How to Build a Data Dictionary (DD) – Construction

Existing Tables

1. A list of required tests should be sent / given from the project PDT
2. Create an empty Excel spreadsheet and name it based on the project.
3. Choose a test and check if it can be found in one of the data dictionaries currently in use by SAJ for Dam / Levee Construction.
    a. If the test selected is within an existing data dictionary, copy it into the new one you are trying to create.
        i. Include with the copy any sub tables or associated domains.
    b. If the test selected isn't found in an existing data dictionary, you will need to build out a new table design. **(see New Testing Tables)**
4. Repeat Step 3 until all tables have been added to the data dictionary.

New Testing Tables

1. Request the testing standard document from the PDT or find it yourself on IHS Workbench. (User / Pass Required).
2. Create an empty tab within the Excel for your new table.
3. Format the tab like the existing testing tabs.
4. Name the test table meaningful enough that the user can easily discern what test is being modeled.
    a. E.g. **ASTM C29 Standard Test Method for Bulk Density Determination of Voids in Aggregate → C29_AGG_BULK_DEN**
    b. There can be no spaces in the name (use _ to replace spaces)
    c. Make names all capitalized.
5. Within the PDF scroll down to the 'Report' section to see the basic data requirements for the report.
    a. Ask questions if you are not sure what to add to the table based on these requirements.
6. The following columns must be added to the beginning to every table:

Model Name	Data Type	Domain	Required	Nullable	Definition
id	number(38,0)		yes	no	The primary key of the table.
parentId	number(38,0)		yes	no	Foreign key to the [Parent Table] table.
testId	varchar2(50)		yes	no	The test or sample id/name, if applicable.
refTestd	varchar2(50)		yes	yes	The original test Id for the retest.
qaqc	number(1,0)		yes	yes	Is the test being run as qc or qa? (0=qa, 1=qc)
passFail	number(1,0)		yes	yes	Did the test pass or fail. (0=Pass, 1=Fail)
retest	number(1,0)		yes	yes	Is this a retest? (0=No, 1=Yes)

7. The following columns must be added to the end of every table:

Model Name	Data Type	Domain	Required	Nullable	Definition
tester	varchar2(255)		yes	yes	The name of the person who conducted the test.
dateTimeTest	timestamp		yes	yes	The date and time of the test.
comments	varchar2(2000)		yes	yes	Any comments about the work for the record.
dateAppended	date		yes	yes	Utility field indicating the date that the row was appended to the table.
dateModified	date		yes	yes	Utility field indicating the date that the row was modified in the table.
author	varchar2(255)		yes	yes	Utility field indicating the name of the person that added or modified the row in the table.
qcVerifier	varchar2(255)		yes	yes	Utility field indicating the name of the person who QC'd the data in the row.
qcDate	date		yes	yes	Utility field indicating the date that the data in the row was reviewed by the QC person.
qaVerifier	varchar2(255)		yes	yes	Utility field indicating the name of the person who QA'd the data in the row.
qDate	varchar2(255)		yes	yes	Utility field indicating the date that the data in the row was reviewed by the QA person.

8. Remember to use the following data types:
    a. For more info on data types, go to https://www.w3resource.com/oracle/oracle-data-types.php

Data Type	When to use
number(38,5)	decimal
number(38,0)	integer
number(1,0)	yes/no, true/false, etc
varchar2(n)	string (where n is the number of characters in the string)
timestamp	need both date and time
date	only need a date