City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 29, 2000

Kim R. Kemper, P.E.
Kemper-Vaughan Consulting Engineers
3700 Coors Road NW Suite C
Albuquerque, NM 87120

RE: VULCAN MATERIALS, INC. (F16-D14A). GRADING PLAN FOR PAVING PERMIT APPROVAL. ENGINEER'S STAMP DATED AUGUST 30, 2000.

Dear Mr.Kemper:

Based on the information provided on your September 1, 2000 submittal, the above referenced project is approved for Paving Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occpancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Whitney Reierson
File

VULCAN MATERIALS COMPANY, INC.

GRADING PLAN & PAVING PLAN

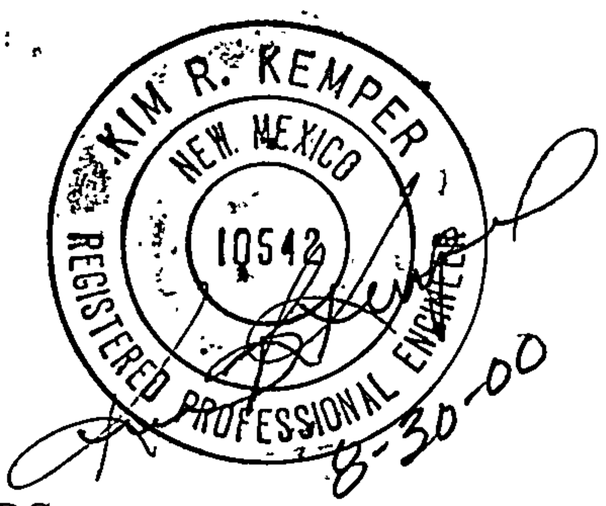
August 30, 2000

Prepared for:

Vulcan Materials Company

6001 Chappell Road NE

Albuquerque, New Mexico 87113

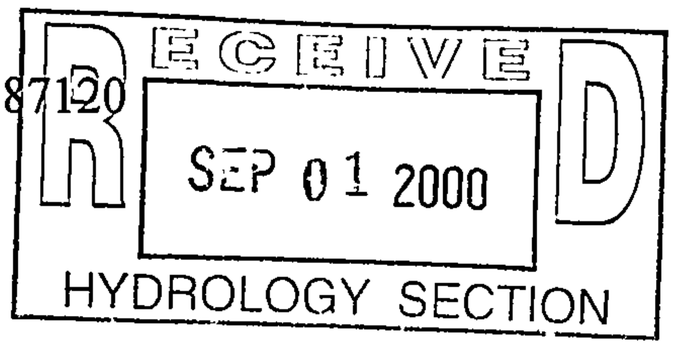


Prepared by:

KEMPER-VAUGHAN CONSULTING ENGINEERS

3700 Coors Road NW

Albuquerque, New Mexico 87120



PROJECT OVERVIEW

The site is located on the west side of Chappell Road just north of the Renaissance Center. This property is currently a sand and gravel extraction and processing facility. In total the site is approximately 161 acres. The proposed project is limited to a small area in the northeast corner of the facility and includes paving improvements around existing loading facilities. The area affected by the proposed improvement is approximately 3.37 acres. As shown on panel 138 of the 1996 FIRM, this site does not lie within a designated flood hazard area.

DRAINAGE

In 1999 a subdivision was programmed for this property and submitted to the City. This subdivision included proposed to create five (5) lots and one large tract. The lots included approximately 14.1 acres leaving approximately 146.4 acres in a single tract. The Owner has represented to this office that this subdivision plan has now been abandoned.

In the subdivision process, much work was completed with regard to the drainage on and surrounding the property. Because the subject project, paving improvements, impacts such a small portion of the total site it appeared reasonable and prudent to utilize the drainage data already prepared/calculated for this site as part of the earlier subdivision. An initial meeting was held with the City Hydrology Division where concurrence on this procedure was obtained.

The Drainage Analysis for this entire parcel can be found in City file F16/D14. In that analysis it was reported that due to numerous active sand and gravel extraction pits, "the exact volume of runoff and peak flow of any design storm under existing conditions is not able to be determined due to the ever-changing topography of the site". Because of this condition, the report focused on the developed condition, neglected all other excavations on the property and addressed only the primary constructed retention pond located near the western boundary of the parcel. The Analysis reported that the total volumetric runoff, including onsite and offsite considerations, created by the site was 18.5 acre-feet during the 100-yr 24-hr event. It further reported that the existing retention pond has a capacity of approximately 21 acre-feet leaving approximately 2.5 acre-feet of excess volume within the existing pond.

The calculations provided herein include the design event peak discharge and volumetric runoff for the area affected by the proposed improvements. A small portion of the new paving will drain to the private access roadway on the north and not to the internal swales and flowlines. However, the storm waters from the access roadway eventually drain to the retention pond. As shown, the planned paving improvement results in an increase of 0.38 acre-feet of total runoff volume during the 100-yr 24-hr event. Therefore, there is sufficient capacity in the existing retention pond to accommodate the proposed project.

Also included is a rating curve identifying the capacity of the proposed concrete rundown exiting the western boundary.

VULCAN PAVING AREA = 3.37 ac.

DRAINAGE ZONE 2
PRECIPITATION: 360 = 2.35 in.
1140 = 2.75 in.
10day = 3.95 in.

	EXCESS PRECIPITATION:	PEAK DISCHARGE:	
TREATMENT A	0.53 in.	1.56	cfs/ac.
TREATMENT B	0.78 in.	2.28	cfs/ac.
TREATMENT C	1.13 in.	3.14	cfs/ac.
TREATMENT D	2.12 in.	4.70	cfs/ac.

EXISTING CONDITIONS:	AREA	PROPOSED CONDITIONS: AREA
TREATMENT A	0 ac.	0 ac.
TREATMENT B	0 ac.	0 ac.
TREATMENT C	3.24 ac.	0 ac.
TREATMENT D	0.13 ac.	3.37 ac.

EXISTING EXCESS PRECIPITATION:

Weighted E = (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(3.24)+(2.12)x(0.13)/ 3.37 ac.
= 1.17 in.

V100-360 = (1.17)x(3.37)/ 12 = 0.328067 ac-ft = 14291 cf

V100-1440 = (0.33)+(0.13)x(2.75 - 2.35)/ 12 = 0.332400 ac-ft = 14479 cf

V100-10day = (0.33)+(0.13)x(3.95 - 2.35)/ 12 = 0.345400 ac-ft = 15046 cf

EXISTING PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(3.24)+(4.70)x(0.13)= 10.78 cfs

PROPOSED EXCESS PRECIPITATION:

Weighted E = (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(0.00)+(2.12)x(3.37)/ 3.37 ac.
= 2.12 in.

V100-360 = (2.12)x(3.37)/ 12.0 = 0.595367 ac-ft = 25934 cf

V100-1440 = (0.60)+(3.37)x(2.75 - 2.35)/ 12 = 0.707700 ac-ft = 30827 cf

V100-10day = (0.60)+(3.37)x(3.95 - 2.35)/ 12 = 1.044700 ac-ft = 45507 cf

PROPOSED PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(0.00)+(4.70)x(3.37)= 15.84 cfs

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

August 30, 2000
VULCAN MATERIALS COMPANY
CONC. RUNDOWN @ WEST PL

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0370
Manning`s Roughness Coefficient (n-value).....	0.0150
Channel Side Slope - Left Side (horizontal/vertical)....	0.01
Channel Side Slope - Right Side (horizontal/vertical)...	0.01
Channel Bottom Width (feet).....	3.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.1	1.2	3.93	2.192	0.240	0.340	0.3	3.0
0.2	3.6	6.00	2.364	0.559	0.759	0.6	3.0
0.3	6.8	7.57	2.436	0.889	1.189	0.9	3.0
0.4	10.6	8.84	2.466	1.215	1.615	1.2	3.0
0.5	14.9	9.92	2.474	1.528	2.028	1.5	3.0
0.6	19.6	10.85	2.470	1.827	2.427	1.8	3.0
0.7	23.0	11.42	2.462	2.026	2.696	2.0	3.0

==========