



2011

Product Data Sheet
Plant: Piney River

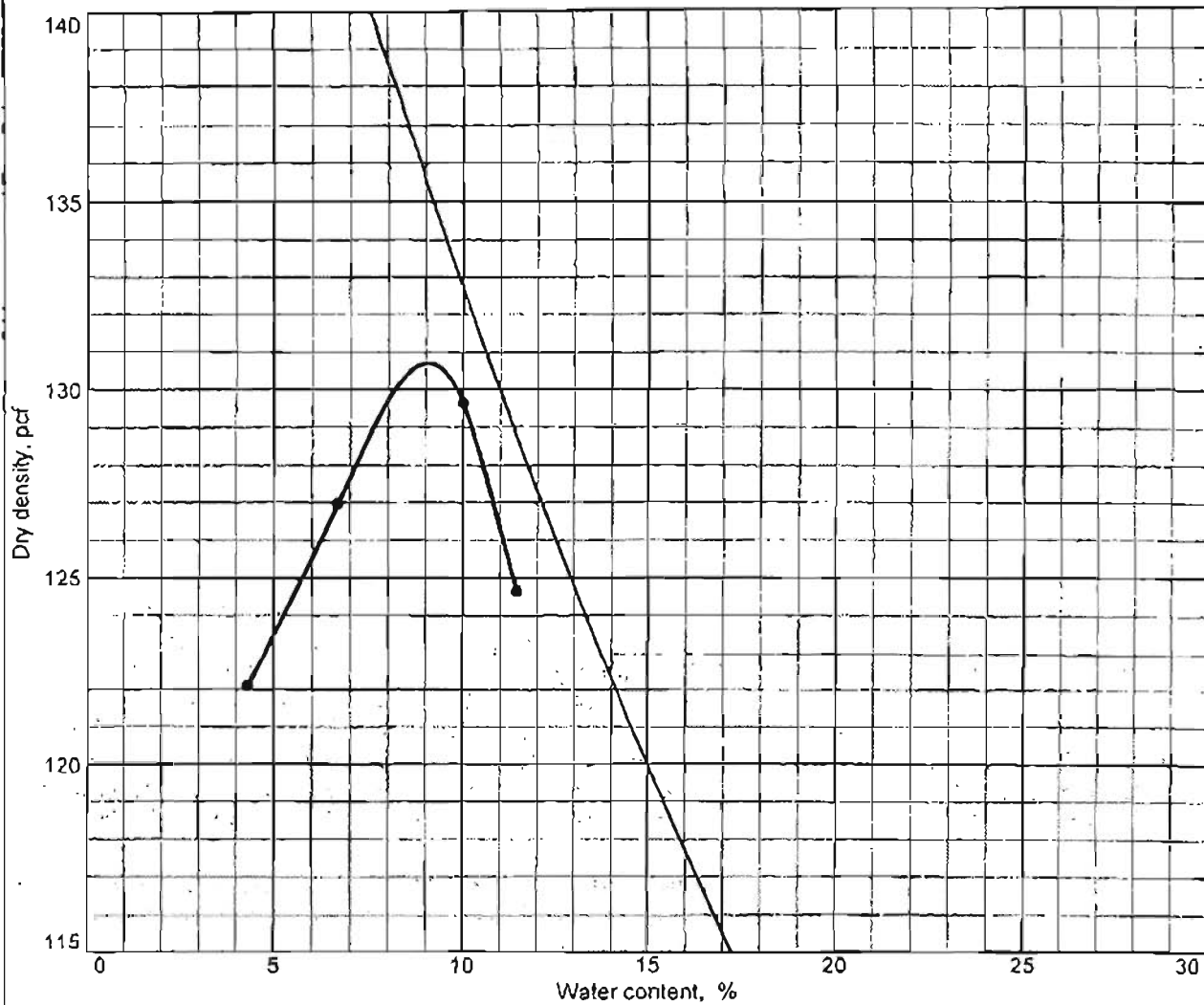
I. GEOLOGICAL FORMATION: APLITE

II. CHEMICAL ANALYSIS (March 2011) :

Silica	as SiO2	55.2%	Calcium	as CaO	5.5%
Iron	as Fe2O3	2.4%	Magnesium	as MgO	2.3%
Aluminum	as Al2O3	17.6%	Sulphur	as S	0.5%

III. QUALITY DATA:			Product											
TEST	TEST DATE		MP 2	MP 3	MP 57	IMP 68	MP 78	MP 8	IMP 8/8P	9	B Sand	IMP A Sand	MP A Sand	10 2010
SPECIFIC GRAVITY														
BULK (ASPHALT)	3/11		2.800	2.763	2.774	2.742	2.726	2.766	2.732	2.737	2.754	2.723	2.717	2.776
BULK - SSD (CONCRETE)	3/11		2.811	2.773	2.785	2.758	2.747	2.783	2.753	2.769	2.779	2.749	2.760	2.797
APPARENT	3/11		2.831	2.791	0.806	2.787	2.785	2.814	2.791	2.828	2.826	2.797	2.839	2.835
% ABSORPTION	3/11		0.4%	0.4%	0.4%	0.6%	0.8%	0.6%	0.8%	1.2%	0.9%	1.0%	1.6%	0.8%
* UNIT WEIGHT *														
DRY RODDED (LBS/CUBIC FT)	3/11		97.3	96.0	98.4	103.0	96.1	93.2	102.5	91.5	101.8	105.8	98.8	107.4
DRY RODDED (LBS/CUBIC YARD)	3/11		2627	2592	2657	2781	2595	2516	2768	2471	2749	2857	2668	2900
DRY RODDED (% VOIDS)	3/11		44.3%	44.3%	43.1%	39.8%	43.5%	46.0%	39.9%	46.5%	40.8%	37.7%	41.7%	37.1%
DRY RODDED (Kg/Cubic Meter)	3/11		1559	1538	1576	1650	1539	1493	1642	1466	1631	1695	1583	1720
VTM-5 % VOIDS IN STONE SAND	3/11										55.0%	50.1%	52.3%	56.6%
ASTM C1252 % VOIDS (METH B)	3/11										54.0%	49.1%	51.2%	53.6%
ASTM C1252 % VOIDS (METH C)	3/11										43.3%	41.7%	41.5%	44.0%
ASTM D4791 % F & E (3:1)	3/11		18.4%	18.9%	9.9%	3.4%	20.6%	32.1%	12.4%	3.1%				
* LOS ANGELES DEGRADATION *														
GRADING A % LOSS	3/11	13.1%												
GRADING B % LOSS	3/11	13.4%												
GRADING C % LOSS	3/11	15.2%												
SOUNDNESS % LOSS (Magnesium Sulfate)	3/11		0.1%		0.2%	0.3%	0.4%	0.4%	0.4%	4.6%	3.9%	2.7%	2.9%	4.6%
SOUNDNESS % LOSS (Sodium Sulfate)														
Surface Treatment Rate of Application														
Stone (lb/sq yd)														
Emulsion (gal/sq yd)														
* SUPERPAVE *														
ASTM C1252 % VOIDS (METH A)	3/11										49.2%	44.5%	46.5%	53.6%
AASHTO T 176 SAND EQUIVALENT	3/11										96	89	87	71
ASTM D4791 % F & E (5:1)	3/11		0.8%	2.1%	0.7%	0.0%	6.6%	8.2%	0.0%	1.1%				

MOISTURE-DENSITY RELATIONSHIP TEST



ZAV for
Sp.G. =
2.70

Test specification: AASHTO T 99 Method D Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
-	-	--	-	-	-	-	30	-

TEST RESULTS	MATERIAL DESCRIPTION
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Maximum dry density = 130.7 pcf Optimum moisture = 9.1 %	White and gray 21A/21B
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Project No. G62-458T Client: Boxley Materials Company Project: Laboratory testing • Source: Piney River Sample No.: 103684M Elev/Depth: -	Remarks: March 4, 2008
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MOISTURE-DENSITY RELATIONSHIP TEST
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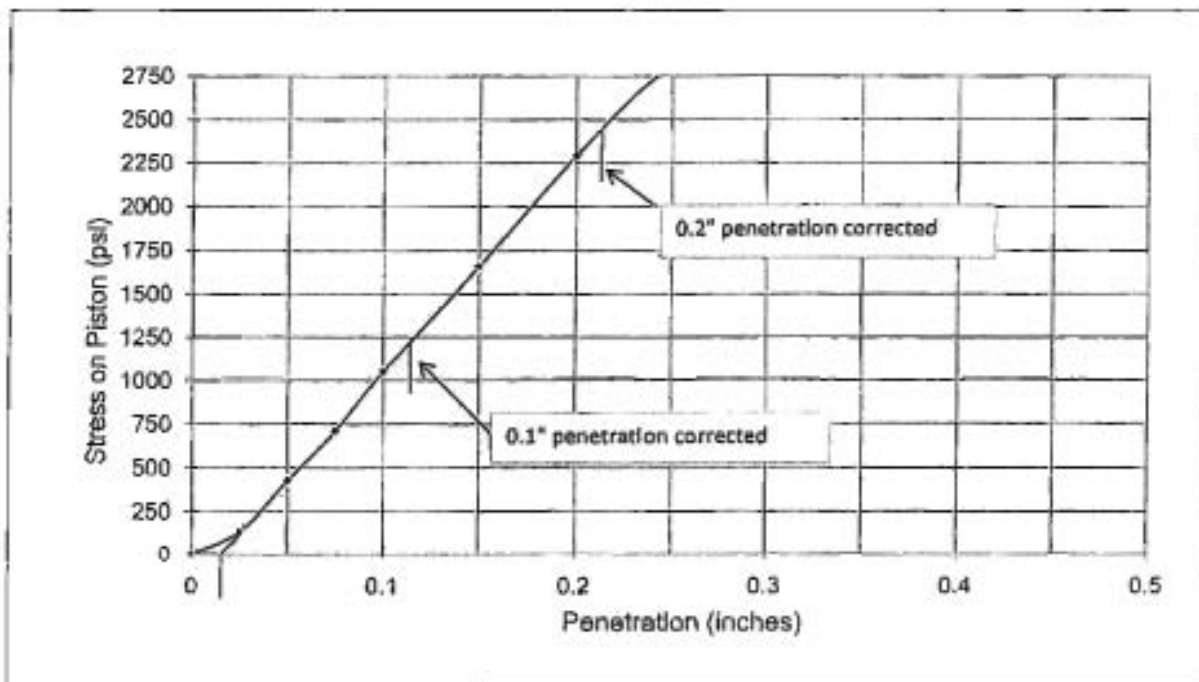
California Bearing Ratio (AASHTO T-193)

Record No.: K62-063T

Client: Boxley Materials Company
 Project: Laboratory testing

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

X Soaked CBR
 _____ Unsoaked CBR



CBR: penetration @ 0.2 in. (corrected) 175.2

Swell (%): 0.0

Dry Density Before Soaking (pcf): 143.0

Dry Density After Soaking (pcf): 142.9

Retained on 3/4 inch sieve (%): 23.0

Surcharge Weight (pounds): 15.0

Moisture Content Before Soaking (%): 6.4

Moisture Content After Soak, Top in. (%): 6.0

Moisture Content After Soak, Avg. (%): 6.0

Maximum Dry Density (pcf): 143.6

Optimum Moisture Content (%): 6.5

Visual Description:
 Select Material Type I

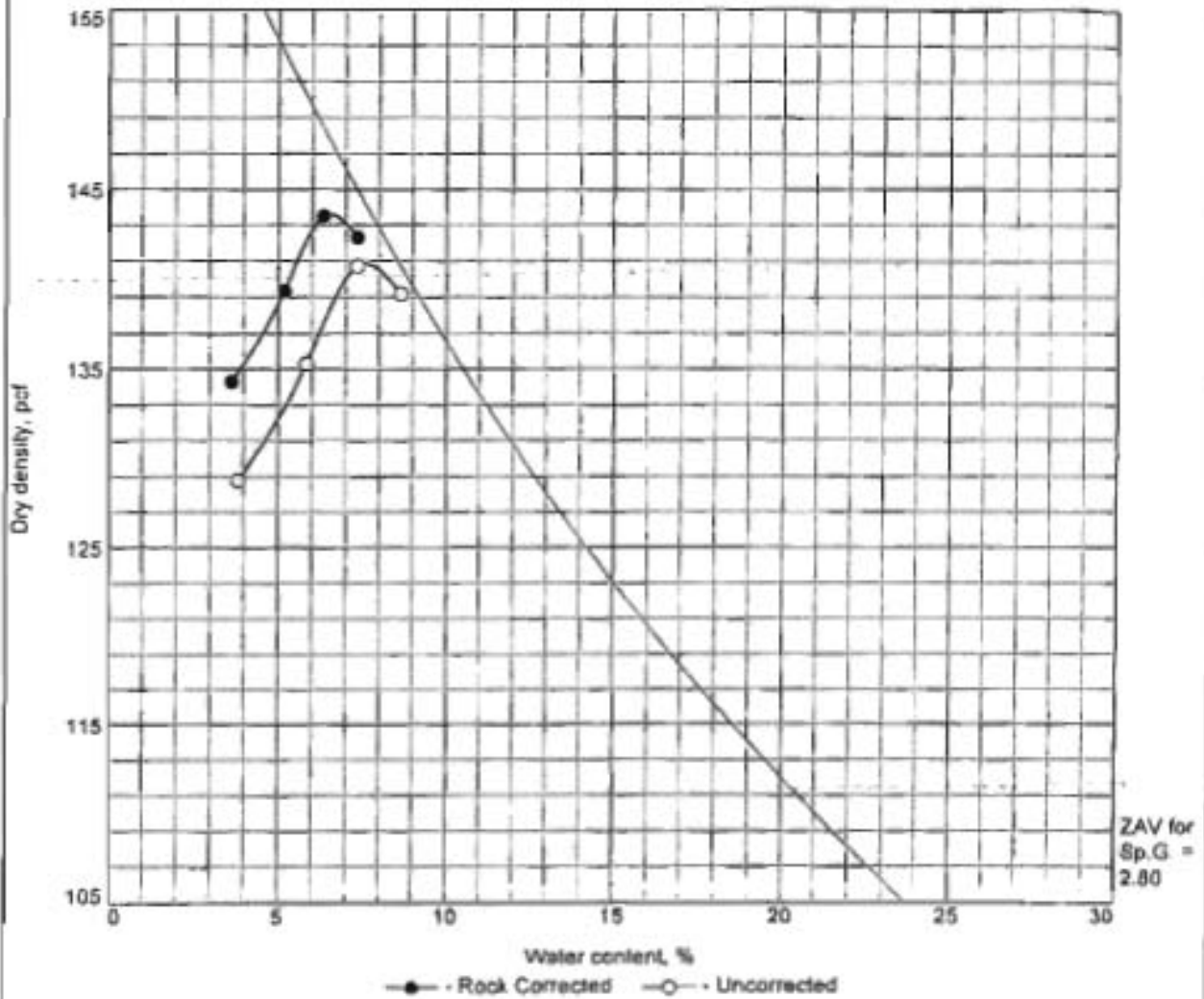
F&R Lab No.: 107284

Source: Piney River Quarry

FROEHLING & ROBERTSON, INC.

By: Frank Jan

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard
 ASTM D 4716-87/AASHTO T 224-86 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	Pl	% > 3/4 In.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	23.0	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 143.6 pcf	140.9 pcf	Select Material Type I
Optimum moisture = 6.5 %	7.6 %	

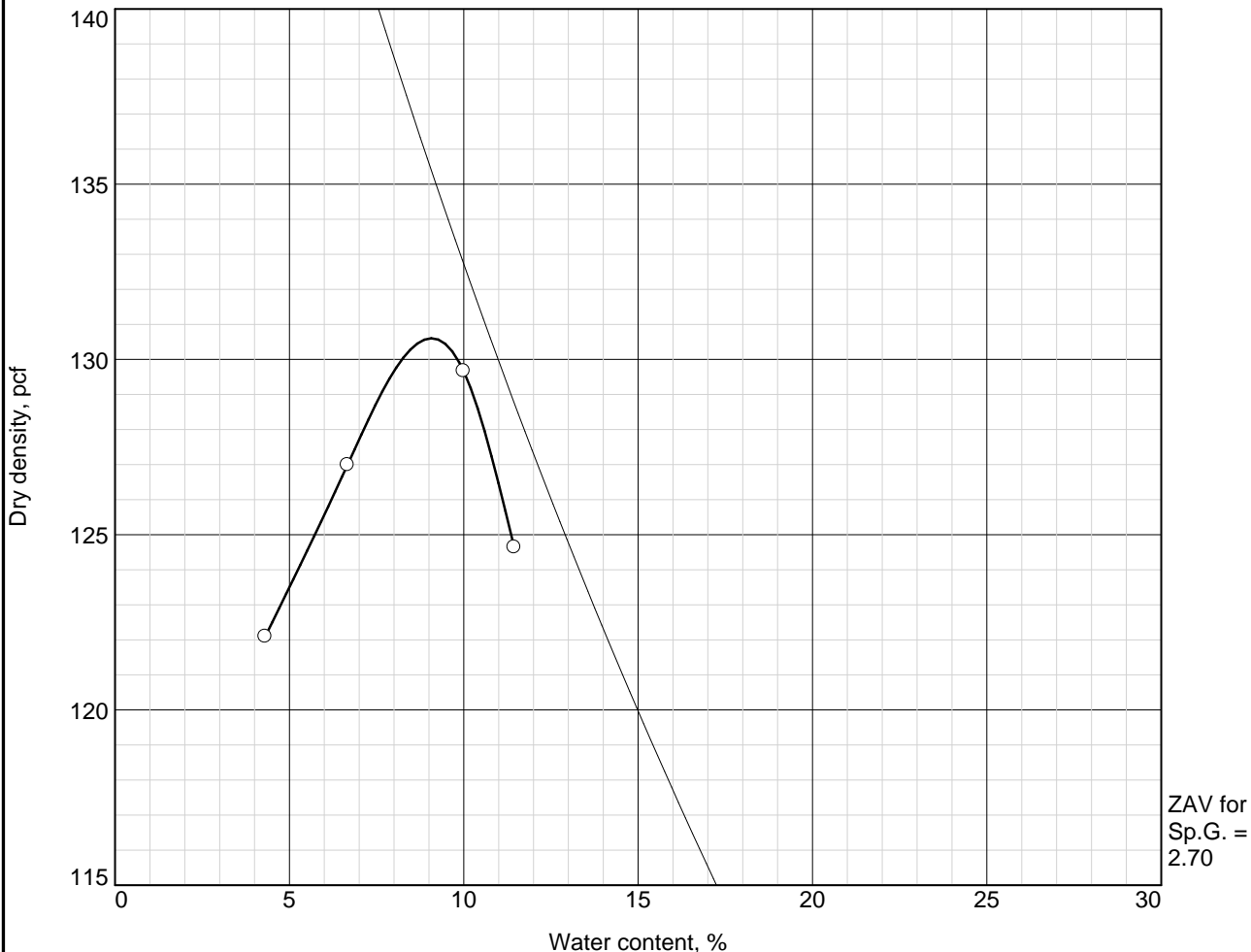
Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing Sample Source: Pincy River Depth: -- Sample No.: 107284	Remarks: July 30, 2009 Assumed sp. gr. of +3/4": 2.72
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Figure

Assumed sp. gr. for ZAV: 2.80

COMPACTION TEST



Test specification: AASHTO T 99 Method D Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
--	--	--	--	--	--	--	3.0	--

Assumed sample sp. gr. for ZAV: 2.70

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 130.6 pcf Optimum moisture = 9.1 %	White and gray 21A/21B
Project No. G62-458T Client: Boxley Materials Company Project: Laboratory testing <input type="radio"/> Sample Source: Piney River Depth: -- Sample No.: 103684M	Remarks: March 4, 2008
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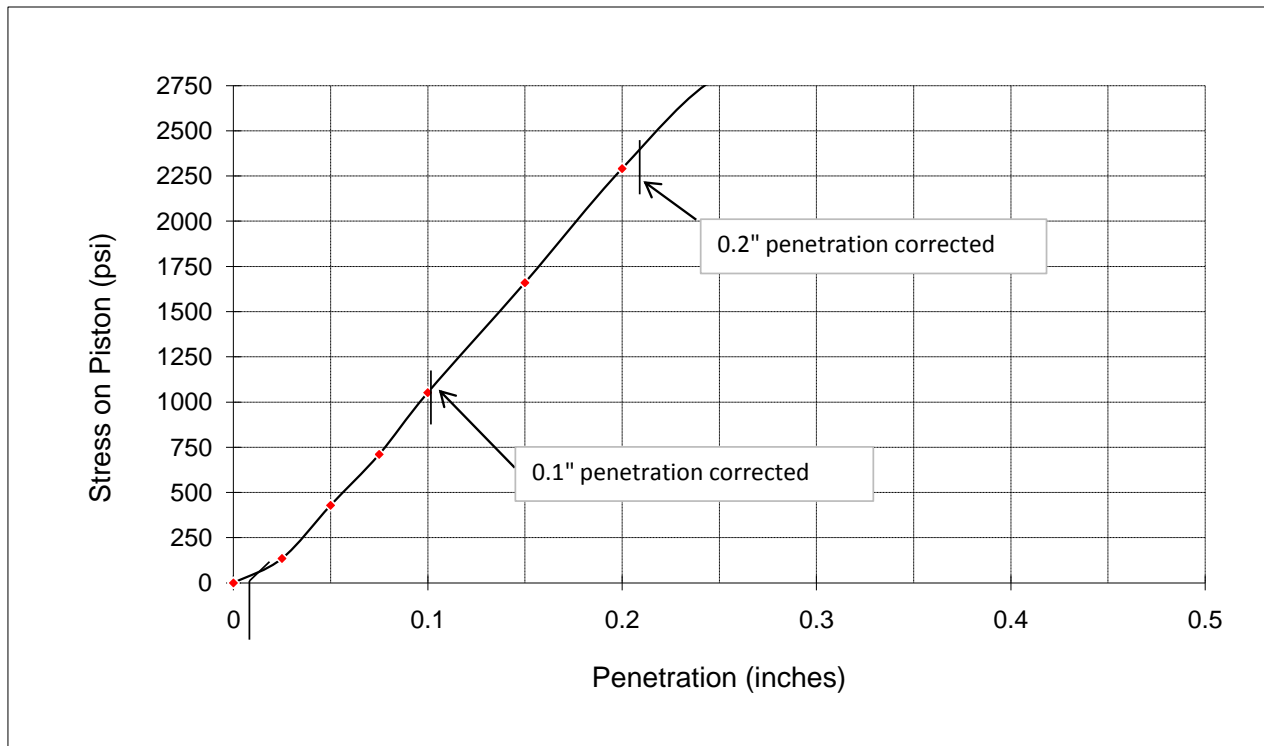
California Bearing Ratio (AASHTO T-193)

Record No.: K62-063T

Client: Boxley Materials Company
 Project: Laboratory testing

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

Soaked CBR
 Unsoaked CBR



CBR: penetration @ 0.2 in. (corrected) 175.2

Maximum Dry Density (pcf): 143.6

Optimum Moisture Content (%): 6.5

Swell (%): 0.0

Dry Density Before Soaking (pcf): 143.0

Dry Density After Soaking (pcf): 142.9

Retained on 3/4 inch sieve (%): 23.0

Surcharge Weight (pounds): 15.0

Visual Description:
 Select Material Type I

Moisture Content Before Soaking (%): 6.4

Moisture Content After Soak, Top in. (%): 6.0

Moisture Content After Soak, Avg. (%): 6.0

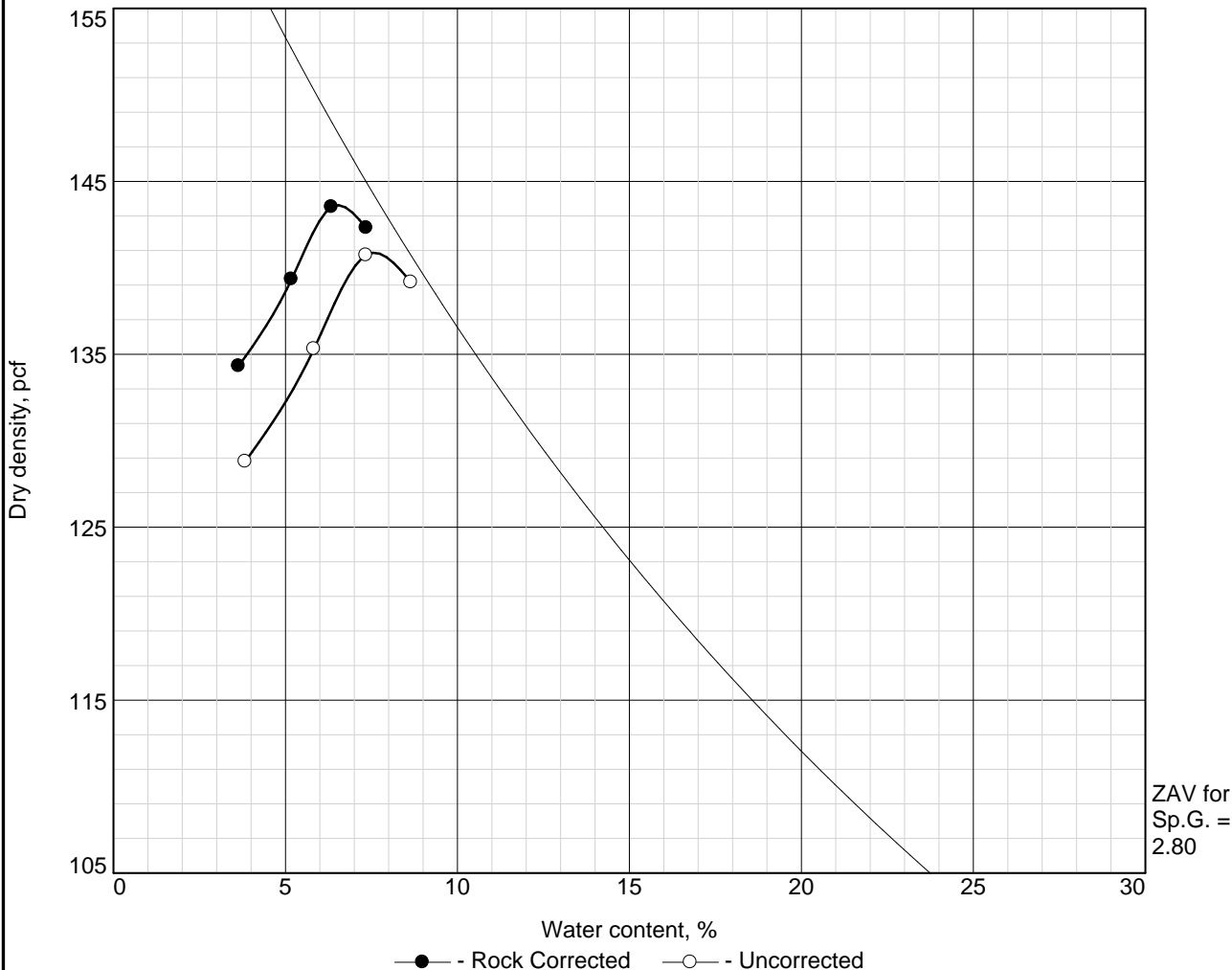
F&R Lab No.: 107284

Source: Piney River Quarry

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						
--	--	--	--	--	--	--	23.0	--

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 143.6 pcf	140.9 pcf	Select Material Type I
Optimum moisture = 6.5 %	7.6 %	

Project No. K62-063T Client: Boxley Materials Company Project: Laboratory testing ○ Sample Source: Piney River Depth: -- Sample No.: 107284	Remarks: July 20, 2009 Assumed sp. gr. of +3/4": 2.72
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Assumed sp. gr. for ZAV: 2.75