

SOIL & AGGREGATE COMPACTION INSPECTOR

WORKSHOP PROBLEMS



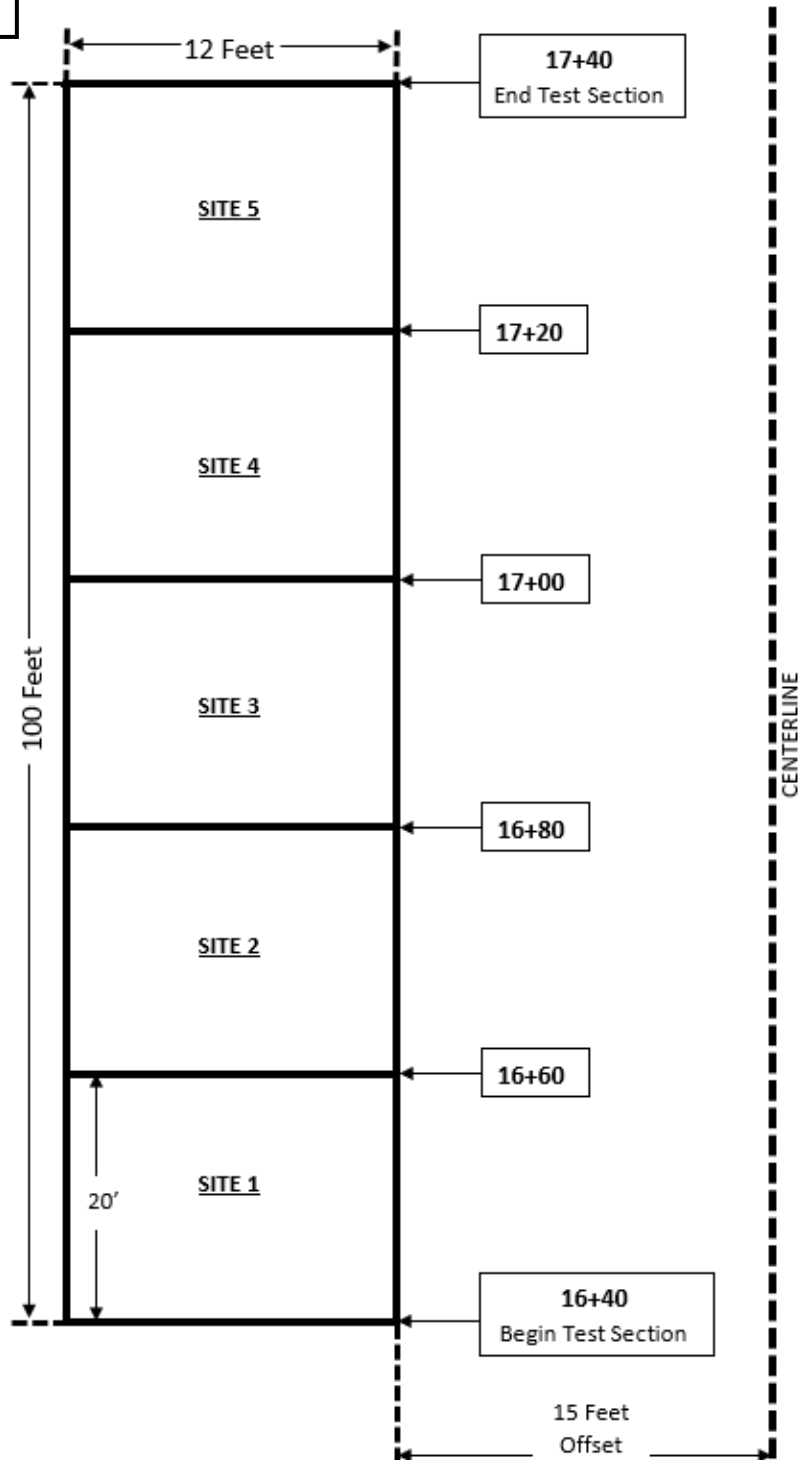
Roller Pass Test Section

Item 307-1

Example #1

RANDOM NUMBERS

1) .065	.627
2) .200	.055
3) .217	.882
4) .237	.146
5) .815	.570



West Virginia Division of Highways
Materials Control Soil and Testing Division

EXAMPLE #2



Lab Number 8110912
 Auth. Number SM8888C
 Project Number S 310-8-18.22
 District Number 9
 Item Number 307-1
 Date Today's Date

FORM T-313
MP 700.00.24

Source of Material: <u>Lewisburg</u>			Length of Test Section: <u>100'</u>		
Roller Type: <u>Vibratory</u>			Width of Test Section: <u>12'</u>		
Roller Weight	Static: <u>9.0 Ton</u>	Working: <u>15.0 Ton</u>	Gauge Number <u>28225</u>		
Lift Thickness Compacted: <u>6"</u>			Manufacturer's Standards		
Depth Below Grade: <u>0</u>			Density: <u>2865</u> Moisture: <u>678</u>		
Depth of Gauge Source: <u>6"</u>			Standard Counts		
Observed	Yes ☒	No ☐	Density: <u>2857</u> Moisture: <u>670</u>		

Test Site Number	1	2	3	4	5
Station Number	16+41	16+64	16+84	17+05	17+36
Offset	23' LT CL	16' LT CL	26' LT CL	17' LT CL	22' LT CL

A	Number of Passes	12
	Test Site	DA Dry Density
	1	127
	2	128
DB	Average	

B	Number of Passes	14
	Test Site	DA Dry Density
	1	133
	2	135
DB	Average	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	135
	2	136
DB	Average	

D	Number of Passes	18
	Test Site	DA Dry Density
	1	136
	2	137
DB	Average	

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Maximum Density Determination		
Test Site	DA	Dry Density
1		136
2		137
3		138
4		137
5		136
DC	Max. Density	

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation _____
 Checked By: _____
 Date: _____

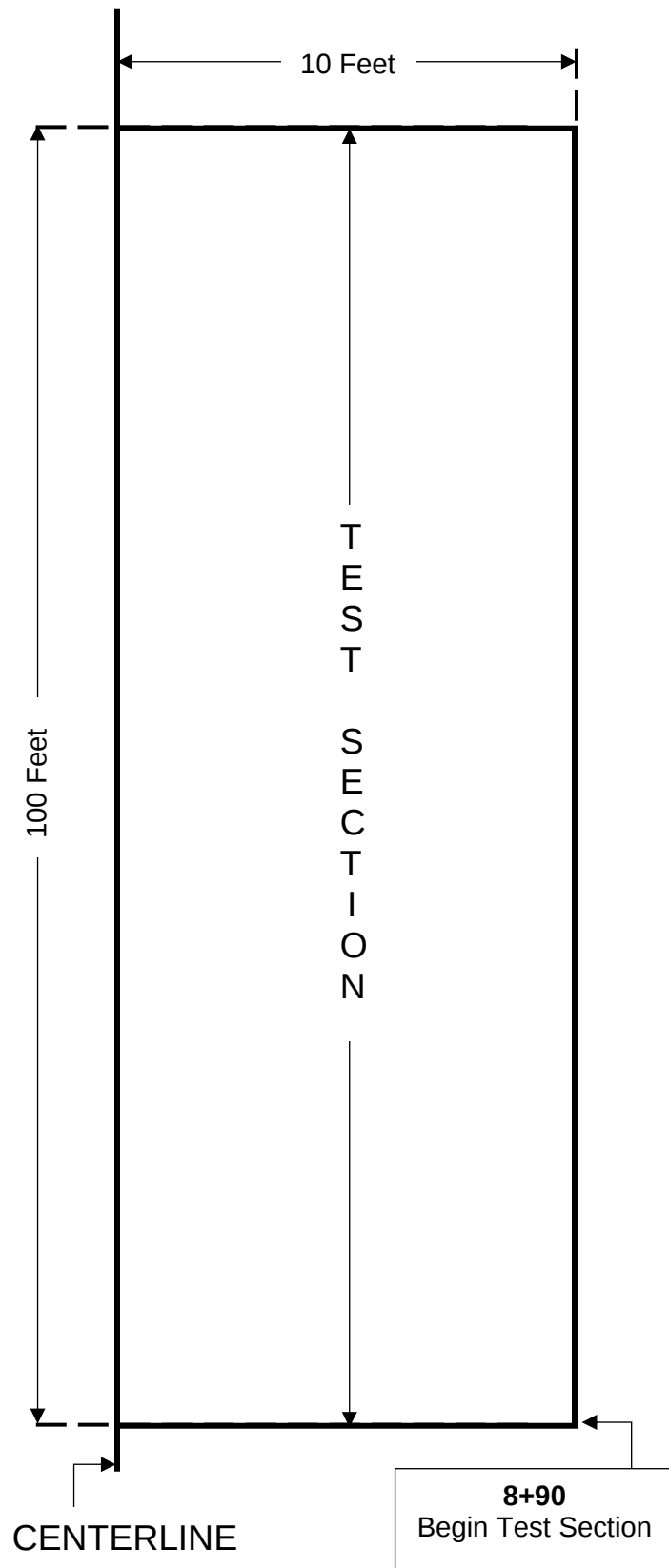
PROBLEM #1

Roller Pass Test Section

Item 307-1

RANDOM NUMBERS

1) .195	.877
2) .902	.850
3) .275	.023
4) .794	.850
5) .043	.293



PROBLEM #2

M.P. 700.00.24
Item Number 307-1
Roller Pass Test Section T-313

Lab Number:	7112182			
Authorization Number:	FC2121C			
Project Number:	RS-0162 (054)			
District Number:	4			
Item Number:	307-1			
Date:	Today's			
Source of Material:	Clarksburg			
Roller Type:	Vibratory			
Roller Weight:	Static:	10 Ton	Working:	18.5 Ton
Lift Thickness Compacted:	6"			
Depth Below Grade:	0"			
Depth of Gauge Source:	6"			
Length of Test Section:	100'			
Width of Test Section:	10'			
Gauge Number:	11172			
Manufacturer's Standard	Density	2891	Moisture	627
Standard Counts	Density	2872	Moisture	624

Test Site Number:	1	2	3	4	5
Station Number:	8+94	9+28	9+36	9+66	9+71
Offset:	9' RT CL	8' RT CL	CL	8' RT CL	3' RT CL

DRY DENSITY PCF

Number of Passes	12	14	16	18	
Test Site Number 1	133	136	137	138	
Test Site Number 2	134	136	138	138	
Test Site Number 3				137	
Test Site Number 4				139	
Test Site Number 5				138	

PROBLEM #2

Source of Material:			Length of Test Section:	
Roller Type:			Width of Test Section:	
Roller Weight	Static:	Working:	Gauge Number	
Lift Thickness Compacted:			Manufacturer's Standards	
Depth Below Grade:			Density:	Moisture:
Depth of Gauge Source:			Standard Counts	
Observed	Yes		No	Density:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

B	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

C	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name:

Inspector's Signature: _____

Project's Evaluation

Checked By:

Date: _____

Maximum Density Determination		
Test Site	DA	Dry Density
1		
2		
3		
4		
5		
DC	Max. Density	

ANSWERS

Workshop Number One

Roller Pass Test Section

Item 307-1

RANDOM NUMBERS

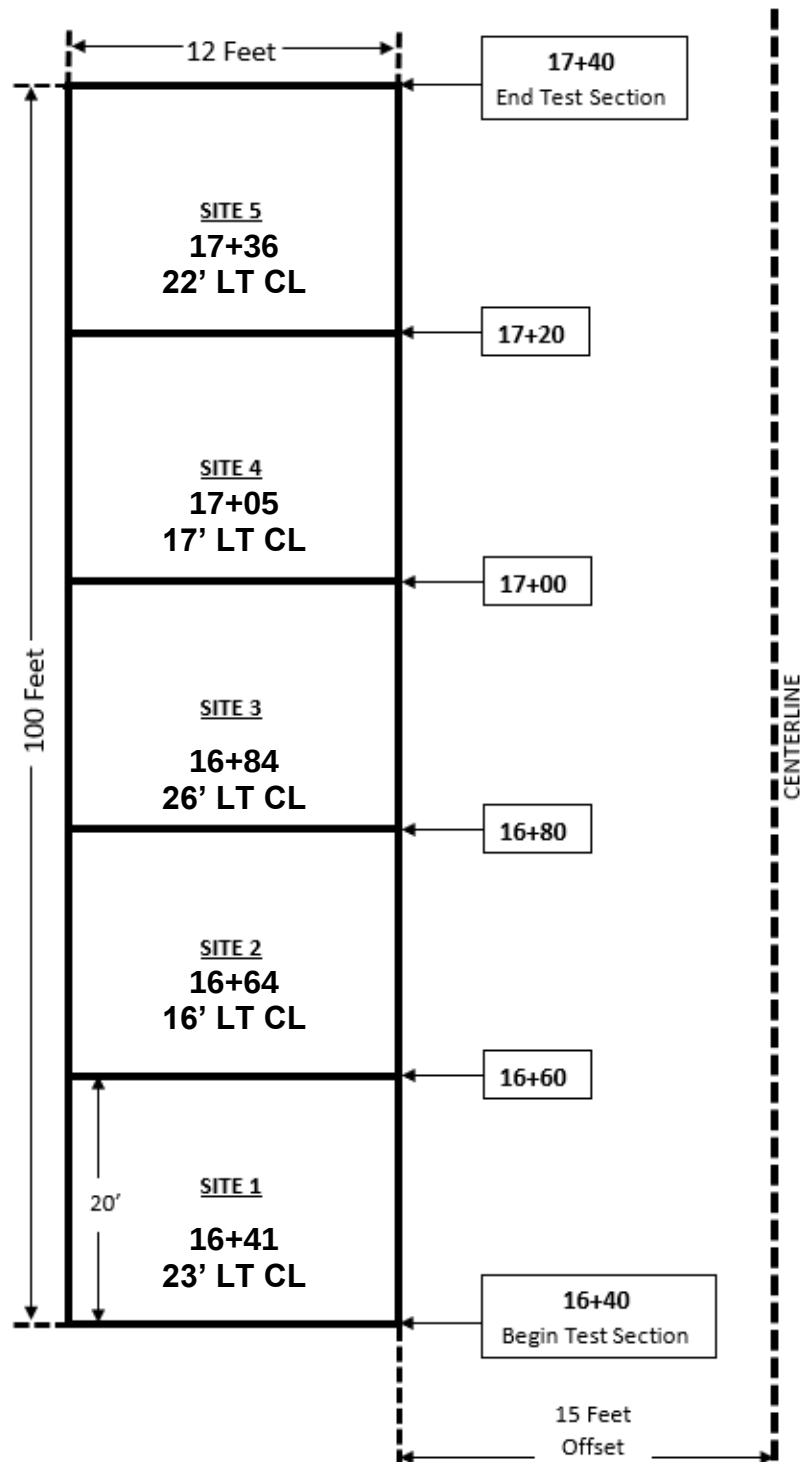
6) .065	.627
7) .200	.055
8) .217	.882
9) .237	.146
10) .815	.570

Length:

- 1) $.065 \times 20 = 1$
 $16+40 + 1 = \mathbf{16+41}$
- 2) $.200 \times 20 = 4$
 $16+60 + 4 = \mathbf{16+64}$
- 3) $.217 \times 20 = 4$
 $16+60 + 4 = \mathbf{16+64}$
- 4) $.237 \times 20 = 5$
 $17+00 + 5 = \mathbf{17+05}$
- 5) $.815 \times 20 = 16$
 $17+20 + 16 = \mathbf{17+36}$

Width:

- 1) $.627 \times 12 = 8$
 $8 + 15 = \mathbf{23' LT CL}$
- 2) $.055 \times 12 = 1$
 $1 + 15 = \mathbf{16' LT CL}$
- 3) $.882 \times 12 = 11$
 $11 + 15 = \mathbf{26' LT CL}$
- 4) $.146 \times 12 = 2$
 $2 + 15 = \mathbf{17' LT CL}$
- 5) $.570 \times 12 = 7$
 $7 + 15 = \mathbf{22' LT CL}$



West Virginia Division of Highways
Materials Control Soil and Testing Division

EXAMPLE #2



Lab Number 8110912
 Auth. Number SM8888C
 Project Number S 310-8-18.22
 District Number 9
 Item Number 307-1
 Date Today's Date

FORM T-313
MP 700.00.24

Source of Material: <u>Lewisburg</u>			Length of Test Section: <u>100'</u>		
Roller Type: <u>Vibratory</u>			Width of Test Section: <u>12'</u>		
Roller Weight	Static: <u>9.0 Ton</u>	Working: <u>15.0 Ton</u>	Gauge Number <u>28225</u>		
Lift Thickness Compacted: <u>6"</u>			Manufacturer's Standards		
Depth Below Grade: <u>0</u>			Density: <u>2865</u> Moisture: <u>678</u>		
Depth of Gauge Source: <u>6"</u>			Standard Counts		
Observed	Yes ☒	No ☐	Density: <u>2857</u> Moisture: <u>670</u>		

Test Site Number	1	2	3	4	5
Station Number	16+41	16+64	16+84	17+05	17+36
Offset	23' LT CL	16' LT CL	26' LT CL	17' LT CL	22' LT CL

A	Number of Passes	12
	Test Site	DA Dry Density
	1	127
	2	128
DB	Average	128

B	Number of Passes	14
	Test Site	DA Dry Density
	1	133
	2	135
DB	Average	134

C	Number of Passes	16
	Test Site	DA Dry Density
	1	135
	2	136
DB	Average	136

D	Number of Passes	18
	Test Site	DA Dry Density
	1	136
	2	137
DB	Average	137

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation _____
 Checked By: _____
 Date: _____

Maximum Density Determination		
Test Site	DA	Dry Density
1		136
2		137
3		138
4		137
5		136
DC	Max. Density	137

Roller Pass Test Section

Item 307-1

RANDOM NUMBERS

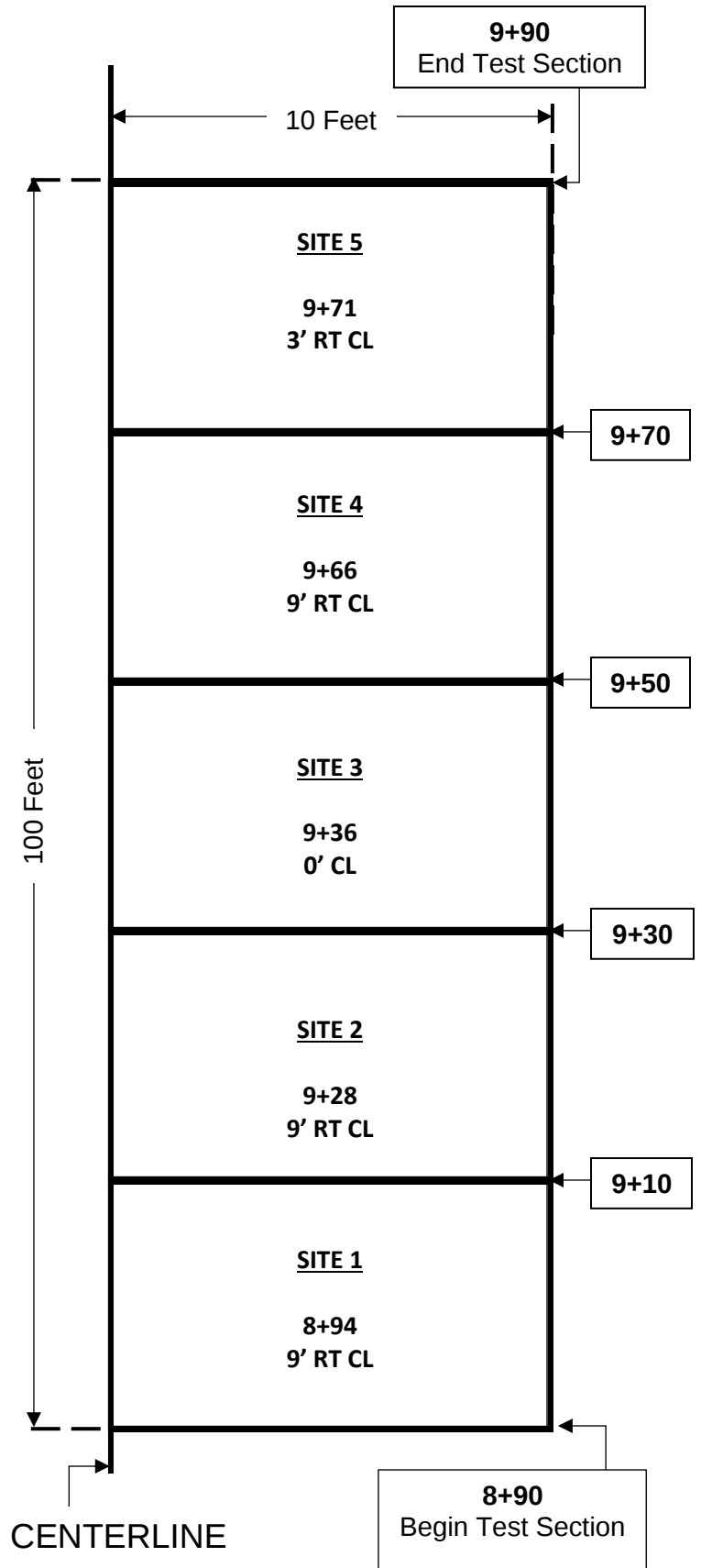
- | | |
|---------|------|
| 1) .195 | .877 |
| 2) .902 | .850 |
| 3) .275 | .023 |
| 4) .794 | .850 |
| 5) .043 | .293 |

Length:

- 1) $.195 \times 20 = 4$
 $8+90 + 4 = \mathbf{8+94}$
- 2) $.902 \times 20 = 18$
 $9+10 + 18 = \mathbf{9+28}$
- 3) $.275 \times 20 = 6$
 $9+30 + 6 = \mathbf{9+36}$
- 4) $.794 \times 20 = 16$
 $9+50 + 16 = \mathbf{9+66}$
- 5) $.043 \times 20 = 1$
 $9+70 + 1 = \mathbf{9+71}$

Width

- 1) $.887 \times 10 = 9' \text{ RT CL}$
- 2) $.850 \times 10 = 9' \text{ RT CL}$
- 3) $.023 \times 10 = 0' \text{ CL}$
- 4) $.850 \times 10 = 9' \text{ RT CL}$
- 5) $.293 \times 10 = 3' \text{ RT CL}$



West Virginia Division of Highways
Materials Control Soil and Testing Division



Lab Number 7112182
Auth. Number FC2121C
Project Number RS-0162 (054)
District Number 4
Item Number 307-1
Date Today's Date

PROBLEM #2

FORM T-313
MP 700.00.24

Source of Material: <u>Clarksburg</u>			Length of Test Section: <u>100'</u>		
Roller Type: <u>Vibratory</u>			Width of Test Section: <u>10'</u>		
Roller Weight	Static: <u>10 Ton</u>	Working: <u>18.5 Ton</u>	Gauge Number <u>11172</u>		
Lift Thickness Compacted:			Manufacturer's Standards		
Depth Below Grade: <u>10</u>			Density: <u>2891</u> Moisture: <u>627</u>		
Depth of Gauge Source:			Standard Counts		
Observed	Yes	No	Density: <u>2872</u> Moisture: <u>624</u>		

Test Site Number	1	2	3	4	5
Station Number	8+94	9+28	9+36	9+66	9+71
Offset	9' RT CL	8' RT CL	CL	8' RT CL	3' RT CL

A	Number of Passes	12
	Test Site	DA Dry Density
	1	133
	2	134
DB	Average	134

B	Number of Passes	14
	Test Site	DA Dry Density
	1	136
	2	136
DB	Average	136

C	Number of Passes	16
	Test Site	DA Dry Density
	1	137
	2	138
DB	Average	138

D	Number of Passes	18
	Test Site	DA Dry Density
	1	138
	2	138
DB	Average	138

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation _____
 Checked By: _____
 Date: _____

Maximum Density Determination		
Test Site	DA	Dry Density
1		138
2		138
3		137
4		139
5		138
DC	Max. Density	138

WORKSHOP NUMBER TWO

Quality Assurance
Of
Aggregates

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER	8110913
AUTH. NUMBER	SM8888C
PROJECT NUMBER	S 310-8-19.22
DISTRICT	9
ITEM NUMBER	307-1

FORM T-317
MP 700.00.24

GAUGE #	DATE	Today's			
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER	B-1			
	BEGINNING STATION	17+40			
	ENDING STATION	34+40			
MANUFACTURER'S MOISTURE STANDARD	OFFSET	10' LT CT			
	DEPTH BELOW GRADE	0"			
	DEPTH OF GAUGE SOURCE	6"			
	LIFT THICKNESS COMPACTED	6"			
DC FROM TEST SECTION	DENSITY STANDARD	2858			
	MOISTURE STANDARD	672			

$$DF = \frac{DE (100)}{DC}$$

$$\bar{X} = \frac{\sum DF}{5}$$

$$QL = \frac{\bar{X} - T}{R}$$

DC	MAXIMUM DENSITY	137			
	REFERENCE LAB NUMBER	8110912			

TEST NUMBER 1	DE	DRY DENSITY	135			
	DF	% RELATIVE DENSITY				

TEST NUMBER 2	DE	DRY DENSITY	134			
	DF	% RELATIVE DENSITY				

TEST NUMBER 3	DE	DRY DENSITY	132			
	DF	% RELATIVE DENSITY				

TEST NUMBER 4	DE	DRY DENSITY	131			
	DF	% RELATIVE DENSITY				

TEST NUMBER 5	DE	DRY DENSITY	136			
	DF	% RELATIVE DENSITY				

LOT EVALUATION	X	AVERAGE DF				
	T	TARGET				
	QL	QUALITY INDEX				
	DG	% WITHIN TOLERANCE				
	DH	MIN. FOR 100% PAY				
	DI	PASS / FAIL				

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

PROBLEM #1

MP 700.00.24

Item Number 307-1

Lot by Lot T-317

Lab Number:	7112183			
Authorization Number:	FC2121C			
Project Number:	RS-0162(054)			
District Number	4			
Item Number:	307-1			
Gauge Number:	11172			
Manufacturer's Standards	Density:	2891	Moisture:	627

Date	Today's				
Lot Number	B-1				
Beginning Station	1+85				
Ending Station	20+85				
Offset	LT CL				
Depth Below Grade	0"				
Depth of Gauge Source	6"				
Lift Thickness	6"				
Density Standards	2884				
Moisture Standards	625				
Maximum Density	138				
Reference Lab Number	7112182				

DRY DENSITY PCF

Test Site Number: 1	134				
Test Site Number: 2	133				
Test Site Number: 3	132				
Test Site Number: 4	135				
Test Site Number: 5	137				

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE						
	DEPTH OF GAUGE SOURCE						
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY					
	REFERENCE LAB NUMBER						
TEST NUMBER 1	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET					
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY					
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

ANSWERS

Workshop Number Two

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER	8110913
AUTH. NUMBER	SM8888C
PROJECT NUMBER	S 310-B-19.22
DISTRICT	9
ITEM NUMBER	307-1

FORM T-317
MP 700.00.24

GAUGE #	DATE	Today's					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER	B-1					
	BEGINNING STATION	17+40					
	ENDING STATION	34+40					
MANUFACTURER'S MOISTURE STANDARD	OFFSET	10' LT CT					
	DEPTH BELOW GRADE	0"					
	DEPTH OF GAUGE SOURCE	6"					
	LIFT THICKNESS COMPACTED	6"					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD	2858					
	MOISTURE STANDARD	672					
	DC	MAXIMUM DENSITY	137				
		REFERENCE LAB NUMBER	8110912				
TEST NUMBER 1	DE	DRY DENSITY	135				
	DF	% RELATIVE DENSITY	99				
TEST NUMBER 2	DE	DRY DENSITY	134				
	DF	% RELATIVE DENSITY	98				
TEST NUMBER 3	DE	DRY DENSITY	132				
	DF	% RELATIVE DENSITY	96				
TEST NUMBER 4	DE	DRY DENSITY	131				
	DF	% RELATIVE DENSITY	96				
TEST NUMBER 5	DE	DRY DENSITY	136				
	DF	% RELATIVE DENSITY	99				
LOT EVALUATION	$\bar{X}$	AVERAGE DF	97.6				
	T	TARGET	95				
	QL	QUALITY INDEX	.87				
	DG	% WITHIN TOLERANCE	99				
	DH	MIN. FOR 100% PAY	80				
	DI	PASS / FAIL	PASS				

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER	7112183
AUTH. NUMBER	FC2121C
PROJECT NUMBER	RS-0162-(054)
DISTRICT	4
ITEM NUMBER	307-1

FORM T-317
MP 700.00.24

GAUGE #	DATE	Today's					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER	B-1					
	BEGINNING STATION	1+85					
	ENDING STATION	20+85					
MANUFACTURER'S MOISTURE STANDARD	OFFSET	LT CL					
	DEPTH BELOW GRADE	0"					
	DEPTH OF GAUGE SOURCE	6"					
	LIFT THICKNESS COMPACTED	6"					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD	2884					
	MOISTURE STANDARD	625					
	DC	MAXIMUM DENSITY	138				
	REFERENCE LAB NUMBER		7112182				
TEST NUMBER 1	DE	DRY DENSITY	134				
	DF	% RELATIVE DENSITY	97				
TEST NUMBER 2	DE	DRY DENSITY	133				
	DF	% RELATIVE DENSITY	96				
TEST NUMBER 3	DE	DRY DENSITY	132				
	DF	% RELATIVE DENSITY	96				
TEST NUMBER 4	DE	DRY DENSITY	135				
	DF	% RELATIVE DENSITY	98				
TEST NUMBER 5	DE	DRY DENSITY	137				
	DF	% RELATIVE DENSITY	99				
LOT EVALUATION	X̄	AVERAGE DF	97.2				
	T	TARGET	95				
	QL	QUALITY INDEX	.73				
	DG	% WITHIN TOLERANCE	99				
	DH	MIN. FOR 100% PAY	80				
	DI	PASS / FAIL	PASS				

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WORKSHOP NUMBER THREE

Quality Assurance
Of
Soils

ONE-POINT PROCTOR

MP 207.07.20

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = $\frac{MA}{100}$ DB CC = CA - CB CF = CD - CE CG = $\frac{CF}{100}$ CC PC = PA - PB PD = PC (0.066) PE = $\frac{PD}{100}$ 100 + MB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
PLUS 3/4 MATERIAL DETERMINATION		CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
					RERUN	RERUN	RERUN	RERUN	RERUN
RERUN PROCTOR PE (RERUN) = $\frac{PD}{100}$ 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SF}{100}$ SE DE = $\frac{DB}{100}$ DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
LOT EVALUATION		X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%		INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX			PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%		CHECKED BY:			
		DG	MIN. FOR 100% PAY	%		DATE:			
		DH	PASS / FAIL	YES	NO				

GAUGE NUMBER	36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE						
DENSITY	2935	STATION NUMBER	ft.					
MOISTURE	664	OFFSET	ft.					
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.					
DENSITY	2902	LIFT THICKNESS	in.					
MOISTURE	658	DEPTH OF SOURCE	in.					
DB	DA	TOTAL DRY DENSITY	lb/ft ³	127				
FROM TABLES	MA	MOISTURE	lb/ft ³	12				
	DB	DRY DENSITY -3/4	lb/ft ³					
MB = $\frac{MA(100)}{DB}$	MB	MOISTURE	%					
DB	CA	EXC. MATERIAL + PAN	grams					
CC = CA - CB	CB	PAN	grams					
CF = CD - CE	CC	EXCAVATED MAT.	grams					
CG = $\frac{CF(100)}{CC}$	CD	PLUS 3/4 MAT. + PAN	grams					
PC = PA - PB	CE	PAN	grams					
PD = PC (0.066)	CF	PLUS 3/4 MAT.	grams					
PE = $\frac{PD(100)}{100 + MB}$	CG	PLUS 3/4 MAT.	%					
	CH	SPECIFIC GRAVITY						
			RERUN RERUN RERUN RERUN RERUN					
RERUN PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
PE (RERUN) = $\frac{PD(100)}{100 + SG}$	PB	MOLD	grams					
	PC	WEIGHT OF SOIL	grams					
	PD	WET DENSITY	lb/ft ³					
	PE	DRY DENSITY	lb/ft ³					

GAUGE NUMBER	36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE						
DENSITY	2935	STATION NUMBER	ft.					
MOISTURE	664	OFFSET	ft.					
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.					
DENSITY	2902	LIFT THICKNESS	in.					
MOISTURE	658	DEPTH OF SOURCE	in.					
DB		DA	TOTAL DRY DENSITY	lb/ft ³	127			
FROM TABLES		MA	MOISTURE	lb/ft ³	12			
		DB	DRY DENSITY - 3/4	lb/ft ³				
		MB	MOISTURE	%				
MB = $\frac{MA}{100}$		CA	EXC. MATERIAL + PAN	grams	4910			
DB		CB	PAN	grams	600			
CC = CA - CB		CC	EXCAVATED MAT.	grams	4310			
CF = CD - CE		CD	PLUS 3/4 MAT. + PAN	grams				
CG = $\frac{CF}{100}$		CE	PAN	grams				
CC		CF	PLUS 3/4 MAT.	grams				
PC = PA - PB		CG	PLUS 3/4 MAT.	%				
PD = PC (0.066)		CH	SPECIFIC GRAVITY					
PE = $\frac{PD}{100}$								
100 + MB								
RERUN PROCTOR								
PE (RERUN) =		PA	WEIGHT SOIL & MOLD	grams				
		PB	MOLD	grams				
PD (100)		PC	WEIGHT OF SOIL	grams				
100 + SG		PD	WET DENSITY	lb/ft ³				
		PE	DRY DENSITY	lb/ft ³				

GAUGE NUMBER	36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE						
DENSITY	2935	STATION NUMBER	ft.					
MOISTURE	664	OFFSET	ft.					
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.					
DENSITY	2902	LIFT THICKNESS	in.					
MOISTURE	658	DEPTH OF SOURCE	in.					
DB		DA TOTAL DRY DENSITY	lb/ft ³	127				
FROM TABLES		MA MOISTURE	lb/ft ³	12				
		DB DRY DENSITY - 3/4	lb/ft ³					
MB = $\frac{MA(100)}{DB}$		MB MOISTURE	%					
DB		CA EXC. MATERIAL + PAN	grams	4910				
CC = CA - CB		CB PAN	grams	600				
CF = CD - CE		CC EXCAVATED MAT.	grams	4310				
CG = $\frac{CF(100)}{CC}$		CD PLUS 3/4 MAT. + PAN	grams	859				
PC = PA - PB		CE PAN	grams	600				
PD = $\frac{PC(100)}{100 + MB}$		CF PLUS 3/4 MAT.	grams	259				
PE = $\frac{PD(100)}{100 + MB}$		CG PLUS 3/4 MAT.	%					
		CH SPECIFIC GRAVITY						
		RERUN RERUN RERUN RERUN RERUN						
RERUN PROCTOR		PA WEIGHT SOIL & MOLD	grams					
PE (RERUN) = $\frac{PD(100)}{100 + SG}$		PB MOLD	grams					
		PC WEIGHT OF SOIL	grams					
		PD WET DENSITY	lb/ft ³					
		PE DRY DENSITY	lb/ft ³					

GAUGE NUMBER	36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE						
DENSITY	2935	STATION NUMBER	ft.					
MOISTURE	664	OFFSET	ft.					
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.					
DENSITY	2902	LIFT THICKNESS	in.					
MOISTURE	658	DEPTH OF SOURCE	in.					
DB		DA TOTAL DRY DENSITY	lb/ft ³	127				
FROM TABLES		MA MOISTURE	lb/ft ³	12				
		DB DRY DENSITY - 3/4	lb/ft ³					
MB = $\frac{MA}{100}$		MB MOISTURE	%					
DB		CA EXC. MATERIAL + PAN	grams	4910				
CC = CA - CB		CB PAN	grams	600				
CF = CD - CE		CC EXCAVATED MAT.	grams	4310				
CG = $\frac{CF}{100}$		CD PLUS 3/4 MAT. + PAN	grams	859				
CC		CE PAN	grams	600				
PC = PA - PB		CF PLUS 3/4 MAT.	grams	259				
PD = PC (0.066)		CG PLUS 3/4 MAT.	grams	6				
PE = $\frac{PD}{100 + MB}$		CH SPECIFIC GRAVITY						
RERUN PROCTOR		RERUN RERUN RERUN RERUN RERUN						
PE (RERUN) =		PA WEIGHT SOIL & MOLD	grams					
$\frac{PD}{100 + SG}$		PB MOLD	grams					
		PC WEIGHT OF SOIL	grams					
		PD WET DENSITY	lb/ft ³					
		PE DRY DENSITY	lb/ft ³					

GAUGE NUMBER	36688	TEST NUMBER	1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE					
DENSITY	2935	STATION NUMBER	ft.				
MOISTURE	664	OFFSET	ft.				
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.				
DENSITY	2902	LIFT THICKNESS	in.				
MOISTURE	658	DEPTH OF SOURCE	in.				
DB		DA TOTAL DRY DENSITY	lb/ft ³	127			
FROM TABLES		MA MOISTURE	lb/ft ³	12			
		DB DRY DENSITY - 3/4	lb/ft ³				
MB = MA (100)		MB MOISTURE	%				
DB		CA EXC. MATERIAL + PAN	grams	4910			
CC = CA - CB		CB PAN	grams	600			
CF = CD - CE		CC EXCAVATED MAT.	grams	4310			
CG = CF (100)		CD PLUS 3/4 MAT. + PAN	grams	859			
CC		CE PAN	grams	600			
PC = PA - PB		CF PLUS 3/4 MAT.	grams	259			
PD = PC (0.066)		CG PLUS 3/4 MAT.	%	6			
PE = PD (100)		CH SPECIFIC GRAVITY		2.6			
100 + MB							
RERUN PROCTOR							
PE (RERUN) =		PA WEIGHT SOIL & MOLD	grams				
PD (100)		PB MOLD	grams				
100 + SG		PC WEIGHT OF SOIL	grams				
		PD WET DENSITY	lb/ft ³				
		PE DRY DENSITY	lb/ft ³				

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING

CH

DENSITY OF -3/4 INCH MATERIAL WITH THE +3/4 INCH MATERIAL SPECIFIC GRAVITY OF

2.6

PERCENT of + 3/4 MATERIAL

DD	1	2	3	4	5	6	7	8	9	10
121	121	121	120	120	120	120	119	119	119	119
122	122	122	121	121	121	121	120	120	120	120
123	123	123	122	122	122	122	122	121	121	121
124	124	124	123	123	123	123	123	122	122	122
125	125	125	124	124	124	124	124	123	123	123
126	126	126	125	125	125	125	125	125	124	124
127	127	127	127	126	126	126	126	126	125	125
128	128	128	128	127	127	127	127	127	127	126
129	129	129	129	128	128	128	128	128	128	127
130	130	130	130	129	129	129	129	129	129	129
131	131	131	131	131	130	130	130	130	130	130
132	132	132	132	132	131	131	131	131	131	131
133	133	133	133	133	132	132	132	132	132	132
134	134	134	134	134	134	133	133	133	133	133
135	135	135	135	135	135	135	134	134	134	134

DA

CG

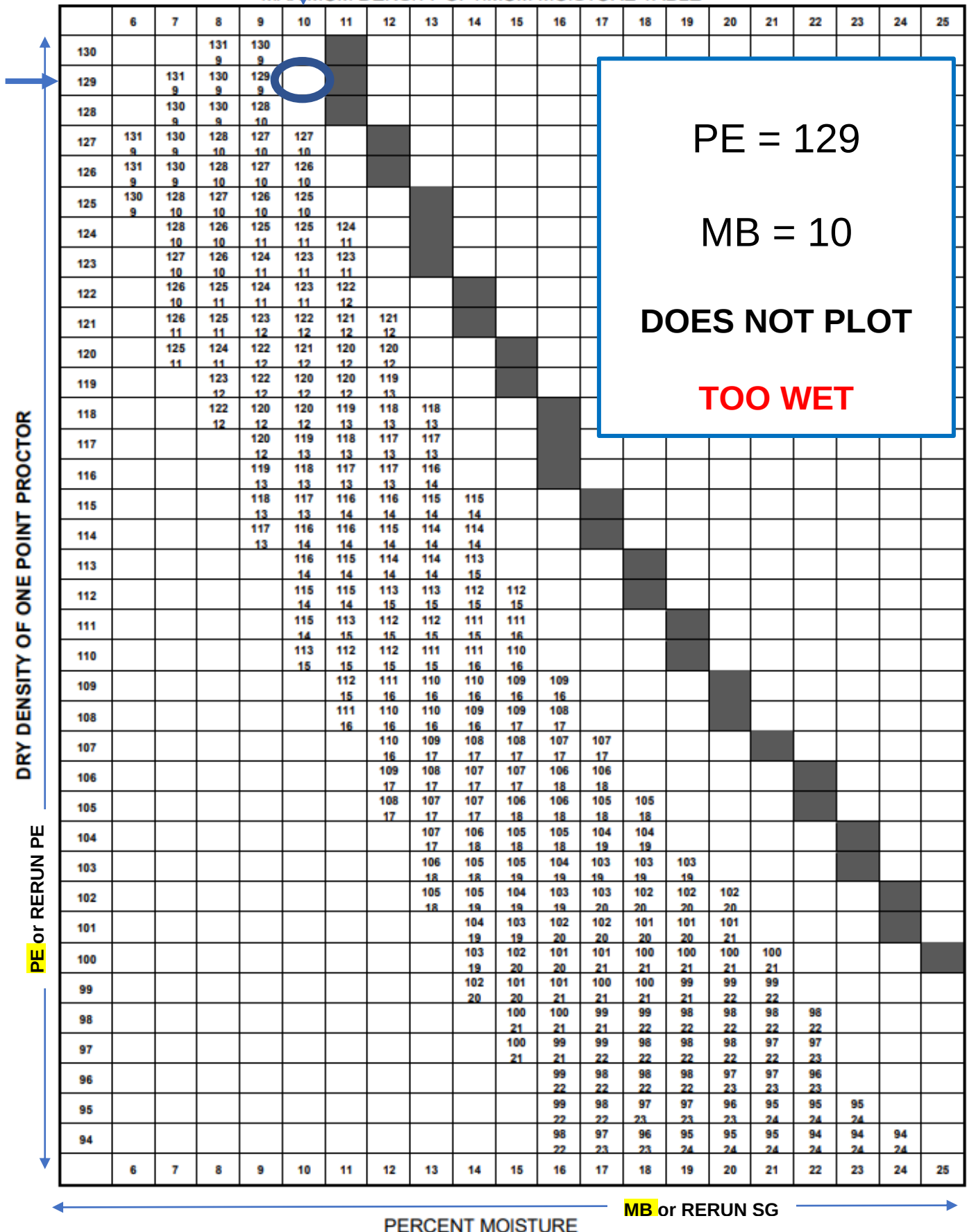
GAUGE NUMBER		36688	TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS			DATE							
DENSITY	2935		STATION NUMBER							
MOISTURE	664		OFFSET							
GAUGE STANDARD COUNTS			DEPTH BELOW GRADE							
DENSITY	2902		LIFT THICKNESS							
MOISTURE	658		DEPTH OF SOURCE							
DB FROM TABLES			DA	TOTAL DRY DENSITY	lb/ft ³	127				
			MA	MOISTURE	lb/ft ³	12				
DB FROM TABLES			DB	DRY DENSITY -3/4	lb/ft ³	126				
			MB	MOISTURE	%	10				
PLUS 3/4 MATERIAL DETERMINATION			CA	EXC. MATERIAL + PAN	grams	4910				
			CB	PAN	grams	600				
			CC	EXCAVATED MAT.	grams	4310				
			CD	PLUS 3/4 MAT. + PAN	grams	859				
			CE	PAN	grams	600				
			CF	PLUS 3/4 MAT.	grams	259				
			CG	PLUS 3/4 MAT.	%	6				
			CH	SPECIFIC GRAVITY		2.6				
RERUN PROCTOR			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	
ONE POINT PROCTOR			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	
PA			WEIGHT SOIL & MOLD	grams						
PB			MOLD	grams						
PC			WEIGHT OF SOIL	grams						
PD			WET DENSITY	lb/ft ³						
PE			DRY DENSITY	lb/ft ³						
RERUN PROCTOR			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	
PE (RERUN) =			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	
PD (100)			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	
100 + SG			RERUN		RERUN	RERUN	RERUN	RERUN	RERUN	

GAUGE NUMBER	36688	TEST NUMBER	1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE					
DENSITY	2935	STATION NUMBER	ft.				
MOISTURE	664	OFFSET	ft.				
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.				
DENSITY	2902	LIFT THICKNESS	in.				
MOISTURE	658	DEPTH OF SOURCE	in.				
DB		DA TOTAL DRY DENSITY	lb/ft ³	127			
FROM TABLES		MA MOISTURE	lb/ft ³	12			
		DB DRY DENSITY - 3/4	lb/ft ³	126			
MB = $\frac{MA(100)}{100 + MB}$		MB MOISTURE	%	10			
DB		CA EXC. MATERIAL + PAN	grams	4910			
CC = CA - CB		CB PAN	grams	600			
CF = CD - CE		CC EXCAVATED MAT.	grams	4310			
CG = $\frac{CF(100)}{100 + CG}$		CD PLUS 3/4 MAT. + PAN	grams	859			
		CE PAN	grams	600			
PC = $\frac{PA - PB}{100 + PG}$		CF PLUS 3/4 MAT.	grams	259			
PD = $\frac{PC(0.066)}{100 + PG}$		CG PLUS 3/4 MAT.	%	6			
PE = $\frac{PD(100)}{100 + MB}$		CH SPECIFIC GRAVITY		2.6			
RERUN PROCTOR							
PE (RERUN) = $\frac{PD(100)}{100 + SG}$		ONE POINT PROCTOR					
		PA WEIGHT SOIL & MOLD	grams	4180			
		PB MOLD	grams	2023			
		PC WEIGHT OF SOIL	grams	2157			
		PD WET DENSITY	lb/ft ³				
		PE DRY DENSITY	lb/ft ³				

GAUGE NUMBER	36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE						
DENSITY	2935	STATION NUMBER	ft.					
MOISTURE	664	OFFSET	ft.					
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.					
DENSITY	2902	LIFT THICKNESS	in.					
MOISTURE	658	DEPTH OF SOURCE	in.					
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	127			
		MA	MOISTURE	lb/ft ³	12			
DB		DRY DENSITY -3/4	lb/ft ³	126				
MB		MOISTURE	%	10				
MB = MA (100) DB	PLUS 3/4 MATERIAL DETERMINATION		CA	EXC. MATERIAL + PAN	grams	4910		
			CB	PAN	grams	600		
CC = CA - CB			CC	EXCAVATED MAT.	grams	4310		
CF = CD - CE			CD	PLUS 3/4 MAT. + PAN	grams	859		
CG = CF (100) CC			CE	PAN	grams	600		
PC = PA - PB			CF	PLUS 3/4 MAT.	grams	259		
PD = PC (0.066)			CG	PLUS 3/4 MAT.	%	6		
PE = PD (100) 100 + MB			CH	SPECIFIC GRAVITY		2.6		
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180			
		PB	MOLD	grams	2023			
		PC	WEIGHT OF SOIL	grams	2157			
		PD	WET DENSITY	lb/ft ³	142			
		PE	DRY DENSITY	lb/ft ³				

GAUGE NUMBER		36688	TEST NUMBER		1	2	3	4	5
MANUFACTURER'S STANDARDS			DATE						
DENSITY	2935		STATION NUMBER		ft.				
MOISTURE	664		OFFSET		ft.				
GAUGE STANDARD COUNTS			DEPTH BELOW GRADE		ft.				
DENSITY	2902		LIFT THICKNESS		in.				
MOISTURE	658		DEPTH OF SOURCE		in.				
DB	DA	TOTAL DRY DENSITY	lb/ft ³	127					
FROM TABLES	MA	MOISTURE	lb/ft ³	12					
	DB	DRY DENSITY - 3/4	lb/ft ³	126					
	MB	MOISTURE	%	10					
MB = MA (100)	CA	EXC. MATERIAL + PAN	grams	4910					
DB	CB	PAN	grams	600					
CC = CA - CB	CC	EXCAVATED MAT.	grams	4310					
CF = CD - CE	CD	PLUS 3/4 MAT. + PAN	grams	859					
CG = CF (100)	CE	PAN	grams	600					
CC	CF	PLUS 3/4 MAT.	grams	259					
PC = PA - PB	CG	PLUS 3/4 MAT.	%	6					
PD = PC (0.066)	CH	SPECIFIC GRAVITY		2.6					
PE = PD (100)					RERUN	RERUN	RERUN	RERUN	RERUN
100 + MB					RERUN	RERUN	RERUN	RERUN	RERUN
RERUN PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180					
PE (RERUN) =	PB	MOLD	grams	2023					
PD (100)	PC	WEIGHT OF SOIL	grams	2157					
100 + SG	PD	WET DENSITY	lb/ft ³	142					
	PE	DRY DENSITY	lb/ft ³	129					

MAXIMUM DENSITY-OPTIMUM MOISTURE TABLE



GAUGE NUMBER	36688	TEST NUMBER	1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE					
DENSITY	2935	STATION NUMBER	ft.				
MOISTURE	664	OFFSET	ft.				
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.				
DENSITY	2902	LIFT THICKNESS	in.				
MOISTURE	658	DEPTH OF SOURCE	in.				
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	127		
		MA	MOISTURE	lb/ft ³	12		
		DB	DRY DENSITY -3/4	lb/ft ³	126		
		MB	MOISTURE	%	10		
DB CC = CA - CB CF = CD - CE CG = CF (100) CC	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	4910		
		CB	PAN	grams	600		
		CC	EXCAVATED MAT.	grams	4310		
		CD	PLUS 3/4 MAT. + PAN	grams	859		
PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CE	PAN	grams	600		
		CF	PLUS 3/4 MAT.	grams	259		
		CG	PLUS 3/4 MAT.	%	6		
		CH	SPECIFIC GRAVITY		2.6		
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG		RERUN					
ONE POINT PROCTOR		PA	WEIGHT SOIL & MOLD	grams	4180	4131	
		PB	MOLD	grams	2023	2023	
		PC	WEIGHT OF SOIL	grams	2157	2108	
		PD	WET DENSITY	lb/ft ³	142	139	
		PE	DRY DENSITY	lb/ft ³	129		

GAUGE NUMBER	36688	TEST NUMBER	1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE					
DENSITY	2935	STATION NUMBER	ft.				
MOISTURE	664	OFFSET	ft.				
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.				
DENSITY	2902	LIFT THICKNESS	in.				
MOISTURE	658	DEPTH OF SOURCE	in.				
DB		DA	TOTAL DRY DENSITY	lb/ft ³	127		
FROM TABLES		MA	MOISTURE	lb/ft ³	12		
		DB	DRY DENSITY -3/4	lb/ft ³	126		
MB = MA (100)		MB	MOISTURE	%	10		
DB		CA	EXC. MATERIAL + PAN	grams	4910		
CC = CA - CB		CB	PAN	grams	600		
CF = CD - CE		CC	EXCAVATED MAT.	grams	4310		
CG = CF (100)		CD	PLUS 3/4 MAT. + PAN	grams	859		
CC		CE	PAN	grams	600		
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	259		
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	6		
PE = PD (100)		CH	SPECIFIC GRAVITY		2.6		
100 + MB							
PLUS 3/4 MATERIAL DETERMINATION							
ONE POINT PROCTOR		PA	WEIGHT SOIL & MOLD	grams	4180	4131	
PE (RERUN) =		PB	MOLD	grams	2023	2023	
PD (100)		PC	WEIGHT OF SOIL	grams	2157	2108	
100 + SG		PD	WET DENSITY	lb/ft ³	142	139	
		PE	DRY DENSITY	lb/ft ³	129		

$PE (RERUN) = \frac{PD(100)}{100 + SG}$		ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180	4131	RERUN	RERUN	RERUN	RERUN
$SC = SA - SB$		STONE DRIED MOISTURE	PB	MOLD	grams	2023	2023				
$SE = SD - SB$			PC	WEIGHT OF SOIL	grams	2157	2108				
$SF = SC - SE$			PD	WET DENSITY	lb/ft ³	142	139				
$SG = \frac{SF(100)}{SE}$			PE	DRY DENSITY	lb/ft ³	129					
$DE = \frac{DB(100)}{DC}$			SA	WET WEIGHT + PAN	grams						
$\bar{X} = \frac{\sum DE}{5}$		MOIST. EVAL.	SB	PAN	grams						
$QL = \frac{\bar{X} - T}{R}$			SC	WET WEIGHT	grams						
			SD	DRY WEIGHT + PAN	grams						
			SE	DRY WEIGHT	grams						
		DEN EVAL	SF	MOISTURE	grams						
			SG	MOISTURE	%						
			OA	OPTIMUM MOISTURE	%						
		LOT EVALUATION	OB	PLUS / MINUS TOLER.							
			OC	PASS / FAIL							
			DC	MAXIMUM DENSITY	lb/ft ³						
		INSPECTOR'S NAME:	DE	RELATIVE DENSITY	%						
			$\bar{X}$	AVERAGE DE	%						
			T	TARGET	%						
			QL	QUALITY INDEX							
			DF	WITHIN TOLERANCE	%						
		PROJECT'S EVALUATION	DG	MIN. FOR 100% PAY	%						
			DH	PASS / FAIL	YES	NO					
				CHECKED BY:	DATE:						

		RERUN										RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180	4131							
		PB	MOLD	grams	2023	2023							
		PC	WEIGHT OF SOIL	grams	2157	2108							
		PD	WET DENSITY	lb/ft ³	142	139							
		PE	DRY DENSITY	lb/ft ³	129								
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SF(100)}{SE}$ DE = $\frac{DB(100)}{DC}$	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	2027								
		SB	PAN	grams	1811								
		SC	WET WEIGHT	grams	216								
		SD	DRY WEIGHT + PAN	grams									
		SE	DRY WEIGHT	grams									
MOIST. EVAL. $\bar{X} = \frac{\sum DE}{5}$		SF	MOISTURE	grams									
		SG	MOISTURE	%									
		OA	OPTIMUM MOISTURE	%									
DEN EVAL. $QL = \frac{\bar{X} - T}{R}$		OB	PLUS / MINUS TOLER.										
		OC	PASS / FAIL										
		DC	MAXIMUM DENSITY	lb/ft ³									
		DE	RELATIVE DENSITY	%									
		$\bar{X}$	AVERAGE DE	%									
LOT EVALUATION		T	TARGET	%									
		QL	QUALITY INDEX										
		DF	WITHIN TOLERANCE	%									
		DG	MIN. FOR 100% PAY	%									
		DH	PASS / FAIL	YES	NO								
		INSPECTOR'S NAME:										INSPECTOR'S SIGNATURE:	
												PROJECT'S EVALUATION	
		CHECKED BY:										DATE:	

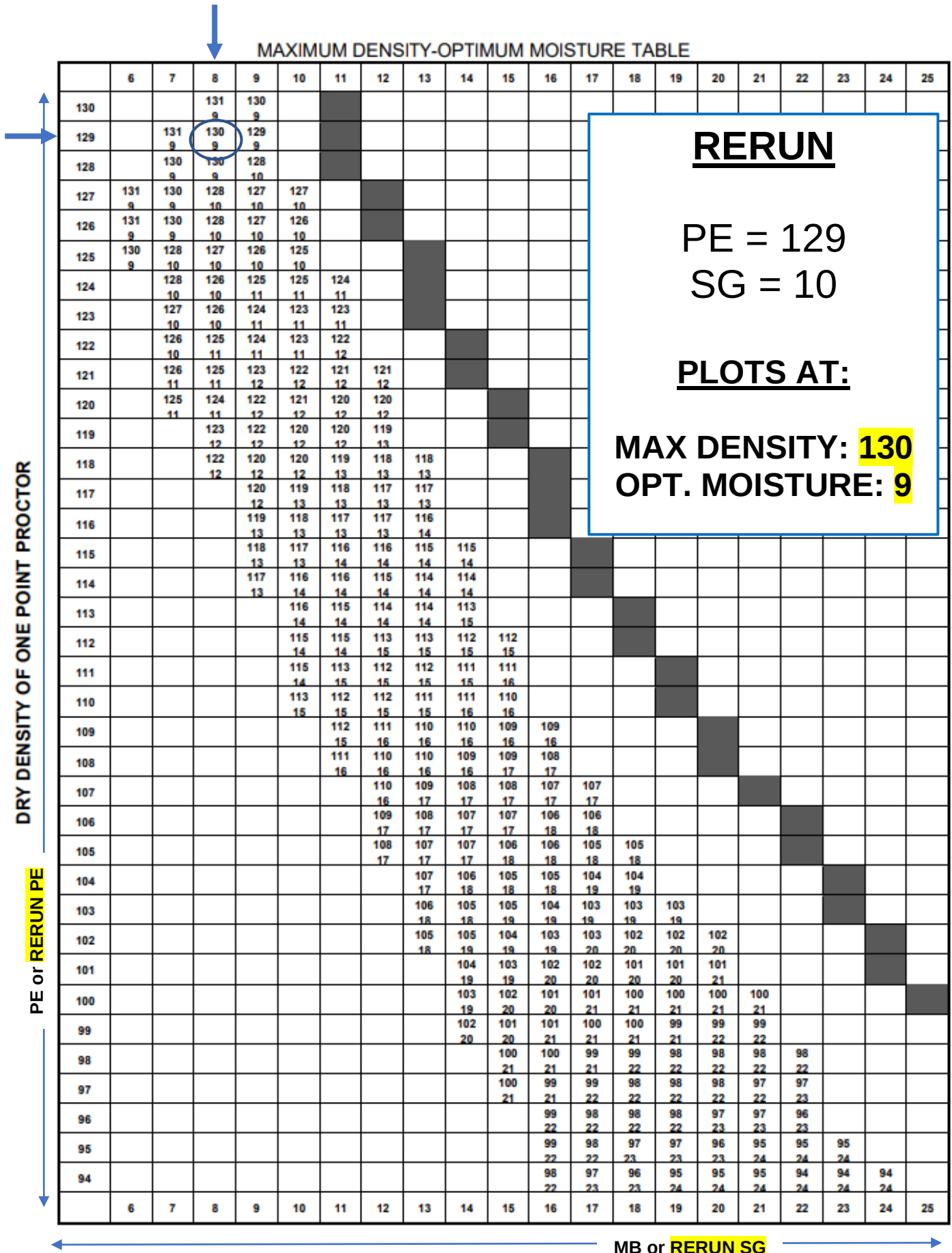
		PA	WEIGHT SOIL & MOLD	grams	4180	4131	RERUN	RERUN	RERUN	RERUN
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PB	MOLD	grams	2023	2023				
		PC	WEIGHT OF SOIL	grams	2157	2108				
		PD	WET DENSITY	lb/ft ³	142	139				
		PE	DRY DENSITY	lb/ft ³	129					
		SA	WET WEIGHT + PAN	grams	2027					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SB	PAN	grams	1811					
		SC	WET WEIGHT	grams	216					
		SD	DRY WEIGHT + PAN	grams	2011					
		SE	DRY WEIGHT	grams	200					
		SF	MOISTURE	grams						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	SG	MOISTURE	%						
		OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.							
		OC	PASS / FAIL							
		DC	MAXIMUM DENSITY	lb/ft ³						
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL	DE	RELATIVE DENSITY	%						
	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%			INSPECTOR'S NAME:			
		T	TARGET	%			INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX				PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%						
	DG	MIN. FOR 100% PAY	%			CHECKED BY:				
	DH	PASS / FAIL	YES	NO	DATE:					

		RERUN					RERUN	RERUN	RERUN	RERUN
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180	4131				
		PB	MOLD	grams	2023	2023				
		PC	WEIGHT OF SOIL	grams	2157	2108				
		PD	WET DENSITY	lb/ft ³	142	139				
		PE	DRY DENSITY	lb/ft ³	129					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = $\frac{DB(100)}{DC}$	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	2027					
		SB	PAN	grams	1811					
		SC	WET WEIGHT	grams	216					
		SD	DRY WEIGHT + PAN	grams	2011					
		SE	DRY WEIGHT	grams	200					
DE = $\frac{DB(100)}{DC}$ $\bar{X} = \frac{\sum DE}{5}$		SF	MOISTURE	grams	16					
		SG	MOISTURE	%						
	MOIST. EVAL	OA	OPTIMUM MOISTURE	%						
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL	OB	PLUS / MINUS TOLER.							
		OC	PASS / FAIL							
		DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
LOT EVALUATION		$\bar{X}$	AVERAGE DE	%			INSPECTOR'S NAME:			
		T	TARGET	%			INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX				PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%						
		DG	MIN. FOR 100% PAY	%			CHECKED BY:			
		DH	PASS / FAIL	YES	NO		DATE:			

		RERUN					RERUN					RERUN				
RERUN PROCTOR $PE (RERUN) = \frac{PD(100)}{100 + SG}$	PA	WEIGHT SOIL & MOLD	grams	4180	4131											
	PB	MOLD	grams	2023	2023											
	PC	WEIGHT OF SOIL	grams	2157	2108											
	PD	WET DENSITY	lb/ft ³	142	139											
	PE	DRY DENSITY	lb/ft ³	129												
SC = SA - SB SE = SD - SB SF = SC - SE $SG = \frac{SF(100)}{SE}$ $DE = \frac{DB(100)}{DC}$	SA	WET WEIGHT + PAN	grams	2027												
	SB	PAN	grams	1811												
	SC	WET WEIGHT	grams	216												
	SD	DRY WEIGHT + PAN	grams	2011												
	SE	DRY WEIGHT	grams	200												
$\bar{X} = \frac{\sum DE}{5}$ $QL = \frac{\bar{X} - T}{R}$	SF	MOISTURE	grams	16												
	SG	MOISTURE	%	8												
	OA	OPTIMUM MOISTURE	%													
	OB	PLUS / MINUS TOLER.														
	OC	PASS / FAIL														
DEN EVAL $QL = \frac{\bar{X} - T}{R}$	DC	MAXIMUM DENSITY	lb/ft ³													
	DE	RELATIVE DENSITY	%													
	$\bar{X}$	AVERAGE DE	%													
	T	TARGET	%													
	QL	QUALITY INDEX														
LOT EVALUATION	DF	WITHIN TOLERANCE	%													
	DG	MIN. FOR 100% PAY	%													
	DH	PASS / FAIL	YES													
		INSPECTOR'S NAME: INSPECTOR'S SIGNATURE: PROJECT'S EVALUATION CHECKED BY: DATE:														

RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180	4131	RERUN	RERUN	RERUN	RERUN
		PB	MOLD	grams	2023	2023				
		PC	WEIGHT OF SOIL	grams	2157	2108				
		PD	WET DENSITY	lb/ft ³	142	139				
		PE	DRY DENSITY	lb/ft ³	129	129				
		SA	WET WEIGHT + PAN	grams	2027					
		SB	PAN	grams	1811					
		SC	WET WEIGHT	grams	216					
		SD	DRY WEIGHT + PAN	grams	2011					
		SE	DRY WEIGHT	grams	200					
	SF	MOISTURE	grams	16						
	SG	MOISTURE	%	8						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.							
		OC	PASS / FAIL							
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
LOT EVALUATION		$\bar{X}$	AVERAGE DE	%			INSPECTOR'S NAME:			
		T	TARGET	%			INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX				PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%						
		DG	MIN. FOR 100% PAY	%			CHECKED BY:			
		DH	PASS / FAIL	YES	NO		DATE:			

MAXIMUM DENSITY-OPTIMUM MOISTURE TABLE



		RERUN					RERUN					RERUN					RERUN				
RERUN PROCTOR $PE (RERUN) = \frac{PD(100)}{100 + SG}$	PA	WEIGHT SOIL & MOLD	grams	4180	4131																
	PB	MOLD	grams	2023	2023																
	PC	WEIGHT OF SOIL	grams	2157	2108																
	PD	WET DENSITY	lb/ft ³	142	139																
	PE	DRY DENSITY	lb/ft ³	129	129																
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SF(100)}{SE}$ DE = $\frac{DB(100)}{DC}$	SA	WET WEIGHT + PAN	grams	2027																	
	SB	PAN	grams	1811																	
	SC	WET WEIGHT	grams	216																	
	SD	DRY WEIGHT + PAN	grams	2011																	
	SE	DRY WEIGHT	grams	200																	
$\bar{X} = \frac{\sum DE}{5}$	SF	MOISTURE	grams	16																	
	SG	MOISTURE	%	8																	
	OA	OPTIMUM MOISTURE	%	9																	
	OB	PLUS / MINUS TOLER.		+3/-4																	
	OC	PASS / FAIL																			
$QL = \frac{\bar{X} - T}{R}$	DC	MAXIMUM DENSITY	lb/ft ³	130																	
	DE	RELATIVE DENSITY	%																		
	$\bar{X}$	AVERAGE DE	%																		
	T	TARGET	%																		
	QL	QUALITY INDEX																			
LOT EVALUATION	DF	WITHIN TOLERANCE	%																		
	DG	MIN. FOR 100% PAY	%																		
	DH	PASS / FAIL	YES																		
			NO																		
		INSPECTOR'S NAME:																			
		INSPECTOR'S SIGNATURE:																			
		PROJECT'S EVALUATION																			
		CHECKED BY:																			
		DATE:																			

Specification

% Moisture (MB)

Must be within +3 and -4 of Optimum Moisture

Optimum Moisture = 9%
 9+3=12
 9-4=5

Range = 5% to 12%



GAUGE NUMBER	36688	TEST NUMBER	1	2	3	4	5
MANUFACTURER'S STANDARDS		DATE					
DENSITY	2935	STATION NUMBER	ft.				
MOISTURE	664	OFFSET	ft.				
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.				
DENSITY	2902	LIFT THICKNESS	in.				
MOISTURE	658	DEPTH OF SOURCE	in.				
DB	DA	TOTAL DRY DENSITY	lb/ft ³	127			
FROM TABLES	MA	MOISTURE	lb/ft ³	12			
	DB	DRY DENSITY - 3/4	lb/ft ³	126			
MB = MA (100)	MB	MOISTURE	%	10			
DB	CA	EXC. MATERIAL + PAN	grams	4910			
CC = CA - CB	CB	PAN	grams	600			
CF = CD - CE	CC	EXCAVATED MAT.	grams	4310			
CG = CF (100)	CD	PLUS 3/4 MAT. + PAN	grams	859			
CC	CE	PAN	grams	600			
PC = PA - PB	CF	PLUS 3/4 MAT.	grams	259			
PD = PC (0.066)	CG	PLUS 3/4 MAT.	%	6			
PE = PD (100)	CH	SPECIFIC GRAVITY		2.6			
100 + MB							
RERUN PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4180	4131		
PE (RERUN) =	PB	MOLD	grams	2023	2023		
PD (100)	PC	WEIGHT OF SOIL	grams	2157	2108		
100 + SG	PD	WET DENSITY	lb/ft ³	142	139		
	PE	DRY DENSITY	lb/ft ³	129	129		

% MOISTURE (MB)

+3/-4 of Optimum 9

Range

5% to 12%

		RERUN										RERUN	
		PA	WEIGHT SOIL & MOLD	grams	4180	4131							
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PB	MOLD	grams	2023	2023							
		PC	WEIGHT OF SOIL	grams	2157	2108							
		PD	WET DENSITY	lb/ft ³	142	139							
		PE	DRY DENSITY	lb/ft ³	129	129							
		SA	WET WEIGHT + PAN	grams	2027								
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SE}{SF(100)}$ DE = $\frac{DB(100)}{DC}$	STOVE DRIED MOISTURE	SB	PAN	grams	1811								
		SC	WET WEIGHT	grams	216								
		SD	DRY WEIGHT + PAN	grams	2011								
		SE	DRY WEIGHT	grams	200								
		SF	MOISTURE	grams	16								
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	SG	MOISTURE	%	8								
		OA	OPTIMUM MOISTURE	%	9								
		OB	PLUS / MINUS TOLER.		+3/-4								
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL	OC	PASS / FAIL		PASS								
		DC	MAXIMUM DENSITY	lb/ft ³	130								
		DE	RELATIVE DENSITY	%	97								
	LOT EVALUATION	X	AVERAGE DE	%									
		T	TARGET	%									
QL		QUALITY INDEX											
DF		WITHIN TOLERANCE	%										
DG		MIN. FOR 100% PAY	%										
	DH	PASS / FAIL	YES	NO									
		INSPECTOR'S NAME:											
		INSPECTOR'S SIGNATURE:											
		PROJECT'S EVALUATION											
		CHECKED BY:											
		DATE:											

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 9112762
AUTHORIZATION NUMBER FC3838H
PROJECT NUMBER S 317 - 2 - 41.55
DISTRICT 4
LOT NUMBER F25
ITEM NUMBER 207.1

EXAMPLE #1
FORM T-316
MP 207.07.20

GAUGE NUMBER		26895		TEST NUMBER		1		2		3		4		5	
MANUFACTURER'S STANDARDS				DATE											
DENSITY		2912		STATION NUMBER		ft.		14+65		15+32		17+18		18+92	
MOISTURE		662		OFFSET		ft.		8' LT CL		12' RT CL		38' RT CL		29' LT CL	
GAUGE STANDARD COUNTS				DEPTH BELOW GRADE		ft.		18'		18'		18'		18'	
DENSITY		2901		LIFT THICKNESS		in.		6"		6"		6"		6"	
MOISTURE		655		DEPTH OF SOURCE		in.		6"		6"		6"		6"	
DB FROM TABLES		Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	125		123		124		120		118	
			MA	MOISTURE	lb/ft ³	10		11		12		16		16	
			DB	DRY DENSITY - 3/4	lb/ft ³										
			MB	MOISTURE	%										
MB = MA (100) DB CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB		PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5035						4916			
			CB	PAN	grams	415						415			
			CC	EXCAVATED MAT.	grams										
			CD	PLUS 3/4 MAT. + PAN	grams	829						1125			
			CE	PAN	grams	465						465			
			CF	PLUS 3/4 MAT.	grams										
			CG	PLUS 3/4 MAT.	%										
			CH	SPECIFIC GRAVITY		2.5						2.5			
				RERUN		RERUN		RERUN		RERUN		RERUN			
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG		ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3941						4014		4032	
			PB	MOLD	grams	2009						2009		2009	
			PC	WEIGHT OF SOIL	grams										
			PD	WET DENSITY	lb/ft ³										
			PE	DRY DENSITY	lb/ft ³										
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC		STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams							598			
			SB	PAN	grams							245			
			SC	WET WEIGHT	grams										
			SD	DRY WEIGHT + PAN	grams							560			
			SE	DRY WEIGHT	grams										
			SF	MOISTURE	grams										
			SG	MOISTURE	%										
X̄ = Σ DE / 5		MOIST. EVAL.	OA	OPTIMUM MOISTURE	%										
			OB	PLUS / MINUS TOLER.											
			OC	PASS / FAIL											
QL = X̄ - T / R		DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³										
			DE	RELATIVE DENSITY	%										
LOT EVALUATION			X̄	AVERAGE DE	%									INSPECTOR'S NAME:	
			T	TARGET	%									INSPECTOR'S SIGNATURE:	
			QL	QUALITY INDEX										PROJECT'S EVALUATION	
			DF	WITHIN TOLERANCE	%									CHECKED BY:	
			DG	MIN. FOR 100% PAY	%									DATE:	
			DH	PASS / FAIL	YES	NO									

PROBLEM #1

MP 207.07.20

One Point T-316

Lab Number:	5111297			
Authorization Number:	FC3636K			
Project Number:	S326-17 - 3.65			
District Number	4			
Lot Number:	P - 218			
Item Number:	604 (36)			
Gauge Number:	57420			
Manufacturer's Standards	Density:	3165	Moisture:	621

Test Number	1	2	3	4	5
Date	Today's	Today's	Today's	Today's	Today's
Station Number	206+18	206+18	206+18		206+18
Offset	37' RT CL	39' RT CL	31' RT CL	25' RT CL	42' RT CL
Density Standards	3152	3152	3152	3152	3152
Moisture Standards	620	620	620	620	620
Depth Below Grade	14'	13'	12'	10'	9'
Lift Thickness	4"	4"	4"	4"	4"
Depth of Gauge Source	4"	4"	4"	4"	4"
Total Dry Density PCF	114	111	112	115	116
Moisture PCF	15	18	18	14	16
Excavated Material + Pan	5057				
Pan	525				
+3/4" Material + Pan	829				
Pan	545				
Specific Gravity	2.5				
Wt. of Soil + Mold (g)	3945				
Wt. Mold (g)	2000				
Wt. Soil + Mold ---RERUN					
Wt. Mold---- RERUN					
Wet Wt. + Pan					
Pan					
Dry Wt. + Pan					

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
 MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
PLUS 3/4 MATERIAL DETERMINATION CA EXC. MATERIAL + PAN CB PAN CC EXCAVATED MAT. CD PLUS 3/4 MAT. + PAN CE PAN CF PLUS 3/4 MAT. CG PLUS 3/4 MAT. CH SPECIFIC GRAVITY	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
					RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD (100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SE SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%		INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX			PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%		CHECKED BY:			
		DG	MIN. FOR 100% PAY	%		DATE:			
		DH	PASS / FAIL	YES	NO				

PROBLEM #2

MP 207.07.20

One Point T-316

Lab Number:	61181932			
Authorization Number:	FM2002C			
Project Number:	S344-41-9.82			
District Number	10			
Lot Number:	F - 32			
Item Number:	207.1			
Gauge Number:	11162			
Manufacturer's Standards	Density:	2914	Moisture:	667

Test Number	1	2	3	4	5
Date	Today's	Today's	Today's	Today's	Today's
Station Number	87+14	88+21	89+33	90+62	92+03
Offset	18' RT CL	29' LT CL	4' LT CL	16' RT CL	23' RT CL
Density Standards	2896				
Moisture Standards	664				
Depth Below Grade	82'				
Lift Thickness	6"				
Depth of Gauge Source	6"				
Total Dry Density PCF	114	112	122	119	120
Moisture PCF	18	16	14	13	12
Excavated Material + Pan	4921		4936		
Pan	450		450		
+3/4" Material + Pan	896		1094		
Pan	421		421		
Specific Gravity	2.5		2.7		
Wt. of Soil + Mold (g)	3941		4059		
Wt. Mold (g)	2000		2000		
Wt. Soil + Mold ---RERUN	3923				
Wt. Mold---- RERUN	2000				
Wet Wt. + Pan	2146				
Pan	1827				
Dry Wt. + Pan	2112				

FORM T-316
MP 207.07.20

One Point Proctor Workshop

ANSWERS

WORKSHOP NUMBER THREE

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 9112762
AUTHORIZATION NUMBER FC3838H
PROJECT NUMBER S 317 - 2 - 41.55
DISTRICT 4
LOT NUMBER F25
ITEM NUMBER 207.1

EXAMPLE #1
FORM T-316
MP 207.07.20

GAUGE NUMBER		26895		TEST NUMBER		1		2		3		4		5	
MANUFACTURER'S STANDARDS				DATE											
DENSITY		2912		STATION NUMBER		ft.		14+65		15+32		17+18		18+92	
MOISTURE		662		OFFSET		ft.		8' LT CL		12' RT CL		38' RT CL		29' LT CL	
GAUGE STANDARD COUNTS				DEPTH BELOW GRADE		ft.		18'		18'		18'		18'	
DENSITY		2901		LIFT THICKNESS		in.		6"		6"		6"		6"	
MOISTURE		655		DEPTH OF SOURCE		in.		6"		6"		6"		6"	
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	125	123	124	120	118						
		MA	MOISTURE	lb/ft ³	10	11	12	16	16						
		DB	DRY DENSITY -3/4	lb/ft ³	124	122	123	117	115						
		MB	MOISTURE	%	8	9	10	14	14						
PLUS 3/4 MATERIAL DETERMINATION	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5035				4916						
		CB	PAN	grams	415				415						
		CC	EXCAVATED MAT.	grams	4620				4501						
		CD	PLUS 3/4 MAT. + PAN	grams	829				1125						
		CE	PAN	grams	465				465						
		CF	PLUS 3/4 MAT.	grams	364				660						
		CG	PLUS 3/4 MAT.	%	8				15						
		CH	SPECIFIC GRAVITY		2.5				2.5						
RERUN RERUN RERUN RERUN RERUN															
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3941					4014	4032				
		PB	MOLD	grams	2009					2009	2009				
		PC	WEIGHT OF SOIL	grams	1932					2005	2023				
		PD	WET DENSITY	lb/ft ³	128					132	134				
		PE	DRY DENSITY	lb/ft ³	119					116	120				
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					598						
		SB	PAN	grams					245						
		SC	WET WEIGHT	grams					353						
		SD	DRY WEIGHT + PAN	grams					560						
		SE	DRY WEIGHT	grams					315						
		SF	MOISTURE	grams					38						
		SG	MOISTURE	%					12						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	12	12	12	12	12						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4						
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass						
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	123	123	123	120	120						
		DE	RELATIVE DENSITY	%	101	99	100	98	96						
LOT EVALUATION	LOT EVALUATION	X	AVERAGE DE	%	98.8	INSPECTOR'S NAME:									
		T	TARGET	%	95										
		QL	QUALITY INDEX		0.76	INSPECTOR'S SIGNATURE:									
		DF	WITHIN TOLERANCE	%	99										
		DG	MIN. FOR 100% PAY	%	80	PROJECT'S EVALUATION									
		DH	PASS / FAIL	YES	NO										
					CHECKED BY:										
					DATE:										

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 5111297
AUTHORIZATION NUMBER FC3636K
PROJECT NUMBER S 326 - 17 - 3.65
DISTRICT 4
LOT NUMBER P-218
ITEM NUMBER 604 (36)

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE		Today's	Today's	Today's	Today's	Today's	
DENSITY		STATION NUMBER	ft.	206+18	206+18	206+18	206+18	206+18	
MOISTURE		OFFSET	ft.	37' RT CL	39' RT CL	31' RT CL	25' RT CL	42' RT CL	
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.	14	13	12	10	9	
DENSITY		LIFT THICKNESS	in.	4	4	4	4	4	
MOISTURE		DEPTH OF SOURCE	in.	4	4	4	4	4	
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	114	111	112	115	116
		MA	MOISTURE	lb/ft ³	15	18	18	14	16
		DB	DRY DENSITY - 3/4	lb/ft ³	113	109	110	114	115
		MB	MOISTURE	%	13	17	16	12	14
PLUS 3/4 MATERIAL DETERMINATION	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5057				
		CB	PAN	grams	525				
		CC	EXCAVATED MAT.	grams	4532				
		CD	PLUS 3/4 MAT. + PAN	grams	829				
		CE	PAN	grams	545				
		CF	PLUS 3/4 MAT.	grams	284				
		CG	PLUS 3/4 MAT.	%	6				
		CH	SPECIFIC GRAVITY		2.5				
					RERUN	RERUN	RERUN	RERUN	RERUN
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3945				
		PB	MOLD	grams	2000				
		PC	WEIGHT OF SOIL	grams	1945				
		PD	WET DENSITY	lb/ft ³	128				
		PE	DRY DENSITY	lb/ft ³	113				
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	14	14	14	14	14
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	114	114	114	114	114
		DE	RELATIVE DENSITY	%	99	96	96	100	101
LOT EVALUATION	LOT EVALUATION	X	AVERAGE DE	%	98.4	INSPECTOR'S NAME:			
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX		0.68	PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%	100	CHECKED BY:			
		DG	MIN. FOR 100% PAY	%	80	DATE:			
		DH	PASS / FAIL		YES	NO			

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 61181932
AUTHORIZATION NUMBER FM2002C
PROJECT NUMBER S 344 - 41 - 9.82
DISTRICT 10
LOT NUMBER F - 32
ITEM NUMBER 207.1

FORM T-316
MP 207.07.20

GAUGE NUMBER		11162		TEST NUMBER		1		2		3		4		5	
MANUFACTURER'S STANDARDS				DATE		Today's		Today's		Today's		Today's		Today's	
DENSITY		2914		STATION NUMBER		ft. 87+14		ft. 88+21		ft. 89+33		ft. 90+62		ft. 92+03	
MOISTURE		667		OFFSET		ft. 18' RT CL		ft. 21' LT CL		ft. 4' LT CL		ft. 16' RT CL		ft. 23' RT CL	
GAUGE STANDARD COUNTS				DEPTH BELOW GRADE		ft. 82'		ft. 82'		ft. 82'		ft. 82'		ft. 82'	
DENSITY		2896		LIFT THICKNESS		in. 6"		in. 6"		in. 6"		in. 6"		in. 6"	
MOISTURE		664		DEPTH OF SOURCE		in. 6"		in. 6"		in. 6"		in. 6"		in. 6"	
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	114	112	122	119	120						
		MA	MOISTURE	lb/ft ³	18	16	14	13	12						
		DB	DRY DENSITY - 3/4	lb/ft ³	111	109	117	114	115						
		MB	MOISTURE	%	16	15	12	11	10						
MB = MA (100) DB CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	4921		4936								
		CB	PAN	grams	450		450								
		CC	EXCAVATED MAT.	grams	4471		4486								
		CD	PLUS 3/4 MAT. + PAN	grams	896		1094								
		CE	PAN	grams	421		421								
		CF	PLUS 3/4 MAT.	grams	475		673								
		CG	PLUS 3/4 MAT.	%	11		15								
		CH	SPECIFIC GRAVITY		2.5		2.7								
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3941	3923			4059						
		PB	MOLD	grams	2000	2000			2000						
		PC	WEIGHT OF SOIL	grams	1941	1923			2059						
		PD	WET DENSITY	lb/ft ³	128	127			136						
		PE	DRY DENSITY	lb/ft ³	110	113			121						
		SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	2146								
SB	PAN			grams	1827										
SC	WET WEIGHT			grams	319										
SD	DRY WEIGHT + PAN			grams	2112										
SE	DRY WEIGHT			grams	285										
SF	MOISTURE			grams	34										
SG	MOISTURE			%	12										
X̄ = Σ DE / 5	MOIST. EVAL.			OA	OPTIMUM MOISTURE	%	14	14	12	12	12				
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4						
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass						
QL = X̄ - T / R	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	114	114	121	121	121						
		DE	RELATIVE DENSITY	%	97	96	97	94	95						
LOT EVALUATION	LOT EVALUATION	X̄	AVERAGE DE	%	95.8	INSPECTOR'S NAME:									
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:									
		QL	QUALITY INDEX		0.27	PROJECT'S EVALUATION									
		DF	WITHIN TOLERANCE	%	73	CHECKED BY:									
		DG	MIN. FOR 100% PAY	%	80	DATE:									
		DH	PASS / FAIL	YES	NO										

BLANK FORMS

T-313

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:					Manufacturer's Standards		
Depth Below Grade:					Density:		Moisture:
Depth of Gauge Source:					Standard Counts		
Observed	Yes	No			Density:		Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

B	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

C	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

D	Number of Passes	
	Test Site	DA Dry Density
	1	
	2	
DB	Average	

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name:

Inspector's Signature: _____

Project's Evaluation

Checked By:

Date: _____

Maximum Density Determination		
Test Site		DA
1		
2		
3		
4		
5		
DC	Max. Density	

West Virginia Division of Highways
Materials Control Soil and Testing Division



Lab Number _____
 Auth. Number _____
 Project Number _____
 District Number _____
 Item Number _____
 Date _____

FORM T-313
 MP 700.00.24

Source of Material:			Length of Test Section:	
Roller Type:			Width of Test Section:	
Roller Weight	Static:	Working:	Gauge Number	
Lift Thickness Compacted:			Manufacturer's Standards	
Depth Below Grade:			Density:	Moisture:
Depth of Gauge Source:			Standard Counts	
Observed	Yes	No	Density:	Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

B	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

C	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Maximum Density Determination		
Test Site	DA	Dry Density
1		
2		
3		
4		
5		
DC	Max. Density	

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation _____
 Checked By: _____
 Date: _____

West Virginia Division of Highways
Materials Control Soil and Testing Division



Lab Number _____
 Auth. Number _____
 Project Number _____
 District Number _____
 Item Number _____
 Date _____

FORM T-313
 MP 700.00.24

Source of Material:			Length of Test Section:	
Roller Type:			Width of Test Section:	
Roller Weight	Static:	Working:	Gauge Number	
Lift Thickness Compacted:			Manufacturer's Standards	
Depth Below Grade:			Density:	Moisture:
Depth of Gauge Source:			Standard Counts	
Observed	Yes	No	Density:	Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

B	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

C	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Maximum Density Determination		
Test Site	DA	Dry Density
1		
2		
3		
4		
5		
DC	Max. Density	

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation _____
 Checked By: _____
 Date: _____

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T-317

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE						
	DEPTH OF GAUGE SOURCE						
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY					
	REFERENCE LAB NUMBER						
TEST NUMBER 1	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET					
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY					
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
 INSPECTOR'S SIGNATURE: _____
 PROJECT'S EVALUATION
 CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE						
	DEPTH OF GAUGE SOURCE						
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY					
	REFERENCE LAB NUMBER						
TEST NUMBER 1	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET					
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY					
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
 INSPECTOR'S SIGNATURE: _____
 PROJECT'S EVALUATION
 CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE						
	DEPTH OF GAUGE SOURCE						
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY					
	REFERENCE LAB NUMBER						
TEST NUMBER 1	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY					
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET					
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY					
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
 INSPECTOR'S SIGNATURE: _____
 PROJECT'S EVALUATION
 CHECKED BY: _____ DATE: _____

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T-316

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%					
		QL	QUALITY INDEX			INSPECTOR'S SIGNATURE:			
		DF	WITHIN TOLERANCE	%					
		DG	MIN. FOR 100% PAY	%		PROJECT'S EVALUATION			
DH	PASS / FAIL	YES	NO	CHECKED BY:					
				DATE:					

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
PLUS 3/4 MATERIAL DETERMINATION CA CB CC CD CE CF CG CH		CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
LOT EVALUATION X T QL DF DG DH		X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%					
		QL	QUALITY INDEX			INSPECTOR'S SIGNATURE:			
		DF	WITHIN TOLERANCE	%					
		DG	MIN. FOR 100% PAY	%		PROJECT'S EVALUATION			
		DH	PASS / FAIL	YES	NO				
					DATE:				

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%		INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX			PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%		CHECKED BY:			
		DG	MIN. FOR 100% PAY	%		DATE:			
DH	PASS / FAIL	YES	NO						

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%		INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX			PROJECT'S EVALUATION			
		DF	WITHIN TOLERANCE	%		CHECKED BY:			
		DG	MIN. FOR 100% PAY	%		DATE:			
DH	PASS / FAIL	YES	NO						

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
LOT EVALUATION		X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%		INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX						
		DF	WITHIN TOLERANCE	%		PROJECT'S EVALUATION			
		DG	MIN. FOR 100% PAY	%		CHECKED BY:			
		DH	PASS / FAIL	YES	NO	DATE:			

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³					
		MA	MOISTURE	lb/ft ³					
		DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams					
		CB	PAN	grams					
		CC	EXCAVATED MAT.	grams					
		CD	PLUS 3/4 MAT. + PAN	grams					
		CE	PAN	grams					
		CF	PLUS 3/4 MAT.	grams					
		CG	PLUS 3/4 MAT.	%					
		CH	SPECIFIC GRAVITY						
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams					
		PB	MOLD	grams					
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
		SB	PAN	grams					
		SC	WET WEIGHT	grams					
		SD	DRY WEIGHT + PAN	grams					
		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.						
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%					
		QL	QUALITY INDEX			INSPECTOR'S SIGNATURE:			
		DF	WITHIN TOLERANCE	%					
DG		MIN. FOR 100% PAY	%		PROJECT'S EVALUATION				
DH	PASS / FAIL	YES	NO	CHECKED BY:					
				DATE:					

COMPACTION INSPECTOR PRACTICE PROBLEMS



* Data for all lines are given or correspond to an equation on the left side of the page

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER GENERAL
PROJECT NUMBER PROJECT
DISTRICT INFORMATION
LOT NUMBER _____
ITEM NUMBER _____

Note: Data from CG, CH, OA, & DC
always carry over from
Left to Right until a new
proctor is established.

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE		General Test Location / Identification						
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	1	From Nuclear Gauge From Tables Using CG, CH, & DA				
		MA	MOISTURE	lb/ft ³	1					
		DB	DRY DENSITY - 3/4	lb/ft ³	3					
MB = $\frac{MA(100)}{DB}$		MB	MOISTURE	%	4					
DB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	2					
CC = CA - CB		CB	PAN	grams	2					
CF = CD - CE		CC	EXCAVATED MAT.	grams	2					
CG = $\frac{CF(100)}{CC}$		CD	PLUS 3/4 MAT. + PAN	grams	2					
CC		CE	PAN	grams	2					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	2					
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	2					
PE = $\frac{PD(100)}{100 + MB}$		CH	SPECIFIC GRAVITY							
					RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR PE (RERUN) = $\frac{PD(100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	5					
		PB	MOLD	grams	5					
		PC	WEIGHT OF SOIL	grams	5					
		PD	WET DENSITY	lb/ft ³	5					
		PE	DRY DENSITY	lb/ft ³	5					
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SF(100)}{SE}$ DE = $\frac{DB(100)}{DC}$	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	This section is performed 6th, only used if a rerun proctor is performed (stove dried moisture is used to plot max density / optimum moisture)					
		SB	PAN	grams						
		SC	WET WEIGHT	grams						
		SD	DRY WEIGHT + PAN	grams						
		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL	OA	OPTIMUM MOISTURE	%	6 if no Rerun needed / 7 if first proctor doesnt plot					
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	6 if no Reun needed / 7 if first proctor doesnt plot					
		DE	RELATIVE DENSITY	%						
*DF found in QL Tables	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%	INSPECTOR'S NAME:					
		T	TARGET	%						95
		QL	QUALITY INDEX		INSPECTOR'S SIGNATURE:					
		DF	WITHIN TOLERANCE	%						
		DG	MIN. FOR 100% PAY	%	80	PROJECT'S EVALUATION				
		DH	PASS / FAIL	YES	NO					
		CHECKED BY:								
		DATE:								

R= Highest DE- Lowest DE

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	127	125	122	126	119	
		MA	MOISTURE	lb/ft ³	14	15	17	14	17	
		DB	DRY DENSITY - 3/4	lb/ft ³						
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%						
DB		CA	EXC. MATERIAL + PAN	grams	4952					
CC = CA - CB		CB	PAN	grams	316					
CF = CD - CE		CC	EXCAVATED MAT.	grams						
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	759					
CC		CE	PAN	grams	316					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams						
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%						
PE = $\frac{PD}{100}$	CH	SPECIFIC GRAVITY		2.7	2.7	2.7	2.7	2.7		
100 + MB					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4055					
PE (RERUN) =		PB	MOLD	grams	2009					
$\frac{PD}{100}$		PC	WEIGHT OF SOIL	grams						
100 + SG		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams						
SE		SE	DRY WEIGHT	grams						
DE = $\frac{DB}{100}$		SF	MOISTURE	grams						
DC		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
DH	PASS / FAIL	YES	NO							

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	111	109	108	110	109	
		MA	MOISTURE	lb/ft ³	14	15	17	14	17	
DB		DRY DENSITY -3/4	lb/ft ³							
MB		MOISTURE	%							
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5541					
DB		CB	PAN	grams	502					
CC = CA - CB		CC	EXCAVATED MAT.	grams						
CF = CD - CE		CD	PLUS 3/4 MAT. + PAN	grams	759					
CG = $\frac{CF}{100}$		CE	PAN	grams	502					
CC		CF	PLUS 3/4 MAT.	grams						
PC = PA - PB		CG	PLUS 3/4 MAT.	%						
PD = PC (0.066)		CH	SPECIFIC GRAVITY		2.5	2.5	2.5	2.5	2.5	
PE = $\frac{PD}{100}$					RERUN	RERUN	RERUN	RERUN	RERUN	
100 + MB										
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3822					
PE (RERUN) =		PB	MOLD	grams	1995					
$\frac{PD}{100}$		PC	WEIGHT OF SOIL	grams						
100 + SG		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams						
SE		SE	DRY WEIGHT	grams						
DE = $\frac{DB}{100}$		SF	MOISTURE	grams						
DC		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
DH	PASS / FAIL	YES	NO							

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____ C _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
 MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER		ft.						
MOISTURE		OFFSET		ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE		ft.						
DENSITY		LIFT THICKNESS		in.						
MOISTURE		DEPTH OF SOURCE		in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	108	109	108	110	111	
		MA	MOISTURE	lb/ft ³	20	19	20	18	20	
		DB	DRY DENSITY -3/4	lb/ft ³						
MB = MA (100) DB		MB	MOISTURE	%						
CC = CA - CB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	4862					
CF = CD - CE		CB	PAN	grams	298					
CG = CF (100) CC		CC	EXCAVATED MAT.	grams						
PC = PA - PB		CD	PLUS 3/4 MAT. + PAN	grams	2045					
PD = PC (0.066)		CE	PAN	grams	298					
PE = PD (100) 100 + MB		CF	PLUS 3/4 MAT.	grams						
		CG	PLUS 3/4 MAT.	%						
		CH	SPECIFIC GRAVITY		2.4	2.4	2.4	2.4	2.4	
					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3799					
		PB	MOLD	grams	2022					
		PC	WEIGHT OF SOIL	grams						
		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = SF (100) SE		SD	DRY WEIGHT + PAN	grams						
DE = DB (100) DC		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
DH	PASS / FAIL	YES	NO							

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____ D _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	130	130	131	129	127
		MA	MOISTURE	lb/ft ³	11	9	8	10	11
MB = MA (100) DB	PLUS 3/4 MATERIAL DETERMINATION	DB	DRY DENSITY - 3/4	lb/ft ³					
		MB	MOISTURE	%					
CC = CA - CB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5005				
CB		PAN	grams	259					
CC		EXCAVATED MAT.	grams						
CG = CF (100) CC		CD	PLUS 3/4 MAT. + PAN	grams	759				
CE		PAN	grams	259					
CF		PLUS 3/4 MAT.	grams						
CG		PLUS 3/4 MAT.	%						
CH		SPECIFIC GRAVITY		2.7	2.7	2.7	2.7	2.7	
PC = PA - PB	RERUN RERUN RERUN RERUN RERUN								
PD = PC (0.066)	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4100				
PE = PD (100) 100 + MB		PB	MOLD	grams	2001				
		PC	WEIGHT OF SOIL	grams					
		PD	WET DENSITY	lb/ft ³					
		PE	DRY DENSITY	lb/ft ³					
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
SE = SD - SB		SB	PAN	grams					
SF = SC - SE		SC	WET WEIGHT	grams					
SG = SF (100) SE		SD	DRY WEIGHT + PAN	grams					
DE = DB (100) DC		SE	DRY WEIGHT	grams					
		SF	MOISTURE	grams					
		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%					
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL						
$QL = \frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³					
		DE	RELATIVE DENSITY	%					
LOT EVALUATION		X	AVERAGE DE	%		INSPECTOR'S NAME:			
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX		PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:			
		DG	MIN. FOR 100% PAY	%	80	DATE:			
		DH	PASS / FAIL	YES	NO				

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	122	125	128	129	127	
		MA	MOISTURE	lb/ft ³	11	9	10	9	11	
		DB	DRY DENSITY - 3/4	lb/ft ³						
MB = $\frac{MA}{100}$		MB	MOISTURE	%						
DB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	6004					
CC = CA - CB		CB	PAN	grams	1009					
CF = CD - CE		CC	EXCAVATED MAT.	grams						
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	1894					
CC		CE	PAN	grams	1009					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams						
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%						
PE = $\frac{PD}{100}$	CH	SPECIFIC GRAVITY		2.6	2.6	2.6	2.6	2.6		
100 + MB				RERUN	RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3975					
PE (RERUN) = $\frac{PD}{100}$		PB	MOLD	grams	1954					
100 + SG		PC	WEIGHT OF SOIL	grams						
		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams						
SE		SE	DRY WEIGHT	grams						
DE = $\frac{DB}{100}$		SF	MOISTURE	grams						
DC		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
DH	PASS / FAIL	YES	NO							

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	118	120	119	117	120	
		MA	MOISTURE	lb/ft ³	17	14	16	15	16	
		DB	DRY DENSITY - 3/4	lb/ft ³						
MB = $\frac{MA}{100} \times DB$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%						
CC = CA - CB		CA	EXC. MATERIAL + PAN	grams	4839					
CF = CD - CE		CB	PAN	grams	306					
CG = $\frac{CF}{100} \times CC$		CC	EXCAVATED MAT.	grams						
PC = PA - PB		CD	PLUS 3/4 MAT. + PAN	grams	1229					
PD = $\frac{PC}{0.066}$		CE	PAN	grams	306					
PE = $\frac{PD}{100} \times 100 + MB$		CF	PLUS 3/4 MAT.	grams						
		CG	PLUS 3/4 MAT.	%						
		CH	SPECIFIC GRAVITY		2.4	2.4	2.4	2.4	2.4	
					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3975	3958				
PE (RERUN) = $\frac{PD}{100} \times 100 + SG$		PB	MOLD	grams	1954	1954				
		PC	WEIGHT OF SOIL	grams						
		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1876					
SE = SD - SB		SB	PAN	grams	1501					
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100} \times SE$		SD	DRY WEIGHT + PAN	grams	1839					
DE = $\frac{DB}{100} \times DC$		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
	DH	PASS / FAIL	YES	NO						

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____ G _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
 MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY lb/ft ³	108	110	110	111	109	
		MA	MOISTURE lb/ft ³	17	16	16	17	16	
		DB	DRY DENSITY -3/4 lb/ft ³						
MB = MA (100) DB		MB	MOISTURE %						
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN grams	5245					
		CB	PAN grams	555					
		CC	EXCAVATED MAT. grams						
		CD	PLUS 3/4 MAT. + PAN grams	605					
		CE	PAN grams	555					
		CF	PLUS 3/4 MAT. grams						
		CG	PLUS 3/4 MAT. %						
		CH	SPECIFIC GRAVITY	2.4	2.4	2.4	2.4	2.4	
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD grams	3957	3944				
		PB	MOLD grams	2003	2003				
		PC	WEIGHT OF SOIL grams						
		PD	WET DENSITY lb/ft ³						
		PE	DRY DENSITY lb/ft ³						
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN grams	1111					
		SB	PAN grams	879					
		SC	WET WEIGHT grams						
		SD	DRY WEIGHT + PAN grams	1082					
		SE	DRY WEIGHT grams						
		SF	MOISTURE grams						
X̄ = Σ DE / 5	MOIST. EVAL.	OA	OPTIMUM MOISTURE %						
		OB	PLUS / MINUS TOLER.	+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL						
QL = X̄ - T / R	DEN EVAL.	DC	MAXIMUM DENSITY lb/ft ³						
		DE	RELATIVE DENSITY %						
	LOT EVALUATION	X̄	AVERAGE DE %		INSPECTOR'S NAME:				
		T	TARGET %	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE %		CHECKED BY:				
		DG	MIN. FOR 100% PAY %	80	DATE:				
DH	PASS / FAIL	YES	NO						

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____ H _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
 MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY lb/ft ³	116	116	116	116	117	
		MA	MOISTURE lb/ft ³	17	15	15	14	13	
MB = MA (100) DB		DB	DRY DENSITY -3/4 lb/ft ³						
		MB	MOISTURE %						
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN grams	4839					
		CB	PAN grams	339					
		CC	EXCAVATED MAT. grams						
		CD	PLUS 3/4 MAT. + PAN grams	777					
		CE	PAN grams	339					
		CF	PLUS 3/4 MAT. grams						
		CG	PLUS 3/4 MAT. %						
		CH	SPECIFIC GRAVITY	2.5	2.5	2.5	2.5	2.5	
				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD grams	3999	3969				
		PB	MOLD grams	1999	1999				
		PC	WEIGHT OF SOIL grams						
		PD	WET DENSITY lb/ft ³						
		PE	DRY DENSITY lb/ft ³						
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN grams	1542					
		SB	PAN grams	1200					
		SC	WET WEIGHT grams						
		SD	DRY WEIGHT + PAN grams	1511					
		SE	DRY WEIGHT grams						
		SF	MOISTURE grams						
X̄ = Σ DE / 5	MOIST. EVAL.	OA	OPTIMUM MOISTURE %						
		OB	PLUS / MINUS TOLER.	+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL						
QL = X̄ - T / R	DEN EVAL.	DC	MAXIMUM DENSITY lb/ft ³						
		DE	RELATIVE DENSITY %						
	LOT EVALUATION	X̄	AVERAGE DE %		INSPECTOR'S NAME:				
		T	TARGET %	95					
		QL	QUALITY INDEX		INSPECTOR'S SIGNATURE:				
		DF	WITHIN TOLERANCE %						
		DG	MIN. FOR 100% PAY %	80	PROJECT'S EVALUATION				
DH	PASS / FAIL	YES	NO	CHECKED BY:					
				DATE:					

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 1
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	117	117	117	117	116	
		MA	MOISTURE	lb/ft ³	17	15	15	14	13	
		DB	DRY DENSITY - 3/4	lb/ft ³						
MB = MA (100)	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%						
DB		CA	EXC. MATERIAL + PAN	grams	4839					
CC = CA - CB		CB	PAN	grams	339					
CF = CD - CE		CC	EXCAVATED MAT.	grams						
CG = CF (100)		CD	PLUS 3/4 MAT. + PAN	grams	777					
CC		CE	PAN	grams	339					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams						
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%						
PE = PD (100)		CH	SPECIFIC GRAVITY		2.5					
100 + MB										
				RERUN	RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR PE (RERUN) = $\frac{PD (100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3999	3969				
		PB	MOLD	grams	1999	1999				
		PC	WEIGHT OF SOIL	grams						
		PD	WET DENSITY	lb/ft ³						
		PE	DRY DENSITY	lb/ft ³						
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1542					
		SB	PAN	grams	1200					
		SC	WET WEIGHT	grams						
		SD	DRY WEIGHT + PAN	grams	1511					
		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%						
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³						
		DE	RELATIVE DENSITY	%						
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX			PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%		CHECKED BY:				
		DG	MIN. FOR 100% PAY	%	80	DATE:				
DH	PASS / FAIL	YES	NO							

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5						
MANUFACTURER'S STANDARDS		DATE												
DENSITY		STATION NUMBER	ft.											
MOISTURE		OFFSET	ft.											
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.											
DENSITY		LIFT THICKNESS	in.											
MOISTURE		DEPTH OF SOURCE	in.											
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	105	117	116	124	111					
		MA	MOISTURE	lb/ft ³	16	15	16	12	18					
DB		DRY DENSITY -3/4	lb/ft ³											
MB		MOISTURE	%											
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5003	5121		5346	5224					
DB														
CC = CA - CB		CB	PAN	grams	500	500		500	500					
CF = CD - CE		CC	EXCAVATED MAT.	grams										
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	654	1026		742	833					
CC														
CE		PAN	grams	500	500		500	500						
CF		PLUS 3/4 MAT.	grams											
PD = PC (0.066)	CG	PLUS 3/4 MAT.	%											
PE = $\frac{PD}{100}$	CH	SPECIFIC GRAVITY		2.4	2.6	2.6	2.7	2.5						
100 + MB	RERUN RERUN RERUN RERUN RERUN													
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3901		3985				4108		3954	3931
PE (RERUN) =		PB	MOLD	grams	2004		2004				2004		2004	2004
$\frac{PD}{100}$		PC	WEIGHT OF SOIL	grams										
100 + SG		PD	WET DENSITY	lb/ft ³										
		PE	DRY DENSITY	lb/ft ³										
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams									1564	
SE = SD - SB		SB	PAN	grams									1209	
SF = SC - SE		SC	WET WEIGHT	grams										
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams									1524	
SE		SE	DRY WEIGHT	grams										
DE = $\frac{DB}{100}$		SF	MOISTURE	grams										
DC		SG	MOISTURE	%										
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%										
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4					
		OC	PASS / FAIL											
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³										
		DE	RELATIVE DENSITY	%										
	LOT EVALUATION	X	AVERAGE DE	%		INSPECTOR'S NAME:								
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:								
		QL	QUALITY INDEX			PROJECT'S EVALUATION								
		DF	WITHIN TOLERANCE	%		CHECKED BY:								
		DG	MIN. FOR 100% PAY	%	80	DATE:								
DH	PASS / FAIL	YES	NO											

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:				Manufacturer's Standards			
Depth Below Grade:				Density:		Moisture:	
Depth of Gauge Source:				Standard Counts			
Observed	Yes			No	Density:		Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	132
	2	134
DB	Average	

B	Number of Passes		14
	Test Site	DA	Dry Density
	1	133	
	2	135	
DB	Average		

C	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name:

Inspector's Signature: _____

Project's Evaluation

Checked By:

Date: _____

Maximum Density Determination		
Test Site	DA	Dry Density
1		
2		
3		136
4		132
5		135
DC	Max. Density	

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:							
Depth Below Grade:							
Depth of Gauge Source:							
Observed	Yes	No					
				Manufacturer's Standards			
				Density:		Moisture:	
				Standard Counts			
				Density:		Moisture:	

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	124
	2	127
DB	Average	

B	Number of Passes	14
	Test Site	DA Dry Density
	1	127
	2	129
DB	Average	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	128
	2	130
DB	Average	

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$DB = \sum DA / 2$$
$$DC = \sum DA / 5$$

Maximum Density Determination		
Test Site		DA Dry Density
1		
2		
3		127
4		126
5		128
DC	Max. Density	

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:					Manufacturer's Standards		
Depth Below Grade:					Density:		Moisture:
Depth of Gauge Source:					Standard Counts		
Observed	Yes	No			Density:		Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	140
	2	141
DB	Average	

B	Number of Passes	14
	Test Site	DA
	1	142
	2	143
DB	Average	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	145
	2	145
DB	Average	

D	Number of Passes		18
	Test Site	DA	Dry Density
	1	146	
	2	144	
DB	Average		

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		Dry Density
1		
2		
3		147
4		143
5		145
DC	Max. Density	

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:							
Depth Below Grade:							
Depth of Gauge Source:							
Observed	Yes	No					
				Manufacturer's Standards			
				Density:		Moisture:	
				Standard Counts			
				Density:		Moisture:	

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	105
	2	101
DB	Average	

B	Number of Passes	14
	Test Site	DA Dry Density
	1	106
	2	104
DB	Average	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	108
	2	107
DB	Average	

D	Number of Passes	18
	Test Site	DA Dry Density
	1	109
	2	109
DB	Average	

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		DA Dry Density
1		
2		
3		108
4		105
5		110
DC	Max. Density	

Inspector's Name: _____
Inspector's Signature: _____
Project's Evaluation
Checked By: _____
Date: _____

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:							
Depth Below Grade:							
Depth of Gauge Source:							
Observed	Yes	No					
				Manufacturer's Standards			
				Density:		Moisture:	
				Standard Counts			
				Density:		Moisture:	

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	131
	2	133
DB	Average	

B	Number of Passes	14
	Test Site	DA Dry Density
	1	134
	2	134
DB	Average	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	135
	2	137
DB	Average	

D	Number of Passes	18
	Test Site	DA Dry Density
	1	136
	2	136
DB	Average	

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name:

Inspector's Signature: _____

Project's Evaluation

Checked By:

Date: _____

Maximum Density Determination		
Test Site		DA Dry Density
1		
2		
3		138
4		139
5		132
DC	Max. Density	

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION
P



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE	6	4	8	6	4	
	DEPTH OF GAUGE SOURCE	6	4	8	6	4	
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY	134	128	145	108	136
		REFERENCE LAB NUMBER	K	L	M	N	O
TEST NUMBER 1	DE	DRY DENSITY	127	125	139	107	138
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY	131	129	144	101	137
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY	134	130	141	107	139
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY	131	127	138	106	139
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY	139	129	139	108	141
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET	95	95	95	95	95
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY	80	80	80	80	80
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE					
	DEPTH OF GAUGE SOURCE					
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD					
	MOISTURE STANDARD					
	DC	MAXIMUM DENSITY	137			
		REFERENCE LAB NUMBER	70-1			
TEST NUMBER 1	DE	DRY DENSITY	127			
	DF	% RELATIVE DENSITY				
TEST NUMBER 2	DE	DRY DENSITY	131			
	DF	% RELATIVE DENSITY				
TEST NUMBER 3	DE	DRY DENSITY	134			
	DF	% RELATIVE DENSITY				
TEST NUMBER 4	DE	DRY DENSITY	131			
	DF	% RELATIVE DENSITY				
TEST NUMBER 5	DE	DRY DENSITY	139			
	DF	% RELATIVE DENSITY				
LOT EVALUATION	X	AVERAGE DF				
	T	TARGET	95			
	QL	QUALITY INDEX				
	DG	% WITHIN TOLERANCE				
	DH	MIN. FOR 100% PAY	80			
	DI	PASS / FAIL				

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	6	6		
	DEPTH OF GAUGE SOURCE	6	6	6		
	LIFT THICKNESS COMPACTED					

DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY	137	137	137		
	REFERENCE LAB NUMBER	70-1	70-1	70-1			

TEST NUMBER 1	DE	DRY DENSITY	136	135	139		
	DF	% RELATIVE DENSITY					

TEST NUMBER 2	DE	DRY DENSITY	136	137	144		
	DF	% RELATIVE DENSITY					

TEST NUMBER 3	DE	DRY DENSITY	134	138	141		
	DF	% RELATIVE DENSITY					

TEST NUMBER 4	DE	DRY DENSITY	135	141	138		
	DF	% RELATIVE DENSITY					

TEST NUMBER 5	DE	DRY DENSITY	143	142	143		
	DF	% RELATIVE DENSITY					

LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET	95	95	95		
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY	80	80	80		
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
 INSPECTOR'S SIGNATURE: _____
 PROJECT'S EVALUATION
 CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE	6	6				
	DEPTH OF GAUGE SOURCE	6	6				
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY	140	140			
	REFERENCE LAB NUMBER	70-1	70-1				
TEST NUMBER 1	DE	DRY DENSITY	138	140			
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY	141	137			
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY	143	137			
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY	137	140			
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY	143	142			
	DF	% RELATIVE DENSITY					
LOT EVALUATION	X̄	AVERAGE DF					
	T	TARGET	95	95			
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY	80	80			
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____
 INSPECTOR'S SIGNATURE: _____
 PROJECT'S EVALUATION
 CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE	6	6	6	6		
	DEPTH OF GAUGE SOURCE	6	6	6	6		
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY	132	132	132	132	
		REFERENCE LAB NUMBER	70-1	70-1	70-1	70-1	
TEST NUMBER 1	DE	DRY DENSITY	128	125	139	127	
	DF	% RELATIVE DENSITY					
TEST NUMBER 2	DE	DRY DENSITY	131	129	134	126	
	DF	% RELATIVE DENSITY					
TEST NUMBER 3	DE	DRY DENSITY	134	130	131	127	
	DF	% RELATIVE DENSITY					
TEST NUMBER 4	DE	DRY DENSITY	126	127	127	128	
	DF	% RELATIVE DENSITY					
TEST NUMBER 5	DE	DRY DENSITY	133	129	130	126	
	DF	% RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$	AVERAGE DF					
	T	TARGET	95	95	95	95	
	QL	QUALITY INDEX					
	DG	% WITHIN TOLERANCE					
	DH	MIN. FOR 100% PAY	80	80	80	80	
	DI	PASS / FAIL					

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	6			
	DEPTH OF GAUGE SOURCE	6	6			
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD					
	MOISTURE STANDARD					
	DC MAXIMUM DENSITY	112	118			
	REFERENCE LAB NUMBER	1233	1234			
TEST NUMBER 1	DE DRY DENSITY	110	115			
	DF % RELATIVE DENSITY					
TEST NUMBER 2	DE DRY DENSITY	108	116			
	DF % RELATIVE DENSITY					
TEST NUMBER 3	DE DRY DENSITY	111	113			
	DF % RELATIVE DENSITY					
TEST NUMBER 4	DE DRY DENSITY	109	117			
	DF % RELATIVE DENSITY					
TEST NUMBER 5	DE DRY DENSITY	108	113			
	DF % RELATIVE DENSITY					
LOT EVALUATION	$\bar{X}$ AVERAGE DF					
	T TARGET	95	95			
	QL QUALITY INDEX					
	DG % WITHIN TOLERANCE					
	DH MIN. FOR 100% PAY	80	80			
	DI PASS / FAIL					

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

COMPACTION INSPECTOR PRACTICE ANSWERS



* Data for all lines are given or correspond to an equation on the left side of the page

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTHORIZATION NUMBER GENERAL
PROJECT NUMBER PROJECT
DISTRICT INFORMATION
LOT NUMBER _____
ITEM NUMBER _____

Note: Data from CG, CH, OA, & DC
always carry over from
Left to Right until a new
proctor is established.

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE		General Test Location / Identification						
DENSITY		STATION NUMBER							ft.	
MOISTURE		OFFSET							ft.	
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE							ft.	
DENSITY		LIFT THICKNESS							in.	
MOISTURE		DEPTH OF SOURCE							in.	
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	1	From Nuclear Gauge From Tables Using CG, CH, & DA				
		MA	MOISTURE	lb/ft ³	1					
MB = $\frac{MA}{DB} (100)$		DB	DRY DENSITY - 3/4	lb/ft ³	3					
DB	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	4					
CC = CA - CB		CA	EXC. MATERIAL + PAN	grams	2					
CF = CD - CE		CB	PAN	grams	2					
CG = $\frac{CF}{CC} (100)$		CC	EXCAVATED MAT.	grams	2					
CC		CD	PLUS 3/4 MAT. + PAN	grams	2					
PC = PA - PB		CE	PAN	grams	2					
PD = PC (0.066)		CF	PLUS 3/4 MAT.	grams	2					
PE = PD (100)		CG	PLUS 3/4 MAT.	%	2					
100 + MB	CH	SPECIFIC GRAVITY								
					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = $\frac{PD (100)}{100 + SG}$	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	5					
		PB	MOLD	grams	5					
		PC	WEIGHT OF SOIL	grams	5					
		PD	WET DENSITY	lb/ft ³	5					
		PE	DRY DENSITY	lb/ft ³	5					
SC = SA - SB SE = SD - SB SF = SC - SE SG = $\frac{SF}{SE} (100)$ SE DE = $\frac{DB (100)}{DC}$ DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	This section is performed 6th, only used if a rerun proctor is performed (stove dried moisture is used to plot max density / optimum moisture)					
		SB	PAN	grams						
		SC	WET WEIGHT	grams						
		SD	DRY WEIGHT + PAN	grams						
		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL	OA	OPTIMUM MOISTURE	%	6 if no Rerun needed / 7 if first proctor doesn't plot					
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4		
		OC	PASS / FAIL							
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	6 if no Rerun needed / 7 if first proctor doesn't plot					
		DE	RELATIVE DENSITY	%						
*DF found in QL Tables	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%	INSPECTOR'S NAME:					
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		PROJECT'S EVALUATION					
		DF	WITHIN TOLERANCE	%	CHECKED BY:					
		DG	MIN. FOR 100% PAY	%	80	DATE:				
		DH	PASS / FAIL	YES	NO					

R= Highest DE- Lowest DE

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	127	125	122	126	119	
		MA	MOISTURE	lb/ft ³	14	15	17	14	17	
		DB	DRY DENSITY -3/4	lb/ft ³	125	122	119	124	116	
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	11	12	14	11	15	
DB		CA	EXC. MATERIAL + PAN	grams	4952					
CC = CA - CB		CB	PAN	grams	316					
CF = CD - CE		CC	EXCAVATED MAT.	grams	4636					
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	759					
CC		CE	PAN	grams	316					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	443					
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	10	10	10	10	10	
PE = $\frac{PD}{100}$	CH	SPECIFIC GRAVITY		2.7	2.7	2.7	2.7	2.7		
100 + MB					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4055					
PE (RERUN) = $\frac{PD}{100}$		PB	MOLD	grams	2009					
100 + SG		PC	WEIGHT OF SOIL	grams	2046					
		PD	WET DENSITY	lb/ft ³	135					
		PE	DRY DENSITY	lb/ft ³	122					
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams						
SE		SE	DRY WEIGHT	grams						
DE = $\frac{DB}{100}$		SF	MOISTURE	grams						
DC		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	12	12	12	12	12	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	122	122	122	122	122	
		DE	RELATIVE DENSITY	%	102	100	98	102	95	
	LOT EVALUATION	X	AVERAGE DE	%	99.4	INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		0.63	PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%	97					
		DG	MIN. FOR 100% PAY	%	80					
		DH	PASS / FAIL	YES	NO					

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	111	109	108	110	109
		MA	MOISTURE	lb/ft ³	14	15	17	14	17
		DB	DRY DENSITY - 3/4	lb/ft ³	110	108	106	109	108
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	13	14	16	13	16
DB		CA	EXC. MATERIAL + PAN	grams	5541				
CC = CA - CB		CB	PAN	grams	502				
CF = CD - CE		CC	EXCAVATED MAT.	grams	5039				
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	759				
CC		CE	PAN	grams	502				
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	257				
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	5				
PE = $\frac{PD}{100}$		CH	SPECIFIC GRAVITY		2.5	2.5	2.5	2.5	2.5
100 + MB				RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3822				
PE (RERUN) =		PB	MOLD	grams	1995				
PD (100)		PC	WEIGHT OF SOIL	grams	1827				
100 + SG		PD	WET DENSITY	lb/ft ³	121				
		PE	DRY DENSITY	lb/ft ³	107				
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
SE = SD - SB		SB	PAN	grams					
SF = SC - SE		SC	WET WEIGHT	grams					
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams					
SE		SE	DRY WEIGHT	grams					
DE = $\frac{DB}{100}$		SF	MOISTURE	grams					
DC		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	17	17	17	17	17
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	109	109	109	109	109
		DE	RELATIVE DENSITY	%	101	99	97	100	99
	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%	99.2	INSPECTOR'S NAME:			
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX		1.05				
		DF	WITHIN TOLERANCE	%	100	PROJECT'S EVALUATION			
		DG	MIN. FOR 100% PAY	%	80	CHECKED BY:			
		DH	PASS / FAIL	YES	NO	DATE:			

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	108	109	108	110	111	
		MA	MOISTURE	lb/ft ³	20	19	20	18	20	
		DB	DRY DENSITY - 3/4	lb/ft ³	93	95	93	97	98	
MB = MA (100) DB		MB	MOISTURE	%	22	20	22	19	20	
CC = CA - CB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	4862					
CF = CD - CE		CB	PAN	grams	298					
CG = CF (100) CC		CC	EXCAVATED MAT.	grams	4564					
PC = PA - PB		CD	PLUS 3/4 MAT. + PAN	grams	2045					
PD = PC (0.066)		CE	PAN	grams	298					
PE = PD (100) 100 + MB		CF	PLUS 3/4 MAT.	grams	1747					
		CG	PLUS 3/4 MAT.	%	38	38	38	38	38	
	CH	SPECIFIC GRAVITY		2.4	2.4	2.4	2.4	2.4		
					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3799					
PE (RERUN) = PD (100) 100 + SG		PB	MOLD	grams	2022					
		PC	WEIGHT OF SOIL	grams	1777					
		PD	WET DENSITY	lb/ft ³	117					
		PE	DRY DENSITY	lb/ft ³	96					
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = SF (100) SE		SD	DRY WEIGHT + PAN	grams						
DE = DB (100) DC		SE	DRY WEIGHT	grams						
		SF	MOISTURE	grams						
		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	23	23	23	23	23	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	96	96	96	96	96	
		DE	RELATIVE DENSITY	%	97	99	97	101	102	
	LOT EVALUATION	X	AVERAGE DE	%	99.2	INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		0.84					
		DF	WITHIN TOLERANCE	%	100	PROJECT'S EVALUATION				
		DG	MIN. FOR 100% PAY	%	80	CHECKED BY:				
DH	PASS / FAIL	YES	NO	DATE:						

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5	
MANUFACTURER'S STANDARDS		DATE							
DENSITY		STATION NUMBER	ft.						
MOISTURE		OFFSET	ft.						
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.						
DENSITY		LIFT THICKNESS	in.						
MOISTURE		DEPTH OF SOURCE	in.						
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	130	130	131	129	127
		MA	MOISTURE	lb/ft ³	11	9	8	10	11
DB		DRY DENSITY - 3/4	lb/ft ³	128	128	129	127	124	
MB		MOISTURE	%	9	7	6	8	9	
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5005				
DB									
CC = CA - CB		CB	PAN	grams	259				
CF = CD - CE		CC	EXCAVATED MAT.	grams	4746				
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	759				
CC									
CE		PAN	grams	259					
CF		PLUS 3/4 MAT.	grams	500					
PC = PA - PB	CG	PLUS 3/4 MAT.	%	11	11	11	11	11	
PD = PC (0.066)	CH	SPECIFIC GRAVITY		2.7	2.7	2.7	2.7	2.7	
PE = $\frac{PD}{100}$					RERUN	RERUN	RERUN	RERUN	RERUN
100 + MB									
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	4100				
PE (RERUN) =		PB	MOLD	grams	2001				
$\frac{PD}{100}$		PC	WEIGHT OF SOIL	grams	2099				
100 + SG		PD	WET DENSITY	lb/ft ³	139				
		PE	DRY DENSITY	lb/ft ³	128				
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams					
SE = SD - SB		SB	PAN	grams					
SF = SC - SE		SC	WET WEIGHT	grams					
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams					
SE		SE	DRY WEIGHT	grams					
DE = $\frac{DB}{100}$		SF	MOISTURE	grams					
DC		SG	MOISTURE	%					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	10	10	10	10	10
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	128	128	128	128	128
		DE	RELATIVE DENSITY	%	100	100	101	99	97
	LOT EVALUATION	X	AVERAGE DE	%	99.4	INSPECTOR'S NAME:			
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:			
		QL	QUALITY INDEX		1.10				
		DF	WITHIN TOLERANCE	%	100	PROJECT'S EVALUATION			
		DG	MIN. FOR 100% PAY	%	80	CHECKED BY:			
		DH	PASS / FAIL	(YES)	NO	DATE:			

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	122	125	128	129	127	
		MA	MOISTURE	lb/ft ³	11	9	10	9	11	
		DB	DRY DENSITY - 3/4	lb/ft ³	117	120	124	125	122	
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	9	7	8	7	9	
DB		CA	EXC. MATERIAL + PAN	grams	6004					
CC = CA - CB		CB	PAN	grams	1009					
CF = CD - CE		CC	EXCAVATED MAT.	grams	4995					
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	1894					
CC		CE	PAN	grams	1009					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	885					
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	18	18	18	18	18	
PE = $\frac{PD}{100}$		CH	SPECIFIC GRAVITY		2.6	2.6	2.6	2.6	2.6	
100 + MB				RERUN	RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3975					
PE (RERUN) =		PB	MOLD	grams	1954					
$\frac{PD}{100}$		PC	WEIGHT OF SOIL	grams	2021					
100 + SG		PD	WET DENSITY	lb/ft ³	133					
		PE	DRY DENSITY	lb/ft ³	122					
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams						
SE = SD - SB		SB	PAN	grams						
SF = SC - SE		SC	WET WEIGHT	grams						
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams						
SE		SE	DRY WEIGHT	grams						
DE = $\frac{DB}{100}$		SF	MOISTURE	grams						
DC		SG	MOISTURE	%						
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	11	11	11	11	11	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	124	124	124	124	124	
		DE	RELATIVE DENSITY	%	94	98	101	102	100	
	LOT EVALUATION	X	AVERAGE DE	%	99.0	INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		0.50					
		DF	WITHIN TOLERANCE	%	90	PROJECT'S EVALUATION				
		DG	MIN. FOR 100% PAY	%	80	CHECKED BY:				
DH		PASS / FAIL	YES	NO	DATE:					

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	118	120	119	117	120	
		MA	MOISTURE	lb/ft ³	17	14	16	15	16	
		DB	DRY DENSITY -3/4	lb/ft ³	115	117	116	113	117	
MB = MA (100)	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	15	12	14	13	14	
DB		CA	EXC. MATERIAL + PAN	grams	4839					
CC = CA - CB		CB	PAN	grams	306					
CF = CD - CE		CC	EXCAVATED MAT.	grams	4533					
CG = CF (100)		CD	PLUS 3/4 MAT. + PAN	grams	1229					
CC		CE	PAN	grams	306					
PC = PA - PB		CF	PLUS 3/4 MAT.	grams	923					
PD = PC (0.066)		CG	PLUS 3/4 MAT.	%	20					
PE = PD (100)		CH	SPECIFIC GRAVITY		2.4	2.4	2.4	2.4	2.4	
100 + MB					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3975	3958				
		PB	MOLD	grams	1954	1954				
		PC	WEIGHT OF SOIL	grams	2021	2004				
		PD	WET DENSITY	lb/ft ³	133	132				
		PE	DRY DENSITY	lb/ft ³	116	119				
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1876					
SE = SD - SB		SB	PAN	grams	1501					
SF = SC - SE		SC	WET WEIGHT	grams	375					
SG = SF (100)		SD	DRY WEIGHT + PAN	grams	1839					
SE		SE	DRY WEIGHT	grams	338					
DE = DB (100)		SF	MOISTURE	grams	37					
DC		SG	MOISTURE	%	11					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	12	12	12	12	12	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL	DC	MAXIMUM DENSITY	lb/ft ³	120	120	120	120	120	
		DE	RELATIVE DENSITY	%	96	98	97	94	98	
	LOT EVALUATION	X	AVERAGE DE	%	96.6	INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		0.40					
		DF	WITHIN TOLERANCE	%	83	PROJECT'S EVALUATION				
		DG	MIN. FOR 100% PAY	%	80	CHECKED BY:				
		DH	PASS / FAIL	YES	NO	DATE:				

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	108	110	110	111	109	
		MA	MOISTURE	lb/ft ³	17	16	16	17	16	
		DB	DRY DENSITY -3/4	lb/ft ³	108	110	110	111	109	
MB = $\frac{MA(100)}{DB}$	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	16	15	15	15	15	
CC = CA - CB		CA	EXC. MATERIAL + PAN	grams	5245					
CF = CD - CE		CB	PAN	grams	555					
CG = $\frac{CF(100)}{CC}$		CC	EXCAVATED MAT.	grams	4690					
PC = PA - PB		CD	PLUS 3/4 MAT. + PAN	grams	605					
PD = PC (0.066)		CE	PAN	grams	555					
PE = $\frac{PD(100)}{100 + MB}$		CF	PLUS 3/4 MAT.	grams	50					
		CG	PLUS 3/4 MAT.	%	1					
		CH	SPECIFIC GRAVITY		2.4	2.4	2.4	2.4	2.4	
				RERUN	RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3957	3944				
PE (RERUN) = $\frac{PD(100)}{100 + SG}$		PB	MOLD	grams	2003	2003				
		PC	WEIGHT OF SOIL	grams	1954	1941				
		PD	WET DENSITY	lb/ft ³	129	128				
		PE	DRY DENSITY	lb/ft ³	111	112				
SC = SA - SB	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1111					
SE = SD - SB		SB	PAN	grams	879					
SF = SC - SE		SC	WET WEIGHT	grams	232					
SG = $\frac{SF(100)}{SE}$		SD	DRY WEIGHT + PAN	grams	1082					
DE = $\frac{DB(100)}{DC}$		SE	DRY WEIGHT	grams	203					
		SF	MOISTURE	grams	23					
		SG	MOISTURE	%	14					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	15	15	15	15	15	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4		
		OC	PASS / FAIL		Pass	Pass	Pass	Pass		
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	112	112	112	112	112	
		DE	RELATIVE DENSITY	%	96	98	98	99	97	
	LOT EVALUATION	$\bar{X}$	AVERAGE DE	%	97.6	INSPECTOR'S NAME:				
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:				
		QL	QUALITY INDEX		0.87	PROJECT'S EVALUATION				
		DF	WITHIN TOLERANCE	%	100					
		DG	MIN. FOR 100% PAY	%	80					
	DH	PASS / FAIL	YES	NO	CHECKED BY:					
					DATE:					

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____ H _____
 AUTHORIZATION NUMBER _____
 PROJECT NUMBER _____
 DISTRICT _____
 LOT NUMBER _____
 ITEM NUMBER _____

FORM T-316
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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	116	116	116	116	117	
		MA	MOISTURE	lb/ft ³	17	15	15	14	13	
		DB	DRY DENSITY - 3/4	lb/ft ³	114	114	114	114	115	
MB = MA (100) DB	PLUS 3/4 MATERIAL DETERMINATION	MB	MOISTURE	%	15	13	13	12	11	
CC = CA - CB		CA	EXC. MATERIAL + PAN	grams	4839					
CF = CD - CE		CB	PAN	grams	339					
CG = CF (100) CC		CC	EXCAVATED MAT.	grams	4500					
PC = PA - PB		CD	PLUS 3/4 MAT. + PAN	grams	777					
PD = PC (0.066)		CE	PAN	grams	339					
PE = PD (100) 100 + MB		CF	PLUS 3/4 MAT.	grams	438					
		CG	PLUS 3/4 MAT.	%	10	10	10	10	10	
		CH	SPECIFIC GRAVITY		2.5	2.5	2.5	2.5	2.5	
				RERUN	RERUN	RERUN	RERUN	RERUN		
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3999	3969				
		PB	MOLD	grams	1999	1999				
		PC	WEIGHT OF SOIL	grams	2000	1970				
		PD	WET DENSITY	lb/ft ³	132	130				
		PE	DRY DENSITY	lb/ft ³	115	118				
SC = SA - SB SE = SD - SB SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1542					
		SB	PAN	grams	1200					
		SC	WET WEIGHT	grams	342					
		SD	DRY WEIGHT + PAN	grams	1511					
		SE	DRY WEIGHT	grams	311					
		SF	MOISTURE	grams	31					
		SG	MOISTURE	%	10					
X̄ = Σ DE / 5	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	12	12	12	12	12	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = X̄ - T / R	DEN. EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	120	120	120	120	120	
		DE	RELATIVE DENSITY	%	95	95	95	95	96	
	LOT EVALUATION	X̄	AVERAGE DE	%	95.2	INSPECTOR'S NAME:				
		T	TARGET	%	95					
		QL	QUALITY INDEX		.20	INSPECTOR'S SIGNATURE:				
		DF	WITHIN TOLERANCE	%	68					
		DG	MIN. FOR 100% PAY	%	80	PROJECT'S EVALUATION				
DH	PASS / FAIL	YES	☒ NO	CHECKED BY:						
				DATE:						

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER 1
AUTHORIZATION NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
LOT NUMBER _____
ITEM NUMBER _____

FORM T-316
MP 207.07.20

GAUGE NUMBER		TEST NUMBER		1	2	3	4	5		
MANUFACTURER'S STANDARDS		DATE								
DENSITY		STATION NUMBER	ft.							
MOISTURE		OFFSET	ft.							
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.							
DENSITY		LIFT THICKNESS	in.							
MOISTURE		DEPTH OF SOURCE	in.							
DB FROM TABLES MB = MA (100) DB	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	117	117	117	117	116	
		MA	MOISTURE	lb/ft ³	17	15	15	14	13	
		DB	DRY DENSITY -3/4	lb/ft ³	115	115	115	115	114	
		MB	MOISTURE	%	15	13	13	12	11	
CC = CA - CB CF = CD - CE CG = CF (100) CC PC = PA - PB PD = PC (0.066) PE = PD (100) 100 + MB	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	4839					
		CB	PAN	grams	339					
		CC	EXCAVATED MAT.	grams	4500					
		CD	PLUS 3/4 MAT. + PAN	grams	777					
		CE	PAN	grams	339					
		CF	PLUS 3/4 MAT.	grams	438					
		CG	PLUS 3/4 MAT.	%	10	10	10	10	10	
		CH	SPECIFIC GRAVITY		2.5	2.5	2.5	2.5	2.5	
					RERUN	RERUN	RERUN	RERUN	RERUN	
RERUN PROCTOR PE (RERUN) = PD (100) 100 + SG	ONE POINT PROCTOR	PA	WEIGHT SOIL & MOLD	grams	3999	3969				
		PB	MOLD	grams	1999	1999				
		PC	WEIGHT OF SOIL	grams	2000	1970				
		PD	WET DENSITY	lb/ft ³	132	130				
		PE	DRY DENSITY	lb/ft ³	115	118				
SC = SA - SB SE = SD - SE SF = SC - SE SG = SF (100) SE DE = DB (100) DC	STOVE DRIED MOISTURE	SA	WET WEIGHT + PAN	grams	1542					
		SB	PAN	grams	1200					
		SC	WET WEIGHT	grams	342					
		SD	DRY WEIGHT + PAN	grams	1511					
		SE	DRY WEIGHT	grams	311					
		SF	MOISTURE	grams	31					
		SG	MOISTURE	%	10					
$\bar{X} = \frac{\sum DE}{5}$	MOIST. EVAL.	OA	OPTIMUM MOISTURE	%	12	12	12	12	12	
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4	
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass	
QL = $\frac{\bar{X} - T}{R}$	DEN EVAL.	DC	MAXIMUM DENSITY	lb/ft ³	120	120	120	120	120	
		DE	RELATIVE DENSITY	%	96	96	96	96	95	
	LOT EVALUATION	X	AVERAGE DE	%	95.8	INSPECTOR'S NAME:				
		T	TARGET	%	95					
		QL	QUALITY INDEX		0.80	INSPECTOR'S SIGNATURE:				
		DF	WITHIN TOLERANCE	%	100					
		DG	MIN. FOR 100% PAY	%	80	PROJECT'S EVALUATION				
DH	PASS / FAIL	YES	NO	CHECKED BY:						
				DATE:						

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GAUGE NUMBER		TEST NUMBER		1	2	3	4	5					
MANUFACTURER'S STANDARDS				DATE									
DENSITY		STATION NUMBER	ft.										
MOISTURE		OFFSET	ft.										
GAUGE STANDARD COUNTS		DEPTH BELOW GRADE	ft.										
DENSITY		LIFT THICKNESS	in.										
MOISTURE		DEPTH OF SOURCE	in.										
DB FROM TABLES	Field Density Moisture	DA	TOTAL DRY DENSITY	lb/ft ³	105	117	116	124	111				
		MA	MOISTURE	lb/ft ³	16	15	16	12	18				
		DB	DRY DENSITY - 3/4	lb/ft ³	104	114	113	123	109				
		MB	MOISTURE	%	15	13	14	10	17				
MB = $\frac{MA}{100}$	PLUS 3/4 MATERIAL DETERMINATION	CA	EXC. MATERIAL + PAN	grams	5003	5121		5346	5224				
DB													
CC = CA - CB		CB	PAN	grams	500	500		500	500				
CF = CD - CE		CC	EXCAVATED MAT.	grams	4503	4621		4846	4724				
CG = $\frac{CF}{100}$		CD	PLUS 3/4 MAT. + PAN	grams	654	1026		742	833				
CC													
CE		PAN	grams	500	500		500	500					
CF		PLUS 3/4 MAT.	grams	154	526		242	333					
PC = PA - PB	ONE POINT PROCTOR	CG	PLUS 3/4 MAT.	%	3	11	11	5	7				
PD = $\frac{PC}{0.066}$		CH	SPECIFIC GRAVITY		2.4	2.6	2.6	2.7	2.5				
PE = $\frac{PD}{100 + MB}$		RERUN RERUN RERUN RERUN RERUN											
RERUN PROCTOR	STOVE DRIED MOISTURE	PA	WEIGHT SOIL & MOLD	grams	3901		3985			4108		3954	3931
PE (RERUN) = $\frac{PD}{100 + SG}$		PB	MOLD	grams	2004		2004			2004		2004	2004
		PC	WEIGHT OF SOIL	grams	1897		1981			2104		1950	1927
		PD	WET DENSITY	lb/ft ³	125		131			139		129	127
		PE	DRY DENSITY	lb/ft ³	109		116			126		110	112
SC = SA - SB	MOIST. EVAL.	SA	WET WEIGHT + PAN	grams								1564	
SE = SD - SB		SB	PAN	grams								1209	
SF = SC - SE		SC	WET WEIGHT	grams								355	
SG = $\frac{SF}{100}$		SD	DRY WEIGHT + PAN	grams								1524	
SE		SE	DRY WEIGHT	grams								315	
DE = $\frac{DB}{100}$	DEN EVAL.	SF	MOISTURE	grams								40	
DC		SG	MOISTURE	%								13	
$\bar{X} = \frac{\sum DE}{5}$		OA	OPTIMUM MOISTURE	%	16	14	14	10	15				
		OB	PLUS / MINUS TOLER.		+3/-4	+3/-4	+3/-4	+3/-4	+3/-4				
		OC	PASS / FAIL		Pass	Pass	Pass	Pass	Pass				
	QL = $\frac{\bar{X} - T}{R}$	DC	MAXIMUM DENSITY	lb/ft ³	109	116	116	126	113				
		DE	RELATIVE DENSITY	%	95	98	97	98	96				
LOT EVALUATION		X	AVERAGE DE	%	96.8	INSPECTOR'S NAME:							
		T	TARGET	%	95	INSPECTOR'S SIGNATURE:							
		QL	QUALITY INDEX		0.60	PROJECT'S EVALUATION							
	DF	WITHIN TOLERANCE	%	96	CHECKED BY:								
	DG	MIN. FOR 100% PAY	%	80	DATE:								
DH	PASS / FAIL	YES	NO										

FORM T-313
MP 700.00.24

Source of Material:			Length of Test Section:	
Roller Type:			Width of Test Section:	
Roller Weight	Static:	Working:	Gauge Number	
Lift Thickness Compacted:			Manufacturer's Standards	
Depth Below Grade:			Density:	Moisture:
Depth of Gauge Source:			Standard Counts	
Observed	Yes		No	Density:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	132
	2	134
DB	Average	133

B	Number of Passes	14
	Test Site	DA Dry Density
	1	133
	2	135
DB	Average	134

C	Number of Passes	
	Test Site	DA Dry Density
	1	
	2	
DB	Average	

D	Number of Passes	
	Test Site	DA Dry Density
	1	
	2	
DB	Average	

$$DB = \sum DA / 2$$

$$DC = \sum DA / 5$$

Inspector's Name: _____
Inspector's Signature: _____
Project's Evaluation
Checked By: _____
Date: _____

Maximum Density Determination		
Test Site		DA
1		133
2		135
3		136
4		132
5		135
DC	Max. Density	134

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Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:							
Depth Below Grade:							
Depth of Gauge Source:							
Observed	Yes	No					
				Manufacturer's Standards			
				Density:		Moisture:	
				Standard Counts			
				Density:		Moisture:	

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	124
	2	127
DB	Average	126

B	Number of Passes	14
	Test Site	DA Dry Density
	1	127
	2	129
DB	Average	128

C	Number of Passes	16
	Test Site	DA Dry Density
	1	128
	2	130
DB	Average	129

D	Number of Passes		
	Test Site	DA	Dry Density
	1		
	2		
DB	Average		

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		DA
1		128
2		130
3		127
4		126
5		128
DC	Max. Density	128

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

FORM T-313
MP 700.00.24

Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:					Manufacturer's Standards		
Depth Below Grade:					Density:		Moisture:
Depth of Gauge Source:					Standard Counts		
Observed	Yes	No			Density:		Moisture:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	140
	2	141
DB	Average	141

B	Number of Passes		14
	Test Site	DA	Dry Density
	1	142	
	2	143	
DB	Average	143	

C	Number of Passes	16
	Test Site	DA Dry Density
	1	145
	2	145
DB	Average	145

D	Number of Passes		18
	Test Site	DA	Dry Density
	1	146	
	2	144	
DB	Average	145	

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		DA Dry Density
1		146
2		144
3		147
4		143
5		145
DC	Max. Density	145

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

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Source of Material:			Length of Test Section:	
Roller Type:			Width of Test Section:	
Roller Weight	Static:	Working:	Gauge Number	
Lift Thickness Compacted:			Manufacturer's Standards	
Depth Below Grade:			Density:	Moisture:
Depth of Gauge Source:			Standard Counts	
Observed	Yes		No	Density:

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	105
	2	101
DB	Average	103

B	Number of Passes	14
	Test Site	DA Dry Density
	1	106
	2	104
DB	Average	105

C	Number of Passes	16
	Test Site	DA Dry Density
	1	108
	2	107
DB	Average	108

D	Number of Passes		18
	Test Site	DA	Dry Density
	1	109	
	2	109	
DB	Average	109	

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		DA Dry Density
1		109
2		109
3		108
4		105
5		110
DC	Max. Density	108

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

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Source of Material:				Length of Test Section:			
Roller Type:				Width of Test Section:			
Roller Weight		Static:		Working:		Gauge Number	
Lift Thickness Compacted:							
Depth Below Grade:							
Depth of Gauge Source:							
Observed	Yes	No					
				Manufacturer's Standards			
				Density:		Moisture:	
				Standard Counts			
				Density:		Moisture:	

Test Site Number	1	2	3	4	5
Station Number					
Offset					

A	Number of Passes	12
	Test Site	DA Dry Density
	1	131
	2	133
DB	Average	132

B	Number of Passes	14
	Test Site	DA Dry Density
	1	134
	2	134
DB	Average	134

C	Number of Passes	16
	Test Site	DA Dry Density
	1	135
	2	137
DB	Average	136

D	Number of Passes		18
	Test Site	DA	Dry Density
	1	136	
	2	136	
DB	Average	136	

$$\begin{aligned} DB &= \sum DA / 2 \\ DC &= \sum DA / 5 \end{aligned}$$

Maximum Density Determination		
Test Site		DA Dry Density
1		136
2		136
3		138
4		139
5		132
DC	Max. Density	136

Inspector's Name: _____
 Inspector's Signature: _____
 Project's Evaluation
 Checked By: _____
 Date: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION
P



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	4	8	6	4
	DEPTH OF GAUGE SOURCE	6	4	8	6	4
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION	DENSITY STANDARD					
	MOISTURE STANDARD					

$$DF = \frac{DE (100)}{DC}$$

$$\bar{X} = \frac{\sum DF}{5}$$

$$QL = \frac{\bar{X} - T}{R}$$

DC	MAXIMUM DENSITY	134	128	145	108	136
	REFERENCE LAB NUMBER	K	L	M	N	O

TEST NUMBER 1	DE	DRY DENSITY	127	125	139	107	138
	DF	% RELATIVE DENSITY	95	98	96	99	101

TEST NUMBER 2	DE	DRY DENSITY	131	129	144	101	137
	DF	% RELATIVE DENSITY	98	101	99	94	101

TEST NUMBER 3	DE	DRY DENSITY	134	130	141	107	139
	DF	% RELATIVE DENSITY	100	102	97	99	102

TEST NUMBER 4	DE	DRY DENSITY	131	127	138	106	139
	DF	% RELATIVE DENSITY	98	99	95	98	102

TEST NUMBER 5	DE	DRY DENSITY	139	129	139	108	141
	DF	% RELATIVE DENSITY	104	101	96	100	104

LOT EVALUATION	$\bar{X}$	AVERAGE DF	99.0	100.2	96.6	98.0	102.0
	T	TARGET	95	95	95	95	95
	QL	QUALITY INDEX	0.44	1.30	0.40	0.50	2.33
	DG	% WITHIN TOLERANCE	86	100	83	90	100
	DH	MIN. FOR 100% PAY	80	80	80	80	80
	DI	PASS / FAIL	Pass	Pass	Pass	Pass	Pass

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE					
	DEPTH OF GAUGE SOURCE					
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD					
	MOISTURE STANDARD					
	DC	MAXIMUM DENSITY	137			
		REFERENCE LAB NUMBER	70-1			
TEST NUMBER 1	DE	DRY DENSITY	127			
	DF	% RELATIVE DENSITY	93			
TEST NUMBER 2	DE	DRY DENSITY	131			
	DF	% RELATIVE DENSITY	96			
TEST NUMBER 3	DE	DRY DENSITY	134			
	DF	% RELATIVE DENSITY	98			
TEST NUMBER 4	DE	DRY DENSITY	131			
	DF	% RELATIVE DENSITY	96			
TEST NUMBER 5	DE	DRY DENSITY	139			
	DF	% RELATIVE DENSITY	101			
LOT EVALUATION	$\bar{X}$	AVERAGE DF	96.8			
	T	TARGET	95			
	QL	QUALITY INDEX	0.23			
	DG	% WITHIN TOLERANCE	70			
	DH	MIN. FOR 100% PAY	80			
	DI	PASS / FAIL	FAIL			

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION
R



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	6	6		
	DEPTH OF GAUGE SOURCE	6	6	6		
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION	DENSITY STANDARD					
	MOISTURE STANDARD					

$$DF = \frac{DE (100)}{DC}$$

$$\bar{X} = \frac{\sum DF}{5}$$

$$QL = \frac{\bar{X} - T}{R}$$

DC	MAXIMUM DENSITY	137	137	137		
	REFERENCE LAB NUMBER	70-1	70-1	70-1		

TEST NUMBER 1	DE	DRY DENSITY	136	135	139		
	DF	% RELATIVE DENSITY	99	99	101		

TEST NUMBER 2	DE	DRY DENSITY	136	137	144		
	DF	% RELATIVE DENSITY	99	100	105		

TEST NUMBER 3	DE	DRY DENSITY	134	138	141		
	DF	% RELATIVE DENSITY	98	101	103		

TEST NUMBER 4	DE	DRY DENSITY	135	141	138		
	DF	% RELATIVE DENSITY	99	103	101		

TEST NUMBER 5	DE	DRY DENSITY	143	142	143		
	DF	% RELATIVE DENSITY	104	104	104		

LOT EVALUATION	X̄	AVERAGE DF	99.8	101.4	102.8		
	T	TARGET	95	95	95		
	QL	QUALITY INDEX	0.80	1.28	1.95		
	DG	% WITHIN TOLERANCE	100	100	100		
	DH	MIN. FOR 100% PAY	80	80	80		
	DI	PASS / FAIL	Pass	Pass	Pass		

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION
S



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
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FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	6			
	DEPTH OF GAUGE SOURCE	6	6			
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD					
	MOISTURE STANDARD					
	DC MAXIMUM DENSITY	140	140			
	REFERENCE LAB NUMBER	70-1	70-1			
TEST NUMBER 1	DE DRY DENSITY	138	140			
	DF % RELATIVE DENSITY	99	103			
TEST NUMBER 2	DE DRY DENSITY	141	137			
	DF % RELATIVE DENSITY	101	98			
TEST NUMBER 3	DE DRY DENSITY	143	137			
	DF % RELATIVE DENSITY	102	98			
TEST NUMBER 4	DE DRY DENSITY	137	140			
	DF % RELATIVE DENSITY	98	100			
TEST NUMBER 5	DE DRY DENSITY	143	142			
	DF % RELATIVE DENSITY	102	101			
LOT EVALUATION	X̄ AVERAGE DF	100.4	100.0			
	T TARGET	95	95			
	QL QUALITY INDEX	1.35	1.00			
	DG % WITHIN TOLERANCE	100	100			
	DH MIN. FOR 100% PAY	80	80			
	DI PASS / FAIL	Pass	Pass			

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION
T



LAB NUMBER _____
AUTH. NUMBER _____
PROJECT NUMBER _____
DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE					
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER					
	BEGINNING STATION					
	ENDING STATION					
MANUFACTURER'S MOISTURE STANDARD	OFFSET					
	DEPTH BELOW GRADE	6	6	6	6	
	DEPTH OF GAUGE SOURCE	6	6	6	6	
	LIFT THICKNESS COMPACTED					
DC FROM TEST SECTION	DENSITY STANDARD					
	MOISTURE STANDARD					

$$DF = \frac{DE (100)}{DC}$$

$$\bar{X} = \frac{\sum DF}{5}$$

$$QL = \frac{\bar{X} - T}{R}$$

DC	MAXIMUM DENSITY	132	132	132	132	
	REFERENCE LAB NUMBER	70-1	70-1	70-1	70-1	

TEST NUMBER 1	DE	DRY DENSITY	128	125	139	127	
	DF	% RELATIVE DENSITY	97	95	105	96	

TEST NUMBER 2	DE	DRY DENSITY	131	129	134	126	
	DF	% RELATIVE DENSITY	99	98	102	95	

TEST NUMBER 3	DE	DRY DENSITY	134	130	131	127	
	DF	% RELATIVE DENSITY	102	98	99	96	

TEST NUMBER 4	DE	DRY DENSITY	126	127	127	128	
	DF	% RELATIVE DENSITY	95	96	96	97	

TEST NUMBER 5	DE	DRY DENSITY	133	129	130	126	
	DF	% RELATIVE DENSITY	101	98	98	95	

LOT EVALUATION	$\bar{X}$	AVERAGE DF	98.8	97.0	100.0	95.8	
	T	TARGET	95	95	95	95	
	QL	QUALITY INDEX	0.54	0.67	0.56	0.40	
	DG	% WITHIN TOLERANCE	93	100	94	83	
	DH	MIN. FOR 100% PAY	80	80	80	80	
	DI	PASS / FAIL	Pass	Pass	Pass	Pass	

INSPECTOR'S NAME: _____
INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

CHECKED BY: _____ DATE: _____

WEST VIRGINIA DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION



LAB NUMBER _____
AUTH. NUMBER _____
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DISTRICT _____
ITEM NUMBER _____

FORM T-317
MP 700.00.24

GAUGE #	DATE						
MANUFACTURER'S DENSITY STANDARD	LOT NUMBER						
	BEGINNING STATION						
	ENDING STATION						
MANUFACTURER'S MOISTURE STANDARD	OFFSET						
	DEPTH BELOW GRADE	6	6				
	DEPTH OF GAUGE SOURCE	6	6				
	LIFT THICKNESS COMPACTED						
DC FROM TEST SECTION $DF = \frac{DE (100)}{DC}$ $\bar{X} = \frac{\sum DF}{5}$ $QL = \frac{\bar{X} - T}{R}$	DENSITY STANDARD						
	MOISTURE STANDARD						
	DC	MAXIMUM DENSITY	112	118			
	REFERENCE LAB NUMBER	1233	1234				
TEST NUMBER 1	DE	DRY DENSITY	110	115			
	DF	% RELATIVE DENSITY	98	97			
TEST NUMBER 2	DE	DRY DENSITY	108	116			
	DF	% RELATIVE DENSITY	96	98			
TEST NUMBER 3	DE	DRY DENSITY	111	113			
	DF	% RELATIVE DENSITY	99	96			
TEST NUMBER 4	DE	DRY DENSITY	109	117			
	DF	% RELATIVE DENSITY	97	99			
TEST NUMBER 5	DE	DRY DENSITY	108	113			
	DF	% RELATIVE DENSITY	96	96			
LOT EVALUATION	X̄	AVERAGE DF	97.2	97.2			
	T	TARGET	95	95			
	QL	QUALITY INDEX	0.73	0.73			
	DG	% WITHIN TOLERANCE	100	100			
	DH	MIN. FOR 100% PAY	80	80			
	DI	PASS / FAIL	Pass	Pass			

INSPECTOR'S NAME: _____

INSPECTOR'S SIGNATURE: _____

PROJECT'S EVALUATION

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

REPORT FRAUD, WASTE AND ABUSE

CALL THE WVDOT
OFFICE OF INVESTIGATIONS
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1-866-206-2728

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