Rapid Field Classification Booklet

Based on booklet version GTA 05-07-013

High Fidelity Prototype release: MAY 2016

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**General Notes:**

Instead of consolidating both stringer bridges, separate Timber Stringer and Steel Stringer bridge types were created. This allowed for easier structural organization of the calculation steps and inputs.

Some functions, including table lookups, are repeated throughout several activities. Though this redundancy requires marginally more space for the application, it actually saves memory during run-time since it decreases live activity count and minimizes thread use. In terms of overall utility, increasing performance is favorable to decreasing the insignificant space requirements.

This prototype was designed to feature a fully functional and usable interface. Further work should be completed on polishing the interface.

Table functions likely have errors due to manual inputting of programmatic values.  
Though checked for accuracy, the presence of errors is still a large possibility due to the sheer number of tabular values.

**Naming Conventions:**

Activities are all named by bridge and preceded by Bridge#

Bridge1 corresponds to Timber Stringer bridge w/ Timber Deck

Bridge2 corresponds to Steel Stringer bridge w/ Timber Deck

Bridge3 corresponds to Steel Stringer bridge w/ Concrete Deck

Bridge4 corresponds to Reinforced Concrete T-Beam w/ Asphalt Wearing Surface

Bridge5 corresponds to Reinforced Concrete Slab bridge w/ Asphalt Wearing Surface

Bridge6 corresponds to Masonry Arch Bridge

Values utilized in calculations are preceded by “val\_”   
*These names correspond to the formulaic variable names used in the booklet*  
*For example, Span Length is denoted by L in the booklet and val\_L in the java code*

T1, T2, W1, W2 retain their names as “t1,” “t2,” “w1,” and “w2”

XML objects referred to in java code are followed by their object type  
 *For example, the EditText for Span Length is named “spanLengthEditText”  
 Spinners are named as DropDown such as “stringerTypeDropDown”*

Other variables are named intuitively or are commented to clarify their contents

**Functions:**

*OnCreate:*

Variables are assigned for referenced XML objects  
 XML objects are loaded with their contents, assigned adapters, assigned (re)actions  
 Also sets values when applicable

*OnCreateOptionsMenu:*

Unused\*

*getValues:*

Retrieves values currently selected or inputted in interface fields  
 Throws error with Toast notification if any value is invalid

*Classify:*

Performs calculation steps, loads values for propagation into next activity, and then starts the next activity

Throws error with Toast notification if any values is invalid

**Calculation Steps:**

In order to organize the code into a sequential, orderly structure, calculation steps in the code follow the booklet calculation steps exactly.  
 Comments indicate where each calculation step begins.  
 Comments also clarify areas where code may be unclear.

**Table Lookups:**

Table lookups are performed via functions during the calculation steps  
For example, lookups into table2 for rectangular stringers is called by “rectangularTable2()”  
Table functions are defined at the very bottom of each activity’s java code  
Table functions do not have parameters or return values; they utilize global variables  
Comments explain how lookup values are stored and accessed

**Activity Progression:**

Activity progression is commented in the Classify function before the startActivity call  
Bridges only start activities of their bridge type   
For example, Bridge1 will only lead to Bridge1 activities