Colorado Department of Transportation

Soils and Aggregate Density/Moisture CP80

Soil- Rock Correction CP23 & Density Check (1 Point) CP25

Contract ID		Region	Date:
Project Number:			
Project Location:			

Pit Name: _____ Material: _____

Item:	Class:	Material Code (SMM):	Curve NO.	Classification:	T99	Method
					T180	A D

Gauge ID: _____ Tested by: _____ Maximum Dry Density: _____ Optimum Moisture Content: _____

Moisture Standard Count: _____ Sample ID SMM: _____ Test NO: _____ Station: _____ Depth Below Grade: _____

Density Standard Count: _____ Density Standard Count Date: _____ Transmission Depth (Probe Setting) _____ Lane: _____ Offset: _____

Field Test Gauge Readings CP80 | M/D Gauge Moisture Verification T265

% Moisture | Density

Reading 1: _____   **Dry:** _____ **Wet:** _____

Reading 2: _____   **Dry:** _____ **Wet:** _____

Reading 3: _____   **Dry:** _____ **Wet:** _____

Reading 4: _____   **Dry:** _____ **Wet:** _____

Average: _____   **Ave:** _____ **Ave:** _____

FDR/RAP - Max. Dry Density: Wet density corrected to Dry Density use formula here.
Ave. Wet Density _____ ÷ [1 + (T265 % moist A _____ ÷ 100)] = _____ Dry
Full Depth Reclamation: Record Wet Density only. Mixture shall be compacted to a min. of 95% of the Max. dry density determined by T180 Method D. CP25 & T265 must be performed at each in-place density location to verify the curve. See CP80 - 8.4.3.

M/D Gauge Moisture Verification T265

Pan ID: _____   **Pan Wt.:** _____

Wet Soil & Pan: _____

Dry Soil & Pan: _____

Wet Soil Wt.: _____

Dry Soil Wt.: _____

Loss: _____

% Moisture (A): _____

Specifications for % Moisture:
Gauge % Moisture within ± 1% of T265.
If not, perform T265 at each location

CP80 - Percent Compaction Calculations with less than 5 % Rock (+#4)

Field Dry Density _____ ÷ Curve Max. Dry Density _____ x 100 =_____   % Relative Compaction at _____ % Moisture

CP23 Calculations for Percent Rock (+#4) and Soil

Method A - Oven Dried

Dry weight of Rock _____ ÷ Dry Weight of Total Sample _____ x 100 = Rock _____ % | 100 - % Rock = Soil _____%

Method B - Using Moisture Density Gauge Moisture Content | Total Weight of Dry Sample

Wet Weight of Rock _____ ÷ [1 + (Absorption _____ ÷ 100)] = Dry Weight of Rock _____ (a)

Wet Weight of Soil _____ ÷ [1 + (Gauge % Moisture _____ ÷ 100)] = Dry Weight of Soil _____ (b)

Total Weight of Dry Sample
Dry wt. of Rock (a) + Dry wt. of Soil (b)
_____ (c)

Dry Weight of Rock (a) _____ ÷ Total Weight of Dry Sample (c) _____ x 100 = Rock _____ % (d) | 100 - % Rock (d) = Soil _____%

CP23 Rock Correction Calculations | CP23 Optimum Moisture Calculations

AASHTO T 99 CF = 0.90   AASHTO T180 CF = 0.95

% Soil_____ x Max.Dry Density of Soil_____ = _____(a)

% Rock _____ x CF _____ x (SpG of Rock _____ x 62.4) = _____(b)

Sum (a) + (b) _____ ÷ 100 = Corr. Max. Dry Density _____

CP23 Optimum Moisture Calculations

% Soil _____ x Opt. Moisture Content _____ = _____ (a)

% Rock _____ x Absorption _____ = _____ (b)

Sum (a) + (b) _____ ÷ 100 = Corr. Opt. Moisture _____%

CP80 - Percent Compaction Calculations with more than 5 % (Rock % =_____+#4)

Field Dry Density _____ ÷ Corrected Max. Dry Density _____ x 100 = _____   % Relative Compaction at _____ % Moisture

CP25 - Compaction Cylinder Density Check (1 Point) | T265 Moisture Content

Weight of Mold _____ (lbs)   Mold ID _____   Mold Volume _____

Weight of Soil & Mold (lbs) _____ - Weight of Mold _____ = Weight of Compacted Soil _____ (lbs)

Weight of Compacted Soil _____ (lbs) ÷ Mold Volume _____ = Wet Density _____

Wet Density _____ ÷ [1 + (T265 % Moist B) _____ ÷ 100)] = Dry Density _____

T265 Moisture Content

Pan ID _____   Pan wt. _____

Wet Soil & Pan _____

Dry Soil & Pan _____

Wet Soil _____

Dry Soil _____

Loss _____

% Moisture (B): _____

IA Sample ID:		Place IA Stamp Here
IA % Relative Compaction: _____ **% Moisture:** _____		
Remarks:		
		Electronic Signature of IA Personnel