1. Create adapter libraries
   1. Core features:
      1. Documentation
      2. Basic helpful enums & data types (help with documentation and parameter consolidation & reuse)
      3. Throw exceptions rather than return error codes.
         1. If possible, exceptions have descriptions of the problem.
      4. Simplified initialization with application
      5. Basic error avoidance/handling
   2. SAP2000 (v19 only for now)
      1. Codes
         1. ~~Aluminum~~
            1. **~~AA ASD 2000~~**
            2. **~~AA LRFD 2000~~**
         2. ~~ColdFormed~~
            1. **~~AISI ASD96~~**
            2. **~~AISI LRFD96~~**
         3. ~~Steel~~
            1. ~~AISC 360-05 IBC 2006~~
            2. ~~AISC 360-10~~
            3. ~~AISC ASD89~~
            4. ~~AISC LRFD93~~
            5. **~~API RP2A LRFD97~~**
            6. **~~API RP2AWSD2000~~**
            7. **~~API RP2AWSD2014~~**
            8. ~~AS 4100-1998~~
            9. **~~ASCE 10-97~~**
            10. ~~BS5950 2000~~
            11. **Chinese 2002**
            12. ~~Chinese 2010~~
            13. ~~CSA S16-09~~
            14. ~~Eurocode 3-2005~~
            15. ~~Indian IS 800-2007~~
            16. **Italian NTC 2008**
            17. **~~Norsok N-004~~**
            18. **~~Norsok N-004 2013~~**
            19. ~~NSZ 3404-1997~~
         4. ~~Concrete~~
            1. **~~AASHTO 07~~**
            2. **~~AASHTO LRFD 2012~~**
            3. **~~AASHTO LRFD 2014~~**
            4. ~~ACI 318-08/IBC 2009~~
            5. **ACI 318-11**
            6. **~~AS 3600-09~~**
            7. **~~BS8110 97~~**
            8. **Chinese 2002**
            9. ~~Chinese 2010~~
            10. ~~CSA A23304~~
            11. ~~Eurocode 2-2004~~
            12. ~~Hong Kong CP 2013~~
            13. ~~Indian IS 456 2000~~
            14. **Italian NTC 2008**
            15. **~~KCI 1999~~**
            16. **Mexican RCDF 2004**
            17. **NZS 3101-2006**
            18. **~~Singapore CP 6599~~**
            19. ~~TS 500-2000~~
      2. Response Spectrum Codes
         1. Add helper function to limit dampingRatio values.
         2. Add check for parameters in SetSP14133302014
      3. Auto Seismic Codes (none in ETABS except 1)
         1. None
         2. UserLoad
         3. UserLoadValue
         4. UserCoefficient
         5. DiaphragmEccentricity
         6. IBC 2003
         7. IBC 2006 (ETABS only)
         8. IBC 2006
         9. IBC 2009
         10. UBC94
         11. UBC97
         12. Eurocode82004
         13. ...
      4. Auto Wind Codes (none in ETABS)
         1. None
         2. UserLoad
         3. Exposure
         4. ASCE702
         5. ASCE705
         6. UBC94
         7. UBC97
         8. Eurocode12005
         9. ...
      5. Auto Wave Codes
         1. None
         2. Auto
   3. ~~Add CSiBridge (v19 only for now)~~
   4. Add ETABS (v2016 only for now)
      1. Going through API documentation, add in methods to these new classes
         1. DesignDetailing
         2. Definition.Abstraction.Diaphragm
         3. Definition.Abstraction.PierLabel
         4. Definition.Abstraction.SpandrelLabel
         5. Definition.Abstraction.Story
         6. Definition.Abstraction.Tower
         7. Property.AreaSpring
         8. Property.LineSpring
         9. Property.PointSpring
      2. Going through API documentation, add in absent methods for existing classes
         1. Program
            1. File

NewBlank

NewGridOnly

NewSteelDeck

* + - 1. SAPModel
         1. TreeIsUpdateSuspended
         2. TreeResumeUpdateData
         3. TreeSuspendUpdateData
  1. Connect into program:
     1. Helper
     2. PluginCallback
     3. All Abstraction
     4. PointSpring
     5. LineSpring
     6. AreaSpring
     7. DesignCompositeBeam
     8. DesignDetailing
  2. Later improvements:
     1. Remove all unused "using" statements.
     2. Extract interfaces for all methods.
        1. Completed:
           1. Core

Program

ModelBehavior

Definition

Abstraction

Design

* + 1. Replace all of:
       1. {enumA} = CSiEnumConverter.FromCSi({csiEnumA});
       2. with
       3. {enumA}= EnumLibrary.Convert({csiEnumA}, {enumA});
       4. or similar for .ToCsi methods
       5. Remove CSiEnumConverter after

1. Internalize "int numberOfItems/Operations, etc." based on passed array length in Get/Set methods.
2. Consider moving BatchFile.cs to a separate project and include as a library.
3. Update documentation for "See Also" for exceptions and interfaces.
4. Add <para /> tags to all line breaks in all files.
5. Helper - Finish documentation of:
   * + 1. CreateObjectProgID
       2. GetObject
   1. Later error checking:
      1. Comment out current extra thrown exceptions for integration testing. Re-implement through testing.
      2. Check that all arrays passed in to 'set' functions are of the same length.
      3. Check behavior of "results in an error" cases in unit testing where it can be done within the method. Implement new thrown exceptions through this process. Note error checks that are multi-method to be handled in OOP wrapper.
6. Create wrapper library (mostly inherited from adapter)
   1. Core features
      1. Parameter objects
      2. Better consolidation into objects w/ state
      3. Better error handling?
      4. Add new functions as needed for simplified actions that require multiple function calls to API.
   2. SAP2000
   3. CSiBridge
   4. ETABS
7. Create tests for adapter library
8. Create tests for wrapper library (mostly inherited from adapter)