

1.



AASHTOWare Project  
Construction and Materials  
Lab Supervisor  
Lab Technician Role  
Training Manual





MONTANA DEPARTMENT OF TRANSPORTATION
AASHTOWare Project Construction and Materials



NEW! New Processes and Procedures ..... 3
1. NEW! Receive a concrete sample at the District Lab and route to Helena for testing ..... 3
2. NEW! Receive an aggregate sample at the destination lab, enter test results and mark as complete. .... 5
3. NEW! Review the test results and mark approved by Level 2..... 9
4. NEW! Search for all samples for a specific sample type and Contract ..... 10
5. NEW! Creating a new PCC Mix Design and DMS Review ..... 11
EXAMPLE More examples for the LAB SUPERVISOR \ Labtech Role ..... 18
6. Create a new Aggregate Source ..... 18
7. Create a sample record for proposed surfacing..... 19
8. Receive the proposed surfacing sample in the District Lab ..... 21
9. Add approved materials to a new aggregate source ..... 22
10. Create a source for a Material supplier ..... 23
11. Associate a material to a Material supplier ..... 24
12. Search for all samples for a specific date range. .... 25
13. Search for all samples for a specific test and test status. .... 26
14. Search for all samples for a specific source and material. .... 27
15. Enter test results for the proposed surfacing sample ..... 28
17. Create a new Superpave Mix Design ..... 31
18. Create a sample record for mix design verification. .... 35
19. Create a New Test Equipment Record ..... 37




20. Update a Test Equipment Record.....38

21. Inactivate a Test Equipment Record.....39

**LABSUPERVISOR – LABTECHNICIAN**



**New Processes and Procedures**

**1.  Receive a concrete sample at the District Lab and route to Helena for testing**

**Login**

Role: LABTECH

**Navigation**

Materials Worksheets > Receive Sample at Destination Lab

1. In the **Select Destination Lab to Receive At** search box, enter *Boz* and choose. **Bozeman Receiving**
2. In the **Filter Destination Lab** field, enter *Bozeman* and select *Bozeman Receiving*.
3. In the search box below the Select Destination Lab to Receive At field, enter *11X* (where X is your assigned letter).
4. Click the box to the left of the Sample ID (a green check mark will appear).
5. Click on the **Mark As Received** button.
6. Verify that the sample disappears from the list.
7. Click on the **Sample Records** Quick Link.
8. In the search box, enter *11X* (where X is your assigned letter).
9. Click on the **Sample ID** link.




MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



10. Click on the **Destination Lab(s)** tab.
11. Click the **New** button.
12. Click in the **Lab Name** field and enter *hel*.
13. Select *Helena Receiving*.
14. Using the **Shipped Date/Time** calendar popup, select the current date and time.
15. Click the calendar icon or anywhere on the screen to close it.
16. Click **Save**.
17. Click on the **Tests** tab.
18. Click on the arrow to the right of the **Assign Tests** button and select *Assign Default Tests*.
19. Verify the tests ConcreteStrength28 and ConcreteStrength7 have been added.
20. Click the **Home** button.



**2.  Receive an aggregate sample at the destination lab, enter test results and mark as complete.**

**Login**

Role: LABTECH

**Navigation**

Home >Materials Worksheets >Receive Sample at Destination Lab

1. In the search bar under the **Select Destination Lab to Receive At** heading, begin to type [Bozeman](#) to initiate search.
2. Select [Bozeman Receiving](#).
3. In the **Search** field, enter [22X](#) (where X is your assigned letter).
4. Check the box next to the desired Sample ID. A green check mark appears
5. On the righthand of the screen, click the **Mark as Received** button
6. Verify that the sample disappears from the list
7. Click on the **Enter Test Results** link.
8. In the **Search** field enter [22X](#) (where X is your assigned letter) under the **Tests** section.
9. For the MT 210, 230 test, click on **Test Number 1.0**.
10. In the **Planned Test Start Date** field select [09/05/2018](#).
11. In the **Estimated Completion Date** field select [09/07/2018](#).
12. Click the **Save** button.
13. Click on the **Testers** tab.
14. Click the **New** button.
15. In the Search field type your last name and select your name.
16. Click on the **General** tab.
17. Click **Save**.
18. Click on the **Component Action** button and select [MDT Proctor](#).
19. Enter data in the agency view according to the screen shot below.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



Optimum Moisture - Test 1 (lb/cu ft) <input type="text" value="6.1"/>	Maximum Density - Test 1 (%) <input type="text" value="140.3"/>
Optimum Moisture - Test 2 (lb/cu ft) <input type="text"/>	Maximum Density - Test 2 (%) <input type="text"/>
Avg Optimum Moisture (lb/cu ft) 6.1	Avg Maximum Density (%) 140.3
<b>COARSE PARTICLE CORRECTION</b>	
Percent Coarse Particles-Pc (%) <input type="text" value="6.00"/>	
Percent Fine Particles-Pf (%) <input type="text" value="94.00"/>	
Bulk Sp. Gravity of Coarse Particles (K) <input type="text" value="2.650"/>	
Corrected Total Dry Density(lb/cu ft) 141.587	

20. In the **Test Result Value** field select *Pass*.
21. Click the **Save** button.
22. Click on the **Sample Record Test** quick link at the top of the page.
23. Click on the **Component Action** button and select *Mark Test Complete*.
24. Verify the **Test Status** changed to *40 – Test Complete*.

**Note: Once test is marked Complete and you need to edit data you will you will need to requeue the test.**

- 1. Click the Review Tests Quick link.**
- 2. Enter last four digits of sample ID in the search box.**
- 3. Go to the action Item and select Tasks.**
- 4. Select Requeue Test.**

25. Click on the **Enter Test Results** Quick link



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



- 26. Verify that the MT 210, 230 test row for this sample has disappeared.
- 27. For the MT 202 test, click on **Test Number 1.0**.
- 28. In the **Planned Test Start Date** field select **09/06/2018**.
- 29. In the **Estimated Completion Date** field select **09/07/2018**.
- 30. Click the **Save**.
- 31. Click on the **Testers** tab.
- 32. Click the **New** button.
- 33. In the Search field type your last name and select your name.
- 34. Click **Save**.
- 35. Click on the **Reference Specifications** tab
- 36. Check the **Use for Test** checkbox.
- 37. Click **Save**.
- 38. Click on the **Component Action** button and select **MDT Sieve Analysis of Fine and Coarse Aggregates** under **Views**.
- 39. Enter data as shown in the following screen shot. **Data is entered into boxes**
- 40. **Sample weight is a calculated field.**

Sample Weight (lbs)	49.16	Before Wash Weight (g)	543.90
Weight Retained 4 Mesh (lbs)	26.58	After Wash Weight (g)	445.80
Weight Passing 4 Mesh (lbs)	22.58	Loss by Wash (g)	98.10
% Total	100.00	No Spec	
% Coarse	54.07	Reciprocal	0.08440
% Fines	45.93	Pan	543.90
		Use Reciprocal	Yes

- 41. Click **Save**.
- 42. Verify the Sample Weight(**lbs**), % Total, % Coarse, % Fines, Loss by Wash(g) and Reciprocal fields are auto-populated
- 43. Enter Weight Retained as shown in the following screen shot:



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



Sieve Size	Weight Retained ▼	Weight Passing	Percent Retained	Percent Passing
1.5 in. (37.5 mm)	<input type="text" value="0.00"/>	49.16	0.00	
1.25 in. (31.5 mm)	<input type="text" value="0.00"/>	49.16	0.00	
1 in. (25 mm)	<input type="text" value="0.00"/>	49.16	0.00	
3/4 in. (19 mm)	<input type="text" value="0.00"/>	49.16	0.00	
1/2 in. (12.5 mm)	<input type="text" value="6.21"/>	42.95	12.60	
3/8 in. (9.5 mm)	<input type="text" value="13.47"/>	35.69	27.40	
4M (4.75 mm)	<input type="text" value="26.58"/>	22.58	54.10	
8M - 10M	<input type="text" value="195.50"/>	348.40	35.90	
16M	<input type="text"/>			
30M	<input type="text"/>			
40M - 50M	<input type="text" value="357.40"/>	186.50	65.70	
80M - 100M	<input type="text" value="403.10"/>	140.80	74.10	
200M	<input type="text" value="441.20"/>	102.70	81.10	

44. In the **Test Result** box type **PASS** and select *Pass*.
45. Click **Save**
46. Click on the **Sample Record Test** quick link
47. Scroll down and verify the **Test Result Value** is auto-populated from the Agency View
48. Click on the **Component Action** button and select *Mark Test Complete*
49. Verify the **Test Status** changed to *40 – Test Complete*

**Note: Once test is marked Complete and you need to edit data you will you will need to requeue the test.**

5. **Click the Review Tests Quick link.**
6. **Enter last four digits of sample ID in the search box.**
7. **Go to the action Item and select Tasks.**
8. **Select Requeue Test.**





### 3. Review the test results and mark approved by Level 2

#### Login

Role: LABSUPERVISOR

#### Navigation

Home > Materials Worksheets > Review Tests

1. In the **Search** field, enter [22X](#) (where X is your assigned letter)
2. From the **Row Action** button for MT 202 click on **Views**, select [MDT Sieve Analysis of Fine and Coarse Aggregates](#) link
3. Review the test results
4. Click the **Previous** button
5. From the **Row Action** button select [Tasks](#)
6. Select [Mark Test Review by Level 2](#)
7. From the **Row Action** button for MT 210, 230 click on **Views**, select [MDT Proctor](#) link
8. Review the test results
9. Click the **Previous** button
10. From the **Row Action** button for MT 210, 230 select [Tasks](#)
11. Select [Mark Test Review by Level 2](#)
12. Verify the sample disappears from the list



## 4. Search for all samples for a specific sample type and Contract

### Login

Role: LABTECH

### Navigation

Materials > Find Sample

1. Check the [Contract ID](#) checkbox in the **Fields** list
2. Enter [07817X](#) in the Criteria search field
3. Click the **Magnifying Glass** icon to the right of the Criteria search field
4. Expand the **Query** button left side of window and select **Execute**.
5. Verify that a list of samples is displayed under the **Sample Record** section
6. Right click on any **Sample ID** link and click on [Open in a new window](#)
7. This will open up the Sample Record Summary window
8. Click on the **Contract** tab
9. Verify that Contract 07817X is listed



## 5. Creating a new PCC Mix Design and DMS Review

### Login

Role: LABSUPERVISOR

### Navigation

Materials > Mix Design

1. Select **Add** from the **Component Action Menu**.
  - Enter last 2 digits of mix design approval year + district/area + class of concrete + 2-digit sequential number (Example: 1951DECK01) in the **Mix Design ID** field.
2. Select **PCC – Portland Cement Concrete Mix Design** from the **Type** Drop-down.
3. Click in the **Material and Source auto-complete fields** and press enter to get the list of available materials and sources to choose from.
4. Enter Today's Date in the **Effective Date** Field.
5. Select **ACTIVE-Active** from the **Status** drop-down.
6. Click **Save** and you will be directed to the Mix Design Summary Window.
7. Click the **Component Materials** tab.
8. Click **Select Component Material**.
9. Choose the applicable Material code for your Mix Design.
10. Click on the Material code in the **Material Code** column and green checks will appear.
11. Click **Add to Mix Design**.
12. Click on the arrow next to your material code – which will expand the record.
13. Click in the Source auto-complete field and hit Enter.
14. Choose your Source and any other information you need to input.
15. Click **Save**.
16. From the Component **Action** button under views click **AV #1 – MDT Concrete Mix Design – Contractor Mix Design agency view**.
17. **NOTE:** You MUST open **AV #1 – MDT Concrete Mix Design – Contractor Mix Design agency view** and enter your data and save BEFORE opening **AV #2 – MDT Concrete Mix Design – Aggregate (Comb) agency view**. There is data that is populated from AV #1 into AV #2.
18. Enter all applicable fields as shown below:



# MONTANA DEPARTMENT OF TRANSPORTATION AASHTOWare Project Construction and Materials



Mix Design

Agency View Summary

Concrete Mix Design

Warning: Data in the Parent Entity has changed. Click Save to refresh the data and recalculate any affected values on the Agency View.

0 changed

Proposed Agg. Cementitious Mats & Admix	CA #1	CA #2	CA #3	MA #1	Fine #1	Fine #2
PI# Number	53-080002				53-080002	
PI# Name	Fred Gillette Source #1				Fred Gillette Source #1	
Size/Fraction	58.6				41.5	
Specific Gravity	2.644				2.612	
Absorption	1.2				1.6	
Aggregate Class						

0 changed

Cement	CHS				
Fly Ash					
GGBFS					
Other CM					
AEA-Admix #1	BASF	Master Air AE200	N/A		
Admix #2	BASF	WRA Master Polyheed 997	Type A		
<b>Materials and Admixtures</b>	<b>Manufacturer/Supplier</b>	<b>Mill/Plant/Admix Name</b>	<b>Type/Class</b>	<b>Specific Gravity</b>	
Admix #3	BASF	MasterSet Delvo	Type B		
Admix #4					
Admix #5					
Admix #6					

Proposed Mix Designs

MDT Concrete Class

551.03.02.02 - General

Water (lbs.)

250

Cement (lbs.)

595

Fly Ash (lbs.)

0

GGBFS (lbs.)

0

Other CM (lbs.)

0

W/CM Ratio

0.42

Cement %

100

Fly Ash %

0

GGBFS %

0

OtherCM %

0



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



<b>Gradation Type</b>	
Combined <input type="button" value="v"/>	
<b>Fine #1 (SSD lbs.)</b>	<b>Fine #1 %</b>
<input type="text" value="1260"/>	41.4
<b>Fine #2 (SSD lbs.)</b>	<b>Fine #2 %</b>
<input type="text"/>	0
<b>CA #1 (SSD lbs.)</b>	<b>CA #1 %</b>
<input type="text" value="1780"/>	58.6
<b>CA #2 (SSD lbs.)</b>	<b>CA #2 %</b>
<input type="text"/>	0
<b>CA #3 (SSD lbs.)</b>	<b>CA #3 %</b>
<input type="text"/>	0
<b>MA #1 (SSD lbs.)</b>	<b>MA #1 %</b>
<input type="text"/>	0
<b>% Air Content</b>	
<input type="text" value="5.5"/>	
<b>TargetSlump</b>	
3 in <input type="button" value="v"/>	

<b>Admix #1 Dosage</b>	<b>Admix #1 Unit</b>
<input type="text" value="1.70"/>	oz/cy <input type="button" value="v"/>
<b>Admix #2 Dosage</b>	<b>Admix #2 Unit</b>
<input type="text" value="4.00"/>	oz/cy <input type="button" value="v"/>
<b>Admix #3 Dosage</b>	<b>Admix #3 Unit</b>
<input type="text" value="3.50"/>	oz/cy <input type="button" value="v"/>
<b>Admix #4 Dosage</b>	<b>Admix #4 Unit</b>
<input type="text"/>	<input type="button" value="v"/>
<b>Admix #5 Dosage</b>	<b>Admix #5 Unit</b>
<input type="text"/>	<input type="button" value="v"/>
<b>Admix #6 Dosage</b>	<b>Admix #6 Unit</b>
<input type="text"/>	<input type="button" value="v"/>
<b>Volume (27.00 cf +/- 0.10 cf)</b>	
27.04	



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



**TRIAL BATCH DATA**

**MDT Concrete Class:**

Compressive Strengths	3 - Day ▼	7 - Day ▼	28 - Day ▼	56 - Day ▼
Cylinder 1]	<input type="text" value="3760"/>	<input type="text" value="4320"/>	<input type="text" value="5270"/>	<input type="text"/>
Cylinder 2	<input type="text"/>	<input type="text" value="4300"/>	<input type="text" value="5280"/>	<input type="text"/>
Cylinder 3	<input type="text"/>	<input type="text"/>	<input type="text" value="5290"/>	<input type="text"/>
AVG	<input type="text" value="3760"/>	<input type="text" value="4310"/>	<input type="text" value="5280"/>	<input type="text" value="0"/>

**Modulus of Rupture (28-Day):**

1

2

AVG  
0

**Slump**

Slump (inches)

Temperature (F)

Air (%)

Unit Weight (lb/ft<sup>3</sup>)

Yield (yd<sup>3</sup>)

**Slump Flow**

Slump-Flow (inches)

J-Ring (inches)

VSI



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



**Rapid Chloride Perm (coulombs) (28-Day):**

1

2

3

AVG  
0

**Surface Resistivity (Kohm-cm) (28-Day):**

Surf Res 28 Day #1	<input type="text"/>	Surf Res 56 Day #1	<input type="text"/>
Surf Res 28 Day #2	<input type="text"/>	Surf Res 56 Day #2	<input type="text"/>
Surf Res 28 Day #3	<input type="text"/>	Surf Res 56 Day #3	<input type="text"/>
28 Day Avg	0	56 Day Avg	0

Aggregate Data	Coarse ▼	Coarse #1 ▼	Coarse #2 ▼
Wear AASHTO T96 (%)	24.4	<input type="text"/>	<input type="text"/>
Soundness AASHTO T104 (%)	0.2	<input type="text"/>	<input type="text"/>
Lightweight Pieces AASHTO T113 (%)	0.9	<input type="text"/>	<input type="text"/>
Clay and Friable AASHTO T112 (%)	0.0	<input type="text"/>	<input type="text"/>

**Intermediate**

Wear AASHTO T95 (%)

Soundness AASHTO T104 (%)

Lightweight Pieces AASHTO T113 (%)

Clay and Friable AASHTO T112 (%)

<b>Fine #1</b>	<b>Fine #2</b>
Organic Impurities AASHTO T21-Fine <input type="text" value="1"/>	Organic Impurities AASHTO T21-Fine 2 <input type="text"/>
Soundness AASHTO T104(%) - Fine <input type="text" value="3.5"/>	Soundness AASHTO T104(%) - Fine 2 <input type="text"/>
Lightwt Pieces AASHTO T113(%) - Fine <input type="text" value="0.9"/>	Lightweight Pieces AASHTO T113(%) - Fine 2 <input type="text"/>



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



19. Click **Save**.
20. Click on the **Mix Design** quick link at the top to get back to the Mix Design Summary screen.
21. From the Component **Action** button under views click **AV #2 – MDT Concrete Mix Design – Aggregate (Comb)**
22. Enter your data and **save**.

Mix Design  
Agency View Summary

Concrete Mix Design

Sieves	Coarse Agg 1	Coarse Agg 2	Coarse Agg 3	Mid 1	Fine Agg 1	Fine Agg 2	Combined Agg % Pass	Combined Agg % Retained	Each Sieve % Retained
2 in.	100.0				100.00		100	0	0
1 1/2 in.	100.0				100.00		100	0	0
1 in.	100.0				100.00		100	0	0
3/4 in.	97.0				100.00		98	2	2
1/2 in.	69.0				100.00		82	18	16
3/8 in.	41.0				100.00		65	35	17
No. 4	0.9				100.00		42	58	23
No. 8	0.7				82.00		34	66	8
No. 16	0.6				58.00		24	76	10
No. 30	0.6				44.00		19	81	5
No. 50	0.6				19.00		8	92	11
No. 100	0.6				3.00		2	98	6
No. 200	0.5				1.00		1	99	1
Pan							0	100	1
Blend Perc	58.6	0	0	0	41.4	0			

23. As you can see in the screen shot above...The Blend Perc fields are populated from the data you entered into AV #1.
24. Click on the **Mix Design** quick link at the top to get back to the Mix Design Summary screen.
25. From the Component **Action** button under views click **MDT Concrete Target**.
26. Enter the applicable data and save.

Home Previous My Pages

Mix Design  
Agency View Summary  
Combined Concrete Agg Contractors Targets





MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



Target Approval Date

01/15/2018

Strength Target

4550.00

Strength Target Min

4000

Strength Target Max

5500

Initial Mix Design

New Mix Design

Min

-500

Max

500

Calc Min

4,050.00

Calc Max

5,050.00

Sieves	Target	Min	Max	Min Tolera...	Max Tolera...
2 in. (50 mm)	100.0	95	100	-5	5
1.5 in. (37.5 mm)	100.0	95	100	-5	5
1.25 in. (31.5 mm)	100.0	95	100	-5	5
1 in. (25 mm)	100.0	95	100	-5	5
3/4 in. (19 mm)	100.0	95	100	-5	5
1/2 in. (12.5 mm)	100.0	95	100	-5	5
3/8 in. (9.5 mm)	77.1	72.1	82.1	-5	5
4M (4.75 mm)	53.6	48.6	58.6	-5	5
8M - 10M	42.7	38.7	46.7	-4	4
16M	30.6	26.6	34.6	-4	4
30M	24.0	20	28	-4	4
40M - 50M	9.9	6.9	12.9	-3	3
80M - 100M	1.8	0	3.8	-2	2
200M	0.2	0	1.7	-1.5	1.5

27. Click on the **Mix Design** quick link at the top to get back to the Mix Design Summary screen.
28. Select **Attachments** from the **Action Menu**.
29. Click **Select File**.
30. Browse to the folder and select the document you want to attach.
31. Click **Open**.
32. Click **Save**.
33. Select **Mix Design Summary** from the **Component Action Menu**.
34. After reviewing the data and verifying specifications are met, enter **Today's Date** in the **DMS Approved Date**.
35. Click **Save**.



**EXAMPLE** More examples for the LAB  
SUPERVISOR \ Labtech Role

## 6. Create a new Aggregate Source

### Login

Role: LABTECH

### Navigation

Reference Data > Sources

### Test Case Steps

1. **Add New Source** by selecting option under **Action** Button.
2. In the **Source ID** field enter *21-000504[X]*
3. In the **Source Name** field enter *AM Welles (DSL)*
4. From the **Source Type** dropdown list select *AGG-Aggregate Pit*
5. Under the **Source Type** section check boxes for *Bituminous, Non-Bituminous, Concrete* and *Cover*
6. In the **Geographic Area** dropdown list select *BUT-Butte*
7. In the **Legal Description** field enter *05S01W16DC*
8. From the **Status** dropdown list select *ACTIVE – Active*
9. From the **Effective Date** popup select a current or past date.
10. Click **Save**
11. Select the **Addresses** tab.
12. Select **Address ID** field enter *01*.
13. In the **County** field under Location enter *silver* and select *C047 – Silver Bow*.
14. In the **District** field under Location enter *butte* and select *2 – Butte*.
15. Click **Save**.



## 7. Create a sample record for proposed surfacing.

### Login

Role: LABTECH

### Navigation





Materials > Sample Records

1. Click on the Component Action button in upper righthand corner of screen and select *Add*.
2. In the **Material Code – Name** field enter *proposed* and then select *PC 1*.
3. In the **Sample Date** field select the current date from the calendar popup.
4. In the **Sample Type** field select *PE – Pre-Construction* from the dropdown list.
5. In the **Acceptance Method** field select *TEST – Test Results* from the dropdown list.
6. Click **Save**.
7. In the **Witnessed By ID – Name** field enter *(your last name)* then select your name from list.
8. In the **Specimen(s) Number** field enter *50*.
9. In the **Intended Use** field enter: *Surfacing-15 Holes-35 Comp-50 sacks total*.
10. In the **District/Area** select: *BUT – Butte*.
11. In the **Lab Reference Number** field enter: *43587-89*.
12. In the **Control Type** field select: *UPN – Uniform Project Number*.
13. In **Preconstruction Number** field re-enter the UPN #: *04807*.
14. Click **Save**.
15. \*\*\*Make a note of the Sample ID's last four digits.
16. Select **Sources** Tab.
17. Press the **Select Primary Source** button and type *welles*.
18. Select *AM Welles (DSL)* from the list.
19. Click on **Add to Sample Record**.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



20. Select **Destination Lab(s)** Tab.
21. Click **New**.
22. In the **Lab Name** field enter *butte* and select [Butte Receiving](#).
23. Click **New**
24. In the **Lab Name** field enter *hel* and select [Helena Receiving](#).
25. Click **Save**.
26. Select **Tests** tab.
27. Click on the **Assign Tests** button.
28.   arrow over twice to **Select Optional Tests**
29. Select the following tests to be run ([SieveAnalysis](#), [SoilClass-Sieve](#), [SoilClass-LLPI](#), [SoilClass](#), [LAWear](#), [SandEquivalent](#)) by clicking on the **checkbox** to the left. A green checkmark will appear in each box as it is selected.
30.   arrow over to **Add Test Runs (Don't click the Confirm Button yet)**
31. Change the Test Runs from 1 to 3 for SoilClass-Sieve, SoilClass-LLPI and SoilClass
32. Click **Confirm**
33. Scroll to the bottom left and click on **Load Next 2**.
34. Verify the tests were added.
35. In the **Test Description** field, add Hole numbers to the Butte Lab tests.
36. Click **Save**



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



## 8. Receive the proposed surfacing sample in the District Lab

### Login

ROLE: LABTECH

### Navigation

Continuation from previous exercise

1. Click on the **Receive at Destination Lab** quick link.
2. In the **Select Destination Lab to Receive At** box enter *but* and select *Butte Receiving*.
3. In the **Search** field enter the last 4-digits of the Sample ID.
4. Check the checkbox to the left of the sample ID. A green check mark will appear.
5. Click on the **Mark as Received** button at top right corner of screen.



## 9. Add approved materials to a new aggregate source

### Login

Role: LABTECH

### Navigation

Reference Data > Sources Enter [21-000504\[X\]](#) > Materials Tab

1. Click on the **Select Source Materials** button
2. Check the [701.01.01.01 - Fine Concrete Aggregate](#), [701.01.02.01 - Coarse Concrete Aggregate No. 2](#), [701.01.03.01 – Combined Concrete Aggregate](#) rows.
3. Click the **Add to Source** button.
4. Click **Save**.
5. Click on the [701.01.01.01](#) Fine Concrete Aggregate **Material Code** link.
6. From the **Effective Date** calendar popup, select the current date.
7. In the **Status** dropdown list select [ACTIVE](#).
8. Click **Save**.
9. Click the Source quicklink at the top.
10. Click on the [701.01.02.01](#) Coarse Concrete Aggregate No. 2 **Material Code** link.
11. From the **Effective Date** calendar popup, select the current date.
12. In the **Status** dropdown list select [ACTIVE](#).
13. Click **Save**.
14. Click the Source quicklink at the top.
15. Click on the [701.01.03.01](#) Combined Concrete Aggregate **Material Code** link.
16. From the **Effective Date** calendar popup, select the current date.
17. In the **Status** dropdown list select [ACTIVE](#).
18. Click **Save**.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



## 10. Create a source for a Material supplier

### Login

Role: LABTECH

### Navigation

Reference Data > Sources

**Click the Component Action button and select [Add New Source](#).**

1. Enter [TreasureState\[x\]](#) in the **Source ID** field.
2. Enter [Treasure State Seed Company](#) in the **Source Name** field.
3. Select [Great Falls](#) from the **Geographic Area** dropdown list.
4. Select [01/01/2018](#) from the **Effective Date** calendar popup.
5. Select [ACTIVE – Active](#) from the **Status** dropdown list.
6. Select [MTRL – Material Supplier](#) from the **Source Type** dropdown list.
7. Click **Save**.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



## 11. Associate a material to a Material supplier

### Login

Role: LABTECH

### Navigation

Continuation from previous test case

#### Click on the Materials Tab

1. Click on the [Select Source Materials](#) button.
2. Type [seed](#) in the **Search** field.
3. Click on the [713.08.01.01 – Seed](#) row.
4. Click the **Add to Source** button.
5. Click **Save**.
6. Click on the [713.08.01.01 Material Code](#) link.
7. Select [02/01/2018](#) from the **Effective Date** calendar popup.
8. Select [ACTIVE – Active](#) from the **Status** dropdown list.
9. Click **Save**.





MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials




## 12. Search for all samples for a specific date range.

### Login

Role: LABTECH

### Navigation

Home > Materials > Find Sample

10. Check the *Sample Date* checkbox in the **Fields** list
11. Click the **Magnifying Glass** icon to the right of the Criteria search field
12. Verify that no samples are displayed under the **Sample Record** section
13. Expand the **Query** section
14. Change the dropdown to the right of Sample date to *Is Later Than or On*
15. Select *03/01/2018* from the Calendar popup
16. Click on the Duplicate icon to the right of the Calendar icon 
17. Change the dropdown from Or to *And*
18. Change the dropdown to the right of Sample date on the 2<sup>nd</sup> row to *Is Earlier Than or On*
19. Select *04/16/2018* from the Calendar popup
20. Click the **Execute** button
21. Verify that there are samples showing in the list of samples under the **Sample Record** section and they have **Sample Dates** within 04/01/2018 and 04/16/2018



## 13. Search for all samples for a specific test and test status.

### Login

Role: LABTECH

### Navigation

Home > Materials > Find Sample

1. Click on [Source](#) in the Entity list
2. Click the [Source Name](#) checkbox in the Fields list
3. Enter [Caliber](#) in the Criteria search field
4. Click the **Magnifying Glass** icon to the right of the Criteria search field
5. Verify that a list of samples is displayed under the **Sample Record** section
6. Right click on any **Sample ID** link and click on [Open in a new window](#)
7. This will open up the Sample Record Summary window
8. Click on the **Sources** tab
9. Verify that High Caliber Concrete is listed as the Primary Source
10. Close the Sample Record Summary window (Internet Explorer window)
11. Click the left arrow icon to the left of Source above the Entity list
12. Click on [Material](#) in the Entity list
13. Click the [Material Full Name](#) checkbox in the Fields list
14. Enter [General](#) in the Criteria search field
15. Expand the **Query** section
16. Click the **Magnifying Glass** icon to the right of the Criteria search field
17. Verify that the list of samples under the Sample Record section are all Concrete-Class General
18. Change the dropdown from Or to [And](#)
19. Click the **Execute** button
20. Verify that the list of samples under the **Sample Record** section displays a shorter list
21. Right click on any **Sample ID** link and click on [Open in a new window](#)
22. This will open up the Sample Record Summary window
23. Verify that the Material Code - Name is Concrete-Class General
24. Click on the **Sources** tab
25. Verify that High Caliber Concrete is listed as the Primary Source
26. Close the Sample Record Summary window (Internet Explorer window)



## 14. Search for all samples for a specific source and material.

### Login

Role: LABTECH

### Navigation

Home > Materials > Find Sample

27. Click on [Source](#) in the Entity list
28. Click the [Source Name](#) checkbox in the Fields list
29. Enter [Caliber](#) in the Criteria search field
30. Click the **Magnifying Glass** icon to the right of the Criteria search field
31. Verify that a list of samples is displayed under the **Sample Record** section
32. Right click on any **Sample ID** link and click on [Open in a new window](#)
33. This will open up the Sample Record Summary window
34. Click on the **Sources** tab
35. Verify that High Caliber Concrete is listed as the Primary Source
36. Close the Sample Record Summary window (Internet Explorer window)
37. Click the left arrow icon to the left of Source above the Entity list
38. Click on [Material](#) in the Entity list
39. Click the [Material Full Name](#) checkbox in the Fields list
40. Enter [General](#) in the Criteria search field
41. Expand the **Query** section
42. Click the **Magnifying Glass** icon to the right of the Criteria search field
43. Verify that the list of samples under the Sample Record section are all Concrete-Class General
44. Change the dropdown from Or to [And](#)
45. Click the **Execute** button
46. Verify that the list of samples under the **Sample Record** section displays a shorter list
47. Right click on any **Sample ID** link and click on [Open in a new window](#)
48. This will open up the Sample Record Summary window
49. Verify that the Material Code - Name is Concrete-Class General
50. Click on the **Sources** tab
51. Verify that High Caliber Concrete is listed as the Primary Source



## 15. Enter test results for the proposed surfacing sample

### Login

ROLE: LABTECH

### Navigation

Continuation from previous test case

1. Click on the **Enter Test Results** quick link.
2. Enter the sample ID or last 4-digits of the Sample ID in the **search** field.
3. On the **MT 202 (for Soils Class) - H1**, click on the [1.0](#) link.
4. In the **Planned Test Start Date** choose current date.
5. In the **Estimated Completion Date** choose tomorrow's date.
6. Click on the Action button and select [MDT Sieve Analysis of Fine & Coarse Aggregates](#) under **Views**.
7. Enter data as follows:

Sample Weight (lbs)

51.68

Weight Retained 4 Mesh (lbs)

41.03

Weight Passing 4 Mesh (lbs)

10.65

% Total

100.00

% Coarse

79.39

% Fines

20.61

Before Wash Weight (g)

523.40

After Wash Weight (g)

440.80

Loss by Wash (g)

82.60

No Spec

Reciprocal

0.03940

Pan

523.40

Use Reciprocal

Yes



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



8. Click **Save**.
9. Enter the Weight Retained as follows:

Sieve Size	Weight Retained ▼	Weight Passing	Percent Retained	Percent Passing
3.5 in. (90mm)	<input type="text" value="2.53"/>	49.15	4.90	95.0
3 in. (75 mm)	<input type="text"/>			
2.5 in. (63mm)	<input type="text" value="3.39"/>	48.29	6.60	93.0
2 in. (50 mm)	<input type="text" value="9.49"/>	42.19	18.40	82.0
1.5 in. (37.5 mm)	<input type="text" value="13.40"/>	38.28	25.90	74.0
1.25 in. (31.5 mm)	<input type="text"/>			
1 in. (25 mm)	<input type="text" value="21.92"/>	29.76	42.40	58.0
3/4 in. (19 mm)	<input type="text" value="26.55"/>	25.13	51.40	49.0
1/2 in. (12.5 mm)	<input type="text" value="33.10"/>	18.58	64.00	36.0
3/8 in. (9.5 mm)	<input type="text" value="36.19"/>	15.49	70.00	30.0
4M (4.75 mm)	<input type="text" value="41.03"/>	10.65	79.40	21.0
<b>8M - 10M</b>	<input type="text" value="91.00"/>	432.40	17.40	17.0
<b>16M</b>	<input type="text"/>			
<b>30M</b>	<input type="text"/>			
<b>40M - 50M</b>	<input type="text" value="151.60"/>	371.80	29.00	15.0
<b>80M - 100M</b>	<input type="text" value="298.90"/>	224.50	57.10	9.0
<b>200M</b>	<input type="text" value="433.70"/>	89.70	82.90	3.5

10. In the **Test Result** field select *Pass*.
11. Click **Save**.
12. Click on the **Sample Record Test** quick link at the top.
13. Scroll down and verify the **Test Result** is auto-populated with *Pass*.
14. Click on the **Component Action** menu and select *Mark Test Complete*.
15. Click on the **Enter Test Results** quick link at the top.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



16. On the **AASHTO M 145 (for Soils Class) - H1**, click on the [1.0](#) link.
17. Click on the **Reference Specifications** tab.
18. Check the **Use for Test** checkbox.
19. Click **Save**.
20. Click on the Action button and select [MDT LLPI](#) under **Views**.
21. In the **Points** dropdown list select [1](#).
22. In the **Test Results** field select [Pass](#).
23. Click **Save**.
24. Click on the **Sample Record Test** quick link at the top.
25. Scroll down and verify the **Test Result** is auto-populated with [Pass](#).
26. Click on the **Component Action** menu and select [Mark Test Complete](#).
27. Click on the **Enter Test Results** quick link at the top.
28. On the **AASHTO M 145 - H1**, click on the [1.0](#) link.
29. Click on the Action button and select [MDT Soil Class](#) under **Views**.
30. Confirm the following data is imported from the Sieve and LLPI tests and the soil class is calculated.

10 Mesh	40 Mesh	200 Mesh	Liquid Limit	Plastic Limit	Plasticity Index	Group Index
17	15	3.5	0	NP	0	0

Soil Class  
A-1-a(0)

31. In the **Test Results** field select [Pass](#).
32. Click **Save**.
33. Click on the **Sample Record Test** quick link at the top.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



## 17. Create a new Superpave Mix Design

### Login

Role: LABTECH

### Navigation

Materials > Mix Design

1. Select **Add** from the **Action Menu**.
2. In the **Mix Design ID** field enter *185S01X* (where X is your assigned letter).
3. From the **Type** Drop-down select *Superpave – Superpave Mix Design*.
4. Enter *401.03.00.01* in the **Material** field.
5. Type *51-000488* in the **Source** field and select **Riverside Sand and Gravel - Verlin Hale**.
6. Select **Effective Date** of today's date.
7. Select *ACTIVE-Active* from the Status drop-down.
8. Click **Save** and you will be directed to the Mix Design Summary Window.
9. Click the **Component Materials** tab.
10. Click **Select Component Material**.
11. Type *401* in the **Search** field.
12. Click **401.03.00.01** in the **Material Code** column and green check will appear.
13. Click **Add to Mix Design**.
14. In the **Source** field enter 51-000 and select 51-000488.
15. Click **Save**.
16. From the **Component Action** button, click *Contractor Superpave Mix Design* under **Views**.



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



▼ Superpave Mix Design

**Mix Design Properties**

20 Yr Design ESALs Total

20 Yr Design ESALs Daily

Source Pit Code

No. of Gyration - N Initial

No. of Gyration - N Design

No. of Gyration - N Maximum

PG Binder Supplier

Binder Supplied By

Hamburg Results (mm)

Passes

Degrees (C)

Compaction Temp

Mixing Temp

Unit

PG Binder Sp. Grav

Design Nominal Max Agg Size

Unit

Temperature

Unit

PG Binder Grade

Hyd Lime Supplier

Hyd Lime Supplied By





# MONTANA DEPARTMENT OF TRANSPORTATION AASHTOWare Project Construction and Materials



**Job Mix Formula Aggregate Data**

Coarse Agg Angularity 1 Face <input type="text" value="100.00"/>	Total Binder Percent (Pb) <input type="text" value="5.30"/>
Coarse Agg Angularity 2 Face <input type="text" value="100.00"/>	Virgin Binder Percent (RAP/RAS) <input type="text" value="0.00"/>
Sand Equivalent <input type="text" value="52.00"/>	Percent Binder Replacement (BR) <input type="text" value="0.00"/>
Flat And Elong Particles <input type="text" value="7.30"/>	% Binder in RAP 1 <input type="text"/>
Fine Aggregate Angularity <input type="text" value="48.90"/>	% Binder in RAP 2 <input type="text"/>
Wear (L.A. Abrasion) <input type="text" value="10.20"/>	% Binder in RAS <input type="text"/>

**Design Volumetric Properties**

% Voids in Mineral Agg (VMA) N des <input type="text" value="14.80"/>	Bulk Sp. Gr. @ N design (Gmb) <input type="text" value="2.46"/>
% Voids filled with Asphalt (VFA) N des <input type="text" value="77.00"/>	Dust/Asphalt Ratio (D/A) <input type="text" value="1.10"/>
% Voids in Mix @ N design (VTM) <input type="text" value="3.40"/>	Dust Proportion (DP) <input type="text" value="1.29"/>
% of Rice (Gmm) at N ini <input type="text" value="86.80"/>	Tensile Strength Ratio (TSR) <input type="text" value="0.00"/>
% of Rice (Gmm) at N des <input type="text" value="96.20"/>	Effective Sp. Gr. (Gse) <input type="text" value="2.79"/>
% of Rice (Gmm) at N max <input type="text" value="97.80"/>	% Absorbed Binder (Pba) <input type="text" value="0.60"/>
Max Sp. Gr. (G mm) <input type="text" value="2.55"/>	% Effective Binder (Pbe) <input type="text" value="4.70"/>

Aggregate Gradation/Sieve Size	Coarse #1	Coarse #2	Intermed.	Fine #1	Fine #2	Hyd. Lime	RAP #1	RAP #2	RAS	Blend
Aggregate Percentages	52.000			46.600		1.400				100.000
Aggregate Bulk Sp. Gravs.	2.797			2.696		2.350				0.000
Aggregate Gradation/Sieve S...	Coarse #1	Coarse #2	Intermed.	Fine #1	Fine #2	Hyd. Lime	RAP #1	RAP #2	RAS	Blend
Aggregate Absorption	0.500			1.100		0.000				0.7
Aggregate Effective Sp. Gravs.										2.7



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



Aggregate Gradation/Sieve S...	Coarse #1	Coarse #2	Intermed.	Fine #1	Fine #2	Hyd. Lime	RAP #1	RAP #2	RAS	Blend
1"	100.000			100.000		100.000				100.00
3/4"	97.900			100.000		100.000				98.90
1/2"	59.100			100.000		100.000				78.70
3/8"	25.800			100.000		100.000				61.40
4M	2.300			96.400		100.000				47.50
8M	2.100			68.000		100.000				34.20
16M	2.000			42.800		100.000				22.40
30M	1.800			27.500		100.000				15.20
50M	1.400			18.600		100.000				10.80
100M	1.000			13.000		100.000				8.00
200M	0.600			9.500		100.000				6.10

17. Click **Save**.
18. Click on the **Mix Design** quick link at the top.
19. Select **Attachments** from the **Action Menu**.
20. Click **Select File**.
21. Browse to the folder and select **MDT-MAT-009\_Bituminous\_Mix\_Design**.
22. Click **Open**.
23. Click **Save**.
24. Select **Mix Design Summary** from the **Action Menu**.
25. After reviewing the data and verifying specifications are met, enter *Today's Date* in the **DMS Approved Date**.
26. Click **Save**.



## 18. Create a sample record for mix design verification.

### Login

Role: LABTECH

Materials > Sample Records

### Test Case Steps

1. Click on the **Component Action** button in upper righthand corner of screen and select *Add*
2. In the **Material Code – Name** field enter *mix* and then select *Plant Mix Surfacing Grade S – 3/4"*
3. In the **Sample Date** field select the current date from the calendar popup
4. In the **Sample Type** field select *MD – Mix Design* from the dropdown list.
5. In the **Acceptance Method** field select *TEST – Test Results* from the dropdown list.
6. In the **Witnessed By ID – Name** field enter *(your last name)* then select your name from list.
7. Click **Save**.
8. In the **Intended Use** field enter: *70-28 Mix design verification*
9. In the **District/Area** select: *BUT – Butte*
10. Click **Save**
11. Select **Sample Location** Tab
12. In the **Sampled From** field enter *Existing stockpiles*
13. Click **Save**
14. Select **Additional Information** Tab
15. In the **Mix Design Type** dropdown list select *Superpave Mix Design*
16. In the **Mix Design ID** field select *185S01X*
17. Click **Save**
18. Select **Sources** Tab
19. Press the **Select Primary Source** button and type *sterling*
20. Select *Sterling Ranch Pit* from the list
21. Click on **Add to Sample Record**



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



22. Select **Destination Lab(s)** Tab
23. Click **New**
24. In the **Destination** box select *Destination Lab*.
25. In the **Lab Name** field enter *hel* and select *Helena Receiving*
26. Select the **Current date and time** in the **Shipped Date/Time** field from the calendar icon.
27. Click **Save**
28. Select **Contract** tab
29. Click on the **Select Contract Project Items** button
30. In the **Search** field enter *07817X* (where X is your assigned letter)
31. Click on Select: *All*
32. Click **Save**
33. Select **Tests** tab
34. Click on the **Arrow** to the right of the **Assign Tests** button and select *Assign Default Tests*
35. Verify the following tests were automatically added (*SandEquivalent*, *FinAggAngularity*, *FlatElongParticles*, *SGCoarseAgg*, *SGFineAgg* and *Two-Face Fracture*)
36. Click on the **Assign Tests** button



arrow over to **Assign Tests** button

37. Select the following tests to be run (*LAWear* test by clicking on the **checkbox** to the left. A green checkmark will appear in each box as it is selected.



38. arrow over to **Add Test Runs and Confirm**

39. Click **Confirm**
40. Verify the tests were added
41. Verify the test was added.



## 19. Create a New Test Equipment Record

### Navigation

Reference Data > Test Equipment

### Login

Role: LABTECH

1. From the Test Equipment Overview action menu select **Add**.
2. The **Equipment component** opens on the **General Tab**.
3. Click on the **Serial Number** field and enter *263456[X]*.
4. Click in the **Description** and enter *Gilson T-S-1*.
5. From the **Geographic Area** dropdown select *Bozeman*.
6. Click on the **Lab Unit** field type in *Boz* and select *Bozeman Lab*.
7. From the **Current Assignment** dropdown select *Bozeman*.
8. Click in the **Model Number** field and enter *T-S-1*.
9. Click in the **Manufacture Name** field and enter *Gilson*.
10. In the **Effective Date** field click the calendar and select *01/29/2018*.
11. In **Expiration Date** field click the calendar and select *01/29/2019*.
12. From the **Status** dropdown select *Active*.
13. Click **Save**



## 20. Update a Test Equipment Record

### Login

Role: LABTECH

### Navigation

Reference Data > Test Equipment

1. In the **search** field and enter *Gil*.
2. Click in the **Description** and select the record for *Gilson, Serial Number 26345[X]*.
3. In the **Status** field select a blank value from the dropdown list
4. Click **Save**
5. In the **Effective Date** field click on the calendar and select *03/02/2018*.
6. In **Expiration Date** field click on the calendar and select *03/29/2019*.
7. Click **Save**
8. From the **Status** dropdown select *Active*.
9. From the **Remarks Type** dropdown select **Equipment**
10. In the **Remarks** field enter *Gilson serial # 26345X has been checked for the following, sieve screens, screen frames, Timer and Hydraulic pump.*
11. Click **Save**



MONTANA DEPARTMENT OF TRANSPORTATION  
AASHTOWare Project Construction and Materials



## 21. Inactivate a Test Equipment Record

### Login

Role: LABTECH

### Navigation

Reference Data > Test Equipment

1. In the **Search** field and enter *Gil*.
2. Click in the **Description** and select the record for *Gilson, Serial Number 26345[X]I*.
3. In **Expiration Date** field click on the calendar and change the date to *03/22/18*.
4. From the **Status** dropdown select **Inactive**.
5. From the **Remarks Type** dropdown select **Equipment**
6. In the **Remarks** field enter *This Gilson serial # 123456 due to unrepairable frame failure is being taken out of service*.
7. Click **Save**.