



MDT SS4/OPENROADS OVERVIEW

JUNE 25, 2018



TOPICS

- SHEET FILE CHANGES
- FILE STRUCTURE
 - EXISTING DESIGN FILES
 - PROPOSED DESIGN FILES
- FILE REFERENCING
 - SURVEY
 - ROAD DESIGN STRIP MAP
 - 3D MODELING
- PLANS PRODUCTION
 - PLAN/PROFILE SHEETS
 - WORKING CROSS SECTION FILES
- EXAMPLE PROJECT

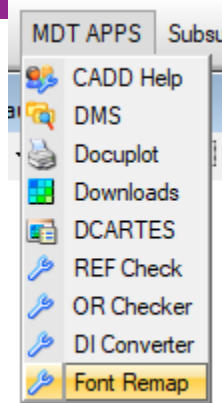
SHEET FILE CHANGES

- TRUE TYPE FONT

- MACRO

- TITLE BLOCK

- CSF REMOVED
- DATA FIELDS REPLACED WITH TEXT
- SHEET LABELING MACRO UPDATED
 - TITLE SHEET STILL USES DATA FIELDS
- DESIGNER BLOCK MACRO STILL USES DATA FIELDS



- CONTROL DIAGRAM/TRVERSE

- CSF(S) SHOWN ONLY HERE

- TITLE SHEET ARROW

- NOW AN EDITABLE LEADER



FILE STRUCTURE – EXISTING DESIGN FILES

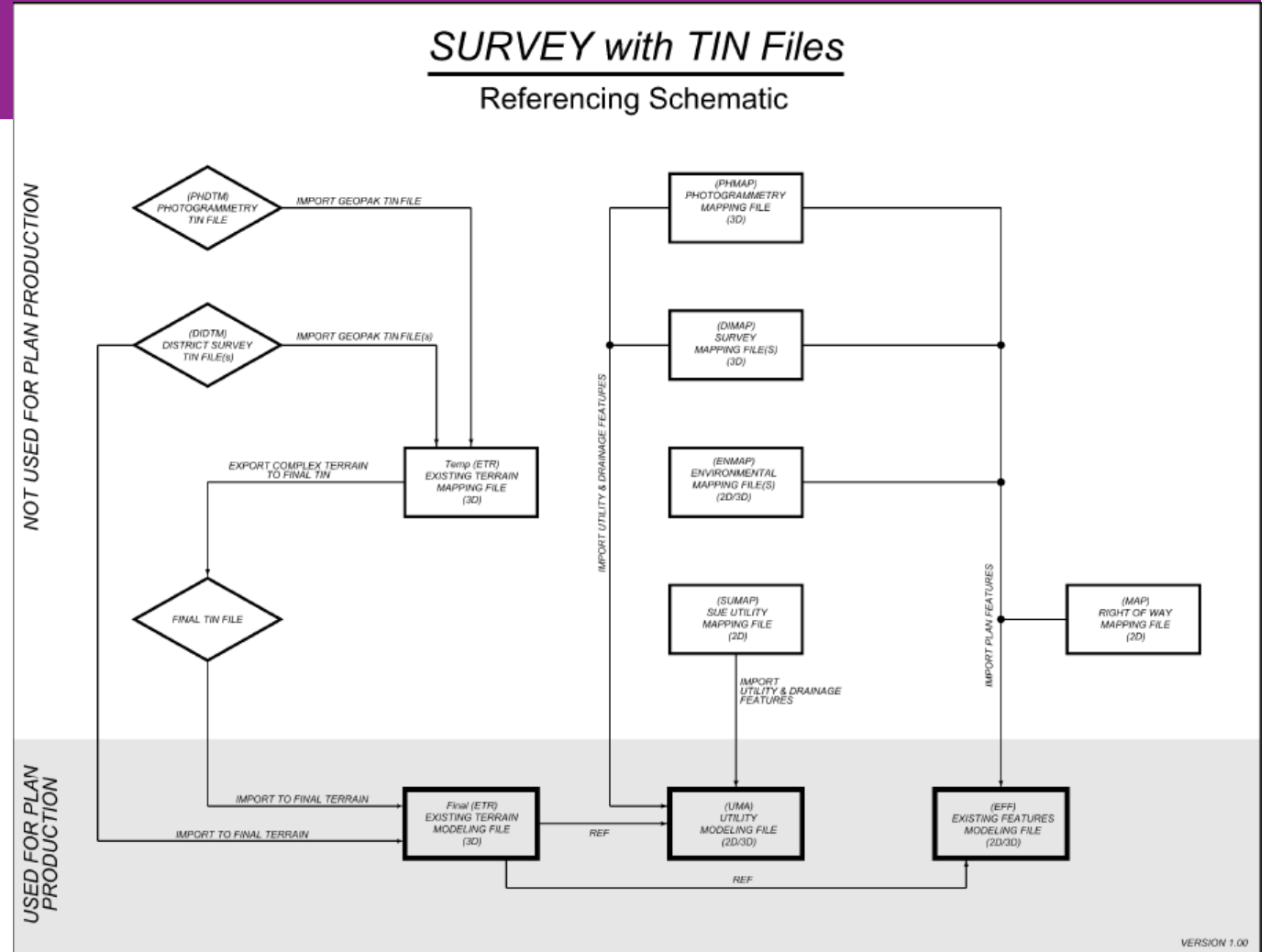
- **EXISTING TERRAIN MODEL (RDETR)**
 - IMPORTED SURVEY .TIN FILE(S)
- **EXISTING FEATURES FILES (RDEFF)**
 - SURVEY/PHOTOGRAMMETRY LINEWORK
 - SAVED AS A ROAD DESIGN FILE
- **UTILITIES MAPPING (RDUMA)**
 - ALL EXISTING UTILITIES THAT HAVE BEEN ACCURATELY AND MODELED LOCATED IN 3D
 - WATER/STORM/SAN/CULVERT

FILE STRUCTURE – PROPOSED DESIGN FILES

- **HORIZONTAL ALIGNMENT/VERTICAL PROFILE (RDALN)**
 - ALL CIVIL ALIGNMENTS AND ASSOCIATED PROFILES
 - PROFILES ARE DYNAMIC ONLY
- **CORRIDOR(S) (RDCRR)**
 - 3-DIMENSIONAL MODELS
- **SUPERELEVATION (RDSUP)**
 - CALCULATED SUPERELEVATIONS
- **PROPOSED TERRAIN MODEL (RDPTR)**
 - PROPOSED SURFACE BASED ON BREAK LINES FROM THE CORRIDOR FILE(S)
- **UTILITIES MAPPING (RDUMA)**
 - ALL PROPOSED UTILITIES THAT CAN BE ACCURATELY MODELED IN 3D
 - WATER/STORM/SAN/CULVERT

FILE REFERENCING: SURVEY

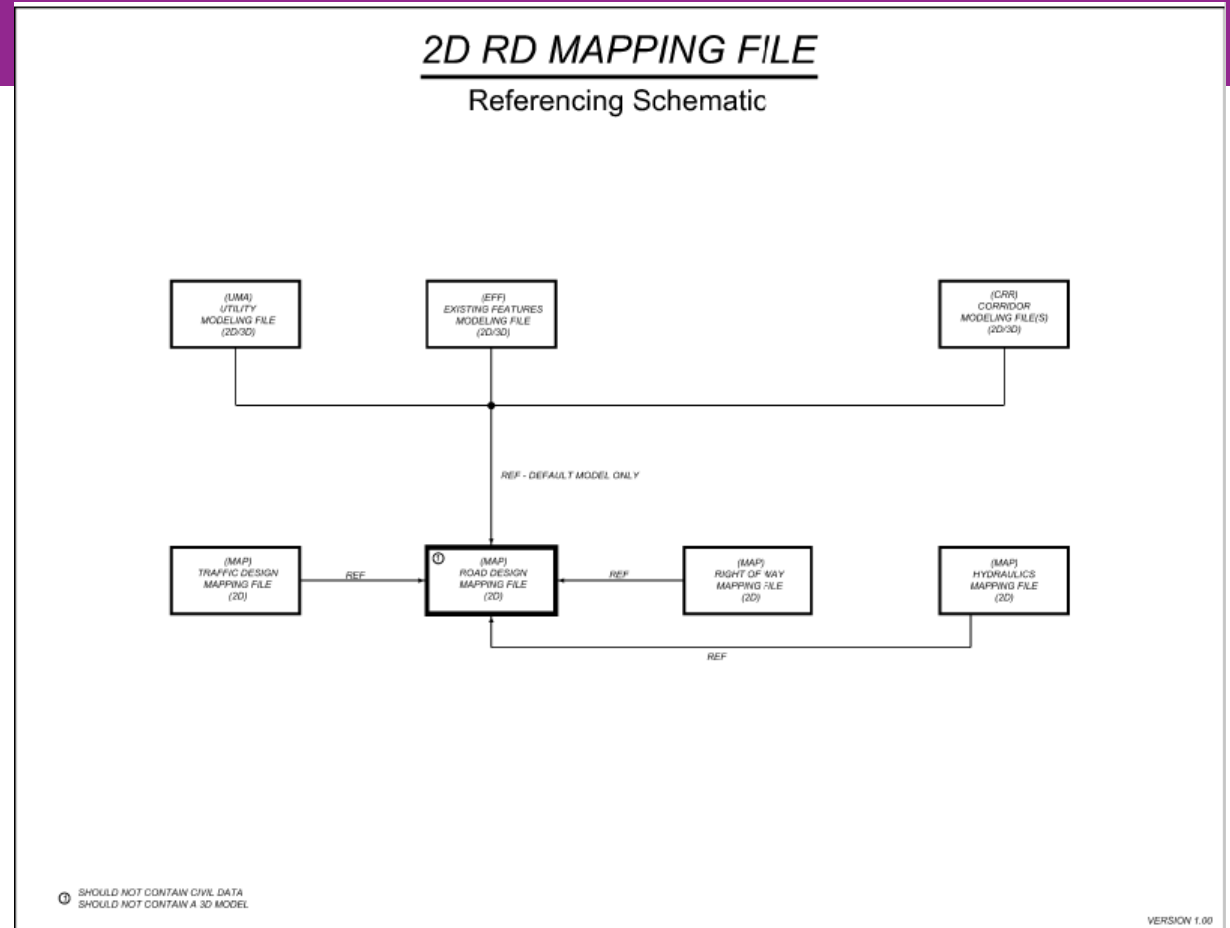
- RDETR (Existing Terrain Model) – N/A
- RDEFF (Existing Features File) – MERGE
 - Photogrammetry (PH)
 - Survey (DI)
 - Environment (EN)
 - Utility (SU)
- RDUMA (Utilities Mapping File)
 - Utility (SU)



FILE REFERENCING: ROAD DESIGN STRIP MAP

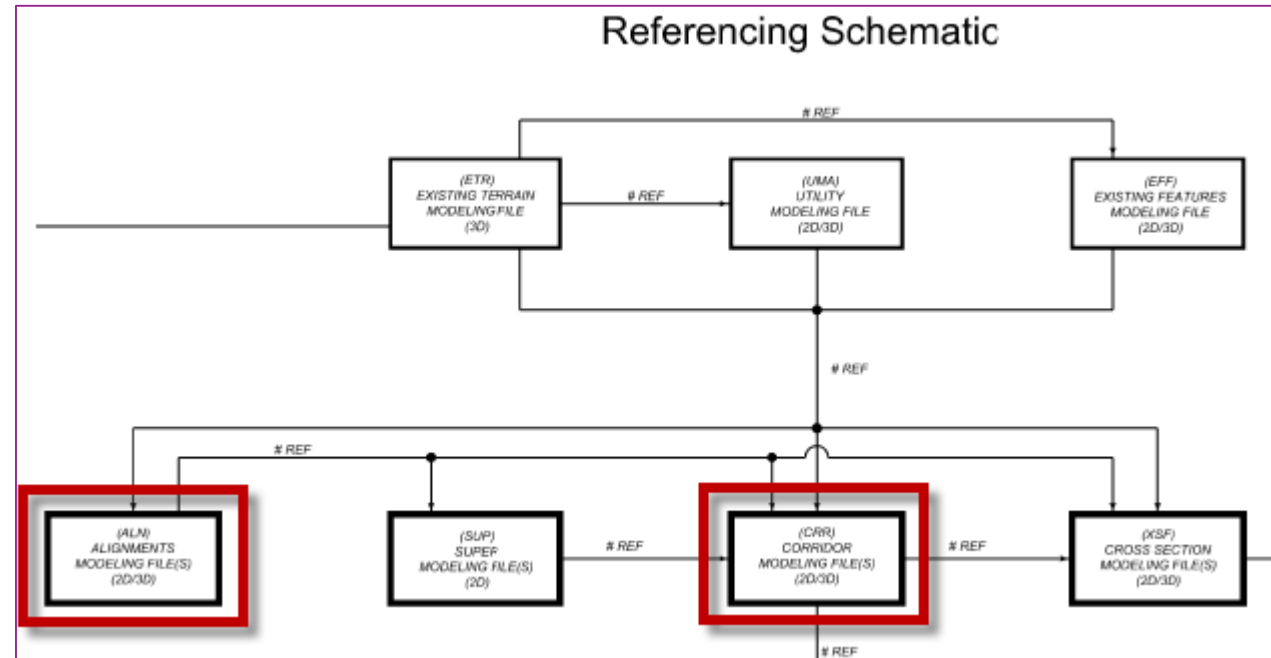
FOR STRIP MAP ANNOTATION ONLY

- **RDMAP (Road Design Strip Map)**
 - **RDEFF (Existing Features File)**
 - **RDUMA (Utilities Modeling File)**
 - **RDCRR (Corridor Modeling File(s))**
 - **GEMAP (Traffic Strip Map File)**
 - **ROMAP (Right-of-Way Strip Map File)**
 - **HYMAP (Hydraulics Map File)**



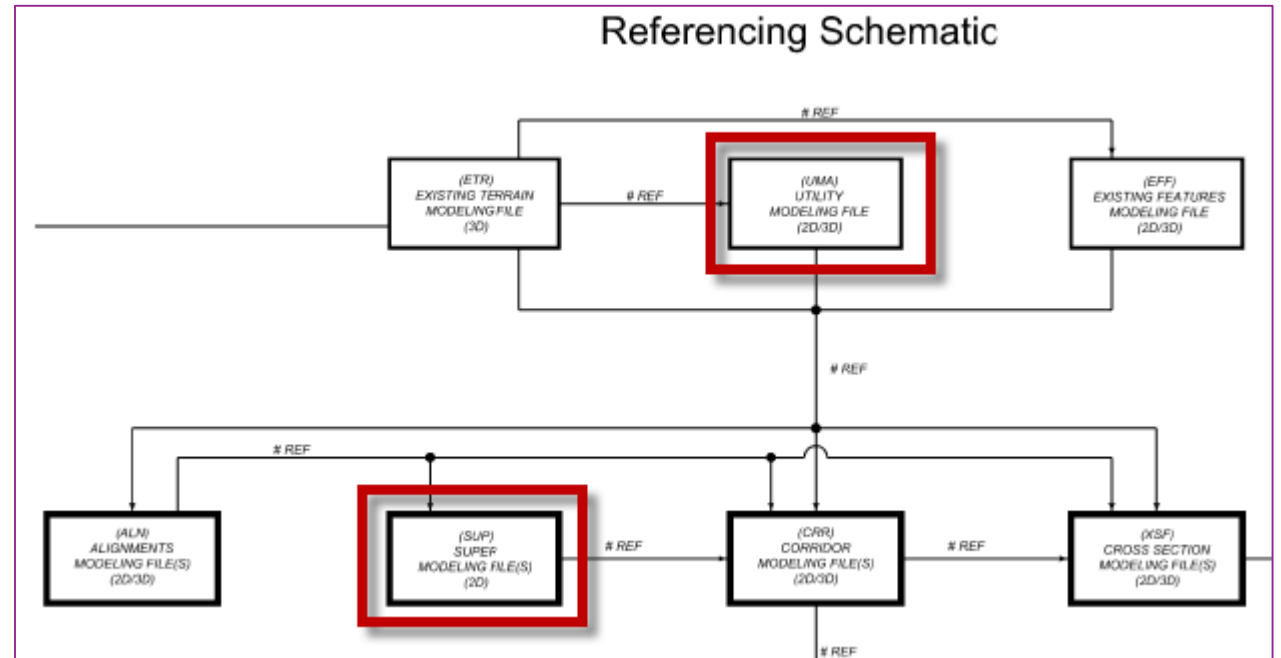
FILE REFERENCING: 3D MODELING

- **RDALN (Alignment File)**
 - RDETR (Existing Terrain Model File)
 - RDEFF (Existing Features File)
 - RDUMA (Utilities Modeling File)
- **RDCRR (Corridor Modeling File(s))**
 - RDETR (Existing Terrain Model File)
 - RDEFF (Existing Features File)
 - RDUMA (Utilities Modeling File)
 - RDALN (Alignment File)
 - RDSUP (Superelevation File)

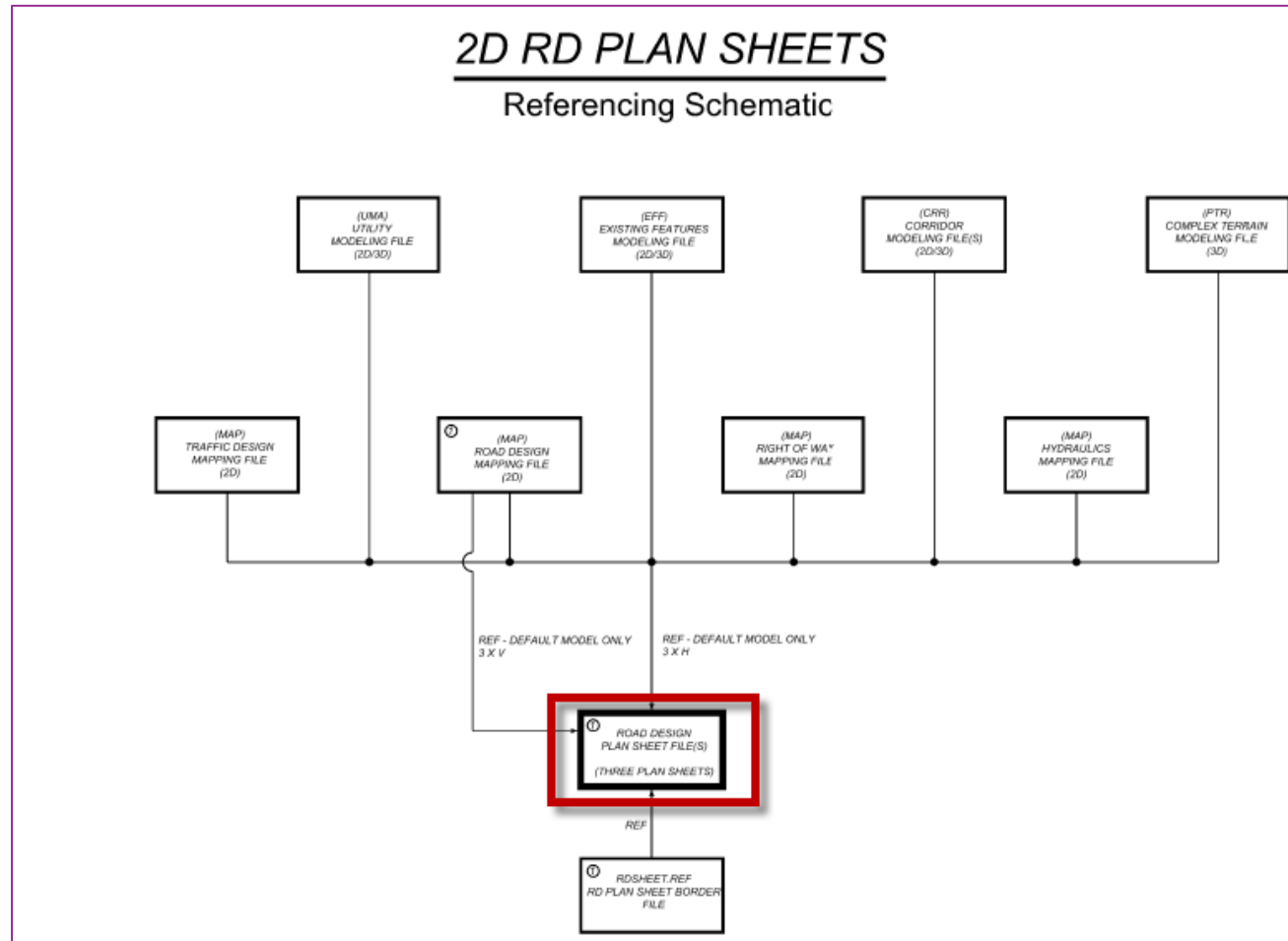


FILE REFERENCING: 3D MODELING

- **RDSUP (Superelevation File)**
 - **RDALN (Alignment File)**
- **RDUMA (Utilities Modeling File)**
 - **RDETR (Existing Terrain Model File)**



PLANS PRODUCTION: PLAN/PROFILE REFERENCE FILES



PLANS PRODUCTION: PLAN/PROFILE REFERENCE FILES

- **RDMAP**

- VISUALIZATION OF THE HORIZONTAL ALIGNMENT/VERTICAL PROFILE

- **RDCRR - CORRIDOR**

- DESIGN BREAKLINES: EDGE OF PAVEMENT, CONSTRUCTION LIMITS, ETC.

- **RDEFF – EXISTING FEATURES**

- EXISTING BREAKLINES/UTILITIES

- **RDPTR – PROPOSED TERRAIN**

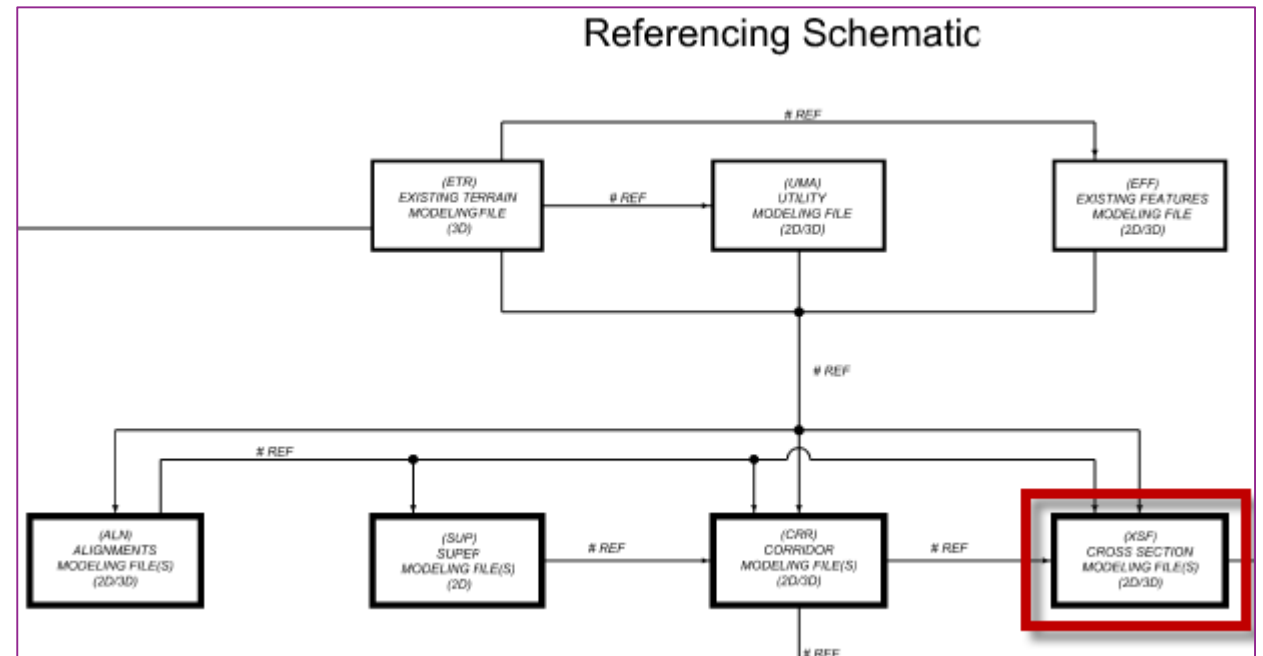
- PROPOSED CONTOURS

- **RDUMA – UTILITIES MODEL**

- WATER/STORM/SAN/CULVERT

PLANS PRODUCTION: WORKING CROSS SECTION REFERENCE FILES

- **RDALN - ALIGNMENT**
 - CORRIDOR ALIGNMENT
- **RDCRR(S) - CORRIDOR**
 - 3 DIMENSIONAL PROPOSED MODELS
- **RDETR – EXISTING TERRAIN MODEL**
 - EXISTING TERRAIN SURFACE
- **RDEFF – EXISTING FEATURES**
 - DRAPED UTILITIES/BARRIER/RIGHT-OF-WAY
- **RDUMA – UTILITIES MODEL**
 - MODELED PIPES



PROJECT WORKFLOW: EXAMPLE PROJECT

I. CREATE ROAD DESIGN FILES

- **RDETR**
- **RDEFF**
- **RDALN**
- **RDSUP**
- **RDCRR**
- **RDXSF**
- **RDMAP**
- **RDPLP**

2. VIEW COPIES OF OTHER DISCIPLINES' WORK FILES

- **BRGEN** – BRIDGE GENERAL LAYOUT
- **DIMAP(S)** – GROUND SURVEY
- **ENSWU** – WETLAND DELINATION
- **GEMAP** – GEOMETRIC STRIP MAP
- **HYMAP** – HYDRAULIC MAP
- **PHMAP** – PHOTOGRAMMETRY SURVEY
- **ROMAP** – RIGHT-OF-WAY STRIP MAP
- SURVEY/PHOTO **.TIN** FILE(S)

PROJECT WORKFLOW: EXAMPLE PROJECT

3. IMPORT .TIN(S) INTO THE **RDETR** FILE.
4. REFERENCE **DIMAP/PHMAP, ENSWU, ROMAP** FILES INTO THE **RDEFF** FILE.
5. MERGE THE **DIMAP** AND ALL BREAKLINES, BOUNDARIES, ETC. FROM THE **ENSWU** AND **ROMAP** INTO THE **RDEFF** FILE.
6. APPLY FEATURE DEFINITIONS TO THE MERGED LINEWORK.
7. REFERENCE THE **RDETR** FILE INTO THE **RDEFF** FILE AND SET THE TERRAIN ACTIVE.
8. CREATE PROFILES FOR ALL ANCILLARY LINEWORK BY DRAPING ON THE EXISTING TERRAIN USING THE PROFILE FROM SURFACE TOOL.

PROJECT WORKFLOW: EXAMPLE PROJECT

9. REFERENCE THE **RDETR** AND **RDEFF** FILES INTO THE **RDALN** FILE. SET EXISTING TERRAIN ACTIVE.
10. CREATE CIVIL HORIZONTAL ALIGNMENT.
11. APPLY STATIONING
12. ROUND BEARINGS AND DISTANCES AS NEEDED.
13. APPLY A HORIZONTAL DESIGN STANDARD.
14. CREATE CIVIL VERTICAL PROFILE. SET ACTIVE.
15. APPLY A VERTICAL DESIGN STANDARD.
16. CREATE GPK. EXPORT ALIGNMENT AND PROPOSED & EXISTING PROFILE.
17. USE THE D&C MANAGER TO VISUALIZE THE ALIGNMENT AND PROFILES IN THE **RDMAP** FILE. (FOR PLANS PRODUCTION)

PROJECT WORKFLOW: EXAMPLE PROJECT

18. REFERENCE THE **RDALN** INTO THE RDSUP FILE. CREATE SUPERELEVATION SHAPES.
19. REFERENCE THE **RDETR**, **RDEFF**, **RDALN**, AND **RDSUP** FILES INTO THE **RDCRR** FILE. SET THE EXISTING TERRAIN ACTIVE.
20. CREATE NEW TEMPLATE LIBRARY IN THE DGN FOLDER USING THE PROJECT NAME. (EX: 8875000RDMDL001.itl)
21. IMPORT TEMPLATES FROM THE PREDEFINED TEMPLATE LIBRARY
22. CREATE CORRIDORS AND APPLY A TEMPLATE.
23. APPLY SUPERELEVATION

PROJECT WORKFLOW: EXAMPLE PROJECT

24. REFERENCE THE **RDALN**, **RDCRR**, **RDEFF**, **RDETR** FILES INTO THE **RDXSF** FILE. SET EXISTING TERRAIN ACTIVE.
25. IN THE DEFAULT 3D MODEL, TURN ON ALL MODELING COMPONENTS THAT NEED TO BE DISPLAYED IN THE CROSS SECTIONS.
26. CREATE .XSC (X-SECTION SETUP FILE).
27. RUN CROSS SECTIONS.
28. LABEL CROSS SECTIONS USING OPENROADS LABELING
29. RUN END AREA VOLUMES.
30. RUN CROSS SECTION AGAIN.
31. LABEL CROSS SECTIONS USING MACRO (.XLP).
32. REFERENCE THE **RDCRR**, **RDEFF**, **RDUMA**, **ROMAP**, **GEMAP**, AND **HYPAP** FILES INTO THE **RDMAP** FILE
33. CREATE PLAN/PROFILE SHEETS USING THE GEOPAK PROCESS.