# ORD Railroad Survey Files – QA/QC Checklist

As outlined in TDOT’s ***Requirements for Model-Centric Design*** document, there are up to five (5) expected deliverables from the Survey phase to Design found in Appendix A. Survey Deliverables Workflow. (Also detailed in the Survey (ORD) Manual Appendix A):

1. **Aerial Survey Data** file (**Aerial Model.dgn** from the **3D seed**) contains the existing graphics imported from the aerial survey. This is only required as a survey deliverable on projects with an aerial survey included in the scope.
2. **Field Survey Data** file (**Model.dgn** from the **3D seed**) contains the existing graphics imported from the original Field Book(s) (e.g. utilities (plan), pavement edges, buildings, vegetation, etc.).
3. **Terrain Model** file (**Terrain.dgn** from the **3D seed**) contains the existing DTM features (e.g. contours, triangles, etc.). If a project requires a Field Survey Data file and an Aerial Survey Data file, the Terrain Model file should combine both the field survey TIN file and the aerial survey TIN file.
4. **Preliminary Geometry** file (**Alignment.dgn** from the **2D seed**) contains the survey preliminary centerline horizontal alignment with profile, existing right-of-way lines, property lines, parcel lines, property owners, tract numbers, and projected existing drainage and utilities (profile only).
5. **Utility Model** file (**Utility.dgn** from the **2D seed**) contains the existing drainage and utility models (plan only), delineated drainage areas, and drainage/hydraulic data blocks.

The following **ORD Railroad Survey Files – QA/QC Checklist** is an additional checklist to be utilized when necessary and must be completed by the surveyor/survey team and submitted as part of the formal, overall survey deliverable package. This checklist has both field and office categories that are specific for railroad surveys within the vicinity of the project. This checklist does not exclude the use of the **ORD Survey Files – Field QA/QC Checklist** or the **ORD Survey Files – Office QA/QC Checklist**, and only verifies that railroad specific tasks have been completed.

# Project Information

|  |  |
| --- | --- |
| **County:** | Choose an item. |
| **Federal Project No.:** | Click or tap here to enter text. |
| **PIN:** | Click or tap here to enter text. |
| **Description:** | Click or tap here to enter text. |
| **Submitted by Surveyor:**  **(TDOT or Consultant)**  **Date:** | Click or tap here to enter text.  Click or tap here to enter text.  Click or tap here to enter text. |
| **Survey Reviewed By:** | Click or tap here to enter text. |
| **Submitted by TDOT Regional Survey Manager:** | Click or tap here to enter text. |
| **Submission Date:** | Click or tap here to enter text. |
| **Comments**:  Click or tap here to enter text. | |

# ORD Railroad Survey Files – Field QA/QC Checklist

In the ***Verified*** column, select either **Yes**, **No**, or **N/A** for the verification status of each documentation/task. Include any assumptions below to help support procedural reasoning.

| Category | Documentation/Task | Verified |
| --- | --- | --- |
| Preliminary | **- To be completed before arriving on site** |  |
|  | Confirm railroad right of entry is obtained before accessing railroad property | Choose an item. |
|  | Electronic copies of tax cards indicating which parcels to be included in survey, including owners’ names, addresses, and phone numbers  (**Note:** These will be submitted with survey) | Choose an item. |
|  | Electronic copies of deeds and plats  (**Note:** These will be submitted with survey) | Choose an item. |
| Field Data |  |  |
|  | Locate all railroad tracks within 600’ (each way) from the proposed centerline within the railroad ROW | Choose an item. |
|  | Locate all topographical features within 600’ (each way) from the proposed centerline within the railroad ROW, including Railroad switching devices, signal devices, control boxes, traffic signs along route, lane lines, railroad crossings pavement markings, median structures, edge of traveled roadway, other roadside features (curbs, concrete bridge rail, etc.), etc. | Choose an item. |
|  | Locate evidence of railroad ROW, including fences, walls, rock piles, pipes, tree lines, old roadbeds, etc. | Choose an item. |
|  | Locate and record number of crossings | Choose an item. |
|  | Locate any existing drainage features for railroad | Choose an item. |
|  | DTM 200’ in each direction perpendicular to the proposed roadway centerline along the tracks within the railroad ROW for at grade crossings | Choose an item. |
|  | DTM 200’ in each direction perpendicular to the proposed roadway centerline along the tracks within the railroad ROW for grade separated crossings | Choose an item. |
|  | Obtain distance to nearest mile post, including mile number | Choose an item. |
|  | Take photos of existing RR crossings per TDOT Design Guideline 4-201.04 RAILROAD CROSSING SAFETY REVIEW | Choose an item. |
| \*Scan Data |  |  |
|  | Extract location of all railroad tracks within 600’ (each way) from the proposed centerline within the railroad ROW | Choose an item. |
|  | Extract location of all topographical features within 600’ (each way) from the proposed centerline within the railroad ROW, including Railroad switching devices, signal devices, control boxes, traffic signs along route, lane lines, railroad crossings pavement markings, median structures, edge of traveled roadway, other roadside features (curbs, concrete bridge rail, etc.), etc. | Choose an item. |

\*Scan Data is to be used to extract the location of features not located in the field.

### Assumptions:

Click or tap here to enter text.

# ORD Railroad Survey Files – Office QA/QC Checklist

This checklist is broken down into each of the four (4) expected deliverables from the Survey phase to Design (i.e. Survey, Terrain, Alignment, and Utility). As discussed in the **ORD Survey Files – Office QA/QC Checklist** file, the reviewer will create a copy of each deliverable file and will place numbers (e.g. M-1, T-1, A-1, U-1 – using the **SUR - MISC - Office** level) as flags locating an area that needs to be edited. These numbers will refer to respective comments detailed in the **ORD Survey – Office Checklist – Comments Template** file.Additional comments needed to address discrepancies within the following checklist can also be added to the same **ORD Survey – Office Checklist – Comments** **Template** file under the **Railroad (if applicable)** category.

In the ***Verified*** column, select either **Yes**, **No**, or **N/A** for the verification status of each documentation/task. Include any assumptions below to help support procedural reasoning.

| Category | Documentation/Task | Verified |
| --- | --- | --- |
| Survey |  |  |
|  | Add railroad company to utility owner’s list | Choose an item. |
|  | Railroad’s rails shown | Choose an item. |
|  | Railroad equipment, signal, flashers, gates, pole lines, switch-points within 600’ in each direction within the railroad ROW (compile and report photos pf existing railroad crossings per TDOT Design Guidelines 4-201.04) | Choose an item. |
|  | Show distance to nearest mile marker and direction, include mile post number (in both directions, if applicable) | Choose an item. |
|  | Label L.M. along state route at which Railroad Crossings occur |  |
|  | Label valuation map(s) for railroads within the project limits | Choose an item. |
|  | Railroad ROW labeled as fee or charter | Choose an item. |
| Terrain |  |  |
|  | *No specific requirements specific to railroads. Use the ORD Terrain Model (Terrain.dgn) Checklist found within the ORD Survey Files – Office QA/QC Checklist to confirm the Terrain Deliverable’s completeness.* |  |
| Alignment |  |  |
|  | Railroad centerline geometry (label format same as road centerline), ensure curves were created using chord definitions | Choose an item. |
|  | Railroad centerline intersection equations | Choose an item. |
|  | Railroad ROW lines and labels (**Note:** Do not visualize temporary control points on Railroad ROW) | Choose an item. |
|  | Show and hatch box indicating where state ROW and Railroad ROW meet, confirm correct feature definition of hatch | Choose an item. |
|  | Show station and offset of each corner of hatch box, discussed above, list permanent easement former coordinates for corners of box (northing and easting), and label bearings and distances of each side of box | Choose an item. |
|  | Check all bearings and distances and coordinates of proposed easement boundary, discussed above, are correct and result in 2D horizontal closure better than 1:20,000 of the boundary perimeter | Choose an item. |
|  | Profile of top of each rail for railroad crossings for a minimum of 600 feet in each direction perpendicular to the proposed centerline crossing” after crossings (railroad not on tangent should show profile of both rails) | Choose an item. |
|  | Station and elevations of each railroad rail crossing on profile | Choose an item. |
|  | For overhead Railroad Crossings, extract and label clearances to existing road surface | Choose an item. |
|  | Show all adjacent properties, label property owners and bearings and distances of property lines | Choose an item. |
|  | \*Establish an alignment along centerline of state route and label state route | Choose an item. |
| Utility |  |  |
|  | Drainage features, including size, type, and length of all structures | Choose an item. |

\*Only applies to railroad specific surveys

### Assumptions:

Click or tap here to enter text.

# Appendix A. Survey Deliverables Workflow

