# ORD Survey Files – Field 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 Survey Files – Field QA/QC Checklist** has been developed to assure the completeness and consistency of survey field work and is one (1) of four (4) ORD Survey checklists for NEW ORD projects that must be completed by the surveyor/survey team and submitted as part of the formal, overall survey deliverable package.

When a project’s limits have a railroad in its vicinity, refer to the **ORD Railroad Survey Files – Field QA/QC Checklist** found within the **ORD Railroad Survey Files – QAQC Checklist** file.

# 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 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.

**Note:** The surveyor/survey team may provide additional information in the space provided on the last page. This information may include, but is not limited to, unique features on site, areas of concern, assumptions, etc.

| Category  Subcategory | Documentation/Task | Verified |
| --- | --- | --- |
| General |  |  |
|  | Mainline survey length | Choose an item. |
|  | Sideroad(s) survey length | Choose an item. |
|  | Check survey limits were completely surveyed, review ties to prior surveys, if applicable | Choose an item. |
| Planimetric |  |  |
| Control | Control points set and located. Traverse closures as needed | Choose an item. |
|  | Benchmarks set and located | Choose an item. |
|  | Reference datum noted |  |
| Property | All property corner monumentation and property line evidence located on all tracts | Choose an item. |
|  | Present ROW monuments or other ROW evidence located | Choose an item. |
| TOPO | Place descriptions on all survey features that require a description and on all items with a miscellaneous feature code | Choose an item. |
|  | **No Aerial:** Locate all topographic features | Choose an item. |
|  | **With Aerial:** Locate all topographic features not on the aerial survey | Choose an item. |
|  | Septic tanks and field lines located on all tracts not served by a sanitary sewer system | Choose an item. |
|  | Fuel tanks located, including size, owner ID, facility number | Choose an item. |
|  | Locate all traffic control pavement markings | Choose an item. |
|  | Wells located, including name and address of driller, date drilled, depth of well, and name of property owner at the time of drilled | Choose an item. |
|  | Historical features located | Choose an item. |
|  | Environmental features located | Choose an item. |
|  | Log mile posts located on state routes and interstates | Choose an item. |
| DTM | **No Aerial:** DTM within project limits | Choose an item. |
|  | **With Aerial:** DTM obscure areas within the project limits | Choose an item. |
|  | **With Aerial:** Label aerial survey topo, including aerial features such as buildings, poles, etc. | Choose an item. |
|  | **With Aerial:** Densify around drainage structures and ditches | Choose an item. |
|  | **With Aerial:** DTM and locate all pavement ties on mainline and sideroad(s), including crown, edge of pavement, shoulders, and ditches | Choose an item. |
| Utilities | All poles and guy wires located and describe all wires properly – i.e. P/T/TV | Choose an item. |
|  | Water lines, valves, meters, and fire hydrants located with corresponding line size and pipe material” after Water lines | Choose an item. |
|  | Gas lines, valves, and meters located with corresponding line size and pipe material” after Gas lines | Choose an item. |
|  | UG telephone lines and pedestals located | Choose an item. |
|  | UG fiber optic lines and pedestals located | Choose an item. |
|  | UG cable lines and pedestals located | Choose an item. |
|  | UG power lines and junction boxes located | Choose an item. |
|  | Manholes located | Choose an item. |
|  | TVA towers located, including tower number | Choose an item. |
|  | Signal heads and span wires located | Choose an item. |
|  | Traffic control devices located | Choose an item. |
|  | Transmission towers and radio/TV towers located | Choose an item. |
|  | Overhead wire crossings located (pole-to-pole) | Choose an item. |
|  | Low wire crossing points located, including number of each type of utility and temperature when surveyed | Choose an item. |
|  | Locate sanitary sewer lines, force main sewer and corresponding manholes, including top, bottom, and invert elevations | Choose an item. |
|  | Locate evidence of underground utilities including marking posts, trenches, and saw-cut pavements | Choose an item. |
|  | Record utility owners on located utility features when available | Choose an item. |
| Drainage | Pipes, box culverts, and end walls located, including size and type | Choose an item. |
|  | Storm sewer lines and catch basins/manholes located, include top, bottom, and invert elevations | Choose an item. |
|  | Obtain floor elevations of buildings subject to flooding | Choose an item. |
|  | Verify floor elevations for vertical structures within the surveyed floodplain limits. Add benchmark elevations to survey model | Choose an item. |
|  | Wetlands, notify if wetlands are possible and locate them when they are flagged | Choose an item. |
|  | Natural features located, such as sinkholes, springs, ponds, etc. | Choose an item. |
| Bridges (if applicable) |  |  |
|  | Locate and describe existing bridges and wingwalls | Choose an item. |
|  | Obtain ordinary and extreme high-water elevations, note the source of the elevation information and date of the “extreme high-water event” after elevations |  |
|  | Obtain normal water elevations and normal pool elevations | Choose an item. |
|  | Locate the bottom flowline, creek Bed, top of water, and top of bank, the greater of 300 ft., one structure length or the length of the stream profile upstream and downstream | Choose an item. |
|  | \*Bathymetric survey for a distance equal to six (6) times the average \*\*bankfull width, or a minimum of 50 feet, upstream and downstream of the proposed structure location along the stream centerline for the stream survey | Choose an item. |
|  | Surveyed cross sectional area, including bathymetry, at the up and downstream floodplain sections (taken above the extreme highwater elevation and perpendicular to flow from the left to right bank) at locations approximately four (4) times the average bankfull width, or a minimum of 50 feet up and downstream from the proposed structure location, from the left bank to right bank looking downstream of flow | Choose an item. |
|  | DTM includes the existing road completely through the flood plain and any other road in the study area | Choose an item. |
|  | Locate bridge deck centerline (abutment to abutment) and any other additional shots needed (use feature code DECK) | Choose an item. |
|  | Record all elevations needed for bridge sketch | Choose an item. |
|  | Verify in any other hydraulic structures within the surveyed stream reach lengths for the up and downstream sections. If hydraulic structures are present in the surveyed reach lengths, obtain equivalent survey data as primary design structure location | Choose an item. |

\* Bathymetry – Survey of stream or channel geometry below the water surface.

\*\* Bankfull width – Width of stream or channel water surface at flood stage, or before the water body begins to inundate the floodplain.

### Additional Information:

Click or tap here to enter text.