



2011

Product Data Sheet
Plant: Blue Ridge

I. GEOLOGICAL FORMATION: Conococheague Limestone

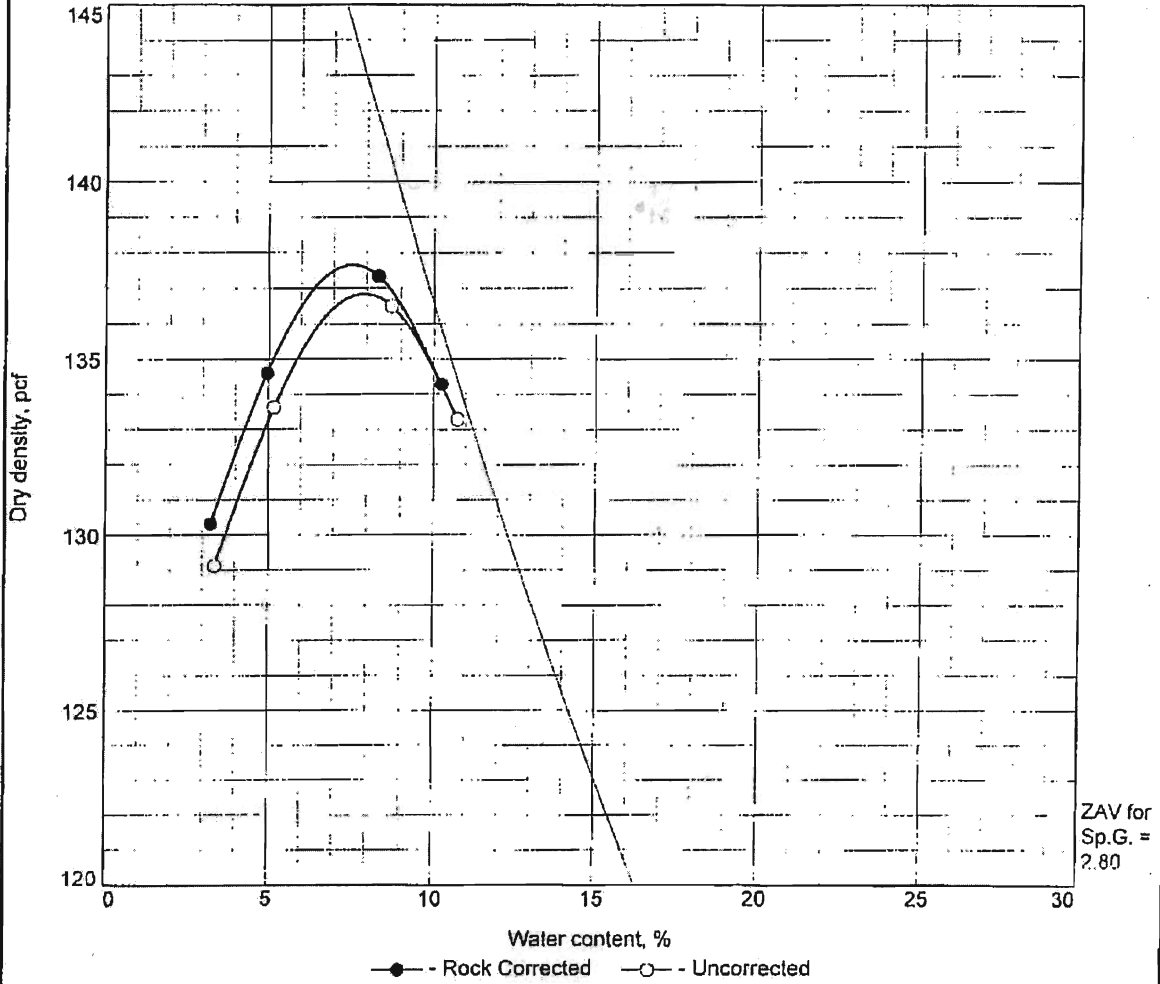
II. CHEMICAL ANALYSIS (March 2011) :

Silica	as SiO2	6.0%	Calcium	29.60% as CaCO3	73.8%
Iron	as Fe2O3	0.9%	Magnesium	7.30% as MgCO3	25.4%
Aluminum	as Al2O3	6.0%	Calcium Carbonate Equiv.	CCE	103.9%
Sulfur	as S	0.1%			

III. QUALITY DATA:

TEST	TEST DATE	Product											
		1	3	5	IMP 57	Coarse 57	68	78	8/8P	9	A Sand	10 Block Mix	
* SPECIFIC GRAVITY *													
BULK (ASPHALT)	2/11	2.733	2.745	2.761	2.760	2.744	2.724	2.753	2.773	2.746	2.690	2.684	
BULK - SSD (CONCRETE)	2/11	2.739	2.755	2.770	2.769	2.754	2.739	2.770	2.784	2.761	2.728	2.723	
APPARENT	2/11	2.75	2.773	2.786	2.784	2.770	2.765	2.799	2.805	2.789	2.797	2.794	
% ABSORPTION	2/11	0.23%	0.4%	0.3%	0.3%	0.3%	0.5%	0.6%	0.4%	0.6%	1.4%	1.5%	
* UNIT WEIGHT *													
DRY RODDED (LBS/CUBIC FT)	2/11	91.9	96.3	100.1	99.8	100.4	100.5	98.3	98.3	95.8	101.8	103.4	
DRY RODDED (LBS/CUBIC YARD)	2/11	2481.3	2600.1	2702.7	2694.6	2710.8	2713.5	2654.1	2654.1	2586.6	2748.6	2791.8	
DRY RODDED (% VOIDS)	2/11	46.1	43.8%	41.9%	42.1%	41.4%	40.9%	42.8%	43.2%	44.1%	39.4%	38.2%	
DRY RODDED (Kg/Cubic Meter)	2/11	1472	1543	1603	1599	1608	1610	1575	1575	1535	1631	1656	
VTM-5 % VOIDS IN STONE SAND	2/11										51.3%	51.7%	
ASTM C1252 % VOIDS (METH B)	2/11										50.8%	51.1%	
ASTM C1252 % VOIDS (METH C)	2/11										43.9%	43.7%	
ASTM D4791 % F & E (3:1)	2/11	24.9%	26.7%	11.5%	9.9%	12.5%	15.8%	15.9%	13.2%	NA			
* LOS ANGELES DEGRADATION *													
GRADING A % LOSS	2/11	16.4%											
GRADING B % LOSS	2/11	13.3%											
GRADING C % LOSS	2/11	14.9%											
SOUNDNESS % LOSS (Magnesium Sulfate)	2/11	0.6%	0.6%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	9.3%	8.9%	8.5%	
SOUNDNESS % LOSS (Sodium Sulfate)													
Surface Treatment Rate of Application													
Stone (lb/sq yd)													
Emulsion (gal/sq yd)													
* SUPERPAVE *													
ASTM C1252 % VOIDS (METH A)	2/11										45.8%	46.0%	
AASHTO T 176 SAND EQUIVALENT	2/11										87	67	
ASTM D4791 % F & E (5:1)	2/11	0.00%	0.3%	0.2%	0.7%	0.3%	0.5%	1.6%	2.0%				

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	5.1	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.7 pcf	136.8 pcf	21B aggregate
Optimum moisture = 7.6 %	7.9 %	

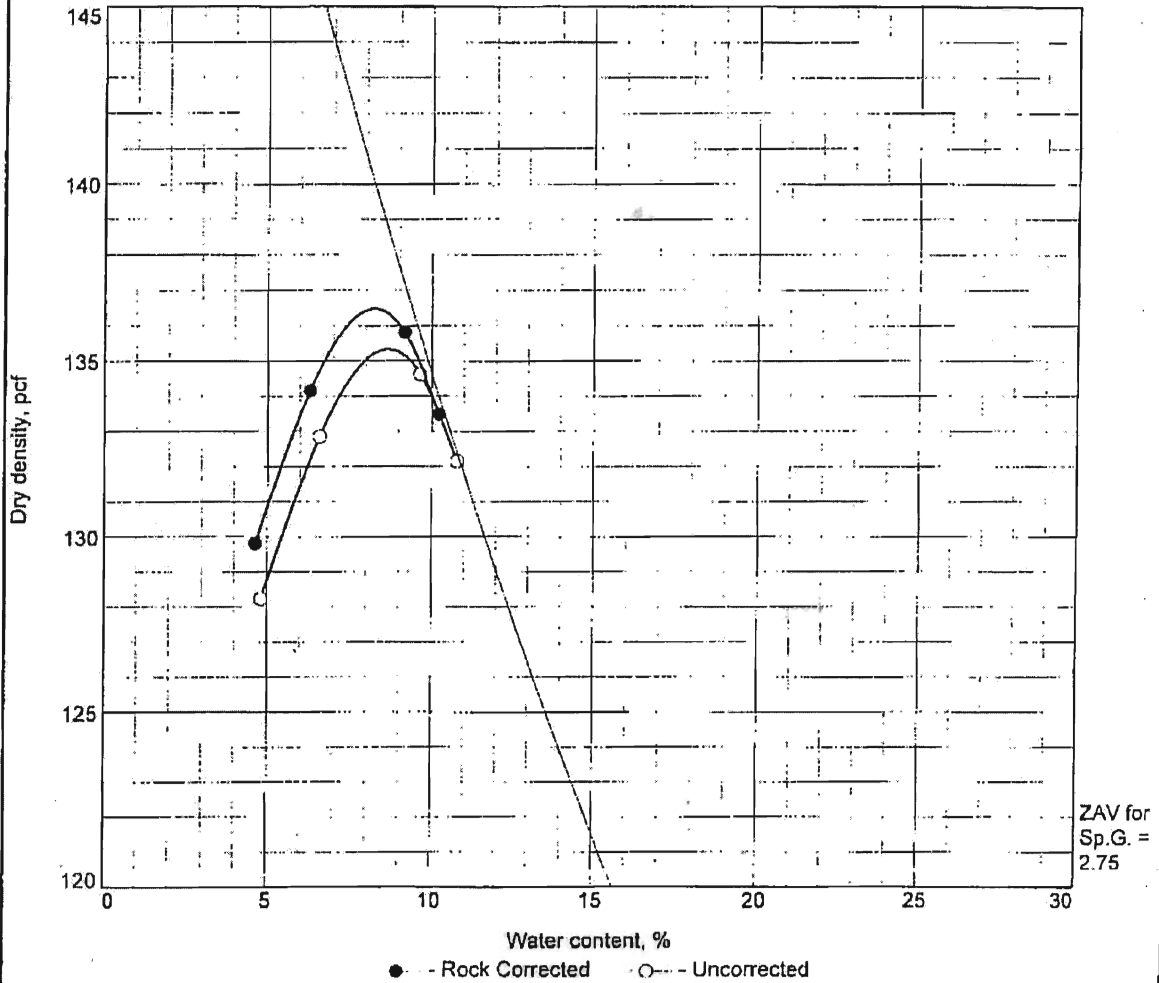
Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing Sample Source: Blue Ridge Depth: -- Sample No.: 107262	Remarks: June 15, 2009 Assumed sp. gr. of +3/4": 2.72
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Figure

Assumed sp. gr. for ZAV: 2.80

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	6.3	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 136.5 pcf	135.3 pcf	21A aggregate
Optimum moisture = 8.2 %	8.7 %	

Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing Sample Source: Blue Ridge Depth: -- Sample No.: 107261	Remarks: June 9, 2009 Assumed sp. gr. of +3/4": 2.72
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Figure

Assumed sp. gr. for ZAV: 2.75



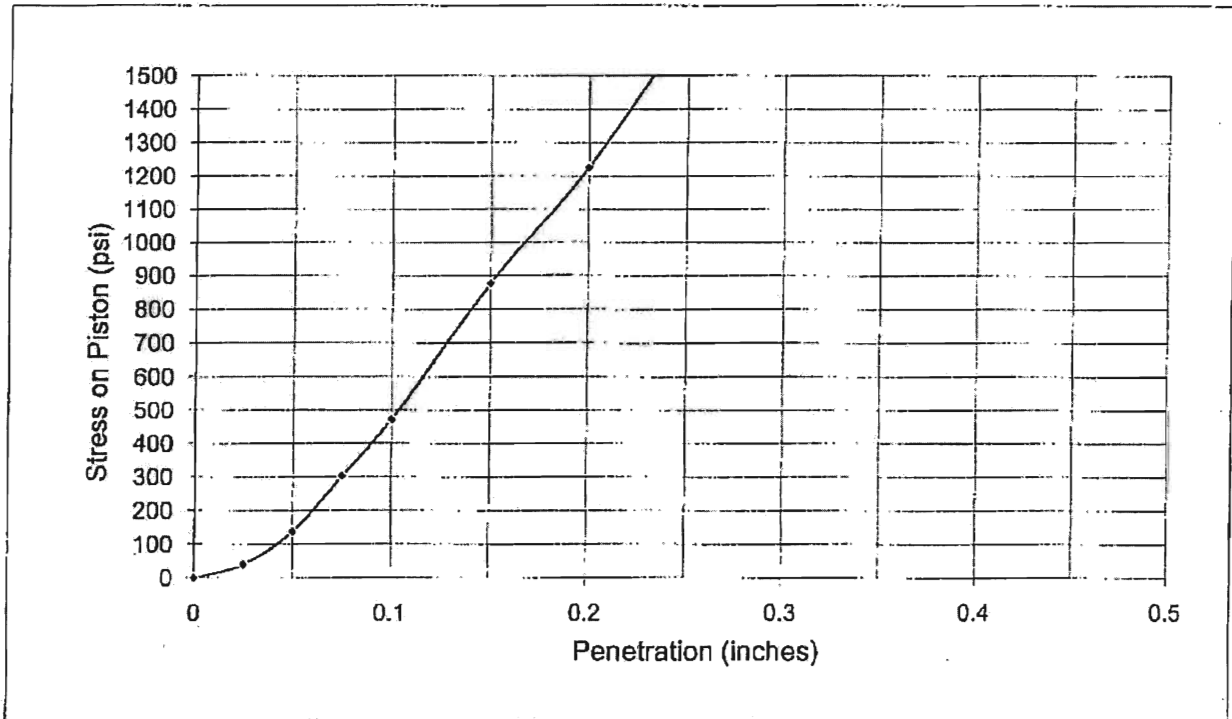
FROEHLING & ROBERTSON, INC.
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS
 ENGINEERS - LABORATORIES
"Over One Hundred Years of Service"
 1734 Seibel Drive, N.E., Roanoke, Virginia 24012
 Telephone: (540) 344-7939 Fax: (540) 344-3657

California Bearing Ratio (AASHTO T-193)

Record No.: K62-063T

Client: Boxley Materials Company
 Project: Laboratory testing
 Source: Blue Ridge

Test Date: 22-Jun-09
 Tested By: M R Henry
 Compaction method: AASHTO T-99
 Soaked CBR
 Unsoaked CBR



CBR: penetration @ 0.2 in. (corrected)

96.1

Maximum Dry Density (pcf):

135.1

Optimum Moisture Content (%):

9.0

Swell (%):

0.0

Dry Density Before Soaking (pcf):

134.7

Visual Description:

Dry Density After Soaking (pcf):

135.6

Select Material Type 1

Retained on 3/4 inch sieve (%):

7.0

Surcharge Weight (pounds):

15.0

F&R Lab No.: 107271

Moisture Content Before Soaking (%):

8.7

Moisture Content After Soak, Top in. (%):

6.7

Source: Blue Ridge

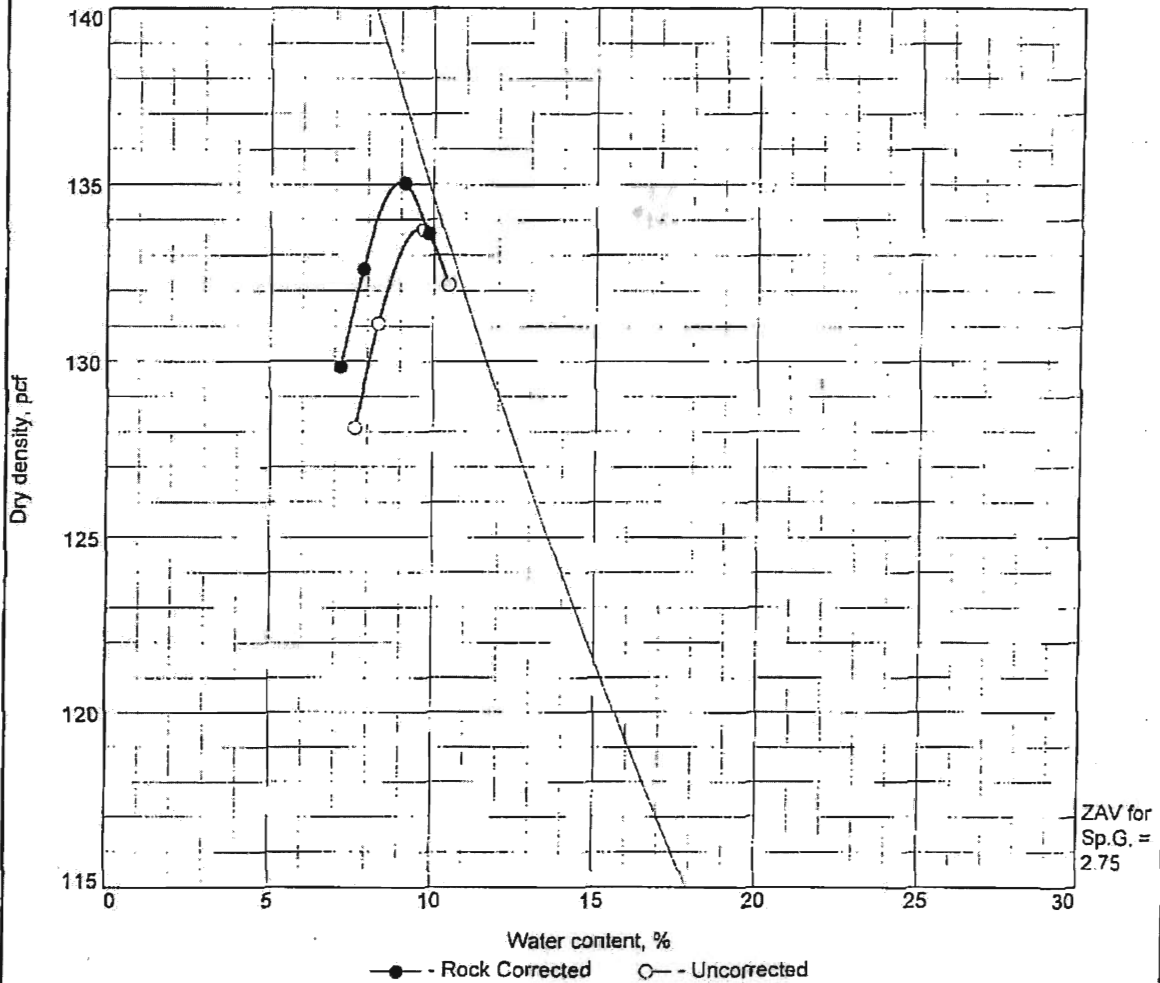
Moisture Content After Soak, Avg. (%):

6.8

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By: Frank Jan

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	7.0	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 135.1 pcf	133.8 pcf	Select Material Type I
Optimum moisture = 9.0 %	9.5 %	

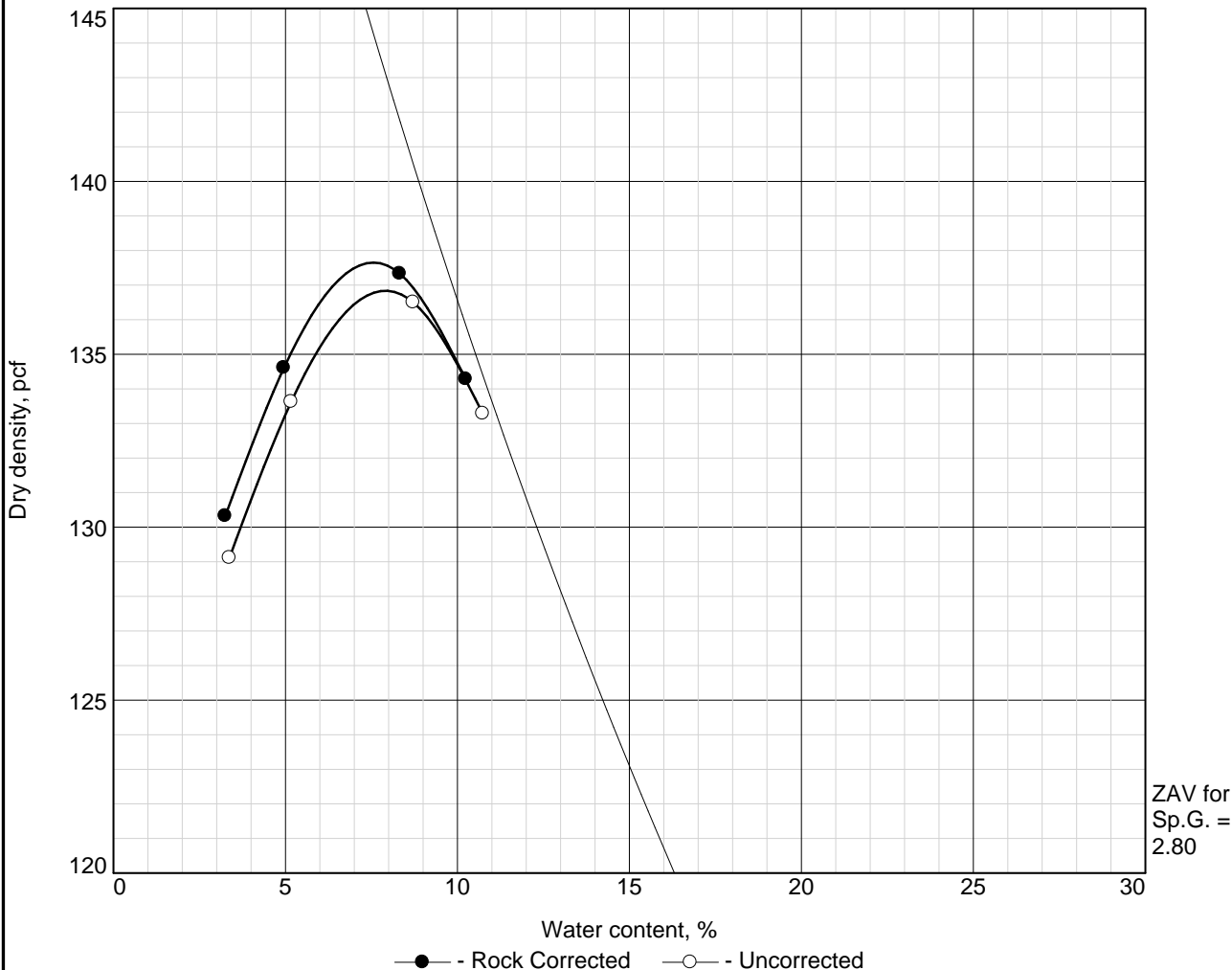
Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing Sample Source: Blue Ridge Depth: -- Sample No.: 107271	Remarks: June 15, 2009 Assumed sp. gr. of +3/4": 2.72
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Figure

Assumed sp. gr. for ZAV: 2.75

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	5.1	--

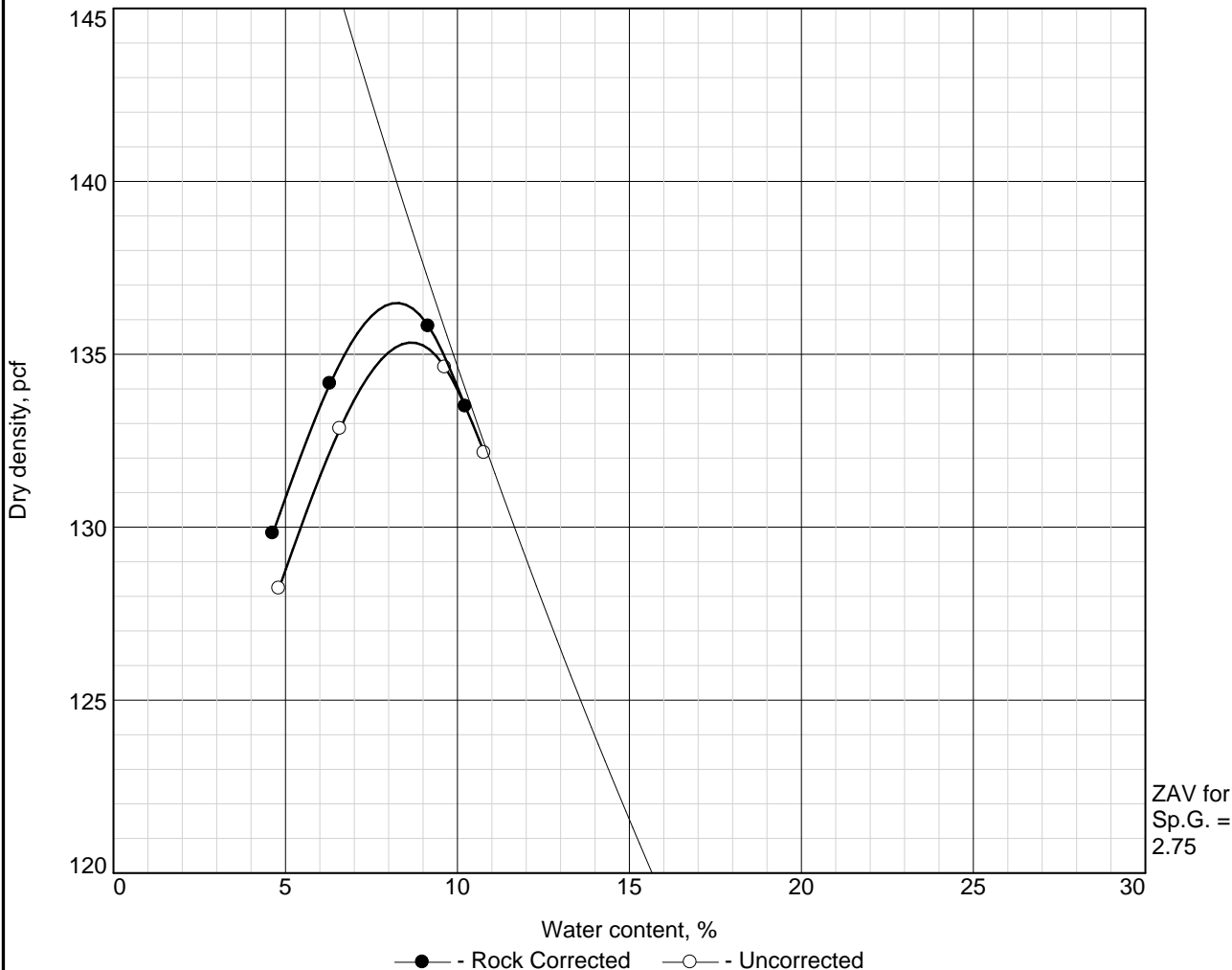
ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 137.7 pcf	136.8 pcf	21B aggregate
Optimum moisture = 7.6 %	7.9 %	

Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing ○ Sample Source: Blue Ridge Depth: -- Sample No.: 107262	Remarks: June 15, 2009 Assumed sp. gr. of +3/4": 2.72
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Assumed sp. gr. for ZAV: 2.75

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	6.3	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 136.5 pcf	135.3 pcf	21A aggregate
Optimum moisture = 8.2 %	8.7 %	

Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing <input type="checkbox"/> Sample Source: Blue Ridge Depth: -- Sample No.: 107261	Remarks: June 9, 2009 Assumed sp. gr. of +3/4": 2.72
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Assumed sp. gr. for ZAV: 2.75



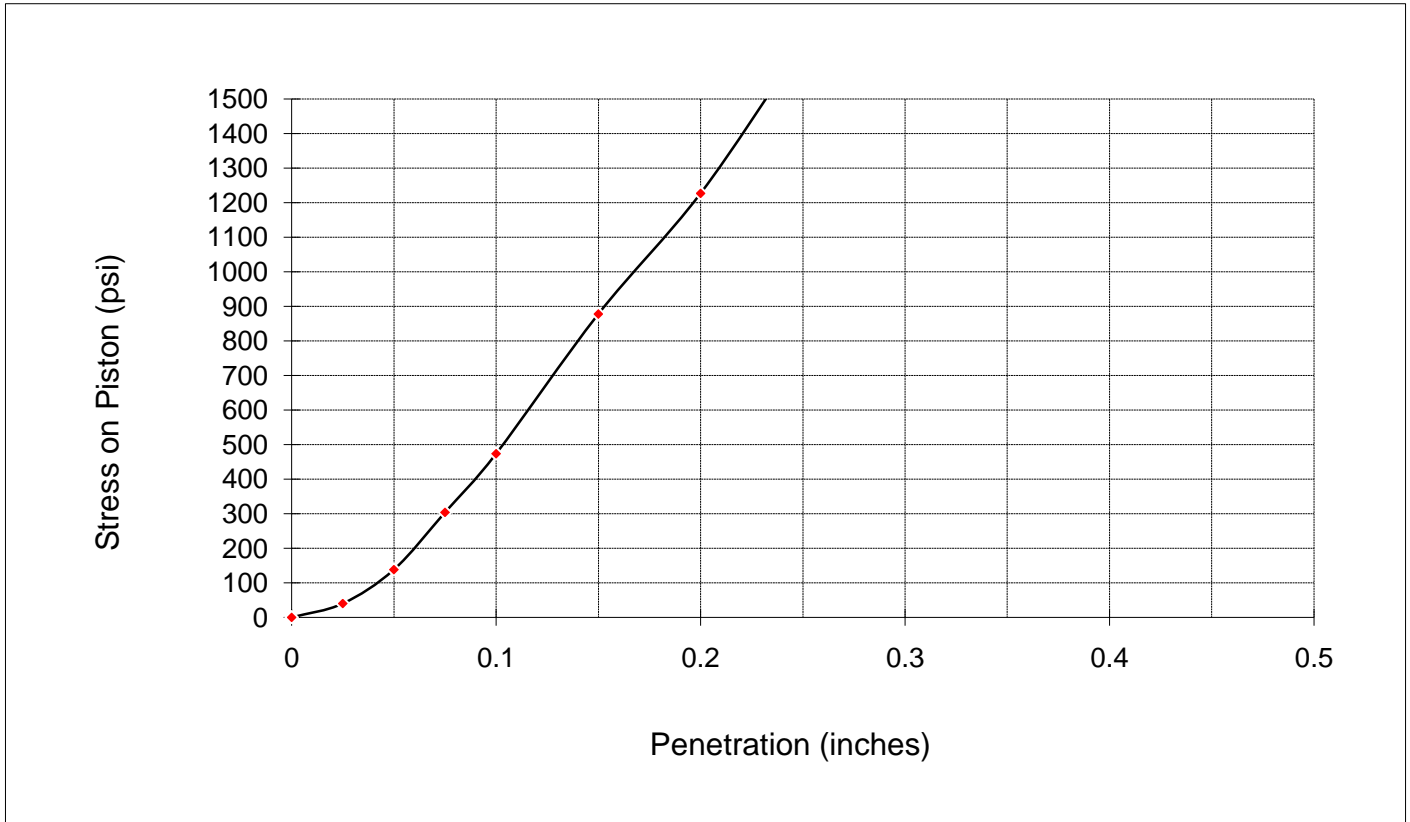
California Bearing Ratio (AASHTO T-193)

Record No.: K62-063T

Client: Boxley Materials Company
 Project: Laboratory testing
 Source: Blue Ridge

Test Date: 22-Jun-09
 Tested By: M R Henry
 Compaction method: AASHTO T-99

 X Soaked CBR
 _____ Unsoaked CBR



CBR: penetration @ 0.2 in. (corrected)	<u>96.1</u>
Swell (%)	<u>0.0</u>
Dry Density Before Soaking (pcf)	<u>134.7</u>
Dry Density After Soaking (pcf)	<u>135.6</u>
Retained on 3/4 inch sieve (%)	<u>7.0</u>
Surcharge Weight (pounds)	<u>15.0</u>
Moisture Content Before Soaking (%)	<u>8.7</u>
Moisture Content After Soak, Top in. (%)	<u>6.7</u>
Moisture Content After Soak, Avg. (%)	<u>6.8</u>

Maximum Dry Density (pcf):	<u>135.1</u>
Optimum Moisture Content (%):	<u>9.0</u>

Visual Description:
Select Material Type I

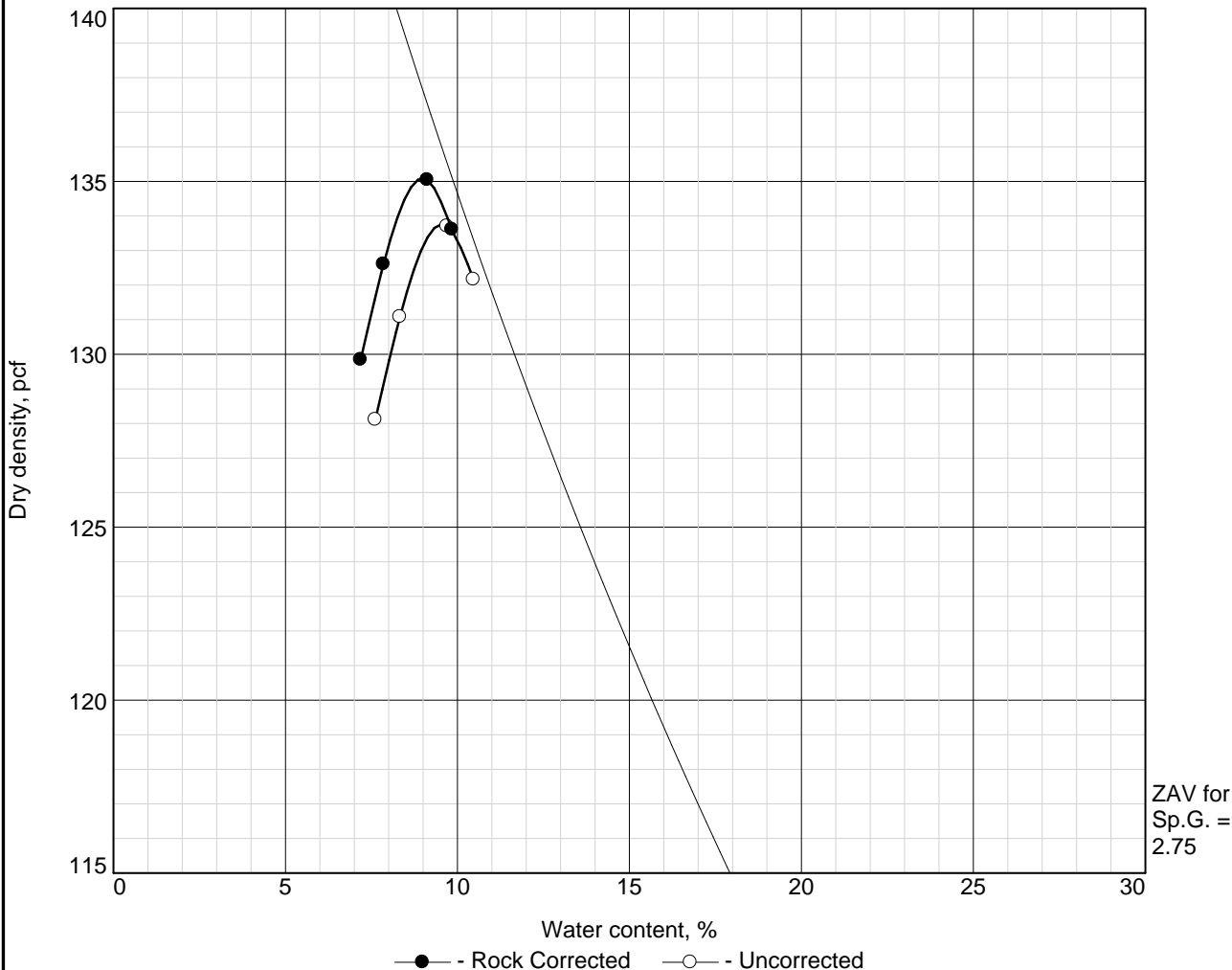
F&R Lab No.: 107271

Source: Blue Ridge

FROEHLING & ROBERTSON, INC.

By: _____

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4718-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	7.0	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 135.1 pcf	133.8 pcf	Select Material Type I
Optimum moisture = 9.0 %	9.5 %	

Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing ○ Sample Source: Blue Ridge Depth: -- Sample No.: 107271	Remarks: June 15, 2009 Assumed sp. gr. of +3/4": 2.72
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Assumed sp. gr. for ZAV: 2.75