PROPRIETARY RIGHTS STATEMENT

Existing Desktop application connects to an SQL Server and database. The application has both Business Settings and User Permissions as well Data Entry Rules, Mandatory Fields and User Defined Fields. Business settings will determine the approval method in place and the User Permissions will determine what a user is allowed to see and do. Security permissions for a user are Role Based. A user that is able to log in to the application is assigned to one or more roles and each role has a set of permissions which determine what that role is allowed to see and do. A user gets the combined total of permissions from the roles they belong to. Work Requests and Work Orders will have mandatory fields based on Data Entry Rules, may have default field values, based on Data Entry Rules and both may have client added fields we call User Defined Fields.

Hybrid App should have the following:

1. When first used present a dialogue that will allow entry of the server address, database name, server account, password for access, and allow the setting of a network path that will be used for attaching pictures or documents. The server address, account and password should be stored in a format that is not readable by the user on the device after being entered.

2. There needs to be an option to re-enter or change the existing server connection information, and network path information.

3. Once the server connection information is entered, app should display a login screen that displays the database name being connected to, then ask for a username and password for the user to connect and use the app.

4. When a user attempts to connect, it should do so securely to the SQL Server:

   (a) Need to check to see if user account information is correct
   - **i.** If not display message saying account information incorrect
   - **ii.** if user account locked display a message to say account has been locked contact your administrator

   (b) Need to check to see if a license is available
   - **i.** Application has concurrent user licensing therefore if current connectons are below the license limit user can connect.
   - **ii.** If license limit is reached:
     - **A.** Check to see if any connected user has been inactive for the inactivity timeout setting
     - **B.** If there are users that are inactive and >= inactivity timeout setting
       - delete those user sessions
       - and continue to 4(c) below
     - **C.** If no users are inactive >= the inactivity timeout setting
       - display message all licenses in use contact your administrator
       - then return to the login screen step 3 above.

   (c) Need to remove any existing session information for the username if from a different device.
   - **i.** A user is only allowed to connect to the database from one device at a time
   - **ii.** If a user tries to connect from two different devices only the current session can be active

   (d) Need to add a session id for this username, device connection

   (e) Need to apply the permissions a user has so they only receive menu options applicable to them
   - **i.** a user may be able to read / change / delete work requests
   - **ii.** a user may be able to read / change / delete their own work orders, or
   - **iii.** a user may be able to read / change / delete all work orders
   - **iv.** a user may be an approver for purchase requisitions, purchase orders and/or work requests

5. Menu options (need to be based on the user's permissions):

   (a) Log out
   - **i.** when a user logs out their session id is removed from the logged in users (which frees up a user license) and the app is either closed or displays the log in screen.

   (b) Approvals with a sub menu for:
   - **i.** Requisitions and/or
   - **ii.** Work Requests and/or

iii. Purchase Orders

If there are items in their queues, show a count of the items next to the menu choices

(c) Work Requests with a sub menu for

i. Create New
- Open a screen that allows a user to enter a new Work Request into the system
- Option to SCAN a code 128 barcode for the equipment number and enter that equipment number on the newly created work request

ii. My current work requests
- Open a list of work requests with a work request status of “open” or “on hold” requested by that user

iii. All my work requests
- Open a list of all the work requests requested by that user

iv. Other work requests
- Open a screen that allows user to search for work requests
- Option to SCAN a code 128 barcode for the equipment and bring up all current work requests for that equipment number (does not include work request status not “on hold”, not “converted”, not “closed”)

v. Convert WR to WO
- if user has the permission to do so would bring up a list of work requests
  - If approvals are turned on for Work Requests then bring up a list of work request that have a work request status of “open” and an approval status of “approved”
  - if approvals are turned off for Work Requests then bring up a list of work requests that have a work request status of “open”
- If a list of work requests is displayed then there needs to be a way to select one or more work requests in the list and allow the user to “Convert to WO” (turn the work requests into a work order)

(d) Work Orders with a sub menu for

i. Create New
- Open a screen that allows a user to enter a new Work Order
- Option to SCAN a code 128 barcode for the equipment number and enter that equipment number on the newly created work order

ii. My assigned work orders
- Open a list of work orders with work order status of “issued” where the current user is estimated to perform the work

iii. My craft’s issued work orders
- Open a list of work orders with work order status “issued” that have the user’s craft listed on the work order

iv. Other work work orders
- Open a screen that allows user to search for work orders
- Option to SCAN a code 128 barcode for the equipment and bring up all work orders for that equipment number that are not closed (does not include work order statuses of cancelled, complete, or incomplete)

Approval Process

Approvals in the CMMS are determined by Business Settings, whether or not the user is an approver and what their approval limit is and if it is limited to specific cost centers. An approver can only approve up to but not including their limit. An approver can reject any item in their approval queue and potentially send the item to another approvers queue.

Business Settings determine the type of approval for:
1. Work Requests,
2. Purchase Requisitions,
3. Purchase Orders

Approvals
Each of the areas Work Requests, Purchase Requisitions, Purchase Orders may have one of the options below. There are multiple options that can apply and each of the areas can have a different process specified.

1. **None**
   - Approvals are not activated so no approval queue, no submit button available on the record

2. **Simple Approval**
   - Any item below the specified limit is automatically approved
   - Any item >= to the specified limit has to be submitted for approval
   - An approver will see in the approval queue all items needing approval < their approval limit not created, or modified by their username

3. **Simple Approval + Self Approval**
   - Any item below the specified limit is automatically approved
   - Any item >= the specified limit has to be submitted for approval
     - If User is not an approver, item will get approval status assigned (waiting to be approved)
     - If User is an approver and the item < users approval limit, item is approved
     - If User is an approver and the item >= users approval limit, item will have approval status assigned
   - User will see in their approval queue items < their limit

4. **Simple Approval + Cost Center Based Approval**
   - Any item below the specified limit is automatically approved
   - Any item >= the specified limit has to be submitted for approval
     - If user is not an approver, item will have approval status assigned (waiting to be approved)
     - if user is an approver, item will have approval status assigned (waiting to be approved)
   - An approver will see in their approval queue items < their limit, within their assigned cost centers, not created or modified by their username
   - An approver can approve or reject any item in their queue

5. **Simple Approval + Cost Center Based Approval + Self Approval**
   - Any item below the specified limit is automatically approved
   - Any item >= the specified limit has to be submitted for approval
     - If user is not an approver, item will have approval status assigned (waiting to be approved)
     - If user is an approver and the item < their approval limit and within their assigned cost centers, item will be approved
     - If user is an approver and the item >= their approval limit or not within their assigned cost centers, item will have approval status assigned (waiting to be approved)
   - An approver will see in their approval queue items < their limit, within their assigned cost centers
   - An approver can approve or reject any item in their queue

6. **Complex Approval**
   When Complex approval is turned on this means users submit items to specific users they are allowed to submit items to. Each user will have a list of “next approvers” they are allowed to submit an item to.
   - There will be a Submit button for items being added/modified
   - If the user is not an approver they will Submit the item for approval and it will become “assigned”
   - If the user is an approver they will Submit the item for approval and it will become “assigned”
   - An approver will see all items in their approval queue that have been assigned to them

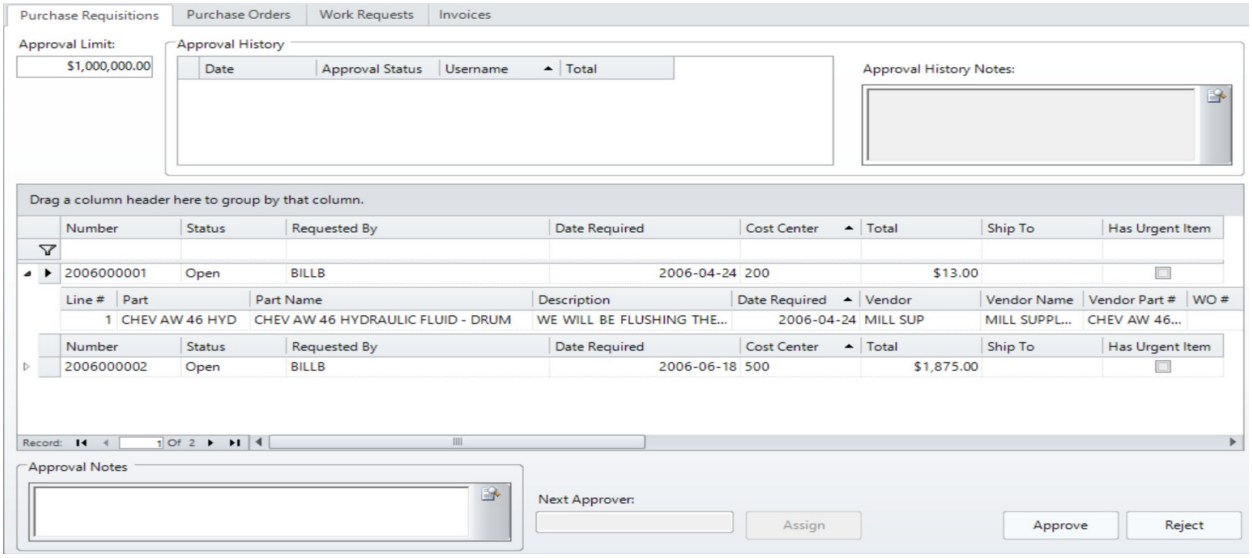
7. **Complex Approval + Self Approval**
   When Complex approval is turned on this means users submit items to specific users they are allowed to submit items to. Each user will have a list of “next approvers” they are allowed to submit an item to.
   - There will be a Submit button for items being added/modified
   - If the user is not an approver they will Submit the item for approval and it will become “assigned”
   - If the user is an approver they will Submit the item for approval and if the item < their approval limit it will be approved
   - If the user is an approver they will Submit the item for approval and if the item >= their approval limit it will become “assigned”
   - An approver will see all items in their approval queue that have been assigned to them
   - An approver can approve any item < their approval limit
   - An approver can reject any item in their approval queue
   - An approver can re-assign any item in their approval queue to another approver

8. **Complex Approval + Cost Center Based Approval**
   When Complex approval is turned on this means users submit items to specific users they are allowed to submit items to. Each user will have a list of “next approvers” they are allowed to submit an item to.
   - There will be a Submit button for items being added/modified
   - If the user is not an approver they will Submit the item for approval and it will become “assigned”
   - If the user is an approver they will Submit the item for approval and it will become “assigned”
   - An approver will see all items in their approval queue that have been assigned to them
   - An approver can approve any item < their approval limit and within their assigned cost centers, not created or modified by their username
   - An approver can reject any item in their approval queue
   - An approver can re-assign any item in their approval queue to another approver

9. **Complex Approval + Cost Center Based Approval + Self Approval**
   When Complex approval is turned on this means users submit items to specific users they are allowed to submit items to. Each user will have a list of “next approvers” they are allowed to submit an item to.
   - There will be a Submit button for items being added/modified
   - If the user is not an approver they will Submit the item for approval and it will become “assigned”
   - If the user is an approver they will Submit the item for approval
     - If the item is >= their approval limit or not within their assigned cost centers it will become assigned
     - If the item is < their approval limit and within their assigned cost centers it will be approved
   - An approver will see all items in their approval queue that have been assigned to them
   - An approver can approve any item < their approval limit and within their assigned cost centers
   - An approver can reject any item in their approval queue
   - An approver can re-assign any item in their approval queue to another approver

Example of Approval Screen in Desktop Application, shown here to give an idea of the data involved.

Screen layout for Approvals on Purchase Requisitions, Purchase Orders and Work Request is the same
Although there is a tab shown for Invoices in the screenshot, Invoice approvals will not be part of this mobile app.



Mobile App needs to display the items in the queue and based on the approval logic, allow the approver to:

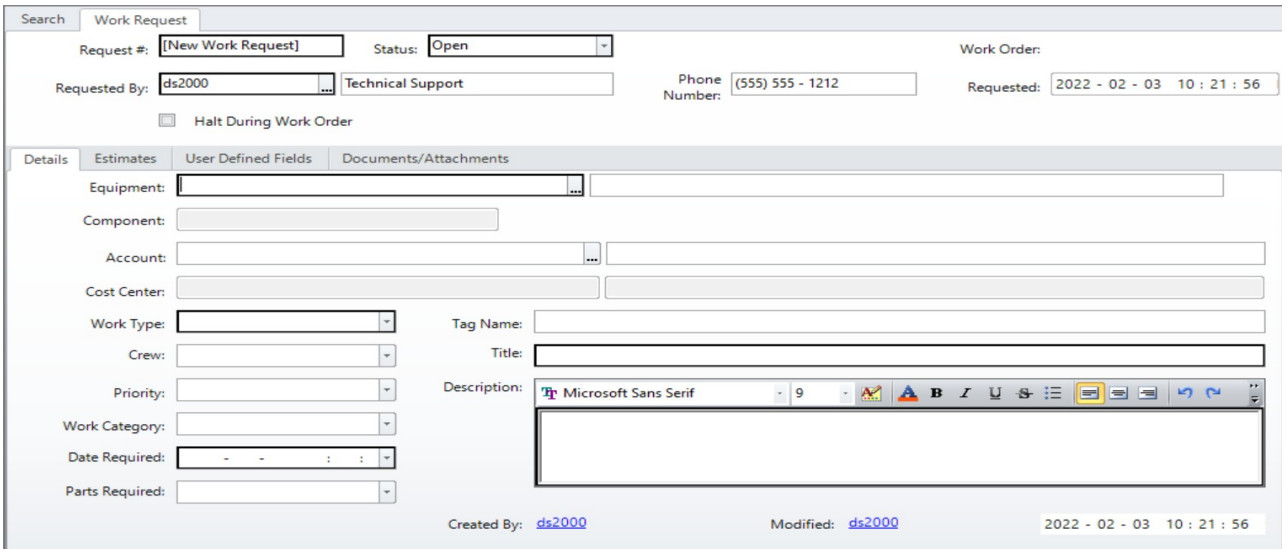
1. Select one or more items and optionally add approval notes, then
2. Re-assign to another user (if that is the approval logic setup), or
3. Approve, or
4. Reject the Item

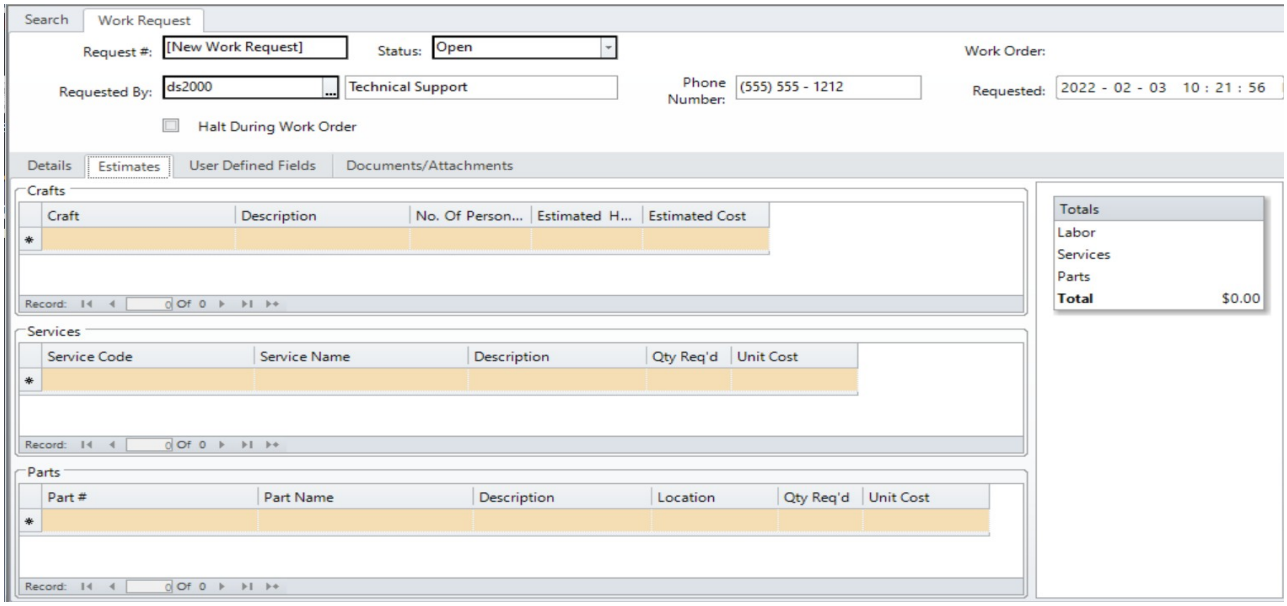
In the CMMS an approver approves, re-assigns or rejects the **entire** Work Request, Purchase Requisition or Purchase Order. Once the record is approved, rejected, or re-assigned the item should be no longer displayed in the queue.

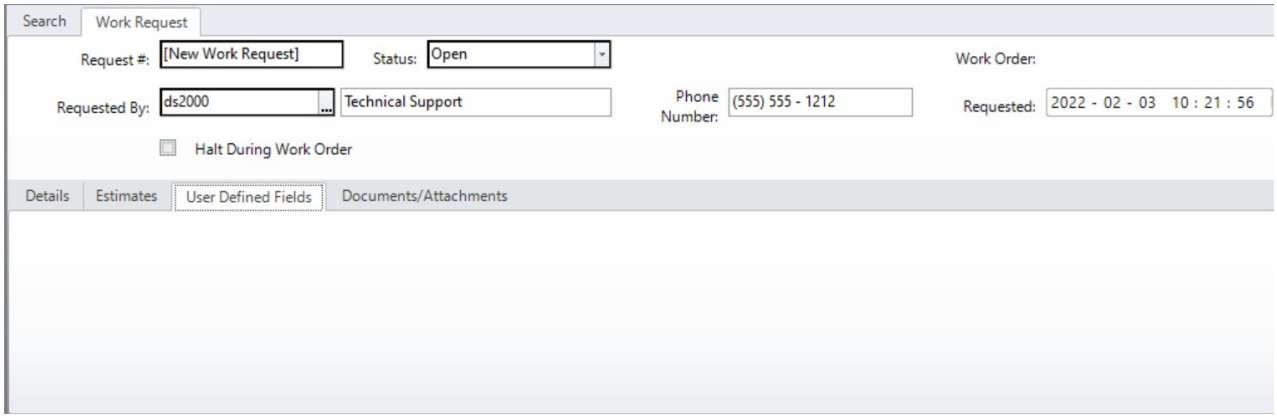
Work Request and Work Orders, both are Managers in the application that users may or may not have permissions on as determined by their Role(s). These Managers may also have mandatory fields that have to have information when editing or creating the record, before the data can be saved to the database. A field in these Managers may have a default or system default value. These Managers may also have User Defined Fields (will be the same for all records in that manager) that have been added to the system. In the desktop application a mandatory field is identified by a bolded outline around the field. Some fields are mandatory, some optional, some have default values, others do not. Some fields are editable, some are not. Many of the fields will have lookups for a user to choose a value from, and the choosing of a value may automatically populate other fields on the record. Generally only the “Details” tab (main tab of the record) has mandatory fields. Data on other tabs is generally optional for a user to enter. Text fields are limited to 50 characters for codes and 100 characters for names/titles and a rich text field allows unlimited text. Some fields in these Managers may have additional logic or data controls on them. The database contains procedures, functions and views for inserting, editing data and showing picklists for data. If awarded the contract the information on procedures, functions, views and data logic that will be needed will be supplied.

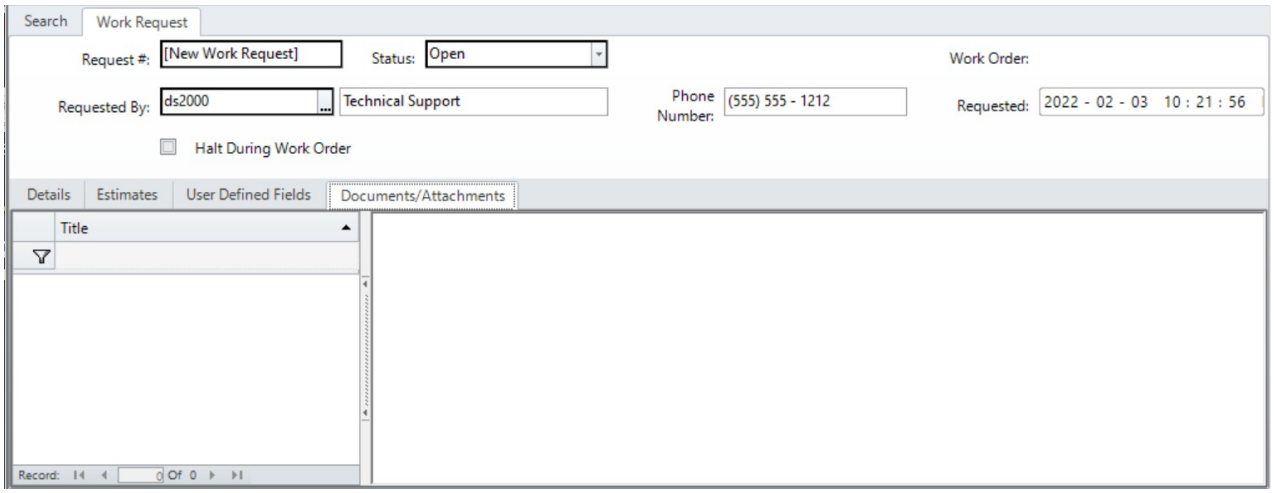
Work Requests

A work request is a request for a job to be performed and contains information as shown in the screenshots below from the desktop client application. The example below is the initial screen after clicking NEW Work Request.









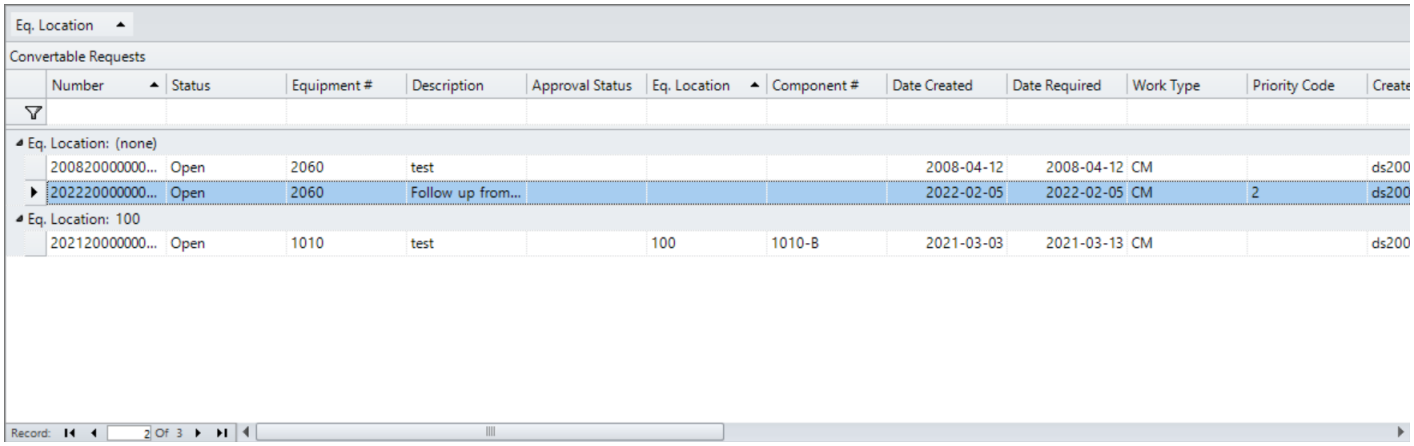
The app will have a way to do the following:

1. Create a New Record and EDIT an Existing Record
   - **(a)** Fill in the information on the Details tab
   - **(b)** A way to ADD Craft information
   - **(c)** A way to ADD Part Information
   - **(d)** A way to Fill in any User Defined Field Data if fields exist
   - **(e)** A way to add one or more picture/document/website url(s)
2. A way to SAVE the data
3. A way to CANCEL the record
   - changes the status to Cancelled and record is no longer editable
4. A way to SUBMIT the record for approval if approvals are turned on
5. A way to GENERATE to a Work Order if user has permission to do so
6. A way to select muliple Work Request and TAG them
   - opens a text input dialogue up to 100 characters and places the same text on all the selected records in the Tag Name field of those records
7. A way to CLONE the work request, and create an identical work request with a different work request number with a status of “Open” and approval status of NULL.

The display of the mobile app of course will not look like the desktop app, but will be as your company’s expertise determines is the best way to display the data.

Convert WR to WO

When a user selects this menu item the user needs to be presented with a list of Work Requests that can be turned generated/converted into Work Orders. Below is a screenshot of the desktop application screen that shows a list of work request records that are ready to be turned into work orders. In this example the screen shows a grid of information. The grid can be filtered by any column and the grid can be grouped by one or more columns to organize the data to the way the user wants to see it. In the desktop application all grids, in all managers, have this functionality.



The app will have a way to display a list of work requests that are ready to be converted to work orders.

1. If approvals are turned on this list will be work requests with a status of “open” and an approval status of “approved”
2. If approvals are turned off this list will be work requests with a status of “open”
3. A way to select one or more records and Convert the Work Request(s) to Work Order(s)
    - Each work request creates one work order
    - The data from the work request is entered into the matching fields on the newly created work order
    - The Work Request gets a link to the work order
    - The Work Order gets a link to the work request
    - The Work Request status is changed to “Converted”
4. A way to select one or more records and Cancel the Work Request.
    - Cancelling a work request is changing the work request status to “Cancelled”.
    - This closes the work request and it is no longer editable

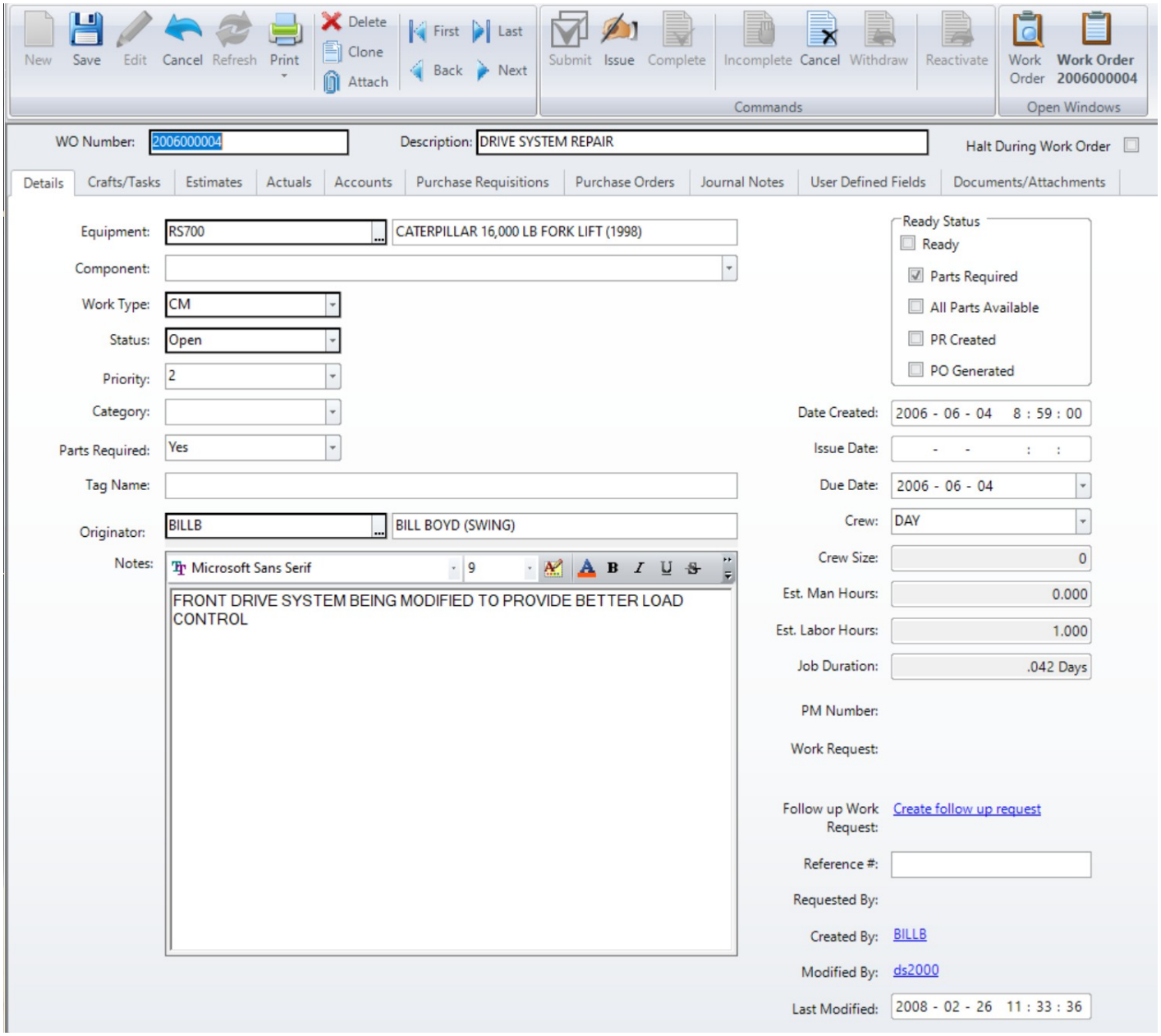
The display of the mobile app of course will not look like the desktop app, but will be as your company’s expertise determines is the best way to display the data on a mobile device.

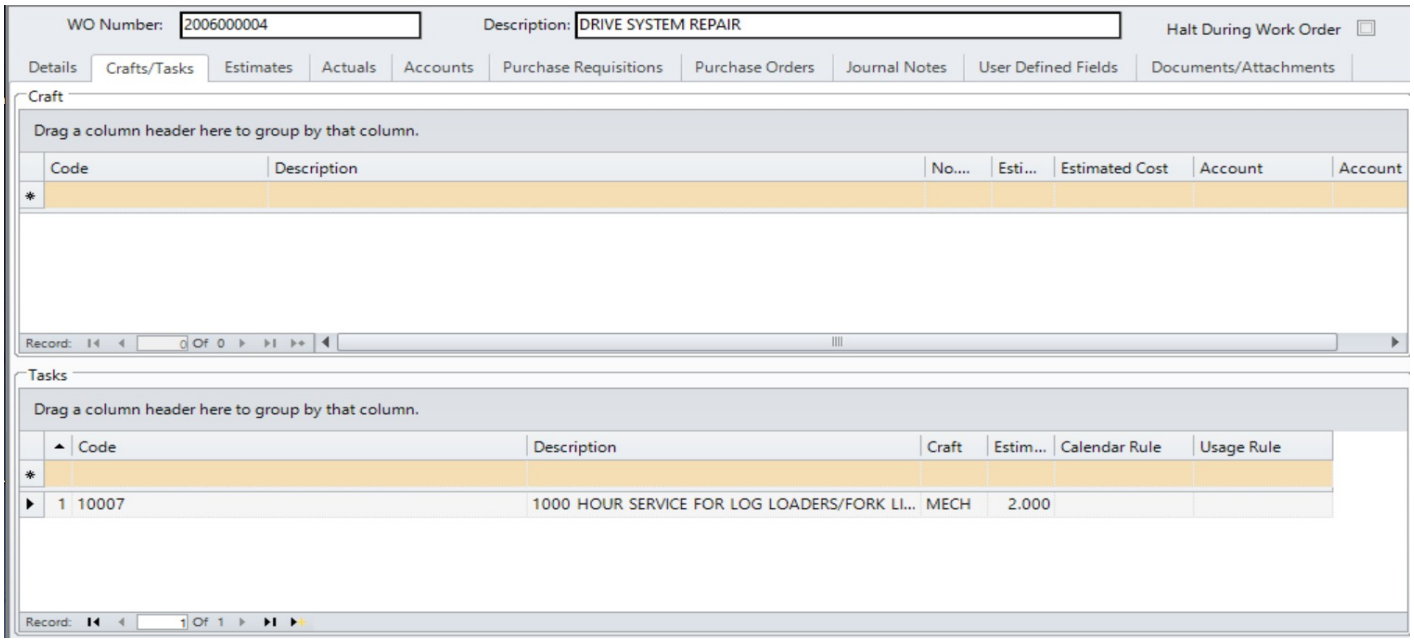
Work Orders

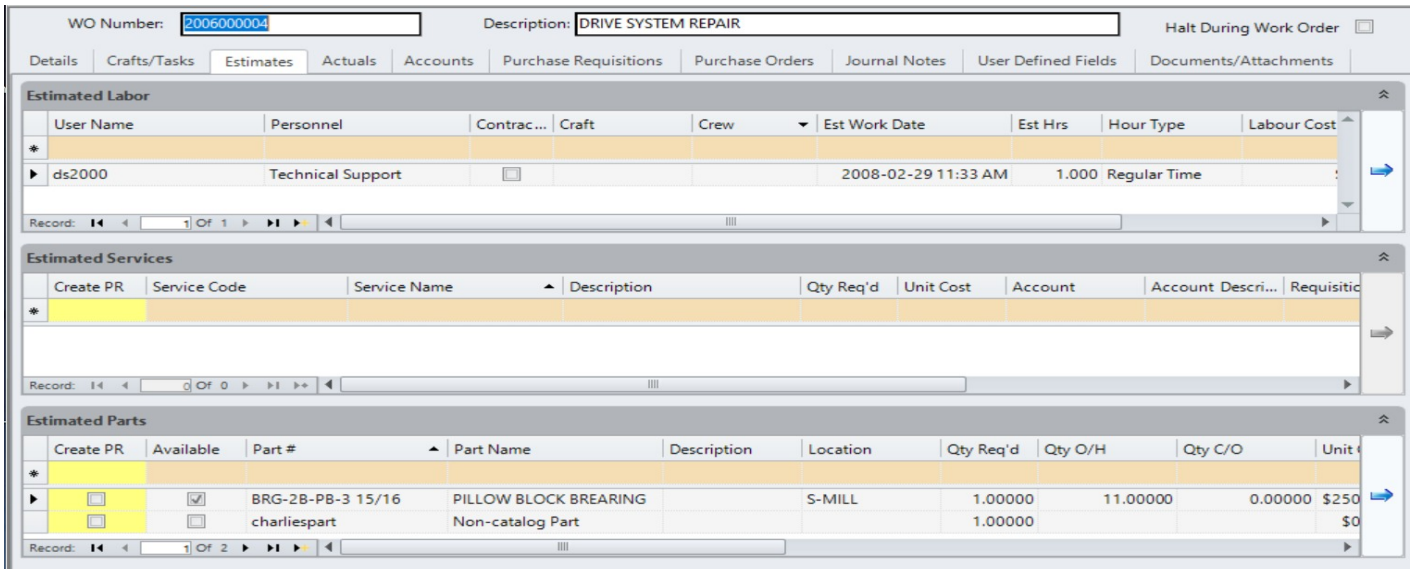
Work orders are jobs in the system that will be assigned to users and/or crafts (trades) and be worked on, details recorded and then closed out and become part of the work history in the database. Below is an example of the data on a Work Order in the system.

The mobile app WILL NOT SHOW Information from the Purchase Requisitions Tab or the Purchase Orders Tab.

The display of the mobile app of course will not look like the desktop app, but will be as your company's expertise determines is the best way to display the data.




WO Number: 2006000004
Description: DRIVE SYSTEM REPAIR
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
Craft
Drag a column header here to group by that column.
Code
Description
No....
Esti...
Estimated Cost
Account
Account
Record: 0 Of 0
Tasks
Drag a column header here to group by that column.
Code
Description
Craft
Estim...
Calendar Rule
Usage Rule
1 10007
1000 HOUR SERVICE FOR LOG LOADERS/FORK LI...
MECH
2.000
Record: 1 Of 1


WO Number: 2006000004
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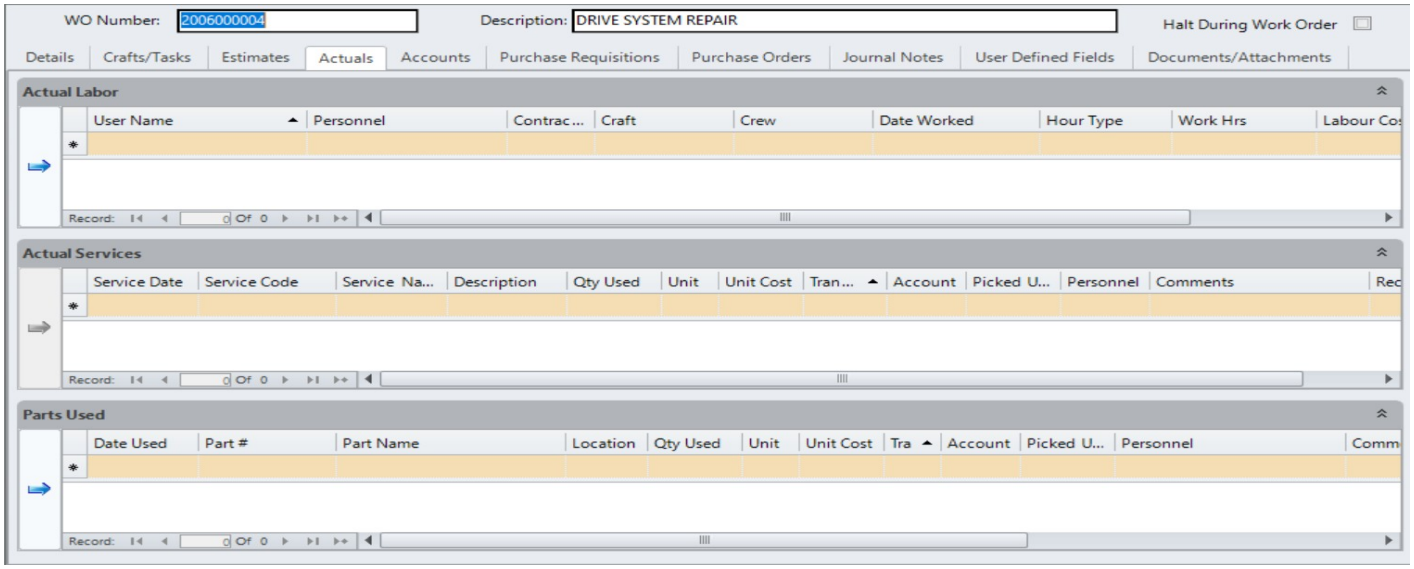
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
Estimated Labor
User Name
Personnel
Contrac...
Craft
Crew
Est Work Date
Est Hrs
Hour Type
Labour Cost
ds2000
Technical Support
2008-02-29 11:33 AM
1.000
Regular Time
Record: 1 Of 1
Estimated Services
Create PR
Service Code
Service Name
Description
Qty Req'd
Unit Cost
Account
Account Descri...
Requisitic
Record: 0 Of 0
Estimated Parts
Create PR
Available
Part #
Part Name
Description
Location
Qty Req'd
Qty O/H
Qty C/O
Unit
BRG-2B-PB-3 15/16
PILLOW BLOCK BREARING
S-MILL
1.00000
11.00000
0.00000
$250
charliespart
Non-catalog Part
1.00000
$0
Record: 1 Of 2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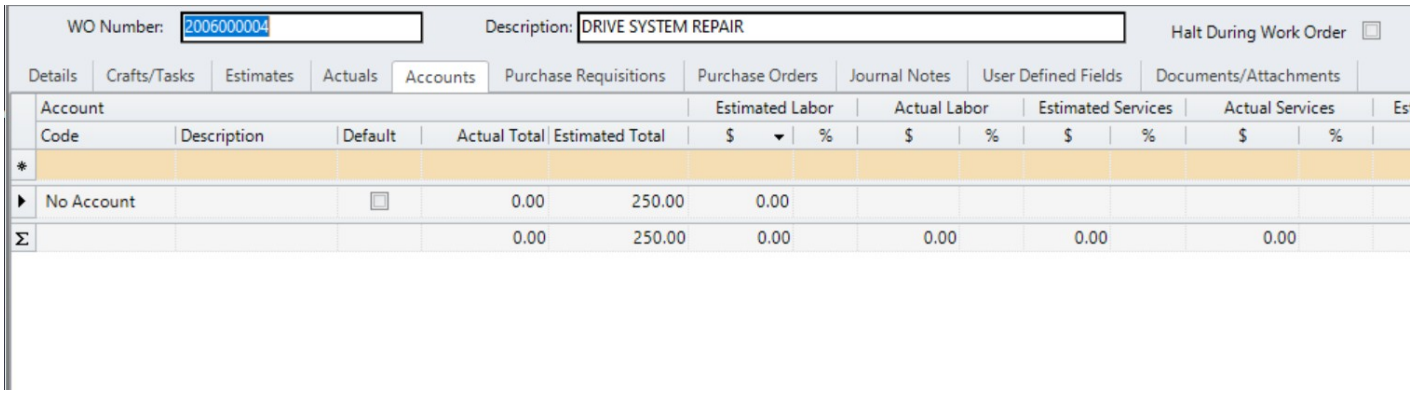
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
Actual Labor
User Name
Personnel
Contrac...
Craft
Crew
Date Worked
Hour Type
Work Hrs
Labour Co
Record: 0 Of 0
Actual Services
Service Date
Service Code
Service Na...
Description
Qty Used
Unit
Unit Cost
Tran...
Account
Picked U...
Personnel
Comments
Rec
Record: 0 Of 0
Parts Used
Date Used
Part #
Part Name
Location
Qty Used
Unit
Unit Cost
Tra
Account
Picked U...
Personnel
Comm
Record: 0 Of 0


WO Number: 2006000004
Description: DRIVE SYSTEM REPAIR
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
Account
Code
Description
Default
Actual Total
Estimated Total
Estimated Labor
Actual Labor
Estimated Services
Actual Services
$
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0.00
0.00
0.00
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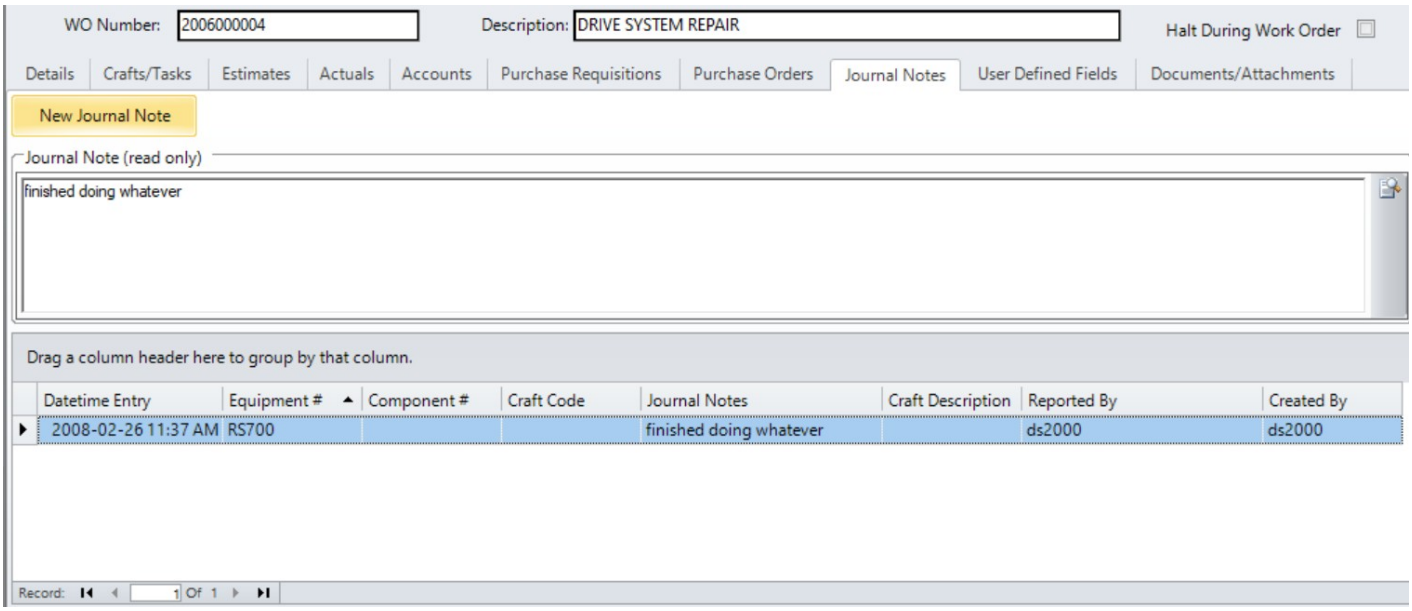
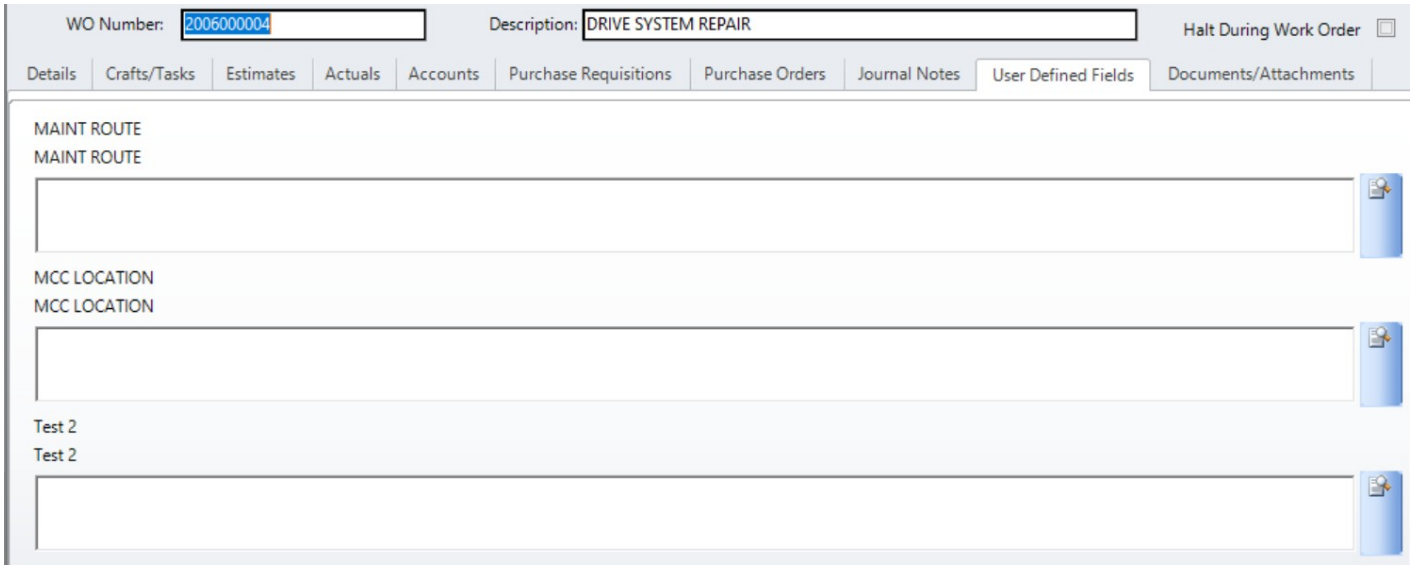
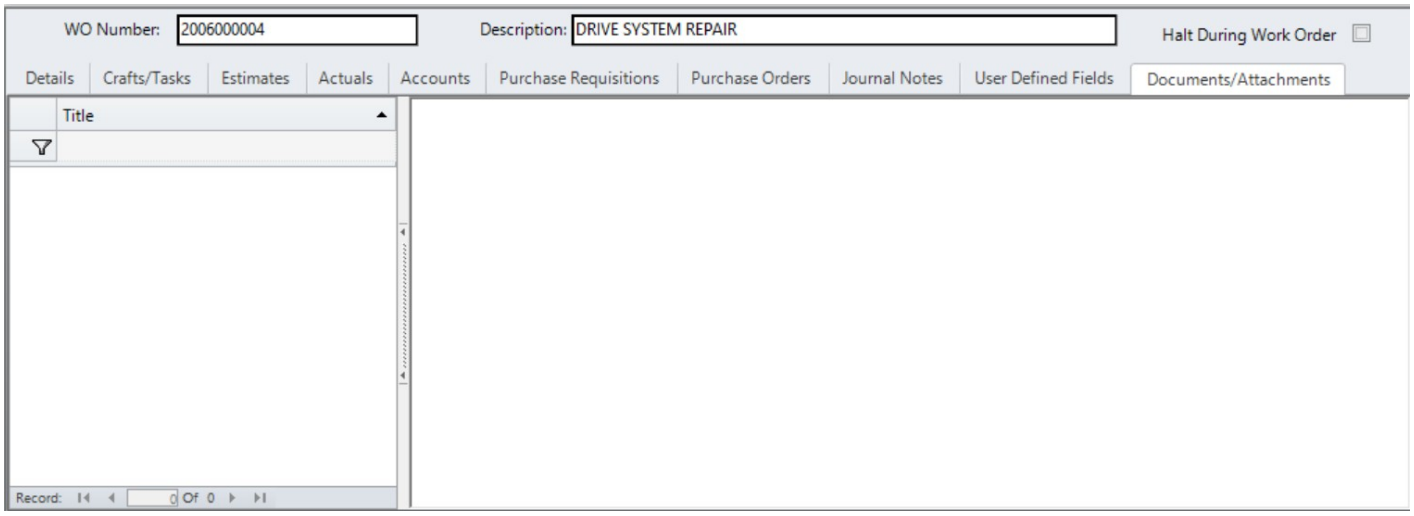
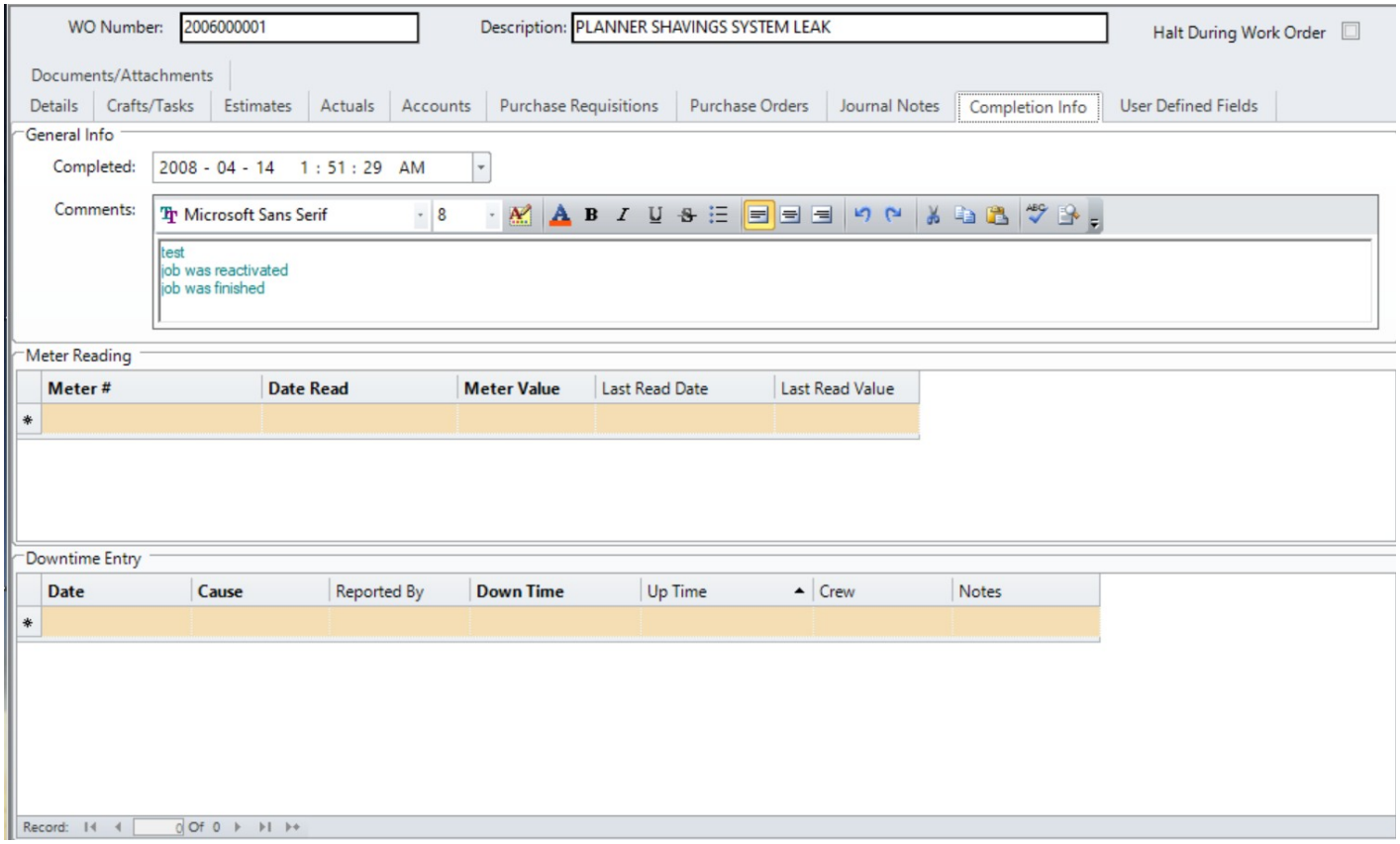
0.00


WO Number: 2006000004
Description: DRIVE SYSTEM REPAIR
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
New Journal Note
Journal Note (read only)
finished doing whatever
Drag a column header here to group by that column.
Datetime Entry
Equipment #
Component #
Craft Code
Journal Notes
Craft Description
Reported By
Created By
2008-02-26 11:37 AM
RS700
finished doing whatever
ds2000
ds2000
Record:
1
Of 1


WO Number: 2006000004
Description: DRIVE SYSTEM REPAIR
Halt During Work Order
Details
Crafts/Tasks
Estimates
Actuals
Accounts
Purchase Requisitions
Purchase Orders
Journal Notes
User Defined Fields
Documents/Attachments
MAINT ROUTE
MAINT ROUTE
MCC LOCATION
MCC LOCATION
Test 2
Test 2





The app will have a way to do the following:

1. Create a New Record and EDIT an Existing Record
   - **(a)** Fill in the information on the Details tab
   - **(b)** A way to ADD Estimated Craft information
   - **(c)** A way to ADD Estimated Part Information
   - **(d)** A way to ADD Task Information and see the Task Instructions
   - **(e)** A way to ADD Account Information
   - **(f)** A way to select Estimated Part(s) and generate a Purchase Requisition
   - **(g)** A way to select Estimated Part(s) and add them to the Actuals Information (recording the part as used)
   - **(h)** A way to add a non estimated part to the Actuals Information (recording the part as used)
   - **(i)** A Button To Start a work timer and to stop the timer, and add a note, and indicate if job is complete and if a follow up work request is required
     - This will record the current users time working on the work order and allow the user to enter a note about the job they have just done all in one simple step

(j) A way to fill in any User Defined Field data (if they exist)
(k) A way to add one or more picture/document/website urls
(l) A way to SAVE the information
(m) A way to EDIT the information after it has been saved.

2. A way to CANCEL an Open job(s)
- changes the status of one or more work orders (that do not have an issue date) to “cancelled”
- job is considered closed and not editable

3. A way to ISSUE the job(s)
- changes the status of one or more work orders to “issued”
- allows user to pick an issued date

4. A way to WITHDRAW the job
- changes the status back to OPEN of the work order selected
- removes the issued date

5. A way to CLOSE an Issued job(s)
A user can close a job(s) by marking the job “Complete” or “Incomplete”
- When a job is being closed the app needs to have a way to:
- allow User to set the date the job was closed
- Enter closing notes (optional)
- Enter a Downtime information (optional)
- Enter a Meter Reading (optional)

When a job is closed the record is considered history and is not editable but needs to still be viewable.

6. A way to REACTIVATE a closed job
- Change the Status to Issued and allow the user to edit the information

7. A way to GENERATE a follow up Work Request to the Work Order (see page 14)

8. A way to select muliple Work Orders and TAG them
- opens a text input dialogue up to 100 characters and places the same text on all the selected records in the Tag Name field of those records

10. A way to select muliple Work Orders and change the Due Date (on work orders not closed)
- opens a calendar dialogue a user can choose a calendar date and then change the due date on all the selected work orders to the date picked

11. A way to select muliple Work Orders and change the Crew Code (on work orders not closed)
- opens a dialogue a user can choose a crew code and then change the crew code on all the selected work orders to the crew code picked

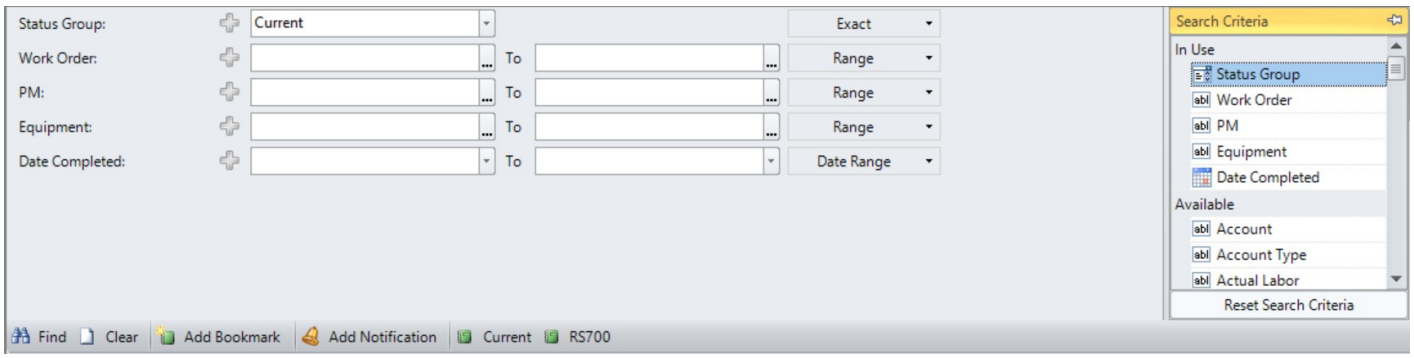
12. A way to select muliple Work Orders and change the Priority Code (on work orders not closed)
- opens a dialogue a user can choose a priority code and then change the priority code on all the selected work orders to the priority code picked

13. A way to CLONE the work order into a new another work order job
- create a copy of the work order with a different work order number
- newly created work order will have work order status of “open”, due date NULL, issue date NULL
- newly created work order will have the details tab, crafts/task tab, and estimates tab data on it as well the user defined data on it and the same documents/attachments tab data

The following fields on the main “Details” tab: Ready Status grouping of fields, Crew size, Est Man Hours, Est Labour Hours, Job Duration, PM Number, Work Request Number, Requested By, Created By, Modified By, Last Modified, Date Created and Ready Status items are all calculated fields, based on the data in that record, not editable by a user.

Searching for Work Requests and Work Orders

Both the Work Request and Work Order Managers have many search fields that can be used for searching on data. The fields that can be used and are used by a user are stored in the user's preferences in the database. An example of an application search screen is shown below.



The App needs to be able to allow a user to choose which field(s) to use for searching and remember which fields they are using for searching the next time they want to perform a search that is not preset by the APP Menu.

The existing desktop application allows creating a bookmark for a user (a bookmark remembers the search criteria used and creates a button for the user just to press to perform that search again another time). The app needs to have some similar functionality, so a user can easily do the same search over and over again when they want to, instead of having to re-enter their search criteria each time.

Example of a Follow-up Work Request

On a work order in the desktop application a user clicks "Create Follow-up Work Request" and then some of the information from the work order is used to automatically insert a new Work Request into the system (only the Details tab is filled out) . The work order gets a link to the Work Request that a user can click on to be taken to the auto generated request and then edit with additional information as necessary and the work request gets a link back to the work order it was generated from.