SAMPLE AND TEST REPORT FORMS

This Section includes a sample of each of the ODOT forms used for submitting samples and reporting test results. The forms can accommodate two different formats, Metric and English. At the top of the form is an area that allows the user to switch between the different units. Examples of completed reports, in English are also included. Located after the table of contents section is a forms description document that outlines the functions and calculation abilities, if applicable, of the various forms. Each form has a unique number identifier that starts with 734-xxxx and the forms are arranged in numerical order, 734-1792, 734-1793A etc.

If a certified technician elects to use forms other than ODOT, then the modified form must contain the same information and be presented in a similar format to the existing ODOT form. The technician must obtain the approval of the Project Manager prior to using different forms. When submitting material for testing to the Salem Materials Laboratory, the appropriate ODOT form must be utilized.

These forms are available electronically. They may be downloaded from our webpage in FTP format.

The URL address is:

http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/pages/hwyconstforms1.aspx

Submittals of form 734-4000, 734-4000C or 734-4000 NFTM requires properly completing the required information as outlined in Section 4 (C) of the MFTP. **If the information required in Section 4(C) is not included on the submitted forms the material will not be accepted for testing.**

A unique data sheet number is also required on the form that is referenced to a submitted sample in chronological order. The data sheet number is a unique value assigned by the submitting party. Example: F-40123-001, the F is generic on all form 4000's, the next set of numbers, in this example, is the technician's certification number and the last series of values indicates the sequential order of submitted samples, 001, 002, 003, etc. If a technician certification number is not available contact the Salem Materials Laboratory at (503-986-6626) and a unique number will be assigned to the user. This eliminates duplicate data sheet numbers, maintains the integrity of the data base and provides for efficient retrieval of information.

The Contractor shall submit copies of the test results to the specified ODOT personnel within the timeframes set forth in the QA program and the project contract. Either the copy of the results or a facsimile of the results will be accepted. The Contractor shall retain the original results for at least three years after ODOT formally accepts the project.

Oregon Department of Transportation
Field Tested Materials Forms and Examples

Soils	
ODOT Form Number	*Description*
734-1793 S	Nuclear Compaction Report For Soil
734-3468	Maximum Density of Construction Materials
734-3468 FC	Family of Curves
Aggregate	
ODOT Form Number	*Description*
734-1792	Field Worksheet for Aggregate
734-1793 B	Nuclear Compaction Report For Base Aggregate
734-1825	Unit Weight and Specific Gravity W/S
734-1825 C	Bulk Density “Unit Weight” Measure Calibration
734-3468 B	Maximum Density of Aggregate Base Material
Asphalt Concrete Pavement (ACP)	
ODOT Form Number	*Description*
734-1793 A 734-1793 AR 734-1793 A10	Nuclear Compaction Report For ACP Nuclear Compaction Report For ACP with Random Location Nuclear Compaction Report For ACP, 10 shot locations
734-1972 A	Random Sample Locations for Density Testing of ACP
734-2043	Daily Asphalt Cement Report
734-2050	Specific Gravity and Maximum Density of ACP
734-2050 GV	Voids Worksheet Gyratory - Multiple
734-2050 GVS	Voids Worksheet Gyratory - Single
734-2050 TSR	Tensile Stripping Strength (TSR) Worksheet
734-2084	Control Strip Method of Compaction Testing
734-2084 T	Establishing Roller Pattern for Thin Lifts of ACP
734-2277	Field Worksheet for ACP (Plant Report)
734-2277 RAM	Field Worksheet for ACP (Plant Report) RAM
734-2327	Nuclear-- Core Correlation Worksheet
734-2327 CB	Calibration Batch Form
734-2327 IC	ACP Incinerator Oven Calibration Worksheet
734-2401	Daily Asphalt Plant Production

Asphalt Concrete Pavement (ACP)	
ODOT Form Number	*Description*
734-2401 RAM	Daily Asphalt Plant Production RAM
734-5068	CAT II – MDV Startup Review
734-2560	CAT II – JMF Target Adjustment Summary
734-5069	CAT II – Density / Control Strip Reconciliation
Concrete	
ODOT Form Number	*Description*
734-3573 WS	Concrete Yield and WIC Ratio Worksheet
734-4000 C	Sample Data Sheet for Concrete Cylinders
Pavement Marking Retroreflectivity Testing	
ODOT Form Number	*Description*
734-4101	Pavement Marking Retroreflectivity Testing – General
734-4102	Pavement Marking Retroreflectivity Testing – Longitudinal Markings
734-4103	Pavement Marking Retroreflectivity Testing – Transverse Markings
734-4104	Pavement Marking Additional Testing Required - Longitudinal Lines
734-4105	Pavement Marking Additional Testing Required - Transverse Markings
Miscellaneous	
ODOT Form Number	*Description*
734-1972	Random Sample Locations by Station Random Units Table
734-4000	Sample Data Sheet
734-4000 NFTM	Sample Data Sheet for Non-Field Tested Materials
734-4040	QA/QC Testing Investigation
734-5072	Random Number Table

Note: These forms may be photocopied for your use.
They are also available in Microsoft Excel file format on the Construction Section webpage at the following address:

http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/pages/hwyconstforms1.aspx

To copy or move sheets within or between workbooks use the following procedure:

- Save desired forms from the address above and open all files intended for the workbook.
- Right click the work sheet tab to be moved or copied.
- From the pop-up window, left click "**Move or Copy…**"
- From the pop-up window, left click drop down button from the "**To Book:**" box.
- Select desired workbook or (new book).
- Select location in workbook to copy or move sheet in the "**Before sheet**" box.
- To keep a copy in the original book and move select "**Create copy**", otherwise leave blank.
- Click **OK**.

Description of Worksheet & Calculation Explanations

General Instructions

All forms, with the exception of the **1972 A**, **2327 IC**, **2401**, **2550, 4000**, **4000 NFTM** and **4040** forms, have an English (**E**) or Metric (**M**) toggle box in the upper right corner of the form. The default setting will show English units. For field use the forms may be printed in dual units by leaving the box blank, entering (**E**) for English units, or entering (**M**) Metric units. Computer generated forms must have either an (**E**) or (**M**) entered in the box. The forms will then convert to English or Metric and calculate accordingly.

Some forms have color shaded data entry cells. This is to give a visual check for the user to see if data may be missing on the form. These cells are auto-formatted and the shading will disappear when data is entered. If the cell is intentionally left blank or a zero value is in the cell the shading will be visible. If no shading is desired for printing the user can go to: file > page setup, select the sheet tab and check the print black and white box.

1792 FIELD WORKSHEET FOR AGGREGATES

Enter either (**E**) for English or (**M**) for Metric. Enter sieve weights from the PAN cell up for washed gradations and from the top down for dry gradations. This will allow .075mm (#200) specifications to be taken to one decimal place. For dry gradations enter the dry mass and pan in the after wash dry mass and pan cell for the sieve loss to calculate. Enter the specification for either Method 1 (Combined) or Method 2 (Individual) for Fracture to calculate. Manually enter Cumulative % Retained (100-% Passing) for Fineness Modulus to calculate. Enter dry mass of wood waste.

1793 A NUCLEAR COMPACTION TEST REPORT FOR ACP

Enter either (**E**) for English or (**M**) for Metric. Enter correlation factor from **Form 2327** in the core to nuclear correlation box if applicable, otherwise leave blank. Form will calculate percent compaction for each test and the average of the five tests.

1793 AR NUCLEAR COMPACTION TEST REPORT FOR ACP with RANDOM'S

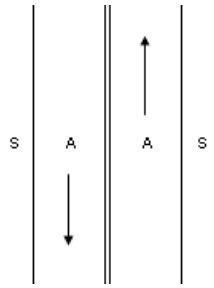
This form is the same as 1793 A except that it also has a section to calculate random testing locations and offsets. This form is an option for use in-lieu of the standard 1793 A form. The same directions apply as form 1793 A. For the yield calculation enter the MAMD, % compaction, panel depth and width, and sublot size. The random's can be set to auto-calculate, by entering an "X" in the auto-calc random's box, or manually by leaving blank. Enter an "X" in the checkbox to base random's on distance or tons. Enter an "X" in the appropriate box to calculate random's in ascending or descending order.

(See Next Sheet for Lane Configuration Examples and test site association)

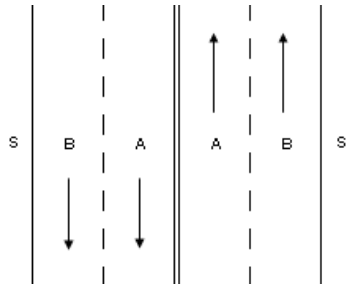
Description of Worksheet & Calculation Explanations

Form 1793 A & Form 1793 AR – (Example of Lane Designations and Test Site Location)

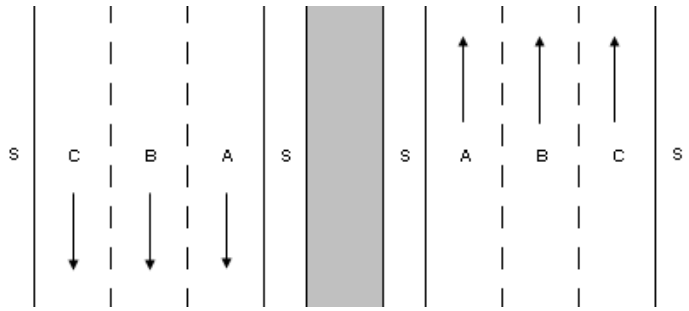
When a set of density tests are taken for a sublot, circle the appropriate direction and lane in which the test was taken. If testing is comprised of multiple lanes and/or ramps, note the test number and location in the remarks. Examples of lane designations are as follows:



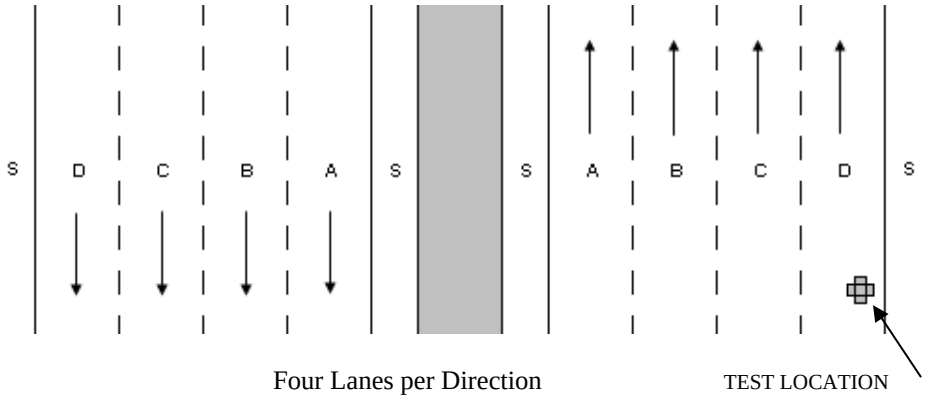
One Lane per Direction



Two Lanes per Direction



Three Lanes per Direction



Four Lanes per Direction

TEST LOCATION

Example: Shoulder and D lane pulled in the same panel (test location shown above)

REPRESENTS MATERIAL INCORPORATED

FROM STATION		TO STATION	
FROM OFFSET		TO OFFSET	

CIRCLE DIRECTION NB SB EB WB

CIRCLE LANE S A B C D S

Description of Worksheet & Calculation Explanations

1793 B NUCLEAR COMPACTION TEST REPORT FOR BASE

Enter either (**E**) for English or (**M**) for Metric. Enter shot data for wet densities and moistures. Form will average shots and compute dry density, percent moisture, and percent compaction for each individual test.

1793 S NUCLEAR COMPACTION TEST REPORT FOR SOIL

Enter either (**E**) for English or (**M**) for Metric. This form will auto-calculate. If an unscreened sample is used to verify gauge moisture enter the sample information in the appropriate boxes in the one-point section. If not the first one-point will be used to verify gauge moisture. Enter the appropriate mold factor. Enter the % Coarse (Pc) in the box from the Method "A" or "D" screening process. Enter curve data. The section of the form will auto-calculate.

1825 C BULK DENSITY "UNIT WEIGHT" MEASURE CALIBRATION

Enter either (**E**) for English or (**M**) for Metric. Enter mass (lbs for English or kg for Metric) in boxes "1" and "2". Box "A" will auto calculate. Enter Temperature of water (ºF for English or °C for Metric) and corresponding density in box "B" from water density table. Box "V" volume will auto calculate.

1825 UNIT WEIGHT AND SPECIFIC GRAVITY W/S

Enter either (**E**) for English or (**M**) for Metric. AASHTO T 19: Enter masses (lbs for English or kg for Metric) in boxes "A" and "B". Box "C" will auto calculate. Enter volume of measure (ft^3 for English or m^3 for Metric) from form 1825 C in box "D". Unit Weight will auto calculate. AASHTO T 85 and 84: Enter mass (grams) in boxes "A", "B", and "C". Specific gravity values and absorption will auto calculate.

1972 RANDOM SAMPLE LOCATIONS

Enter either (**E**) for English or (**M**) for Metric. This is not a calculating form.

1972 A RANDOM SAMPLE LOCATIONS FOR DENSITY TESTING OF ACP

The user can utilize either tonnage values or distance values for determining random sample locations. In most cases using tonnage values may simplify random sampling management. For the yield calculation enter the MAMD, % compaction, panel depth and width, and sublot size. The random's can be set to auto-calculate, by entering an "X" in the auto-calc random's box, or manually by leaving blank. Enter an "X" in the checkbox to base random's on distance or tons. Enter an "X" in the appropriate box to calculate random's in ascending or descending order.

2043 DAILY ASPHALT CEMENT REPORT

Enter either (**E**) for English or (**M**) for Metric. Some portions of this form are automatically calculated. Volumes in Tank and Temperature Corrections Factors need to be hand entered. The quantities will need to be carried forward to the next report in order to maintain a running total.

2050 SPECIFIC GRAVITY AND MAXIMUM DENSITY OF ACP

Enter either (**E**) for English or (**M**) for Metric. This form is designed for daily, first sample calculation of MAMD for compaction. The MAMD will not calculate but the MDT will self- calculate.

2050 GV VOIDS WORKSHEET GYRATORY

Enter either (**E**) for English or (**M**) for Metric. Enter Design Gsb and Asphalt Gb, test result P#200, test Pb, and Specimen Height for each test sample. Enter previous form results for running average calculation.

2050 GVS VOIDS WORKSHEET GYRATORY

Enter either (**E**) for English or (**M**) for Metric. Enter design Gsb and Asphalt Gb, test P#200, and test Pb in center of form. Enter previous form results and current test results at bottom for running average calculation.

2050 TSR TENSILE STRIPPING STRENGTH

Enter either (**E**) for English or (**M**) for Metric. In test condition cell enter Wet for saturated specimens and leave blank for dry specimens.

Description of Worksheet & Calculation Explanations

2084 CONTROL STRIP METHOD OF COMPACTION TESTING

Enter either (**E**) for English or (**M**) for Metric. This is not a calculating form.

2084T CONTROL STRIP METHOD OF COMPACTION FOR THIN LIFTS OF ACP (TM 301)

Enter either (**E**) for English or (**M**) for Metric. This is not a calculating form.
Enter the station and offsets of the two Evaluation points.

2277 FIELD WORKSHEET FOR ACP (PLANT REPORT)

Enter either (**E**) for English or (**M**) for Metric. Enter the exact term, **EAC** or **ACP** in the heading cell. Enter Sieves from the pan up. When applying correction factors for aggregate gradation and/or asphalt (**Cf**) from Form **2327 IC,** they should be entered as they appear on that form (e.g. + or –). Enter dry washed mass with pan tare for sieve loss calculation. The total asphalt **(O)** cell is the sub total multiplied by the asphalt meter correction cell, if needed. If the plant reads in Tons leave the asphalt meter correction blank. If Ultrapave is used, convert to dry Tons/Mg and enter those values for beginning and ending antistrip.

2277RAM FIELD WORKSHEET FOR ACP (PLANT REPORT)

Enter either (**E**) for English or (**M**) for Metric. Enter the exact term, **EAC** or **ACP** in the heading cell. Enter Sieves from the pan up. When applying correction factors for aggregate gradation and/or asphalt (**Cf**) from Form **2327 IC,** they should be entered as they appear on that form (e.g. + or –). Enter dry washed mass with pan tare for sieve loss calculation. The total asphalt **(O)** cell is the sub total multiplied by the asphalt meter correction cell, if needed. If the plant reads in Tons leave the asphalt meter correction blank. If Ultrapave is used, convert to dry Tons/Mg and enter those values for beginning and ending antistrip.

2327 NUCLEAR - CORE CORRELATION WORKSHEET

Enter either (**E**) for English or (**M**) for Metric. This form calculates the information to the ratio used cells. Check the unwanted ratios and the form will automatically adjust the overall correlation.

2327 CB CALIBRATION BATCH FORM

Enter either (**E**) for English or (**M**) for Metric. Hand enter all information in heading block, JMF % Pass and RAP % Pass columns, all weights in Actual column, and Buttered Mixing Bowl & Spoon cell. All other cells will automatically calculate.

2327 IC ACPINCINERATOR OVEN CALIBRATION WORKSHEET

If the blank and RAP are combined prior to washing, enter the combined weights in the center of the form for wet, dry, and after washed dry masses. If performed separately, use the RAP sample section in the upper right portion of the form and use the center portion for the Blank only.

2401
2401RAM DAILY ASPHALT PLANT PRODUCTION

Enter the exact term **EAC** or **ACP** in the material type cell. The form assumes that Antistrip is incorporated before the aggregate inclined belt scale therefore including the mass of Antistrip in the total dry aggregate for proper calculations. If Antistrip is added after the aggregate inclined belt scale the mass of Antistrip will not be included in the total dry aggregate and will erroneously affect subsequent calculations. Contact the Region QAC for assistance on how to properly account for Antistrip for plants setup in this fashion. The asphalt deductions box (**k**) is only for material removed from the oil tank during production and not incorporated into the mix (material removed and used for other purposes). It is not to be used to deduct asphalt in mix waste based on the 2043 form. For plants that meter RAS and RAP as a combined product the meter readings should be entered in the "RAP/RAM" block of the meter readings section. For plants that meter RAS and RAP separately the individual RAS and RAP meter reading should be entered in their respective locations. For Asphalt and Antistrip meter readings supplied in tons enter 1.0 in the correction box cell. If a multiplier is necessary to convert meter readings to Tons enter the appropriate value in the correction box cell.

Description of Worksheet & Calculation Explanations

2550 CAT II – MDV STARTUP REVIEW

Enter MDV test data and evaluate according to Section 00745.16(b)(c)1-6. Check appropriate box (1-6) to identify step of MDV Startup Process review represents. This is a not a calculating form.

2560 CAT II – JMF TARGET ADJUSTMENT SUMMARY

Enter either (**E**) for English or (**M**) for Metric. Enter JMF adjustments made in column under "ADJUSTMENT #" box. Detail justification and obtain Engineers approval as required for each adjustment made. Enter in the "sublot" box, the sublot number for which the adjustment becomes effective.

2584 CAT II – DENSITY / CONTROL STRIP RECONCILIATION

Enter either (**E**) for English or (**M**) for Metric. Enter data supplied from CAT-I and CDT in the appropriate boxes for "Quality Control Lab Results" and "Control Strip Results". Identify if results reconcile by checking "YES" or "NO" box. Detail any corrective action taken or method of resolution as appropriate.

3468 MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

Enter either (**E**) for English or (**M**) for Metric. This form has a Material Description box in the heading area to give a visual description (dark brown, gravely clay). The companion form will compute the coarse particle corrections based on the rules established under T 99/180.The mold factor must be manually entered in the "Mold Standardization Block". This value is determined on each mold used and is calibrated annually per AASHTO T-19M/T.

3468 B MAXIMUM DENSITY OF AGGREGATE BASE MATERIALS

Enter either (**E**) for English or (**M**) for Metric. This form is intended for use in conjunction with AASHTO T 99 "Method A" as required for test method ODOT TM 223. Enter the statspec stockpile mean for the material **retained** (100 - % passing) on the #4 (4.75mm) sieve in the "Pc" box. The scales for density and moisture on the graph auto calculate however the formulas are not protected. If either scale does not fit the data from the points, they can be manually overwritten. Enter the mass for "mold and materials" and "mold" in grams. The "mass of mold" entered for point #1 will auto insert for subsequent points.

3468 FC FAMILY OF CURVES

Enter either (**E**) for English or (**M**) for Metric. This is not a calculating form.

3573ws CONCRETE YIELD AND W/C RATIO WORKSHEET

Enter either (**E**) for English or (**M**) for Metric. The pot calibration is a divisor number, not a multiplier. The number for ¼ cubic foot pots should resemble 0.2497 for English and 0.007070 for Metric.

4000 SAMPLE DATA SHEET

In the Data Sheet Number cell the "**F**" number is the card number and one plus number of data sheets submitted prior to it. Also remember to include your Phone Number.

4000 C SAMPLE DATA SHEET FOR CONCRETE CYLINDERS

Enter either (**E**) for English or (**M**) for Metric. This form does the same calculations the **3573wc** form. The NET WEIGHT is the weight of the concrete only and does not include the weight of the pot. In the slots with the capitol letters "A through H" there should be a number to represent the number of days for the break. The "F" number is the card number and one plus number of data sheets submitted prior to it. Also remember to include your Phone Number.

4000NFTM SAMPLE DATA SHEET FOR NON-FIELD TESTED MATERIALS

This form is for submittals of materials not field tested and includes items like steel, bolts, washers etc.

Description of Worksheet & Calculation Explanations

4040 QA/QC TESTING INVESTIGATION

This form is for data collection during the investigation phase outlined in the Quality Assurance Program under Appendix C. Remember to submit copies of the report according to the distribution list.

4101-4105 PAVEMENT MARKINGS RETROREFLECTIVITY TESTING

These forms are used to document the Retroreflectivity of Longitudinal and Transverse pavement markings for durable and high performance applications. The forms also include areas for bead embedment estimates. Follow the test procedure for the proper completion of these forms.

FIELD WORKSHEET FOR AGGREGATE

E English (E) or Metric (M)

PROJECT NAME (SECTION)					CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
SOURCE NAME			SOURCE NUMBER		MATERIAL SIZE
TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN	

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11							FM
		MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	CUMULATIVE % RETAINED
PAN	---								

B = INITIAL DRY MASS: D =MASS AFTER SIEVING:

SIEVE SIZE	SPECS. LIMITS	FRACTURE % METHOD 2 AASHTO T 335				ELONGATED PIECES	
		FRAC MASS (**F**)	QUESTIONABLE MASS (**Q**)	NON FRAC MASS (**N**)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS

SE T 176			
1	2	3	Sample
			Clay
			Sand
			S.E.
AVG.		SPEC	
PAN TARE			
WET MASS & PAN			
DRY MASS & PAN			
AFTER WASH DRY MASS & PAN			

C = AFTER WASH DRY MASS & PAN - PAN **B** = DRY MASS & PAN - PAN

A = WET MASS & PAN - PAN

☐ DRY ☐ WET WAQTC AASHTO T-27/T11

☐ Round ☐ Square ☐ Rectangle ☐ Size

		RESULT	SPEC
Fracture % Method 1	T 335		
Wood Waste TM225		%	
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100			
SIEVE LOSS %={(C-D) / C} X 100			
(№10 / 1/4") x 100			

REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

FIELD WORKSHEET FOR AGGREGATE

E English (E) or Metric (M)

PROJECT NAME (SECTION)				CONTRACT NUMBER
US97: Lower Bridge Rd (Terrebonne)				C15123
CONTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
Hooker Creek		Earl Mershon		420
SOURCE NAME		SOURCE NUMBER		MATERIAL SIZE
Red Rock Quarry		04-32-01		#4 -#8
TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
IA-4	4/27/2015	10am	Belt	ACP

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11 MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
						0.0	0.0	100	
						0.0	0.0	100	
1"		0.0	0.0			0.0	0.0	100	
3/4"	99-100	0.0	0.0			0.0	0.0	100	
1/2"	85-95	338.0	105.2			443.2	12.1	88	
3/8"	39-55	1115.2	396.4			1511.6	41.4	47	
1/4"		911.7	553.9			1465.6	40.1	6	
#4	0-11	68.4	68.7			137.1	3.8	3	
#8	0-7	7.4	28.0			35.4	1.0	2	
#16		0.2	3.6			3.8	0.1	2	
#30	0-6	0.1	1.8			1.9	0.1	1	
#50		0.1	1.6			1.7	0.0	1	
#100		0.1	2.2			2.3	0.1	1	
#200	0.1-2.1	0.1	4.0			4.1	0.1	1.2	
PAN	---	1.4	1.3			2.7	0.1		

B = INITIAL DRY MASS: 3653.5 D =MASS AFTER SIEVING: 3609.4

SIEVE SIZE	SPECS. LIMITS	FRACTURE % METHOD 2 AASHTO T 335 FRAC MASS (**F**)	QUESTIONABLE MASS (**Q**)	NON FRAC MASS (**N**)	INDIVIDUAL FRAC %	ELONGATED PIECES TEST MASS	ELONG MASS
1/2"	75%	443.2	0.0	0.0	100%		
3/8"	----						
1/4"	----						
#4	75%	3114.3	0.0	0.0	100%	1188.4	30.0
#8	75%	<5%					

SE T 176			
1	2	3	Sample
			Clay
			Sand
			S.E.
AVG.		SPEC	

PAN TARE	1330.5
WET MASS & PAN	5032.5
DRY MASS & PAN	4984.0
AFTER WASH DRY MASS & PAN	4940.5

C = AFTER WASH DRY MASS & PAN - PAN **B** = DRY MASS & PAN - PAN [ ] DRY [X] WET WAQTC AASHTO T-27/T11

A = WET MASS & PAN - PAN

	RESULT	SPEC
Fracture % Method 1 T 335		
Wood Waste TM225 3.2	0.09 %	0.10%
CleannessValue TM 227		
Flat & Elongated TM 229	2.5%	10.0%
Fineness Modulus T 27/T11		
MOISTURE %={(A-B) / B} X 100	1.3%	
SIEVE LOSS %={(C-D) / C} X 100	0.0%	<0.3%
(№10 / 1/4") x 100		

[X] Round [ ] Square [ ] Rectangle 12" Size

REMARKS

[ ] QUALITY CONTROL [X] VERIFICATION [X] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Josh Huber #42332	ODOT Region 1 QA		4/27/2015

734-1792 (10-2015)

FIELD WORKSHEET FOR AGGREGATE

E English (E) or Metric (M)

PROJECT NAME (SECTION)				CONTRACT NUMBER
Forms Example				12345
CONTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms		Sean Parker		123
SOURCE NAME		SOURCE NUMBER		MATERIAL SIZE
Good Rock Bar		10-123-3		3/4"-0
TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1	10/10/2012	7:30am	Final Belt	Base Aggregate

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11							FM
		MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	CUMULATIVE % RETAINED
1"	100	0.0	0.0			0.0	0.0	100	
3/4"	90-100	88.3	170.2			258.5	4.8	95	
1/2"	---	446.3	381.5			827.8	15.4	80	
3/8"	55-75	223.8	247.7			471.5	8.8	71	
1/4"	40-60	311.8	347.5			659.3	12.3	59	
#4	---	252.7	193.6			446.3	8.3	50	
#6	---	298.8	165.1			463.9	8.7	42	
#10	---	287.4	222.1			509.5	9.5	32	
						0.0	0.0	32	
						0.0	0.0	32	
						0.0	0.0	32	
						0.0	0.0	32	
						0.0	0.0	32	
						0.0	0.0	32.2	
PAN	---	864.8	857.5			1722.3	32.1		

B = INITIAL DRY MASS: 5361.1 D =MASS AFTER SIEVING: 5359.1

SIEVE SIZE	SPECS. LIMITS	FRACTURE % METHOD 2 AASHTO T 335				ELONGATED PIECES	
		FRAC MASS (**F**)	QUESTIONABLE MASS (**Q**)	NON FRAC MASS (**N**)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS
1"		0.0	0.0	0.0			
3/4"		248.1	0.0	10.4			
1/2"		765.7	0.0	62.1			
3/8"		436.9	0.0	34.6			
1/4"		659.5	0.0	0.0			

SE T 176			
1	2	3	Sample
6.9	6.7	6.4	Clay
3.4	3.4	3.3	Sand
50	51	52	S.E.
AVG.	51	SPEC	30
PAN TARE			2516.3
WET MASS & PAN			8145.4
DRY MASS & PAN			7877.4
AFTER WASH DRY MASS & PAN			7877.4

C = AFTER WASH DRY MASS & PAN - PAN **B** = DRY MASS & PAN - PAN

A = WET MASS & PAN - PAN

X DRY WET WAQTC AASHTO T-27/T11

X Round Square Rectangle 12" Size

		RESULT	SPEC
Fracture % Method 1	T 335	95%	70-100%
Wood Waste TM225		%	
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		5.0%	
SIEVE LOSS %={(C-D) / C} X 100		0.0%	0.3 Max
(№10 / 1/4") x 100		54%	40-60

REMARKS

X QUALITY CONTROL VERIFICATION INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT Region 3 QA Unit		4/27/2015

FIELD WORKSHEET FOR AGGREGATE

E English (E) or Metric (M)

PROJECT NAME (SECTION)			CONTRACT NUMBER
Forms Example			12345
CONTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms		Sean Parker	123
SOURCE NAME		SOURCE NUMBER	MATERIAL SIZE
Good Rock Bar		10-123-3	#4-0

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1	10/10/2012	7:30am	Stockpile	PCC Fine Aggregate

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11 MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
3/8	100	0.0				0.0	0.0	100	
#4	90-100	1.3				1.3	0.1	100	0
#8	70-100	133.7				133.7	12.8	87	13
#16	50-85	192.4				192.4	18.5	69	31
#30	25-60	281.9				281.9	27.1	42	58
#50	5-30	260.9				260.9	25.0	17	83
#100	0-10	104.4				104.4	10.0	7	93
#200	0.0-4.0	38.9				38.9	3.7	2.8	
PAN	---	3.5				3.5	0.3		

B = INITIAL DRY MASS: 1041.8 D =MASS AFTER SIEVING: 1017.0

SIEVE SIZE	SPECS. LIMITS	FRACTURE % METHOD 2 AASHTO T 335 FRAC MASS (**F**)	QUESTIONABLE MASS (**Q**)	NON FRAC MASS (**N**)	INDIVIDUAL FRAC %	ELONGATED PIECES TEST MASS	ELONG MASS

SE T 176			
1	2	3	Sample
4.5	4.6		Clay
3.5	3.6		Sand
78	79		S.E.
AVG.	79	SPEC	68

PAN TARE	1303.4
WET MASS & PAN	2418.0
DRY MASS & PAN	2345.2
AFTER WASH DRY MASS & PAN	2320.4

C = AFTER WASH DRY MASS & PAN - PAN **B** = DRY MASS & PAN - PAN

A = WET MASS & PAN - PAN

[ ] DRY [X] WET WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Fracture % Method 1	T 335		
Wood Waste TM225		%	
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11	2.78	2.60-3.00
MOISTURE %={(A-B) / B} X 100		7.0%	
SIEVE LOSS %={(C-D) / C} X 100		0.0%	0.3 Max
(№10 / 1/4") x 100			

REMARKS

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT Region 3 QA Unit		4/27/2015

FIELD WORKSHEET FOR AGGREGATE

M English (E) or Metric (M)

PROJECT NAME (SECTION)			CONTRACT NUMBER
Forms Example			12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms		Sean Parker	123
SOURCE NAME		SOURCE NUMBER	MATERIAL SIZE
Good Rock Bar		10-123-3	3/4"-#4

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1	10/10/2012	7:30am	Final Belt	PCC Coarse Aggregate

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11 MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
						0.0	0.0	100	
1	100	0.0	0.0			0.0	0.0	100	
3/4	90-100	10.5	27.6			38.1	0.7	99	
1/2	---	747.1	927.2			1674.3	30.1	69	
3/8	20-55	751.3	792.9			1544.2	27.8	41	
1/4	---	990.4	1040.7			2031.1	36.6	5	
#4	0-10	91.7	58.0			149.7	2.7	2	
#6	---	22.1	18.9			41.0	0.7	1	
#8	0-5	5.4	6.9			12.3	0.2	1	
#30	---	3.3	8.0			11.3	0.2	1	
#200	0.0-1.0	2.3	8.3			10.6	0.2	0.8	
PAN	---	1.7	3.5			5.2	0.1		

B = INITIAL DRY MASS: 5555.1 D =MASS AFTER SIEVING: 5517.8

SIEVE SIZE	SPECS. LIMITS	FRACTURE % METHOD 2 AASHTO T 335 FRAC MASS (**F**)	QUESTIONABLE MASS (**Q**)	NON FRAC MASS (**N**)	INDIVIDUAL FRAC %	ELONGATED PIECES TEST MASS	ELONG MASS

SE T 176			
1	2	3	Sample
			Clay
			Sand
			S.E.
AVG.		SPEC	

PAN TARE	1329.3
WET MASS & PAN	7060.6
DRY MASS & PAN	6884.4
AFTER WASH DRY MASS & PAN	6848.2

C = AFTER WASH DRY MASS & PAN - PAN **B** = DRY MASS & PAN - PAN

A = WET MASS & PAN - PAN

[ ] DRY [X] WET WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Fracture % Method 1	T 335		
Wood Waste TM225	0.8	0.01 %	0.05%
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		3.2%	
SIEVE LOSS %={(C-D) / C} X 100		0.0%	0.3 Max
(2.00 / 6.3) x 100			

REMARKS: Woodwaste = 0.8 grams

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT Region 3 QA Unit		4/27/2015

NUCLEAR COMPACTION TEST REPORT FOR ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION)						CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER			MATERIAL TYPE
MEASURED PLACEMENT TEMP °F	PANEL WIDTH		CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)		CODES FOR ROLLER TYPES
BREAKDOWN		P - PNEUMATIC
INTERMEDIATE		TS - TANDEM STEEL
FINISH		3WS - THREE WHEEL STEEL
		SDV-SINGLE DRUM VIBRATORY
		DDV-DOUBLE DRUM VIBRATORY

TEST NUMBER						
DATE OF TEST						
TEST LOCATION (STATION)						
DISTANCE LT. OR RT. OF CENTERLINE FEET						
LIFT / DIST BELOW GRADE / LIFT THICKNESS						
DENSITY lb/ft³	1					
Max difference 2.5 lb/ft³	2					
AVERAGE DENSITY (LINE 1 + LINE 2) / 2	3					
CORE TO NUCLEAR CORRELATION LINE 3 +	4					
x MAMD TARGET DENSITY lb/ft³	5					
% COMPACTION FOR INDIVIDUAL TESTS (LINE 3 OR 4 / LINE 5) X 100	6					
SUBLOT OR SECTION LINE 6 AVERAGE % REQUIRED						

REPRESENTS MATERIAL INCORPORATED

FROM STATION _____ TO STATION _____

FROM OFFSET _____ TO OFFSET _____

CIRCLE DIRECTION NB SB EB WB CIRCLE LANE S A B C D S

REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE DATE

734-1793_A (10-2015)

NUCLEAR COMPACTION TEST REPORT FOR ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION): Forms Example					CONTRACT NUMBER: 12345
C0NTRACTOR OR SUPPLIER: ODOT Forms			PROJECT MANAGER: Sean Parker		BID ITEM NUMBER: 123
ODOT MIX DESIGN NO.: 06-MD0001	JMF PLACEMENT TEMP °F: 288-297	LIFT THICKNESS: 2 inch	TYPE GAUGE-SERIAL NUMBER: Humboldt 5001c #1234		MATERIAL TYPE: L3 1/2" D
MEASURED PLACEMENT TEMP °F: 290	PANEL WIDTH: 13 ft		CONTROL STRIP NO.: 1	LOT-SUBLOT: 1-1	LIFT: 1st / DATE: 10/10/2013

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)		CODES FOR ROLLER TYPES
BREAKDOWN	Cat PF - 300B - 25ton - P	P - PNEUMATIC
INTERMEDIATE	IR DD130 - 14ton - DDV	TS - TANDEM STEEL
FINISH	Dynapac CC412 - 10ton - DDV	3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY DDV-DOUBLE DRUM VIBRATORY

TEST NUMBER		1-1-1	1-1-2	1-1-3	1-1-4	1-1-5
DATE OF TEST		10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
TEST LOCATION (STATION)		24+98	25+32	64+99	67+21	67+50
DISTANCE LT. OR RT. OF CENTERLINE FEET		6.5' Rt	7.6' Rt	10.0' Rt	2.1' Rt	4.1' Rt
LIFT / DIST BELOW GRADE / LIFT THICKNESS		1st - 2" - 2"	1st - 2" - 2"	1st - 2" - 2"	1st - 2" - 2"	1st - 2" - 2"
DENSITY lb/ft³	1	148.7	152.6	154.2	151.2	154.3
Max difference 2.5 lb/ft³	2	150	154.6	154.8	151.4	152.3
AVERAGE DENSITY (LINE 1 + LINE 2) / 2	3	149.4	153.6	154.5	151.3	153.3
CORE TO NUCLEAR CORRELATION LINE 3 +	4	149.4	153.6	154.5	151.3	153.3
x MAMD TARGET DENSITY lb/ft³	5	162.6	162.6	162.6	162.6	162.6
% COMPACTION FOR INDIVIDUAL TESTS (LINE 3 OR 4 / LINE 5) X 100	6	91.9%	94.5%	95.0%	93.1%	94.3%
SUBLOT OR SECTION LINE 6 AVERAGE % REQUIRED		93.8%				

REPRESENTS MATERIAL INCORPORATED

FROM STATION	15+00	TO STATION	72+00
FROM OFFSET	centerline	TO OFFSET	13' Rt

CIRCLE DIRECTION NB SB EB WB — CIRCLE LANE S A B C D S

REMARKS

X QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE DATE
Scott Aker #43048	ODOT	10/10/2013

NUCLEAR COMPACTION TEST REPORT FOR ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER	MATERIAL TYPE

MEASURED PLACEMENT TEMP °F	PANEL WIDTH	CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE

RANDOM TEST LOCATIONS AND OFFSETS

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
	%	in	ft	ft³/ton	ft²	ft/ton	tons	ft

AVG VOLUME 2000 (1000) / (MAMD x (% REQ'D / 100)) = ft³/ton (m³/Mg)

CROSS SECTION PANEL DEPTH / 12 (1000) X PANEL WIDTH = ft² (m²)

YIELD AVG VOLUME / CROSS SEC. =ft / ton (m / Mg)

SUBLOT DIST. YIELD X SUBLOT SIZE = ft (m)

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) **SUBLOT SEGMENT** DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	**TEST LOCATION** (A X B) ± C	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1

SUBLOT: DISTANCE		**DISTANCE**		**TONS**		**AUTO-CALC. RANDOMS**		**ASCENDING DESCENDING**	

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

P - PNEUMATIC TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY DDV-DOUBLE DRUM VIBRATORY

BREAKDOWN	**INTERMEDIATE**	**FINISH**

TEST NUMBER						
DATE OF TEST						
TEST LOCATION (STATION)						
OFFSET (FEET OR METERS)						
LIFT / DIST BELOW GRADE / LIFT THICKNESS						
DENSITY lb/ft³	1					
Max difference 2.5 lb/ft³	2					
AVG DENSITY (LINE 1 + LINE 2) / 2	3					
CORE CORRELATION LINE 3 + lb/ft	4					
X **MAMD** **TARGET DENSITY**	5					
% COMPACTION (LINE 3 OR 4 / LINE 5) X 100	6					
LINE 6 AVERAGE % **REQUIRED**						

REPRESENTS MATERIAL INCORPORATED

FROM STATION **OFFSET** **TO STATION** **OFFSET**

CIRCLE DIRECTION NB SB EB WB CIRCLE LANE S A B C D S

REMARKS

QUALITY CONTROL VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

NUCLEAR COMPACTION TEST REPORT FOR ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION)	CONTRACT NUMBER
Forms Example	12345

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123

ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER	MATERIAL TYPE
11-MD0001	288-297	2"	Troxler 3430 #11111	L3 1/2" Dense

MEASURED PLACEMENT TEMP °F	PANEL WIDTH	CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE
290	16'	1	1-1	1st	10/10/2013

RANDOM TEST LOCATIONS AND OFFSETS

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
151.9	**92.0** %	**2** in	**16** ft	**14.32** ft³/ton	**2.67** ft²	**5.36** ft/ton	**1000** tons	**5360** ft

AVG VOLUME = 2000 (1000) / (MAMD x (% REQ'D / 100)) = ft³/ton (m³/Mg)

CROSS SECTION = PANEL DEPTH / 12 (1000) X PANEL WIDTH = ft² (m²)

YIELD = AVG VOLUME / CROSS SEC. =ft / ton (m / Mg)

SUBLOT DIST. = YIELD X SUBLOT SIZE = ft (m)

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) **SUBLOT SEGMENT** DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	**TEST LOCATION** (A X B) ± C	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1
1-1	0.254	1072	12345	**12617**	0.24	16.0	**4.4**
1-2	0.564	1072	13417	**14022**	0.15	16.0	**3.1**
1-3	0.854	1072	14489	**15404**	0.50	16.0	**8.0**
1-4	0.125	1072	15561	**15695**	0.80	16.0	**12.2**
1-5	0.025	1072	16633	**16660**	0.92	16.0	**13.9**
SUBLOT: DISTANCE		5360	**DISTANCE** x **TONS**		**AUTO-CALC. RANDOMS** x	**ASCENDING DESCENDING**	x

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

P - PNEUMATIC TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY DDV-DOUBLE DRUM VIBRATORY

BREAKDOWN	INTERMEDIATE	FINISH
CAT PF - 300B - 25ton - P	IR DD130 - 14ton - DDV	Dynapac CC412 - 10ton - DDV

TEST NUMBER			1-1	1-2	1-3	1-4	1-5
DATE OF TEST			10/10/2013	10/10/2013	10/10/2013	10/10/2013	10/10/2013
TEST LOCATION	(STATION)		126+17	140+22	154+04	156+95	166+60
OFFSET	(FEET OR METERS)		3.6' Rt	4.9' Rt	CL	4.2' Lt	5.9' Lt
LIFT / DIST BELOW GRADE / LIFT THICKNESS			1st 2" 2"	1st 2" 2"	1st 2" 2"	1st 2" 2"	1st 2" 2"
DENSITY lb/ft³		1	148.7	152.6	154.2	151.2	154.3
Max difference 2.5 lb/ft³		2	150.0	154.6	154.8	151.4	152.3
AVG DENSITY	(LINE 1 + LINE 2) / 2	3	149.4	153.6	154.5	151.3	153.3
CORE CORRELATION	LINE 3 +	4	149.4	153.6	154.5	151.3	153.3
X **MAMD**	**TARGET DENSITY**	5	162.6	162.6	162.6	162.6	162.6
% COMPACTION	(LINE 3 OR 4 / LINE 5) X 100	6	91.9%	94.5%	95.0%	93.1%	94.3%
LINE 6 AVERAGE	% REQUIRED **92.0%**		**93.8%**				

REPRESENTS MATERIAL INCORPORATED

FROM STATION **123+45** **OFFSET** **8' Lt** **TO STATION** **177+05** **OFFSET** **8' Rt**

CIRCLE DIRECTION NB SB EB WB CIRCLE LANE S A B C D S

REMARKS

QUALITY CONTROL VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2013

NUCLEAR COMPACTION TEST FOR ACP

E English

PROJECT NAME (SECTION)	ODOT MIX DESIGN NO.	CONTRACT NUMBER

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	CONTRACTOR MIX DESIGN NO.	BID ITEM NUMBER

MEASURED PLACEMENT TEMP °F	JMF PLACEMENT TEMP °F	PANEL WIDTH	TYPE GAUGE-SERIAL NUMBER	MIX NOMINAL SIZE

BREAKDOWN ROLLER	INTERMEDIATE ROLLER	FINISH ROLLER	CONTROL STRIP NO.	LIFT THICKNESS	LIFT	DATE

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

P - PNEUMATIC TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV - SINGLE DRUM VIBRATORY DDV - DOUBLE DRUM VIBRATORY

TEST NUMBER											
DATE OF TEST											
LOCATION (STATION)											
OFFSET (FEET)											
LIFT / DISTANCE BELOW GRADE / LIFT THICKNESS											
DIRECTION OF TRAVEL NB SB EB WB											
TRAVEL LANE LS A B C D RS											
DENSITY lb/ft^3	1										
MAX DIFFERENCE 2.5 lb/ft^3	2										
AVG DENSITY (LINE 1 + 2) / 2	3										
CORE CORRELATION LINE 3 +	4										
☐ **MAMD** ☐ lb/ft^3 **TARGET DENSITY**	5										
% COMPACTION (LINE 3 OR 4 / LINE 5) X 100	6										
LINE 6 AVG **% REQUIRED**											

REPRESENTS MATERIAL INCORPORATED

FROM STATION		**TO STATION**	
FROM OFFSET		**TO OFFSET**	

REMARKS

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE	☐ QUALITY CONTROL VERIFICATION

NUCLEAR COMPACTION TEST FOR ACP

E English

PROJECT NAME (SECTION)	ODOT MIX DESIGN NO.	CONTRACT NUMBER
OR58: Pheasant Lane to Dexter	14-MD0957	19245

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	CONTRACTOR MIX DESIGN NO.	BID ITEM NUMBER
Stoney S & G	Art Truff	LBS154B	570

MEASURED PLACEMENT TEMP °F	JMF PLACEMENT TEMP °F	PANEL WIDTH	TYPE GAUGE-SERIAL NUMBER	MIX NOMINAL SIZE
305	300 - 315	26 Ft	Troxler 3430 / 3806	1/2"

BREAKDOWN ROLLER	INTERMEDIATE ROLLER	FINISH ROLLER	CONTROL STRIP NO.	LIFT THICKNESS	LIFT	DATE
CAT - 300 - TS	Hamm HD 20i +	Hamm HD 110 VO +	15	3"	Base	7/31/2014

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

P - PNEUMATIC TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV - SINGLE DRUM VIBRATORY DDV - DOUBLE DRUM VIBRATORY

TEST NUMBER		6-25-1	6-25-2	6-25-3	6-25-4	6-25-5	6-25-6	6-25-7	6-25-8	6-25-9	6-25-10
DATE OF TEST		7/31/14	7/31/14	7/31/14	7/31/14	7/31/14	7/31/14	7/31/14	7/31/14	7/31/14	7/31/14
LOCATION (STATION)		501+33	505+87	508+47	512+75	514+90	518+43	522+49	523+50	525+91	529+00
OFFSET (FEET)		14.4 ft Rt	17.2 ft Rt	10.9 ft Rt	8.6 ft Rt	16.1 ft Rt	17.7 ft Rt	10.0 ft Rt	2.0 ft Rt	4.4 ft Rt	12.0 ft Rt
LIFT / DISTANCE BELOW GRADE / LIFT THICKNESS		Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"	Base / 3"
DIRECTION OF TRAVEL NB SB EB WB		EB	EB	EB	EB	EB	EB	EB	EB	EB	EB
TRAVEL LANE LS A B C D RS		RS & B	RS & B	RS & B	RS & B	RS & B	RS & A	RS & A	RS & A	RS & A	RS & A
DENSITY lb/ft^3	1	144.2	144.7	137.3	140.4	145.1	144.6	142.8	140.7	142.8	146.5
MAX DIFFERENCE 2.5 lb/ft^3	2	143.6	145.1	137.1	140.1	145.5	145.5	143.2	140.1	143.6	147
AVG DENSITY (LINE 1 + 2) / 2	3	143.9	144.9	137.2	140.3	145.3	145.1	143	140.4	143.2	146.8
CORE CORRELATION LINE 3 + 0.4	4	144.3	145.3	137.6	140.7	145.7	145.5	143.4	140.8	143.6	147.2
☑ **MAMD** ☐ lb/ft^3 **TARGET DENSITY**	5	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9	153.9
% COMPACTION (LINE 3 OR 4 / LINE 5) X 100	6	93.8%	94.4%	89.4%	91.4%	94.7%	94.5%	93.2%	91.5%	93.3%	95.6%
LINE 6 AVG **% REQUIRED** 92.0		93.2%									

REPRESENTS MATERIAL INCORPORATED

FROM STATION 500+00 **OFFSET** Varied **TO STATION** 530+50 **OFFSET** Varied

REMARKS

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER		COMPANY NAME	SIGNATURE	DATE	
Scott Wales	49325	ODOT R2 QA			☑ QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

NUCLEAR COMPACTION TEST REPORT

E — English (**E**) or Metric(**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
TEST LOCATION (STATION)		OFFSET (DISTANCE FROM CENTERLINE)		SOURCE POSITION
TEST NUMBER	DISTANCE BELOW GRADE	LIFT	LIFT THICKNESS	DATE

CODES FOR ROLLER TYPES
SDV-SINGLE DRUM VIBRATORY — SF- SHEEP FOOT
DDV-DOUBLE DRUM VIBRATORY — GR - GRID ROLLER

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

REPRESENTS MATERIAL / AREA INCORPORATED

FROM: STATION		**OFFSET**		**DIST. BELOW GRADE**	
TO: STATION		**OFFSET**		**DIST. BELOW GRADE**	

CHECK BOX ☐ **DEFLECTION OBSERVED UNDER LOADED EQUIP.** ☐ **NO DEFLECTION OBSERVED UNDER LOADED EQUIP.**

☐ **MOISTURE IS NOT WITHIN SPECIFICATION** ☐ **MOISTURE IS WITHIN SPECIFICATION**

AASHTO T 310	Wet Density lb/ft³	Moisture lb/ft³	**Dry Density**	**Percent Moisture**
Shot 1			WD - M	(M / DD) X 100
Shot 2				
Average	**WD**	**M**	**DD**	**%M** %

(shots within 2 lb/ft³)

AASHTO T 99								**(Pc)**
	A	№4	COARSE		FINE		**% Coarse**	
	D	¾	COARSE		FINE		**% Coarse**	

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL **(M)**	WET DENSITY lb/ft³ **(A)**	SPEEDY MOISTURE % WET **(B)**	DRY **(C)**	AASHTO T 255 / T 265 MOISTURE % WET **(a)**	DRY **(b)**	% M **(C)**	DRY DENSITY lb/ft³ **(D)**
UNSCREENED COMBINED IN-PLACE MOISTURE →									

WD (A) = (M) X (MF)MOLD FACTOR

MOLD FACTOR **(MF)**

4 inch MOLD (WD) = (M) x 0.06614

6 inch MOLD (WD) = (M) x 0.02939

SPEEDY MOISTURE %

$$(C) = \frac{(B)}{100 - (B)} \times 100$$

T 255 / T 265 MOISTURE %

$$(C) = \frac{(a) - (b)}{(b)} \times 100$$

DRY DENSITY

$$(D) = \frac{(A)}{(C)+100} \times 100$$

Pc (from A or D above)	**Pf** (Pf = 100 - Pc)	**CURVE NO.**	DRY DENSITY D_f	OPTIMUM MOISTURE	**MCf**	**k** (Gsb x 62.4)	**MCc**

COMBINED IN-PLACE MOISTURE

(C) = unaltered one-point moisture

Within 1% of T 310 % Moisture?
(If not Correct T 310 DD)

$$W = ((C)P_f + MC_cP_c) / 100$$

[ ] [ ] + [ ] [ ] /100

W= [ ]

COMBINED OPTIMUM MOISTURE (MCT)

(Based on Curve Info.)

$$MC_T = (MC_fP_f + MC_cP_c) / 100$$

[ ] [ ] + [ ] [ ] /100

MC$_T$= [ ]

RELATIVE MAXIMUM DRY DENSITY lb/ft³

$$Dd = \frac{100}{\frac{P_f}{D_f} + \frac{P_c}{k}}$$

$$Dd = \frac{100}{\frac{[\ ]}{[\ ]} + \frac{[\ ]}{[\ ]}}$$

CORRECTED DRY DENSITY

DD = WD / (1+(**W**/100))

DD [ ] = **WD** [ ] / **1+(W/100)** [ ]

PERCENT COMPACTION

Original or Corrected (DD / Dd) x 100

Percent Required [ ] PERCENT OBTAINED [ ]

REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION **TYPE GAUGE-SERIAL NUMBER:**

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

NUCLEAR COMPACTION TEST REPORT

E — English (**E**) or Metric(**M**)

PROJECT NAME (SECTION)			CONTRACT NUMBER
Forms Example			12345
CONTRACTOR OR SUPPLIER	PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms	Sean Parker		123
TEST LOCATION (STATION)	OFFSET (DISTANCE FROM CENTERLINE)		SOURCE POSITION
65+15	15' Rt.		8"
TEST NUMBER / DISTANCE BELOW GRADE	LIFT	LIFT THICKNESS	DATE
1-1 / Subgrade	N/A	N/A	10/9/16

CODES FOR ROLLER TYPES: SDV-SINGLE DRUM VIBRATORY, SF- SHEEP FOOT, DDV-DOUBLE DRUM VIBRATORY, GR - GRID ROLLER

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC): CAT CF 560 SDV

REPRESENTS MATERIAL / AREA INCORPORATED

FROM: STATION	**62+00**	**OFFSET**	**CL**	**DIST. BELOW GRADE**	**Subgrade**
TO: STATION	**75+00**	**OFFSET**	**20' Rt.**	**DIST. BELOW GRADE**	**Subgrade**

CHECK BOX
- [ ] **DEFLECTION OBSERVED UNDER LOADED EQUIP.**
- [x] **NO DEFLECTION OBSERVED UNDER LOADED EQUIP.**
- [ ] **MOISTURE IS NOT WITHIN SPECIFICATION**
- [x] **MOISTURE IS WITHIN SPECIFICATION**

AASHTO T 310	Wet Density lb/ft³	Moisture lb/ft³	**Dry Density**	**Percent Moisture**
Shot 1	150.2	10.1	WD - M	(M / DD) X 100
Shot 2	150.9	10.3		
Average	**WD** 150.6	**M** 10.2	**DD** **140.4**	**%M** **7.3 %**

(shots within 2 lb/ft³)

AASHTO T 99								**(Pc)**
	A	№4	COARSE	4582	FINE	5939	**% Coarse**	**44**
	D	¾	COARSE	845	FINE	9691	**% Coarse**	**8**

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL **(M)**	WET DENSITY lb/ft³ **(A)**	SPEEDY MOISTURE % WET **(B)**	SPEEDY MOISTURE % DRY **(C)**	AASHTO T 255 / T 265 MOISTURE % WET **(a)**	AASHTO T 255 / T 265 MOISTURE % DRY **(b)**	AASHTO T 255 / T 265 MOISTURE % % M **(C)**	DRY DENSITY lb/ft³ **(D)**
UNSCREENED COMBINED IN-PLACE MOISTURE →						2005.2	1850.1	8.4	
10317	5655.5	4661.5	137			1097.7	1065.3	3.0	133
10491.8	5655.5	4836.3	142.1			1044.7	991.1	5.4	134.8

WD (A) = (M) X (MF)MOLD FACTOR

MOLD FACTOR **(MF)** **0.02939**

4 inch MOLD (WD) = (M) x 0.06614

6 inch MOLD (WD) = (M) x 0.02939

SPEEDY MOISTURE %

$$(C) = \frac{(B)}{100 - (B)} \times 100$$

T 255 / T 265 MOISTURE %

$$(C) = \frac{(a) - (b)}{(b)} \times 100$$

DRY DENSITY

$$(D) = \frac{(A)}{(C)+100} \times 100$$

Pc (from A or D above)	**Pf** (Pf = 100 - Pc)	**CURVE NO.**	DRY DENSITY D_f	OPTIMUM MOISTURE	**MCf**	**k** (Gsb x 62.4)	**MCc**
8	**92**	Exit 99-03	139.0	8.5		165	2.2

COMBINED IN-PLACE MOISTURE

(C) = unaltered one-point moisture

$$W = ((C)P_f + MC_cP_c) / 100$$

[ ] [ ] + [ ] [ ] /100

Within 1% of T 310 % Moisture?
(If not Correct T 310 DD)

W= **8.4**

COMBINED OPTIMUM MOISTURE (MCT)

(Based on Curve Info.)

$$MC_T = (MC_fP_f + MC_cP_c) / 100$$

[ ] [ ] + [ ] [ ] /100

MC$_T$= **8.5**

RELATIVE MAXIMUM DRY DENSITY lb/ft³

$$Dd = \frac{100}{\frac{P_f}{D_f} + \frac{P_c}{k}}$$

Dd **139.0** = $\frac{100}{\frac{[\ ]}{[\ ]} + \frac{[\ ]}{[\ ]}}$

CORRECTED DRY DENSITY

DD = WD / (1+(**W**/100))

DD		**WD**		**1+(W/100)**
138.9	=	150.6	/	1.084

PERCENT COMPACTION

Original or Corrected (DD / Dd) x 100

Percent Required **95** PERCENT OBTAINED **100**

REMARKS

- [ ] QUALITY CONTROL
- [x] VERIFICATION

TYPE GAUGE-SERIAL NUMBER: **Troxler 3430 #11111**

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker	#43048		10/9/2016

NUCLEAR COMPACTION TEST REPORT

E — English (E) or Metric(M)

PROJECT NAME (SECTION): Forms Example			CONTRACT NUMBER: 12345
CONTRACTOR OR SUPPLIER: ODOT Forms	PROJECT MANAGER: Sean Parker		BID ITEM NUMBER: 123
TEST LOCATION (STATION): 117+17	OFFSET (DISTANCE FROM CENTERLINE): 16' Lt.		SOURCE POSITION: 8"
TEST NUMBER: 1-1 / DISTANCE BELOW GRADE: 7 ft.	LIFT: 3 rd	LIFT THICKNESS: 12"	DATE: 10/9/16
CODES FOR ROLLER TYPES: SDV-SINGLE DRUM VIBRATORY, SF- SHEEP FOOT, DDV-DOUBLE DRUM VIBRATORY, GR - GRID ROLLER	ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC): CAT CF 460 SF		

REPRESENTS MATERIAL / AREA INCORPORATED

FROM: STATION	115+25	OFFSET	15' Lt.	DIST. BELOW GRADE	8'
TO: STATION	200+25	OFFSET	20' Rt.	DIST. BELOW GRADE	7'

CHECK BOX
- [ ] DEFLECTION OBSERVED UNDER LOADED EQUIP.
- [x] NO DEFLECTION OBSERVED UNDER LOADED EQUIP.
- [ ] MOISTURE IS NOT WITHIN SPECIFICATION
- [x] MOISTURE IS WITHIN SPECIFICATION

AASHTO T 310

	Wet Density lb/ft³	Moisture lb/ft³	Dry Density	Percent Moisture
Shot 1	131	9.4	WD - M	(M / DD) X 100
Shot 2	131.1	9.4		
Average	WD 131.1	M 9.4	DD 121.7	%M 7.7 %

(shots within 2 lb/ft³)

								(Pc)
AASHTO T 99	A	№4	COARSE	8946.8	FINE	12948.7	% Coarse	41
	D	¾	COARSE	5425.2	FINE	16470.3	% Coarse	25

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL (M)	WET DENSITY lb/ft³ (A)	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	AASHTO T 255 / T 265 MOISTURE % WET (a)	AASHTO T 255 / T 265 MOISTURE % DRY (b)	AASHTO T 255 / T 265 MOISTURE % % M (C)	DRY DENSITY lb/ft³ (D)
UNSCREENED COMBINED IN-PLACE MOISTURE →									
9815.3	5645.5	4169.8	122.6			4158.9	3718.5	11.8	109.7

WD (A) = (M) X (MF)MOLD FACTOR

MOLD FACTOR (MF): 0.02939

4 inch MOLD (WD) = (M) x 0.06614

6 inch MOLD (WD) = (M) x 0.02939

SPEEDY MOISTURE %: (C)= (B) / (100 - (B)) X100

T 255 / T 265 MOISTURE %: (C)= (a) - (b) / (b) X100

DRY DENSITY: (D)= (A) / ((C)+100) X100

Pc (from A or D above)	Pf (Pf = 100 - Pc)	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE	MCf	k (Gsb x 62.4)	MCc
25	75	Exit 19-1	112.8	15.4		166.6	1.5

COMBINED IN-PLACE MOISTURE

(C) = unaltered one-point moisture

Within 1% of T 310 % Moisture? (If not Correct T 310 DD)

$W = ((C)P_f + MC_cP_c) / 100$

(11.8 × 75 + 1.5 × 25) /100

W= 9.2

COMBINED OPTIMUM MOISTURE (MCT)

(Based on Curve Info.)

$MC_T = (MC_fP_f + MC_cP_c) / 100$

(15.4 × 75 + 1.5 × 25) /100

MC_T= 11.9

RELATIVE MAXIMUM DRY DENSITY lb/ft³

$Dd = \frac{100}{\frac{P_f}{D_f} + \frac{P_c}{k}}$

Dd 122.7 = 100 / (75/112.8 + 25/166.6)

CORRECTED DRY DENSITY

DD = WD / (1+(W/100))

DD		WD		1+(W/100)
120.1	=	131.1	/	1.092

PERCENT COMPACTION

Original or Corrected (DD / Dd) x 100

Percent Required: 95 — PERCENT OBTAINED: 98

REMARKS

- [ ] QUALITY CONTROL
- [x] VERIFICATION

TYPE GAUGE-SERIAL NUMBER: Troxler 3430 #11111

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2016

NUCLEAR COMPACTION TEST REPORT FOR BASE AGGREGATE

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER	BID ITEM NUMBER
CONTROL STRIP NO.	PANEL WIDTH	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER	MIX NOMINAL SIZE

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

TEST NUMBER					
DATE OF TEST					
TEST LOCATION (STATION)					
DISTANCE LT. OR RT. OF CENTERLINE (FEET)					
SOURCE POSITION					
LIFT / DIST BELOW GRADE					

WET DENSITY lb/ft³	**1D**					
MAX DIFFERENCE 2 lb/ft³	**2D**					
MOISTURE lb/ft³	**1M**					
	2M					

AVE. WET DENSITY lb/ft³	**AD**					
AVE. MOISTURE lb/ft³	**AM**					
DRY DENSITY (AD-AM) lb/ft³	**DD**					
% MOISTURE (AM / DD) x 100	**%M**					

Curve # - Source #						
RELATIVE MAXIMUM DRY DENSITY	**RD**					
Combined Optimum Moisture						

% COMPACTION (DD / RD) X 100		% REQ				

CHECK APPROPRIATE ☐ MATERIAL DEFLECTED UNDER LOADED EQUIPMENT ☐ MATERIAL DID NOT DEFLECT UNDER LOADED EQUIPMENT

REPRESENTS MATERIAL INCORPORATED

FROM STATION _____ TO STATION _____

FROM OFFSET _____ TO OFFSET _____

REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

NUCLEAR COMPACTION TEST REPORT FOR BASE AGGREGATE

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
Forms Example				12345
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms			Sean Parker	123
CONTROL STRIP NO.	PANEL WIDTH	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER	MIX NOMINAL SIZE
	13 ft	6"	Troxler 3430 #11111	3/4"-0

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)

Ingersoll Rand - SDV - 10 ton

TEST NUMBER		1	2	3	4	5
DATE OF TEST		10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012
TEST LOCATION (STATION)		135+15	142+50	148+30	155+45	161+00
DISTANCE LT. OR RT. OF CENTERLINE (FEET)		5' Rt	2' Rt	10' Rt	9' Rt	3' Rt
SOURCE POSITION		6"	6"	6"	6"	6"
LIFT	DIST BELOW GRADE	1st 6"	1st 6"	1st 6"	1st 6"	1st 6"
WET DENSITY lb/ft³	**1D**	144.4	145.6	147	146.5	145.7
MAX DIFFERENCE 2 lb/ft³	**2D**	143.8	145.3	147.2	146.5	145.9
MOISTURE lb/ft³	**1M**	7.2	7.9	8.1	7.4	7.6
	2M	7.1	7.7	8.3	7.3	7.7
AVE. WET DENSITY lb/ft³	**AD**	144.1	145.5	147.1	146.5	145.8
AVE. MOISTURE lb/ft³	**AM**	7.2	7.8	8.2	7.4	7.7
DRY DENSITY (AD-AM) lb/ft³	**DD**	136.9	137.7	138.9	139.1	138.1
% MOISTURE (AM / DD) x 100	**%M**	5.3%	5.7%	5.9%	5.3%	5.6%
Curve # - Source #		#1 10-001-3	#1 10-001-3	#1 10-001-3	#1 10-001-3	#1 10-001-3
RELATIVE MAXIMUM DRY DENSITY	**RD**	135.4	134.5	135.4	135.4	135.4
Combined Optimum Moisture		7.3%	7.3%	7.3%	7.3%	7.3%
% COMPACTION (DD / RD) X 100 **95**	% REQ	**101%**	**102%**	**103%**	**103%**	**102%**

CHECK APPROPRIATE [ ] MATERIAL DEFLECTED UNDER LOADED EQUIPMENT [X] MATERIAL DID NOT DEFLECT UNDER LOADED EQUIPMENT

REPRESENTS MATERIAL INCORPORATED

FROM STATION	**120+00**	TO STATION	**162+00**
FROM OFFSET	**Centerline**	TO OFFSET	**13' Rt**

REMARKS

[X] QUALITY CONTROL [ ] VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012

UNIT WEIGHT AND SPECIFIC GRAVITY W/S

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN

BULK DENSITY ("UNIT WEIGHT") AND VOIDS IN AGGREGATE AASHTO T 19

	SOUCE NAME				
	SOURCE NUMBER				
	MATERIAL SIZE				
A	MEASURE + AGGREGATE	lb			
B	EMPTY MEASURE	lb			
C	MASS OF AGGREGATE A-B	lb			
D	VOLUME OF MEASURE	ft^3			
	UNIT WEIGHT C / D	lb/ft^3			

SPECIFIC GRAVITY AND ABSORPTION OF COARSE AGGREGATE AASHTO T 85

	SOUCE NAME				
	SOURCE NUMBER				
	MATERIAL SIZE				
A	MASS OF DRY SAMPLE	g			
B	MASS OF SSD SAMPLE	g			
C	WEIGHT IN WATER	g			
Gsb	A / (B - C)				
Gsb ssd	B / (B - C)				
Gsa	A / (A - C)				
Absorption	[(B - A) / A] X 100				

SPECIFIC GRAVITY AND ABSORPTION OF FINE AGGREGATE AASHTO T 84

PYCNOMETER METHOD				**LeCHATELIER FLASK METHOD**				
	SOURCE NAME				**SOURCE NAME**			
	SOURCE NUMBER				**SOURCE NUMBER**			
	MATERIAL SIZE				**MATERIAL SIZE**			
S	MASS OF SSD SAMPLE	g			S_1	SSD MATERIAL IN FLASK (55±5)	g	
A	MASS OF DRY SAMPLE	g			**S**	SEPARATE SSD SAMPLE (500±10)	g	
B	MASS OF PYC + WATER	g			R_1	INITIAL FLASK READING	ml	
C	PYCN + WATER + SAMPLE	g			R_2	FINAL FLASK READING	ml	
Gsb	A / (B + S - C)				**A**	MASS OF DRY SAMPLE	g	
Gsb ssd	S / (B + S - C)				**Gsb**	$[S_1(A / S] / [0.9975 (R_2 - R_1)]$		
Gsa	A / (B + A - C)				**Gsb ssd**	S1 / [0.9975 (R2 - R1)]		
Absorption	[(S - A) / A] X 100				**Absorption**	[(S - A) / A] X 100		

☐ QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

UNIT WEIGHT AND SPECIFIC GRAVITY W/S

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
C0NTRACTOR OR SUPPLIER				PROJECT MANAGER	BID ITEM NUMBER
Super Concrete Ready Mix				Sean Parker	123
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
07-1	11/7/2007	10:00am	Stockpile	Round/Crushed Blend	PCC Coarse Aggregate

BULK DENSITY ("UNIT WEIGHT") AND VOIDS IN AGGREGATE AASHTO T 19

	SOUCE NAME		Best Rock	Best Rock	Best Rock
	SOURCE NUMBER		12-123-3	12-123-3	12-123-3
	MATERIAL SIZE		85% 3/4 Rnd - 15% 1/2 Cr	3/4" - #4 round	1/2" - #4 Crushed
A	MEASURE + AGGREGATE	lb	70.76	70.90	70.12
B	EMPTY MEASURE	lb	19.12	19.12	19.12
C	MASS OF AGGREGATE A-B	lb	51.64	51.78	51.00
D	VOLUME OF MEASURE	ft^3	0.5002	0.5002	0.5002
	UNIT WEIGHT C / D	lb/ft^3	103.2	103.5	102

SPECIFIC GRAVITY AND ABSORPTION OF COARSE AGGREGATE AASHTO T 85

	SOUCE NAME		Best Rock	Best Rock	Best Rock
	SOURCE NUMBER		12-123-3	12-123-3	12-123-3
	MATERIAL SIZE		85% 3/4 Rnd - 15% 1/2" Cr	3/4" - #4 Round	1/2" - #4 Crushed
A	MASS OF DRY SAMPLE	g	3059.6	3101.5	2235.1
B	MASS OF SSD SAMPLE	g	3108.7	3145.6	2275.9
C	WEIGHT IN WATER	g	1954.1	1985.4	1425.1
Gsb	A / (B - C)		2.650	2.673	2.627
Gsb ssd	B / (B - C)		2.692	2.711	2.675
Gsa	A / (A - C)		2.768	2.779	2.759
Absorption	[(B - A) / A] X 100		1.6	1.4	1.8

SPECIFIC GRAVITY AND ABSORPTION OF FINE AGGREGATE AASHTO T 84

PYCNOMETER METHOD				**LeCHATELIER FLASK METHOD**			
SOURCE NAME		Best Rock		**SOURCE NAME**		Best Rock	
SOURCE NUMBER		12-123-3		**SOURCE NUMBER**		12-123-3	
MATERIAL SIZE		#4-0		**MATERIAL SIZE**		#4-0	
S	MASS OF SSD SAMPLE g	504.9		**S_1**	SSD MATERIAL IN FLASK (55±5) g	55.1	
A	MASS OF DRY SAMPLE g	485.6		**S**	SEPARATE SSD SAMPLE (500±10) g	504.9	
B	MASS OF PYC + WATER g	4298.0		**R_1**	INITIAL FLASK READING ml	0.3	
C	PYCN + WATER + SAMPLE g	4622.5		**R_2**	FINAL FLASK READING ml	20.0	
Gsb	A / (B + S - C)	2.692		**A**	MASS OF DRY SAMPLE g	485.6	
Gsb ssd	S / (B + S - C)	2.799		**Gsb**	$[S_1(A / S] / [0.9975 (R_2 - R_1)]$	2.697	
Gsa	A / (B + A - C)	3.014		**Gsb ssd**	S1 / [0.9975 (R2 - R1)]	2.804	
Absorption	[(S - A) / A] X 100	4.0		**Absorption**	[(S - A) / A] X 100	4.0	

[ ] QUALITY CONTROL [X] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT Region 3 QA Unit		10/10/2012

BULK DENSITY "UNIT WEIGHT" MEASURE CALIBRATION

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER

BULK DENSITY ("UNIT WEIGHT") AND VOIDS IN AGGREGATE AASHTO T 19

WATER DENSITY TABLE

°F	lb/ft³	°c	kg/m³	°F	lb/ft³	°c	kg/m³	°F	lb/ft³	°c	kg/m³
60.0	62.366	15.6	999.01	68.5	62.312	20.3	998.14	77.0	62.243	25.0	997.04
60.5	62.363	15.8	998.96	69.0	62.308	20.6	998.08	77.5	62.239	25.3	996.97
61.0	62.360	16.1	998.91	69.5	62.305	20.8	998.02	78.0	62.234	25.6	996.90
61.5	62.357	16.4	998.87	70.0	62.301	21.1	997.97	78.5	62.230	25.8	996.82
62.0	62.354	16.7	998.82	70.5	62.297	21.4	997.90	79.0	62.225	26.1	996.75
62.5	62.351	16.9	998.77	71.0	62.293	21.7	997.84	79.5	62.221	26.4	996.68
63.0	62.348	17.2	998.72	71.5	62.289	21.9	997.78	80.0	62.216	26.7	996.59
63.5	62.345	17.5	998.67	72.0	62.285	22.2	997.71	80.5	62.211	26.9	996.53
64.0	62.342	17.8	998.63	72.5	62.281	22.5	997.65	81.0	62.206	27.2	996.45
64.5	62.339	18.1	998.58	73.0	62.277	22.8	997.58	81.5	62.201	27.5	996.37
65.0	62.336	18.3	998.54	73.5	62.273	23.1	997.52	82.0	62.196	27.8	996.29
65.5	62.333	18.6	998.47	74.0	62.269	23.3	997.46	82.5	62.191	28.1	996.21
66.0	62.329	18.9	998.42	74.5	62.265	23.6	997.39	83.0	62.186	28.3	996.13
66.5	62.326	19.2	998.36	75.0	62.261	23.9	997.32	83.5	62.181	28.6	996.05
67.0	62.322	19.4	998.30	75.5	62.257	24.2	997.26	84.0	62.176	29.2	995.97
67.5	62.319	19.7	998.25	76.0	62.252	24.4	997.18	84.5	62.171	29.2	995.89
68.0	62.315	20.0	998.19	76.5	62.248	24.7	997.11	85.0	62.166	29.4	995.83

CALIBRATION OF MEASURE

RECALIBRATE ANNUALLY OR WHEN IN QUESTION

	DATE						
	SERIAL NUMBER						
1	MEASURE + GLASS + WATER	lb					
2	EMPTY MEASURE + GLASS	lb					
A	MASS OF WATER (1 - 2)	lb					
	TEMPERATURE OF WATER	°F					
B	DENSITY OF WATER	ft³					
V	VOLUME OF MEASURE (A / B)	ft³					

☐ QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

BULK DENSITY "UNIT WEIGHT" MEASURE CALIBRATION

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
Form Example		12345
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123

BULK DENSITY ("UNIT WEIGHT") AND VOIDS IN AGGREGATE AASHTO T 19

WATER DENSITY TABLE

°F	lb/ft³	°c	kg/m³	°F	lb/ft³	°c	kg/m³	°F	lb/ft³	°c	kg/m³
60.0	62.366	15.6	999.01	68.5	62.312	20.3	998.14	77.0	62.243	25.0	997.04
60.5	62.363	15.8	998.96	69.0	62.308	20.6	998.08	77.5	62.239	25.3	996.97
61.0	62.360	16.1	998.91	69.5	62.305	20.8	998.02	78.0	62.234	25.6	996.90
61.5	62.357	16.4	998.87	70.0	62.301	21.1	997.97	78.5	62.230	25.8	996.82
62.0	62.354	16.7	998.82	70.5	62.297	21.4	997.90	79.0	62.225	26.1	996.75
62.5	62.351	16.9	998.77	71.0	62.293	21.7	997.84	79.5	62.221	26.4	996.68
63.0	62.348	17.2	998.72	71.5	62.289	21.9	997.78	80.0	62.216	26.7	996.59
63.5	62.345	17.5	998.67	72.0	62.285	22.2	997.71	80.5	62.211	26.9	996.53
64.0	62.342	17.8	998.63	72.5	62.281	22.5	997.65	81.0	62.206	27.2	996.45
64.5	62.339	18.1	998.58	73.0	62.277	22.8	997.58	81.5	62.201	27.5	996.37
65.0	62.336	18.3	998.54	73.5	62.273	23.1	997.52	82.0	62.196	27.8	996.29
65.5	62.333	18.6	998.47	74.0	62.269	23.3	997.46	82.5	62.191	28.1	996.21
66.0	62.329	18.9	998.42	74.5	62.265	23.6	997.39	83.0	62.186	28.3	996.13
66.5	62.326	19.2	998.36	75.0	62.261	23.9	997.32	83.5	62.181	28.6	996.05
67.0	62.322	19.4	998.30	75.5	62.257	24.2	997.26	84.0	62.176	29.2	995.97
67.5	62.319	19.7	998.25	76.0	62.252	24.4	997.18	84.5	62.171	29.2	995.89
68.0	62.315	20.0	998.19	76.5	62.248	24.7	997.11	85.0	62.166	29.4	995.83

CALIBRATION OF MEASURE

RECALIBRATE ANNUALLY OR WHEN IN QUESTION

	DATE		10/22/2007				
	SERIAL NUMBER		R3QA-1				
1	MEASURE + GLASS + WATER	lb	53.18				
2	EMPTY MEASURE + GLASS	lb	22.02				
A	MASS OF WATER (1 - 2)	lb	31.16				
	TEMPERATURE OF WATER	°F	71.0				
B	DENSITY OF WATER	ft³	62.293				
V	VOLUME OF MEASURE (A / B)	ft³	0.5002				

[ ] QUALITY CONTROL [X] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT Region 3 QA Unit		10/10/2012

RANDOM SAMPLE LOCATIONS

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER

LOT SUBLOT TEST	FIVE DIGIT RANDOM NUMBER	(A) THREE RANDOM DIGITS X .001	(B) Ton or DISTANCE COVERED	(C) BEGINNING STATION OR Ton	TEST LOCATION STATION or Ton (A X B) ± C	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS	TEST LOCATION DISTANCE FROM RIGHT EDGE ((E - 2) X D) + 1

RANDOM SAMPLE LOCATIONS

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123

LOT SUBLOT TEST	FIVE DIGIT RANDOM NUMBER	(A) THREE RANDOM DIGITS X .001	(B) Ton or DISTANCE COVERED	(C) BEGINNING STATION OR Ton	TEST LOCATION STATION or Ton (A X B) ± C	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS	TEST LOCATION DISTANCE FROM RIGHT EDGE ((E - 2) X D) + 1
1-1-1	.17550	0.175	5700	15+00	24+98	0.50	13'	6.5'
2	.92128	0.921			67+50	0.28	13'	4.1'
3	.18160	0.181			25+32	0.60	13'	7.6'
4	.91610	0.916			67+21	0.10	13'	2.1'
5	.87782	0.877			64+99	0.82	13'	10.0'
1-2-1	.69103	0.691	5700	72+00	118+32	0.03	13'	1.3'
2	.26825	0.268			92+47	0.25	13'	2.8'
3	.95215	0.952			134+27	0.15	13'	2.7'
4	.63932	0.639			115+14	0.32	13'	4.5'
5	.88997	0.889			130+42	0.97	13'	11.7'
1-3-1	.14741	0.147	5750	129+00	145+65	0.41	13'	6.3'
2	.81213	0.812			183+89	0.13	13'	2.7'
3	.09007	0.090			142+38	0.07	13'	1.9'
4	.70847	0.708			177+91	0.47	13'	7.1'
5	.34421	0.344			156+98	0.21	13'	3.7'
			5750	186+50				

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

RANDOM SAMPLE DENSITY LOCATIONS - ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER

AVG VOLUME 2000 (1000) / (MAMD x (% REQ'D / 100)) = ft³/ton (m³/Mg)

CROSS SECTION PANEL DEPTH / 12 (1000) X PANEL WIDTH = ft² (m²)

YIELD AVG VOLUME / CROSS SEC. =ft / ton (m / Mg)

SUBLOT DIST. YIELD X SUBLOT SIZE = ft (m)

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
	%	in	ft	ft³/ton	ft²	ft/ton	tons	ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1

SUBLOT: DISTANCE | **DISTANCE** | **TONS** | **AUTO-CALC. RANDOMS** | **ASCENDING DESCENDING**

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
	%	in	ft	ft³/ton	ft²	ft/ton	tons	ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1

SUBLOT: DISTANCE | **DISTANCE** | **TONS** | **AUTO-CALC. RANDOMS** | **ASCENDING DESCENDING**

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
	%	in	ft	ft³/ton	ft²	ft/ton	tons	ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1

SUBLOT: DISTANCE | **DISTANCE** | **TONS** | **AUTO-CALC. RANDOMS** | **ASCENDING DESCENDING**

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
	%	in	ft	ft³/ton	ft²	ft/ton	tons	ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1

SUBLOT: DISTANCE | **DISTANCE** | **TONS** | **AUTO-CALC. RANDOMS** | **ASCENDING DESCENDING**

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

RANDOM SAMPLE DENSITY LOCATIONS - ACP

E English (E) or Metric (M)

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123

AVG VOLUME = ft³/ton (m³/Mg): 2000 (1000) / (MAMD x (% REQ'D / 100))

CROSS SECTION = ft² (m²): PANEL DEPTH / 12 (1000) X PANEL WIDTH

YIELD =ft / ton (m / Mg): AVG VOLUME / CROSS SEC.

SUBLOT DIST. = ft (m): YIELD X SUBLOT SIZE

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
151.9	92.0 %	2 in	16 ft	14.32 ft³/ton	2.67 ft²	5.36 ft/ton	1000 tons	5360 ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION 772 C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1
1-1	0.254	1072	12345	12617	0.55	16.0	8.7
1-2	0.564	1072	13417	14022	0.96	16.0	14.4
1-3	0.854	1072	14489	15404	0.64	16.0	10.0
1-4	0.125	1072	15561	15695	0.08	16.0	2.1
1-5	0.025	1072	16633	16660	0.40	16.0	6.6

SUBLOT: DISTANCE 5360 — DISTANCE [X] TONS [ ] — AUTO-CALC. RANDOMS [X] — ASCENDING [X] DESCENDING [ ]

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
152.1	93.4 %	2 in	14 ft	14.07 ft³/ton	2.33 ft²	6.04 ft/ton	1000 tons	6040 ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1
2-1	0.648	1208	12345	11562	0.46	14.0	6.5
2-2	0.522	1208	11137	10506	0.02	14.0	1.2
2-3	0.023	1208	9929	9901	0.18	14.0	3.2
2-4	0.089	1208	8721	8613	0.68	14.0	9.2
2-5	0.546	1208	7513	6853	0.93	14.0	12.2

SUBLOT: DISTANCE 6040 — DISTANCE [X] TONS [ ] — AUTO-CALC. RANDOMS [X] — ASCENDING [ ] DESCENDING [X]

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
152.2	92.6 %	2 in	16 ft	14.19 ft³/ton	2.67 ft²	5.31 ft/ton	1000 tons	5310 ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1
3-1	0.365	200	2000	2073	0.03	16.0	1.4
3-2	0.215	200	2200	2243	0.09	16.0	2.3
3-3	0.025	200	2400	2405	0.55	16.0	8.7
3-4	0.005	200	2600	2601	0.87	16.0	13.2
3-5	0.859	200	2800	2972	0.46	16.0	7.4

SUBLOT: DISTANCE 1000 — DISTANCE [ ] TONS [X] — AUTO-CALC. RANDOMS [X] — ASCENDING [X] DESCENDING [ ]

MAMD	COMPACTION	PANEL DEPTH	PANEL WIDTH	AVG VOLUME	CROSS SEC.	YIELD (FT/TON)	SUBLOT SIZE	SUBLOT DIST.
152.4	91.5 %	3 in	14 ft	14.35 ft³/ton	3.5 ft²	4.1 ft/ton	1000 tons	4100 ft

TEST NUMBER	(A) THREE RANDOM DIGITS X .001	(B) SUBLOT SEGMENT DISTANCE OR TONS (Sublot Total / 5)	(C) BEGINNING STATION OR TONAGE	TEST LOCATION C ± (A X B)	(D) TWO RANDOM DIGITS X .01	(E) WIDTH MATERIAL COVERS ft.	OFFSET DIST. FROM RIGHT EDGE ((E - 2) X D) + 1
4-1	0.879	200	3000	3176	0.56	14.0	7.7
4-2	0.556	200	3200	3311	0.88	14.0	11.6
4-3	0.989	200	3400	3598	0.16	14.0	2.9
4-4	0.521	200	3600	3704	0.09	14.0	2.1
4-5	0.014	200	3800	3803	0.07	14.0	1.8

SUBLOT: DISTANCE 1000 — DISTANCE [ ] TONS [X] — AUTO-CALC. RANDOMS [X] — ASCENDING [X] DESCENDING [ ]

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

DAILY ASPHALT CEMENT REPORT

E English (E) or Metric (M)

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR	PROJECT MANAGER	REPORT NUMBER
	SUPPLIER	DATE

ASPHALT INVENTORY METHOD

PREVIOUS ENDING TANK STICK	LINE 8 FROM PREVIOUS REPORT	1	

DELIVERIES BEFORE BEGINNING TANK STICK

INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons

TOTAL DELIVERIES	2	
DEDUCTIONS BEFORE BEGINNING INVENTORY EXPLAIN BELOW OR ON ATTACHMENT		
EXPLANATION	3	
BEGINNING INVENTORY 1 + 2 - 3 (ANY DIFFERENCES WITH LINE 5 OTHER THAN MINOR MEASURING DIFFERENCES, MUST BE RESOLVED)	4	

BEGINNING TANK STICK

TANK NO.	TEMP	TANK STICK	VOLUME IN TANK	X	TEMP. CORR. FACTOR	X	SPECIFIC GRAVITY	/239.9=Tons
1								
2								
3								

BEGINNING TANK STICK TOTAL	5	

DELIVERIES AFTER BEGINNING INVENTORY

INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons

TOTAL DELIVERIES	6	
DEDUCTIONS AFTER BEGINNING INVENTORY (TACK, WASTE, REJECT, SOLD TO OTHERS ETC.) EXPLAIN BELOW OR ON ATTACHMENT	7	

ENDING TANK STICK

TANK NO.	TEMP	TANK STICK	VOLUME IN TANK	X	TEMP. CORR. FACTOR	X	SPECIFIC GRAVITY	/239.9=Tons
1								
2								
3								

ENDING TANK STICK TOTAL	8	
ASPHALT CEMENT LINES 4 or 5 + 6 - 7 - 8	9	

SMALL QUANTITY METHOD

ASPHALT TARGET % FROM JOB MIX FORMULA	C	

Tons MIX THIS DATE X $\frac{C}{100}$ = ASPHALT CEMENT INCORPORATED 10

BATCH MASS METHOD

BATCH TICKET NO.		
ASPHALT CEMENT INCORPORATED	11	

ASPHALT CEMENT SUMMARY

		B.I. NO.
ASPHALT CEMENT IN MIX		
PREVIOUS REPORT LINE 14	12	
THIS REPORT LINE 9, 10, OR 11	13	
ASPHALT CEMENT IN MIXTURE TO DATE 12 + 13	14	

ASPHALT MIXTURE SUMMARY

		B.I. NO.
CLASS HMAC		
PREVIOUS REPORT LINE 17	15	
MATERIAL RECEIPT TOTAL FOR THIS DATE	16	
ASPHALT MIXTURE TO DATE 15+16	17	
CLASS HMAC		B.I. NO.
PREVIOUS REPORT LINE 20	18	
MATERIAL RECEIPT TOTAL FOR THIS DATE	19	
ASPHALT MIXTURE TO DATE 18+19	20	

WASTE DEDUCTION CALCULATION

From Form 2401

TOTAL MIX NOT ACCEPTED	Line "e"	e	
DAILY AVERAGE MIX MOISTURE	Line "g"	g	
TOTAL DRY MIX NOT ACCEPTED e / (1+(g/100))		TD	
BY TANK % Pb HMAC	Line "Z"	Z	
WASTE ASPHALT for line 7 deductions (TDxZ)/100		7	

Remarks

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

DAILY ASPHALT CEMENT REPORT

E English (E) or Metric (M)

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
CONTRACTOR: ODOT Forms	PROJECT MANAGER: Sean Parker	REPORT NUMBER: 123
	SUPPLIER: Confidential	DATE: 10/10/2012

ASPHALT INVENTORY METHOD

PREVIOUS ENDING TANK STICK	LINE 8 FROM PREVIOUS REPORT	1	95.94

DELIVERIES BEFORE BEGINNING TANK STICK

INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons

TOTAL DELIVERIES	2	
DEDUCTIONS BEFORE BEGINNING INVENTORY EXPLAIN BELOW OR ON ATTACHMENT		
EXPLANATION	3	0.09
BEGINNING INVENTORY 1 + 2 - 3 (ANY DIFFERENCES WITH LINE 5 OTHER THAN MINOR MEASURING DIFFERENCES, MUST BE RESOLVED)	4	95.85

BEGINNING TANK STICK

TANK NO.	TEMP	TANK STICK	VOLUME IN TANK X	TEMP. CORR. FACTOR X	SPECIFIC GRAVITY	/239.9=Tons
1	320	27.5"	24699	0.9118	1.021	95.85
2						
3						

BEGINNING TANK STICK TOTAL	5	95.85

DELIVERIES AFTER BEGINNING INVENTORY

INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons
V09586	24.95	V09589	24.40		
V09587	23.51	V09590	23.49		
V09588	23.66				

TOTAL DELIVERIES	6	120.01
DEDUCTIONS AFTER BEGINNING INVENTORY (TACK, WASTE, REJECT, SOLD TO OTHERS ETC.) EXPLAIN BELOW OR ON ATTACHMENT	7	0.27

ENDING TANK STICK

TANK NO.	TEMP	TANK STICK	VOLUME IN TANK X	TEMP. CORR. FACTOR X	SPECIFIC GRAVITY	/239.9=Tons
1	325	49.25"	17648	0.9101	1.021	68.36
2						
3						

ENDING TANK STICK TOTAL	8	68.36
ASPHALT CEMENT LINES 4 or 5 + 6 - 7 - 8	9	147.23

SMALL QUANTITY METHOD

ASPHALT TARGET % FROM JOB MIX FORMULA		C	
Tons MIX THIS DATE X	C/100 = 0	10	ASPHALT CEMENT INCORPORATED

BATCH MASS METHOD

BATCH TICKET NO.		
ASPHALT CEMENT INCORPORATED	11	

ASPHALT CEMENT SUMMARY

		B.I. NO.
ASPHALT CEMENT IN MIX		123
PREVIOUS REPORT LINE 14	12	531.66
THIS REPORT LINE 9, 10, OR 11	13	147.23
ASPHALT CEMENT IN MIXTURE TO DATE 12 + 13	14	678.89

ASPHALT MIXTURE SUMMARY

CLASS		B.I. NO.
HMAC		124
PREVIOUS REPORT LINE 17	15	10006.45
MATERIAL RECEIPT TOTAL FOR THIS DATE	16	2735.78
ASPHALT MIXTURE TO DATE 15+16	17	12742.23
CLASS / HMAC		B.I. NO.
PREVIOUS REPORT LINE 20	18	
MATERIAL RECEIPT TOTAL FOR THIS DATE	19	
ASPHALT MIXTURE TO DATE 18+19	20	

WASTE DEDUCTION CALCULATION

From Form 2401

TOTAL MIX NOT ACCEPTED Line "e"	e	5.00
DAILY AVERAGE MIX MOISTURE Line "g"	g	0.27
TOTAL DRY MIX NOT ACCEPTED e / (1+(g/100))	TD	4.99
BY TANK % Pb HMAC Line "Z"	Z	5.40
WASTE ASPHALT for line 7 deductions (TDxZ)/100	7	0.27

EXPLANATION

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

SPECIFIC GRAVITY AND MAXIMUM DENSITY OF ACP

E English (**E**) or Metric(**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER	BID ITEM NUMBER
ODOT MIX DESIGN NO.	JMF MAX SPECIFIC GRAVITY		PYCNOMETER	MIX NOMINAL SIZE

		DATE	DATE	DATE	DATE	DATE
		TIME	TIME	TIME	TIME	TIME
		LOT & SUBLOT	LOT & SUBLOT	LOT & SUBLOT	LOT & SUBLOT	LOT & SUBLOT
1	PYCNOMETER + LID + MIX					
2	PYCNOMETER + LID					
A	MASS OF DRY SAMPLE (1 - 2)					
A_{SSD}	MASS OF SSD SAMPLE (uncoated porous agg.)					
D	PYCNOMETER + LID + WATER					
E	PYCNOMETER + LID + WATER + MIX					
G	Gmm (pre) = A / (A + D - E)					
H	Gmm_{SSD} =A/(A_{SSD} + D - E) (uncoated porous agg.)					
I	MAX DENSITY = G or H x 62.4					
J	THE PREVIOUS MAMD					
K	THE DIFFERENCE BETWEEN I & J					
THE MOVING AVERAGE MAXIMUM DENSITY **(MAMD)**						

MDT'S Previous Form	
TEST NO	MDT

REMARKS

	QUALITY CONTROL		VERIFICATION		INDEPENDENT ASSURANCE	
CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER				COMPANY NAME	SIGNATURE	DATE

SPECIFIC GRAVITY AND MAXIMUM DENSITY OF ACP

E English (**E**) or Metric(**M**)

PROJECT NAME (SECTION)			CONTRACT NUMBER
Form Example			12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms		Sean Parker	123
ODOT MIX DESIGN NO.	JMF MAX SPECIFIC GRAVITY	PYCNOMETER	MIX NOMINAL SIZE
10-MD0001	2.556	1122	L3 1/2" Dense

		DATE 10/18/12	DATE 10/19/12	DATE 10/20/12	DATE 10/21/12	DATE 10/22/12
		TIME 6:00am	TIME 6:30am	TIME 7:30am	TIME 6:00am	TIME 8:00am
		LOT & SUBLOT 1-10	LOT & SUBLOT 1-11	LOT & SUBLOT 1-12	LOT & SUBLOT 1-13	LOT & SUBLOT 1-14
1	PYCNOMETER + LID + MIX	4621.3	4715.7	4599.5	4682.3	4542.2
2	PYCNOMETER + LID	2924.4	2924.4	2924.4	2924.4	2924.4
A	MASS OF DRY SAMPLE (1 - 2)	1696.9	1791.3	1675.1	1757.9	1617.8
A_{SSD}	MASS OF SSD SAMPLE (uncoated porous agg.)					
D	PYCNOMETER + LID + WATER	7327.8	7327.8	7327.8	7327.8	7327.8
E	PYCNOMETER + LID + WATER + MIX	8369.0	8421.3	8354.3	8399.9	8319.2
G	Gmm (pre) = A / (A + D - E)	2.588	2.567	2.583	2.563	2.583
H	Gmm $_{SSD}$ =A/(A $_{SSD}$ + D - E) (uncoated porous agg.)					
I	MAX DENSITY = G or H x 62.4	161.5	160.2	161.2	159.9	161.2
J	THE PREVIOUS MAMD	160.8	160.6	160.7	160.6	160.4
K	THE DIFFERENCE BETWEEN I & J	0.7	-0.4	0.5	-0.7	0.8
THE MOVING AVERAGE MAXIMUM DENSITY **(MAMD)**		**160.6**	**160.7**	**160.6**	**160.4**	**160.8**

MDT'S Previous Form	
TEST NO	MDT
1-5	162.6
1-6	159.9
1-7	161.4
1-8	160.9
1-9	159.4

REMARKS

X QUALITY CONTROL	VERIFICATION	INDEPENDENT ASSURANCE	
CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/22/2012

VOIDS WORKSHEET GYRATORY

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)						CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
ODOT MIX DESIGN NO.	DESIGN Gsb	DESIGN Gmm	DESIGN VMA	DESIGN Va	DESIGN Pb	MATERIAL TYPE
COMPACTOR MAKE	SERIAL NUMBER	AC BRAND	AC GRADE	AC Gb @ 77°F	NUMBER GYRATIONS	PLACEMENT TEMP RANGE

DATE	Test Pb	Test P75um	Gse	Pba	P75um/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P75um/Pbe	Va	VMA	VFA

TEST	Test №				Gmb		PYCNOMETER + LID + MIX	
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID	
							MASS OF DRY SAMPLE	
							MASS OF SSD SAMPLE	
							PYCNOMETER + LID+H2O	
REMARKS	TIME SAMPLED:		TIME COMPACTED:			AVE	PYCNOMETER+ LID+H2O+MIX	
							SSD Gmm	Gmm

DATE	Test Pb	Test P75um	Gse	Pba	P75um/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P75um/Pbe	Va	VMA	VFA

TEST	Test №				Gmb		PYCNOMETER + LID + MIX	
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID	
							MASS OF DRY SAMPLE	
							MASS OF SSD SAMPLE	
							PYCNOMETER + LID+H2O	
REMARKS	TIME SAMPLED:		TIME COMPACTED:			AVE	PYCNOMETER+ LID+H2O+MIX	
							SSD Gmm	Gmm

DATE	Test Pb	Test P75um	Gse	Pba	P75um/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P75um/Pbe	Va	VMA	VFA

TEST	Test №				Gmb		PYCNOMETER + LID + MIX	
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID	
							MASS OF DRY SAMPLE	
							MASS OF SSD SAMPLE	
							PYCNOMETER + LID+H2O	
REMARKS	TIME SAMPLED:		TIME COMPACTED:			AVE	PYCNOMETER+ LID+H2O+MIX	
							SSD Gmm	Gmm

Previous Forms Results

Test №	Pba	P75um/Pbe	Va	VMA	VFA

REMARKS

☐ Quality Control ☐ Verification

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

VOIDS WORKSHEET GYRATORY

PROJECT NAME (SECTION)						CONTRACT NUMBER
Form Sample						93005
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
Bend - Salem			Sean Parker			745
ODOT MIX DESIGN NO.	DESIGN Gsb	DESIGN Gmm	DESIGN VMA	DESIGN Va	DESIGN Pb	MATERIAL TYPE
05-MD0066	2.724	2.556	14.8	4.4	5.30%	1/2 inch
COMPACTOR MAKE	SERIAL NUMBER	AC BRAND	AC GRADE	AC Gb @ 77° F	NUMBER GYRATIONS	PLACEMENT TEMP RANGE
Pine	2106	Albina	PG 64-28	1.039	100	288 - 297

DATE	Test Pb	Test P#200	Gse	Pba	P#200/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P#200/Pbe	Va	VMA	VFA
9/30/05	5.36	5.3	2.807	1.13	1.23	5.8	15.8	63					

TEST	Test № 1-1			Gmb				
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID + MIX	5599.6
							PYCNOMETER + LID	2924.4
							MASS OF DRY SAMPLE	2675.2
A	115.2	292	4828.3	2847.4	4831.0	2.434	MASS OF SSD SAMPLE	
B	115.9	294	4840.5	2840.4	4847.4	2.412	PYCNOMETER + LID+H2O	7327.8
REMARKS	TIME SAMPLED:	7:15	TIME COMPACTED:	8:00	AVE	2.423	PYCNOMETER+ LID+H2O+MIX	8962.8
							SSD Gmm / Gmm	2.572

DATE	Test Pb	Test P#200	Gse	Pba	P#200/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P#200/Pbe	Va	VMA	VFA
9/30/05	5.42	5.1	2.817	1.26	1.21	4.5	14.6	69					

TEST	Test № 1-2			Gmb				
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID + MIX	5579.6
							PYCNOMETER + LID	2924.4
							MASS OF DRY SAMPLE	2655.2
A	116.1	293	4832.3	2878.6	4842.8	2.460	MASS OF SSD SAMPLE	
B	115.9	293	4822.1	2873.1	4831.9	2.462	PYCNOMETER + LID+H2O	7327.8
REMARKS	TIME SAMPLED:	10:30	TIME COMPACTED:	11:20	AVE	2.461	PYCNOMETER+ LID+H2O+MIX	8953.1
							SSD Gmm / Gmm	2.578

DATE	Test Pb	Test P#200	Gse	Pba	P#200/Pbe	Va	VMA	VFA	RUNNING AVERAGE Pba	P#200/Pbe	Va	VMA	VFA
9/30/05	5.33	5.8	2.801	1.05	1.34	5.0	15.2	67					

TEST	Test № 1-3			Gmb				
	specimen height	COMPACTED Temperature	(A) MASS IN AIR	(C) MASS IN WATER	(B) MASS SSD	A / B-C	PYCNOMETER + LID + MIX	5049.8
							PYCNOMETER + LID	2924.4
							MASS OF DRY SAMPLE	2125.4
A	115.2	290	4840.5	2860.4	4847.4	2.436	MASS OF SSD SAMPLE	
B	114.8	292	4828.3	2857.4	4831.0	2.446	PYCNOMETER + LID+H2O	7327.8
REMARKS	TIME SAMPLED:	3:30	TIME COMPACTED:	4:15	AVE	2.441	PYCNOMETER+ LID+H2O+MIX	8625.8
							SSD Gmm / Gmm	2.569

Previous Forms Results				
Test №	P#200/Pbe	Va	VMA	VFA

REMARKS

X QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Andy Clark #41585	ODOT		9/9/2016

VOIDS WORKSHEET GYRATORY

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)						CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
ODOT MIX DESIGN NO.	DESIGN Gsb	DESIGN Gmm	DESIGN VMA	DESIGN Va	DESIGN Pb	MATERIAL TYPE
COMPACTOR MAKE	SERIAL NUMBER	AC BRAND	AC GRADE	AC Gb @ 60°F	NUMBER GYRATIONS	PLACEMENT TEMP RANGE

DATE	TIME SAMPLED	TIME COMPACTED	LOT & SUBLOT

AASHTO T 166

	SPECIMEN ID		
	SPECIMEN HEIGHT		
	COMPACTED TEMP.		
A	MASS IN AIR		
C	MASS IN WATER		
B	MASS SSD		
Gmb	A / (B - C)		
AVE	**Gmb**		

AASHTO T 209

1	PYCNOMETER + LID + MIX	
2	PYCNOMETER + LID	
A	MASS OF DRY SAMPLE (1 - 2)	
A_{SSD}	MASS OF SSD SAMPLE (uncoated porous agg.)	
D	PYCNOMETER + LID + WATER	
E	PYCNOMETER + LID + WATER + MIX	
G	**Gmm** (pre) = A / (A + D - E)	
H	Gmm $_{SSD}$ =A/(A $_{SSD}$ + D - E) (uncoated porous agg.)	

Va

$$= \left(\frac{Gmm - Gmb}{Gmm}\right) \times 100$$

VMA

$$= 100 - \left(\frac{Gmb \times PS}{Gsb}\right)$$

VFA

$$= \frac{(VMA - Va)}{VMA} \times 100$$

P #200/Pbe

= /

Pb

Gse $_{SSD}$

Gb 77°F

Pba $_{SSD}$

Gsb

Pbe $_{SSD}$

P #200

Ps

$$= 100 - Pb$$

Gse

$$= \frac{Ps}{\frac{100}{Gmm} - \frac{Pb}{Gb}}$$

Pba

$$= 100 \times \frac{(Gse - Gsb)}{(Gsb \times Gse)} \times Gb$$

Pbe

$$= Pb - \left(\left(\frac{Pba}{100}\right) \times Ps\right)$$

Previous Forms Results

Test №	Pba	P #200/Pbe	Va	VMA	VFA
1-1					
1-2					
1-3					
Current					

RUNNING AVERAGE

Pba	P #200/Pbe	Va	VMA	VFA

REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

VOIDS WORKSHEET GYRATORY

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)						CONTRACT NUMBER
Forms Sample						12345
CONTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
ODOT Forms			Sean Parker			123
ODOT MIX DESIGN NO.	DESIGN Gsb	DESIGN Gmm	DESIGN VMA	DESIGN Va	DESIGN Pb	MATERIAL TYPE
06-MD0001	2.724	2.556	14.8	4.4	5.3	L3 1/2" Dense
COMPACTOR MAKE	SERIAL NUMBER	AC BRAND	AC GRADE	AC Gb @ 60°F	NUMBER GYRATIONS	PLACEMENT TEMP RANGE
Brovold	59902	Albina	PG64-28	1.043	100	288-297

DATE	TIME SAMPLED	TIME COMPACTED	LOT & SUBLOT
10/10/2012	3:00pm	4:30pm	1-4

AASHTO T 166

	SPECIMEN ID	1-4a	1-4b
	SPECIMEN HEIGHT	115.2	116.5
	COMPACTED TEMP.	294	295
A	MASS IN AIR	4833.6	4840.1
C	MASS IN WATER	2881.3	2880.1
B	MASS SSD	4842.4	4849.3
Gmb	A / (B - C)	2.465	2.458
AVE	**Gmb**	2.462	

AASHTO T 209

1	PYCNOMETER + LID + MIX	5552.6
2	PYCNOMETER + LID	2924.4
A	MASS OF DRY SAMPLE (1 - 2)	2628.2
A_{SSD}	MASS OF SSD SAMPLE (uncoated porous agg.)	
D	PYCNOMETER + LID + WATER	7327.1
E	PYCNOMETER + LID + WATER + MIX	8931.4
G	**Gmm** (pre) = A / (A + D - E)	2.567
H	Gmm $_{SSD}$ =A/(A $_{SSD}$ + D - E) (uncoated porous agg.)	

Va

$$4.1 = \left(\frac{\overset{2.567}{Gmm} - \overset{2.462}{Gmb}}{\underset{2.567}{Gmm}}\right) \times 100$$

VMA

$$14.5 = 100 - \left(\frac{\overset{2.462}{Gmb} \times \overset{94.62}{PS}}{\underset{2.724}{Gsb}}\right)$$

VFA

$$72 = \frac{\overset{10.4}{(VMA - Va)}}{\underset{14.5}{VMA}} \times 100$$

P #200/Pbe

$$1.25 = 5.5 / 4.39$$

Pb

5.38

Gse SSD

Gb 77°F

1.039

Pba SSD

Gsb

2.724

Pbe SSD

P #200

5.5

Ps

$$94.62 = \overset{100 - Pb}{100 - 5.38}$$

Gse

$$2.801 = \frac{\overset{94.62}{Ps}}{\underset{2.567}{\frac{100}{Gmm}} - \underset{1.039}{\frac{\overset{5.38}{Pb}}{Gb}}}$$

Pba

$$1.05 = 100 \times \frac{\overset{0.077}{(Gse - Gsb)}}{\underset{7.630}{(Gsb \times Gse)}} \times \underset{1.039}{Gb}$$

Pbe

$$4.39 = \overset{5.38}{Pb} - \left(\left(\frac{Pba}{100}\right) \times \overset{94.62}{Ps}\right)$$

Previous Forms Results

Test №	Pba	P #200/Pbe	Va	VMA	VFA
1-1	0.99	1.2	5.8	15.8	63
1-2	1.01	1.2	4.5	14.6	69
1-3	1.05	1.3	5.0	15.2	67
Current	1.05	1.3	4.1	14.5	72

RUNNING AVERAGE

Pba	P #200/Pbe	Va	VMA	VFA
1.03	**1.3**	**4.9**	**15.0**	**68**

REMARKS

X QUALITY CONTROL ☐ VERIFICATION ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

TENSILE STRIPPING STRENGTH (TSR)

E English (E) or Metric (M)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT MIX DESIGN NO.	MAX SPECIFIC GRAVITY (Gmm)	% ASPHALT	NUMBER OF BLOWS	MIX NOMINAL SIZE

DATE SAMPLED

Sample #	1	2	3	4	5	6	7	8
D. diameter, in								
t. thickness, in								
A. mass in air, g								
B. SSD. WT. g								
C. WT. in H2O, g								
E. Volume **(B-C)**								
F. Bulk SpSg **(A/E)**								
G. MAX SPECIFIC GRAVITY (Gmm)								
H. % voids **((G-F)/G)x100**								
I. Vol of air voids **(HxE)/100**								
Test Cond. (**Wet or Dry)**								
X. Wt. gain for wet **(0.75 x I)**								
Target SSD Wt. **(X+A)**								
B' SSD Wt. after Sat.								
J' Vol absorbed H20 **(B'-A)**								
% saturation **(J'/I)x100**								

P. Load for dry sample									AVG
Std = 2P / (txDx3.14)									

P' Load for wet sample									AVG
Stm = 2P' / (txDx3.14)									

Tensile Strength Ratio = (Stm / Std) 100

Remarks

CERTIFIED TECHNICIAN (PLEASE PRINT) & CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

TENSILE STRIPPING STRENGTH (TSR)

E English (E) or Metric (M)

PROJECT NAME (SECTION)				CONTRACT NUMBER
Forms Example				12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms		Sean Parker		123
ODOT MIX DESIGN NO.	MAX SPECIFIC GRAVITY (Gmm)	% ASPHALT	NUMBER OF BLOWS	MIX NOMINAL SIZE
11-MD0001	2.497	5.7	35	L3 1/2" Dense HMAC

DATE SAMPLED **7/1/2011**

Sample #	1	2	3	4	5	6	7	8
D. diameter, in	4.001	4.001	4.001	4.001	4.001	4.001	4.001	4.001
t. thickness, in	2.481	2.481	2.481	2.481	2.481	2.481	2.481	2.481
A. mass in air, g	1201.9	1202.5	1202.3	1205.6	1205.6	1204.6	1205.6	1202.2
B. SSD. WT. g	1205.6	1207.9	1207.0	1211.2	1209.9	1209.6	1210.6	1206.8
C. WT. in H2O, g	687.5	688.9	687.3	689.2	688.7	690.2	689.0	690.1
E. Volume **(B-C)**	518.1	519.0	519.7	522.0	521.2	519.4	521.6	516.7
F. Bulk SpSg **(A/E)**	2.320	2.317	2.313	2.310	2.313	2.319	2.311	2.327
G. MAX SPECIFIC GRAVITY (Gmm)	2.497	2.497	2.497	2.497	2.497	2.497	2.497	2.497
H. % voids **((G-F)/G)x100**	7.1	7.2	7.4	7.5	7.4	7.1	7.4	6.8
I. Vol of air voids **(HxE)/100**	36.79	37.37	38.46	39.15	38.57	36.88	38.60	35.14
Test Cond. (**Wet or Dry)**	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
X. Wt. gain for wet **(0.75 x I)**		28.0		29.4		27.7		26.4
Target SSD Wt. **(X+A)**		1230.5		1235.0		1232.3		1228.6
B' SSD Wt. after Sat.		1229.1		1236.1		1232.9		1228.3
J' Vol absorbed H20 **(B'-A)**		26.6		30.5		28.3		26.1
% saturation **(J'/I)x100**		71.2		77.9		76.7		74.3

P. Load for dry sample	1325		1425		1420		1422		AVG
Std = 2P / (txDx3.14)	85.0		91.4		91.1		91.2		**89.7**

P' Load for wet sample		1335		1310		1305		1330	AVG
Stm = 2P' / (txDx3.14)		85.7		84.1		83.7		85.3	**84.7**

Tensile Strength Ratio = (Stm / Std) 100 ***94.4***

Remarks

CERTIFIED TECHNICIAN (PLEASE PRINT) & CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

DEVELOPMENT OF ROLLER PATTERN

CONTROL STRIP METHOD OF COMPACTION

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)						CONTRACT NUMBER
CONTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER			MIX NOMINAL SIZE
MEASURED PLACEMENT TEMP °F	PANEL WIDTH		CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE

	ROLLER TYPE AND DESCRIPTION (MANUFACTURER, WEIGHT, ETC)	CODES FOR ROLLER TYPES
BREAKDOWN		P - PNEUMATIC TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY DDV-DOUBLE DRUM VIBRATORY
INTERMEDIATE		
FINISH		

NOTE: LENGTH OF CONTROL STRIP IS ALWAYS THE LENGTH OF CONTRACTOR'S ROLLING PATTERN (MAXIMUM 500ft)

DENSITY TEST CANNOT BE TAKEN BEHIND PNEUMATIC ROLLER WHEN USED IN THE BREAKDOWN POSITION.

INDICATE IF VIBRATION USED AND DIRECTION BY CIRCLING (F) FORWARD OR (B) BACK.

ROLLER ➔								
PASSES ➓	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY
1		F B		F B		F B		F B
2		F B		F B		F B		F B
3		F B		F B		F B		F B
4		F B		F B		F B		F B

"INITIAL POINT" (SANDED) DENSITY READING 1 _____ lb/ft³

2 _____ lb/ft³

If correlation applies enter **A** = AVE + Correlation

AVE = **A** = _____ lb/ft³

NOTE: IF **A** IS LESS THAN **C** , MOVE AHEAD, CHANGE ROLLING PATTERN AND START OVER.

		1.0 Ft from LEFT	MIDPOINT LEFT	CENTER	MIDPOINT RIGHT	1.0 Ft from LEFT
	STATION					
1	DENSITY lb/ft³					
2	DENSITY lb/ft³					
3	AVERAGE DENSITY (DENS 1+ DENS 2) / 2					
Cf	CORE CORRELATION LINE 3 + _____					
4	% COMPACTION DENSITY / MAMD					

TARGET

AVE = **B1** = _____ lb/ft³

AVE = **B2** = _____ %

Note: If any single value in row 4 is above 95% of **MAMD** contact the Project Manager

MAMD _____ lb/ft³ **X** PERCENT COMPACTION REQUIRED _____ % **= C =** _____ lb/ft³

REMARKS

CONTROL STRIP IS VALID ONLY IF:

	YES	NO
1. B1 is => **C**	☐	☐
2. Individual Results in Row 4 are all within ± 1.5 of **B2**	☐	☐

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

DEVELOPMENT OF ROLLER PATTERN

CONTROL STRIP METHOD OF COMPACTION

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
CONTRACTOR OR SUPPLIER		PROJECT MANAGER			BID ITEM NUMBER
ODOT Forms		Sean Parker			123
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS	TYPE GAUGE-SERIAL NUMBER		MIX NOMINAL SIZE
09-MD0001	288-297	2"	Troxler 3430 #12345		L3 1/2" Dense
MEASURED PLACEMENT TEMP °F	PANEL WIDTH	CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE
290	13'	1	1-1	1st	10/10/2012

	ROLLER TYPE AND DESCRIPTION (MANUFACTURER, WEIGHT, ETC)	CODES FOR ROLLER TYPES
BREAKDOWN	CAT PF 300B - 25 ton - P	P - PNEUMATIC
INTERMEDIATE	IR DD 130 - 14 ton - DDV	TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY
FINISH	Dynapac CC 412 - 10 ton - DDV	DDV-DOUBLE DRUM VIBRATORY

NOTE: LENGTH OF CONTROL STRIP IS ALWAYS THE LENGTH OF CONTRACTOR'S ROLLING PATTERN (MAXIMUM 500ft)

DENSITY TEST CANNOT BE TAKEN BEHIND PNEUMATIC ROLLER WHEN USED IN THE BREAKDOWN POSITION.

INDICATE IF VIBRATION USED AND DIRECTION BY CIRCLING (F) FORWARD OR (B) BACK.

ROLLER →	CAT PT 300B		IR DD 130		Dynapac CC 412		Dynapac CC 412	
PASSES ↓	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY	MIX TEMP °F	DENSITY
1	288	--- F B	251	145.1 F B	180	148.1 F B	160	149.9 F B
2	281	--- F B	245	147.5 F B	175	148.8 F B	158	150.2 F B
3	277	--- F B	241	147.3 F B	172	149.1 F B		F B
4		F B		F B		F B		F B

"INITIAL POINT" (SANDED) DENSITY READING 1 151.1 lb/ft³
2 151.4 lb/ft³

If correlation applies enter **A** = AVE + Correlation

AVE = **A** = 151.9 lb/ft³

NOTE: IF **A** IS LESS THAN **C** , MOVE AHEAD, CHANGE ROLLING PATTERN AND START OVER.

		1.0 Ft from LEFT	MIDPOINT LEFT	CENTER	MIDPOINT RIGHT	1.0 Ft from LEFT
	STATION	16+00	17+53	17+01	17+42	17+86
1	DENSITY lb/ft³	151.3	153.3	153.2	151.6	149.2
2	DENSITY lb/ft³	150.9	152.8	153.2	151.8	149.9
3	AVERAGE DENSITY (DENS 1+ DENS 2) / 2	151.1	153.1	153.2	151.7	149.6
Cf	CORE CORRELATION LINE 3 + 0.6	151.7	153.7	153.8	152.3	150.2
4	% COMPACTION DENSITY / MAMD	93.3	94.5	94.6	93.7	92.4

TARGET
AVE = **B1** = 152.3 lb/ft³
AVE = **B2** = 93.7 %

Note: If any single value in row 4 is above 95% of **MAMD** contact the Project Manager

MAMD 162.6 lb/ft³ **X** PERCENT COMPACTION REQUIRED 92.0 % **= C =** 149.6 lb/ft³

REMARKS

CONTROL STRIP IS VALID ONLY IF:

	YES	NO
1. B1 is => **C**	X	
2. Individual Results in Row 4 are all within ± 1.5 of **B2**	X	

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

DEVELOPMENT OF ROLLER PATTERN

CONTROL STRIP METHOD OF COMPACTION FOR THIN LIFTS OF ACP (TM301)

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS **<2"**	TYPE GAUGE-SERIAL NUMBER		MIX NOMINAL SIZE
MEASURED PLACEMENT TEMP °F	PANEL WIDTH	CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE

	ROLLER TYPE AND DESCRIPTION (MANUFACTURER, WEIGHT, ETC)	CODES FOR ROLLER TYPES
BREAKDOWN		P - PNEUMATIC
INTERMEDIATE		TS - TANDEM STEEL 3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY
FINISH		DDV-DOUBLE DRUM VIBRATORY

NOTE: TW0 (2) EVALUATION POINTS IN AN AREA REPRESENTING THE OVERALL MATERIAL AND CONDITIONS OF PLACEMENT.

EVALUATION POINTS SHALL BE AT THE SAME STATION AT LEAST 1 METER (3 FT) APART TRANSVERSELY.

DENSITY TEST CANNOT BE TAKEN BEHIND PNEUMATIC ROLLER WHEN USED IN THE BREAKDOWN POSITION.

STATION	OFFSET DISTANCE FROM CENTERLINE			
	EVAL 1		**EVAL 2**	

INDICATE IF VIBRATION (V) OR STATIC (S) USED AND DIRECTION BY CIRCLING (F) FORWARD OR (B) BACK.

PASS	EVALUATION POINT 1					EVALUATION POINT 2					AVERAGE DENSITY
	ROLLER	TEMP	F/B	DENSITY	S/V	ROLLER	TEMP	F/B	DENSITY	S/V	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

REMARKS

THE OPTIMUM ROLLING PATTERN CONSISTS OF ONE LESS THAN THE NUMBER OF PASSES NECESSARY TO REACH THE POINT AT WHICH DENSITY DOES NOT INCREASE.

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

DEVELOPMENT OF ROLLER PATTERN

CONTROL STRIP METHOD OF COMPACTION FOR THIN LIFTS OF ACP (TM301)

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)						CONTRACT NUMBER
OR97: Lower Bridge Rd. (Terrebonne)						C1971
CONTRACTOR OR SUPPLIER			PROJECT MANAGER			BID ITEM NUMBER
Hooker Creek			Earl Mershon			420
ODOT MIX DESIGN NO.	JMF PLACEMENT TEMP °F	LIFT THICKNESS <2"	TYPE GAUGE-SERIAL NUMBER			MIX NOMINAL SIZE
15-MD0027	290-302	1 1/2"	Troxler 3440 #22252			1/2"
MEASURED PLACEMENT TEMP °F	PANEL WIDTH		CONTROL STRIP NO.	LOT-SUBLOT	LIFT	DATE
292	12 ft		QA-1	2-1	1	4/27/2015

ROLLER TYPE AND DESCRIPTION (MANUFACTURER, WEIGHT, ETC)		CODES FOR ROLLER TYPES
BREAKDOWN	CAT CB534XW - DDV	P - PNEUMATIC
INTERMEDIATE	CAT CB534 - DDV	TS - TANDEM STEEL
FINISH	CAT CB24 - DDV	3WS - THREE WHEEL STEEL SDV-SINGLE DRUM VIBRATORY DDV-DOUBLE DRUM VIBRATORY

NOTE: TW0 (2) EVALUATION POINTS IN AN AREA REPRESENTING THE OVERALL MATERIAL AND CONDITIONS OF PLACEMENT.
EVALUATION POINTS SHALL BE AT THE SAME STATION AT LEAST 1 METER (3 FT) APART TRANSVERSELY.
DENSITY TEST CANNOT BE TAKEN BEHIND PNEUMATIC ROLLER WHEN USED IN THE BREAKDOWN POSITION.

STATION	OFFSET DISTANCE FROM CENTERLINE			
"PE" 1217+44	EVAL 1	15ft rt	EVAL 2	19ft rt

INDICATE IF VIBRATION (V) OR STATIC (S) USED AND DIRECTION BY CIRCLING (F) FORWARD OR (B) BACK.

PASS	EVALUATION POINT 1					EVALUATION POINT 2					AVERAGE DENSITY
	ROLLER	TEMP	F/B	DENSITY	S/V	ROLLER	TEMP	F/B	DENSITY	S/V	
1	CAT CB534XW - DDV	280	F	128.3	V	CAT CB534XW - DDV	282	B	127.9	V	128.1
2	CAT CB534XW - DDV	273	F	131.2	V	CAT CB534XW - DDV	270	B	130.9	V	131.1
3	CAT CB534XW - DDV	254	F	133.0	S	CAT CB534XW - DDV	250	B	133.5	S/V	133.3
4	CAT CB534XW - DDV	225	F	134.6	S	CAT CB534XW - DDV	220	B	134.7	S/V	134.7
5	CAT CB534 - DDV	212	F	138.0	V	CAT CB534 - DDV	205	B	136.5	V	137.3
6	CAT CB534 - DDV	202	F	139.5	V	CAT CB534 - DDV	186	B	140.0	V	139.8
7	CAT CB534 - DDV	162	F	140.0	S	CAT CB534 - DDV	154	B	140.5	S	140.3
8	CAT CB534 - DDV	142	F	141.2	S	CAT CB534 - DDV	138	B	140.8	S	141.0
9	CAT CB534 - DDV	132	F	140.1	S	CAT CB534 - DDV	130	B	139.8	S	140.0
10											
11											
12											
13											
14											
15											
16											

REMARKS

THE OPTIMUM ROLLING PATTERN CONSISTS OF ONE LESS THAN THE NUMBER OF PASSES NECESSARY TO REACH THE POINT AT WHICH DENSITY DOES NOT INCREASE.

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Josh Huber #42332	ODOT R1 QA		4/27/2015

FIELD WORKSHEET FOR ACP (PLANT REPORT)

English (**E**) Metric (**M**)

PROJECT NAME (SECTION)				ODOT MIX DESIGN NO.	TEST NO.	CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER			DATE	AMOUNT REPRESENTED	BID ITEM NUMBER
SOURCE NAME	SOURCE NUMBER			TIME	(EAC OR ACP)	MIX NOMINAL SIZE
PLANT / MODEL	TYPE	SIZE	TO BE USED IN	SAMPLED AT	JMF MIX TEMP.	MIX TEMP

SIEVE SIZE	SIEVE ANALYSIS MASS 1	MASS 2	TOTAL MASS	% RET	% PASS	INCINERATOR CORRECTION FACTOR	CORRECTED % PASSING	JOB MIX FORMULA TARGET	TOLERANCE	SIEVE SIZE
PAN										
		INITIAL DRY MASS					% ASPHALT , Pb			ASPHALT

COLD FEED MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

MOISTURE %={(A-B)/ (B-T)} X 100=

MIX MOISTURE

WET TEMP | DRY TEMP

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

MOISTURE %= [(A-B)/(B-T)] X 100=

RAP MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

MOISTURE %= [(A-B)/(B-T)] X 100=

SIEVE LOSS

PAN TARE	(T)	
DRY WASHED MASS	(C)	
Mass After Sieve	(D)	

SIEVE LOSS %={(C-T-D)/C-T)}X 100=

METER READINGS

	ASPHALT	WET AGG	WET RAP	ANTISTRIP	FILLER	FIBER
BEGINING						
ENDING						
SUB TOTAL						
MOISTURE		%	%	%	%	%
TOTAL	O Tons Mg	A Tons Mg	B Tons Mg	C Tons Mg	D Tons Mg	E Tons Mg

T-308 (Method A or B)

BASKET TARE	T	
MIX MASS & BASKET	A	
AGG MASS & BASKET	B	
COOL AGG & BASKET		
MIX MOISTURE	%M	

(Mi) =((A-T)/(1+%M/100)) (Mf) = (B - T)

TEMP A		Mi
TEMP B		Mf

%I = [(Mi -Mf) / (Mi)] x 100

% INCINERATED	%I	
CORRECTION FACTOR	Cf	

% AC, Pb=(% I - Cf)

% AC, Pb

REMARKS:

ASPHALT METER CORRECTION

% ASPHALT= $\frac{O}{O+A}$ X100= (ACP)

% FILLER $\frac{D}{A+B+D}$ X100=

PLANT MOISTURE AND DRY READINGS

% | ←AGG RAP→ | %

% RAP = $\frac{B}{A+B}$ X100=

% FIBER $\frac{E}{O+A+B+D+E}$ X100=

% ANTISTRIP $\frac{C}{A-C}$ X100=

% ASPHALT= $\frac{O}{A}$ X100= (EAC)

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

☐ QUALITY CONTROL
☐ VERIFICATION
☐ INDEPENDENT ASSURANCE

FIELD WORKSHEET FOR ACP (PLANT REPORT)

E English (E) Metric (M)

PROJECT NAME (SECTION)	ODOT MIX DESIGN NO.	TEST NO.	CONTRACT NUMBER
Forms Example	08-MD0000	1-1	12345

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	DATE	AMOUNT REPRESENTED	BID ITEM NUMBER
ODOT Forms	Sean Parker	9/17/2012	1000	123

SOURCE NAME	SOURCE NUMBER	TIME	(EAC OR ACP)	MIX NOMINAL SIZE
Good Rock Bar	10-123-3	8:00pm	ACP	1/2"

PLANT / MODEL	TYPE	SIZE	TO BE USED IN	SAMPLED AT	JMF MIX TEMP.	MIX TEMP
Gencore	Drum	350	L3 1/2" Dense	Drum Discharge	305-322	320

SIEVE SIZE	SIEVE ANALYSIS MASS 1	MASS 2	TOTAL MASS	% RET	% PASS	INCINERATOR CORRECTION FACTOR	CORRECTED % PASSING	JOB MIX FORMULA TARGET	TOLERANCE	SIEVE SIZE
				0.0	100.0		100			
				0.0	100.0		100			
3/4	0.0			0.0	100.0		100	100	95-100	3/4
1/2"	82.9		82.9	5.2	94.8		95	95	90-100	1/2"
3/8"	261.6		261.6	16.4	78.4		78	77	---	3/8"
1/4"	298.9		298.9	18.7	59.7		60	---	---	1/4"
#4	185.4		185.4	11.6	48.1		48	50	45-55	#4
#6	141.3		141.3	8.9	39.2		39	---	---	#6
#8	156.5		156.5	9.8	29.4		29	27	23-31	#8
#16	120.9		120.9	7.6	21.8		22	---	---	#16
#30	138.4		138.4	8.7	13.1		13	14	10-18	#30
#50	52.1		52.1	3.3	9.8		10	---	---	#50
#100	35.1		35.1	2.2	7.6		8	---	---	#100
#200	38.5		38.5	2.4	5.2		5.2	5.5	3.5-7.5	#200
PAN	15.8		15.8	1.0						
		INITIAL DRY MASS	1596.3				% ASPHALT , Pb	5.50	5.0-6.0	ASPHALT

COLD FEED MOISTURE

PAN TARE	(T)	0.0
WET MASS + PAN	(A)	2465.7
DRY MASS + PAN	(B)	2397.1
MOISTURE %={(A-B)/ (B-T)} X 100=		2.9

MIX MOISTURE

WET TEMP 220 DRY TEMP 226

PAN TARE	(T)	356.2
WET MASS + PAN	(A)	1412.8
DRY MASS + PAN	(B)	1410.0
MOISTURE %= [(A-B)/(B-T)] X 100=		0.27

RAP MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	
MOISTURE %= [(A-B)/(B-T)] X 100=		

METER READINGS

	ASPHALT	WET AGG	WET RAP	ANTISTRIP	FILLER	FIBER
BEGINING	2.92	53.92		29.91		
ENDING	6.56	120.42		29.36		
SUB TOTAL	3.64	66.50		0.55		
MOISTURE		2.90 %	%	%	%	%
TOTAL	O 3.64 Tons	A 64.63 Tons	B Tons	C 0.55 Tons	D Tons	E Tons

INCINERATOR

BASKET TARE	T	3033.2
MIX MASS & BASKET	A	4729.3
AGG MASS & BASKET	B	4628.8
COOL AGG & BASKET		4629.5
MIX MOISTURE	%M	0.27

(Mi) =((A-T)/(1+%M/100)) (Mf) = (B - T)

TEMP A	315	Mi	1691.5
TEMP B	310	Mf	1595.6

%I = [(Mi -Mf) / (Mi)] x 100

% INCINERATED	%I	5.67
CORRECTION FACTOR	Cf	0.31

% AC, Pb=(% I - Cf)

% AC, Pb 5.36

SIEVE LOSS

PAN TARE	(T)	0.0
DRY WASHED MASS	(C)	1527.6
Mass After Sieve	(D)	1527.4
SIEVE LOSS %={(C-T-D)/C-T)}X 100=		0.0

REMARKS:

ASPHALT METER CORRECTION

% ASPHALT= O / O+A X100= 5.33 (ACP)

% FILLER D / A+B+D X100=

PLANT MOISTURE AND DRY READINGS

3.1 % % 52.30 ←AGG 116.80 RAP→

% RAP = B / A+B X100=

% FIBER E / O+A+B+D+E X100=

% ANTISTRIP C / A-C X100= 0.858

% ASPHALT= O / A X100= (EAC)

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Josh Huber #42332	ODOT		9/16/2015

X QUALITY CONTROL
VERIFICATION
INDEPENDENT ASSURANCE

FIELD WORKSHEET FOR ACP (PLANT REPORT)

E English (E) Metric (M)

PROJECT NAME (SECTION)				ODOT MIX DESIGN NO.	TEST NO.	CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		DATE	AMOUNT REPRESENTED	BID ITEM NUMBER
SOURCE NAME		SOURCE NUMBER		TIME	(EAC OR ACP)	MIX NOMINAL SIZE
PLANT / MODEL	TYPE	SIZE	TO BE USED IN	SAMPLED AT	JMF MIX TEMP.	MIX TEMP

SIEVE ANALYSIS

SIEVE SIZE	MASS 1	MASS 2	TOTAL MASS	% RET	% PASS	INCINERATOR CORR. FACTOR	CORRECTED % PASSING	JOB MIX FORMULA TARGET	JOB MIX FORMULA TOLERANCE	SIEVE SIZE
							% AC, Pb			
	INITIAL DRY MASS									

COLD FEED MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

%M ={(A-B)/ (B-T)} X 100=

MIX MOISTURE

TEMP A		TEMP B	
PAN TARE	(T)		
WET MASS + PAN	(A)		
DRY MASS + PAN	(B)		

%M = [(A-B)/(B-T)] X 100=

RAP MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

%M = [(A-B)/(B-T)] X 100=

RAS MOISTURE

PAN TARE	(T)	
WET MASS + PAN	(A)	
DRY MASS + PAN	(B)	

%M = [(A-B)/(B-T)] X 100=

SIEVE LOSS

PAN TARE	(T)	
DRY WASHED MASS	(C)	
Mass After Sieve	(D)	

SL %={(C-T-D)/C-T)}X 100=

METER READINGS

	ASPHALT	WET AGG	WET RAP	WET RAS	ANTISTRIP	FILLER	FIBER
BEGINING							
ENDING							
SUB TOTAL							
MOISTURE		%	%	%	%		
TOTAL	O 0.00 Tons	A Tons	B Tons	C Tons	D Tons	E Tons	F

T-308 METHOD A or B

BASKET TARE	T	
MIX MASS & BASKET	A	
AGG MASS & BASKET	B	
COOL AGG & BASKET		
MIX MOISTURE	%M	

(Mi) =(A-T)/(1+(%M/100)) (Mf) = (B - T)

TEMP A		Mi	
TEMP B		Mf	

%I = [(Mi -Mf) / (Mi)] x 100

% INCINERATED	%I	
CORRECTION FACTOR	Cf	

% AC, Pb=(% I - Cf)

% AC, Pb = **(H)**

ASPHALT METER CORRECTION

% VIRGIN AC (G) $\frac{O}{O+A+B+C}$ X100=

% FILLER $\frac{E}{A+B+C+E}$ X100=

PLANT DRY & MOISTURE SETTINGS

	←AGG→	
	←RAP→	
	←RAS→	
%m AGG	%m RAP	%m RAS

% RAM = $\frac{B+C}{A+B+C}$ X100=

% FIBER $\frac{F}{O+A+B+C+E+F}$ X100=

% RAS = $\frac{C}{A+B+C}$ X100=

% ASPHALT= EAC $\frac{O}{A}$ X100=

% BINDER REPLACEMT $\frac{H-G}{H}$ X100=

% ANTISTRIP $\frac{D}{A-D}$ X100=

REMARKS:

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE	QUALITY CONTROL VERIFICATION INDEPENDENT ASSURANCE

FIELD WORKSHEET FOR ACP (PLANT REPORT)

E English (E) Metric (M)

PROJECT NAME (SECTION)	ODOT MIX DESIGN NO.	TEST NO.	CONTRACT NUMBER
Form Example	12-MD0000	1-1	12345

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	DATE	AMOUNT REPRESENTED	BID ITEM NUMBER
ODOT Forms	Sean Parker	10/10/2012	1000	123

SOURCE NAME	SOURCE NUMBER	TIME	(EAC OR ACP)	MIX NOMINAL SIZE
Good Rock Bar	10-123-3	8:00pm	ACP	1/2"

PLANT / MODEL	TYPE	SIZE	TO BE USED IN	SAMPLED AT	JMF MIX TEMP.	MIX TEMP
Gencore	Drum	350	L3 1/2" Dense	Drum Discharge	319-329	325

SIEVE ANALYSIS

SIEVE SIZE	MASS 1	MASS 2	TOTAL MASS	% RET	% PASS	INCINERATOR CORR. FACTOR	CORRECTED % PASSING	JOB MIX FORMULA TARGET	JOB MIX FORMULA TOLERANCE	SIEVE SIZE
				0.0	100.0		**100**			
				0.0	100.0		**100**			
3/4	0.0			0.0	100.0		**100**	100	**95-100**	3/4
1/2	33.3		33.3	2.2	97.8		**98**	97	**90-100**	1/2
3/8	141.4		141.4	9.5	88.3		**88**	84		3/8
1/4	348.9		348.9	23.5	64.8		**65**	64		1/4
#4	174.0		174.0	11.7	53.1		**53**	53	**48-58**	#4
#6	156.1		156.1	10.5	42.6		**43**			#6
#8	141.5		141.5	9.5	33.1		**33**	32	**28-36**	#8
#16	177.4		177.4	12.0	21.1		**21**	21		#16
#30	97.5		97.5	6.6	14.5		**15**	13	**9-17**	#30
#50	63.1		63.1	4.3	10.2		**10**	9		#50
#100	44.2		44.2	3.0	7.2		**7**	6		#100
#200	32.2		32.2	2.2	5.0		**5.0**	4.4	**2.4-6.4**	#200
PAN	19.2		19.2	1.3			**% AC, Pb**	5.70	**5.20-6.20**	
	INITIAL DRY MASS		1482.5							

COLD FEED MOISTURE

PAN TARE	(T)	1280.2
WET MASS + PAN	(A)	4025.9
DRY MASS + PAN	(B)	3916.1
%M ={(A-B)/ (B-T)} X 100=		**4.2**

MIX MOISTURE

TEMP A	66	TEMP B	74
PAN TARE	(T)	1730.5	
WET MASS + PAN	(A)	3058.7	
DRY MASS + PAN	(B)	3054.2	
%M = [(A-B)/(B-T)] X 100=		**0.34**	

RAP MOISTURE

PAN TARE	(T)	225.7
WET MASS + PAN	(A)	1619.6
DRY MASS + PAN	(B)	1579.3
%M = [(A-B)/(B-T)] X 100=		**3.0**

RAS MOISTURE

PAN TARE	(T)	235.2
WET MASS + PAN	(A)	1329.4
DRY MASS + PAN	(B)	1315.5
%M = [(A-B)/(B-T)] X 100=		**1.3**

SIEVE LOSS

PAN TARE	(T)	1307.0
DRY WASHED MASS	(C)	2736.5
Mass After Sieve	(D)	1428.8
SL %={(C-T-D)/C-T)}X 100=		**0.0**

METER READINGS

	ASPHALT	WET AGG	WET RAP	WET RAS	ANTISTRIP	FILLER	FIBER
BEGINING	31.78	571.67	235.37	50.56			
ENDING	34.08	612.21	251.82	52.59			
SUB TOTAL	2.30	40.54	16.45	2.03			
MOISTURE		**4.2** %	**3.0** %	**1.3** %	%		
TOTAL	**O** 2.30 Tons	**A** 38.91 Tons	**B** 15.97 Tons	**C** 2.00 Tons	**D** Tons	**E** Tons	**F**

T-308 METHOD A or B: B

BASKET TARE	T	3327.2
MIX MASS & BASKET	A	4910.3
AGG MASS & BASKET	B	4809.7
COOL AGG & BASKET		4809.7
MIX MOISTURE	%M	0.34

(Mi) =(A-T)/(1+(%M/100)) (Mf) = (B - T)

TEMP A	68	Mi	1577.7
TEMP B	76	Mf	1482.5

%I = [(Mi -Mf) / (Mi)] x 100

% INCINERATED	%I	6.03
CORRECTION FACTOR	Cf	**0.36**

% AC, Pb=(% I - Cf)

% AC, Pb = (H) 5.67

ASPHALT METER CORRECTION

% VIRGIN AC (G) = O / (O+A+B+C) X100= **3.89**

% FILLER = E / (A+B+C+E) X100=

PLANT DRY & MOISTURE SETTINGS

542.90	←AGG→	581.40
226.10	←RAP→	241.90
51.22	←RAS→	53.27
%m AGG	%m RAP	%m RAS
5.3	4.1	1.3

% RAM = B+C / A+B+C X100= **31.6**

% FIBER = F / O+A+B+C+E+F X100=

% RAS = C / A+B+C X100= **3.5**

% ASPHALT= EAC = O / A X100=

% BINDER REPLACEMT = H-G / H X100= **31.5**

% ANTISTRIP = D / A-D X100=

REMARKS:

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Josh Huber #42332	ODOT		9/16/2015

X QUALITY CONTROL
VERIFICATION
INDEPENDENT ASSURANCE

NUCLEAR - CORE CORRELATION WORKSHEET

E English (**E**) Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT MIX DESIGN NO.	TYPE GAUGE - SERIAL NUMBER	LIFT	DEPTH OF LIFT	MATERIAL TYPE

UNDERLYING MATERIAL (ACP / GRIND / AGG BASE)

LOT SUBLOT	TEST	SHOT #1	SHOT #2	NUCLEAR DENSITY AVERAGE	CORE DENSITY					
					CORE THICKNESS	(A) MASS IN AIR	(C) MASS IN WATER	(B) SSD MASS	$\frac{A}{B-C}$	X 62.4
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									

TEST	**Difference** Core - Nuclear	VALUES NOT USED
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
	Average	
	Standard Deviation	

2.5 MAX

CORRELATION FACTOR

(TO ONE DECIMAL PLACES)

a. If the standard deviation exceeds 2.5 lb/ft3 the value with the greatest deviation from the average is not used.

b. If less then 8 values remain, obtain more gauge readings and cores.

$$\text{Standard Deviation} = \sqrt{\frac{\sum x^2}{n-1}}$$

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICAN **CDT** (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
CERTIFIED TECHNICAN **CAT 1**(PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
CERTIFIED TECHNICAN **QCCS** (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

NUCLEAR - CORE CORRELATION WORKSHEET

E English (**E**) Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
Forms Example				12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms		Sean Parker		123
ODOT MIX DESIGN NO.	TYPE GAUGE - SERIAL NUMBER	LIFT	DEPTH OF LIFT	MATERIAL TYPE
12-MD0000	Troxler 3430 #11111	2nd	2"	L3 1/2" Dense

UNDERLYING MATERIAL (ACP / GRIND / AGG BASE)

HMAC

LOT SUBLOT	TEST	SHOT #1	SHOT #2	NUCLEAR DENSITY AVERAGE	CORE DENSITY					
					CORE THICKNESS	(A) MASS IN AIR	(C) MASS IN WATER	(B) SSD MASS	A / B-C	X 62.4
1-1-1	1	139.7	140.3	140	1.8	1867.3	1073.1	1885.7	2.298	143.4
1-1-2	2	138.8	138.8	138.8	1.5	1371.2	782.9	1384.2	2.280	142.3
1-1-3	3	139	139.8	139.4	1.6	1625.3	928.4	1639.9	2.284	142.5
1-1-4	4	139	139.2	139.1	1.7	1641.4	941.4	1660.4	2.283	142.5
1-1-5	5	140.5	140.1	140.3	1.7	1700.9	965.6	1716.9	2.264	141.3
1-2-1	6	137.1	138.6	137.9	1.7	1698.0	988.6	1725.9	2.303	143.7
1-2-2	7	138.2	138.8	138.5	1.9	1943.3	1127.3	1974.9	2.293	143.1
1-2-3	8	144.9	146.2	145.6	2.5	3241.2	1883.2	3250.9	2.370	147.9
1-2-4	9	142.8	143	142.9	2.1	2291.5	1325.2	2308.1	2.331	145.5
1-2-5	10	142.9	142.9	142.9	2.1	2285.3	1325.3	2309.3	2.322	144.9

TEST	**Difference** Core - Nuclear	VALUES NOT USED
1	3.4	
2	3.5	
3	3.1	
4	3.4	
5	1.0	
6	5.8	
7	4.6	
8	2.3	
9	2.6	
10	2.0	
	Average 3.2	
	Standard Deviation 1.35	

2.5 MAX

CORRELATION FACTOR

3.2

(TO ONE DECIMAL PLACES)

a. If the standard deviation exceeds 2.5 lb/ft3 the value with the greatest deviation from the average is not used.

b. If less then 8 values remain, obtain more gauge readings and cores.

$$\text{Standard Deviation} = \sqrt{\frac{\sum x^2}{n-1}}$$

X QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICAN **CDT** (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012
CERTIFIED TECHNICAN **CAT 1**(PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012
CERTIFIED TECHNICAN **QCCS** (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Sean Parker #12345	ODOT		10/9/2012

CALIBRATION BATCH FORM

SAMPLE No. | **E** English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
MIX DESIGN NO.	DESIGN RAP % **(%RAP)**	DESIGN ANTISTRIP %	DESIGN ASPHALT % **(P_b)**	MATERIAL TYPE
AGG SOURCE No.	RAP SOURCE	ANTISTRIP SUPPLIER	AC SUPPLIER	MIXING TEMP RANGE
AGG % Absorbtion	RAP % ASPHALT **(P_{br})**	ANTISTRIP % Solids	AC GRADE	MASS OF SAMPLE **(M_{mix})** **Grams**

Mass of Asphalt Cement =	(Mass of Sample x Design Asphalt %) **/** 100	
Mass of Aggregate =	Mass of Sample - Mass of Asphalt Cement	
Mass of Asphalt Cement in RAP =	M_{mix} x [(1 - P_b / 100) / {(100 / %RAP - 1) x (100 / P_{br})} + (100 / P_{br} - 1)]	
Mass of Aggregate in RAP =	Mass of Asphalt Cement in RAP x (100 / RAP % Asphalt - 1)	
Mass of RAP =	Mass of Asphalt Cement in RAP + Mass of Aggregate in RAP	
Mass of Virgin Aggregate =	Mass of Aggregate - Mass of Aggregate in RAP	
Mass of Virgin Aggregate without Antistrip =	Mass of Virgin Aggregate / (100 + DESIGN ANTISTRIP %) x 100	
Mass of Antistrip in Virgin Aggregate =	Mass of Virgin Aggregate - Mass of Virgin Agg w/o Antistrip	
Mass of Virgin Asphalt Cement =	Mass of Asphalt Cement - Mass of Asphalt Cement in RAP	
(Pb) Virgin Asphalt Cement Percentage =	Mass of Virgin Asphalt Cement / Mass of Virgin Aggregate + Mass of Virgin Asphalt Cement	

Batching Detail

Sieve	JMF % Pass	RAP % Pass	Virgin AGG Target % Pass	Virgin AGG Target % Retain	DRY VIRGIN AGGREGATE BATCHING WEIGHTS Individual	Accumulative	Actual
1 in							
¾ in							
½ in							
⅜ in							
¼ in							
№ 4							
№ 8							
№ 16							
№ 30							
№ 50							
№ 100							
№ 200							
Pan	Without ANTISTRIP						

Mix Designs Follow TM 316 (ADDING ANTI-STRIP ADDITIVES OR LIME TO MIX DESIGN SAMPLES)

TM 323 Add 0.1% More Moisture than AGG	Moisture				
% Absorbtion **MIX** add lime **MIX** AGAIN	ANTISTRIP				

All Ingredients and Utensils are Weighed in Hot Condition			Accumulative	Actual
		BUTTERED MIXING BOWL and SPOON		
Aggregate		**Mass of DRY AGG, ANTISTRIP, BOWL & SPOON**		
Asphalt		**Actual** Mass of DRY AGG X Pb **/** 100 - Pb		
RAP		Weigh the Sample after mixing before transferring to another container		
BUTTERED MIXING BOWL and SPOON		With in 1 Gram of Previous Tare weight		
		SAMPLE OF HMAC		

ACTUAL RAP AGG		ACTUAL RAP ASPHALT			
ACTUAL VIRG AGG		ACTUAL VIRG ASPHALT			
ACTUAL AGG TOTAL		ACTUAL ASPHALT TOTAL		% ASPHALT	

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

CALIBRATION BATCH FORM

SAMPLE No. 3 | **E** English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)				CONTRACT NUMBER
Forms Example				12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms		Sean Parker		123
MIX DESIGN NO.	DESIGN RAP % **(%RAP)**	DESIGN ANTISTRIP %	DESIGN ASPHALT % **(P_b)**	MATERIAL TYPE
12-MD0001	20	0.375	5.5	L3 3/4" Dense
AGG SOURCE No.	RAP SOURCE	ANTISTRIP SUPPLIER	AC SUPPLIER	MIXING TEMP RANGE
10-001-3	Hwy 20	Ultrapave	Albina3	300-304
AGG % Absorbtion	RAP % ASPHALT **(P_{br})**	ANTISTRIP % Solids	AC GRADE	MASS OF SAMPLE **(M_{mix})**
2.3	6.3	69	PG 70-28	**2100 Grams**

Mass of Asphalt Cement =	(Mass of Sample x Design Asphalt %) **/** 100	115.5
Mass of Aggregate =	Mass of Sample - Mass of Asphalt Cement	1984.5
Mass of Asphalt Cement in RAP =	M_{mix} x [(1 - P_b / 100) / {(100 / %RAP - 1) x (100 / P_{br})} + (100 / P_{br} - 1)]	25.3
Mass of Aggregate in RAP =	Mass of Asphalt Cement in RAP x (100 / RAP % Asphalt - 1)	376.6
Mass of RAP =	Mass of Asphalt Cement in RAP + Mass of Aggregate in RAP	402.0
Mass of Virgin Aggregate =	Mass of Aggregate - Mass of Aggregate in RAP	1607.9
Mass of Virgin Aggregate without Antistrip =	Mass of Virgin Aggregate / (100 + DESIGN ANTISTRIP %) x 100	1601.9
Mass of Antistrip in Virgin Aggregate =	Mass of Virgin Aggregate - Mass of Virgin Agg w/o Antistrip	6.0
Mass of Virgin Asphalt Cement =	Mass of Asphalt Cement - Mass of Asphalt Cement in RAP	90.2
(Pb) Virgin Asphalt Cement Percentage =	Mass of Virgin Asphalt Cement / Mass of Virgin Aggregate + Mass of Virgin Asphalt Cement	5.31%

Batching Detail

	JMF	RAP	Virgin AGG Target		DRY VIRGIN AGGREGATE BATCHING WEIGHTS		
Sieve	% Pass	% Pass	% Pass	% Retain	Individual	Accumulative	Actual
1 in	100	100.0	100.0	0.0	0.0	**0.0**	0
¾ in	96	100.0	95.0	5.0	80.5	**80.5**	78.9
½ in	80	98.6	75.2	19.7	316.2	**396.7**	396.8
⅜ in	69	84.6	64.9	10.3	165.0	**561.7**	561.9
¼ in	54	63.9	51.3	13.6	218.5	**780.2**	780.5
№ 4	44	54.5	41.1	10.2	163.4	**943.5**	943.7
№ 8	25	29.8	23.4	17.7	282.9	**1226.4**	1226.4
№ 16	18	23.0	16.4	7.1	113.5	**1339.8**	1339.8
№ 30	11	16.2	9.3	7.1	113.5	**1453.3**	1453.3
№ 50	9	13.3	7.5	1.8	28.6	**1481.9**	1481.9
№ 100	7	10.3	5.7	1.8	28.2	**1510.0**	1510
№ 200	5.0	7.2	4.0	1.7	27.8	**1537.8**	1537.8
Pan	Without ANTISTRIP			4.0	64.1	**1601.9**	1601.9

Mix Designs Follow TM 316 (ADDING ANTI-STRIP ADDITIVES OR LIME TO MIX DESIGN SAMPLES)

TM 323 Add 0.1% More Moisture than AGG	Moisture	2.4%	38.4	**1640.3**	1640.3
% Absorbtion **MIX** add lime **MIX** AGAIN	ANTISTRIP	0.4%	6.0	**1646.3**	1646.3

All Ingredients and Utensils are Weighed in Hot Condition			Accumulative	Actual
		BUTTERED MIXING BOWL and SPOON	**1000.0**	1001.2
Aggregate	1607.3	**Mass of DRY AGG, ANTISTRIP, BOWL & SPOON**	**2607.9**	2608.5
Asphalt	90.1	**Actual** Mass of DRY AGG X Pb **/** 100 - Pb	**2698.6**	2698.7
RAP	402.0	Weigh the Sample after mixing before transferring to another container	**3100.6**	3101.4
BUTTERED MIXING BOWL and SPOON		With in 1 Gram of Previous Tare weight	**1000.0**	1000.6
		SAMPLE OF HMAC	**2100.6**	2100.8

ACTUAL RAP AGG	377.3	ACTUAL RAP ASPHALT	25.4		
ACTUAL VIRG AGG	1607.3	ACTUAL VIRG ASPHALT	90.2		
ACTUAL AGG TOTAL	1984.6	ACTUAL ASPHALT TOTAL	115.6	% ASPHALT	5.50%

☑ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/7/2012

ACP INCINERATOR OVEN CALIBRATION WORKSHEET

PROJECT NAME (SECTION)	PROJECT MANAGER	CONTRACT NUMBER	ASPHALT SUPPLIER	ODOT MIX DESIGN NO.
CONTRACTOR OR SUPPLIER	**MATERIAL TYPE**	**PERCENT RAP**	**ASPHALT GRADE**	**CONTRACTOR DESIGN #**

INCINERATOR MAKE		SERIAL NUMBER		BURN METHOD (A OR B)	

BLANK		RAP		Incinerator Sample #		Incinerator Sample #	
PAN TARE		BASKET TARE T		BASKET TARE T		BASKET TARE T	
WET MASS & PAN		MIX MASS & BASKET A		MIX MASS & BASKET A		MIX MASS & BASKET A	
DRY MASS & PAN		AGG MASS & BASKET B		AGG MASS & BASKET B		AGG MASS & BASKET B	
		COOL AGG & BASKET		COOL AGG & BASKET		COOL AGG & BASKET	
		TEMP A	Mi (A-T)	TEMP A	Mi (A-T)	TEMP A	Mi (A-T)
		TEMP B	Mf (B-T)	TEMP B	Mf (B-T)	TEMP B	Mf (B-T)
		%I = [(Mi -Mf) / (Mi)] x 100		%I = [(Mi -Mf) / (Mi)] x 100		%I = [(Mi -Mf) / (Mi)] x 100	

Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass
PAN		Initial Mass		PAN		Initial Mass		PAN		Initial Mass		PAN		Initial Mass	
AFTER WASH DRY MASS				AFTER WASH DRY MASS				AFTER WASH DRY MASS				AFTER WASH DRY MASS			
MASS AFTER SEVE				MASS AFTER SEVE				MASS AFTER SEVE				MASS AFTER SEVE			
Sieve loss				Sieve loss				Sieve loss				Sieve loss			

SIEVE	TARGET	BLANK/RAP	MIX # 1	MIX # 2	AVE 1 & 2	Diff TARGET-BLANK	FACTOR

	MIX # 1	MIX # 2
% LOSS (%I)		
% Pb BATCHED		
CORRECTION		

(Cf)

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE	QUALITY CONTROL VERIFICATION INDEPENDENT ASSURANCE

734-2327_IC (10-2015)

ACP INCINERATOR OVEN CALIBRATION WORKSHEET

PROJECT NAME (SECTION)	PROJECT MANAGER	CONTRACT NUMBER	ASPHALT SUPPLIER	ODOT MIX DESIGN NO.
ODOT Forms	Sean Parker	12345	Paramount	09-MD0001
CONTRACTOR OR SUPPLIER	**MATERIAL TYPE**	**PERCENT RAP**	**ASPHALT GRADE**	**CONTRACTOR DESIGN #**
Best Paving Company	Level 3 1/2" Dense	25	PG 70-22	BPC-001

INCINERATOR MAKE	SERIAL NUMBER	BURN METHOD (A OR B)
Troxler	160	B

BLANK		RAP		Incinerator Sample # 3		Incinerator Sample # 7	
PAN TARE	1311.8	BASKET TARE T	4461.7	BASKET TARE T	4504.2	BASKET TARE T	4543.2
WET MASS & PAN	2403.3	MIX MASS & BASKET A	4812.8	MIX MASS & BASKET A	6033.8	MIX MASS & BASKET A	6073.0
DRY MASS & PAN	2403.3	AGG MASS & BASKET B	4812.8	AGG MASS & BASKET B	5930.8	AGG MASS & BASKET B	5970.9
		COOL AGG & BASKET	4812.8	COOL AGG & BASKET	5930.8	COOL AGG & BASKET	5970.9
		TEMP A 70.0 Mi (A-T)	351.1	TEMP A 71.0 Mi (A-T)	1529.6	TEMP A 71.0 Mi (A-T)	1529.8
		TEMP B 72.0 Mf (B-T)	351.1	TEMP B 75.0 Mf (B-T)	1426.6	TEMP B 73.0 Mf (B-T)	1427.7
		%I = [(Mi -Mf) / (Mi)] x 100	0.00	%I = [(Mi -Mf) / (Mi)] x 100	6.73	%I = [(Mi -Mf) / (Mi)] x 100	6.67

Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass	Sieve	Mass	% Ret	%Pass
1	0.0	0.0	100.0	1	0.0	0.0	100.0	1	0.0	0.0	100.0	1	0.0	0.0	100.0
3/4	0.0	0.0	100.0	3/4	0.0	0.0	100.0	3/4	0.0	0.0	100.0	3/4	0.0	0.0	100.0
1/2	52.0	4.8	95.2	1/2	30.7	8.7	91.3	1/2	53.3	3.7	96.3	1/2	32.3	2.3	97.7
3/8	181.5	16.6	78.6	3/8	8.2	2.3	89.0	3/8	209.4	14.7	81.6	3/8	233.2	16.3	81.4
1/4	228.9	21.0	57.6	1/4	48.4	13.8	75.2	1/4	241.4	16.9	64.7	1/4	236.8	16.6	64.8
4	202.0	18.5	39.1	4	35.8	10.2	65.0	4	237.0	16.6	48.1	4	238.2	16.7	48.1
6	106.0	9.7	29.4	6	37.0	10.5	54.5	6	128.4	9.0	39.1	6	137.0	9.6	38.5
8	58.7	5.4	24.0	8	30.7	8.7	45.8	8	93.1	6.5	32.6	8	86.8	6.1	32.4
16	72.1	6.6	17.4	16	38.4	10.9	34.9	16	100.0	7.0	25.6	16	100.0	7.0	25.4
30	72.2	6.6	10.8	30	38.5	11.0	23.9	30	135.7	9.5	16.1	30	133.9	9.4	16.0
50	28.2	2.6	8.2	50	19.0	5.4	18.5	50	50.0	3.5	12.6	50	50.0	3.5	12.5
100	28.2	2.6	5.6	100	19.1	5.4	13.1	100	50.0	3.5	9.1	100	50.0	3.5	9.0
200	28.4	2.6	3.0	200	19.1	5.4	7.7	200	57.5	4.0	5.1	200	57.9	4.1	4.9
PAN	4.0	Initial Mass	1091.5	PAN	4.7	Initial Mass	351.1	PAN	6.4	Initial Mass	1426.6	PAN	9.3	Initial Mass	1427.7
AFTER WASH DRY MASS			1062.2	AFTER WASH DRY MASS			329.7	AFTER WASH DRY MASS			1362.0	AFTER WASH DRY MASS			1365.7
MASS AFTER SEVE			1062.2	MASS AFTER SEVE			329.6	MASS AFTER SEVE			1362.2	MASS AFTER SEVE			1365.4
Sieve loss			0.0%	Sieve loss			0.0%	Sieve loss			0.0%	Sieve loss			0.0%

SIEVE	TARGET	BLANK/RAP	MIX # 1	MIX # 2	AVE 1 & 2	Diff TARGET-BLANK	FACTOR	
1	100	100.0	100.0	100.0	100.0	0.0	0.0	1
3/4	100	100.0	100.0	100.0	100.0	0.0	0.0	3/4
1/2	96	94.3	96.3	97.7	97.0	1.7	-2.7	1/2
3/8	81	81.2	81.6	81.4	81.5	-0.2	-0.3	3/8
1/4	65	62.0	64.7	64.8	64.8	3.0	-2.8	1/4
4	47	45.5	48.1	48.1	48.1	1.5	-2.6	4
6	39	35.6	39.1	38.5	38.8	3.4	-3.2	6
8	32	29.4	32.6	32.4	32.5	2.6	-3.1	8
16	25	21.7	25.6	25.4	25.5	3.3	-3.8	16
30	16	14.0	16.1	16.0	16.1	2.0	-2.1	30
50	12	10.7	12.6	12.5	12.6	1.3	-1.9	50
100	9	7.4	9.1	9.0	9.1	1.6	-1.7	100
200	5.1	4.1	5.1	4.9	5.0	1.0	-0.9	200

	MIX # 1	MIX # 2
% LOSS (%I)	6.73	6.67
% Pb BATCHED	5.71	5.71
CORRECTION	1.02	0.96

0.99 **(Cf)**

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE		
Scott Aker #43048	ODOT		10/10/2012	X	QUALITY CONTROL
					VERIFICATION
					INDEPENDENT ASSURANCE

DAILY ASPHALT PLANT PRODUCTION

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	REPORT NUMBER
	MATERIAL TYPE (ACP OR EAC)	DATE

DAILY METER READINGS

	PLANT DRY AGG BEGIN		WET AGG BEGIN A
	PLANT DRY AGG END		WET AGG END B 0.00
	PLANT SET AGG MOISTURE		AVERAGE COLD FEED MOISTURE C
D	TOTAL DRY AGG (B-A)/(1+(C/100))		
	PLANT DRY RAP BEGIN		WET RAP BEGIN E
	PLANT DRY RAP END		WET RAP END F 0.00
	PLANT SET RAP MOISTURE		AVERAGE RAP MOISTURE G
H	TOTAL DRY RAP (F-E)/(1+(G/100)) 0.00		
	ASPHALT BEGIN I		
	ASPHALT END J		
K	ASPHALT TOTAL (SHOW METHOD FOR CORRECTION)		
	ANTISTRIP BEGIN correction		CORRECTED L 0.000
	ANTISTRIP DELIVERED 0.00		M 0.000
	ANTISTRIP END 0.00		N 0.000
O	ANTISTRIP TOTAL N-L (meter) or L+M-N (scales) 0.000		
U	UNCOATED AGG WASTE (WEIGHED)		
V	METERED TOTAL DRY MIX (D +H + K - U) (D + K - U)		
Y	BY METER % Pb HMAC: (K / V)X100 EAC : (K / (V - K))X100		
	% ANTISTRIP (O/(D-O))x100		%RAP (H/(D+H))x100
	% ERROR TRUCK SCALE vs. TOTAL METER **ACP** ((W - V) / W) x100 ALLOWABLE ±1.0% (ACP) **EAC** (f- (B - A + K - U) / f x100		

DAILY PHYSICAL INVENTORY

a	TOTAL MIX ACCEPTED
b	PLANT MIX WASTE (WEIGHED)
c	REJECTED LOAD MIX WASTE
d	MIX SOLD TO OTHERS
e	TOTAL MIX NOT ACCEPTED b+c+d 0.00
f	TOTAL HMAC PRODUCED a+e 0.00
g	DAILY AVERAGE MIX MOISTURE
h	TANK STICK BEGIN
i	ASPHALT DELIVERED
k	DEDUCTIONS (ASPHALT REMOVED FROM TANK, PRIOR TO METERING)
m	TANK STICK END
n	TOTAL BY TANK STICKING h + i - k - m 0.00
p	ANTISTRIP BEGIN INVENTORY
q	ANTISTRIP DELIVERED
r	ANTISTRIP END INVENTORY
s	ANTISTRIP TOTAL p + q - r 0.00
W	PHYSICAL TOTAL DRY MIX f / (1+(g/100)) 0.00
Z	BY TANK % Pb ACP: (n / W) x 100 EAC : n/((W-n)/(1+(C/100))) x 100
	% ERROR ASPHALT METER vs. TANK MEASURE ((n - K) / n) x 100
	DAILY DIFFERENCE: TANK vs. METER **Z - Y** ALLOWABLE ±0.20

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

DAILY ASPHALT PLANT PRODUCTION

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	REPORT NUMBER
ODOT Forms	Sean Parker	123
	MATERIAL TYPE (ACP OR EAC)	DATE
	ACP	10/10/2015

DAILY METER READINGS

	PLANT DRY AGG BEGIN		WET AGG BEGIN
	0.00	A	0.00
	PLANT DRY AGG END		WET AGG END
	2596.28	B	2676.76
	PLANT SET AGG MOISTURE		AVERAGE COLD FEED MOISTURE
	3.1	C	2.9
D	TOTAL DRY AGG (B-A)/(1+(C/100))		
	2601.32		
	PLANT DRY RAP BEGIN		WET RAP BEGIN
		E	
	PLANT DRY RAP END		WET RAP END
		F	
	PLANT SET RAP MOISTURE		AVERAGE RAP MOISTURE
		G	
H	TOTAL DRY RAP (F-E)/(1+(G/100))		
	ASPHALT BEGIN		
	I	0	
	ASPHALT END		
	J	147.23	
	ASPHALT TOTAL (SHOW METHOD FOR CORRECTION)		
K	147.23		
	ANTISTRIP BEGIN correction		CORRECTED
	30.210 1.00	L	30.210
	ANTISTRIP DELIVERED		
	0.000 1.00	M	
	ANTISTRIP END		
	8.030 1.00	N	8.030
O	ANTISTRIP TOTAL N-L (meter) or L+M-N (scales)		
	22.180		

U	UNCOATED AGG WASTE (WEIGHED) 5.00

DAILY PHYSICAL INVENTORY

a	TOTAL MIX ACCEPTED 2735.78
b	PLANT MIX WASTE (WEIGHED) 5.00
c	REJECTED LOAD MIX WASTE 0.00
d	MIX SOLD TO OTHERS 0.00
e	TOTAL MIX NOT ACCEPTED b+c+d 5.00
f	TOTAL HMAC PRODUCED a+e 2740.78
g	DAILY AVERAGE MIX MOISTURE 0.27
h	TANK STICK BEGIN 95.85
i	ASPHALT DELIVERED 120.01
k	DEDUCTIONS (ASPHALT REMOVED FROM TANK, PRIOR TO METERING)
m	TANK STICK END 68.36
n	TOTAL BY TANK STICKING h + i - k - m 147.50
p	ANTISTRIP BEGIN INVENTORY
q	ANTISTRIP DELIVERED
r	ANTISTRIP END INVENTORY
s	ANTISTRIP TOTAL p + q - r

V	METERED TOTAL DRY MIX (D +H + K - U) 2743.55	W	PHYSICAL TOTAL DRY MIX f / (1+(g/100)) 2733.40
Y	BY METER % Pb ACP: (K / V)X100 EAC : (K / (V - K))X100 5.37	Z	BY TANK % Pb ACP: (n / W) x 100 EAC : n/((W-n)/(1+(C/100))) x 100 5.40
	% ANTISTRIP (O/(D-O))x100 0.86		% ERROR ASPHALT METER vs. TANK MEASURE ((n - K) / n) x 100 0.18
	% ERROR TRUCK SCALE vs. TOTAL METER **ACP** ((W - V) / W) x100 ALLOWABLE ±1.0% (HMAC) **EAC** (f- (B - A + K - U) / f x100 -0.37		DAILY DIFFERENCE: TANK vs. METER **Z - Y** ALLOWABLE ±0.20 0.03

X QUALITY CONTROL VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

DAILY ASPHALT PLANT PRODUCTION

PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	REPORT NUMBER
	MATERIAL TYPE (ACP OR EAC)	DATE

DAILY METER READINGS

AGG	PLANT DRY AGG BEGIN		WET AGG BEGIN	A
	PLANT DRY AGG END		WET AGG END	B
	PLANT SET AGG MOISTURE		AVERAGE COLD FEED MOISTURE	C
	(B-A)/(1+(C/100)) TOTAL DRY AGG			D
RAP/RAM	PLANT DRY RAP BEGIN		WET RAP BEGIN	E
	PLANT DRY RAP END		WET RAP END	F
	PLANT SET RAP MOISTURE		AVERAGE RAP MOISTURE	G
	(F-E)/(1+(G/100)) TOTAL DRY RAP			H
RAS	PLANT DRY RAS BEGIN		WET RAS BEGIN	I
	PLANT DRY RAS END		WET RAS END	J
	PLANT SET RAS MOISTURE		AVERAGE RAS MOISTURE	K
	(J-I)/(1+(K/100)) TOTAL DRY RAS			L
ASPHALT	ASPHALT BEGIN	correction 1.000		M
	ASPHALT END	1.000		N
	If correction used explain method.			
	(N-M) ASPHALT TOTAL			O
ANTISTRIP	ANTISTRIP BEGIN	correction 1.00	CORRECTED	P
	ANTISTRIP DELIVERED	1.00		Q
	ANTISTRIP END	1.00		R
	R-P (meter) or P+Q-R (scales) ANTISTRIP TOTAL			S

DAILY PHYSICAL INVENTORY

ACP	TOTAL MIX ACCEPTED	a
	PLANT MIX WASTE (WEIGHED)	b
	REJECTED LOAD MIX WASTE	c
	MIX SOLD TO OTHERS	d
	TOTAL MIX NOT ACCEPTED b + c + d	e
	TOTAL ACP PRODUCED a + e	f
	DAILY AVE MIX MOISTURE	g
ASPHALT	TANK STICK BEGIN	h
	ASPHALT DELIVERED	i
	DEDUCTIONS ASPHALT REMOVED PRIOR TO METERING	k
	TANK STICK END	m
	TOTAL BY TANK STICKING h + i - k - m	n
ANTISTRIP	ANTISTRIP BEGIN INVENTORY	p
	ANTISTRIP DELIVERED	q
	ANTISTRIP END INVENTORY	r
	ANTISTRIP TOTAL p + q - r	s

V	PHYSICAL TOTAL DRY MIX	**ACP:** f / (1+(g/100))	**EAC:** f / (1+(C/100))
W	METERED TOTAL DRY MIX	**ACP:** (D+H+L+O-U)	**EAC:** (D+O-U)
Y	BY METER % Pb	**ACP:** (O / W)X100	**EAC:** (O / (W - O))X100
Z	BY TANK % Pb	**ACP:** (n / V) x 100	**EAC:** (n/(V-n)) x 100
	% ERROR ASPHALT METER vs. TANK MEASURE		((n - O) / n) x 100

U	**UNCOATED AGG WASTE (WEIGHED)**

% ANTISTRIP (S/(D-S))x100	**% RAS** (L/(D+H+L))x100	**% RAM** ((H+L)/(D+H+L))x100

% ERROR TRUCK SCALE vs. TOTAL METER **ACP:** ((V - W) / V) x100	ALLOWABLE ±1.0% **(ACP)** **EAC:** (f- (B - A + O - U) / f) x100	
DAILY DIFFERENCE: TANK vs. METER	**Z - Y**	ALLOWABLE ±0.20

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

DAILY ASPHALT PLANT PRODUCTION

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	REPORT NUMBER
ODOT Forms	Sean Parker	123
	MATERIAL TYPE (ACP OR EAC)	DATE
	ACP	10/10/2015

DAILY METER READINGS

AGG	PLANT DRY AGG BEGIN	0.00	A	WET AGG BEGIN 0.00
	PLANT DRY AGG END	825.60	B	WET AGG END 841.29
	PLANT SET AGG MOISTURE	1.9	C	AVERAGE COLD FEED MOISTURE 1.5
	(B-A)/(1+(C/100)) TOTAL DRY AGG		D	**828.86**
RAP/RAM	PLANT DRY RAP BEGIN	0.00	E	WET RAP BEGIN 0.00
	PLANT DRY RAP END	306.79	F	WET RAP END 314.15
	PLANT SET RAP MOISTURE	2.4	G	AVERAGE RAP MOISTURE 2.3
	(F-E)/(1+(G/100)) TOTAL DRY RAP		H	**307.09**
RAS	PLANT DRY RAS BEGIN	0.00	I	WET RAS BEGIN 0.00
	PLANT DRY RAS END	59.46	J	WET RAS END 60.35
	PLANT SET RAS MOISTURE	1.5	K	AVERAGE RAS MOISTURE 1.7
	(J-I)/(1+(K/100)) TOTAL DRY RAS		L	**59.34**
ASPHALT	ASPHALT BEGIN	0.00 correction 1.000	M	0.00
	ASPHALT END	58.59 1.000	N	58.59
	If correction used explain method.			
	(N-M) ASPHALT TOTAL		O	**58.59**
ANTISTRIP	ANTISTRIP BEGIN	14.080 correction 1.00	P	CORRECTED 14.080
	ANTISTRIP DELIVERED	1.00	Q	
	ANTISTRIP END	7.400 1.00	R	7.400
	R-P (meter) or P+Q-R (scales) ANTISTRIP TOTAL		S	**6.680**

U	**UNCOATED AGG WASTE (WEIGHED)**	11.11

% ANTISTRIP (S/(D-S))x100	% RAS (L/(D+H+L))x100	% RAM ((H+L)/(D+H+L))x100
0.81	**5.0**	**30.7**

DAILY PHYSICAL INVENTORY

ACP	TOTAL MIX ACCEPTED	a	1205.25
	PLANT MIX WASTE (WEIGHED)	b	36.11
	REJECTED LOAD MIX WASTE	c	10.00
	MIX SOLD TO OTHERS	d	0.00
	TOTAL MIX NOT ACCEPTED b + c + d	e	46.11
	TOTAL ACP PRODUCED a + e	f	**1251.36**
	DAILY AVE MIX MOISTURE	g	**0.25**
ASPHALT	TANK STICK BEGIN	h	100.24
	ASPHALT DELIVERED	i	38.50
	DEDUCTIONS ASPHALT REMOVED PRIOR TO METERING	k	0.00
	TANK STICK END	m	79.64
	TOTAL BY TANK STICKING h + i - k - m	n	**59.10**
ANTISTRIP	ANTISTRIP BEGIN INVENTORY	p	14.080
	ANTISTRIP DELIVERED	q	0.000
	ANTISTRIP END INVENTORY	r	7.400
	ANTISTRIP TOTAL p + q - r	s	**6.680**

V	PHYSICAL TOTAL DRY MIX **ACP:** f / (1+(g/100)) **EAC:** f / (1+(C/100))	**1248.24**
W	METERED TOTAL DRY MIX **ACP:** (D+H+L+O-U) **EAC:** (D+O-U)	**1242.77**
Y	BY METER % Pb **ACP:** (O / W)X100 **EAC:** (O / (W - O))X100	**4.71**
Z	BY TANK % Pb **ACP:** (n / V) x 100 **EAC:** (n/(V-n)) x 100	**4.73**
	% ERROR ASPHALT METER vs. TANK MEASURE ((n - O) / n) x 100	**0.86**

% ERROR TRUCK SCALE vs. TOTAL METER **ACP:** ((V - W) / V) x100	ALLOWABLE ±1.0% **(ACP)** **EAC:** (f- (B - A + O - U) / f) x100 **0.44**
DAILY DIFFERENCE: TANK vs. METER **Z - Y**	ALLOWABLE ±0.20 **0.02**

X QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker # 43048	ODOT		10/10/2015

734-2401 (10-2015) RAM

CAT II - JMF TARGET ADJUSTMENT SUMMARY

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)			CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
CERTIFIED TECHNICIAN CAT II & CARD #	MIX DESIGN	MATERIAL DESCRIPTION	TO BE USED IN

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1”	3/4”	1/2”	3/8”	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												
SUBLOT	JUSTIFICATION / REMARKS:											
ADJUSTMENT DATE												

CERTIFIED CAT II SIGNATURE	DATE	ENGINEER APPROVAL (SIGNATURE)	DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1”	3/4”	1/2”	3/8”	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												
SUBLOT	JUSTIFICATION / REMARKS:											
ADJUSTMENT DATE												

CERTIFIED CAT II SIGNATURE	DATE	ENGINEER APPROVAL (SIGNATURE)	DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1”	3/4”	1/2”	3/8”	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												
SUBLOT	JUSTIFICATION / REMARKS:											
ADJUSTMENT DATE												

CERTIFIED CAT II SIGNATURE	DATE	ENGINEER APPROVAL (SIGNATURE)	DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1”	3/4”	1/2”	3/8”	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												
SUBLOT	JUSTIFICATION / REMARKS:											
ADJUSTMENT DATE												

CERTIFIED CAT II SIGNATURE	DATE	ENGINEER APPROVAL (SIGNATURE)	DATE

CAT II - JMF TARGET ADJUSTMENT SUMMARY

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)			CONTRACT NUMBER
Forms Example			12345
C0NTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms		Sean Parker	123
CERTIFIED TECHNICIAN CAT II & CARD #	MIX DESIGN	MATERIAL DESCRIPTION	TO BE USED IN
Scott Aker #43048	08-MD0000	L3 1/2" Dense HMAC	Base / Wearing

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
1	4.0		4.8		74		67		15.4		14.5	
CONSTITUENT	Pb	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
TARGET	5.30	---	100	98	84	56	38	25	14	11	8	5.0
ADJUSTMENT							35					

SUBLOT 1-5

JUSTIFICATION / REMARKS: Running average of 4 shows VMA out of tolerance at 13.4, Pb = 5.32, P#8 = 38%, P#200 = 4.9%, and Va = 4.6%. Proposed blend change for #8 to 35% to increase VMA. Will need to check voids after blend change.

ADJUSTMENT DATE 10/9/12

CERTIFIED CAT II SIGNATURE DATE | ENGINEER APPROVAL (SIGNATURE) DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
2	4.0		4.1		74		72		15.4		14.8	
CONSTITUENT	Pb	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
TARGET	5.30	---	100	98	84	53	35	25	14	11	8	5.0
ADJUSTMENT	5.50											

SUBLOT 1-7

JUSTIFICATION / REMARKS: Blend change on sublot 1-5 brought VMA within tolerance however running average of 4 after sublots 1-5 and 1-6 shows Va at 5.0. Propose Pb target change to 5.50

ADJUSTMENT DATE 10/10/12

CERTIFIED CAT II SIGNATURE DATE | ENGINEER APPROVAL (SIGNATURE) DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												

SUBLOT

JUSTIFICATION / REMARKS:

ADJUSTMENT DATE

CERTIFIED CAT II SIGNATURE DATE | ENGINEER APPROVAL (SIGNATURE) DATE

ADJUSTMENT #	JMF Va		EXPECTED Va		JMF VFA		EXPECTED VFA		JMF VMA		EXPECTED VMA	
CONSTITUENT	Pb	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
TARGET												
ADJUSTMENT												

SUBLOT

JUSTIFICATION / REMARKS:

ADJUSTMENT DATE

CERTIFIED CAT II SIGNATURE DATE | ENGINEER APPROVAL (SIGNATURE) DATE

MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

E English (E) or Metric (M)

PROJECT NAME (SECTION)					CONTRACT NUMBER
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
SOURCE NAME			SOURCE NUMBER		MATERIAL SIZE
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN

lb/ft³					
lb/ft³					
lb/ft³					
lb/ft³					
lb/ft³					
%	%	%	%	%	%

TEST METHOD

T 99 ☐ **T 180** ☐

A or D ☐

SAMPLE

+ №4	
- №4	
Total	
Pc	%
+ ¾	
- ¾	
Total	
Pc	%

MAX DRY DENSITY OF THE FINES

D_f _____ lb/ft³

OPTIMUM MOISTURE OF THE FINES

MC_f _____ %

TEST NO.	MASS OF MOLD AND MATERIALS (GRAMS)	MASS OF MOLD (GRAMS)	(M) MASS OF WET MATERIAL	WET DENSITY WD = (M)x(MF) lb/ft³	OVEN MOISTURE % AASHTO T255 / 265 Pan Tare (t)	WET(a)	DRY(b)	% M (m)	(D) DRY DENSITY lb/ft³
1									
2									
3									
4									
5									
6									
7									
8									

MOLD FACTOR (MF)

4 in MOLD = 0.06614
101.6mm MOLD = 1.060
6 in MOLD = 0.02939
152.4mm = 0.471

OVEN MOISTURE %

$$(m) = \frac{(a) - (b)}{(b) - (t)} \times 100$$

$$(D) = \frac{(WD)}{(m)+100} \times 100$$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	**Gsb** (A) / [(B)-(C)]	**Gsb SSD** (B) / [(B)-(C)]	**Gsa** (A) / [(A)-(C)]	**ABSORPTION** [[(B)-(A)]/(A)]X100

COMMENTS

☐ **QUALITY CONTROL** ☐ **INDEPENDENT ASSURANCE**

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

PROJECT NAME (SECTION)						CONTRACT NUMBER
CONTRACTOR OR SUPPLIER				PROJECT MANAGER		BID ITEM NUMBER
SOURCE NAME				SOURCE NUMBER		MATERIAL SIZE
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN	

AASHTO T 99 COARSE PARTICLE CORRECTION

RELATIVE MAXIMUM DRY DENSITY

100 / (Pf / Df)+(Pc / k) = Dd

COMBINED OPTIMUM MOISTURE

(MCf x Pf + MCc x Pc) / 100 = MCT

Pf = 100 - Pc k = Gsb x 62.4

MCc = ABSORPTION OR MOISTURE

COARSE PARTICLES	RELATIVE MAXIMUM DRY DENSITY	COMBINED OPTIMUM MOISTURE	COARSE PARTICLES
0-9%			0-9%
10%			10%
11%			11%
12%			12%
13%			13%
14%			14%
15%			15%
16%			16%
17%			17%
18%			18%
19%			19%
20%			20%
21%			21%
22%			22%
23%			23%
24%			24%
25%			25%
26%			26%
27%			27%
28%			28%
29%			29%
30%			30%
31%			31%
32%			32%
33%			33%
34%			34%
35%			35%
36%			36%
37%			37%
38%			38%
39%			39%
40%			40%

TEST METHOD

T 99 ☐ T 180 ☐

A or D ☐

CURVE COARSE PARTICLES

+ №4 ____ %

+ ¾ ____ %

SOILS

MAX DRY DENSITY OF THE FINES

Df ____ lb/ft³

OPTIMUM MOISTURE % THE FINES

MCf ____ %

MAX DRY DENSITY OF THE COURSE

k ____ lb/ft³

OPTIMUM MOISTURE % THE COURSE

MCc ____ %

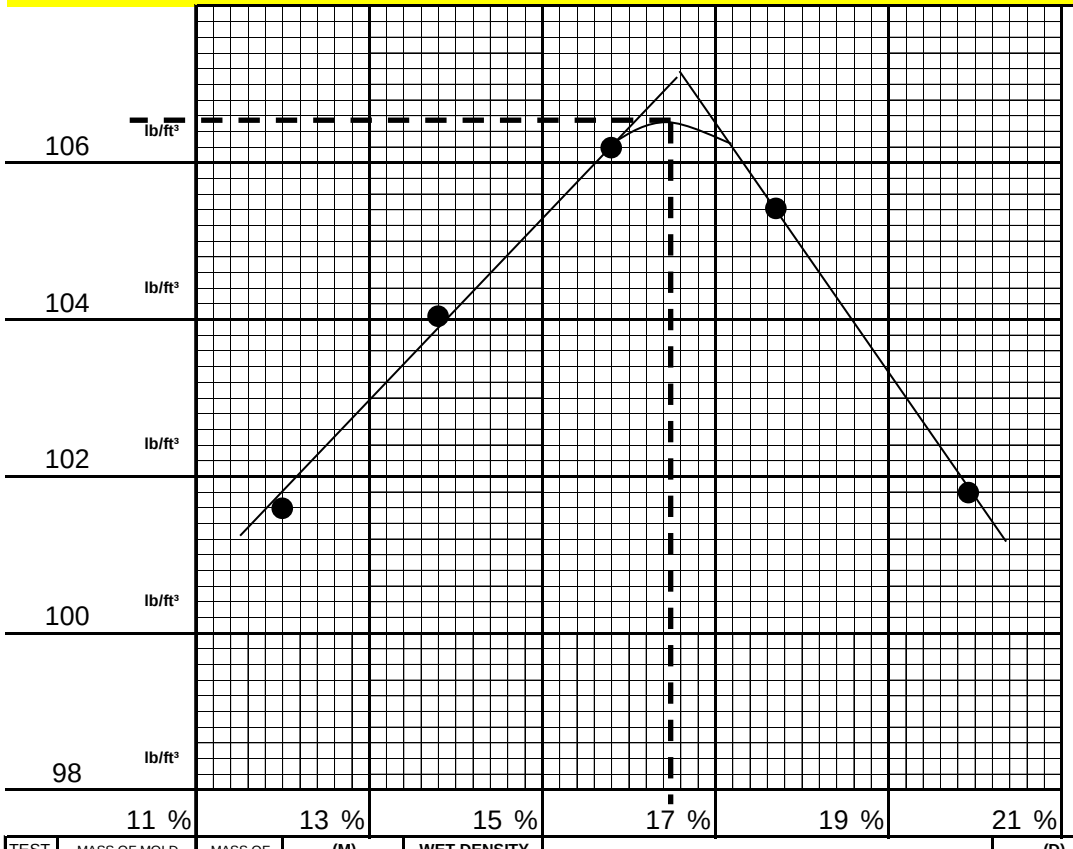
☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

E English (E) or Metric (M)

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms			Sean Parker		123
SOURCE NAME			SOURCE NUMBER		MATERIAL SIZE
Native			n/a		1"-0
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
1	10/9/2012	8:00am	15+45	Lt Brown Silty Clay	Embankment



TEST METHOD

T 99 [X] T 180 [ ]

A or D [A]

SAMPLE

+ №4	4098.1
- №4	9231.6
Total	13329.7
Pc	**31 %**
+ ¾	1533.4
- ¾	11796.3
Total	13329.7
Pc	**12 %**

MAX DRY DENSITY OF THE FINES

D_f **106.5** lb/ft³

OPTIMUM MOISTURE OF THE FINES

MC_f **16.5** %

TEST NO.	MASS OF MOLD AND MATERIALS (GRAMS)	MASS OF MOLD (GRAMS)	(M) MASS OF WET MATERIAL	WET DENSITY WD = (M)x(MF) lb/ft³	OVEN MOISTURE % AASHTO T255 / 265 Pan Tare (t)	WET(a)	DRY(b)	% M (m)	(D) DRY DENSITY lb/ft³
1	5964.80	4244.1	1720.70	113.8	130.2	358.4	334.0	**12.0**	**101.6**
2	6032.50	4244.1	1788.40	118.3	127.9	361.8	333.4	**13.8**	**104**
3	6104.20	4244.1	1860.10	123	128.5	382.0	347.4	**15.8**	**106.2**
4	6118.70	4244.1	1874.60	124	128.2	376.7	339.4	**17.7**	**105.4**
5	6090.50	4244.1	1846.40	122.1	129.5	372.2	331.9	**19.9**	**101.8**
6									
7									
8									

MOLD FACTOR (MF)

0.06614

4 in MOLD = 0.06614
101.6mm MOLD = 1.060
6 in MOLD = 0.02939
152.4mm = 0.471

OVEN MOISTURE %

$$(m) = \frac{(a) - (b)}{(b) - (t)} \times 100$$

$$(D) = \frac{(WD)}{(m)+100} \times 100$$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	**Gsb** (A) / [(B)-(C)]	**Gsb SSD** (B) / [(B)-(C)]	**Gsa** (A) / [(A)-(C)]	**ABSORPTION** [[(B)-(A)]/(A)]X100
	4001.7	4073.1	2498.4	2.541	2.587	2.662	1.8

COMMENTS

[X] **QUALITY CONTROL** [ ] **INDEPENDENT ASSURANCE**

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012

MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
CONTRACTOR OR SUPPLIER				PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms				Sean Parker	123
SOURCE NAME				SOURCE NUMBER	MATERIAL SIZE
Native				n/a	1"-0
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
1	10/9/2012	8:00am	15+45	Lt Brown Silty Clay	Embankment

AASHTO T 99 COARSE PARTICLE CORRECTION

RELATIVE MAXIMUM DRY DENSITY

100 / (Pf / Df)+(Pc / k) = Dd

COMBINED OPTIMUM MOISTURE

(MCf x Pf + MCc x Pc) / 100 = MCT

Pf = 100 - Pc k = Gsb x 62.4

MCc = ABSORPTION OR MOISTURE

COARSE PARTICLES	RELATIVE MAXIMUM DRY DENSITY	COMBINED OPTIMUM MOISTURE	COARSE PARTICLES
0-9%	106.5	16.5	0-9%
10%	110.1	15.0	10%
11%	110.5	14.9	11%
12%	110.9	14.7	12%
13%	111.3	14.6	13%
14%	111.6	14.4	14%
15%	112	14.3	15%
16%	112.4	14.1	16%
17%	112.8	14.0	17%
18%	113.2	13.9	18%
19%	113.6	13.7	19%
20%	114	13.6	20%
21%	114.4	13.4	21%
22%	114.8	13.3	22%
23%	115.2	13.1	23%
24%	115.6	13.0	24%
25%	116	12.8	25%
26%	116.4	12.7	26%
27%	116.9	12.5	27%
28%	117.3	12.4	28%
29%	117.7	12.2	29%
30%	118.1	12.1	30%
31%	118.6	11.9	31%
32%	119	11.8	32%
33%	119.4	11.6	33%
34%	119.9	11.5	34%
35%	120.3	11.4	35%
36%	120.8	11.2	36%
37%	121.2	11.1	37%
38%	121.7	10.9	38%
39%	122.1	10.8	39%
40%	122.6	10.6	40%

TEST METHOD

T 99	T 180
X	

A or D: A

CURVE COARSE PARTICLES

+ №4: 31 %

+ ¾: 12 %

SOILS

MAX DRY DENSITY OF THE FINES

Df: 106.5 lb/ft³

OPTIMUM MOISTURE % THE FINES

MCf: 16.5 %

MAX DRY DENSITY OF THE COURSE

k: 158.6 lb/ft³

OPTIMUM MOISTURE % THE COURSE

MCc: 1.8 %

X QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012

MAXIMUM DENSITY OF AGGREGATE BASE MATERIALS

E English (E) or Metric (M)

PROJECT NAME (SECTION)						CONTRACT NUMBER
CONTRACTOR OR SUPPLIER				PROJECT MANAGER		BID ITEM NUMBER
SOURCE NAME				SOURCE NUMBER		MATERIAL SIZE
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN	

TEST METHOD
ODOT TM 223
FOR AASHTO T 99
METHOD A

lb/ft³					
lb/ft³					
lb/ft³					
lb/ft³					
lb/ft³					
%	%	%	%	%	%

SAMPLE

MAX DRY DENSITY OF THE FINES

D_f _____ lb/ft³

OPTIMUM MOISTURE % THE FINES

MC_f _____ %

BASE AGG STOCKPILE

STATSPEC MEAN #4 (4.75mm)

P_c _____ %

COMBINED

RELATIVE MAX DRY DENSITY

D_d _____ lb/ft³

OPTIMUM MOISTURE %

MC_T _____ %

TEST NO.	MASS OF MOLD AND MATERIALS (grams)	MASS OF MOLD (grams)	(M) MASS OF WET MATERIAL	(WD) WET DENSITY lb/ft³	OVEN MOISTURE % AASHTO T255 / 265				(D) DRY DENSITY lb/ft³
					Pan Tare (t)	WET(a)	DRY(b)	% M (m)	
1									
2									
3									
4									
5									
6									
7									
8									

MOLD FACTOR

4" MOLD = 0.06614
101.6mm MOLD = 1.060
WD = (M) x MOLD FACTOR

OVEN MOISTURE %

$$(m) = \frac{(a) - (b)}{(b) - (t)} \times 100$$

$$(D) = \frac{(WD)}{(m)+100} \times 100$$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	Gsb (A) / [(B)-(C)]	Gsb SSD (B) / [(B)-(C)]	Gsa (A) / [(A)-(C)]	ABSORPTION [[(B)-(A)]/(A)]X100

ODOT TM 223

COARSE PARTICLE CORRECTION

$P_f = 100 - P_c$ k = Gsb x 62.4 MCc = ABSORPTION OR MOISTURE

100 / ((Pf / Df) + (Pc / (k x 0.9))) = Dd

100 /((_____ / _____)+(_____ / _____))= Dd

100 /((_____)+(_____))= _____

((MCf x Pf) + (MCc x Pc)) / 100 = MC_T

((_____ X _____)+(_____ X _____))/ 100 = MC_T

((_____)+(_____))/ 100 = _____

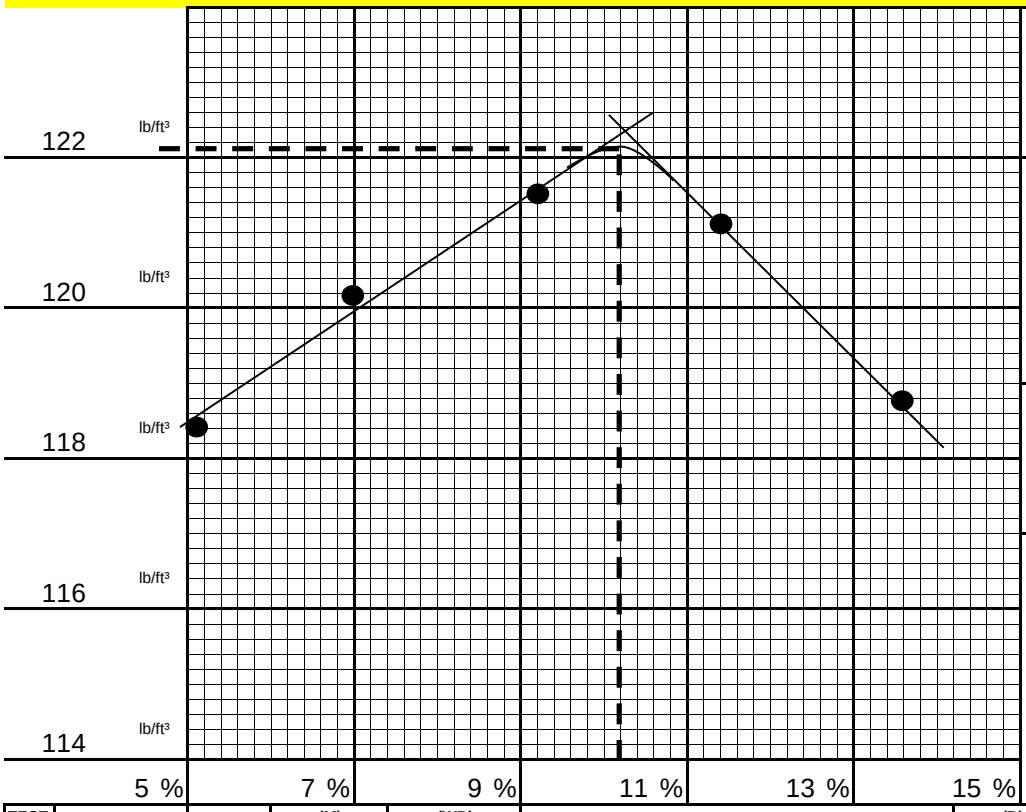
☐ QUALITY CONTROL ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

MAXIMUM DENSITY OF AGGREGATE BASE MATERIALS

E English (E) or Metric (M)

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
ODOT Forms			Sean Parker		123
SOURCE NAME			SOURCE NUMBER		MATERIAL SIZE
Best Rock Quarry			10-123-3		1"-0
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
1	10/9/2012	8:00am	Final Belt	Crushed Aggregate	Aggregate Base



TEST METHOD
ODOT TM 223

FOR AASHTO T 99 METHOD A

SAMPLE

MAX DRY DENSITY OF THE FINES

D_f 122.1 lb/ft³

OPTIMUM MOISTURE % THE FINES

MC_f 10.2 %

BASE AGG STOCKPILE

STATSPEC MEAN #4 (4.75mm)

P_c 57 %

COMBINED

RELATIVE MAX DRY DENSITY

D_d 135.4 lb/ft³

OPTIMUM MOISTURE %

MC_T 6.2 %

TEST NO.	MASS OF MOLD AND MATERIALS (grams)	MASS OF MOLD (grams)	(M) MASS OF WET MATERIAL	(WD) WET DENSITY lb/ft³	OVEN MOISTURE % AASHTO T255 / 265 Pan Tare (t)	WET(a)	DRY(b)	% M (m)	(D) DRY DENSITY lb/ft³
1	6125.2	4244.1	1881.1	124.4	100.1	638.2	612.1	5.1	118.4
2	6188.4	4244.1	1944.3	128.6	99.9	660.2	623.5	7.0	120.2
3	6250.5	4244.1	2006.4	132.7	100.3	736.0	682.4	9.2	121.5
4	6284.3	4244.1	2040.2	134.9	100.5	668.0	609.9	11.4	121.1
5	6284.2	4244.1	2040.1	134.9	100.2	686.0	615.9	13.6	118.8
6									
7									
8									

MOLD FACTOR

0.06614

4" MOLD = 0.06614
101.6mm MOLD = 1.060
WD = (M) x MOLD FACTOR

OVEN MOISTURE %

$$(m) = \frac{(a) - (b)}{(b) - (t)} \times 100$$

$$(D) = \frac{(WD)}{(m)+100} \times 100$$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	Gsb (A) / [(B)-(C)]	Gsb SSD (B) / [(B)-(C)]	Gsa (A) / [(A)-(C)]	ABSORPTION [[(B)-(A)]/(A)]X100
	4562.3	4701.9	2964.3	2.626	2.706	2.855	3.1

ODOT TM 223

COARSE PARTICLE CORRECTION

$P_f = 100 - P_c$ k = Gsb x 62.4 MCc = ABSORPTION OR MOISTURE

100 / ((Pf / Df) + (Pc / (k x 0.9))) = Dd

100 /((43 / 122.1)+(57 / 147.5))= Dd

100 /((0.35217)+(0.38644))= 135.4

((MCf x Pf) + (MCc x Pc)) / 100 = MC_T

((10.2 X 43)+(3.1 X 57))/ 100 = MC_T

((438.6)+(176.7))/ 100 = 6.2

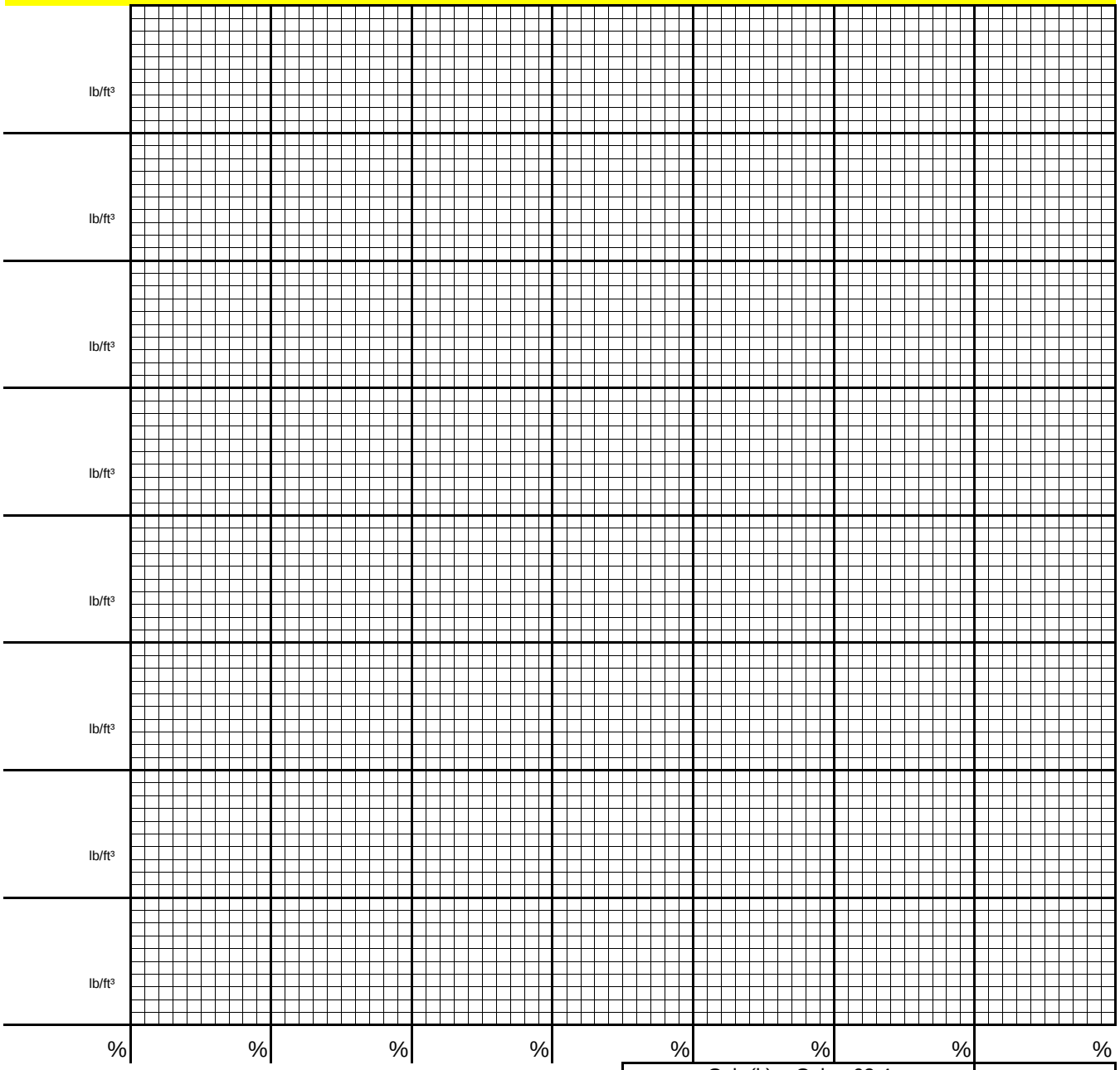
X QUALITY CONTROL ☐ INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/9/2012

FAMILY OF CURVES

E English (**E**) Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER



Gsb (k) = Gsb x 62.4	
MCc = Absorption or Moisture	

AASHTO T-99 **Method A** ☐ **Method D** ☐

Coarse-Grained		**Fine-Grained**		**Color**	
Sandy-Gravel	☐	Sand	☐	Light Brown	☐
Silty-Gravel	☐	Silt	☐	Med Brown	☐
Clayey-Gravel	☐	Clay	☐	Dark Brown	☐
				Redish Brown	☐

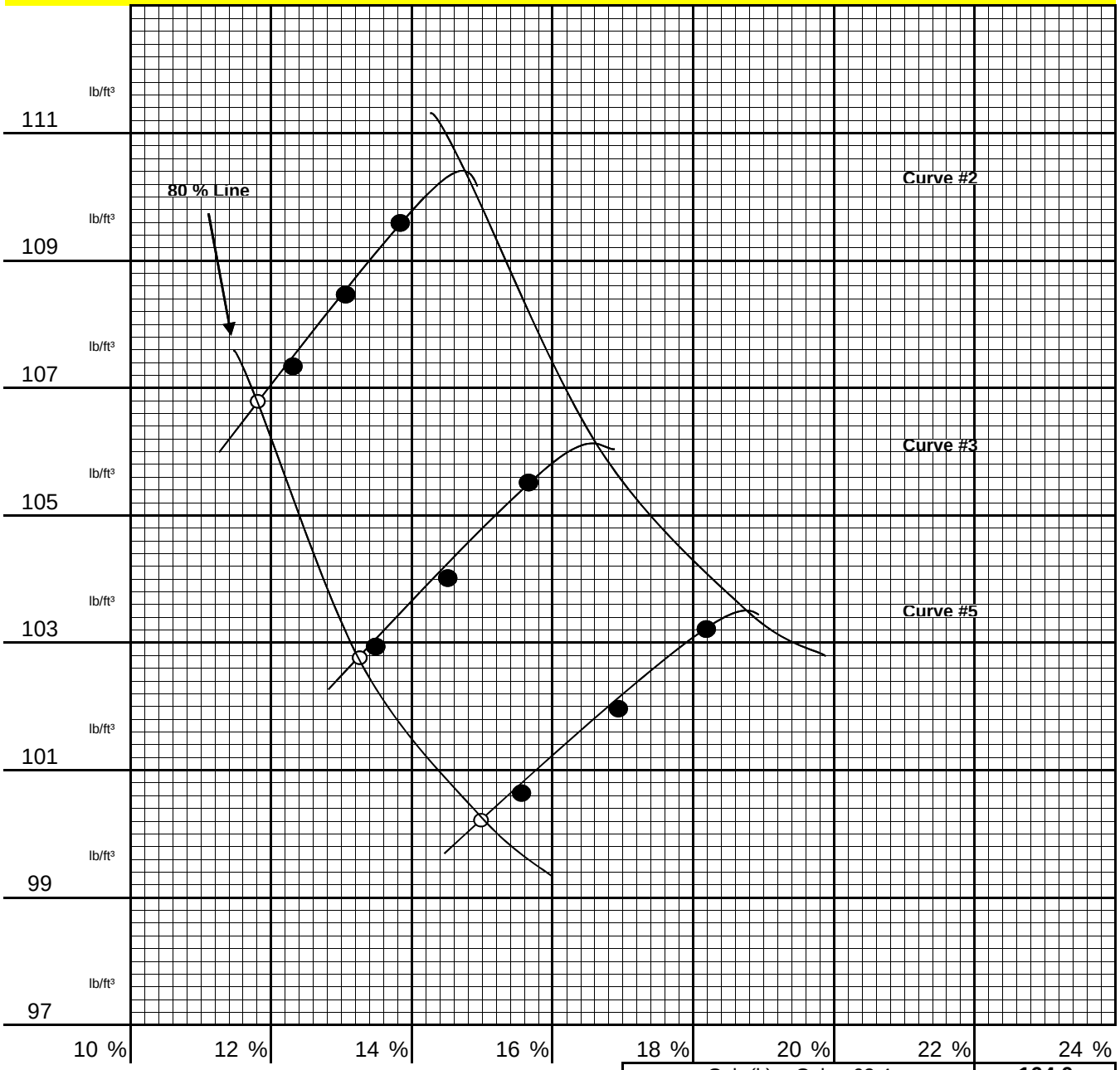
Comments:

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

FAMILY OF CURVES

E English (**E**) Metric (**M**)

PROJECT NAME (SECTION)		CONTRACT NUMBER
Forms Example		12345
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123



Gsb (k) = Gsb x 62.4	**164.0**
MCc = Absorption or Moisture	**2.2%**

AASHTO T-99 **Method A** [x] **Method D** [ ]

Coarse-Grained		**Fine-Grained**		**Color**	
Sandy-Gravel	x	Sand		Light Brown	
Silty-Gravel		Silt		Med Brown	x
Clayey-Gravel		Clay		Dark Brown	
				Redish Brown	

Comments:

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE DATE
Scott Aker #43048	ODOT	10/10/2012

CONCRETE YIELD AND W/C RATIO WORKSHEET

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
C0NTRACTOR		PROJECT MANAGER			BID ITEM NUMBER
CONCRETE SUPPLIER		SUBMITTED BY			QUANTITY REPRESENTED yd³
CONCRETE FOR USE IN (LOCATION OR PLACEMENT)		BRIDGE NUMBER		SPECIFIED STRENGTH PSI DAYS	
DATA SHEET NUMBER	SET NUMBER	DATE	INVOICE NUMBER	BATCH SIZE	TRUCK NO & DRIVER

CONCRETE BATCH TICKET AND FIELD TEST DATA

CEMENTITIOUS MATERIAL			***AGGREGATES***			**AGG % FREE MOISTURE**
CEMENT		lb		#1	lb	%
SLAG		lb		#2	lb	%
FLYASH		lb		#3	lb	%
SILICA FUME		lb	FINE AGG (SAND)	#4	lb	%
TOTAL CEMENT		**lb**	**TOTAL AGG**		**lb**	

ADMIXTURES			
	1		oz
	2		oz
	3		oz
	4		oz
	TOTAL ADMIXTURES		oz
	TOTAL ADMIXTURES		**lb**

ADD WATER		
BATCHED		lb
JOBSITE		lb
TOTAL WATER		**lb**

CONVERSIONS

WATER
Gal x 8.34 = lb
L = kg
Admixtures
oz / 16 = lb
ml / 1000 = kg

TOTAL BATCH MASS _____ **lb**

AMBIENT _____ °F **SLUMP** _____ in

CONCRETE _____ °F **AIR** _____ %

DENSITY

CONCRETE + POT _____ lb

- POT MASS _____ lb

CONCRETE MASS= lb ÷ POT CALIBRATION = lb/ft³

YIELD TOTAL BATCH MASS = _____

lb/ft³ x 27 = = yd³

CEMENT CONTENT CEMENT, FLYASH & SILICA = _____

YIELD = = _____ lb/yd³

WATER CEMENT RATIO A. AGGREGATE FREE WATER (FREE MOISTURE FACTOR = % FREE MOISTURE DIVIDED BY 100. EG. : 5.5% = 0.055)

BATCH MASS - (BATCH MASS / (1+ FREE MOISTURE FACTOR)) =AGG. FREE WATER

W/C RATIO= TOTAL FREE WATER (A+B+C) / TOTAL CEMENT & FLYASH

	#1	- (	/ 1+	) =	lb
	#2	- (	/ 1+	) =	lb
	#3	- (	/ 1+	) =	lb
FINE AGG (SAND)	#4	- (	/ 1+	) =	lb

A. AGGREGATE FREE WATER TOTAL = _____ lb

B. WATER ADDED AT PLANT&JOBSITE = _____ lb

C. ADMIXTURES ADDED = _____ lb

_____ lb = _____ **= W/C RATIO**

lb

☐ QUALITY CONTROL ☐ VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

734-3573 (10-2012)

CONCRETE YIELD AND W/C RATIO WORKSHEET

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION): Forms Example					CONTRACT NUMBER: 12345
CONTRACTOR: ODOT Forms		PROJECT MANAGER: Sean Parker			BID ITEM NUMBER: 123
CONCRETE SUPPLIER: The Best Ready Mix		SUBMITTED BY: Scott Aker			QUANTITY REPRESENTED: 150 yd³
CONCRETE FOR USE IN (LOCATION OR PLACEMENT): Deck		BRIDGE NUMBER: 1234a		SPECIFIED STRENGTH: 5000 PSI 28 DAYS	
DATA SHEET NUMBER: F-43048-001	SET NUMBER: 1	DATE: 10/10/12	INVOICE NUMBER: 123456	BATCH SIZE: 9.00yd3	TRUCK NO & DRIVER: #21 T. Driver

CONCRETE BATCH TICKET AND FIELD TEST DATA

CEMENTITIOUS MATERIAL			***AGGREGATES***			**AGG % FREE MOISTURE**	
CEMENT	4735	lb	3/4" Round #1	17600	lb	0.30	%
SLAG	165	lb	#2		lb		%
FLYASH	2000	lb	#3		lb		%
SILICA FUME	288	lb	FINE AGG (SAND) #4	10080	lb	7.90	%
TOTAL CEMENT	**7188**	**lb**	**TOTAL AGG**	**27680**	**lb**		

ADMIXTURES				
Rheobuild	1	580	oz	
997	2	512	oz	
AE-90	3	64	oz	
	4		oz	
TOTAL ADMIXTURES		1156	oz	
TOTAL ADMIXTURES		**72**	**lb**	

ADD WATER		
BATCHED	1186	lb
JOBSITE	0	lb
TOTAL WATER	**1186**	**lb**

CONVERSIONS

WATER
Gal x 8.34 = lb
L = kg
Admixtures
oz / 16 = lb
ml / 1000 = kg

TOTAL BATCH MASS **36126** **lb**

AMBIENT 40.5 °F **CONCRETE** 60.5 °F

SLUMP 6 1/2 in **AIR** 4.9 %

DENSITY

CONCRETE + POT 43.90 lb

- POT MASS 7.68 lb

CONCRETE MASS= 36.22 lb ÷ POT CALIBRATION 0.249900 = **144.9** lb/ft³

YIELD TOTAL BATCH MASS = 36126

lb/ft³ x 27 = 3912.30 = **9.23** yd³

CEMENT CONTENT CEMENT, FLYASH & SILICA = 7188

YIELD = 9.23 = **779** lb/yd³

WATER CEMENT RATIO A. AGGREGATE FREE WATER (FREE MOISTURE FACTOR = % FREE MOISTURE DIVIDED BY 100. EG. : 5.5% = 0.055)

BATCH MASS - (BATCH MASS / (1+ FREE MOISTURE FACTOR)) =AGG. FREE WATER

W/C RATIO= TOTAL FREE WATER (A+B+C) / TOTAL CEMENT & FLYASH

3/4" Round	#1	17600	- (	17600	/ 1+	0.0030	) =	53 lb
	#2		- (		/ 1+		) =	lb
	#3		- (		/ 1+		) =	lb
FINE AGG (SAND)	#4	10080	- (	10080	/ 1+	0.0790	) =	738 lb

A. AGGREGATE FREE WATER TOTAL = 791 lb

2049 lb = **0.29** **= W/C RATIO** B. WATER ADDED AT PLANT&JOBSITE = 1186 lb

7188 lb C. ADMIXTURES ADDED = 72 lb

[ ] QUALITY CONTROL [X] VERIFICATION

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

SAMPLE DATA SHEET

LABORATORY REPORT NUMBER

* CON NO. & EA	* DATA SHEET NUMBER	
	F - -	
PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER

COMPLETE THIS SECTION FOR ALL SAMPLES **One Data Sheet Per Asphalt Cement Type or Aggregate Size**

* MATERIAL (DESCRIPTION, SIZE, GRADE, BRAND)	* USE OF MATERIAL	
* SOURCE OF MATERIAL (MANUFACTURER, SUPPLIER, OR SOURCE NO. & NAME FOR NATURAL MATERIALS)	SAMPLED AT (LOCATION OR STATION NUMBERS)	
NUMBER OF SAMPLES (BAGS, BOXES, OTHER)	QUANTITY REPRESENTED BY SAMPLE	DATE SAMPLED
* CLASS OF SAMPLE		DATE SHIPPED
☐ QUALITY CONTROL ☐ VERIFICATION ☐ THIRD PARTY	BID ITEM NUMBER	SAMPLE NUMBER
☐ SOURCE/PRODUCT COMPLIANCE ☐ OTHER (SPECIFY IN REMARKS)		
* FIELD TESTED OR SUBMITTED BY (PRINT NAME)	SIGNATURE	
COMPANY NAME		
STREET ADDRESS	CREW NUMBER	
CITY, STATE AND ZIP CODE	* PHONE NUMBER	
* PROJECT CONTACT PERSON	* CONTACT PHONE NUMBER	

* ACP MIX DESIGN no.	
ODOT LAB/JMF#	CONTRACTOR MIX #
ASPHALT CEMENT	
** Lot & Sublot	** Date

REMARKS / SPECIAL REQUIREMENTS

Note: * Required information. If information is missing, testing will be delayed.

**** Additional information required for Asphalt Cement samples.**

734-4000 (10-2015)

SAMPLE DATA SHEET

LABORATORY REPORT NUMBER

* CON NO. & EA	* DATA SHEET NUMBER
CON01111	F - 43048 - 001

PROJECT NAME (SECTION)	CONTRACT NUMBER
Form Example	12345

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER
ODOT Forms	Sean Parker	1234

COMPLETE THIS SECTION FOR ALL SAMPLES **One Data Sheet Per Asphalt Cement Type or Aggregate Size**

* MATERIAL (DESCRIPTION, SIZE, GRADE, BRAND)	* USE OF MATERIAL
PG 64 - 28	Base & Leveling 1/2" HMAC

* SOURCE OF MATERIAL (MANUFACTURER, SUPPLIER, OR SOURCE NO. & NAME FOR NATURAL MATERIALS)	SAMPLED AT (LOCATION OR STATION NUMBERS)
Albina	Truck at Plant

NUMBER OF SAMPLES (BAGS, BOXES, OTHER)	QUANTITY REPRESENTED BY SAMPLE	DATE SAMPLED
12 cans	1 per 1000 ton HMAC sublot	10/18/2012

* CLASS OF SAMPLE	DATE SHIPPED
[X] QUALITY CONTROL [ ] VERIFICATION [ ] THIRD PARTY	10/19/2012
[ ] SOURCE/PRODUCT COMPLIANCE [ ] OTHER (SPECIFY IN REMARKS)	BID ITEM NUMBER: 580 / SAMPLE NUMBER: see below

* FIELD TESTED OR SUBMITTED BY (PRINT NAME)	SIGNATURE
Scott Aker	
COMPANY NAME: Eek Testers LLC	
STREET ADDRESS: 123 Hwy St	CREW NUMBER: 1234
CITY, STATE AND ZIP CODE: Roseburg, OR 97470	* PHONE NUMBER: (123)123-1234
* PROJECT MANAGER CONTACT: John Consultant #98764	* CONTACT PHONE NUMBER: (321) 321-4321

* ACP MIX DESIGN no.	
ODOT LAB/JMF#	CONTRACTOR MIX #
10-MD0001	AS30RL4.1
ASPHALT CEMENT	
** Lot & Sublot	** Date
1-1	10/16/2012
1-2	10/16/2012
1-3	10/17/2012
1-4	10/17/2012
1-5	10/18/2012
2-1	10/18/2012

REMARKS / SPECIAL REQUIREMENTS

"The EA (or Con Number), Data sheet number, grade of the material (i.e. "PG 64-22"), name of the oil manufacturer, class of sample, lot and sublot, date, submitted by name and contact number, and project contact person name and contact number is required for the sample to be accepted. Only one type of sample may be submitted per Sample Data Sheet."

Please make sure to label the SAMPLE containers with;
Product
ID (CSS 1 Tack or 19 mm Base Agg),

Test number (Lot & Sublot), Date, and Data Sheet Number.

In a manner that will with stand the elements
(water, wind, and wild shipping companies).

Note: * Required information. If information is missing, testing will be delayed.

**** Additional information required for Asphalt Cement samples.**

734-4000 (10-2015)

SAMPLE DATA SHEET

LABORATORY REPORT NUMBER

* CON NO. & EA	* DATA SHEET NUMBER
CON01111	F - 43048 - 001

PROJECT NAME (SECTION)	CONTRACT NUMBER
Form Example	

C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER
ODOT Forms	Sean Parker	1234

COMPLETE THIS SECTION FOR ALL SAMPLES **One Data Sheet Per Asphalt Cement Type or Aggregate Size**

* MATERIAL (DESCRIPTION, SIZE, GRADE, BRAND)	* USE OF MATERIAL
3/4"-0	Base Aggregate

* SOURCE OF MATERIAL (MANUFACTURER, SUPPLIER, OR SOURCE NO. & NAME FOR NATURAL MATERIALS)	SAMPLED AT (LOCATION OR STATION NUMBERS)
Newton Creek Quarry 10-216-3	Final Belt

NUMBER OF SAMPLES (BAGS, BOXES, OTHER)	QUANTITY REPRESENTED BY SAMPLE	DATE SAMPLED
2 Bags	Annual Compliance	10/18/2012

* CLASS OF SAMPLE			DATE SHIPPED
☐ QUALITY CONTROL	☐ VERIFICATION	☐ THIRD PARTY	10/19/2012
☒ SOURCE/PRODUCT COMPLIANCE	☐ OTHER (SPECIFY IN REMARKS)	BID ITEM NUMBER: 550	SAMPLE NUMBER:

* FIELD TESTED OR SUBMITTED BY (PRINT NAME)	SIGNATURE
Scott Aker	
COMPANY NAME: Eek Testers LLC	
STREET ADDRESS: 123 Hwy St	CREW NUMBER: 1234
CITY, STATE AND ZIP CODE: Roseburg, OR 97470	* PHONE NUMBER: (123)123-1234
* PROJECT CONTACT PERSON: John Consultant #98764	* CONTACT PHONE NUMBER: (321) 321-4321

* ACP MIX DESIGN no.	
ODOT LAB/JMF#	CONTRACTOR MIX #
ASPHALT CEMENT	
** Lot & Sublot	** Date

REMARKS / SPECIAL REQUIREMENTS

"The EA (or Con Number), Data sheet number, size of material (i.e. 3/4" - 1/4"), source number, use of material (i.e. "Base Rock"), class of sample, submitted by name and contact number, and project contact person name and contact number is required for the sample to be accepted. Only one type of sample may be submitted per Sample Data Sheet."

Note: * Required information. If information is missing, testing will be delayed.

**** Additional information required for Asphalt Cement samples.**

734-4000 (10-2015)

SAMPLE DATA SHEET

LABORATORY REPORT NUMBER	
* CON NO. & EA	CON01111
* DATA SHEET NUMBER	F - 43048 - 001
PROJECT NAME (SECTION)	Form Example
CONTRACT NUMBER	12345
CONTRACTOR OR SUPPLIER	ODOT Forms
PROJECT MANAGER	Sean Parker
CREW NUMBER	1234

COMPLETE THIS SECTION FOR ALL SAMPLES **One Data Sheet Per Asphalt Cement Type or Aggregate Size**

* MATERIAL (DESCRIPTION, SIZE, GRADE, BRAND)	L3 1/2" Dense HMAC
* USE OF MATERIAL	Base and Leveling
* SOURCE OF MATERIAL (MANUFACTURER, SUPPLIER, OR SOURCE NO. & NAME FOR NATURAL MATERIALS)	Industry Standard LLC
SAMPLED AT (LOCATION OR STATION NUMBERS)	Plant Discharge
NUMBER OF SAMPLES (BAGS, BOXES, OTHER)	2 10,000g Boxes
QUANTITY REPRESENTED BY SAMPLE	
DATE SAMPLED	10/18/2012
DATE SHIPPED	10/19/2012
BID ITEM NUMBER	570
SAMPLE NUMBER	

* CLASS OF SAMPLE

- [ ] QUALITY CONTROL
- [ ] VERIFICATION
- [ ] THIRD PARTY
- [ ] SOURCE/PRODUCT COMPLIANCE
- [x] OTHER (SPECIFY IN REMARKS)

* FIELD TESTED OR SUBMITTED BY (PRINT NAME)	Scott Aker
SIGNATURE	
COMPANY NAME	Eek Testers LLC
STREET ADDRESS	123 Hwy St
CREW NUMBER	1234
CITY, STATE AND ZIP CODE	Roseburg, OR 97470
* PHONE NUMBER	(123)123-1234
* PROJECT CONTACT PERSON	John Consultant #98764
* CONTACT PHONE NUMBER	(321) 321-4321

*** ACP MIX DESIGN no.**

ODOT LAB/JMF#	CONTRACTOR MIX #
10-MD0001	AS30RL3.1

ASPHALT CEMENT

** Lot & Sublot	** Date

REMARKS / SPECIAL REQUIREMENTS

"The EA (or Con Number), Data sheet number, material (i.e. "level 3 HMAC"), use of material (i.e. "Base lift"), class of sample, Mix Design Info., submitted by name and contact number, and project contact person name and contact number is required for the sample to be accepted. Only one type of sample may be submitted per Sample Data Sheet."

(Example)
2 boxes of mix for testing per AASHTO T308,AASHTO T30 and AASHTO T209.

Note: * Required information. If information is missing, testing will be delayed.

**** Additional information required for Asphalt Cement samples.**

734-4000 (10-2015)

SAMPLE DATA SHEET FOR CONCRETE CYLINDERS

E English (E) or Metric (M)

* CON NO. & EA	* DATA SHEET NUMBER	LABORATORY REPORT NUMBER
	F - -	

PROJECT NAME (SECTION)	CONTRACT NUMBER

C0NTRACTOR	PROJECT MANAGER	BID ITEM NUMBER

CONCRETE SUPPLIER	* SUBMITTED BY	QUANTITY REPRESENTED
		yd³

CONCRETE FOR USE IN (LOCATION OR PLACEMENT)	BRIDGE NUMBER	* SPECIFIED STRENGTH
		PSI DAYS

REPRESENTED BY NO. OF CYLS.	SET NUMBER	* DATE CAST	DATE SHIPPED	CYLINDER SIZE	INVOICE NUMBER

* TEST SPECIMENS AT DAYS INDICATED								YIELD
A.	B.	C.	D.	E.	F.	G.	H.	yd³

* MIX DESIGN	* ODOT LAB / MIX DESIGN NUMBER	* CONCRETE SUPPLIER MIX DESIGN NUMBER	* DESIGN CEMENTITIOUS MATERIAL CONTENT	* FREE (SURFACE) MOISTURE			
				* COARSE #1	* COARSE #2	* COARSE #3	* SAND
			lb/yd³	%	%	%	%

* AMBIENT TEMP.	* CONCRETE TEMP	* SLUMP	* AIR CONTENT	* UNIT WEIGHT	* CEMENTITIOUS MAT. CONTENT	* FIELD W/C RATIO
°F	°F	in	%	lb/ft³	lb/yd³	BY WT.

* ADDITIVES	* CEMENT	* FLYASH	* SILICA	* WATER BATCHED	* NET WEIGHT	* POT CALIBRATION
oz	lb	lb	lb	lb		

* AGGREGATE #1	* AGGREGATE #2	* AGGREGATE #3	* FINE AGG (SAND)	* WATER AT JOB	* CURING	* CAPPING
lb	lb	lb	lb	lb		

* PROJECT CONTACT PERSON	* CONTACT PHONE NUMBER	* TIME CYL CAST	* LOW TEMP.	* HIGH TEMP.
			°F	°F

FIELD REMARKS

☐ QUALITY CONTROL ☐ VERIFICATION ☐ INFO *** PHONE No.** FAX No.

T 23 CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

LAB USE ONLY BELOW

CYLINDER ID	DATE OF BREAK	AGE DAYS	MAXIMUM LOAD	CYLINDER AREA	STRENGTH PSI	COMPOUND TYPE / PAD DUROMETER	BREAK TYPE	REMARKS
A								
B								
C								
D								
E								
F								
G								
H								

AVE _____ DAY ☐ PSI ☐ PASS ☐ FAIL

COMMENTS (WHEN MATERIAL ,CYLINDERS OR DATA RECEIVED)

☐ QUALITY CONTROL ☐ VERIFICATION CYLINDERS REC'D DATA SHEET RECD

T 22 CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

Note: * Required information. If this information is missing, testing will be delayed.

734-4000_C (10-2012)

SAMPLE DATA SHEET FOR CONCRETE CYLINDERS

E — English (E) or Metric (M)

* CON NO. & EA	* DATA SHEET NUMBER	LABORATORY REPORT NUMBER
CON01234	F - 43048 - 001	

PROJECT NAME (SECTION)	CONTRACT NUMBER
Forms Example	12345

CONTRACTOR	PROJECT MANAGER	BID ITEM NUMBER
ODOT Forms	Sean Parker	123

CONCRETE SUPPLIER	* SUBMITTED BY	QUANTITY REPRESENTED
The Best Ready Mix	Scott Aker	150 yd³

CONCRETE FOR USE IN (LOCATION OR PLACEMENT)	BRIDGE NUMBER	* SPECIFIED STRENGTH
Deck	1234a	5000 PSI 28 DAYS

REPRESENTED BY NO. OF CYLS.	SET NUMBER	* DATE CAST	DATE SHIPPED	CYLINDER SIZE	INVOICE NUMBER
5	1	10/10/12	10/11/12	4" x 8"	123456

* TEST SPECIMENS AT DAYS INDICATED								YIELD
A. 7	B. 14	C. 28	D. 28	E. 28	F.	G.	H.	9.23 yd³

* MIX DESIGN	* ODOT LAB / MIX DESIGN NUMBER	* CONCRETE SUPPLIER MIX DESIGN NUMBER	* DESIGN CEMENTITIOUS MATERIAL CONTENT	* FREE (SURFACE) MOISTURE * COARSE #1	* COARSE #2	* COARSE #3	* SAND
	08-0001	BRMHPC5000FM	780 lb/yd³	0.30 %	%	%	7.90 %

* AMBIENT TEMP.	* CONCRETE TEMP	* SLUMP	* AIR CONTENT	* UNIT WEIGHT	* CEMENTITIOUS MAT. CONTENT	* FIELD W/C RATIO
40.5 °F	60.5 °F	6 1/2" in	4.9 %	144.9 lb/ft³	779 lb/yd³	0.29 BY WT.

* ADDITIVES	* CEMENT	* FLYASH	* SILICA	* WATER BATCHED	* NET WEIGHT	* POT CALIBRATION
1156 oz	4735 lb	2165 lb	288 lb	1186 lb	36.22	0.249900

* AGGREGATE #1	* AGGREGATE #2	* AGGREGATE #3	* FINE AGG (SAND)	* WATER AT JOB	* CURING	* CAPPING
17600 lb	0 lb	0 lb	10080 lb	0 lb	Tank	Pad

* PROJECT CONTACT PERSON	* CONTACT PHONE NUMBER	* TIME CYL CAST	* LOW TEMP.	* HIGH TEMP.
John Consultant	123-123-1234	7:30am	65 °F	75 °F

FIELD REMARKS

"The EA (or Con Number), Data sheet number, specified strength, date cast, the number of days to test the specimens, and the field test results including the curing and capping methods, submitted by name and contact number, and project contact person name and contact number is required for the sample to be accepted. Only one type of sample may be submitted per Sample Data Sheet."

X QUALITY CONTROL ☐ VERIFICATION ☐ INFO *** PHONE No.** 123-123-1234 FAX No. 123-123-9876

T 23 CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/12

LAB USE ONLY BELOW

CYLINDER ID	DATE OF BREAK	AGE DAYS	MAXIMUM LOAD	CYLINDER AREA	STRENGTH PSI	COMPOUND TYPE / PAD DUROMETER	BREAK TYPE	REMARKS
A	10/17/12	7	52500	12.56	4180	60	Shear	
B	10/24/12	14	59500	12.56	4740	60	Shear	
C	11/07/12	28	69540	12.56	5540	60	Cone	
D	11/07/12	28	70330	12.56	5600	60	Shear	
E	11/07/12	28	71850	12.56	5720	60	Shear	
F								
G								
H								

AVE 28 DAY 5620 PSI ☒ PASS ☐ FAIL

COMMENTS (WHEN MATERIAL ,CYLINDERS OR DATA RECEIVED)

X QUALITY CONTROL ☐ VERIFICATION CYLINDERS REC'D 10/11/2012 DATA SHEET RECD 10/11/2012

T 22 CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		11/7/2012

Note: *** Required information. If this information is missing, testing will be delayed.**

734-4000_C (10-2012)

SAMPLE DATA SHEET (NONFIELD-TESTED MATERIALS)

LABORATORY REPORT NUMBER		
* CON NO. & EA	* DATA SHEET NUMBER F - -	
PROJECT NAME (SECTION)		CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER

* SUBMITTED BY (PRINT NAME)	SIGNATURE
COMPANY NAME	
STREET ADDRESS	CREW NUMBER
CITY, STATE AND ZIP CODE	* PHONE NUMBER
* PROJECT CONTACT PERSON	* CONTACT PHONE NUMBER

SUPPORTING WORKSHEETS

☐ ATTACHED ☐ FAXED ☐ MAILED ☐ E-MAIL

DATE SHIPPED

CLASS OF SAMPLE

☐ QUALITY CONTROL ☐ VERIFICATION ☐ OTHER (SPECIFY IN REMARKS)

BID ITEM NUMBER

Description Of Item	Mfg - Source	Qty	Heat #	Lot #	LAB USE ONLY

REMARKS / SPECIAL REQUIREMENTS

Note: *** Required information. If this information is missing, testing will be delayed.**

734-4000NFTM (10-2012)

SAMPLE DATA SHEET (NONFIELD-TESTED MATERIALS)

LABORATORY REPORT NUMBER

* CON NO. & EA	* DATA SHEET NUMBER
OTIA-S006(44) / 2142B005	F - 43048 - 123

PROJECT NAME (SECTION)	CONTRACT NUMBER
Forms Example	12345

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER
ODOT Forms Example	Sean Parker	1234

* SUBMITTED BY (PRINT NAME)	SIGNATURE
Scott Aker	
COMPANY NAME: ODOT	
STREET ADDRESS: 123 State Highway	CREW NUMBER: 1234
CITY, STATE AND ZIP CODE: Salem, OR 97301	* PHONE NUMBER: (123) 123-1234
* PROJECT CONTACT PERSON: John Consultant	* CONTACT PHONE NUMBER: (567) 567-5678

SUPPORTING WORKSHEETS: [ ] ATTACHED [X] FAXED [ ] MAILED [ ] E-MAIL

DATE SHIPPED: 10/10/2012

CLASS OF SAMPLE: [X] QUALITY CONTROL [ ] VERIFICATION [ ] OTHER (SPECIFY IN REMARKS)

BID ITEM NUMBER: 123

Description Of Item	Mfg - Source	Qty	Heat #	Lot #	LAB USE ONLY
2" x 48" Anchor Rod	Sheffield	24	510034	1812	
2" Nut	Dyson	48	51004	YDAX	
2" Washer	Binder	48	1412	S7914	
7/8" x 3" Bolt	Nucor	53	911105	D1865	
7/8" Nut	Unytite	137	74015	7845	
7/8" Washer	Binder	142	H4215	X4831	

REMARKS / SPECIAL REQUIREMENTS

"The EA (or Con Number), Data sheet number, submitted by name and contact number, and project contact person name and contact number is required for the sample to be accepted. Only one type of sample may be submitted per Sample Data Sheet. Must supply Certification of Heat Numbers for all materials.

(ALL BOLT KITS MUST BE BROKEN DOWN TO BOLT, NUT, WASHER).

Note: *** Required information. If this information is missing, testing will be delayed.**

SAMPLE DATA SHEET (NONFIELD-TESTED MATERIALS)

LABORATORY REPORT NUMBER

* CON NO. & EA	* DATA SHEET NUMBER	
EA or Con Number	F - 43048 - 123	

PROJECT NAME (SECTION)	CONTRACT NUMBER
Form Example	12345

C0NTRACTOR OR SUPPLIER	PROJECT MANAGER	CREW NUMBER
ODOT Forms Example	Rodney Smith	1234

* SUBMITTED BY (PRINT NAME)	SIGNATURE
Scott Aker	
COMPANY NAME: ODOT	
STREET ADDRESS: 123 State Highway	CREW NUMBER:
CITY, STATE AND ZIP CODE: Salem, Oregon	* PHONE NUMBER: 541-123-1234
* PROJECT CONTACT PERSON: John Consulant	* CONTACT PHONE NUMBER: 567-203-1235

SUPPORTING WORKSHEETS: [ ] ATTACHED [ ] FAXED [ ] MAILED [ ] E-MAIL

DATE SHIPPED: 10/10/2012

CLASS OF SAMPLE: [X] QUALITY CONTROL [ ] VERIFICATION [ ] OTHER (SPECIFY IN REMARKS)

BID ITEM NUMBER: 11

Description Of Item	Mfg - Source	Qty	Heat #	Lot #	LAB USE ONLY
# 10 Mechanical Splice	Erico	3		6171	
L-Splice					
# 8 Mech. Splice	Dayton	1		4325	
SCA Splice					
#5 Form Saver Splice	Superior	3		1743	

REMARKS / SPECIAL REQUIREMENTS

Indicate if samples are to be used for installer qualification or for production.
Suppy installer's name for each size of splice.

3 samples of each size and type to qualify an installer (530.30)
1 sample per 100 for production (530.42)
All sample sizes 8-feet total length

Note: *** Required information. If this information is missing, testing will be delayed.**

QC/QA TESTING INVESTIGATION

PROJECT NAME (SECTION)		CONTRACT NUMBER
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
MATERIAL DESCRIPTION	SOURCE NAME & NUMBER IF APPLICABLE	
QA TEST NUMBER ID. / QC TEST NUMBER ID.	TEST PROCEDURE OR PROCESS UNDER INVESTIGATION	

☐ **FAILED I.A. PARAMETERS** ☐ **QA FAILED VERIFICATION**

☐ **QC FAILED VERIFICATION** ☐ **QUESTIONABLE QC HISTORY**

INVESTIGATION DESCRIPTION: ☐ CONTINUED ON ADDITIONAL SHEETS

INVESTIGATION SUMMARY: ☐ CONTINUED ON ADDITIONAL SHEETS

CONCLUSION / RESOLUTION: ☐ CONTINUED ON ADDITIONAL SHEETS

COMMENTS OR FOLLOW-UPS: ☐ CONTINUED ON ADDITIONAL SHEETS

INDIVIDUAL PERFORMING INVESTIGATION (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
PROJECT MANAGER or CPM REVIEW/APPROVAL (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Distribution: QAC, QC, PM, CPM, QAE and Project File

734-4040-2012

QC/QA TESTING INVESTIGATION

PROJECT NAME (SECTION)		CONTRACT NUMBER
A Bridge Too Far		C12889
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
Black and Sticky	John Behold	745
MATERIAL DESCRIPTION	SOURCE NAME & NUMBER IF APPLICABLE	
Level 3, 1/2" Dense Graded HMAC	Hard Rock, Source # 2-889-65	
QA TEST NUMBER ID. / QC TEST NUMBER ID.	TEST PROCEDURE OR PROCESS UNDER INVESTIGATION	
QA-V1 / QC-V1	HMAC Density Testing	

	FAILED I.A. PARAMETERS	X	**QA FAILED VERIFICATION**
	QC FAILED VERIFICATION		**QUESTIONABLE QC HISTORY**

INVESTIGATION DESCRIPTION: CONTINUED ON ADDITIONAL SHEETS

On October 15, 2006 Region QA performed verification testing (QA-V1) on a Level3, 1/2" Dense Graded HMAC. The contractor had placed 3005.26 tons of material on this date and had performed density testing for 3 sublots of HMAC. QA testing represented 1000 tons of HMAC and spanned testing performed by QC through sublots 1 & 2. The QC results showed all density measurements meeting and exceeding the contract criteria for a base lift application of (91.0%). QC testing showing an overall average for all 3 sublots to be (91.9%). The QA testing showed failing density in their represented area with an average compaction of 89.2%. QA had shot several of the QC existing locations and still had approximately a 2% difference. QA did indicate the QC technician was performing the testing according to the test procedure.

INVESTIGATION SUMMARY: X CONTINUED ON ADDITIONAL SHEETS

The Region QAC suggested both gauges be evaluated over the blocks according to TM 304 test procedure to ensure calibration integrity still existed. After completion of the calibration check, the Region gauge met test procedure criteria but the QC gauge failed the high block evaluation and the gauge was reading on the high side giving a false indication of achieving density. Several options were discussed with the PM and it was decided that the sublot's in question would be evaluated through a core analysis. Both parties agreed that 5 cores would be randomly removed from each of the three sublots and the results would replace the current gauge readings for statistical evaluation. It was also decided a core correlation would be performed on 10 of the core locations for future density testing. Prior to the core removals the QC gauge was re-calibrated and verified according to TM 304. **See Next page for further details.**

CONCLUSION / RESOLUTION: CONTINUED ON ADDITIONAL SHEETS

In conclusion, results of the core analysis did show the sublot's in question were failing density requirements. The core results showed an overall average density of 90.4%, which is 0.6% below the 91.0% compaction criteria. The failing results were discussed with the PQE and the sublots in question were placed into a different lot and the statistical analysis (CPF) showed 0.6789. The PM decided to allow the material to remain in place and applied the appropriate price reduction according to section 00165 & 00150.25. The PM and PQE determined the in-place material was suitable for the intended use and 3 subsequent lifts of material were going to be placed over the failing area, so the associated risk of leaving the material in place was minimal. See CCO #5 for allowance of in-place density according to the core method.

COMMENTS OR FOLLOW-UPS: CONTINUED ON ADDITIONAL SHEETS

A request to the Region QA for additional testing will be made to ensure the QC gauge is holding calibration and specified density is being achieved.

INDIVIDUAL PERFORMING INVESTIGATION (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Sean P. Parker	ODOT		
PROJECT MANAGER or CPM REVIEW/APPROVAL (PLEASE PRINT)	**COMPANY NAME**	**SIGNATURE**	**DATE**
John Behold	ODOT		

Distribution: QAC, QC, PM, CPM, QAE and Project File

734-4040-2012

QC/QA TESTING INVESTIGATION

PROJECT NAME (SECTION)		CONTRACT NUMBER
A Bridge Too Far		C12889
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
Black and Sticky	John Behold	745
MATERIAL DESCRIPTION	SOURCE NAME & NUMBER IF APPLICABLE	
Level 3, 1/2" Dense Graded HMAC	Hard Rock, Source # 2-889-65	
QA TEST NUMBER ID. / QC TEST NUMBER ID.	TEST PROCEDURE OR PROCESS UNDER INVESTIGATION	
QA-V1 / QC-V1	HMAC Density Testing	

	FAILED I.A. PARAMETERS	X	**QA FAILED VERIFICATION**
	QC FAILED VERIFICATION		**QUESTIONABLE QC HISTORY**

INVESTIGATION DESCRIPTION: CONTINUED ON ADDITIONAL SHEETS

INVESTIGATION SUMMARY: CONTINUED ON ADDITIONAL SHEETS

During the re-calibration phase the QA technician discovered the handle was loose and not maintaining a locked position in the backscatter mode. In addition, the block area of the gauge was extremely dirty and difficult to engage and disengage. These problems were corrected and the gauge was placed back in service.

CONCLUSION / RESOLUTION: CONTINUED ON ADDITIONAL SHEETS

COMMENTS OR FOLLOW-UPS: CONTINUED ON ADDITIONAL SHEETS

INDIVIDUAL PERFORMING INVESTIGATION (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Sean P. Parker	ODOT		
PROJECT MANAGER or CPM REVIEW/APPROVAL (PLEASE PRINT)	**COMPANY NAME**	**SIGNATURE**	**DATE**
John Behold	ODOT		

Distribution: QAC, QC, PM, CPM, QAE and Project File

734-4040-2012

QC/QA TESTING INVESTIGATION

PROJECT NAME (SECTION)		CONTRACT NUMBER
A Bridge Too Far		C12889
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
Black and Sticky	John Behold	745
MATERIAL DESCRIPTION	SOURCE NAME & NUMBER IF APPLICABLE	
1/2"- #4 Aggregate for L3 Dense HMAC	Hard Rock, Source # 2-889-65	

QA TEST NUMBER ID.	QC TEST NUMBER ID.	TEST PROCEDURE OR PROCESS UNDER INVESTIGATION
QA-V1	QC-V1	HMAC Density Testing

X	**FAILED I.A. PARAMETERS**		**QA FAILED VERIFICATION**
	QC FAILED VERIFICATION		**QUESTIONABLE QC HISTORY**

INVESTIGATION DESCRIPTION: CONTINUED ON ADDITIONAL SHEETS

On October 15, 2006 Region QA performed verification testing (QA-V1) on Level 3 1/2" - #4 HMAC aggregate. The split sample results were within specification for both QC and QA, however, the results were not within I.A. parameters for the #4 sieve. The QC test showed the #4 at 9% passing and the QA test showed the #4 at 15%, a difference of 6%. The I.A. parameter allows 5% maximum difference.

INVESTIGATION SUMMARY: CONTINUED ON ADDITIONAL SHEETS

Because the results were within specification the investigation was initially restricted to the (QA-V1) original sample. The tested samples were swapped between the QA and QC technicians and passed through the sieves. The original results were verified by the opposite technician. QC got 15% passing on the QA side of the split and QA got 9% passing on the QC side of the split.

CONCLUSION / RESOLUTION: CONTINUED ON ADDITIONAL SHEETS

The results of the investigation indicate that the difference in the results was due to a bad split on the verification. The ongoing QC results show the average passing the #4 sieve at 12%.

As a result of this investigation the ongoing QC results are acceptable.

COMMENTS OR FOLLOW-UPS: CONTINUED ON ADDITIONAL SHEETS

The project QCCS will be observing the QC technician performing the splitting and testing procedures to ensure that splitting is being done properly ASAP.

INDIVIDUAL PERFORMING INVESTIGATION (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Sean P. Parker			
PROJECT MANAGER or CPM REVIEW/APPROVAL (PLEASE PRINT)	**COMPANY NAME**	**SIGNATURE**	**DATE**
John Behold			

Distribution: QAC, QC, PM, CPM, QAE and Project File

734-4040-2012

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4101 | GENERAL INFORMATION

PROJECT NAME (SECTION)			HIGHWAY
CONTRACTOR		CONTRACT NUMBER	
PROJECT BEGIN MP/STATION	PROJECT END MP/STATION	PROJECT (LOT) LENGTH (Miles)	NUMBER OF SUBLOTS

NO. OF FORM 734-4102 ATTACHED	NO. OF FORM 734-4103 ATTACHED	NO. OF FORM 734-4104 ATTACHED	NO. OF FORM 734-4105 ATTACHED

PROJECT ACCEPTANCE RESULTS				
	LONGITUDINAL MARKINGS		TRANSVERSE MARKINGS	
	WHITE	YELLOW	WHITE	YELLOW
SUBLOT 1				
SUBLOT 2				
SUBLOT 3				
SUBLOT 4				
SUBLOT 5				
SUBLOT 6				
SUBLOT 7				
SUBLOT 8				
SUBLOT 9				
SUBLOT 10				
SUBLOT 11				
SUBLOT 12				
SUBLOT 13				
SUBLOT 14				
SUBLOT 15				
SUBLOT 16				
SUBLOT 17				
SUBLOT 18				
SUBLOT 19				
SUBLOT 20				

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4101 | GENERAL INFORMATION

PROJECT NAME (SECTION)	HIGHWAY
US97: Terrebonne - Redmond	014 CROOKED RIVER

CONTRACTOR	CONTRACT NUMBER
Pavement Markings 'R' Us	C7149

PROJECT BEGIN MP/STATION	PROJECT END MP/STATION	PROJECT (LOT) LENGTH (Miles)	NUMBER OF SUBLOTS
112.68	124.32	1.119	1

NO. OF FORM 734-4102 ATTACHED	NO. OF FORM 734-4103 ATTACHED	NO. OF FORM 734-4104 ATTACHED	NO. OF FORM 734-4105 ATTACHED

PROJECT ACCEPTANCE RESULTS

	LONGITUDINAL MARKINGS		TRANSVERSE MARKINGS	
	WHITE	YELLOW	WHITE	YELLOW
SUBLOT 1	PASS	PASS W/ ADDITIONAL TESTING	PASS	
SUBLOT 2				
SUBLOT 3				
SUBLOT 4				
SUBLOT 5				
SUBLOT 6				
SUBLOT 7				
SUBLOT 8				
SUBLOT 9				
SUBLOT 10				
SUBLOT 11				
SUBLOT 12				
SUBLOT 13				
SUBLOT 14				
SUBLOT 15				
SUBLOT 16				
SUBLOT 17				
SUBLOT 18				
SUBLOT 19				
SUBLOT 20				

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Cindy R. Wade	Mainline Utility Testing Tech		

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4102 | LONGITUDINAL MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER

CONTRACTOR	BID ITEM NUMBER

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION

METHOD OF LONGITUDINAL MARKING	MATERIAL		BEAD TYPE
MATERIAL MANUFACTURER	**PRODUCT CODE (WHITE)**	**PRODUCT CODE (YELLOW)**	**DATE OF MATERIAL APPLICATION**

RETROREFLECTOMETER EQUIPMENT USED	SERIAL NUMBER	DATE OF LAST FACTORY CALIBRATION

DATE OF MEASUREMENTS	ZERO & CALIBRATION READINGS (Attach Field Print-out)	WEATHER CONDITIONS	START TIME	END TIME
REMARKS:		AMBIENT TEMP. (^{O}F)		
		RELATIVE HUMIDITY		

LINE TYPE	DIRECTION	AVERAGE THICKNESS (mils)	AVERAGE GROOVE DEPTH (mils)	RETROREFLECTIVITY (mcd/m^2/lx) (Attach Field Print-out)										AVERAGE	% VALUES ABOVE MIN.
WHITE LONGITUDINAL MARKINGS															
YELLOW LONGITUDINAL MARKINGS															

SUBLOT ACCEPTANCE

WHITE MARKINGS

- [ ] PASS
- [ ] FAIL
- [ ] ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4104)

YELLOW MARKINGS

- [ ] PASS
- [ ] FAIL
- [ ] ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4104)

ATTACH FIELD PRINTOUTS

- [ ] ZERO & CALIBRATION READINGS
- [ ] RETROREFLECTIVITY

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4102 | LONGITUDINAL MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER
US97: Terrebonne - Redmond	014 CROOKED RIVER	C7149
CONTRACTOR		**BID ITEM NUMBER**
Pavement Markings 'R' Us		0865-0114000

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION
1	1645+80	1704+88

METHOD OF LONGITUDINAL MARKING	MATERIAL		BEAD TYPE
Method E	Thermoplastic		3130
MATERIAL MANUFACTURER	**PRODUCT CODE (WHITE)**	**PRODUCT CODE (YELLOW)**	**DATE OF MATERIAL APPLICATION**
Ennis-Flint	885300	884411	12/17/2014

RETROREFLECTOMETER EQUIPMENT USED	SERIAL NUMBER	DATE OF LAST FACTORY CALIBRATION
Microlux Ultra Retroreflectometer	1458932485	04/27/2014

DATE OF MEASUREMENTS	ZERO & CALIBRATION READINGS (Attach Field Print-out)	WEATHER CONDITIONS	START TIME	END TIME
12/17/2014	3,9,0,4			
REMARKS: New Asphalt Surface		AMBIENT TEMP. (°F)	52°F	67°F
		RELATIVE HUMIDITY	87%	51%

LINE TYPE	DIRECTION	AVERAGE THICKNESS (mils)	AVERAGE GROOVE DEPTH (mils)	RETROREFLECTIVITY (mcd/m²/lx) (Attach Field Print-out)										AVERAGE	% VALUES ABOVE MIN.
WHITE LONGITUDINAL MARKINGS															
W	Eastbound	120	N/A	500	537	486	433	444	489	460	433	510	506	423	96
				476	481	528	488	430	464	405	500	498	487		
W	Westbound	123	N/A	309	302	314	318	302	303	307	317	304	335		
				314	284	309	295	270	278	248	330	278	243		
WB	Eastbound	120	125	459	514	512	509	617	616	634	612	476	511		
				512	527										
YELLOW LONGITUDINAL MARKINGS															
ND	Eastbound	121	N/A	253	301									292	89
ND	Westbound	120	N/A	264	247										
Y	Eastbound	120	N/A	194	253	294	279	189	282	281	292	299	183		
				330	312	309	302	314	318	293					
Y	Westbound	120	N/A	323	351	347	332	363	371	334	307	306	300		
				195	302	284	309	319	295	263					

SUBLOT ACCEPTANCE

WHITE MARKINGS		YELLOW MARKINGS		ATTACH FIELD PRINTOUTS	
X	PASS		PASS	X	ZERO & CALIBRATION READINGS
	FAIL		FAIL	X	RETROREFLECTIVITY
	ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4104)	X	ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4104)		

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Cindy R. Wade	Mainline Utility Testing Tech		

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4103 | TRANSVERSE MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER

CONTRACTOR

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION

TYPE OF APPLICATION	MATERIAL MANUFACTURER	BEAD TYPE
MATERIAL	**MATERIAL PRODUCT CODE**	**DATE OF MATERIAL APPLICATION**

RETROREFLECTOMETER EQUIPMENT USED	SERIAL NUMBER	DATE OF LAST FACTORY CALIBRATION

DATE OF MEASUREMENTS	ZERO & CALIBRATION READINGS (Attach Field Print-out)	WEATHER CONDITIONS	START TIME	END TIME

NUMBER OF LEGENDS IN THE SUBLOT	NUMBER OF LEGENDS TESTED	NUMBER OF BARS IN THE SUBLOT	NUMBER OF BARS TESTED			
				AMBIENT TEMP. (^{o}F)		
				RELATIVE HUMIDITY		

REMARKS:

MARKING DESCRIPTION/LOCATION	RETROREFLECTIVITY (mcd/m^2/lux) (Attach Field Print-out)										AVERAGE	% VALUES ABOVE MIN.
WHITE TRANSVERSE MARKINGS												
YELLOW TRANSVERSE MARKINGS												

SUBLOT ACCEPTANCE

WHITE MARKINGS	YELLOW MARKINGS	ATTACH FIELD PRINTOUTS
☐ PASS	☐ PASS	☐ ZERO & CALIBRATION
☐ FAIL	☐ FAIL	☐ RETRO-REFLECTIVITY
☐ ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4105)	☐ ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4105)	

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING

FORM 734-4103 | TRANSVERSE MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER
US97: Terrebonne - Redmond	014 CROOKED RIVER	C7149

CONTRACTOR
Pavement Markings 'R' Us

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION
1	1645+80	1704+88

TYPE OF APPLICATION	MATERIAL MANUFACTURER	BEAD TYPE
Type B	Ennis-Flint	3130
MATERIAL	**MATERIAL PRODUCT CODE**	**DATE OF MATERIAL APPLICATION**
Thermoplastic	1778	12/17/2014

RETROREFLECTOMETER EQUIPMENT USED	SERIAL NUMBER	DATE OF LAST FACTORY CALIBRATION
Microlux Ultra Retroreflectometer	1458932485	4/27/2014

DATE OF MEASUREMENTS		ZERO & CALIBRATION READINGS (Attach Field Print-out)		WEATHER CONDITIONS	START TIME	END TIME
12/17/2014		3,9,0,4				
NUMBER OF LEGENDS IN THE SUBLOT	NUMBER OF LEGENDS TESTED	NUMBER OF BARS IN THE SUBLOT	NUMBER OF BARS TESTED	AMBIENT TEMP. (°F)	52°F	67°F
8	1	1	1	RELATIVE HUMIDITY	87%	51%

REMARKS:

MARKING DESCRIPTION/LOCATION	RETROREFLECTIVITY (mcd/m²/lux) (Attach Field Print-out)										AVERAGE	% VALUES ABOVE MIN.
WHITE TRANSVERSE MARKINGS												
S - Stop Bar at Lower Bridge Rd (1645+98)	511	467	516	533	576	462	508				**522**	100
LRA - 1st Lane Reduction Arrow (1656+32)	593	514	602	472	508							
YELLOW TRANSVERSE MARKINGS												

SUBLOT ACCEPTANCE

WHITE MARKINGS		YELLOW MARKINGS		ATTACH FIELD PRINTOUTS	
X	PASS		PASS	X	ZERO & CALIBRATION
	FAIL		FAIL	X	RETRO-REFLECTIVITY
	ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4105)		ADDITIONAL TESTING REQUIRED (Use ODOT Form 734-4105)		

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Cindy R. Wade	Mainline Utility Testing Tech		

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING
ADDITIONAL TESTING REQUIRED
FORM 734-4104 | LONGITUDINAL MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER

CONTRACTOR	BID ITEM NUMBER

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION

INITIAL RETROREFLECTIVITY MEASUREMENTS (WHITE) (mcd/m^2/lx) (Use ODOT Form 734-4102 containing original readings)										INITIAL RETROREFLECTIVITY MEASUREMENTS (YELLOW) (mcd/m^2/lx) (Use ODOT Form 734-4102 containing original readings)									

DATE OF ADDITIONAL MEASUREMENTS	ZERO & CALIBRATION READINGS (Attach Field Print-out)	WEATHER CONDITIONS	START TIME	END TIME
REMARKS:		AMBIENT TEMP. (^{o}F)		
		RELATIVE HUMIDITY		

LINE TYPE	DIRECTION	RETROREFLECTIVITY (mcd/m^2/lx) (Attach Field Print-out)										COMBINED AVERAGE	COMBINED % VALUES ABOVE MIN.
WHITE LONGITUDINAL MARKINGS													
YELLOW LONGITUDINAL MARKINGS													

FINAL SUBLOT ACCEPTANCE

WHITE MARKINGS	YELLOW MARKINGS	ATTACH FIELD PRINTOUTS
☐ PASS	☐ PASS	☐ ZERO & CALIBRATION READINGS
☐ FAIL	☐ FAIL	☐ RETROREFLECTIVITY

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING
ADDITIONAL TESTING REQUIRED
FORM 734-4104 | LONGITUDINAL MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER
US97: Terrebonne - Redmond	014 CROOKED RIVER	C7149
CONTRACTOR		**BID ITEM NUMBER**
Pavement Markings 'R' Us		0865-0114000

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION
1	1645+80	1704+88

INITIAL RETROREFLECTIVITY MEASUREMENTS (WHITE) (mcd/m²/lx) (Use ODOT Form 734-4102 containing original readings)										INITIAL RETROREFLECTIVITY MEASUREMENTS (YELLOW) (mcd/m²/lx) (Use ODOT Form 734-4102 containing original readings)									
500	537	486	433	444	489	460	433	510	506	253	301	264	247	194	253	294	279	189	282
476	481	528	488	430	464	405	500	498	487	281	292	299	183	330	312	309	302	314	318
309	302	314	318	302	303	307	317	304	335	293	323	351	347	332	363	371	334	307	306
314	284	309	295	270	278	248	330	278	243	300	195	302	284	309	319	295	263		
459	514	512	509	617	616	634	612	476	511										
512	527																		

DATE OF ADDITIONAL MEASUREMENTS	ZERO & CALIBRATION READINGS (Attach Field Print-out)	WEATHER CONDITIONS	START TIME	END TIME
12/18/2014	0,3,1,2			
REMARKS:		AMBIENT TEMP. (°F)	62°F	73°F
		RELATIVE HUMIDITY	34%	53%

LINE TYPE	DIRECTION	RETROREFLECTIVITY (mcd/m²/lx) (Attach Field Print-out)										COMBINED AVERAGE	COMBINED % VALUES ABOVE MIN.
WHITE LONGITUDINAL MARKINGS													
YELLOW LONGITUDINAL MARKINGS													
Y	Eastbound	323	302	318	303	335	314	330	284	309	319	300	94
		282	270	222	275	305	308	283					
Y	Westbound	323	351	347	332	363	371	334	307	306	293		
		300	302	284	309	319	295	284					

FINAL SUBLOT ACCEPTANCE

WHITE MARKINGS		YELLOW MARKINGS		ATTACH FIELD PRINTOUTS	
	PASS	X	PASS	X	ZERO & CALIBRATION READINGS
	FAIL		FAIL	X	RETROREFLECTIVITY

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Cindy R. Wade	Mainline Utility Testing Tech		

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING
ADDITIONAL TESTING REQUIRED
FORM 734-4105 | TRANSVERSE MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER

CONTRACTOR

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION

INITIAL RETROREFLECTIVITY MEASUREMENTS (WHITE) (mcd/m^2/lx) (Use ODOT Form 734-4103 containing original readings)												INITIAL RETROREFLECTIVITY MEASUREMENTS (YELLOW) (mcd/m^2/lx) (Use ODOT Form 734-4103 containing original readings)							

DATE OF ADDITIONAL MEASUREMENTS		ZERO & CALIBRATION READINGS (Attach Field Print-		WEATHER CONDITIONS	START TIME	END TIME
NUMBER OF LEGENDS IN THE SUBLOT	NUMBER OF ADDITIONAL LEGENDS TESTED	NUMBER OF BARS IN THE SUBLOT	NUMBER OF ADDITIONAL BARS TESTED	AMBIENT TEMP. (^{o}F)		
				RELATIVE HUMIDITY		

REMARKS:

MARKING DESCRIPTION/LOCATION	RETROREFLECTIVITY (mcd/m^2/lux) (Attach Field Print-out)										COMBINED AVERAGE	COMBINED % VALUES ABOVE MIN.
WHITE TRANSVERSE MARKINGS												
YELLOW TRANSVERSE MARKINGS												

FINAL SUBLOT ACCEPTANCE

WHITE MARKINGS		YELLOW MARKINGS		ATTACH FIELD PRINTOUTS	
	PASS		PASS		ZERO & CALIBRATION READINGS
	FAIL		FAIL		RETROREFLECTIVITY

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE

Oregon Department of Transportation

PAVEMENT MARKING RETROREFLECTIVITY TESTING
ADDITIONAL TESTING REQUIRED
FORM 734-4105 | TRANSVERSE MARKINGS

PROJECT NAME (SECTION)	HIGHWAY	CONTRACT NUMBER
US97: Terrebonne - Redmond	014 CROOKED RIVER	C7149

CONTRACTOR
Pavement Markings 'R' Us

SUBLOT NUMBER	SUBLOT BEGINNING STATION/LOCATION DESCRIPTION	SUBLOT ENDING STATION/LOCATION DESCRIPTION

INITIAL RETROREFLECTIVITY MEASUREMENTS (WHITE) (mcd/m²/lx) (Use ODOT Form 734-4103 containing original readings)												INITIAL RETROREFLECTIVITY MEASUREMENTS (YELLOW) (mcd/m²/lx) (Use ODOT Form 734-4103 containing original readings)							

DATE OF ADDITIONAL MEASUREMENTS		ZERO & CALIBRATION READINGS (Attach Field Print-		WEATHER CONDITIONS	START TIME	END TIME
NUMBER OF LEGENDS IN THE SUBLOT	NUMBER OF ADDITIONAL LEGENDS TESTED	NUMBER OF BARS IN THE SUBLOT	NUMBER OF ADDITIONAL BARS TESTED	AMBIENT TEMP. (°F)		
				RELATIVE HUMIDITY		

REMARKS:

MARKING DESCRIPTION/LOCATION	RETROREFLECTIVITY (mcd/m²/lux) (Attach Field Print-out)										COMBINED AVERAGE	COMBINED % VALUES ABOVE MIN.
WHITE TRANSVERSE MARKINGS												
YELLOW TRANSVERSE MARKINGS												

FINAL SUBLOT ACCEPTANCE

WHITE MARKINGS		YELLOW MARKINGS		ATTACH FIELD PRINTOUTS	
	PASS		PASS		ZERO & CALIBRATION READINGS
	FAIL		FAIL		RETROREFLECTIVITY

NAME OF TECHNICIAN (PLEASE PRINT)	COMPANY NAME	SIGNATURE	DATE
Cindy R. Wade	Mainline Utility Testing Tech		

CAT II - MDV STARTUP REVIEW

PROJECT NAME (SECTION)					CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
DATE	MIX DESIGN	BEGINNING LOT/SUBLOT	MATERIAL DESCRIPTION	TO BE USED IN	

MDV STARTUP REVIEW

CONDUCT REVIEW ACCORDING TO SECTION 00745.16(b)(c)1-6 MDV REQUIREMENTS AT STARTUP. If corrective action is required detail action taken and expected results below. If target adjustments are made, attach form 734-2560 (10-2007). Obtain Engineers approval prior to restarting if Va results exceed requirement of step 5 in Section 00745.16(b)(c)

MDV TEST DATA

DATE _____ **TEST No.** _____

TIME _____ **TONAGE** _____

SECTION 00745.16(b)(c)

1 ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☐ **6** ☐

check appropriate boxes to identify which steps this review represents in the MDV Startup Process

	YES	NO
Va REQUIREMENT MET:	☐	☐
VMA REQUIREMENT MET:	☐	☐
CORRECTIVE ACTION REQUIRED:	☐	☐

RESULTS

	TARGET	ACTUAL
VMA		
Va		
VFA		
Pb		
P #8		
P #30		
P #200		

ACTION TAKEN: _____

EXPECTED RESULT: _____

CERTIFIED TECHNICIAN CAT II (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

ENGINEERS APPROVAL REQUIRED PRIOR TO RESTARTING IF PRODUCTION STOPPED PER SECTION 00745.16(b)(c)

REVIEWED BY (AUTHORIZED ENGINEER PLEASE PRINT)	SIGNATURE	DATE	TIME

CAT II - MDV STARTUP REVIEW

PROJECT NAME (SECTION)					CONTRACT NUMBER
Forms Example					12345
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
The HMAC Company			Sean Parker		123
DATE	MIX DESIGN	BEGINNING LOT/SUBLOT	MATERIAL DESCRIPTION	TO BE USED IN	
10/10/2012	07-MD0000	1-1	L3 1/2" Dense HMAC	Base / Wearing	

MDV STARTUP REVIEW

CONDUCT REVIEW ACCORDING TO SECTION 00745.16(b)(c)1-6 MDV REQUIREMENTS AT STARTUP. If corrective action is required detail action taken and expected results below. If target adjustments are made, attach form 734-2560 (10-2007). Obtain Engineers approval prior to restarting if Va results exceed requirement of step 5 in Section 00745.16(b)(c)

MDV TEST DATA

DATE 10/10/2012 **TEST No.** 1-1

TIME 8:00am **TONAGE** 65

SECTION 00745.16(b)(c)

1 [X] **2** [X] **3** [ ] **4** [ ] **5** [ ] **6** [ ]

check appropriate boxes to identify which steps this review represents in the MDV Startup Process

	YES	NO
Va REQUIREMENT MET:	[ ]	[X]
VMA REQUIREMENT MET:	[X]	[ ]
CORRECTIVE ACTION REQUIRED:	[X]	[ ]

RESULTS

	TARGET	ACTUAL
VMA	**15.4**	15.0
Va	**4.0**	2.7
VFA	**74**	82
Pb	**5.70**	5.69
P #8	**38**	37
P #30	**14**	13
P #200	**5.0**	5.1

ACTION TAKEN: Lab results indicate mix was produced close to JMF targets, However Voids and VFA are out of tolerance. Density results from the grade were reported to be 95.1% which reconcile with the Voids results from the lab. Pb results from the lab test were .01% lower than target. Propose Pb change reducing the target from 5.70% to 5.30%.

EXPECTED RESULT: Reducing Pb by 0.40% to 5.30% should bring Voids to approximately 3.9% without adversly affecting VMA. If the expected result from this change brings the Voids to 3.9% VFA should drop back to the JMF target of 74. All other constituents staying the same the mix should be within tolerance and field densities should fall within reasonable values of 92.2 to 94.1%. After adjustments are made another sample will immediately be taken and results reviewed in accordance with step 3 and 4 of the MDV Start-Up Process.

CERTIFIED TECHNICIAN CAT II (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

ENGINEERS APPROVAL REQUIRED PRIOR TO RESTARTING IF PRODUCTION STOPPED PER SECTION 00745.16(b)(c)

REVIEWED BY (AUTHORIZED ENGINEER PLEASE PRINT)	SIGNATURE	DATE	TIME

CAT II - DENSITY / CONTROL STRIP RECONCILIATION

E

English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
DATE	MIX DESIGN	BEGINNING SUBLOT	MATERIAL DESCRIPTION	TO BE USED IN	

QUALITY CONTROL LAB RESULTS

TEST NUMBER	DATE	TIME
VMA	VFA	Pb
P #8	P #30	P #200

P #200 / Pbe	Va

PREDICTED DENSITY RANGE:

CONTROL STRIP RESULTS

CONTROL STRIP NUMBER	DATE	TIME

LIFT NUMBER	PERCENT REQUIRED	INITIAL POINT % COMP

CONTROL STRIP - % COMPACTION

LEFT EDGE	MIDPOINT LEFT	CENTER	MIDPOINT RIGHT	RIGHT EDGE

CONTROL STRIP AVERAGE

LABORATORY / CONTROL STRIP RECONCILE: YES ☐ NO ☐

NOTE: IF CONTROL STRIP DOES NOT RECONCILE DETAIL CORRECTIVE ACTION BELOW

CORRECTIVE ACTION TAKEN / RESOLUTION: (If new control strip performed a new reconciliation report is required)

CERTIFIED TECHNICIAN CAT II (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE

CAT II - DENSITY / CONTROL STRIP RECONCILIATION

E English (**E**) or Metric (**M**)

PROJECT NAME (SECTION)					CONTRACT NUMBER
Form Example					12345
C0NTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
The HMAC Company			Sean Parker		123
DATE	MIX DESIGN	BEGINNING SUBLOT	MATERIAL DESCRIPTION	TO BE USED IN	
10/10/2012	12-MD0000	1-1	L3 1/2" Dense HMAC	Base	

QUALITY CONTROL LAB RESULTS

TEST NUMBER	DATE	TIME
1-1	10/10/2012	8:00am
VMA	**VFA**	**Pb**
15.0	74	5.00
P #8	**P #30**	**P #200**
37	13	5.1

P #200 / Pbe	Va
1.13	3.9

PREDICTED DENSITY RANGE:
92.2% - 94.1%

CONTROL STRIP RESULTS

CONTROL STRIP NUMBER	DATE	TIME
1	10/10/2012	10:30am

LIFT NUMBER	PERCENT REQUIRED	INITIAL POINT % COMP
1	92.0%	95.8%

CONTROL STRIP - % COMPACTION

LEFT EDGE	MIDPOINT LEFT	CENTER	MIDPOINT RIGHT	RIGHT EDGE
95.5%	95.0%	95.0%	95.7%	95.9%

CONTROL STRIP AVERAGE
95.4%

	YES	NO
LABORATORY / CONTROL STRIP RECONCILE:		X

NOTE: IF CONTROL STRIP DOES NOT RECONCILE DETAIL CORRECTIVE ACTION BELOW

CORRECTIVE ACTION TAKEN / RESOLUTION: (If new control strip performed a new reconciliation report is required)

Lab results indicate the mix is being produced close to JMF targets and compaction in the field may be artificially high. Density technician checked gauge accuracy by running comparison tests with ODOT QA gauge and found the gauges were reading within one percent of each other. Core correlation was then performed and after applying the correction to the the control strip the resulting average of 93.6 effectively reconciling the lab results and the control strip.

CERTIFIED TECHNICIAN CAT II (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Scott Aker #43048	ODOT		10/10/2012

Random Number Table

Line/Col.	1	2	3	4	5	6	7	8	9	10	11
1	16897	16881	22931	30360	86899	51400	15815	41234	81861	82040	35678
2	16066	03723	89146	22426	63867	63506	17781	49403	04287	20424	07348
3	85075	44878	72033	58248	77069	18971	39182	30082	56504	46566	42681
4	92639	30948	57302	81544	63775	52944	80353	63289	86249	75673	09155
5	35721	37005	49818	86207	62735	44649	23672	06383	04114	28132	05908
6	40489	59044	89605	35282	26421	01022	61386	92737	87214	45817	91765
7	44342	01656	85330	48692	24303	00857	37624	26026	24111	11525	09849
8	48339	55094	00436	05613	45626	16491	78652	60998	80789	51080	74835
9	78149	23513	40239	08012	07515	30771	22169	42811	65528	69258	08210
10	53975	05987	19104	37420	24813	05085	57626	68003	81529	15681	28910
11	47292	70452	34590	31785	85351	54591	59692	55567	45079	45751	40201
12	34542	53478	24010	23177	47320	47810	63102	42071	01144	52342	74604
13	07353	34902	98261	40943	21138	20089	18299	39147	87712	40470	72981
14	70361	33031	17937	83411	03889	16309	94376	88326	69494	20471	67255
15	33361	61660	86771	02004	01567	06219	97827	75885	90188	56494	52163
16	12998	73394	24693	34225	42333	69609	53915	18304	82164	56042	12097
17	29623	44833	25355	29022	41902	42322	67751	04941	42039	86077	87066
18	94859	35317	68957	47114	24840	73777	87089	17554	15613	59887	68990
19	68417	40318	85951	46929	07799	11666	94557	69499	73074	78549	50198
20	11826	65897	95213	07860	14082	23312	72457	17117	27707	33332	76374
21	85532	33390	48065	62862	93745	87022	68944	18825	96608	12332	31279
22	09588	86051	27474	46612	94954	66084	28031	11486	26895	56861	49260
23	99396	93908	91658	93214	79134	00272	89581	92129	23926	01510	55723
24	78462	91590	31144	91250	85550	11080	97373	63397	39601	43019	09742
25	98696	01557	06498	39892	02702	52858	36984	45515	21716	92369	81682