-day period following December 31 (January 1-30, 2002) shall be submitted by Florida Rock to the Northeast District Office by February 15, 2002. The Department may revise the limit to less than 2.8 lb/ton clinker (30-day rolling average) based on continuous emission monitoring data covering the period January 1-March 31, 2002 to be submitted by Florida Rock to the Department's Northeast District by April 15, 2002.

\+ The Department may revise the SO_2 limit to less than 0.28 lb/ton clinker based on compliance test and continuous monitoring data.

TO

Table II

Allowable Emissions
Florida Rock Industries

Pollutant	Emission Limit		Emission Rate[1]		Basis
	lb/ton clinker	lb/ton dry feed[2]	lb/hr	ton/yr	
PM (kiln)	0.235	0.138	25.90	94	Permittee
PM_{10} (kiln)	0.20	--	22.08	79.9	Permittee
PM (cooler)	0.139	0.082	15.39	55.70	BACT-NSPS
PM_{10} (cooler)	0.118	--	13.03	47.3	BACT
SO_2 (kiln)[3]	0.16	--	17.67	64	Permittee
NO_x (kiln)[4]	2.45	--	270.53	980	Permittee
H_2SO_4 (kiln)	0.0025	--	0.276	1	BACT
CO (kiln)	2.50	--	276.05	1000	Permittee
VOC (kiln)[5]	0.107	--	11.81	42.90	BACT

Notes:

[1] The kiln emission rate does not include fuel oil combustion emissions from the raw mill air heater.
[2] Emissions in units of lb/ton of dry feed are only applicable for particulate matter.
[3] 24-hour rolling average.
[4] 30-day rolling average.
[5] 24-hour rolling average.

2. **Describe in detail the manner in which the Multi-Stage Calciner (MSC) has been operated with respect to achievement of the present NO_x emission limit (2.8 lb/ton of clinker). Advise of any projected changes or adjustments in kiln burner and MSC operational parameters that will be implemented to insure achievement of the lower proposed emission rates for NO_x and CO. These parameters should include: breakdown of fuel and air distribution between kiln burner and MSC burners; typical percent and type of reburn fuel as well as oxygen levels in the lower stage of the calciner; similar information for the upper calciner; tertiary air considerations to finalize burnout; and achieve the lower CO levels also projected. Attach flow diagrams as necessary.**

Response: The Multi-Stage Calciner System (MSC) conversion was executed for the purpose of complying with the permitted NOx emission limit of 2.8 lb/ton clinker under normal and abnormal operating conditions, and provide operating latitude and process flexibility, while recognizing that the best conditions for reduction of NOx and CO are at the highest sustainable production rates within the capacity levels of the entire pyro-processing system, including all ancillary equipment, i.e. raw material and product conveying and combustion air requirements. A flow diagram of the original kiln/calciner system is attached as Figure I (sheets 1 and 2), to show the base configuration to which the MSC conversion was added. Data under various operating conditions are shown on Table III. These operating scenarios include eight short-term trial periods after the MSC conversion, and typical data from operation prior to the MSC conversion.

Present Operating Conditions and Parameters

Subsequent to the installation of the Multi-Stage Calciner System (MSC), kiln operations have been maintained at a maximum daily rate of 2,300-tpd clinker. Compliance with emission limits of NOx and CO has been achieved by adhering to good operating practices, the main goals of which are the following:

1 Keep fuel consumption at the lowest possible level to satisfactorily convert the raw materials to high quality clinker, which is defined as having less that 1.5% unreacted (free) calcium oxide.

2 Produce kiln feed of sufficient fineness and in compliance with ASTM and AASHTO/FDOT chemical specifications, which is as uniform from day to day as can be achieved, using the most modern on-line and laboratory analytical test methods available.

3 Maintain sufficient kiln feed inventory to ward against undesirable fluctuations in physical and chemical properties due to external causes, i.e. excess moisture resulting from prolonged rain and raw material composition changes.

4 Operate the pyro-processing system in an anticipatory manner to avoid process upsets and temporary excursions from emissions limits, caused by needed corrections to bring the process back to normal operating parameters.

Physical Conversion of the Pyro-Processing System to MSC

The outlet gas duct from the calciner was disconnected and turned 90 degrees. A new identical duct segment was added in parallel to the turned duct and the two duct segments were tied together with a deflection chamber at the bottom and a new outlet connected to stage 1 cyclone in the existing location. The deflection chamber provides the gas residence time to convert CO to CO2 with additional oxygen provided through the upper tertiary air duct (upper TA), a branch off the existing (lower TA) tertiary air duct. Due to the change in velocity of the gas stream, a nominal amount of raw mix drops out, which is collected in the deflection chamber hoppers and returned to the kiln via the

kiln meal chute discharging from cyclone 1. The material collected in stage 2 cyclone was partially rerouted with the installation of a branch meal chute and a material splitter. The new meal chute discharges into the calciner approximately 15 feet above the calciner burner elevation.

A flow sheet showing the revised preheater system after the installation of the MCS is shown as Figure II. Four sheets of this Figure are attached with data entered from Table III (trial periods 2, 4, 6, and 8).

Explanation of the revised preheater operation

The staged introduction of feed allows the reduction of NOx to elemental nitrogen to occur over a larger volume of the calciner. At the junction of the Y, an adjustable splitter allows routing of the meal to the elevation of the calciner, at which the best NOx reduction occurs.

The CO created from the reduction of NOx is oxidized to CO2 in the deflection chamber. The oxygen is supplied through the new upper tertiary air duct. As the temperature in this chamber is between 1500 and 1800 degrees F, additional fuel is not required to provide the energy to oxidize CO.

As shown in Table III, the MSC system is highly efficient for the reduction of NOx and the oxidation of CO.

Additional assurance that the allowable limits of the regulated emissions (i.e., NOx and CO) will not be exceeded under various operating conditions, including those that may be considered to be outside normal production practices, was provided through short-term trial operation scenarios. The kiln was "pushed" through a series of feed rate changes. Such feed rate changes are not normally considered prudent for good kiln operation. The results of this exercise confirm that the kiln / preheater system can maintain emissions within the proposed permitted limits, even under upset or abnormal conditions.

As the process is manually controlled, the operator must maintain management of many variable inputs, i.e. coal, airflow, oxygen content, various temperatures, damper positions and motor amps. Simultaneously, the operator watches the NOx and CO emissions.

With increased feed rates the NOx level stayed generally low, which tracks the very low oxygen content at the kiln inlet. These observations show that the NOx level is controllable at constant feed rates over sustained periods of time as the operator tunes the process, keeping in mind that the heat value of coal is not uniform.

As the feed rates were increased, the fuel input was escalated ahead of its actual requirements. The excess fuel resulted in increased NOx generation. During these tests the airflow lagged behind the fuel increase, which explains the low oxygen level at the kiln inlet.

At the stack, the CO level is very low at all levels of feed rates. The operator attempts to maintain a constant excess oxygen level at the kiln stack, a further indication of the absence of combustibles to protect the electrostatic precipitator against explosions.

The most suitable ratio of calciner and kiln fuel must be adjusted to a variety of conditions and cannot be expected to be constant. Over the short-term test periods, the optimum ratio was not established.

While the coal ratio distributed to the kiln main burner and the calciner burner totals 100%, the weight of tires burned was constant. Under the test conditions, the range of tires burned as a portion of total

fuel by weight was 9% at the low feed level and 7% at the high rate of feed. The tire feed rate must be manually set and is not maintained as a constant percentage of the total fuel input, as it affects potential plugging of the preheater.

There are some other relationships between operating parameters, from which significant conclusions can be drawn. The most important information that can be gleaned from the test series is the assurance that the proposed emission limits will not be exceeded, even though the operating conditions may vary from the desired, preferred and necessary mode to produce a high quality clinker, while maintaining low emission rates.

Table III – NOx and CO Emissions under Various Operating Conditions

Florida Rock Industries, Inc.
Thompson S. Baker Cement Plant

Operating Parameter	Trial Period 1	2	3	4	5	6	7	8	Prior to MSC Conversion
Kiln Feed Rate, STPH	125	125	145	165	170	155	169	174	154
Clinker Production (SPTH)	76	76	88	100	103	94	102	105	93
Clinker Production (SPTD)	1818	1818	2109	2400	2473	2255	2458	2531	2240
TA Damper A, % Open To Calciner	99	99	54	55	55	70	65	65	75
TA Damper B, % Open To Mix Chamber	0	0	10	10	10	0	0	0	0
Secondary Air Temp, deg F	1658	1637	1507	1644	1672	1501	1703	1703	1750
Tertiary Air Temp, deg F	1513	1524	1458	1798	1782	1527	2123	2121	1580
Kiln Inlet O2, %	2.4	1.7	4.3	2.5	1.3	0.4	0.4	0.5	2
Kiln Inlet CO, ppm	99	244	10000	676	8760	10000	10000	9400	2000
ID Fan O2, %	4.4	4.5	3.7	3.7	4.3	3.8	4	4.4	5
ID Fan CO, ppm	7.2	7.2	8	8	8	3.6	10.4	16	20
Coal to Kiln Main Burner, STPH	4.9	4.7	6.2	6.2	6.2	6.2	6.6	6.7	6
% of total	59.8	56.7	59.1	60	58	63	60	60	60
Coal to Calciner, STPH	3.3	3.6	4.3	4.2	4.4	3.6	4.4	4.5	4
% of total	40.2	43.3	40.9	40	42	37	40	40	40
NOx at Stack, lbs/ton-clinker	3.05	3.3	1.8	1.61	2	1.54	1.65	2.44	2.85
Tires (coal replacement in STPH)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0

3. **Continuous Emission Monitoring: Explain the data collection and calculation procedures during start up and shutdown and low load operation. Describe how the CEM software calculates the 30-day rolling average NO_x limit. Propose permit conditions regarding the manner by which data are to be included or excluded (e.g. span data, zero production, etc.).**

Response: The data collection by the continuous emissions monitoring system (CEM) is done on a continuous basis, regardless of the raw mill or kiln operating status. It records data on one-minute intervals, and summarizes it into one-hour results. These results are recorded both in a database and printed onto a hard copy. In the event the plant is not in operation and there is no data, the system records zeroes. These zeroes are not included in the calculations of rolling averages, and are removed from the tabulation.

The monitor is checked for accuracy daily with zero and span gases and by annual accuracy audits.

The 30-day NOx rolling average is calculated through the use of spreadsheet software, using data generated by the CEM. The daily data are entered into a spreadsheet for these calculations. The 30-day NOx rolling average is calculated by adding the current day's average, and dropping the first day in the rolling average.

Proposed permit conditions for the CEM are included with this response as Attachment 1.

4. **Attached is a submittal from the Alachua County Environmental Protection Department. Please provide information they have requested when submitting the above requested information.**

Response: All of the Alachua County information request items have been reproduced, preserving their numbering. Responses follow each item.

1) **Florida Rock is requesting that the proposed permit emission rates for PM (kiln), PM10 (kiln) SO2 (kiln), NOx (kiln) and CO (kiln) be reduced. What are their current actual emissions (from CEMS or stack test data) based on their clinker production? How much PM, PM10, SO2, NOx, and CO are they actually emitting now at their maximum production rates?**

Response: As discussed in preceding sections of this letter, the MSC system has recently been installed as required by permit, and plant and operational refinements are essentially complete. As a result, a two-year plant operating record necessary to establish "actual emissions" as defined by Rule 62-210.200(11)(a), F.A.C., does not exist. Florida Rock believes, therefore that the Department (FDEP) should define "actual emissions" as unit-specific allowable emissions per Rule 62-210.200(11)(b) for purposes of this application. These emissions are summarized in response to FDEP Item No. 1 in Table II as permitted.

2) **Has the permittee supplied sufficient actual data to show that after production rates are increased, the emission rates would go down from present permitted levels as indicated in the Fred Cohrs letter. This data should be supplied.**

Response: See Response to FDEP Item No. 1 with specific reference to Permit Condition No. 5 (Table II, as permitted and Table II, as proposed).

3) **Has the permittee supplied reasonable assurance or data to indicate that Dioxin emissions will be below the new MACT standards? Is any actual emission data available?**

Response: Reasonable assurance of compliance with the MACT standard for dioxin emissions can be derived from emission data provided to the City of Newberry, for measurements performed quarterly during the first year of plant operation. The data (summarized in the table below) shows that the average emission rate of dioxins/furans (toxicity equivalents, TEQ) was 0.029 nanograms per dry standard cubic meter of stack gas (ng/dscm), when corrected to 7% oxygen. As the standard is 0.4 ng/dscm, reasonable assurance of compliance is demonstrated.

Table IV – Summary of Dioxin/Furan Emission Data for the First Year of Plant Operation

Florida Rock Industries
Thompson S. Baker Cement Plant

Test Date	Preheater Feed Rate (ton/hr)	Fuel		Dioxin/Furan Emissions (TEQ)	
		Type	Heat Input (MMBtu/hr)	Conc. @ 7% 0_2 (ng/dscm)*	Mass (lb/hr)
7/26/2000	140.0	Coal	170	0.064	0.0000000286
10/17/2000	146.3	Coal	152	0.020	0.0000000039
2/5-6/2001	124.2	Coal	128	0.023	0.0000000071
4/18/2001	155.1	Coal	253	0.008	0.0000000023
Average				**0.029**	0.0000000105

* NESHAP (40 CFR 63, Subpart LLL) Limit - 0.4 ng/dscm

The reports containing the above data were provided to the City of Newberry. The testing was not as a result of state requirements, so the reports were not submitted to the Department of Environmental Protection.

Thank you in advance for your review of this information. Please contact me if you have any questions or require further additional information.

Sincerely,

SEAL

1/5/02

Steven C. Cullen, PE
Koogler & Associates

Florida PE No. 45188

Enclosures: Attachment 1: Proposed Permit Conditions for CEM
Figure I: Original Kiln/Calciner Configuration (2 Sheets)
Figure II: Kiln/Calciner Configuration after MSC Conversion (4 sheets)

cc: J. Huron
D. Galbraith
C. Kirts, NED
G. Worley, EPA
J. Bunyak, NPS
C. Bird, Alachua Co.

Attachment 1 – Proposed Permit Conditions for CEM

Florida Rock Industries, Inc.
Thompson S. Baker Cement Plant

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring SO2 and NOx.

(2) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 4A in Appendix B of 40 CFR 60, data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the reference test methods.

(3) The span value of the continuous emission monitoring system shall be no less than 150 percent of the maximum permitted emissions of the inline kiln/raw mill.

(4) The 24-hour daily arithmetic averages shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume (dry basis). The 1-hour arithmetic averages shall be calculated using the one-minute data points generated by the continuous emission monitoring system. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) At a minimum, valid continuous emission monitoring system hourly averages shall be obtained for 75 percent of the operating hours per day, and for 90 percent of the operating days per calendar quarter that the plant is producing clinker. If less than 90 percent of the hourly averages for the operating days for any given calendar quarter is available, the permittee will provide a report with corrective actions.

(6) All valid continuous emission monitoring system data must be used in calculating the emissions averages. When continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, for periods of time in excess of those described in paragraph (5), emissions data shall be obtained using other monitoring systems as approved by the Department to provide, as necessary, reasonable assurance.

(7) In the event the plant is not in operation and there is no data, the system records zeroes. These zeroes are not included in the calculations of rolling averages, and are removed from the tabulation.

(8) The 30-day NOx rolling average is calculated through the use of spreadsheet software, using data generated by the CEM. The daily data are entered into a spreadsheet for these calculations. The 30-day NOx rolling average is calculated by adding the current day's average and dropping the first day in the rolling average.

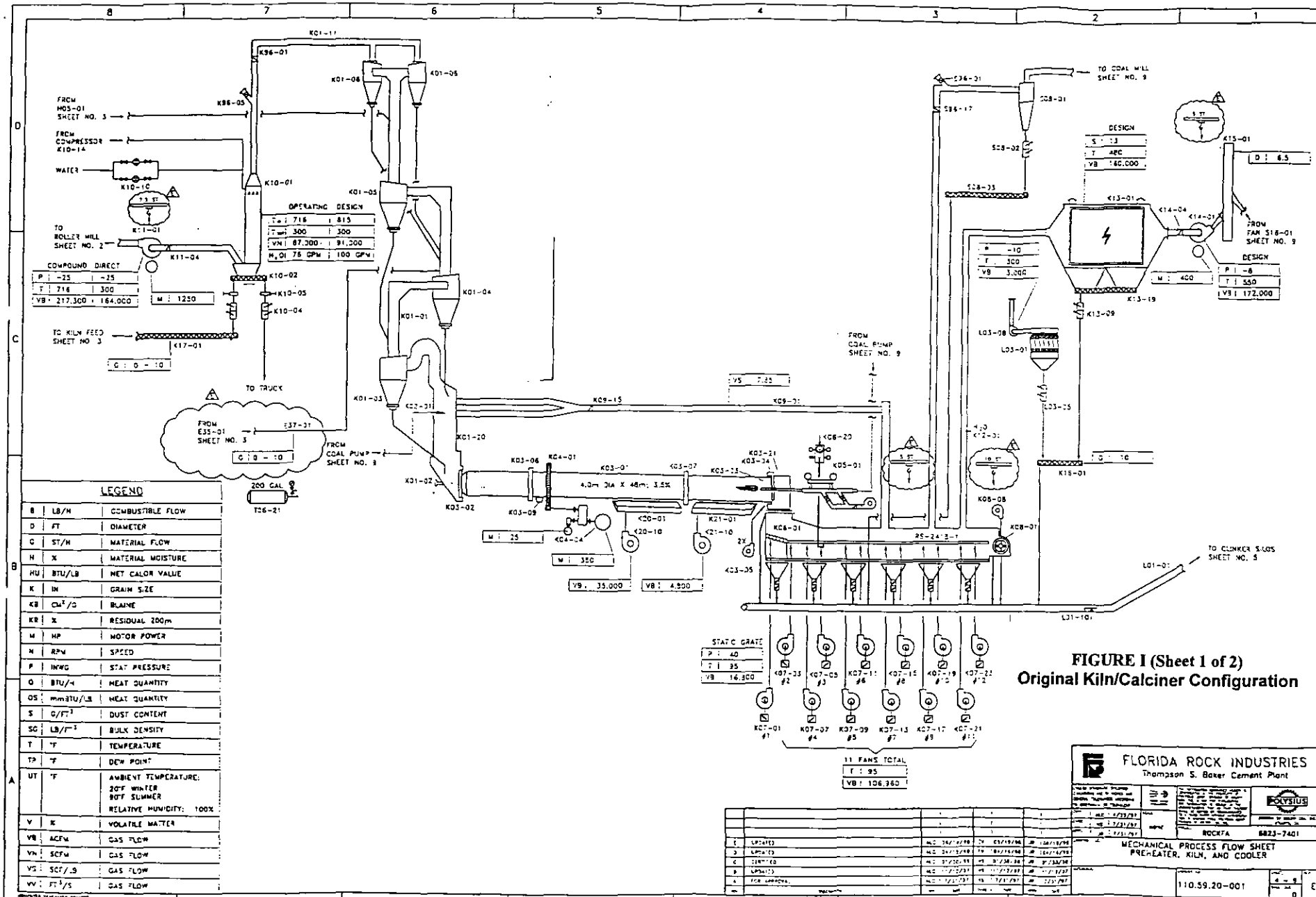


FIGURE I (Sheet 1 of 2)
Original Kiln/Calciner Configuration

FLORIDA ROCK INDUSTRIES
Thompson S. Baker Cement Plant

POLYSIUS

ROCKFA 8823-7401

MECHANICAL PROCESS FLOW SHEET
PREHEATER, KILN, AND COOLER

110.59.20-001

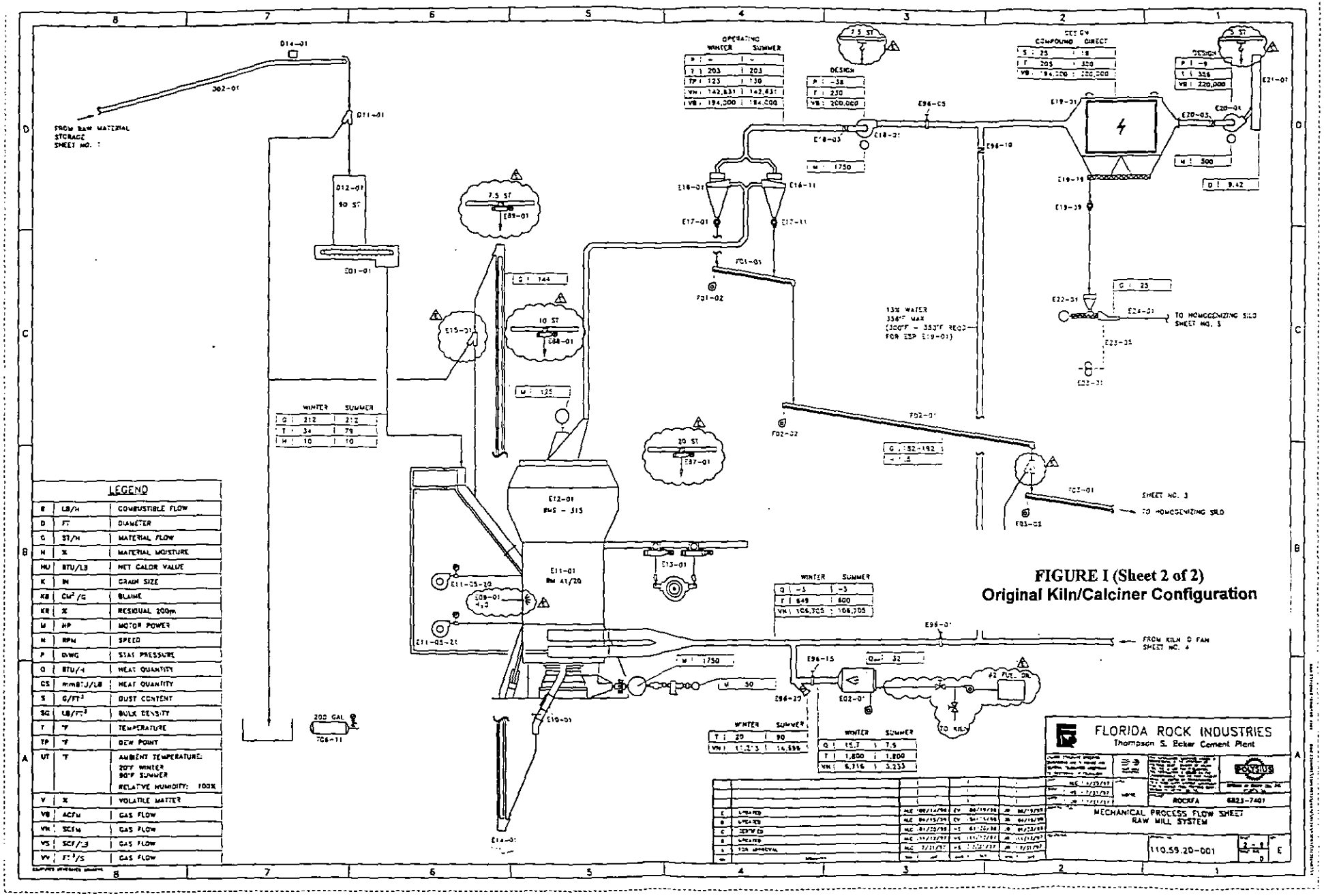


FIGURE I (Sheet 2 of 2)
Original Kiln/Calciner Configuration

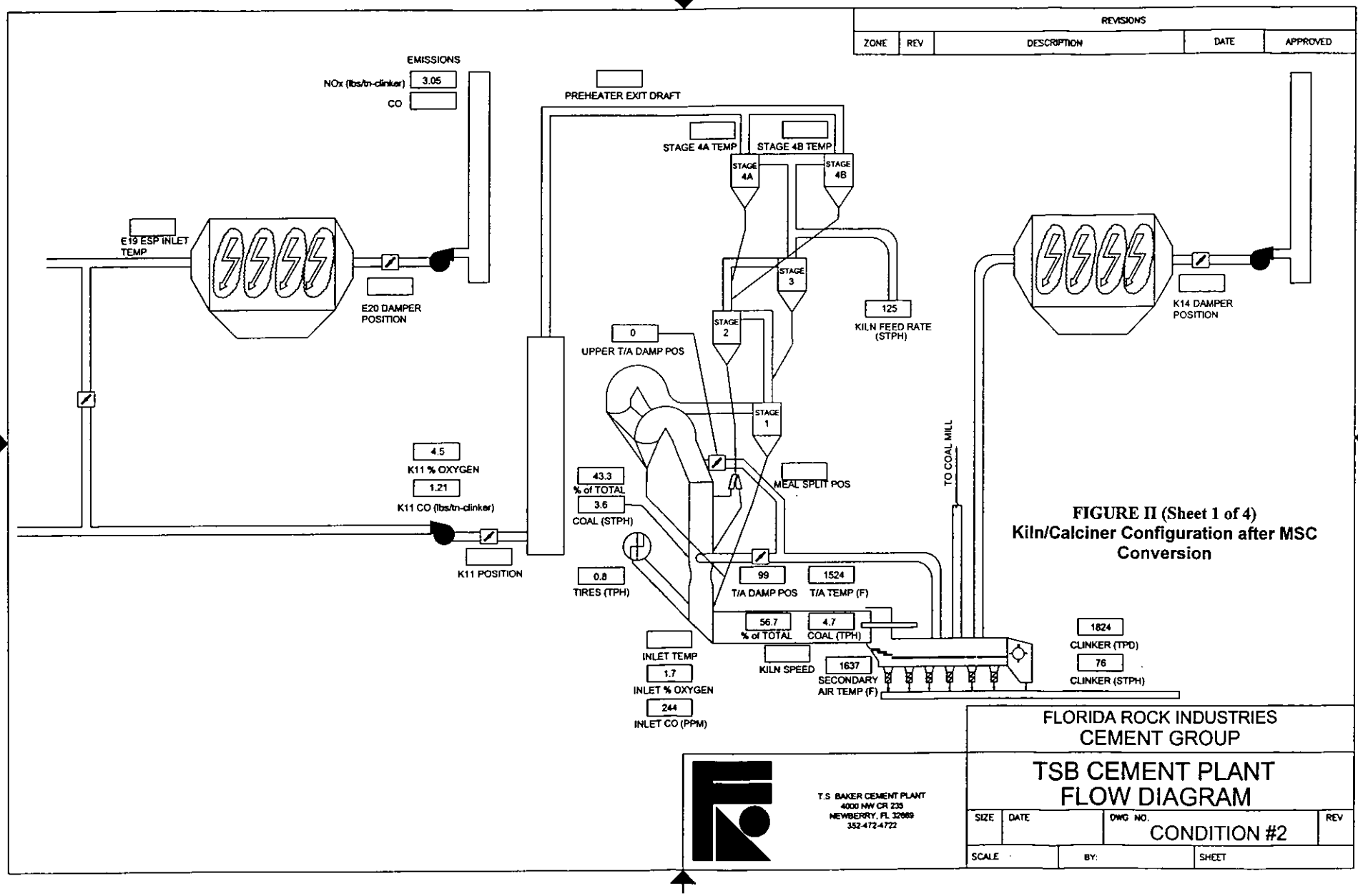
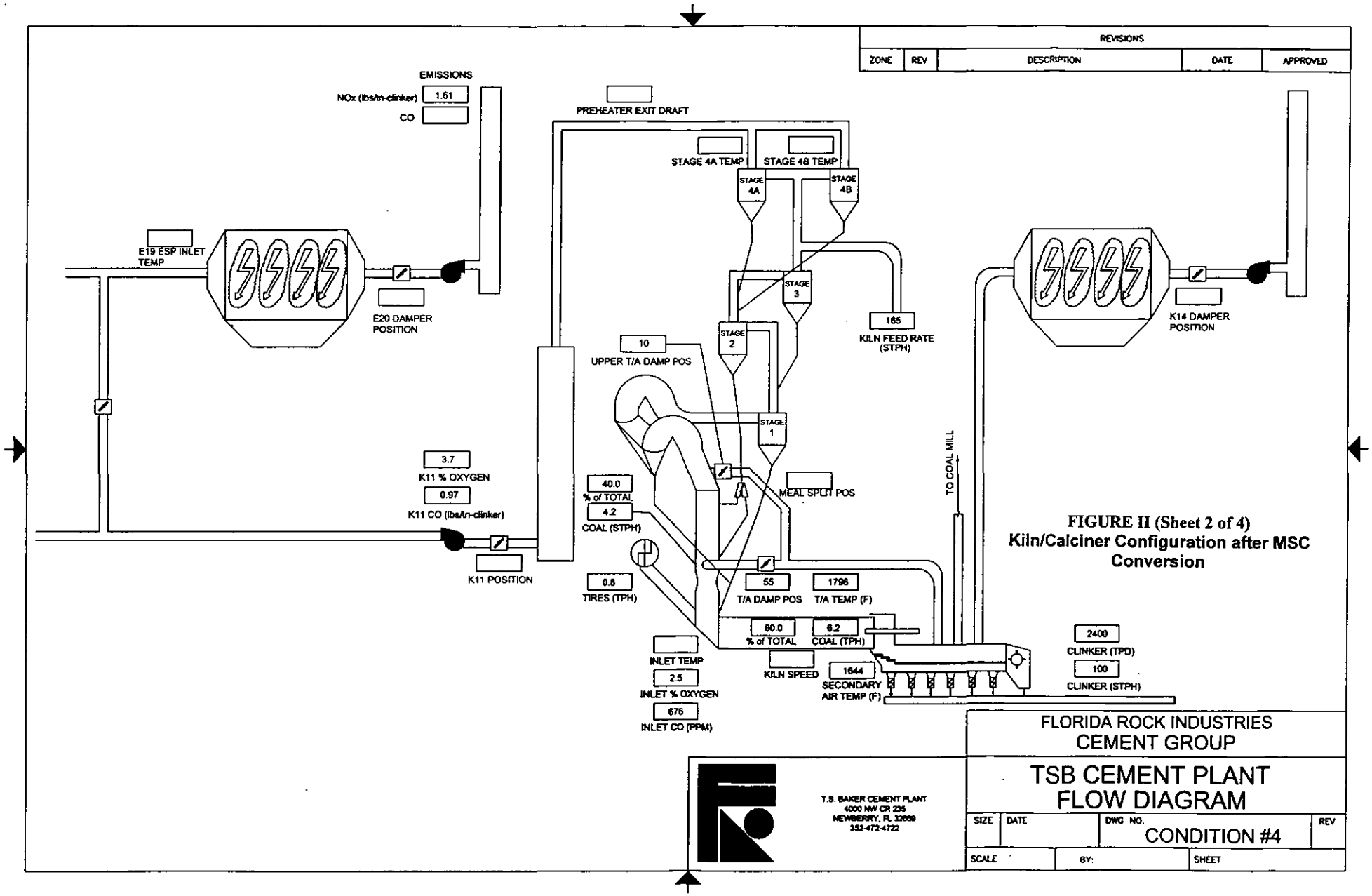


FIGURE II (Sheet 1 of 4)
Kiln/Calciner Configuration after MSC Conversion


REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
EMISSIONS
NOx (lbs/tn-clinker)
1.61
CO
PREHEATER EXIT DRAFT
STAGE 4A TEMP
STAGE 4B TEMP
STAGE 4A
STAGE 4B
E19 ESP INLET TEMP
E20 DAMPER POSITION
STAGE 3
STAGE 2
STAGE 1
165
KILN FEED RATE (STPH)
10
UPPER T/A DAMP POS
K14 DAMPER POSITION
3.7
K11 % OXYGEN
0.97
K11 CO (lbs/tn-clinker)
40.0
% of TOTAL
4.2
COAL (STPH)
MEAL SPLIT POS
TO COAL MILL
K11 POSITION
0.8
TIRES (TPH)
55
T/A DAMP POS
1798
T/A TEMP (F)
60.0
% of TOTAL
6.2
COAL (TPH)
2400
CLINKER (TPD)
INLET TEMP
KILN SPEED
1644
SECONDARY AIR TEMP (F)
100
CLINKER (STPH)
2.5
INLET % OXYGEN
676
INLET CO (PPM)
FIGURE II (Sheet 2 of 4)
Kiln/Calciner Configuration after MSC Conversion
T.S. BAKER CEMENT PLANT
4000 NW CR 235
NEWBERRY, FL 32669
352-472-4722
FLORIDA ROCK INDUSTRIES
CEMENT GROUP
TSB CEMENT PLANT
FLOW DIAGRAM
SIZE
DATE
DWG NO.
CONDITION #4
REV
SCALE
BY:
SHEET

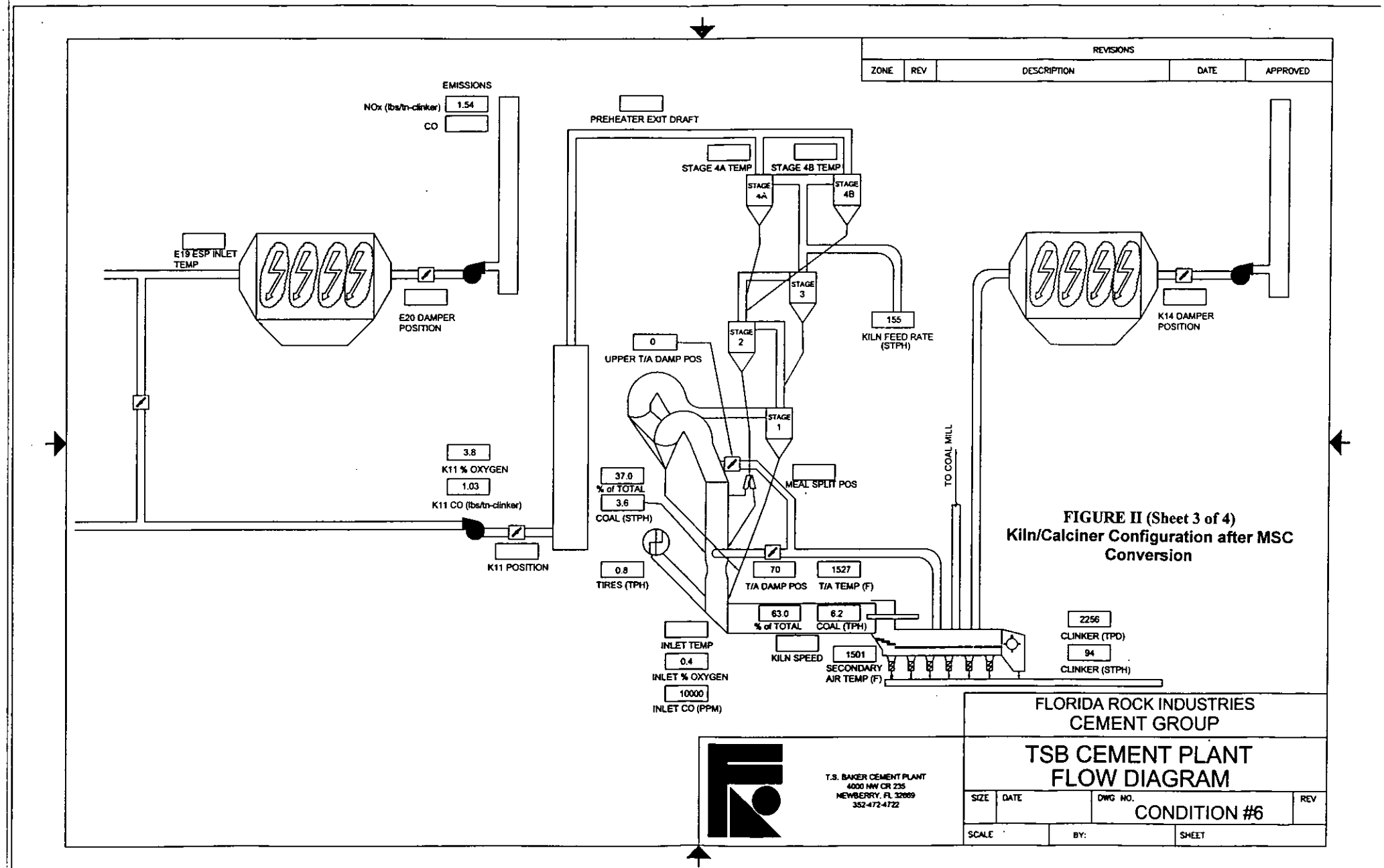


FIGURE II (Sheet 3 of 4)
Kiln/Calciner Configuration after MSC Conversion

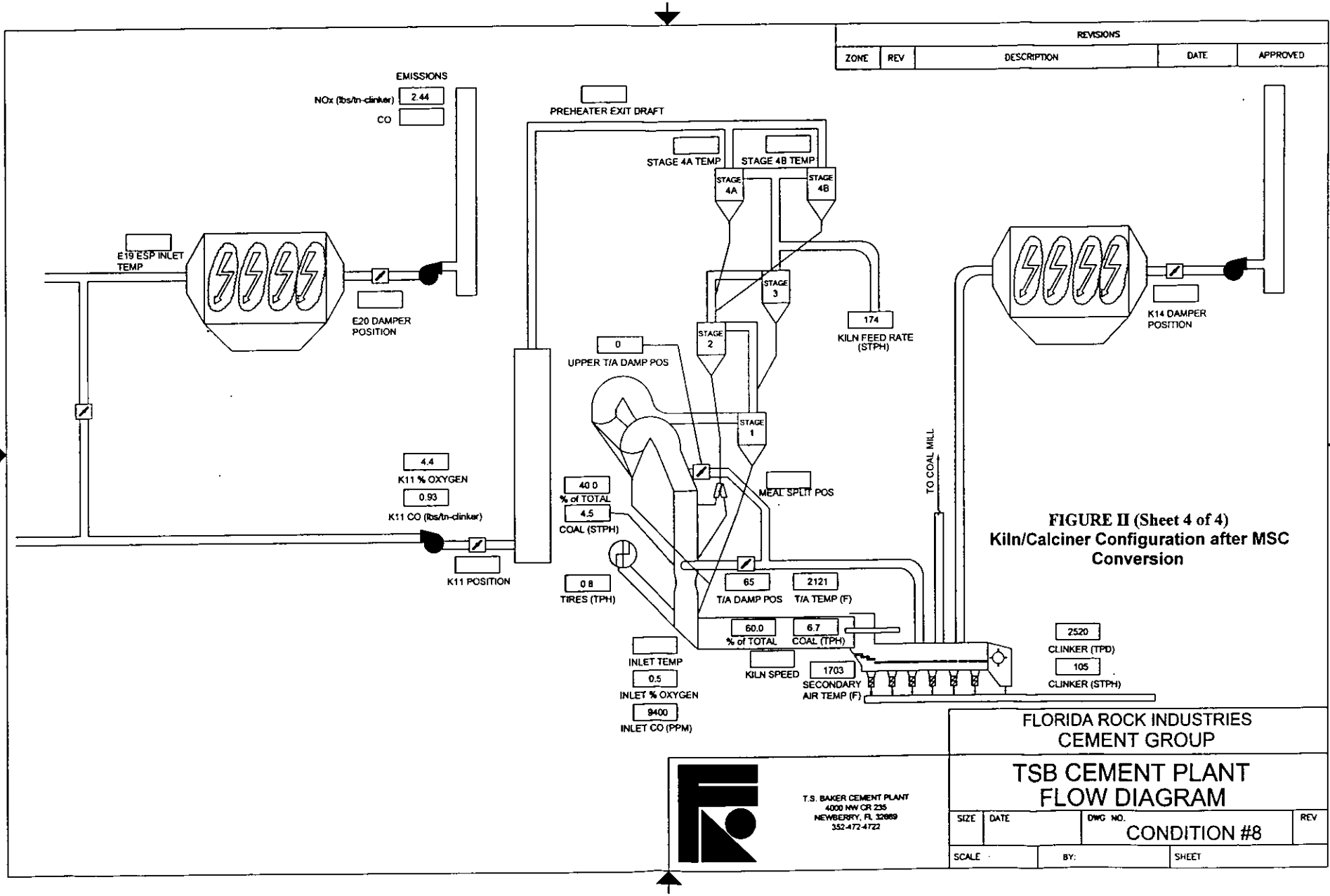


FIGURE II (Sheet 4 of 4)
Kiln/Calciner Configuration after MSC Conversion

Florida Department of Environmental Protection

✓ 7/16/02 @ 9:05 AM

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David Struhs
Secretary

FAX TRANSMITTAL SHEET

DATE: 7/16/02

TO: Chris Bird, Director

PHONE: _____ FAX: 352-264-6852

FROM: Vickie Gibson PHONE: 850-921-9504

Division of Air Resources Management FAX: 850.922.6979

RE: Fla. Rock Indus. - Thompson S. Baker Portland Cement Plant - Newberry

CC: _____

Total number of pages including cover sheet: 4

Message

I was out of the office yesterday. Therefore, I am sending you a copy of this correspondence by fax and will send you a hard copy in todays mail..

If there are any problems with this fax transmittal, please call the above phone number.

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

July 12, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John D. Baker, President
Florida Rock Industries
155 East 21st Street
Jacksonville, Florida 34601

Re: Request for Additional Information
DEP File No. 0010087-006-AC (PSD-FL-228)
Florida Rock Industries (FRI)
Thompson S. Baker Portland Cement Plant in Newberry

Dear Mr. Baker:

On June 14, 2002 the Department received your application for a modification of the Thompson S. Baker Portland Cement Plant's air construction permit. This modification is to increase clinker production and to reduce some of the permitted emission limitations of criteria pollutants.

We require some additional information to process your application. Please submit the information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Please note that in accordance with Page 2 of the application, we will act only on the changes requested in the air construction permit, but not on those requested in the Title V Operation permit (see pages 12 and 38). Please list the requested changes in accordance with the numeration in the original air construction permit. A separate Title V Operation Permit application may be required following final action on this construction permit application.
2. Describe in detail the manner in which the Multi-Stage Calciner (MSC) has been operated with respect to achievement of the present NO_X emission limit (2.8 lb/ton of clinker). Advise of any projected changes or adjustments in kiln burner and MSC operational parameters that will be implemented to insure achievement of the lower proposed emission rates for NO_X and CO. These parameters should include: breakdown

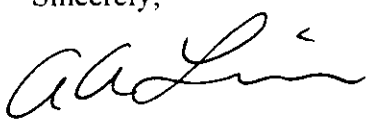
of fuel and air distribution between kiln burner and MSC burners; typical percent and type of reburn fuel as well as oxygen levels in the lower stage of the calciner; similar information for the upper calciner; tertiary air considerations to finalize burnout; and achieve the lower CO levels also projected. Attach flow diagrams as necessary.

3. Continuous Emission Monitoring: Explain the data collection and calculation procedures during start up and shutdown and low load operation. Describe how the CEM software calculates the 30-day rolling average NO_X limit. Propose permit conditions regarding the manner by which data are to be included or excluded (e.g. span data, zero production, etc.)

4. Attached is a submittal from the Alachua County Environmental Protection Department. Please provide information they have requested when submitting the above requested information.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call me at 850/921-9523.

Sincerely,



A.A. Linero, P.E.
Administrator
New Source Review Section

AAL/al

Enclosure

cc: Fred Cohrs, FRI
Cary Cohrs, FRI
Steve Cullen, P.E.
Gregg Worley, EPA
John Bunyak, NPS
Christopher Kirts, NED
Chris Bird, Alachua County

ALACHUA COUNTY
ENVIRONMENTAL PROTECTION DEPARTMENT

201 SE 2nd Avenue, Suite 201 • Gainesville, Florida 32601
Tel: (352) 264-6800 • Fax (352) 264-6852
Suncom: 651-6800
Home Page: http://environment.alachua-county.org/

ALACHUA COUNTY

Board of County Commissioners

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Environmental Protection Director
cbird@co.alachua.fl.us

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rbuch@co.alachua.fl.us

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Pollution Prevention Manager
jmousa@co.alachua.fl.us

Geoffrey Sample
Natural Resources Supervisor (Interim)
gsample@co.alachua.fl.us

Debbie VanSlooten
Administrative Assistant
dvanslooten@co.alachua.fl.us

July 11, 2002

Mr. Al Linero, Administrator
New Source Review
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Permit Number: 0010087-002-AV
Florida Rock Industries, Thompson S. Baker Plant

Dear Mr. Linero,

The purpose of this letter is to provide Alachua County Environmental Protection Department (ACEPD) comments and concerns regarding the air permit modification application of Florida Rocks Industries, Thompson S. Baker plant in Newberry, Florida.

1) Florida Rock is requesting that the proposed permit emission rates for PM (kiln), PM10 (kiln) SO2 (kiln), NOx (kiln) and CO (kiln) be reduced. What are their current actual emissions (from CEMS or stack test data) based on their clinker production? How much PM, PM10, SO2, NOx, and CO are they actually emitting now at their maximum production rates?

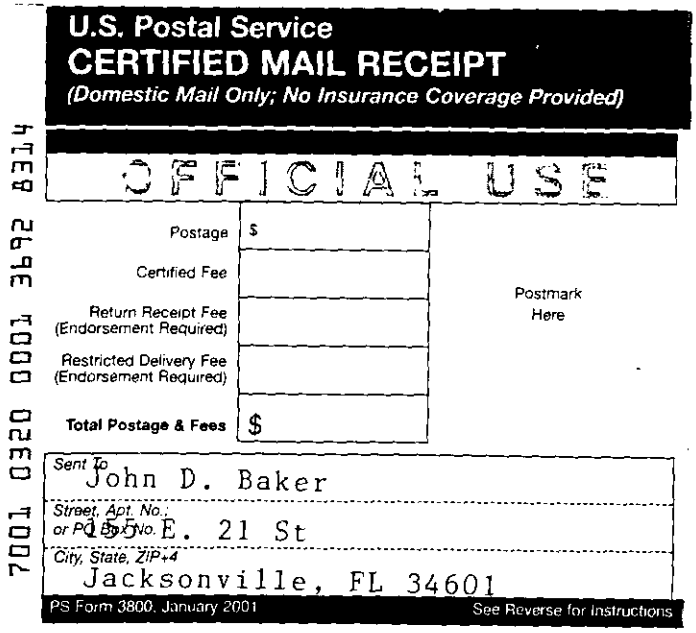
2) Has the permittee supplied sufficient actual data to show that after production rates are increased, the emission rates would go down from present permitted levels as indicated in the Fred Cohrs letter? This data should be supplied.

3) Has the permittee supplied reasonable assurance or data to indicate that Dioxin emissions will be below the new MACT standards? Is any actual emission data available?

Thanks for your response. If you have any questions please call me at 352-264-6809.

Lalit Lalwani
Air Quality Engineer

cc: John Mousa, ACEPD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OFFICIAL USE
Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $
Postmark Here
Sent To John D. Baker
Street, Apt. No.; or PO Box No. 455 E. 21 St
City, State, ZIP+4 Jacksonville, FL 34601
PS Form 3800, January 2001
See Reverse for Instructions
7001 0320 0001 3692 8814

AL

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
352/377-5822 ▪ FAX/377-7158

187-02-04
June 19, 2002

Mr. Joseph Kahn
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

SUBJECT: Florida Rock Industries - Organic HAP stack emissions measurements
NESHAP, Subpart LLL, Source Status Determination

Dear Mr. Kahn:

This letter is to confirm the criteria by which organic HAP emissions will be determined for the Florida Rock Industries (FRI), Newberry plant to establish NESHAP, Subpart LLL source status. In particular, we are requesting confirmation of the specific organic HAP compounds that should be analyzed and quantified.

As your letter to me, dated May 7, 2002, directs me to EPA document "Questions and Answers for the Portland Cement Manufacturing Industry, NESHAP, Subpart LLL" I reviewed the document. Russell Wider discussed the pertinent portions of the document relative to organic HAP compounds with Max Lee via telephone on June 17, 2002. Russell directed Max to Page 3 of the document for clarification of the compounds that should be tested for. The document states on Page 3:

> *Hydrogen chloride and organic HAP emissions such as (but not limited to) benzene, toluene, hexane, formaldehyde, hexane, naphthalene, phenol, styrene, and xylenes are the main HAPs from the kiln that may cause facilities to be major sources, but HAPs emitted from all sources at the plant site should be accounted for in making a major source determination.*

Furthermore, your letter of May 7, 2002 states on Page 2, line 16, semi-volatile organic HAPs are expected to be low and that an estimate of emissions using AP-42 emission factors can substituted for stack testing. For example, formaldehyde and phenol can be estimated using AP-42 factors.

You mention that sampling for volatile organic HAPs will be necessary. We are planning to perform organic HAP emissions at the Newberry plant on July 10, 2002 by EPA

Method 18 (per Method 18 allowance of EPA Method 0030 (VOST traps) with analysis by EPA Method 8260). The following volatile HAP compounds will be analyzed for:

Acetonitrile	Ethylbenzene
Benzene	Hexane
Bromoform	Methylene Chloride
Carbon Sulfide	Napthalene
Carbon Tetrachloride	Styrene
Chlorobenzene	Toluene
Chloroform	1,1,2-Trichlorethane
1,2 Dibromo-3-chlorpropane	Vinyl acetate
1,4-Dichlorobenzene	Vinyl chloride
	m-xylene, p-xylene, o-xylene

We request your confirmation that testing of these volatile organic HAP compounds plus an estimate of semi-volatile (including, but not limited to, phenols and formaldehyde) will allow adequate NESHAP status determination of organic HAP emissions from the FRI -Newberry plant. HAP metals emissions will be estimated using the EPA guidance of 1.0 percent of all permitted PM emissions and HCl emissions will be determined using EPA Method 321. Emissions testing will be conducted during the week of July 8-12, 2002 with EPA Method 321 scheduled on July 10, 2002. Please contact me if you have any questions regarding this request for confirmation.

Sincerely,

John Koogler, Ph.D., P.E.
KOOGLER & ASSOCIATES

C: Greg DeAngelo, DEP DARM
Cindy Phillips, DEP DARM
Fred Cohrs, FRI
Cary Cohrs, FRI

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Natural Resources Supervisor (Interim)
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Debbie VanSlooten
Administrative Assistant
dvanslooten@co.alachua.fl.us

RECEIVED

JUL 16 2002

BUREAU OF AIR REGULATION

July 11, 2002

Mr. Al Linero, Administrator
New Source Review
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Permit Number: 0010087-002-AV
Florida Rock Industries, Thompson S. Baker Plant

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Lalit Lalwani
Air Quality Engineer

cc: John Mousa, ACEPD