COLORADO DEPARTMENT OF TRANSPORTATION

CP 80 NUCLEAR SOILS MOISTURE/DENSITY TEST AND CP 25 PERCENT RELATIVE COMPACTION

Project No.	Region	Contract ID
Project Location		

Pit Name	Material	Class	Item	Date
{l·Y˙LJfŠ L5 ó¢Šăú Iú		¢ŠăúŠŘ ōè óLJŃŷŭ yl·Y˙Šú	{úl·ûł2ÿk2ŤŤăŠú	9fŠØl·ûł2y˙κ 5ŠLJúK
Gauge ID	a 2łăúdzŃŠ {ûl·yŘl·ŃŘ /2dzyŭ	5Šyăłúè {ûl·yŘl·ŃŘ /2dzyŭ	Transmission Depth, in.	{2łf /fl·ăăłŤłÓl·ûł2y˙
Curve No.	Maximum Dry Density	Optimum Moisture Content	AASHTO T99 or T180	Method A or D

Field Test Data

Gauge Reading	Moisture		Density		
(1) % Moisture		Wet Dens.		Dry Dens.	
(2) % Moisture		Wet Dens.		Dry Dens.	
(3) % Moisture		Wet Dens.		Dry Dens.	
(4) % Moisture		Wet Dens.		Dry Dens.	
Average		Average		Average	

M/D Gauge Moisture Check

Wet Soil wt. + pan	
Dry Soil wt. + pan	
Pan wt.	
Dry soil wt.	
Water wt.	
% Moisture =	

Calculations for Percent Rock [Plus #4 (Method A) or 3/4 inch (Method D)]

Method A - Oven Dried

Dry wt. of rock ÷ Dry wt. total sample = % Rock & % Soil

Method B - Using Gauge MC

Wet weight of rock _____ ÷ (1 + _____ absorption ÷ 100)= dry weight rock _____

Wet weight of soil _____ ÷ (1 + _____ M/D Gauge MC ÷ 100)= dry wt. soil _____

Dry wt. of rock ÷ (Dry wt. of rock + Dry wt. of soil) X 100% = _____ % Rock & _____ % Soil

Rock Correction Formula and Calculations

[(% Soil x Max dry density of Soil) + (% Rock x CF x 62.4 x Sp Gr Rock)] ÷ 100

For AASHTO T99, CF = 0.90 For AASHTO T180, CF = 0.95

% Soil _____ x _____ Maximum Dry Density of soil = _____

% Rock _____ x _____ x _____ Specific Gravity of Rock = _____

Sum = _____ ÷ 100 = _____

Corrected Maximum Dry Density

Optimum Moisture Correction Calculations

[(% Soil x OMC of Soil) + (% Rock x Absorption of Rock)] ÷ 100

% Soil _____ x _____ Optimum MC of Soil = _____

% Rock _____ x _____ Absorption of Rock = _____

Sum = _____

Corrected Optimum Moisture Content, % ÷ 100 = _____

1 Point Moisture Determination

Wet Soil wt. + pan	
Dry Soil wt. + pan	
Pan wt.	
Dry soil wt.	
Water wt.	
% Moisture =	

1 Point Check Compaction Cylinder Density Data

Gross wt. _____

- Tare wt. _____

Net wt. _____ ÷ Volume of Mold _____ = Wet Density _____ ÷ ó100 + Moisture Content _____ ÷ ÎнhúÈмллГ Dry Density _____

Field Dry Density _____ ÷ [ ] **Percent Compaction calculation** (Corrected Maximum dry density) x 100 or (Curve Maximum Dry Dens) x 100 = [ ] % Relative Compaction

Specifications: Moisture _____ Compaction _____ Minimum 95.0 %

Remarks: