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HOT MIX PLANT
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VALLEY
CALICHE
PRODUCTS, INC. P.O. BOX 1086 MISSION, TX 78573-0017
Crushed Caliche & Construction Aggregates

June 8, 2017

Sandy Suarez, Buyer II
Hidalgo County Purchasing Department
2802 S. Bus. Hwy 281
Edinburg, Texas 78539

RE: Hot Mix Asphaltic Concrete (Hot Mix) Mixture Design

Dear Ms. Suarez,

In response to your letter to Mr. Cory Thompson this morning, please review the responses listed below:

1. On the Mixture Design, the information that you have requested in not available and not applicable due to the fact that this information is only inserted when a specific job and location is designated for the material produced. For Hidalgo County, the projects will change on a daily or weekly basis.
   The "Sample ID" is specific for the sample taken to test on a specific job and date. The "Lot Number" pertains to the specific sample also, as does "Sampled By", "Sample Location", and Sample Date". The "Status", "County", Letting Date", "Controlling CSJ", "Area Engineer", "Project Manager", "Course/Lift", "Station", and "Dist. from CL" are all terms used by TxDOT for designating the exact TxDOT project the hot mix is being produced for and does not apply to the Hidalgo County hot mix bid discussed here.

2. The Spec. Year for the design submitted was 2004 because that was the most current TxDOT Standard Specification Book published at the time our hot mix design was produced. Since TxDOT updates their spec book approximately every ten (10) years, the only other spec book published by TxDOT is the 2014 Standard Specification Book. The Type "D" hot mix specifications were not changed in the 2014 spec book, so Valley Caliche Products, Inc. continued to use their current, proven hot mix design which met all of the specification requirements of the TxDOT 2014 Standard Specification Book for Type "D" hot mix.

3. The cover sheet for the hot mix design that we currently produce and that was submitted to Hidalgo County is attached. The Certified Level II HMA Specialist id Oscar H. Rodriguez, P.E., the owner of Rodriguez Engineering Laboratories in Austin, Texas.

We hereby certify that the "Hot Mix Asphaltic Concrete" that we propose to produce at our Mission, Texas plant for Hidalgo County shall meet the requirements of Type D, Hot Mix, in accordance with Item 341, Dense-Graded Hot-Mix Asphalt of the Texas Department of Transportation 2014 Standard Specification for Construction and Maintenance of Highways, Streets and Bridges. This is the most recent Standard Specification Manual from the Texas State Department of Transportation.

Valley Caliche Products, Inc. has successfully produced hot mix asphaltic concrete meeting these design criteria for numerous city, county and private development projects in the Rio Grande Valley for many years. The Texas Department of Transportation (TxDOT) and the Texas Hot Mix Asphalt Pavement Association Hot Mix Asphalt Center both agree that the only reason to ever re-design or update a proven hot mix asphalt design is if there is a change in the source of aggregate or a change in the source of the liquid asphalt. Once a hot mix asphalt design has been proven to meet all design and field application criteria, there is no need (or desire) to re-design or up-date the design. Valley Caliche Products, Inc. produces their own crushed gravel and sand for their hot mix and has retained the same suppliers for limestone and liquid asphalt for many years, which has yielded the proven, high quality hot mix design which we have submitted here.

If you have any questions regarding this submittal, or need any additional information, please contact me. As always, I appreciate your time on this matter.

Sincerely,

VALLEY CALICHE PRODUCTS, INC.

Mark Motheral
Certificate No. 641 – Level I A Plant Production Specialist
Certificate No. 452 – Level II Mix Design Specialist

Rodriguez
Engineering
Laboratories

April 13, 2005

Hot Mix Asphaltic Concrete Design

Performed for

Valley Caliche

RE05 0272

Spec: 340
Type: "D" Surface, PG64-22
2004 Spec.

Designed By

Oscar H. Rodriguez, P.E.
Level II Cert. No. 004

13809 Turbine Drive · Austin, TX 78728
(512) 251-4454 · Fax (512) 251-1380

TEXAS DEPARTMENT OF TRANSPORTATION

HMACP MIXTURE DESIGN : COMBINED GRADATION

Refresh Workbook

File Version: 12/09/04 11:12:14

SAMPLE ID:		SAMPLE DATE:	
LOT NUMBER:		LETTING DATE:	
STATUS:		CONTROLLING CSJ:	
COUNTY:		SPEC YEAR:	2004
SAMPLED BY:		SPEC ITEM:	
SAMPLE LOCATION:		SPECIAL PROVISION:	
MATERIAL:		MIX TYPE:	ITEM341_D_Fine_Surface
PRODUCER:	Valley Caliche Products, Inc.		
AREA ENGINEER:		PROJECT MANAGER:	

COURSE\LIFT:		STATION:		DIST. FROM CL:	

	BIN FRACTIONS																	
	Bin No.1		Bin No.2		Bin No.3		Bin No.4		Bin No.5		Bin No.6		Bin No.7		Combined Gradation			
Aggregate Source:	VCP		Border Pacific		VCP		VCP		Border Pacific		VCP							
Aggregate Number:																		
Sample ID:	7/16" Crushed Gravel		7/16" Crushed Limestone		1/4" Grade 1		1/4" Grade 2		Screenings		Washed Sand							
Rap?, Asphalt%:															Total Bin			
Individual Bin (%):	20.0	Percent	10.0	Percent	18.0	Percent	16.0	Percent	22.0	Percent	14.0	Percent		Percent	100.0%	Lower & Upper Specification Limits		
Sieve Size:	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum.% Passing	*Wtd* Cum. %	Cum. % Passing			Within Spec's
3/4"	100.0	20.0	100.0	10.0	100.0	18.0	100.0	16.0	100.0	22.0	100.0	14.0		0.0	100.0	100.0	100.0	Yes
1/2"	98.9	19.8	100.0	10.0	100.0	18.0	100.0	16.0	100.0	22.0	100.0	14.0		0.0	99.8	98.0	100.0	Yes
3/8"	68.9	13.8	95.2	9.5	100.0	18.0	99.6	15.9	100.0	22.0	100.0	14.0		0.0	93.2	85.0	100.0	Yes
No. 4	1.9	0.4	10.1	1.0	77.9	14.0	73.2	11.7	99.7	21.9	100.0	14.0		0.0	63.0	50.0	70.0	Yes
No. 8	0.4	0.1	4.6	0.5	27.9	5.0	9.6	1.5	86.2	19.0	99.9	14.0		0.0	40.1	35.0	46.0	Yes
No. 30	0.3	0.1	2.9	0.3	1.2	0.2	2.7	0.4	37.4	8.2	99.8	14.0		0.0	23.2	15.0	29.0	Yes
No. 50	0.2	0.0	2.6	0.3	0.7	0.1	2.1	0.3	23.9	5.3	95.1	13.3		0.0	19.3	7.0	20.0	Yes
No. 200	0.1	0.0	2.1	0.2	0.6	0.1	1.0	0.2	12.2	2.7	10.0	1.4		0.0	4.6	2.0	7.0	Yes

\# Not within specifications   # Not cumulative

Asphalt Source & Grade:	Valero PG 64-22	Binder Percent, (%):		Asphalt Spec. Grav.:	1.032
Antistripping Agent:	N/A	Percent, (%):			

Remarks:

Test Method:	Tested By:	Tested Date:
Tx207		
Tx226		
Tx227		
Tx235		
Tx242		
Tx530		

Reviewed By:	Completed Date:

Authorized By:	Authorized Date:

TEXAS DEPARTMENT OF TRANSPORTATION

HMACP MIXTURE DESIGN : MATERIAL PROPERTIES

File Version: 12/09/04 11:12:14

SAMPLE ID:		SAMPLE DATE:	
LOT NUMBER:		LETTING DATE:	
STATUS:		CONTROLLING CSJ:	
COUNTY:		SPEC YEAR:	2004
SAMPLED BY:		SPEC ITEM:	
SAMPLE LOCATION:		SPECIAL PROVISION:	
MATERIAL:		MIX TYPE:	ITEM341_D_Fine_Surface
PRODUCER:	Valley Caliche Products, Inc.		
AREA ENGINEER:		PROJECT MANAGER:	

COURSE\LIFT:		STATION:		DIST. FROM CL:	

	Bin No.1 = 20 %	Bin No.2 = 10 %	Bin No.3 = 18 %	Bin No.4 = 16 %	Bin No.5 = 22 %	Bin No.6 = 14 %	
Aggregate Source:	VCP	Border Pacific	VCP	VCP	Border Pacific	VCP	
Aggregate Number:							
Sample ID:	7/16" Crushed Gravel	7/16" Crushed Limestone	1/4" Grade 1	1/4" Grade 2	Screenings	Washed Sand	

Test Name	SiteManager Test Template	Test Method	Specification Requirement		Result	Sample ID	Result	Sample ID	Result	Sample ID	Result	Sample ID	Result	Sample ID	Result	Sample ID	Result	Sample ID
Stockpile																		
Decantation	Tx217	Tex-217-F	1.5	Max.	0.10		0.30		0.20			0.20	N/A		N/A			
Deleterious Mat'l	Tx217	Tex-217-F	1.5	Max.	0.00		0.00		0.00			0.00	N/A		N/A			
Surface Aggregate Classification	Tx4AgClas	Tex-438-A Tex-612-J		Min.	A		B		A			A	N/A		N/A			
Magnesium Sulfate Soundness	Tx411M	Tex-411-A	30	Max.	9.00		7.00		9.00			9.00	N/A		N/A			
LA Abrasion	Tx410	Tex-410-A	40	Max.	20.00		27.00		20.00			20.00	N/A		N/A			
Crushed Faces Count	Tx460	Tex-460-A	85	Min.	98.00		100.00		96.00			96.00	N/A		N/A			
Flakiness Index	Tx224	Tex-224-F		Max.									N/A		N/A			
Fine Aggregate																		
Bar Linear Shrinkage	Tx107	Tex-107-E	3	Max.									1.00					
Combined Aggregate																		
Sand Equivalent	Tx203	Tex-203-F	45	Min.									73.00					
User Defined Testing																		
Use this area to enter any test methods, speciafications & test result that apply to this material(s) but are not not listed above.																		

Remarks:

TEXAS DEPARTMENT OF TRANSPORTATION

HMACP MIXTURE DESIGN : WEIGH UP SHEET

File Version 12/09/04 11:12:14

SAMPLE ID:		SAMPLE DATE:	
LOT NUMBER:		LETTING DATE:	
STATUS:		CONTROLLING CSJ:	
COUNTY:		SPEC YEAR:	2004
SAMPLED BY:		SPEC ITEM:	
SAMPLE LOCATION:		SPECIAL PROVISION:	
MATERIAL:		MIX TYPE:	ITEM341_D_Fine_Surface
PRODUCER:	Valley Caliche Products, Inc.		
AREA ENGINEER:		PROJECT MANAGER:	

COURSE\LIFT:		STATION:		DIST. FROM CL:	

Aggregate Weight:	5,000.0	grams	% Asphalt by Weight of Aggregate:	0.0	grams
% Asphalt by Weight of Aggr:	0.0	grams			
Total Weight:	5,000.0	grams	(Valero PG 64-22) Asphalt to Add:	**0.0**	grams

INDIVIDUAL

			Bin No.1 = 20 %	Bin No.2 = 10 %	Bin No.3 = 18 %	Bin No.4 = 16 %	Bin No.5 = 22 %	Bin No.6 = 14 %				
Aggregate Source:			VCP	Border Pacific	VCP	VCP	Border Pacific	VCP				
Aggregate Number:												
Sample ID:			7/16" Crushed Gravel	7/16" Crushed Limestone	1/4" Grade 1	1/4" Grade 2	Screenings	Washed Sand		Total Weights	Individual Retained, %	Cumulative Retained, %
Sieve Size:			Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight				
Passing	-	Retained										
	-	3/4"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3/4"	-	1/2"	10.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.2	0.2
1/2"	-	3/8"	300.0	25.0	0.0	5.0	0.0	0.0	0.0	330.0	6.6	6.8
3/8"	-	No. 4	670.0	425.0	200.0	210.0	5.0	0.0	0.0	1,510.0	30.2	37.0
No. 4	-	No. 8	15.0	25.0	450.0	510.0	145.0	0.0	0.0	1,145.0	22.9	59.9
No. 8	-	No. 30	0.0	10.0	240.0	55.0	540.0	0.0	0.0	845.0	16.9	76.8
No. 30	-	No. 50	5.0	0.0	5.0	5.0	145.0	35.0	0.0	195.0	3.9	80.7
No. 50	-	No. 200	0.0	5.0	0.0	5.0	130.0	595.0	0.0	735.0	14.7	95.4
No. 200	-	Pan	0.0	10.0	5.0	10.0	135.0	70.0	0.0	230.0	4.6	100.0
Totals			1,000.0	500.0	900.0	800.0	1,100.0	700.0	0.0	**5,000.0**		

CUMULATIVE

			Bin No.1 = 20 %	Bin No.2 = 10 %	Bin No.3 = 18 %	Bin No.4 = 16 %	Bin No.5 = 22 %	Bin No.6 = 14 %		
Running Total:										
Aggregate Source:			VCP	Border Pacific	VCP	VCP	Border Pacific	VCP		
Aggregate Number:										
Sample ID:			7/16" Crushed Gravel	7/16" Crushed Limestone	1/4" Grade 1	1/4" Grade 2	Screenings	Washed Sand		Total Weights
Sieve Size:			Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight	Aggregate Weight		
Passing	-	Retained								
	-	3/4"	0.0	1,000.0	1,500.0	2,400.0	3,200.0	4,300.0		0.0
3/4"	-	1/2"	10.0	1,000.0	1,500.0	2,400.0	3,200.0	4,300.0		10.0
1/2"	-	3/8"	310.0	1,025.0	1,500.0	2,405.0	3,200.0	4,300.0		340.0
3/8"	-	No. 4	980.0	1,450.0	1,700.0	2,615.0	3,205.0	4,300.0		1,850.0
No. 4	-	No. 8	995.0	1,475.0	2,150.0	3,125.0	3,350.0	4,300.0		2,995.0
No. 8	-	No. 30	995.0	1,485.0	2,390.0	3,180.0	3,890.0	4,300.0		3,840.0
No. 30	-	No. 50	1,000.0	1,485.0	2,395.0	3,185.0	4,035.0	4,335.0		4,035.0
No. 50	-	No. 200	1,000.0	1,490.0	2,395.0	3,190.0	4,165.0	4,930.0		4,770.0
No. 200	-	Pan	1,000.0	1,500.0	2,400.0	3,200.0	4,300.0	5,000.0		5,000.0
	-									

Remarks:

TEXAS DEPARTMENT OF TRANSPORTATION

HMACP MIXTURE DESIGN : BULK GRAVITY

File Version: 12/09/04 11:12:14

SAMPLE ID:		SAMPLE DATE:	
LOT NUMBER:		LETTING DATE:	
STATUS:		CONTROLLING CSJ:	
COUNTY:		SPEC YEAR:	2004
SAMPLED BY:		SPEC ITEM:	
SAMPLE LOCATION:		SPECIAL PROVISION:	
MATERIAL:		MIX TYPE:	ITEM341_D_Fine_Surface
PRODUCER:	Valley Caliche Products, Inc.		
AREA ENGINEER:		PROJECT MANAGER:	

COURSE\LIFT:		STATION:		DIST. FROM CL:	

	Bin No.1 = 20 %	Bin No.2 = 10 %	Bin No.3 = 18 %	Bin No.4 = 16 %	Bin No.5 = 22 %	Bin No.6 = 14 %	
Aggregate Source:	VCP	Border Pacific	VCP	VCP	Border Pacific	VCP	
Aggregate Number:							
Sample ID:	7/16" Crushed Gravel	7/16" Crushed Limestone	1/4" Grade 1	1/4" Grade 2	Screenings	Washed Sand	

Sieve Size: Passing	-	Retained	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG	Individual Ret., %	Bulk SG
	-	3/4"														
3/4"	-	1/2"	1.1													
1/2"	-	3/8"	30.0		4.8				0.4							
3/8"	-	No. 4	67.0		85.1		22.1		26.4		0.3					
No. 4	-	No. 8	1.5		5.5		50.0		63.6		13.5		0.1			
No. 8	-	No. 30	0.1		1.7		26.7		6.9		48.8		0.1			
No. 30	-	No. 50	0.1		0.3		0.5		0.6		13.5		4.7			
No. 50	-	No. 200	0.1		0.5		0.1		1.1		11.7		85.1			
No. 200	-	Pan	0.1		2.1		0.6		1.0		12.2		10.0			
Totals			100.0		100.0		100.0		100.0		100.0		100.0			

Combined Bulk Specific Gravity:		Specific Gravity of Asphalt:	**1.032**

Remarks:

TEXAS DEPARTMENT OF TRANSPORTATION

HMACP MIXTURE DESIGN : SUMMARY SHEET

File Version: 09/25/01 14:11:54

SAMPLE ID:	05-0272	SAMPLE DATE:	
LOT NUMBER:		LETTING DATE:	
STATUS:		CONTROLLING CSJ:	
COUNTY:		SPEC YEAR:	2004
SAMPLED BY:		SPEC ITEM:	
SAMPLE LOCATION:		SPECIAL PROVISION:	
MATERIAL:		MIX TYPE:	Type_D
PRODUCER:	Valley Caliche Products, Inc.		
AREA ENGINEER:		PROJECT MANAGER:	

COURSE\LIFT:		STATION:		DIST. FROM CL:	

Target Density:	**96**	Percent

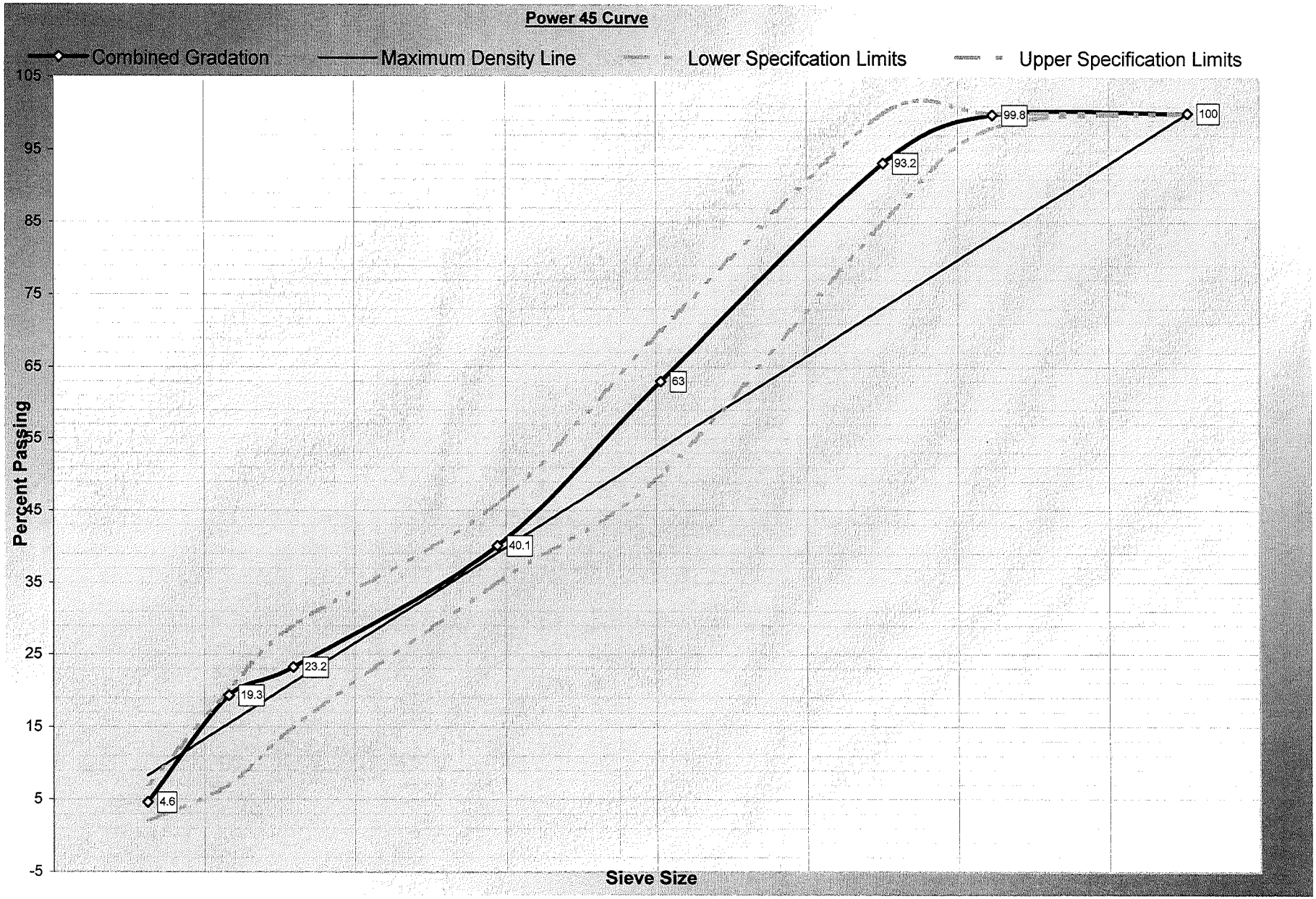
								Static Creep		
Asphalt Content (%)	Spec. Grav. Of Specimen (Ga)	Max. Spec. Grav. (Gr)	Effective Grav. (Ge)	Theo. Max. Sp. Gr. (Gt)	Density from Gt (Percent)	VMA (Percent)	Hveem Stability (%)	Creep Stiffness (psi)	Perm. Strain X1000 (in/in)	Slope of SS Curve X 10^9 (in/in/Sec)
3.50	2.309	2.502	2.638	2.504	92.2	15.6	41			
4.50	2.344	2.473	2.647	2.468	95.0	15.2	44			
5.50	2.374	2.424	2.631	2.432	97.6	15.0	38			
6.50	2.378	2.401	2.645	2.398	99.2	15.8	25			
7.50	2.359	2.366	2.643	2.365	99.7	17.4	TO LOW			

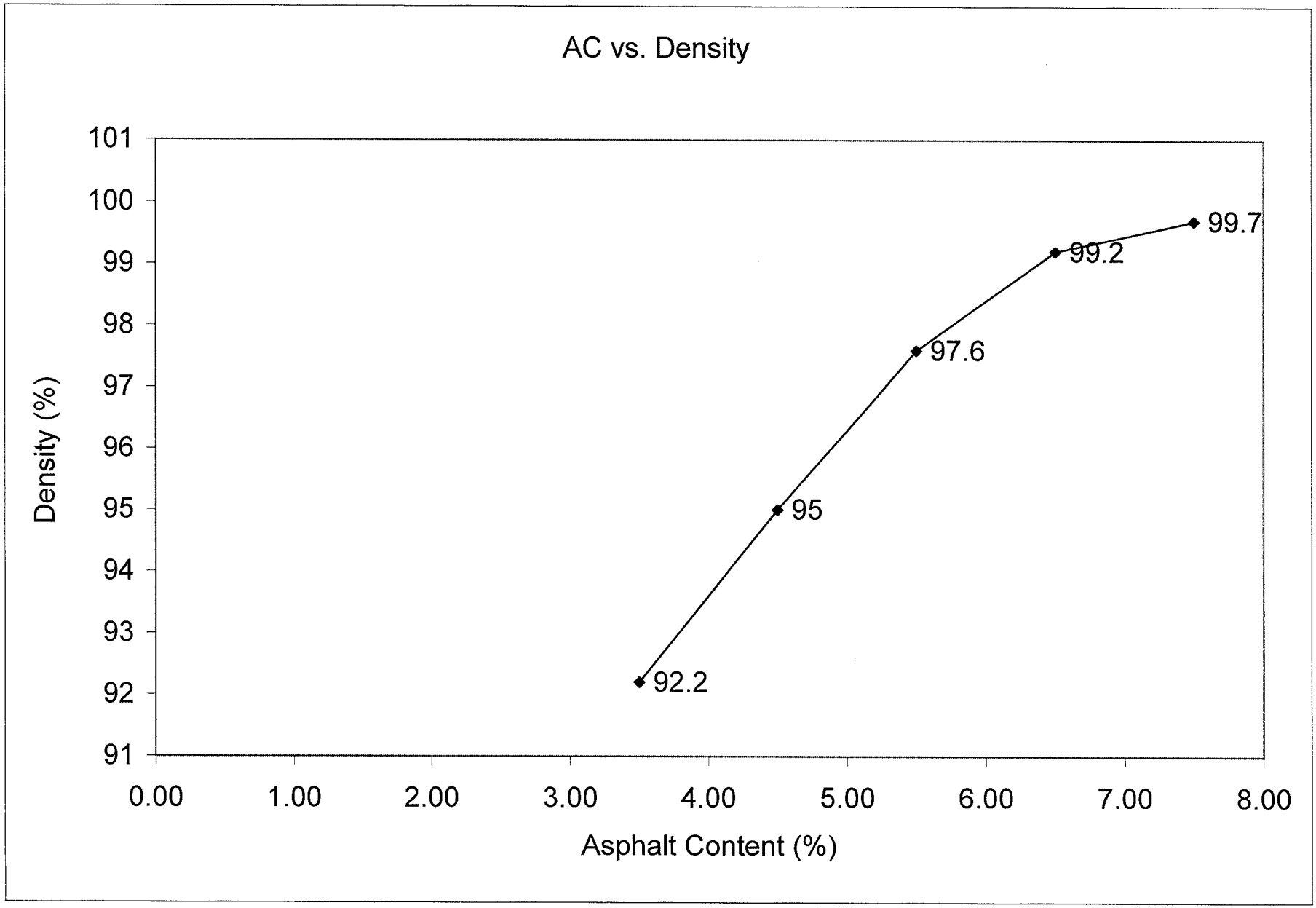
Effective Specific Gravity:	2.641

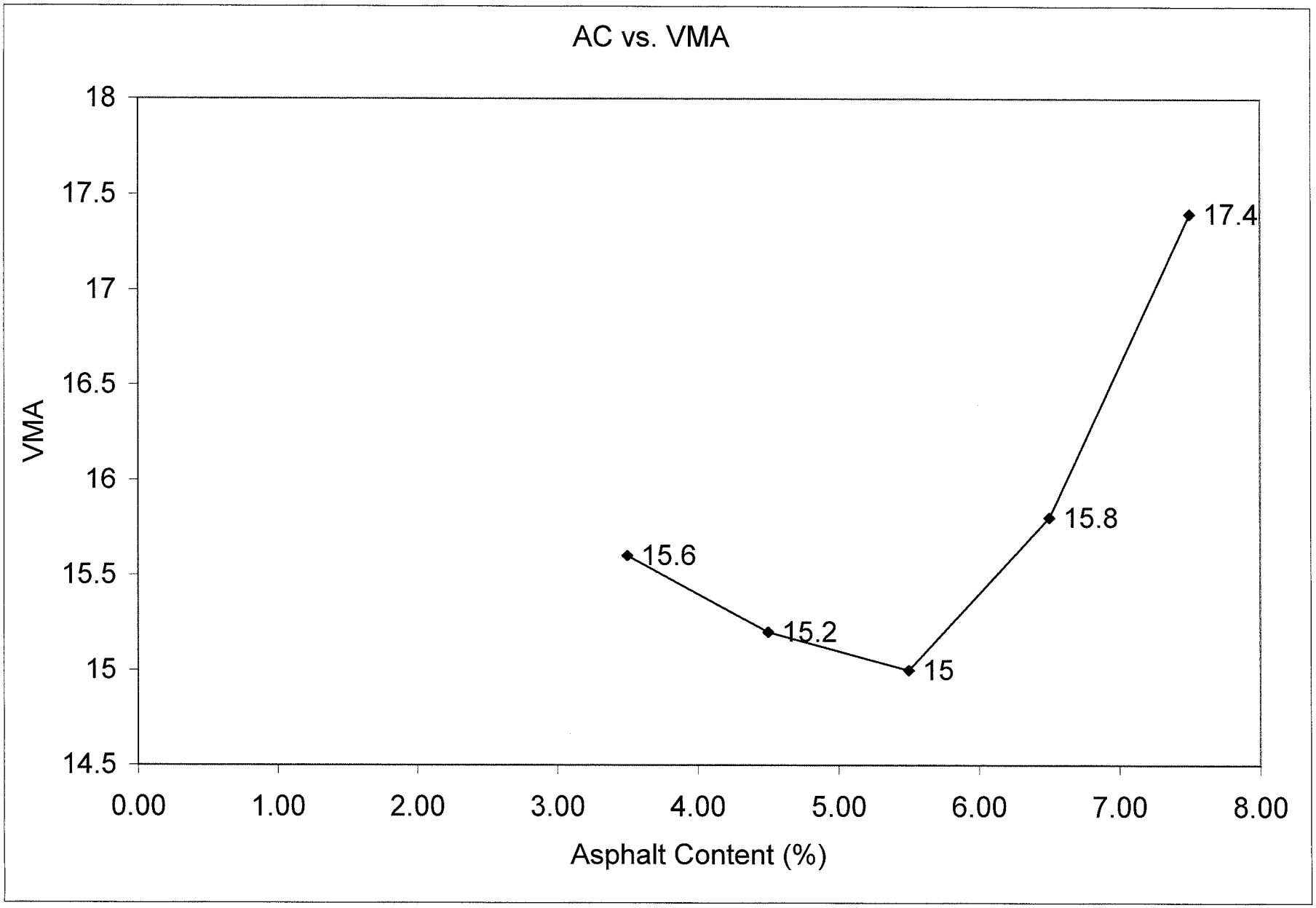
Optimum Asphalt Content:	**4.9**
VMA @ Optimum AC:	**15.1**

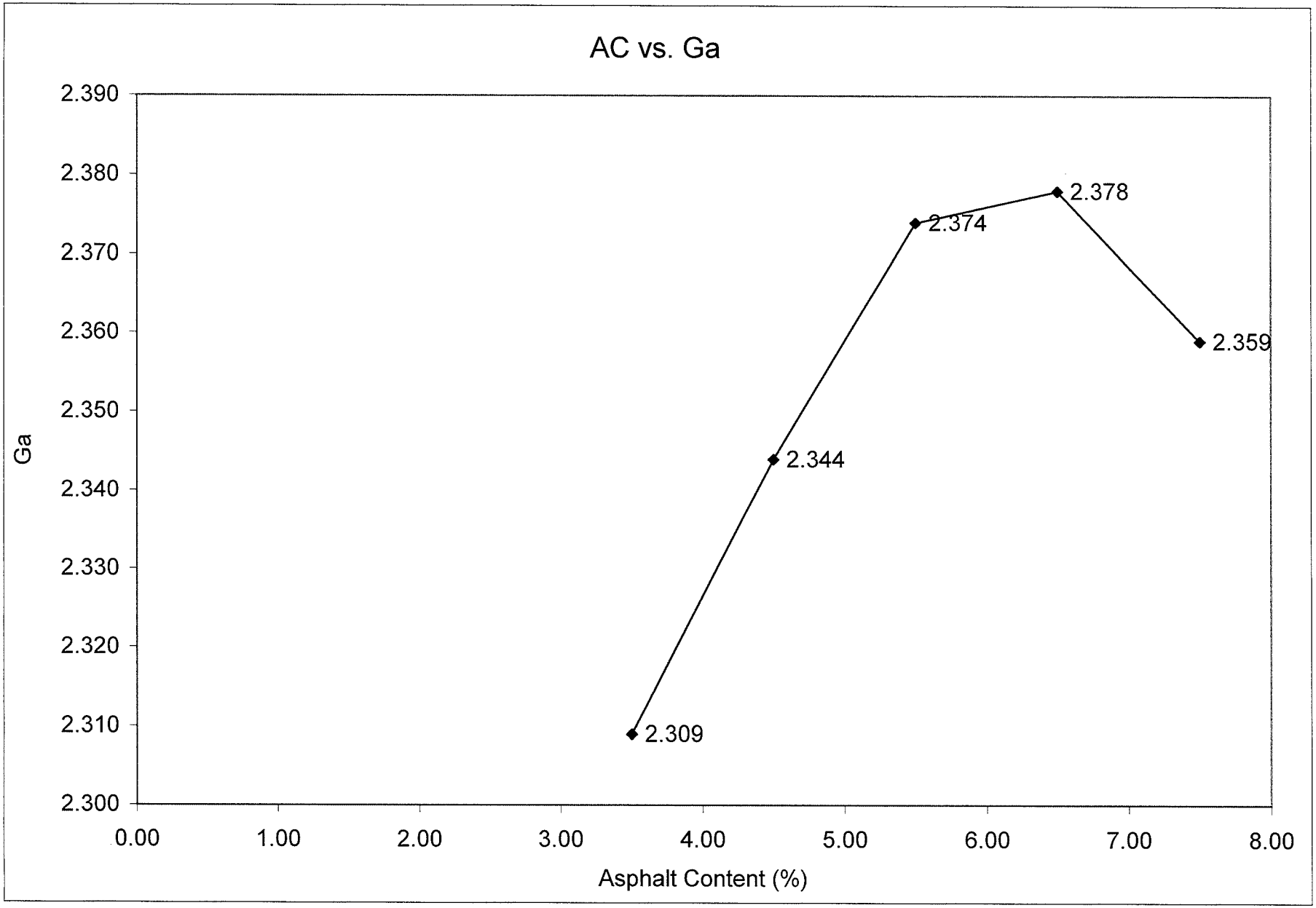
Interpolated Values	
Specific Gravity (Ga):	**2.355**
Max. Specific Gravity (Gr):	**2.454**
Theo. Max. Sp. Gr. (Gt):	**2.453**

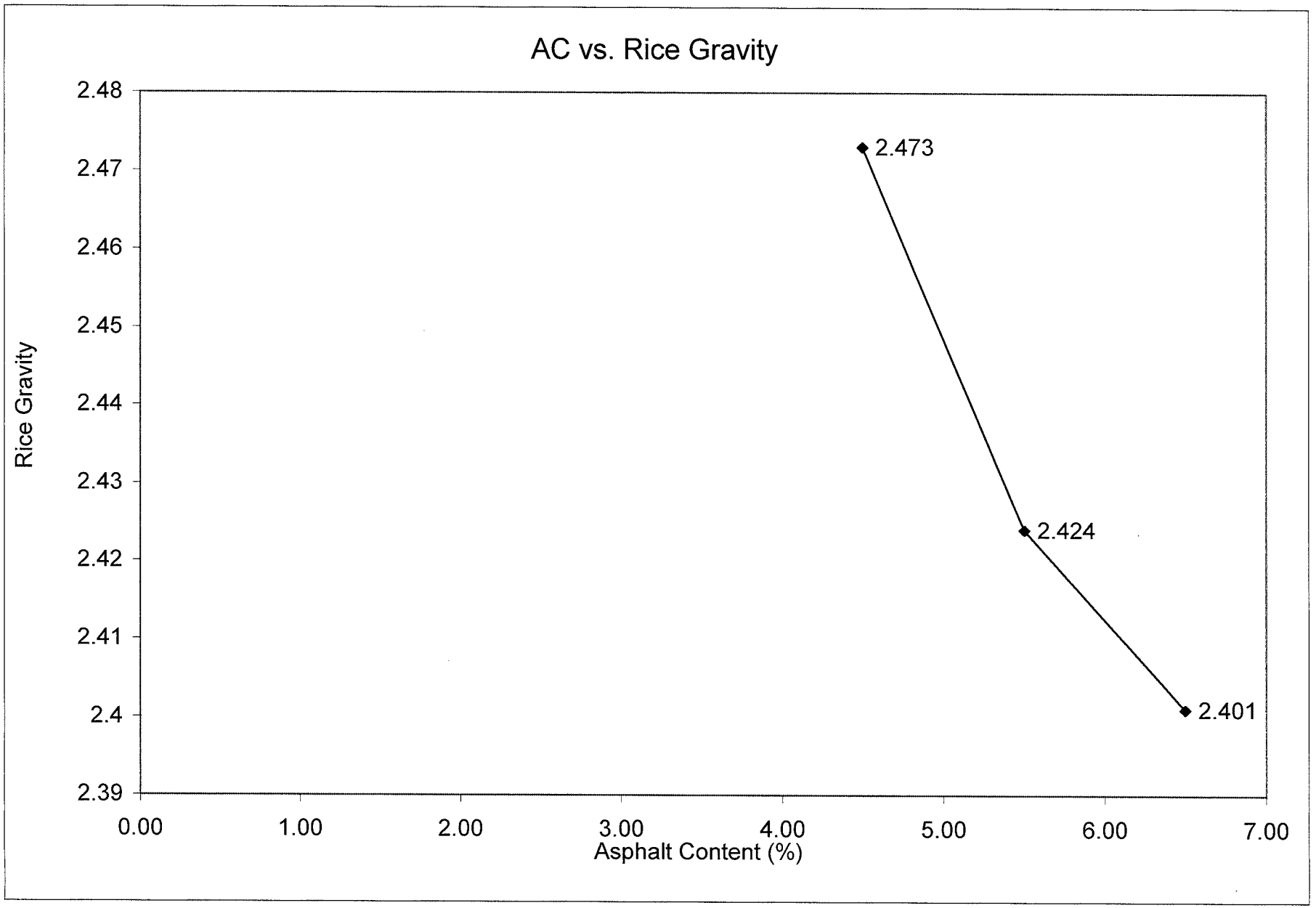
Remarks:


Power 45 Curve
Combined Gradation
Maximum Density Line
Lower Specifcation Limits
Upper Specification Limits
105
95
85
75
65
55
45
35
25
15
5
-5
Percent Passing
Sieve Size
4.6
19.3
23.2
40.1
63
93.2
99.8
100


AC vs. Density
Density (%)
101
100
99
98
97
96
95
94
93
92
91
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
Asphalt Content (%)
92.2
95
97.6
99.2
99.7


AC vs. VMA
18
17.5
17
16.5
16
15.5
15
14.5
VMA
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
Asphalt Content (%)
15.6
15.2
15
15.8
17.4


AC vs. Ga
Ga
2.390
2.380
2.370
2.360
2.350
2.340
2.330
2.320
2.310
2.300
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
Asphalt Content (%)
2.309
2.344
2.374
2.378
2.359


AC vs. Rice Gravity
Rice Gravity
2.48
2.47
2.46
2.45
2.44
2.43
2.42
2.41
2.4
2.39
2.473
2.424
2.401
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
Asphalt Content (%)