OMS MATERIALS
Policy and Procedures Manual

# DEPARTMENT OF HIGHWAYS
Division of Maintenance
Revision April 2019

|	Chapter INTRODUCTION
MATERIALS **POLICY & PROCEDURES**	Subject Design of This Manual

Organization &
Numbering

>**Chapter Title**—the subject matter in the manual is divided into chapters. The chapter title appears in the upper right-hand corner of the first page of a subject and in the upper left-hand corner of any subsequent page.

>**Subject Title**—the title of a subject appears in the upper right-hand corner of the first page of a subject and in the upper left-hand corner of any subsequent page.

>**"MAT" Prefix**—preceding each subject number, this prefix stands for the manual title *Materials Policy and Procedures Manual.*

>**Date**—the latest issuance date of a subject appears at the bottom of each page of the subject. This date agrees with the latest issuance date shown for the subject in the Table of Contents ().

>**Page Numbering**—each subject has its own page numbering, which appears at the bottom of each page.

Locating
Information

>Two indexes appear at the front of the manual, and one index appears at the back:

>♦ Table of Contents—this index at the front lists the titles of the manual's chapters and their subjects, as well as other information, in numerical order. It includes the latest issuance dates of all the subjects. As the manual matures, these dates may change.

Locating
Information (Cont)

- ♦ List of Figures—this index at the front lists the titles of the figures referenced in the manual. It includes the latest issuance dates of all the subjects. As the manual matures, these dates may change.

- ♦ Appendix—this index at the back lists the manual's calculation procedures, inventory example, referenced memorandum, and review exercises.

Cross References
In Manual

Subject Numbers within Narrative—a subject number within the narrative on a page directs the user to more information about the subject.

Questions

Who to Contact—for answers to questions about the contents of the manual, please contact:

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	Chapter
MATERIALS POLICY & PROCEDURES	INTRODUCTION
	Subject
	Overview

Overview

This manual discusses the policies and procedures to be followed by all Operations Management System (OMS) users. This manual provides a demonstration of the inventory options available in the materials tab. There are three options available in the Materials Inventory menu- **Material Inventory, Material Management,** and **Material Reconciliation (fig. 102-1**). These windows allow you to view the available quantities of all inventory items relative to the 'full' stockpile amount; track the inflow and outflow of material over time; and to edit certain information to keep your inventory data up to date.

FIGURE 102-1: Material Inventory Menu Options
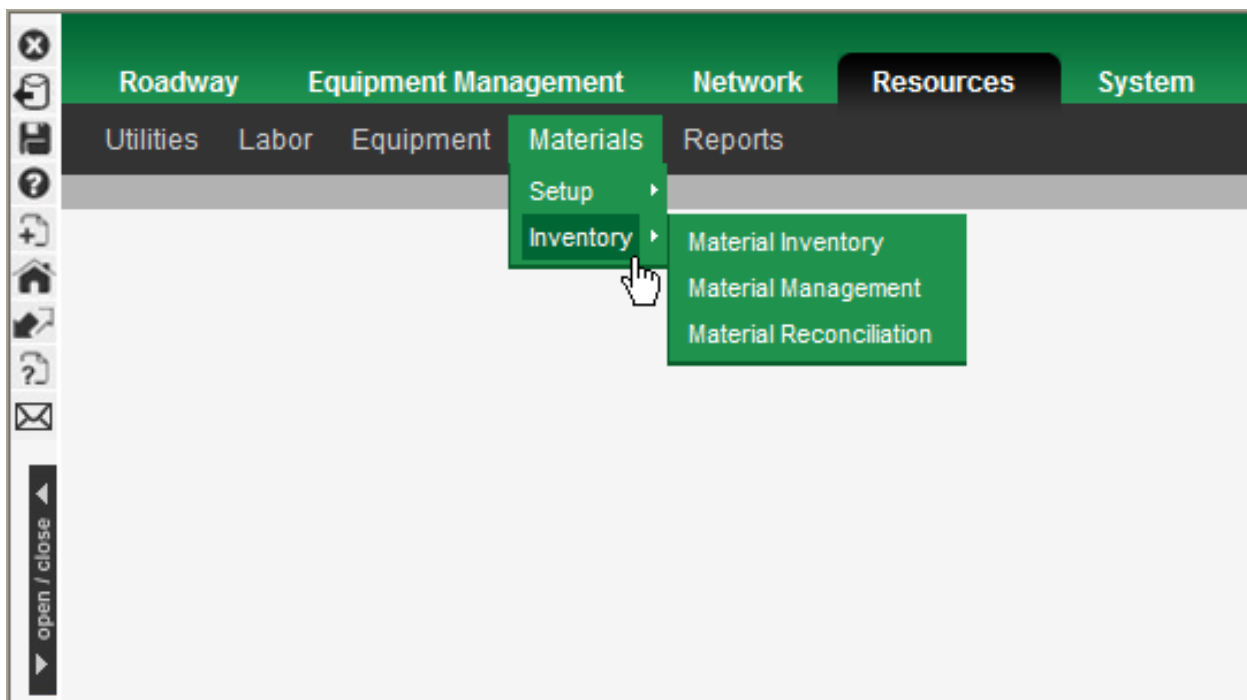
**Overview
(Cont)**

Additionally, you may check on materials that have been assigned to a future Work Order to ensure enough is available.

By the completion of this manual you should be able to:

- Add newly purchased material to your inventory
- Freeze warehouse or individual stock items
- Transfer material from one warehouse to another
- Manage your inventory
- Perform a physical inventory of your material
- Correct errors in your inventory

Mgmt. Units and Warehouses
For the purposes of this manual, the terms "warehouse" and "management unit" are used interchangeably. It is e assumption that any management unit with access to the **Materials Management Windo** has its own material inventory.

	Chapter
MATERIALS **POLICY & PROCEDURES**	INTRODUCTION
	Subject
	Definition of New Terms

Overview

Classification Codes (or Class Codes) - A Class code is a name given to a group of materials that are similar. Examples of class codes are "Aggregates", "Pipes", "Signs", "Oil", etc. Keep in mind that class codes aren't actual pieces of material. Instead, they should be considered categories of materials.

Master Code Number - A Master Code Number is given to an actual type of material. It is different from a class code in that it describes a specific item rather than a broad group. Some examples of Master Code Numbers are "M13101" (salt), "M22115" (15" metal pipe), etc. Master Code Numbers are useful for labeling stockpiles and keeping records, but do not give you the actual name of the material.

Material Master Code - The Master Code Name is the actual name of a specific material. This is the name with which you will most likely be familiar. Some examples of Material Code Names include "24 inch Linear White - Preformed Thermo", "Hot Mix, Surface Class 2, 0.38D", and "Re-refined 15W40 Engine Oil".

> Each Master Code only has one Stock Name, and each Stock Name only has one Master Code.

Full Capacity - The maximum amount of a particular item that you would want to keep on hand in your warehouse. This number will be different for different items, and can be changed at any time to suit the needs of your particular warehouse.

Threshold to Purchase - The percentage of Full Capacity at which you would want to order more of a particular item.

**Overview
(Cont)**

For instance, if the Full Capacity of an item is 500 tons and the Threshold to Purchase is 10% (0.10), the reorder trigger will occur when the amount of the material drops to 50 tons or less.
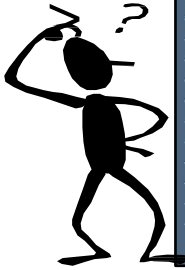
What do those ">" symbols mean?
Usually, > means "greater than" in math, but this manual will use it to describe a series of steps that you should take on the computer.

For instance, **Materials>Inventory>Material Management** means that you should click on   then the Inventory Menu   select *Material Management* from the dropdown list.

Unit Cost - The cost of ONE UNIT of a particular material. Each material has an associated unit which must be observed carefully when purchasing material.

	Chapter
MATERIALS **POLICY & PROCEDURES**	MATERIAL INVENTORY WINDOW
	Subject
	Overview
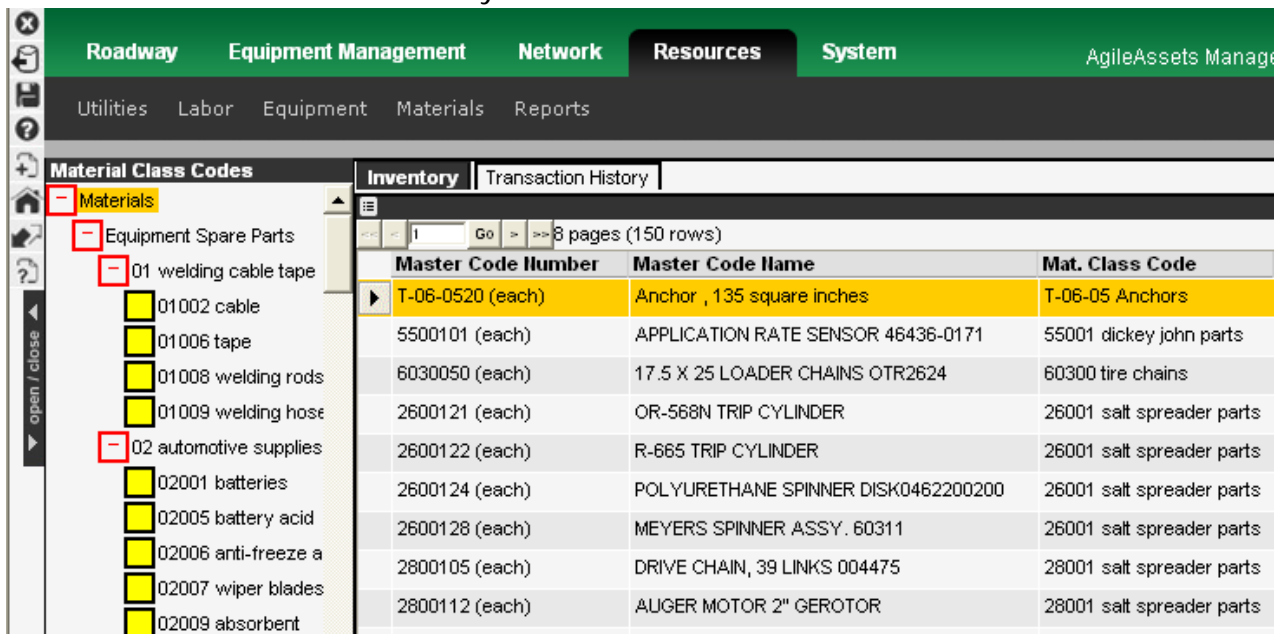
Overview

The **Material Inventory Window** allows you to view all available quantities of your inventory items relative to the Full Amount and track the usage of these materials over time. Additionally, you may edit certain information to keep inventory data up-to-date and check on materials that have been planned or assigned in advance to ensure you have sufficient quantities available.

There are two tabs available in the **Materials Inventory Window** (**fig. 201-1**). These include:

- **Inventory**
- **Transaction History**

FIGURE 201-1: Material Inventory Window

**Overview
(Cont)**

> **Getting there:**
> *Resources>Materials>Inventory>Material Inventory*

	Chapter
MATERIALS **POLICY & PROCEDURES**	MATERIAL INVENTORY WINDOW
	Subject
	Class Codes Tab

Overview

The **Material Class Codes Sub-Window** (**fig. 202-1**) is a <u>read-only view</u> that allows you to select the material classifications you want to view in the remaining tabs. The selections you make in this window are remembered the next time you enter the **Materials Inventory Window**.

Hollow icon boxes (▢▢) mean that the data has not been selected for viewing, while a checked icon box (▢☑) indicates that the item has been selected.

FIGURE 202-1: Material Class Codes Sub-Window
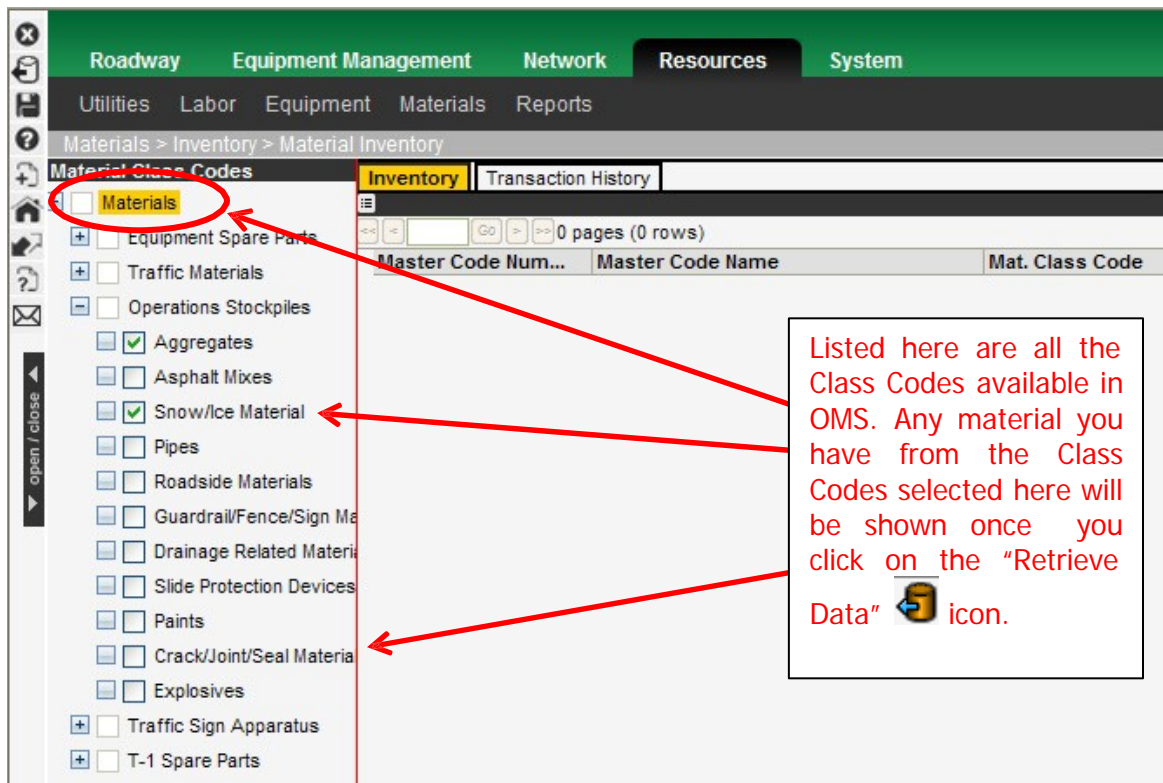
Procedure

To view the material inventory for your Management Unit:

1. After logging into OMS, go to *Resources>Materials>Inventory>Material Inventory*.

2. Right-click on "Materials" and choose *Select All.* This will select <u>all materials </u>for all categories of material.

3. Click on the "Retrieve Data" icon. Detailed records for all materials in all classes are displayed.

> **WHERE'S MY STUFF?!?!**
> You know you   100 tons of DGA in your inventory. In fact, you can look out the window and see the pile right there. The problem is it's not listed at all in the   **y Window**. What's going on?
>
> Most likely the problem is   you haven't selected the "Aggregates" Class Code. Go to **Material Class Codes** sub-win   and make certain there is a yellow icon (☐✔) next to all the categories of material that you want to se

4. Right-click on "Materials" and choose *Deselect All.* This will deselect all materials for all classes.

5. Click the "+" to expand the Operations Stockpiles category.

6. Right-click on the sub-category Pipes and choose *Select This.*

7. Click on the "Retrieve" icon.

8. Detailed records for all materials in class code Pipes are displayed in the **Inventory** tab.

9. For the material you have highlighted in the **Inventory** tab, click on the **Transaction** tab to view all transactions for the selected material.

10. Go to the **Material Class Codes Tree Sub-Window**.

11. Right-click on "Materials" and choose *Deselect All.* This will reset your selection for the next time you open the window.

12. Close the window.
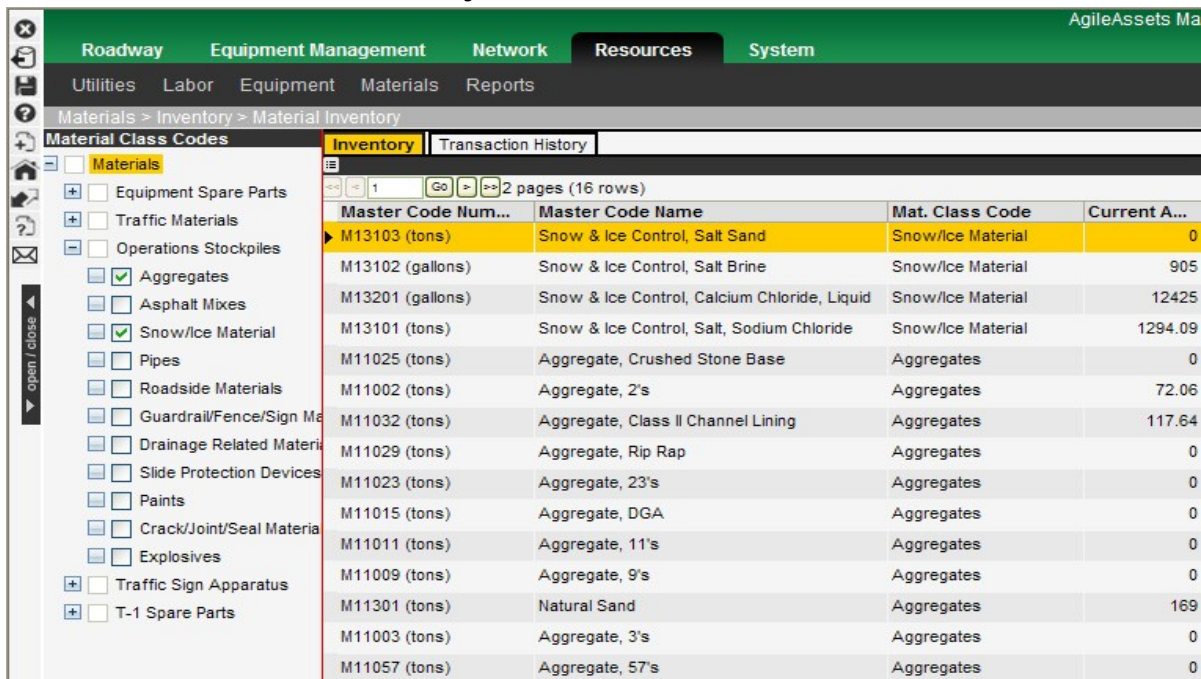
	Chapter
MATERIALS POLICY & PROCEDURES	MATERIAL INVENTORY WINDOW
	Subject
	Inventory Tab

Overview

The **Material Inventory** tab (**fig. 203-1**) is used for viewing certain information about an item such as what class code a specific stock item falls under or setting the Full Capacity and Threshold to Purchase. This tab also defines color-coded bands (Buy column) in the **Material Management Window** indicating the current inventory levels. The indicator bands are displayed based on information stored in the following fields:

- Full Capacity - maximum amount to have on hand
- Threshold to Purchase - point at which more of a material needs to be purchased
- Current Amount - amount of material you currently have on hand

FIGURE 203-1: Material Inventory Tab

**Overview
(Cont)**

The colored bars at the left of each material displayed in the Material Management line under the Buy column are used to represent the availability of each material.

The different colors next to each material in the **Material Management Window** Stock List screen indicate the following:

- No color – The "Current Amount" of stock on hand is above the "Threshold to purchase", but less than the "Full Amount".

- Yellow – The amount of stock on hand is close (but still not above) the "Threshold to Purchase".

- Orange – The amount of stock on hand is equal to or below the "Threshold to Purchase".

- Red – The amount of stock on hand is zero.

- Green – The amount of stock on hand is greater than the "Full Amount".

- Blue – The value for "Full Capacity" or "Threshold to Purchase" is zero.
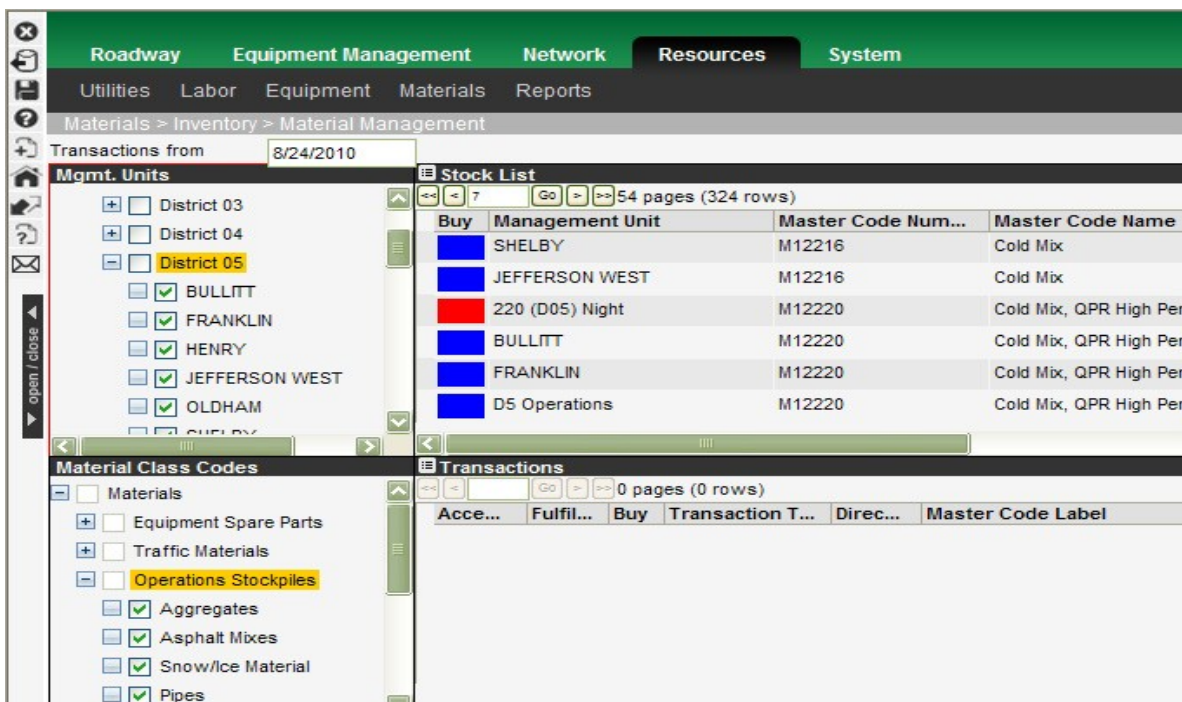
Procedure

Example: Setting Threshold to Purchase

In order to use the colored bars in the **Material Management Window**, you must first set up your Threshold to Purchase and Full Capacity for each stock item in the **Material Inventory Window**. The following example outlines this process:

1. After logging into your management unit, go to *Resources>Materials>Inventory>Material Inventory*.

2. Right-click on Materials in the class code list and choose Select All.

3. Click on the "Retrieve" icon.

4. A list of all materials available in your management unit should appear.

5. For each stock item, enter the Full Capacity. This is the maximum number of this item that you would ever want to keep on hand. You are allowed to exceed this number, but in general this should be the most you will have in stock.

6. For each stock item, enter the Threshold to Purchase. This is the percentage of Full Capacity at which you want to order more of this item. Be sure to enter the Threshold to Purchase as a decimal (25% = 0.25).

7. Once you have entered the Full Capacity and Threshold to Purchase for each item, save and exit the *Inventory Window*.

After you have set up your Reorder Levels for all stock items, you can use the col red bars the **Management Window** to help you determine wh you're running low on an item. Each time you approve a Material Day Card in the *Roadway>Progress>Daycards/Daily Log* window, the Current Amount for the   will be reduced. As your Current   changes the Buy column colors will change appropriately.

8. Go to *Resources>Materials>Inventory>Material Management*

**Procedure
(Cont)**

9. Verify that only your Mgmt. Unit is selected in the upper left hand Mgmt. Units sub window, and all materials are selected in the lower left hand **Material Class Codes Sub-Window** and select retrieve .

10. Notice *Buy* column in the upper right hand sub window. Each material now has different color coded bars based on your Current Amount in relation to the Threshold to Purchase and Full Capacity amounts you defined in the **Material Inventory Window**.

	Chapter MATERIAL MANAGEMENT WINDOW
MATERIALS **POLICY & PROCEDURES**	Subject Overview

Overview

The main purpose of the **Material Management Window** is to handle transactions in and out of a warehouse. Material Management within the Operations Management System (OMS) will inventory and track all stockpiled materials owned by the Divisions of Equipment, Maintenance, and Traffic Operations. The primary functions of Material Management are:

♦ purchasing materials for stockpiling,
♦ transferring materials between management units,
♦ selling materials,
♦ utilizing materials for use on Work Orders, and
♦ end of year stock reconciliation.

> **Getting there:**
> *Resources>Materials>Inventory>Material Management*

There are four sub-windows in the **Material Management Window** (**fig. 301-1**):

♦ The **Management Units Tree Sub-Window** (upper left)

♦ The **Material Class Tree Code Sub-Window** (lower left)

♦ The **Stock List Sub-Window** (upper right)

♦ The **Transactions Sub-Window** (lower right)

Overview
(Cont)

FIGURE 301-1: Material Management Sub-Windows
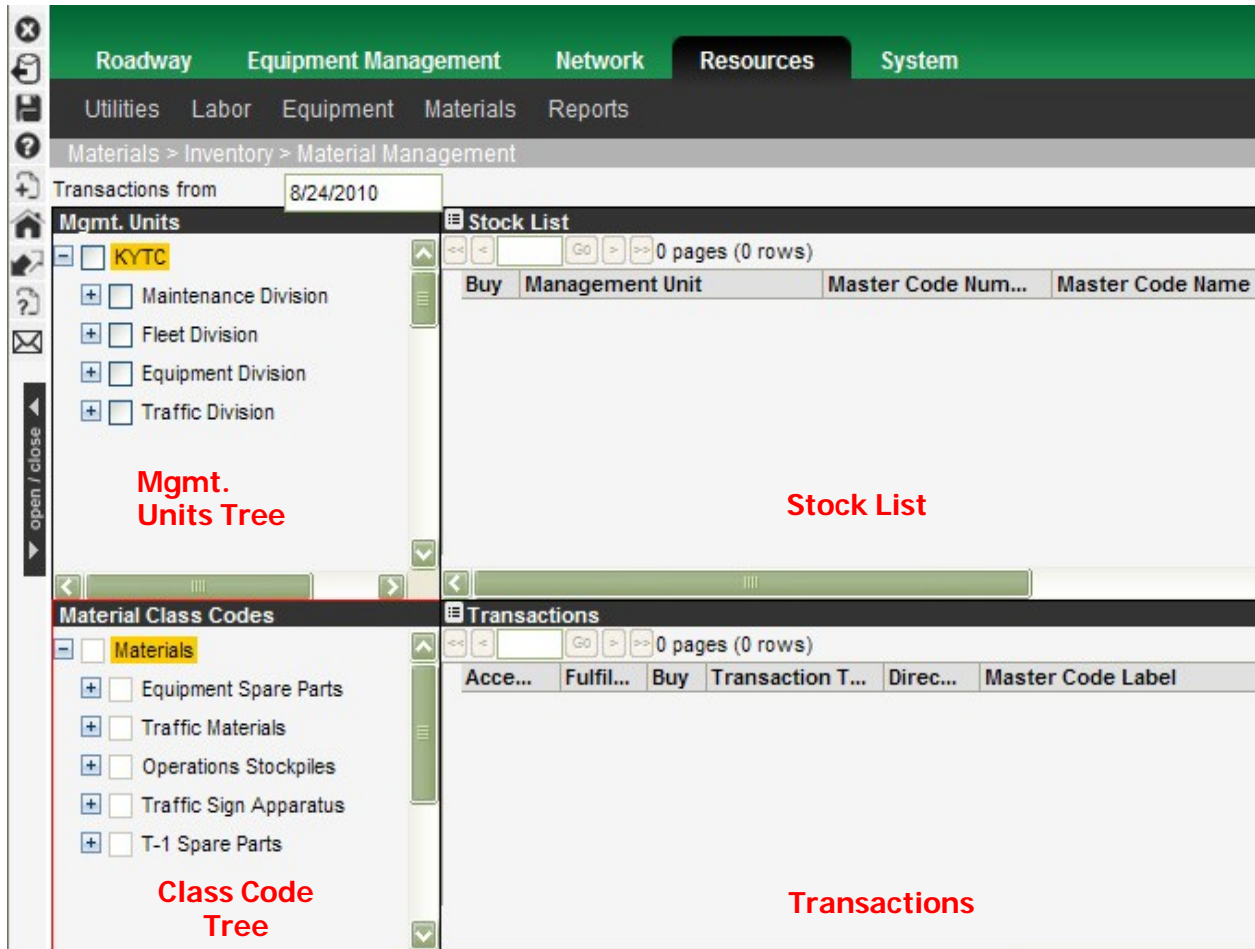
We'll go over the functions for each of these sub-windows in detail.

	Chapter
MATERIALS **POLICY & PROCEDURES**	MATERIAL MANAGEMENT WINDOW
	Subject
	Management Units Tree Sub-Window

Overview

The **Management Units Tree Sub-Window** (**fig. 302-1**) is used to select the management unit(s) in which you are interested. The system will remember your previous settings and will be automatically selected next time you open the window. To see the inventory for another management unit, simply click on the gray ( ) icon next to its name.

FIGURE 302-1: Management Units Tree - Expanded Views
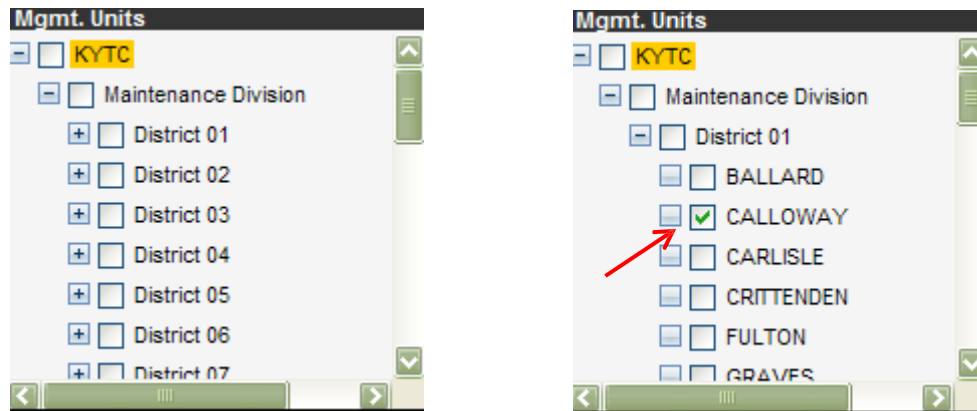
	Chapter
MATERIALS **POLICY & PROCEDURES**	MATERIAL MANAGEMENT WINDOW
	Subject Material Class Code Tree Sub-Window

Overview

The **Material Class Code Tree Sub-Window** (**fig. 303-1**) is used for selecting the type of material you wish to view.

FIGURE 303-1: Material Class Code Tree – Expanded Views
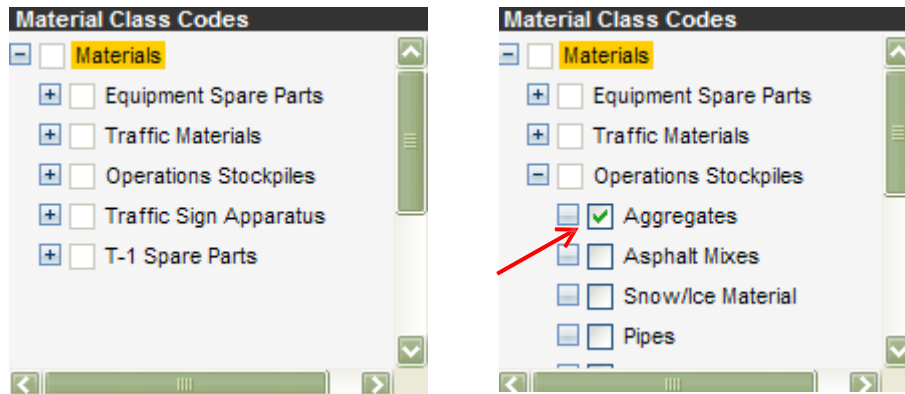
In the example above, we expanded Operations Stockpiles and have selected "Aggregates". (Notice the ▣☑ icon). This tells OMS that we want to look at all "Aggregates". Depending on your inventory, this may only return one or two items, or there may be dozens. If you wanted to look at ALL material in the inventory, you should right-click in the **Class Code View** and choose *Select All* from the menu.

**Overview
(Cont)**

> **NOTE:**   Any material previously selected will remain selected unless you choose D*eselect This or Deselect All.*

> The   rieve Data"   icon at the to   of the **Material Management Window** is used to implement any changes you've made in the other views. If you change the Class Code or Management Unit selections, you have to click on the "Retrieve Data"   icon before those changes will take effect.

	Chapter MATERIAL MANAGEMENT WINDOW
MATERIALS **POLICY & PROCEDURES**	Subject Stock List Sub-Window

Overview

The **Stock List Sub-Window** (**fig. 304-1**) displays the material information for all class codes and management units chosen after the "Retrieve Data" icon is clicked.

FIGURE 304-1: Stock List Sub-Window
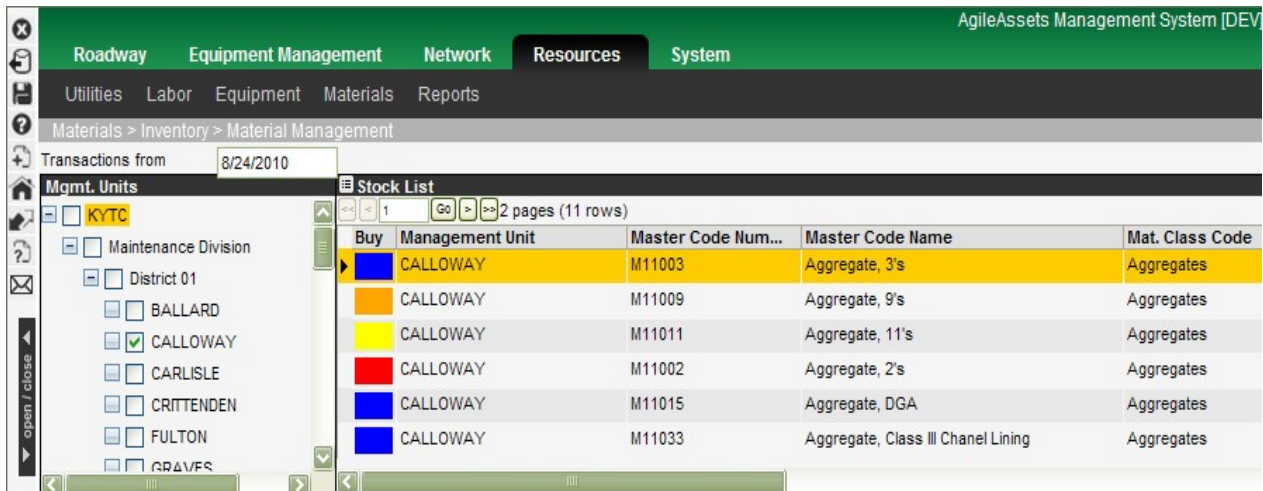
If you've been following along throughout this section, you'll remember that we selected Calloway County from the **Management Units Tree Sub-Window**, and chose "Aggregates" in the **Material Class Code Tree Sub-Window**.

**Overview
(Cont)**

Now that we've made those selections, we're ready for OMS to retrieve and display our selected data. To do this, you must click the "Retrieve Data" 🔄 icon at the top left of the window.

Once you've done this, OMS will search the database for the information that you've specified. If you choose several management units or multiple class codes, it may take some time for OMS to return your data.

> **Be Choosy - Save Time!!!**
> If your connection to OMS is running slow, you should be specific in what items you want it to pull up. In other words, don't "Select All" class codes if you're only interested in information concerning Snow & Ice materials. Instead, you should only select those class codes and management units in which you are currently interested. Otherwise you'll wind up waiting for OMS to pull up a lot of information that really isn't necessary.

There are several pieces of information available to you in the **Stock List Sub-Window**. We'll look at each of these individually.

FIGURE 304-2: Stock List Columns

Buy	Management Unit	Master Code Number	Master Code Name	Mat. Class Code	Current Amount	Unit Cost ($)	Unit
🔴	CALLOWAY	M11002	Aggregate, 2's	Aggregates	0	$0.00	tons
🟢	CALLOWAY	M11032	Aggregate, Class II Channel Lining	Aggregates	247.5	$11.15	tons
🔴	CALLOWAY	M11040	Aggregate, AG Lime	Aggregates	0	$0.00	tons
🔵	CALLOWAY	M11015	Aggregate, DGA	Aggregates	71.18	$15.95	tons
🟡	CALLOWAY	M11011	Aggregate, 11's	Aggregates	189.33	$11.10	tons
🟠	CALLOWAY	M11009	Aggregate, 9's	Aggregates	68.92	$13.39	tons
🟢	CALLOWAY	M11610	Aggregate, 610's	Aggregates	678.45	$15.70	tons
🟠	CALLOWAY	M11301	Natural Sand	Aggregates	20	$3.50	tons
🔵	CALLOWAY	M11085	Millings	Aggregates	1067.14	$5.00	tons
🔵	CALLOWAY	M11003	Aggregate, 3's	Aggregates	164	$16.70	tons

Overview (Cont)

Mgmt. Unit - This is the warehouse to which the stock item belongs. You will only see material belonging to management units that you chose in the **Management Units Tree Sub-Window**.

Master Code Number - The Master Code is a unique identifier for each type of material. Notice in **figure 304-2** that the various stock items all have different Master Codes. Usually, the Master Code is a letter/number combination.

Master Code Name - This is the name of the material. You'll probably be more familiar with this name. Master Code Name may sometimes be called *Master Code Label* or *Stock Name*.

Unit- This column shows you how the item is measured. In our example in **figure 304-2**, all the units are in tons. It is very important that you verify the units of measure. Otherwise, what you think is 600 pounds may actually be 600 tons.

Class Code - This is the category to which the item belongs. In our example, we only selected "Aggregates", so that is the only type of material which was returned after clicking the "Retrieve Data" icon.

Current Amount - The amount of the material that is currently in stock.

Unit Cost - Average cost of 1 unit of the material. If the unit is tons, this is the cost of 1 ton. If the unit is gallons, it is the cost of 1 gallon. This is NOT the total cost of the material on hand. The Unit Cost may not exactly equal the amount you last paid for the material. This is because OMS averages costs over time.

	Chapter MATERIAL MANAGEMENT WINDOW
MATERIALS **POLICY & PROCEDURES**	Subject Transactions Sub-Window

Overview

The **Transactions Sub-Window** shows the various transactions that have taken place with the material selected in the **Material Class Code Tree Sub-Window**. In order to view transactions, you must first select the appropriate class codes then adjust the date in the "from" box at the top of the window (**fig. 305-1**).

Once you've entered your date, click the "Retrieve Data" icon at the top of the window. All transactions since this date will be shown (for the material class codes that you selected).

FIGURE 305-1: Materials Management-Show Schedule Dates
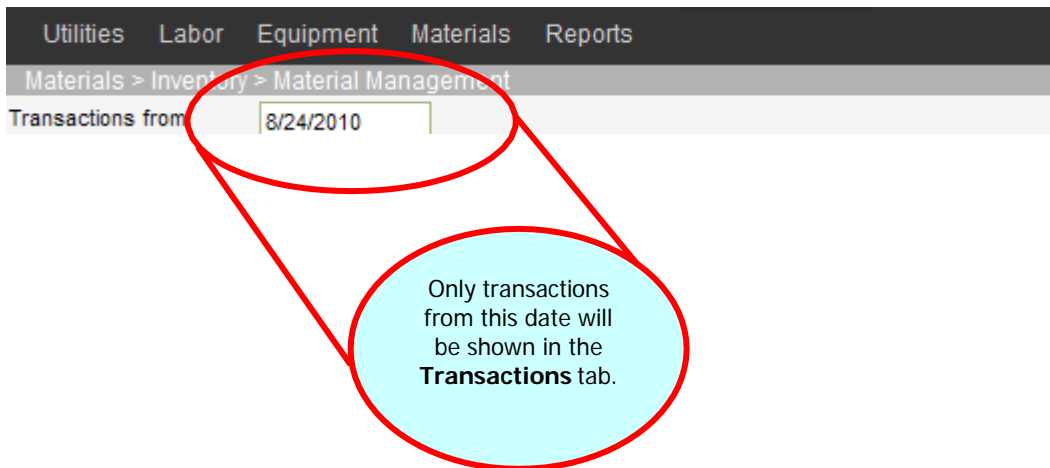
**Overview
(Cont)**

The various transactions associated with the **Transactions Sub-Window** (**fig. 305-2**) are described on the following pages.

FIGURE 305-2: Transactions Sub-Window

	Accepted	Fulfilled	Buy	Transaction Type	Direction	Master Code Label	Management Unit	Full Amount	Unit
▶	☑	☑		Correction	Internal	M11002: Aggregate, 2's	FRANKLIN	54.75	✔
	☑	☑		Correction	Internal	M11009: Aggregate, 9's	FRANKLIN	12.51	✔
	☑	☑		Correction	Internal	M11009: Aggregate, 9's	FRANKLIN	0	✔
	☑	☑		Correction	Internal	M11015: Aggregate, DGA	FRANKLIN	124.56	✔
	☑	☑		Correction	Internal	M11015: Aggregate, DGA	FRANKLIN	0	✔

	Chapter MATERIAL MANAGEMENT WINDOW
MATERIALS **POLICY & PROCEDURES**	Subject Transactions Sub-Window - Transfers

Overview

The transferring and selling of materials (including the associated accounting transaction and movement of inventory) will be handled by the individual management units as follows:

Operations

The transfer of material is within the district: Use the transfer functionality as it exists in MMS (which will move the inventory from the "transfer from" to the "transfer to" management unit). Since this transfer does not take care of the accounting, an ITI/ITA document can be done in eMARS to move the money between the individual county's material overhead accounts. The ITI/ITA transaction is optional if transferring within the district and should only be done if the operations management units want to track the use of funds down to the county level.

The transfer of material is across districts: Use the transfer inventory functionality as it exists in OMS (which will move the inventory from the "transfer from" to the "transfer to" management unit). Since this transfer does not take care of the accounting, an ITI/ITA document shall be completed in eMARS to move the money between the individual county's material overhead accounts.

Contact your OMS Coordinator for assistance with this transaction.

**Overview
(Cont)**

Traffic and Equipment-

The transfer of material is within Traffic (FE04), Equipment (FK01) or within the Louisville Salt Quarry (FE01): There are two options to properly transfer and charge materials:

♦ Use the transfer inventory functionality as it exists in OMS (which will move the inventory from the "transfer from" to the "transfer to" management unit). Since this transfer does not take care of the accounting, an ITI/ITA document can be done in eMARS to move the money between the individual District's material overhead accounts; **OR**

♦ Create a Work Order in OMS. The accounting string on the Work Order should specify where the material is being charged, ("sold to"). This will this take care of the accounting (the transaction will be included in the MAT-05 interface) as well as remove the material from the inventory of the selling management unit. In order to properly add the material to the receiving management unit, the receiving management unit must purchase the material into their inventory (See Chapter 305-02, Purchases).

Contact your OMS Coordinator for assistance with this transaction.

It is assumed that materials placed on Work Orders will only be obtained from the management unit who owns the Work Order. In other words, if materials are needed from another management unit for use on a Work Order, they will first be transferred to the management unit who has created the Work Order before being used on the Work Order. The credit side of this MAT-05 accounting transaction will be based on the management unit who owns the Work Order.

Transfer of materials in OMS will occur AFTER the materials have been moved out of the sender's warehouse and arrived at the requestor's warehouse.

Procedure

Transfers In

This transaction (**fig. 305-3**) is used to display transfers from other warehouses to your warehouse.

If the source warehouse has fulfilled the transaction, the "Fulfilled" check box will be checked. Once this has been done, you will be able to accept the material into your warehouse.

FIGURE 305-3: Transfer In Transaction Type

In the example shown above, we have logged into Calloway County's management unit and selected the Snow/Ice material class code in Calloway County. We did this by performing a right-click "Select This" function in the **Material Class Code Tree Sub-Window**.

In **figure 305-3**, we can see that Calloway County received 1200 gallons *(Quantity)* of Salt Brine *(Stock Name)* from Lyon County *(Management Unit Source).* The cost of this brine was $0.07 cents per gallon *(Unit Cost).*

To view previous material transactions change the "from date" at the top left of the window to desired date and click the "Retrieve Data" icon.

**Procedure
(Cont)**

Take a look at the other transactions shown for Calloway County.

Notice that some items are listed in other units such as tons. <u>IT IS CRITICAL THAT UNITS ARE CAREFULLY EXAMINED WHENEVER A TRANSACTION TAKES PLACE.</u>

Transfers Out

This transaction is used to display and fulfill all transfers from your warehouse to another. Once you have "Fulfilled" the transaction, the destination warehouse will be able to check the "Accepted" box to accept the material into their warehouse.

FIGURE 305-4: Transfer Out Transaction Type

In **figure 305-4**, we see all material transactions for Lyon County since January 1, 2009. There were multiple transactions of material for Calloway County during this time period. One of these transactions was a transfer of salt brine from Lyon County to Calloway County totaling 1200 gallons. The other 6 transactions were for transfers into other County's inventory.

**Procedure
(Cont)**

When transfers are made from one management unit to another, there is no need to enter a unit cost. The unit costs are automatically calculated according to the amount which was originally paid for the material.

Example: Transferring Material

A request for a transfer must be initiated by your warehouse from another warehouse (two-way transfer).

With a two-way transfer, the requesting warehouse initiates the request to the sending warehouse.

The sending warehouse accepts the transfer, which adjusts both stockpile inventory amounts.

Two-Way Transfer (Requesting Material)

Scenario: The District 6 Traffic crew needs 1 new 36" school sign. They will be ordering this from the sign shop in Frankfort. Rather than calling the sign shop, the order will be placed directly in OMS. The following steps will describe this process.

1. Log into the D6 Traffic and Engineering management unit.

2. Go to **Resources>Materials>Inventory>Material Management**.

3. Go to the **Management Units Tree Sub-Window** (upper left) and click the (+) symbol next to Traffic Division. This will expand the management unit tree.

4. Click on the box next to "464 Traffic Sign Shop". The box should now look like this: ☐☑ .

5. Go to the **Material Class Code Tree Sub-Window** (lower left) and locate **Materials** - right-click and *Select All*.

6. Click on the "Retrieve Data" 🔄 icon. This will retrieve all material for the Sign Shop.

7. Locate "School, 36x36 S1-1 (each)" in the list for the Sign Shop.

8. Right-click on the line and choose *Ask for transfer from this stock*. (Make certain you click on the line for the "464 Traffic Sign Shop".) A new line will be inserted into the lower right hand transactions sub-window.

**Procedure
(Cont)**

9. Fill in "1" for the Full Amount (how much you wish to have transferred).

10. Click or tab to the "Delivery Date" field. If the delivery date of the request is not today's date, double-click on the field and select the appropriate delivery date from the calendar option.

11. If you want to add comments, click or tab to the Comments field and enter them there.

12. Save and exit.

**Procedure
(Cont)**

12. Enter comments here.

10. Enter the quantity needed here.

11. Change the date if necessary.
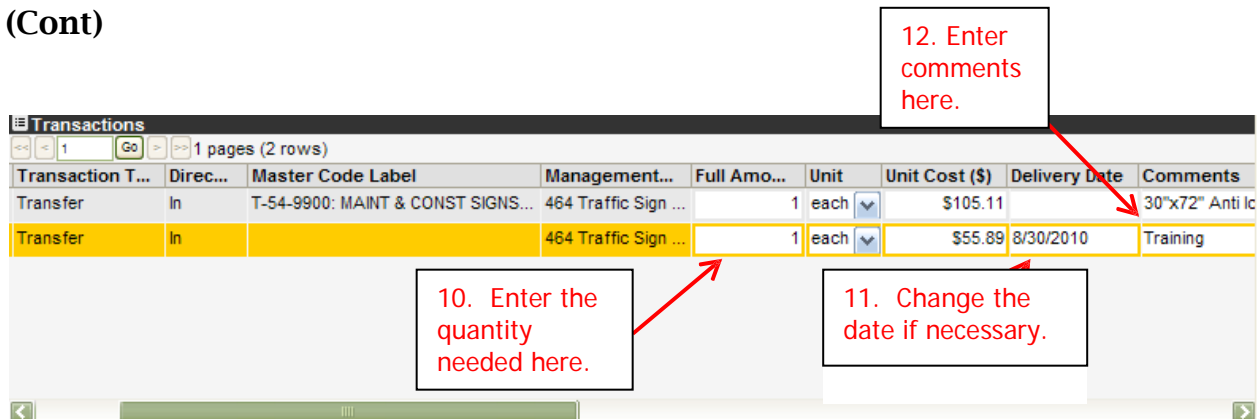
NOTE: The next time that someone logs into the 464 Traffic Sign Shop management unit, a message indicator will be displayed concerning your request. Completion of the transfer must be done by the management unit that is supplying the material.

1. Log into the 464 Traffic Sign Shop management unit (the management unit you just requested the transfer from).

2. Go to *Resources>Materials>Inventory>Material Management.*

3. In the bottom right hand **Transactions Sub-Window**, verify the Full Amount is equivalent to what was requested.

4. Click in the "Fulfilled" check box.

5. Verify that the prospective out column reflects the amount of the fulfilled request.

6. Save and Exit [icon].

7. Log into the D6 Traffic and Engineering management unit.

8. Go to *Resources>Materials>Inventory>Material Management.*

9. In the upper left hand **Management Units Tree Sub-Window**, right click on the D6 Traffic and Engineering management unit and click "Select This".

10. In the bottom left hand, **Material Class Codes Tree Sub-Window**, right click on a class code and click "Select All".

**Procedure
(Cont)**

11. In the upper left of the screen click on the "Retrieve Data" icon.

12. You should notice that in the upper right hand **Stock List Sub-Window** the prospective inflow for your management unit should match the amount of your request.

13. In the bottom right **Transactions Sub-Window** find the transfer transaction associated with your request and check the "Accepted" check box.

14. In the upper right hand of the screen click on the "Retrieve Data" icon.

15. Save and close the window.
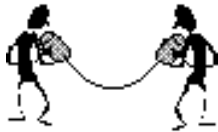
With transfers, the receiving management unit is only requesting the stock be transferred. It is up to the supplying management unit to accept the transfer and provide the material.

After the receiving management unit has made the request as outlined above, the supplying management unit will receive a message the next time that they log into the System. This message will explain the receiving management unit's request.

The supplying management unit must then accept the transfer in the **Transactions** sub window of the **Material Management** window.

	Chapter
	MATERIAL MANAGEMENT WINDOW
MATERIALS **POLICY & PROCEDURES**	Subject Transactions Sub-Window - Purchases

Overview

Direct Costs (Not Stockpiled) - There will be certain circumstances where it is more appropriate to charge material as a Direct Cost in OMS. The general rule is as follows: If the material will be stored at the management unit warehouse for ANY amount of time, it should be purchased for stockpiling in OMS. If the material is to be used directly on a project and is delivered directly to that project then it can be purchased for direct cost purposes. If you have any questions on which method to use, contact your District OMS Coordinator.

The following process MUST be followed for any material that is entered as a Direct Cost.

1) Material is purchased in eMARS and charged directly to the project accounting string.
2) Material is NOT added to the management unit inventory in OMS.
3) Material is charged only as a Direct Cost in OMS (under the **Cost and Accomplishments** tab in the **Work Order Window**). These charges will not be sent to eMARS by OMS. All secondary transactions must be completed manually.

Do not use the stockpile account for material that is not going into inventory.

Do not use the stockpile account for material that is going to be used as a Direct Cost on a Work Order. <u>This will result in charges not being generated at all to the appropriate project</u>.

**Overview
(Cont)**

Note: Material is charged to a project in eMARS prior to completing the Work Order for which the material is used.

Materials to be Stockpiled- If the material will be stored at the management unit warehouse for ANY amount of time; it should be purchased for stockpiling in OMS. Material is purchased in eMARS and charged to a stockpile account assigned to the management unit to which the material is going prior to completing the Work Order for which the material is used. When the Work Order is completed, the stockpile account will automatically be credited for the amount of the material purchase.

An example of a stockpile account is 1100 08 FE01 001 N900 1000 (for Adair County in District 8).

Material is added to OMS through the **Material Management Window** by using the Initiate Purchase command. Be sure to use the correct material class code in OMS. For the purchases transaction in OMS, be sure to include the material vendor and the applicable eMARS invoice number. Approve material purchase in OMS. This will add the material to your inventory for use on material Day Cards (work orders). Approving the material transaction should occur AFTER the material has been delivered and all cost/quantity information has been verified.

REMEMBER: If material is to be added to the inventory it must be used on a material Day Card and must be charged to the appropriate stockpile account during purchasing (eMARS). Charging to anything other than the stockpile account will result in charging the material to more than one project or overhead account strip. This action will result in duplicate transactions and double charges.

For purchasing materials in eMARS for stockpiling:

♦ Ensure that you use the stockpile account that has been assigned to you;
♦ Ensure that you always use the same account with exception to object code.

**Overview
(Cont)**

Note: Material is purchased in eMARS and charged to a stockpile account prior to completing the Work Order for which the material is used.

Procedure
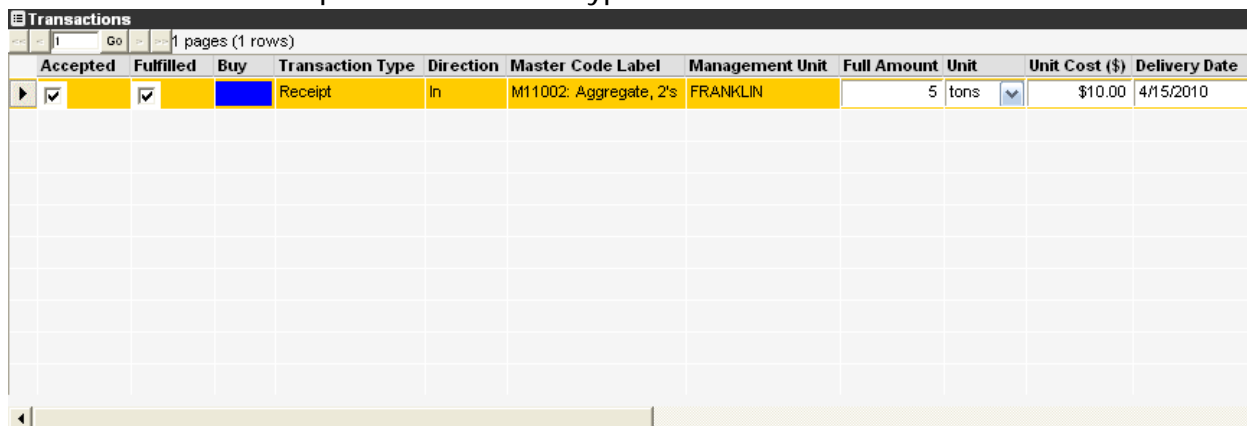
The **Receipt In Transaction Type** displays all stock item purchases. Whenever material is purchased for your management unit's stockpile, you must enter that purchase here. All purchases for the date/class code combination you've selected will be shown after you click the "Retrieve Data" icon.

FIGURE 305-5: Receipt In Transaction Type

In the example above, we can see that 5 tons of #2 Aggregate was purchased.   The cost of this rock was $10.00 PER TON.

Procedure (Cont)

How do I calculate   T COST?

Often, invoices from vendors will only list total cost of material purchased. Unit Cost may not be listed at If this is the case, you must calculate the Unit Cost before entering the purchase into OMS. So how is that done?
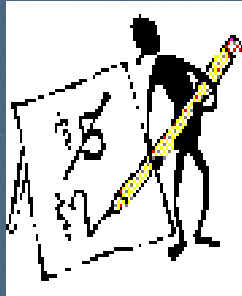
Using the example in **figure 305-5,** we'll assume that the Unit Cost was not given. Instead the invoice had the following:

> *Rogers Group*   *D-03467169*
> *Location: Canton Quarry   Date: 12/29/03*
> *5 tons #11 Aggregate   Cost: $50.00*

Now, obviously #11 stone doesn't cost $50.00 per
   .   get the Unit Cost, we divide the total cost by the   of units (in this case the units are tons).

That gives us $50.00/5 tons = $10.00 per ton.

So, when this   e was created in OMS, the Unit Cost was entered as $10.00 per ton.

Total Cost ÷ No. of Units

= Unit Cost

Example: Initiating a Purchase of a New Material

Scenario: The engineer for your management unit has suggested using boiler slag to perform work on some chip-seal shoulders. A vendor was located and the purchase was completed through eMARS. Now the material needs to be added to your inventory. Since your management unit has never owned boiler slag before, you must follow the following steps:

1. After logging in, go to *Resources>Materials>Inventory>Material Management.*

Procedure

FIGURE 305-6: Initiating a Purchase of New Material

(Cont)

2. In the **Material Class Code Tree Sub-Window** (lower left), expand the tree for **Materials>Operations Stockpiles**. (This is done by clicking the "+" symbol next to the name.)

3. Right-click on "Aggregates", and choose *Receive this Material.* A new window will open.

4. In the new window, all aggregates are listed. This list includes items that are not in your inventory.

5. Locate and highlight *Boiler Slag.*

6. Click "OK".

7. A new line will be added to the **Transactions Sub-Window** (lower right).

8. Enter the Full Amount, Delivery Date, and Unit Cost for this purchase.
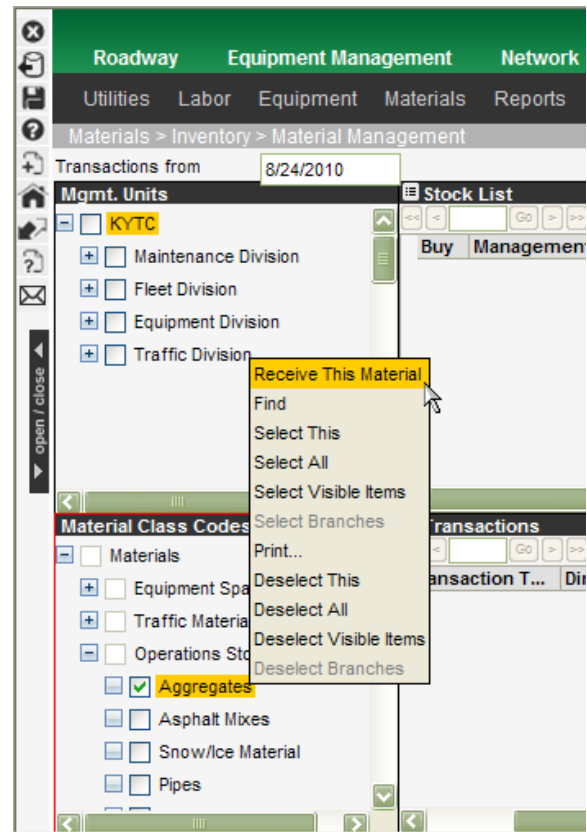
Unit Cost does not equal Total Cost! When entering a purchase, **never** enter the total cost of a purchase in the Unit Cost field (unless you only bought one unit). Instead, enter the amount that one unit (1 gallon, 1 ton, 1 foot, etc.) costs. Entering incorrect Unit Costs will cause severe problems throughout the system. Work Order costs associated with bogus Unit Costs will be inaccurate and your on-hand inventory will not match the system inventory. These errors can sometimes go unnoticed for months.

9. If you have received the full amount of the material, click the check box under the "Accepted" column.

10. Save and Exit .

Procedure

(Cont)

	Chapter
MATERIALS POLICY & PROCEDURES	MATERIAL MANAGEMENT WINDOW
	Subject Transactions Sub-Window - Sale of Inventory Items

Overview

On some occasions, management units will provide material to outside agencies or to crews that do not utilize OMS. In these instances, the "Release from this Stock" function must be used to remove the material from inventory.

Unlike when material is used on a Work Order, no accounting documentation is created by OMS when a sale takes place. Instead, all eMARS accounting must be handled by the district bookkeeper to ensure the crew or agency receiving the material has been charged appropriately. Failure to do so will result in a loss of funds within the account of the crew providing the material.

Procedure

The **Release Out Transaction Type** (**fig. 305-7**), shows all sales of materials from your management unit to a non-OMS entity. This includes other KYTC crews that do not use OMS (Construction, Design, etc.). It also includes non-KYTC entities (cities and county governments, parks, etc.).

Although rare, sales may occasionally take place during emergencies or for other reasons. In the example below, a local county agency needs 18" Coated Metal Pipe. Since they are not users of the OMS system, it is impossible to perform a transfer. Instead, we must sell the material to them through the **Release Out Transaction Type**.

**Procedure
(Cont)**

FIGURE 305-7: Release Out Transaction Type

Example

Scenario: A local county government has requested 20 L.F. of 18"
Coated Metal Pipe for a project. The appropriate approvals and
interagency agreement paperwork has been completed at the
District Office. To complete the transaction in OMS, a sale will
have to be created.

1. After logging in, go to
   Resources>Materials>Inventory>Material Management.

2. Go to the top left **Management Units Sub-Window**, in the
   Materials Management Window, to select your management
   unit to be viewed.

3. Go to the **Material Class Codes Tree Sub-Window** (lower left)
   and click on the "+" next to Operations Stockpiles. From the
   drop down tree, right-click on "Pipes" and choose *Select This.*

4. Click the "Retrieve Data" icon near the top of the window.

5. Locate and highlight the record that represents Pipe, Metal,
   Coated 18'.

6. Right-click on the record and click on "*Release from this
   Stock".* A new record is placed in the **Transactions Sub-
   Window** (lower right).

Procedure
(Cont)
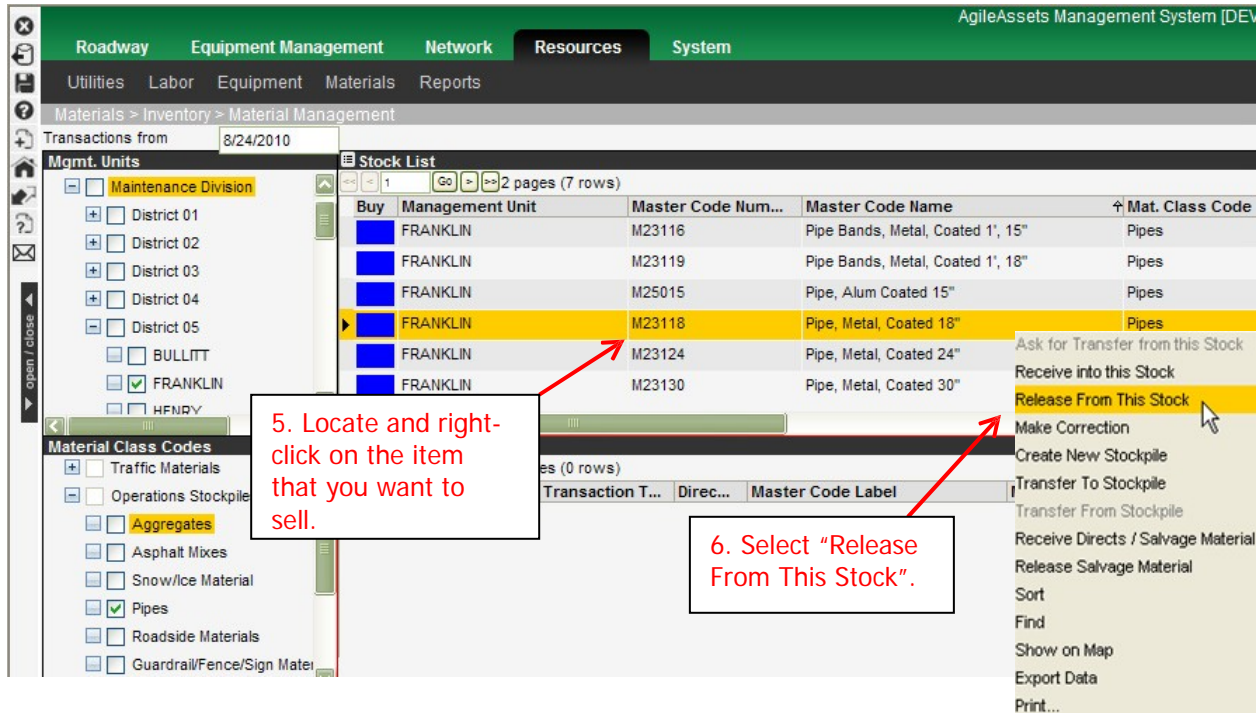
7. Enter Full Amount, any comments (e.g. concerning the outside entity) and check the "Accepted" box.

8. Hit "Retrieve Data" icon on top left of the page.

9. Save and Exit.

10. Contact the bookkeeper to ensure that the agency receiving the material is charged through eMARS.

Sales of materials very rarely occur and they must be approved by the appropriate District Office personnel for your management unit. Funds are not transferred from the receiving entity to your management unit when performing a sale in OMS. Any transfer of funds must be performed within eMARS.

| | Chapter

MATERIAL MANAGEMENT
WINDOW |
| MATERIALS
POLICY & PROCEDURES | Subject
    Transactions Sub-Window -
Correction Transaction Type |

Overview

Occasionally it will be necessary to correct the quantity or unit cost of an item listed in your inventory. These adjustments can only be completed by users with the appropriate level of security - generally the OMS Coordinator or System Administrators; however, anyone can view these corrections.

Any adjustments made to the material inventory in OMS (quantity and/or price adjustments) shall require written approval from the Branch Manager for the management unit performing the adjustment. Once approved, the OMS Coordinator for that management unit will make the necessary changes in OMS. The OMS Coordinator will also be responsible for approving the transaction in OMS. Coordinators must use the "*Make Correction"* action from the **Material Management Window.** This will be the only acceptable method for performing inventory adjustments throughout the year except when conducting end or year reconciliation.

Procedure

As with all items listed in the **Transactions Sub-Window**, you must select the "from date" in which you are interested. Once this date has been adjusted at the top of the **Material Management Window**, you must click the "Retrieve Data" icon to retrieve all the transactions for the mgmt. unit you are logged into since the date entered.

**Procedure
(Cont)**

FIGURE 305-8: Correction Transaction Type

The **Correction Transaction Type (fig. 305-8)**, will list all stock corrections for the material and date range that you specify. Here you can see which items have been corrected, the amount of the correction, and the date that the correction took place. Note in **figure 305-8** that the Full Amount field for some items lists a negative number. This is the case when the amount on hand listed in OMS needs to be reduced in order to match the amount actually on hand.

Stock Corrections should only be used as a last resort to correct an inventory error. Every effort should be made to keep from using this method. When it is necessary to perform an inventory adjustment, the branch manager for your management unit must be notified and MUST provide written documentation approving the correction. This documentation may be in the form of an e-mail, but must be obtained *before* the adjustment is completed.

<u>**Adjustments in Inventory Quantities:**</u>

Scenario: You realize that although OMS shows you with 418.3 tons of Class II Channel Lining, you actually only have 300 tons on-hand. You have researched the Work Orders associated with this material and believe that the difference was caused by rounding errors. Now you need to adjust the inventory to reflect the actual on-hand quantity.

**Procedure
(Cont)**

1. After logging into OMS, go to *Resources>Materials>Inventory>Material Management.*

2. Go to the **Materials Management Sub-Window** (lower left) and expand the Operations Stockpiles category. Right-click on "Aggregates" and click "Select this". Click the "Retrieve Data" icon near the top of window.

3. Right click on the "Master Code Name" column and select find. In the pop up window type in Aggregate, Class II Channel Lining then click next. You will be automatically directed to the Aggregate, Class II Channel Lining line.

4. Right-click on the record and click on "Make Correction".

5. In the pop-up window fill in the correct amount for "Aggregate, Class II Channel Lining".

NOTE: Do not change the Unit Cost.

6. Save .

7. In the **Transactions Sub-Window** make any necessary comments.

8. Click the "Accepted" box in the bottom right sub-window.

9. Save .

10. Click the "Retrieve Data" icon.

What's the difference?
When performing Corrections, you must always enter the *actual amount on hand.* OMS will automatically calculate the difference for you whether it's an addition or subtraction from your inventory.

**Procedure
(Cont)**

Corrections in Inventory Unit Costs:

Scenario: You noticed that the unit cost for "Pipe Bands, Metal, Coated 2', 15" was incorrectly entered as $35.00, but should be $3.50. You need adjust your inventory unit cost to reflect the correct amount.

1. Go to *Resources>Materials>Inventory>Material Management.*

2. Go to the **Materials Management Sub-Window** (lower left) and expand the Operations Stockpiles category.

3. Right-click on "Pipes" and click "Select this". Click the "Retrieve Data" icon near the top of window.

4. Right click on the "Master Code Name" column and select Find. In the pop up box type Pipe Bands, Metal, Coated 2', 15". You will automatically be directed to the Pipe Bands, Metal, Coated 2', 15" line.

5. Make note of the unit price and current amount for the material to be adjusted.

6. Right-click on the record and select "Correct this Stock".

7. In the pop-up window enter target values for Current Amount and Unit Cost. The Current Amount target value will default to the actual Current Amount. Since we are not changing the Current Amount no change is necessary. For Unit Cost change the current default value of $35 to $3.50.

8. In the **Transactions Sub-Window** you should see two newly created transactions, one with a negative full amount equivalent to your current amount in the **Stock List Sub-Window** (this is zeroing out your inventory). And another for the same equivalent current amount with a new target Unit cost.

9. Tab over to the Comments field and insert any necessary information.

**Procedure
(Cont)**

10. Check the "Accepted" box on both newly created transactions and click on the "Retrieve Data" icon.

11. Save .

	Chapter
	RECONCILIATION WINDOW
MATERIALS POLICY & PROCEDURES	Subject
	Overview

Overview

OMS Coordinator will perform warehouse freezing for their responsible management units according to the inventory schedule. Each management unit is responsible for printing their inventory report for stock counting purposes. Specifics on this report will be defined and communicated by the OMS Help Desk.

After inventory counting has been completed, each management unit will forward their completed inventory sheets to the OMS Coordinator so they can key the counted amounts into the Reconciliation Window for their warehouse. The OMS Coordinator shall be responsible for verifying the accuracy of the management unit's reconciliation efforts. Once complete, the OMS Coordinator will be responsible for unfreezing the individual warehouses.

The **Reconciliation Window** in OMS is the only window approved for performing end of year reconciliation.

All end of year reconciliation in OMS will take place (and be completed) in the month of June each year. Individual management units will refer to the annual inventory schedule for further information.

	Chapter
	RECONCILIATION WINDOW
MATERIALS POLICY & PROCEDURES	Subject Reconciliation Process

Procedure

The main purpose of the **Reconciliation Window** is to freeze and unfreeze warehouse material classes for taking fiscal year end stock inventory. The basic effect of freezing a warehouse material class is to prohibit inventory transactions during inventory counts. As a result, business may continue as usual, but because approvals are suspended for the duration that the material class is frozen, the quantities shown remain constant. Once frozen, stock items may not be accepted in Transfers, Work Orders, or Sales to Outside Entities until they are unfrozen.

There are three steps in the process of Reconciliation: Freezing a warehouse inventory, performing the reconciliation process, and completing the reconciliation.

> **Getting there:**
> *Resources> Materials>Inventory>Material Reconciliation*

Example: Freeze Warehouse Inventory for Reconciliation:

1. After logging into your management unit, go to *Resources>Materials >Inventory>Materials Reconciliation.*

2. Right-click in the **Reconciliation Sub-Window** and select insert (**fig. 402-1**).

Procedure
(Cont)

FIGURE 402-1: Inserting a New Reconciliation Line
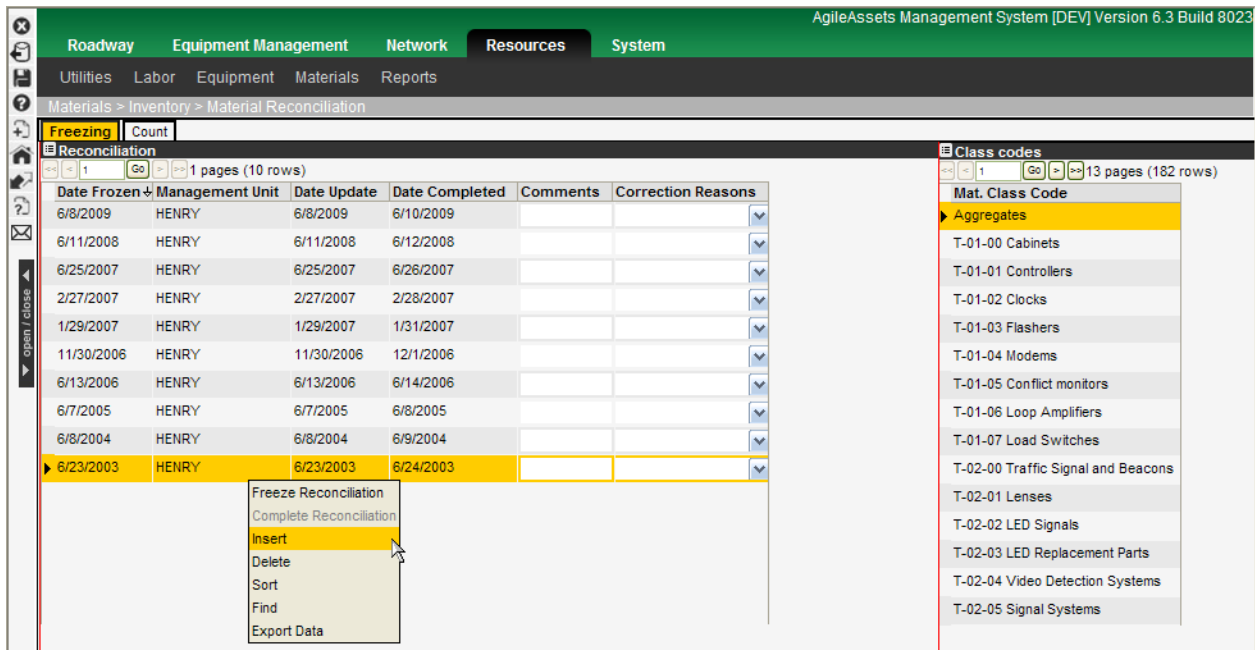
3. In the Material Class Code pop-up window right-click and choose *Select All* **(fig. 402-2)**.

4. Click on *Ok.*

**Procedure
(Cont)**

FIGURE 402-2: Selecting Class Codes to Freeze
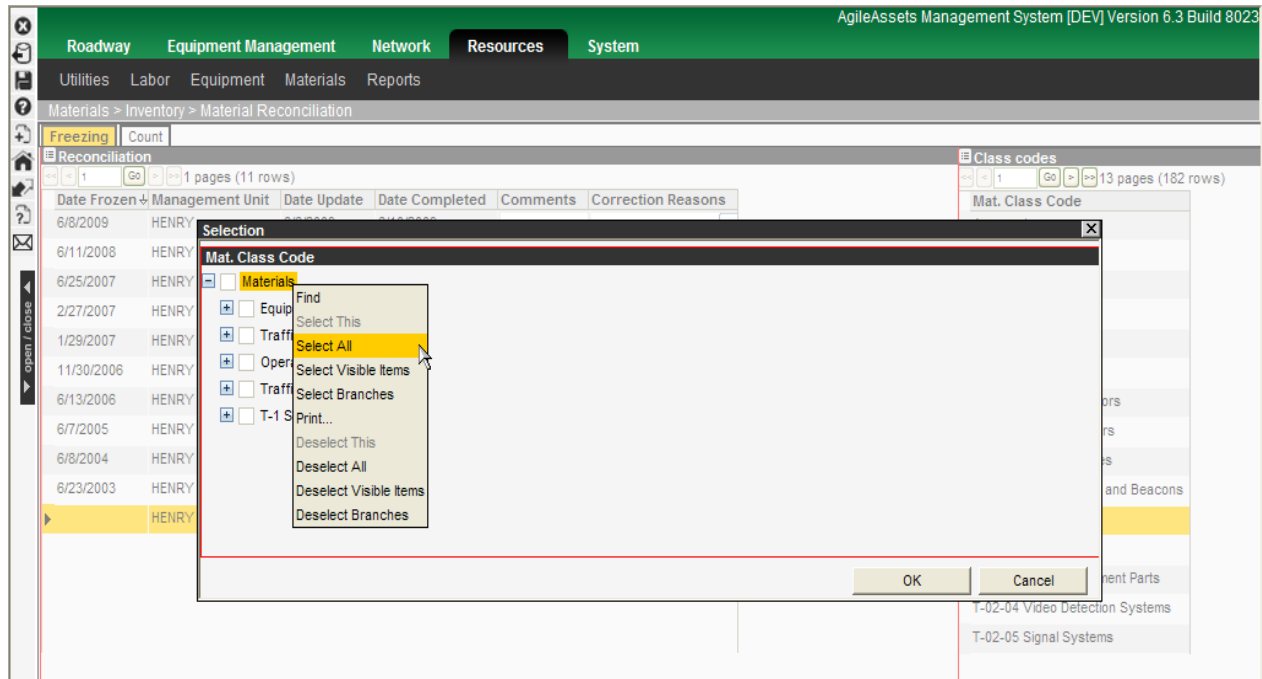
5. Right click on the new Reconciliation line you just added and select Freeze Inventory. Notice that today's date will populate in the Date Frozen field.

The inventory for your management unit is now frozen. Any attempt to use or assign material from this warehouse will not be allowed. You should now use the report printed earlier to perform your physical inventory of stock. Once complete, you must perform the Reconciliation Process described next.

6. Click on the Correction Reasons field and select the appropriate reason for reconciliation

7. Click on the **Count** tab (**fig. 402-3**) in the **Reconciliation Sub-Window** to begin the reconciliation process.

**Procedure
(Cont)**

FIGURE 402-3: The Reconciliation Count Tab

8. In the **Count Window** enter the correct current amounts for all materials inventoried and any necessary comments.

9. Click on the **Freezing** tab.

10. Click in the Comments field for the reconciliation you just created and enter any necessary information about the reconciliation.

11. Right-click on the frozen reconciliation and select *Complete Reconciliation.* Notice the Date Completed will be populated with today's date.

12. Save and Exit .

13. Go to *Resources>Materials>Inventory>Material Management.*

**Procedure
(Cont)**

14. Make sure the management unit you completed the reconciliation for is the only management unit selected in the **Management Units Sub-Window**.

15. In the **Material Class Codes Sub-Window**, right-click on Materials and *Select All.*

16. Click the "Retrieve Data" icon.

17. All materials assigned to the management unit you reconciled should appear in the **Stock List Sub-Window**.

NOTE: Every material you reconciled should appear in the **Transactions Sub-Window** with "Correction" as the Transaction Type.

18. Exit .

	Chapter
MATERIALS **POLICY & PROCEDURES**	ADDITIONAL POLICIES
	Subject
	Obsolete, Scrapped, and Salvaged Items

Definition

♦ Obsolete materials are materials by either policy or regulation that can no longer be used in its current condition but can be transformed into a usable material. For example, the MUTCD has forbidden the further use of "stop ahead" message signs. Instead, the "stop ahead" symbol sign must be used. The "stop ahead" message signs are now considered obsolete. You can, however, reface the sign to become a usable material.

♦ Scrapped materials are materials that have no further use for KYTC functions and cannot be transformed into a usable material. These materials should be taken out of inventory and removed from your lot.

If inventory adjustment is necessary, contact your OMS coordinator.

♦ Salvaged materials are previously used materials returned to the warehouse for secondary use.

Procedure

Usable materials that are returned to the maintenance garages upon the completion of a project should be reentered into inventory one of two ways:

♦ If the Work Order has not yet been completed then unaccept the associated Day Card and change the material quantity to reflect the actual amount used or;

♦ If the Work Order has already been completed then purchase the remaining amount of material back into your inventory

Procedure

(Cont)

♦ Salvaged materials that have already been charged out to a project should be repurchased to your inventory at a zero (0) cost with the exception of millings which should be entered in at $5/ton. For example, if you installed a sign last year and you have removed that sign, for any reason, you would repurchase the sign at a zero (0) cost reflecting the amount of money you have invested to return that item to your inventory.

♦ Place the salvaged material back into inventory by using the "initiate purchase of this material" function in the "materials management" screen of OMS.

♦ Enter comments to the effect of "salvaged material".

♦ Approve the transaction.

	Chapter ADDITIONAL POLICIES
MATERIALS **POLICY & PROCEDURES**	Subject Weight Tickets

Overview

Before purchasing a weighable material (rock, cold mix, etc.), the timekeeper, superintendent, or maintenance engineer shall contact the district office bookkeeper to have them process the delivery order in eMARS and place the order with the vendor. KYTC will then pick up the material from the vendor or the vendor will send the material along with the weight tickets or delivery packing slip to the KYTC specified location. The timekeeper will initiate a purchase for the total amount of material received into inventory that day as indicated on the weight ticket(s) or delivery packing slip(s). If material is charged to a project during the purchasing process, it <u>must </u>be charged as a direct cost in OMS. However, purchasing material directly to a project should rarely be done. If material is to remain on a crew's lot for any amount of time, it must be purchased to the crew's stockpile account and charged out on an OMS Material Day Card to the project. As always, timekeepers should take caution to make sure they enter the date received, quantity, unit cost, and the delivery order number correctly when initiating any purchases in OMS.

When the delivery of the material is complete, all weight tickets or packing slips are totaled and sent to the district office bookkeeper.

	Chapter ADDITIONAL POLICIES
MATERIALS **POLICY & PROCEDURES**	Subject Access to Materials By Private Contractors

Overview

As per the State Highway Engineer's March 24, 2008 Memorandum titled "*Safeguarding Assets: Access to Facilities*" (Appendix A), all KYTC maintenance lots will need to confiscate keys from private contractors and require district personnel to limit private contractor access to KYTC maintenance lots to regular business hours unless prior arrangements have been made to ensure a member of KYTC personnel is present if after-hour access is necessary.

All maintenance lots will also need to designate an area for private contractors to store their materials separate from KYTC materials. Under no circumstance should KYTC materials be stored in conjunction with private contractor materials.

	Chapter ADDITIONAL POLICIES

MATERIALS
POLICY & PROCEDURES
	Subject
	    KYTC Materials Provided to
	    Private Contractors

Overview

Before any materials (working stock) are assigned to a contractor, the Transportation Warehouse shall receive the TC 71-225 form, *Daily Material Usage Report* (Appendix G) from a KYTC project or contract manager. This may be done by hard copy or via email. When the form is sent by email, the project or contract manager must type his/her name on the approved line of the form. When the Transportation Warehouse staff receives a signed TC 71-225 from the project or contract manager, they will require the contractor to sign for the materials received making the contractor liable for KYTC materials in case any are lost, damaged, or stolen.

All materials provided to a contractor shall be tracked by a KYTC employee by means of hard copy and by an opened work order. This is to ensure that inventory on hand minus the materials tracked by the KYTC staff should equal the correct amount of actual stock on hand. KYTC personnel shall create a work order charging the materials requested by the contractor. The work order shall not be completed until the TC 71-225 is submitted. The work order shall be modified to match the appropriate usage amounts and locations. In some cases, additional work orders may need to be created or multiple sections assigned.

Once the contractor installs an item from his/her working stock, the contractor will be required to return the replaced material to the project or contract manager along with the TC 71-225 documenting the amount of material used, returned, and the project number. No working stock materials will be replaced until the contractor provides this information so that materials can be charged out to the correct locations.

**Overview
(Cont)**

All materials beyond the contractors working stock that he/she may need to maintain or rebuild signals and lighting shall follow the same procedures as above.

	Chapter
MATERIALS POLICY & PROCEDURES	ADDITIONAL POLICIES
	Subject
	User Access/Security

Overview

All new district new user requests need to be submitted from the district OMS coordinator to the OMS helpdesk. All central office new user requests need to be submitted from the branch manager of the employee to the OMS helpdesk.

Bi-annually the OMS helpdesk will review and forward current user lists to the appropriate personnel to confirm which users need to be updated, disabled, or deleted.

Special care should be considered when selecting/requesting security profiles to ensure users do not have access to sensitive information or possible dangerous functionality.

Any user or manager who notices or assumes questionable activity within the system should contact the OMS helpdesk immediately for investigation.

	Chapter	INVENTORY COUNTS
MATERIALS POLICY & PROCEDURES	Subject	Inventory Process

Procedure

The actual counting of material during the inventory process does not involve the OMS system. However, it is critical that proper procedures be used when conducting the inventory. The following guidelines are based on policy set forth by the Office of Fiscal Management.

♦ Prior to inventory, items should be organized. Like items should be grouped together in one area and stockpiles should be shaped to make measurements easier. Standard stockpile shapes for bulk materials are cone, tent, cube, or any other measurable formation. Typical examples are shown in Appendix E.

♦ The person responsible for ordering and issuing inventory should not be counting the inventory. This means that timekeepers should only help with locating material, but should not be in charge of counting or recording of inventory items.

♦ Stock room removals during the inventory should be done only in emergency situations. While conducting the inventory, two lists should be maintained for items removed during inventory. One list will be for material removed <u>before </u>the item is counted. The other list will be for material removed <u>after </u>it has been counted. Once the inventory and reconciliation process has been completed, materials from both lists should be charged out on a Work Order.

♦ Counts shall be performed from floor to sheet. This ensures the items recorded in OMS exist, those items not entered in OMS are not overlooked.

♦ Counts shall be performed in teams of at least two people. One person is responsible for the count, and the other is responsible for recording.

♦ All contract materials should be stacked separately from OMS materials and marked in a manner to avoid confusion.

Procedure
(Cont)

♦ You are responsible for inventory items on your lot. Any material that is on your lot but not in OMS or scrap should be clearly marked "DNI" (Do Not Inventory).

♦ Bulk material stockpile quantities should be calculated as outlined in the Stockpile Quantity Calculation Procedures (Appendix D).

♦ Recording of counts must be done on the original inventory sheet printed from OMS. Numbers are not to be recorded on a separate sheet and transcribed later.

♦ All markings should be done in ink, and corrections should be marked out with a <u>single</u> line. Do not erase, whiteout, or otherwise obliterate the originally recorded amount. The counter and recorder should also initial corrections.

♦ After each item is counted, the bin, shelf, or stockpile should be marked in such a way as to clearly identify that it has already been counted. This can be done with masking or surveying tape, a heavy magic marker, stickers, spray paint, or any other method that is both consistent and clear.

♦ Once completed, the counter and recorder should sign and date each individual sheet of the inventory report.

♦ The completed inventory report needs to be signed by the Chief District Engineer, and Maintenance/Traffic engineer before it is submitted and processed.

♦ After the reconciliation has been completed district personnel should double-check the reconciliations for all management units within the district in order to verify all corrections were made accurately.

♦ Finally calculate the number of errors and discrepancies, print an updated material inventory report, attach the signed field inventory report, and send all documents to central office maintenance for review.

DOUBLE-CHECK EVERY COUNT!
Each item in your inventory should be counted at least twice. If the two counts do not agree, repeat until you are confident you have the correct number. If an auditor has been assigned to observe your inventory, he/she will conduct several test counts to check your accuracy. <u>It is our goal to match the auditor's count for 100% of all test counts.</u>

Remember that the top priority in conducting an inventory is not to match the numbers listed on the sheet. Instead, it is to accurately count and record the number of items on hand.

	Chapter
MATERIALS POLICY & PROCEDURES	INVENTORY COUNTS
	Subject
	Monthly Procedures

Overview

As per the State Highway Engineer's policy # 2018-01 dated January 29, 2018 Memorandum (Appendix B), all management units shall conduct a quarterly inventory for all OMS related materials.

Each quarter all crews will be expected to conduct an inventory count (not reconciliation) and forward the results to the County Superintendent and Maintenance and/or Traffic Engineer for signature and approval. The signed documents will then be forwarded to the District Office. The Chief District Engineer will review forward them to the Director, Division of Maintenance within one month of the end of each quarter. The Division of Maintenance will review and note any significant discrepancies to the State Highway Engineer.

All material Day Cards on Work Orders and repair orders must be approved before any inventory counts are made. Open Work Orders will have materials assigned to them that will cause error in the inventory count.

A report titled "Monthly Inventory Report" has been created in the materials module under the Reports/Standard Reports drop down. This can be used for all inventory counts.

Records must be examined to determine the cause of any discrepancies. These may include missing Work Orders, purchases, or transfers since the last inventory.

**Overview
(Cont)**

If the cause is identified, the appropriate action must be taken to correct the error. Only when these remedies have been exhausted may inventory adjustments be made. Inventory adjustments must be performed by the OMS coordinator and must have written approval from the appropriate branch manager.

Mark all errors and discrepancies on the inventory sheet before correcting. Once all errors and discrepancies have been identified and corrected make note on the inventory sheet how the error was resolved.

If you have any further questions or concerns feel free to contact the OMS help desk at (502)-564-6818.

	Chapter INVENTORY COUNTS
MATERIALS POLICY & PROCEDURES	Subject Errors and Discrepancies

Overview

Discrepancy – Any difference between what is on hand in your physical inventory and what is listed in OMS.

Error – Any discrepancy between OMS and your physical inventory that exceeds the allowable thresholds listed below.

Individual Items
(Each/Foot/Gallons/L.F./Pairs/Pound/Quarts/Sq. Ft):
Individual Items are expected to be within $25 total cost. For example if your current inventory is off 5 gallons of antifreeze, and each gallon costs $5 then this is considered a discrepancy. If those 5 gallons had a unit cost of $5.50, then it would be considered an error.

Stockpile Items (Tons):
Aggregates and sand should be shaped in a cone, tent, or any other measurable formation. Due to settling and other measurement issues, these items will be counted as an error only if the there is greater than a 25% difference between OMS and the actual count, and that difference is greater than $100.

Packaged Items (Bags/Boxes/Cases/Rolls):
These items are expected to be within one unit or $25 of the OMS current amount listed. For example if you have 9.5 bags of concrete on hand but in OMS you have 9 bags listed, this would be acceptable, even if a bag cost $100.
If you have 10.5 bags on hand but 9 listed in OMS this would only be an error if the total cost of 1.5 bags exceeds $25.

Overview
(Cont)

Exclusions Auditor judgment will be used to determine if differences should be noted in the audit report when the exclusions are measured. Due to the difficulty and inconsistency of measuring and accounting for certain materials, the following are excluded from the error rate calculation:

Cold Mix
Fly Ash
Gallons stored in a 55 gallon drum
Millings
Salt
Kegs
Tack Oil Tank

Inventory Error Rates
Error rates will be calculated by Central Office Division of Maintenance. Error rates are determined by dividing the number of line items that are in error by the number of line items that are included in the inventory.

	Chapter
MATERIALS **POLICY & PROCEDURES**	INVENTORY COUNTS
	Subject
	Quarterly Report

Overview

Each quarter after all inventories have been submitted, the Central Office Division of Maintenance will compile inventory data and send an Inventory Report to the Commissioner of Highways for review. The report will be divided into the following four categories that measure performance:

1) Average Error Rate – Calculated by adding the inventory error rate for every crew within a district divided by the number of inventories submitted per that district each month. Average error rates are expected to be 5% or lower for all districts.

2) Highest Error Rate – Represents the crew with the highest error rate in their district for that particular month.

3) Percentage of Crews with Error Rates > 5% - Indicates the number of crews which failed to meet the expected error rate of 5% each month.

4) Number of Crews with no data reported – Represents the number of management units, which failed to either conduct or submit an inventory for that month.

APPENDICES

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Joseph W. Prather
Secretary

STATE HIGHWAY ENGINEER POLICY #2008-05

MEMORANDUM

TO: Chief District Engineers
        Division of Equipment
        Division of Maintenance

FROM: O. Gilbert Newman, P.E.
        State Highway Engineer

DATE: March 24, 2008

SUBJECT: Safeguarding Assets
        Access to Facilities

Attached is a copy of a Record of Control Weakness from the Office of the Auditor of Public Accounts based on an audit conducted in 2007 regarding access to our facilities. The concern centers on contractors having keys to the gates and unsupervised access to our materials. Another item of concern is the commingling of contractor-owned materials and state-owned materials.

The response to this Record of Control Weakness submitted by the Cabinet needs to be fulfilled at each facility. This may be particularly challenging at shared facilities to ensure that no one function allows an opportunity for unsupervised access by any contractor to any of the materials on the facility. Meeting this challenge will require a higher level of coordination among the employees at a shared facility. No contractor should have a key to any facility nor should any contractor remove or return materials without the oversight of a Cabinet employee. This is effective immediately.

OGN:CAK

Attachment

c: Alice Wilson, Deputy Executive Director, Budget & Fiscal Management

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F-51 (Revised 6/07)   Ref# _____

AGENCY: Kentucky Transportation Cabinet _____

FYE   6/30/07

X   RECORD OF CONTROL WEAKNESS
___   RECORD OF NONCOMPLIANCE

Prepared by:	Lori A. Riddle	Date:	October 31, 2007
Reviewed by:	Libby Carlin	Date:	November 6, 2007
Delivered to:	Alice Wilson	Date:	November 7, 2007
Department:	Department of Highways	Division:	Maintenance
CFDA:	N/A	Title:	N/A
Federal Award No.:	N/A	Year:	N/A
Federal Agency:	N/A		
Type of Compliance Requirement:	N/A		
Known Questioned Cost:	N/A	Likely Questioned Cost:	N/A

Condition (Nature of the Weakness or Noncompliance):

Safeguarding of assets at the Kentucky Transportation Cabinet (KYTC) maintenance barns is inadequate. The areas where KYTC stores materials and supplies are not protected against access by unauthorized personnel. Private contractors have access and/or keys to the maintenance barns so they can enter the KYTC lot at any time. Private contractors also store their supplies and materials in the same area that KYTC stores its materials.

The Auditor of Public Accounts (APA) became aware that private contractors stored materials at the KYTC maintenance barns during the FY2007 maintenance materials inventory observation. The contractors' supplies and materials were stored together with the KYTC materials. The inventory team could not determine which materials were KYTC and which materials belonged to the contractors. The inventory team also informed the auditor that the contractors had a key so they could access the lot after hours, and KYTC staff could not be certain that contractors were only taking their own materials and supplies.

Cause/Effect:

Although it is convenient for the private contractors to have their supplies and materials stored nearby at a KYTC maintenance barn, there is a greater risk of theft and asset misappropriation due to unauthorized access by non-employees and because materials are not distinctly separated from KYTC materials.

F-51 (Revised 6/07)   Ref# _____

AGENCY: Kentucky Transportation Cabinet _____

FYE   6/30/07

 X   RECORD OF CONTROL WEAKNESS
___ RECORD OF NONCOMPLIANCE

Criteria:

Good internal controls dictate that proper precautions be taken to safeguard assets from loss, damage, or misappropriation. Strong internal controls are essential to protect the department's assets.

Recommendation:

We recommend that private contractors only be given access to the KYTC maintenance barns with KYTC personnel present.

We also recommend that any supplies and materials stored at the KYTC maintenance barns belonging to private contractors be kept in a separate location from the KYTC materials and supplies.

F-51 (Revised 6/07)   Ref# _____

AGENCY: Kentucky Transportation Cabinet
FYE   6/30/07

X   **RECORD OF CONTROL WEAKNESS**
___   **RECORD OF NONCOMPLIANCE**

NOTE TO RESPONDENT:

It is vital to respond to comments and recommendations with due thought and consideration. When agreeing with the comment and recommendation made, outline corrective steps that have already been taken or will be taken by definitive action, including the name(s) of the contact person(s) responsible for corrective action and the timeframe of the actual or anticipated correction.

When disagreeing, by clearly delineating why purported comments are incorrect or why suggested solutions are inappropriate, by including an explanation and specific reasons, you may head off potential problems, even going so far as convincing the auditor to exclude the comment from the final report when he or she is incorrect. In any event, the clearer you draft your response so that someone outside of your department, or even state government, can understand it, the better case you will present for your argument. Please note that we do not include the name of the respondent in the findings in the reports that we issue.

KRS 43.090 requires your agency to notify the Legislative Research Commission and the Auditor of Public Accounts of the audit recommendations that have been implemented and of the audit recommendations that have not been implemented within 60 days of the completion of the final audit report. For any recommendations that have not been implemented, a reason for failure to implement audit recommendations must also be provided.

Please respond by: November 21, 2007

Management's Response and Corrective Action Plan:

We accept the recommendation of the APA and it is our plan to safeguard the department's assets by:

- Requiring all keys to the KYTC maintenance barns be confiscated from private contractors and require district personnel to limit private contractor access to KYTC maintenance barns to regular business hours unless prior arrangement has been made ensuring a member of KYTC personnel is present if after-hour access is necessary.
- Designate an area for private contractors to store their materials separate from KYTC materials.

This action will be documented in the Maintenance materials manual no later than December 2007.

Responded to by: Andria T. Maiden

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KY 40622
WWW.TRANSPORTATION.KY.GOV/

MATTHEW G. BEVIN
GOVERNOR

GREG THOMAS
SECRETARY

STATE HIGHWAY ENGINEER POLICY # 2018-01

MEMORANDUM

TO: Chief District Engineers

FROM: Andy Barber, PE
State Highway Engineer

DATE: 1/29/2018

SUBJECT: Quarterly Material Inventory Counts

Effective immediately, each district shall perform quarterly inventory counts for all Project Delivery and Preservation crews and Engineering Support crews which have material inventories recorded in the Operations Management System (OMS). Copies of the counts are to be maintained at the district office and compiled quarterly for submittal to the State Highway Engineer's office. Each crew's inventory must include a cover sheet that summarizes the number of errors encountered for each month.

This policy supersedes SHE Policy 2008-01, which required monthly inventory counts.

When compiling district quarterly reports, the Chief District Engineer must review and sign the summary sheet for each crew. Excessive errors should be investigated to determine the appropriate corrective measures. The district quarterly reports must be delivered to the State Highway Engineer's office before the end of the month following each quarter. Reports for the quarter ending March 31, 2018 must be delivered by April 30, 2018 for inclusion in the statewide quarterly report.

State Highway Engineer staff will review each district report, calculate error rates, and prepare the statewide report. Performance measures will continue to be analyzed based on average error rate per district, highest error rate within each district, percentage of crews with failing error rates (greater than 5%), and number of crews not reporting. The statewide report will then be distributed to the State Highway Engineer, Internal Audits, Division of Maintenance, Division of Traffic Operations, Division of Equipment, and each district's Chief District Engineer.

This policy language shall be incorporated into the OMS Policies and Procedures manual by March 31, 2018. Any questions regarding the inventory process should be directed to Bob Goodman in the State Highway Engineer's office at 502-782-4090.

JAB:JDW

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Material Inventory Error Calculations

Admin Unit _____ Calloway _____   District __1__   Inventory Period _1st Qtr FY09_

Master Code	Master Code Label	Unit	Unit Cost	OMS Current Amount	Actual On Hand Quantity	Error Flag	Action(s) Required
0200713	18" BLADE WINDSHIELD WIPER	each	$5.51	5	15	✓	Make corrections, document correction method, AND highlight inventory sheet.
0300238	STROBE EMERGENCY ROOF/PIPE MOUNT	each	$121.98	0	1	✓	Make corrections, document correction method, AND highlight inventory sheet.
0800704	GRADER BOLTS W/HEX-NUT 5/8"X3"	box	$11.05	2	4	☐	Make corrections and document correction method.
1500312	SNOW PLOW BLADES 5' X 1" X 8"	each	$39.64	38	40	✓	Make corrections, document correction method, AND highlight inventory sheet.
2200123	KNIFE ASSEMBLY 5' 1875	each	$75.37	2	5	✓	Make corrections, document correction method, AND highlight inventory sheet.
2200215	MOTOR MOUNT 1827	each	$253.47	0	1	✓	Make corrections, document correction method, AND highlight inventory sheet.
2200503	ROCK GUARD INNER #5935 FOR MOWERS	each	$7.56	17	5	✓	Make corrections, document correction method, AND highlight inventory sheet.

Discrepancies __7__   # Errors __6__

Inventory Period must be entered before signing.

CDE Signature

Monthly Material Inventory

Page 1 of 6

AGILEASSETS

Monthly Material Inventory
3/14/2009 14:12:55

Management Unit	Material Master Code	Master Code Number	Unit Cost ($)	Total Cost ($)	Current Amount	
CALLOWAY	1/0 AW CABLE 300 AMP WELDING @ 0100206 (foot)	0100206	$1.05	$0.00	0	0
CALLOWAY	TAPE 3/4" ELECTRICAL TAPE EA ROLL @ 0100601 (each)	0100601	$1.02	$0.00	0	0
CALLOWAY	PRE-MIXED ANTIFREEZE @ 0200601 (gallons)	0200601	$2.51	$7.53	3	3
CALLOWAY	ANTI-FREEZE GALLONS @ 0200602 (gallons)	0200602	$3.46	$0.00	0	0
CALLOWAY	18" BLADE WINDSHIELD WIPER @ 0200713 (each)	0200713	$5.51	$27.55	5	15 * missed purchase
CALLOWAY	WINDSHIELD WASHER FLUID @ 0201501 (gallons)	0201501	$1.38	$0.00	0	0
CALLOWAY	WINDSHIELD WASHER DE-ICER @ 0201502 (gallons)	0201502	$1.38	$11.04	8	8
CALLOWAY	MUD FLAPS 24" X 36" @ 0203401 (each)	0203401	$5.75	$0.00	0	0
CALLOWAY	20 OUNCE AEROSOL BRAKE CLEANER @ 0203603 (each)	0203603	$1.90	$9.51	5	5
CALLOWAY	15" RUBBER TIE STRAP "S" HOOKS @ 0204601 (each)	0204601	$1.34	$9.37	7	7
CALLOWAY	22" RUBBER TIE STRAP "S" HOOKS @ 0204602 (each)	0204602	$1.23	$8.61	7	7
CALLOWAY	PEDESTAL TURN SIGNAL 4" AMBER/RED @ 0300213 (each)	0300213	$9.75	$38.99	4	4
CALLOWAY	WORK LIGHT 5" PEDESTAL MOUNT @ 0300220 (each)	0300220	$9.80	$39.18	4	4
CALLOWAY	STROBE EMERGENCY ROOF/PIPE MOUNT @ 0300238 (each)	0300238	$121.98	$0.00	0	1 * PO# 123456
CALLOWAY	HALOGEN SNOW PLOW DRIVING LIGHT @ 0300244 (each)	0300244	$66.16	$132.31	2	2
CALLOWAY	FLASHER 12V 25AMP 2 TERMINAL @ 0300303 (each)	0300303	$8.92	$0.00	0	0
CALLOWAY	GREASE GUN, PISTIL GRIP STYLE @ 0600302 (each)	0600302	$23.09	$0.00	0	0
CALLOWAY	SNOW PLOW REFLECTIVE GUIDE BAR @ 0700106 (each)	0700106	$12.73	$89.09	7	7
CALLOWAY	5 LB. FIRE EXTINGUISHER @ 0700107 (each)	0700107	$24.63	$0.00	0	0
CALLOWAY	FLAG 6 FOOT FIBER GLASS ROD/CLAMPS @ 0700109 (each)	0700109	$3.28	$6.56	2	2
CALLOWAY	FLASHLIGHT, YELLOW 2-D CELL @ 0700140 (each)	0700140	$2.99	$0.00	0	0
CALLOWAY	POISON IVY CREAM, TUBE @ 0700209 (each)	0700209	$1.34	$0.00	0	0
CALLOWAY	GRADER BOLTS W/HEX-NUT 5/8"X2 1/2" @ 0800703 (box)	0800703	$9.94	$0.00	0	0
CALLOWAY	GRADER BOLTS W/HEX-NUT 5/8"X3" @ 0800704 (box)	0800704	$11.05	$22.10	2	4 * missed purchase
CALLOWAY	HYDRAULIC FLUID, UNIVERSAL 5G/PAIL @ 1402002 (gallons)	1402002	$3.22	$0.00	0	0
CALLOWAY	DEXRON II SERIES D TRANS/HYD FLUID @ 1402003 (quarts)	1402003	$1.65	$13.23	8	8
CALLOWAY	85W-140 GEAR LUBRICANT 120 LBS KEGS @ 1403002 (pound)	1403002	$1.37	$137.00	100	100
CALLOWAY	GREASE NLGI 1, TUBES @ 1404003 (each)	1404003	$1.97	$25.59	13	13
CALLOWAY	PENETRATING OIL, SPRAY CAN @ 1405003 (each)	1405003	$3.46	$10.39	3	3
CALLOWAY	RE-REFINED 15W40 ENGINE OIL QUART @ 1406001 (quarts)	1406001	$0.79	$28.47	36	36
CALLOWAY	RE-REFINED UNIV.HYD/TRANS FL. 55GAL @ 1406002 (gallons)	1406002	$2.69	$177.76	66	66
CALLOWAY	RE-REFINED 80W90 GEAR LUBE 120 LBS @ 1406003 (pound)	1406003	$1.07	$29.99	28	28
CALLOWAY	SNOW PLOW BLADES 5' X 1" X 8" @ 1500312 (each)	1500312	$39.64	$1,506.30	38	40 * Inv. Adj. Approved by: ALC
CALLOWAY	SNOW PLOW BLADES 6' X 1" X 8" @ 1500313 (each)	1500313	$46.46	$1,300.76	28	28
CALLOWAY	72" BLADE CARRIER ASSEMBLY @ 2100302 (each)	2100302	$96.88	$0.00	0	0
CALLOWAY	72" CUTTING BLADES 8588 @ 2100303 (pairs)	2100303	$13.80	$0.00	0	0
CALLOWAY	BLADE BOLT WITH NUT 8264 @ 2100304 (each)	2100304	$6.99	$0.00	0	0

http://kytcwoab14:8080/ams_ky/Kernel/w_gridreport.jsp

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Monthly Material Inventory

CALLOWAY	WASHER @ 2100305 (each)	2100305	$0.00	$0.00	0	*0*
CALLOWAY	LOCKNUT @ 2100306 (each)	2100306	$0.00	$0.00	0	*0*
CALLOWAY	BLADE WASHER @ 2100307 (each)	2100307	$0.00	$0.00	0	*0*
CALLOWAY	KNIFE HIGH CLIP 127 @ 2200101 (each)	2200101	$2.32	$2.32	1	*1*
CALLOWAY	INNER SHOE GUARD ROD 447 @ 2200104 (each)	2200104	$12.32	$0.00	0	*0*
CALLOWAY	7/16"X1 1/2" GUARD BOLT/1638NUT 464 @ 2200105 (each)	2200105	$0.38	$13.29	35	*35*
CALLOWAY	7/16"X1 3/4"GUARD BOLT/1638 NUT 465 @ 2200106 (each)	2200106	$0.46	$10.92	24	*24*
CALLOWAY	646 SECTION 25 PER BOX @ 2200110 (each)	2200110	$0.59	$0.00	0	*0*
CALLOWAY	OUTER SHOE SOLE 1238 @ 2200119 (each)	2200119	$6.83	$0.00	0	*0*
CALLOWAY	RIVET 1 LB. TO BOX 1871 @ 2200122 (box)	2200122	$2.21	$0.00	0	*0*
CALLOWAY	KNIFE ASSEMBLY 5' 1875 @ 2200123 (each)	2200123	$75.37	$150.74	2	*5 # Inv. Adj. approved by: ALC*
CALLOWAY	KNIFE HEAD CAP FRONT 1883 @ 2200124 (each)	2200124	$4.29	$4.29	1	*1*
CALLOWAY	CLIP LOW 1887 @ 2200131 (each)	2200131	$3.10	$0.00	0	*0*
CALLOWAY	HOSE 1/2" X 52" X 1/2" 331 @ 2200203 (each)	2200203	$14.63	$0.00	0	*0*
CALLOWAY	HOSE 1/2" X 58" 404 @ 2200205 (each)	2200205	$14.26	$0.00	0	*0*
CALLOWAY	HOSE 1/4"X36" 1148 @ 2200208 (each)	2200208	$8.53	$0.00	0	*0*
CALLOWAY	HOSE 1/4" X 17" 1149 @ 2200209 (each)	2200209	$5.01	$10.02	2	*2*
CALLOWAY	HOSE 1/4" X 22" 1814 @ 2200213 (each)	2200213	$6.31	$0.00	0	*0*
CALLOWAY	MOTOR MOUNT 1827 @ 2200215 (each)	2200215	$253.47	$0.00	0	*1 # missed purchase*
CALLOWAY	MOTOR 1886 @ 2200216 (each)	2200216	$695.70	$0.00	0	*0*
CALLOWAY	COUPLING, FLEXIBLE 2235 @ 2200219 (each)	2200219	$106.37	$0.00	0	*0*
CALLOWAY	MOTOR SUPPORT 2701 @ 2200225 (each)	2200225	$282.10	$0.00	0	*0*
CALLOWAY	KNIFE HEAD CAP REAR 450 @ 2200301 (each)	2200301	$3.16	$0.00	0	*0*
CALLOWAY	SHIM 453 @ 2200302 (each)	2200302	$1.72	$20.68	12	*12*
CALLOWAY	PITMAN ASSEMBLY 1828 @ 2200303 (each)	2200303	$105.05	$0.00	0	*0*
CALLOWAY	ROCK GUARD INNER #5935 FOR MOWERS @ 2200503 (each)	2200503	$7.56	$128.60	17	*5 # RO# 123456*
CALLOWAY	ROCK GUARD OUTER #5936 FOR MOWERS @ 2200504 (each)	2200504	$8.30	$41.52	5	*5*
CALLOWAY	ROCK GUARD CENTER #5937 FOR MOWERS @ 2200505 (each)	2200505	$7.48	$82.27	11	*11*
CALLOWAY	OUTER SHOE #5709 FOR MOWERS WITH @ 2200508 (each)	2200508	$14.95	$0.00	0	*0*
CALLOWAY	GUARD #5855 INNER SOLE @ 2200512 (each)	2200512	$28.51	$0.00	0	*0*
CALLOWAY	CUTTER BAR ASSY,5'LESS KNIFE FOR @ 2200513 (each)	2200513	$833.84	$0.00	0	*0*
CALLOWAY	#5857 R.H. GUARD @ 2200516 (each)	2200516	$131.15	$0.00	0	*0*
CALLOWAY	445 KNIFE HEAD WEAR PLATE,REAR @ 2200527 (each)	2200527	$4.11	$0.00	0	*0*
CALLOWAY	INNER SHOE ASSEMBLY 5713 @ 2200533 (each)	2200533	$120.65	$0.00	0	*0*
CALLOWAY	7/16"UNCX2" GUARD BOLT W/NUT 5718 @ 2200534 (each)	2200534	$0.47	$0.00	0	*0*
CALLOWAY	KNIFE RING SHACKLE 701043M @ 2300102 (each)	2300102	$1.29	$0.00	0	*0*
CALLOWAY	POLYURETHANE SPINNER DISK0462200200 @ 2600124 (each)	2600124	$62.75	$0.00	0	*0*
CALLOWAY	SALT SPREADER ENCAPSULANT LUBRASEAL @ 3000102 (gallons)	3000102	$27.35	$246.14	9	*9*
CALLOWAY	1" NIPPLE SH8-63 PARKER ST/STL.QC @ 3200508 (each)	3200508	$58.28	$0.00	0	*0*
CALLOWAY	TIRE/WHEEL W/O HUB 5855&M7055 #108 @ 4400107 (each)	4400107	$32.30	$32.30	1	*1*
CALLOWAY	111MR FORK 1 7/8" SHAFT 7055&7055-7 @ 4400111 (each)	4400111	$20.07	$0.00	0	*0*
CALLOWAY	HUB WITH BEARINGS/SEALS #101 @ 4400115 (each)	4400115	$20.23	$20.23	1	*1*
CALLOWAY	AXLE BOLT #106 (MODEL 7055 & 7055-7) @ 4400116 (each)	4400116	$2.17	$2.17	1	*1*

http://kytcwoab14:8080/ams ky/Kernel/w gridreport.jsp

3/14/2009

AGGREGATES

1. **STOCKPILE SHAPE**

   Stockpiles must be formed into a standard shape before volume can be determined. The typical examples of shapes for bulk materials (salt, rock, etc.) shown in Appendix E are tent, cone, and cube.

2. **STOCKPILE QUANTITY**

   Choose the appropriate worksheet from Table 1 based on the aggregate size and type. Each worksheet uses a different unit weight to calculate the stockpile quantity. The worksheet will step you through the necessary volume calculations. Be sure to use the correct worksheet for each type of bulk material stockpile.

TABLE 1

Worksheet	Aggregate Size
A	Limestone Sand
	Blasting Sand
	Natural Sand
	10
	11
B	8
	9
	78
C	4
	57
D	1
	2
	3
	23
E	68
	610
	710
F	DGA
	Crushed Stone Base
G	Rip Rap
	Quarry Waste
	Quarry Shot Rock
	Quarry Run
	Channel Lining (All Classes)

Example Calculations

You need to determine the quantity of a DGA stockpile. After looking at Table 1, you decide to fill out **Worksheet F**. The stockpile has been measured and the dimensions are:

- 25 feet (width)

- 60 feet (length)

- 11 feet (height)

- 25 x 60 x 11 = 16,500 cubic feet

- 16,500 ÷ 81 = 203.7 cubic yards

- Multiply the volume in cubic yards by the unit weight to yield the stockpile quantity in tons. 203.7 cubic yards x 1.37 tons/cubic yard = 279.1 tons

- Record 279.1 tons as your final quantity.

TENT SHAPE

HEIGHT

WIDTH = DIAMETER
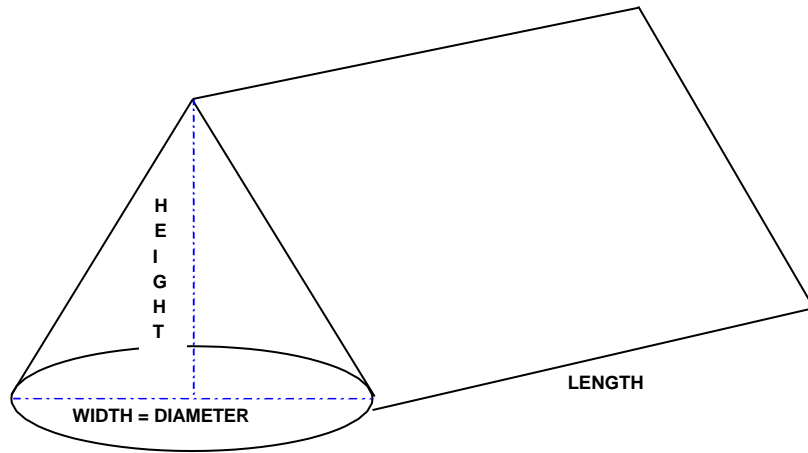
LENGTH

CONE SHAPE (WHEN LENGTH AND WIDTH EQUAL)
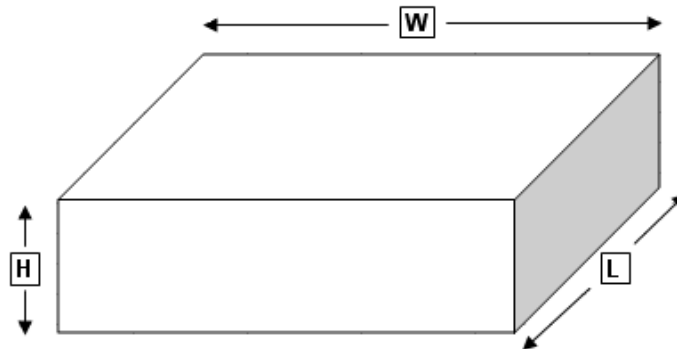
HEIGHT

WIDTH = DIAMETER

CUBE SHAPE

W

H

L

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET A

For Limestone Sand, Blasting Sand, Natural Sand, #10's, and 11's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.42 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.42	=	78.89
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	
	x		x		÷	81	x	1.42	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET A

For Limestone Sand, Blasting Sand, Natural Sand, #10's, and #11's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.42 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.42	=	26.3
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	
	x		x		÷	27	x	1.42	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET B

For #8's, #9's, and #78's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.19 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.19	=	66.11
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	
	x		x		÷	81	x	1.19	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET B

For #8's, #9's, and #78's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.19 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.19	=	22.04
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	
	x		x		÷	27	x	1.19	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET C

For #4's, and #57's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.24 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.24	=	68.89
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	
	x		x		÷	81	x	1.24	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET C

For #4's, and #57's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.24 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.24	=	22.96
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	
	x		x		÷	27	x	1.24	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET D

For #1's, #2's, #3's, and #23's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.11 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.11	=	61.67
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	
	x		x		÷	81	x	1.11	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET D

For #1's, #2's, #3's, and #23's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.11 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.11	=	20.56
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	
	x		x		÷	27	x	1.11	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET E

For #68's, #610's, and #710's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.31 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.31	=	72.78
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	
	x		x		÷	81	x	1.31	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET E

For #68's, #610's, and #710's

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.31 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.31	=	24.26
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	
	x		x		÷	27	x	1.31	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET F

For DGA and Crushed Stone Base

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.37 (TONS/ YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.37	=	76.11
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	
	x		x		÷	81	x	1.37	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET F

For DGA and Crushed Stone Base

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.37 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.37	=	25.37
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	
	x		x		÷	27	x	1.37	=	

TENT OR CONE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET G

For Rip Rap, Quarry Waste, Quarry Shot Rock, Quarry Run, and Channel Lining (All Classes)

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	81	x	1.5 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 30	x	15	x	10	÷	81	x	1.5	=	83.33
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	
	x		x		÷	81	x	1.5	=	

CUBE SHAPE
BULK MATERIALS QUANTITY CALCULATION WORKSHEET G

For Rip Rap, Quarry Waste, Quarry Shot Rock, Quarry Run, and Channel Lining (All Classes)

WIDTH (FEET)	x	LENGTH (FEET)	x	HEIGHT (FEET)	÷	27	x	1.5 (TONS /YD^3)	=	QUANTITY (TONS)
EXAMPLE 10	x	10	x	5	÷	27	x	1.5	=	27.78
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	
	x		x		÷	27	x	1.5	=	

Kentucky Transportation Cabinet

Division of Maintenance
DAILY MATERIALS USAGE REPORT

Crew: _____   _____

Date: _____   _____

Type of Material	Amount Loaded	Amount Returned	Unit	Activity	Project Number

KYTC Material   Contractor   Superintendent
Manger Signature   Signature   Signature

_____   _____   _____

REVIEW EXERCISES

1. In the list below, circle all examples of class codes.

Aggregates	30" Stop Sign	Barren County
18" Metal coated pipe	Guardrail End Treatment Type I	Type 2 Aggregate
Pipes	Signs	Asphalt Mixes
Materials	Snow/Ice Material	Salt Brine

2. Fill in the blank in the sentence below:

> "Class codes aren't actual pieces of material. Instead they should be considered_____of material."

1. Log into your management unit and fill in the following material information:

Current Amount of "Snow & Ice Control,

Salt, Sodium Chloride"   _____

Unit Cost of "Pipe, Metal, Uncoated, 18"   _____

Class code of "Hot Mix, Surface Class 2, 0.38B"   _____

Current Amount of "Pre-Mixed Antifreeze"

Stock Name for Master Code "1406001"   _____

2. If the total cost for 100 tons of salt is $3,940.00, what is the Unit Cost of one ton of Salt?   _____

3. **TRUE or FALSE**: Written approval must first be provided by the Branch Manager before an Inventory Adjustment can be performed.

4. In which window would you look to find a record of all transfers made from your management unit in the last 6 months?   _____