Rev. 04/2024

Survey Alignment ROW Drawing Requirements

The following guidance is for the creation of both the **S-XXXXXX_Align_ROW_YYYY-MM-DD.dgn** and the **XXXXXX_Align_ROW_YYYY-MM-DD.pdf**. These are the standards for the alignment definitions and annotation requirements for all Alignment_ROW drawings created for MDOT design surveys.

Drawing Requirements:
The standard requirements for survey deliverables provided for all Alignment and/or ROW surveys will be delivered in the **S-XXXXXX_Align_ROW_YYYY-MM-DD.dgn** file. Below is a list of the required elements that must be included in all alignment and/or ROW drawings submitted to MDOT.

All labels and dimensions must use the text style **MDOT_NoMask** or **MDOT_Mask** and the font must be **(Arial)** and must be on the appropriate Levels. **MDOT_Survey_PA132** will only be used for PA132 survey drawings. See example settings below:
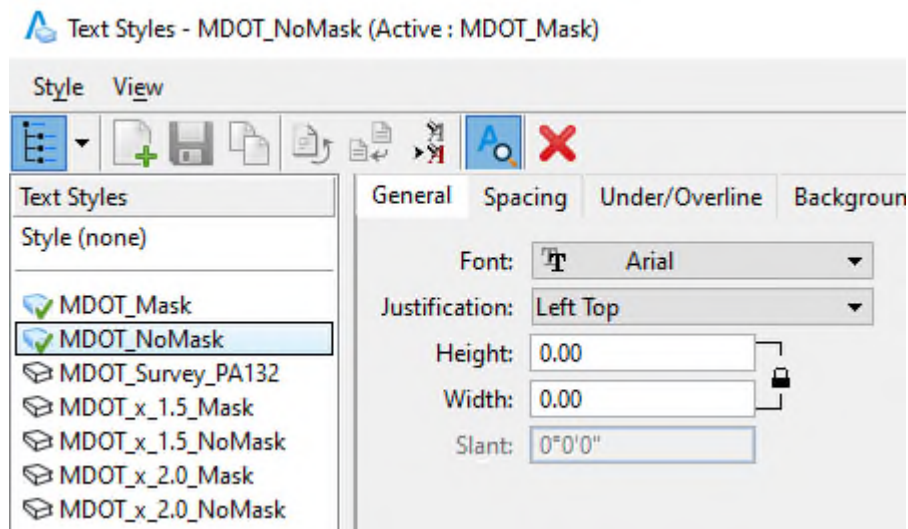
All Alignment/ROW drawing files must include the following components: (Note: the numbers below correspond to the numbered items on the example alignment .pdf file.)
1. Place north arrow in upper right corner of the drawing.
2. Place the alignment key near the north arrow in the upper right corner of the drawing. See below for more information on the alignment key.
3. Label all rivers and county drains (if any) at the limits of the right of way.
4. Label the Quarter Section, Section, Township and Range, City / Village / Township, and County in every 1/4 section shown in the drawing.

<div align="center">
NW QUARTER
SECTION 2
T25N-R15W
BENZONIA TWP.
BENZIE CO.
</div>

5. Display PLSS cells per the current MDOT workspace.

6. All section corners shown on the **S-XXXXXX_Align_ROW_YYYY-MM-DD.dgn** must be included in the Survey Info Sheet, and will be annotated with point name, description, northing and easting values.

7. Label all section lines with the bearing and distance between section corners and place the labels on the Level: **Sheet_Label_Shared_Surv_Wt0**

8. Label all applicable ties for alignments and ROW along section lines with the distance to the Legal Alignment and the stationing. Place the labels on the Level: **Sheet_Label_Shared_Surv_Wt0**
   o NOTE: station along ROW must be shown as standard labeling Ex. 100+00.00

9. When the section line is running along but not coincident with the alignment, label station and perpendicular offsets from the alignment to the PLSS corners.

10. NON Legal ROW is shown as overall width only.

11. Legal ROW is dimensioned only to the legal alignments. If a legal alignment is not available, then the overall ROW width is dimensioned from ROW line to ROW line.

12. Label the width of the ROW every time it changes.

13. Label all deflections in the ROW with associated station.

14. If the ROW is not parallel to the legal alignment label every line segment with the bearing, distance, and stationing to the nearest alignment.

15. When the Legal Alignment or ROW is determined for the project show the parcel, plat, and subdivision lines used to determine the alignment.

16. If Requested show and label all property Tax ID, owner, and address within each parcel. (Look into a level for legal-nonlegal labels)…. GIS levels

17. If easements are located and shown, dimension and label with Liber, Page, and Owner.

18. All Property corners and Alignment points found during the survey must be shown in the drawing.

19. Label all crossroad alignment ties with stationing of each alignment at the intersection as well as the coordinates of the intersection.

20. Label all roadway names near the limits of the ROW shown in the drawing. If there is a cross road place the label on both sides of the main project alignment near the limits of the ROW shown.

21. Place one alignment label near the POB of every alignment shown in the drawing using the current alignment annotation naming requirements outlined below in this document. Example:(US-131 LEGAL CALIL).

22. When two or more alignments are running along but not coincident, label station and perpendicular offsets between the alignments and note the alignment measured from.

23. Show tangent bearings on all alignments.

24. Use the current MDOT standards for labeling PC, PI, PT, POT and Curve data locations whenever possible. These can be modified if readability becomes an issue. Curve data should be placed as close to the midpoint of the curves as possible ensuring that there is enough room to clearly label other alignment features.

25. The POB/POE of all alignments must be labeled with either POB or POE (START or END), alignment name, and coordinate values.

26. Show all station equations if applicable.

27. Show LA terminator cell signifying the change from LA ROW to ROW.

28. Instruments used to define the legal right of way will be represented as a microstation filled shape. (only those parcels within the ROW)

Alignment Definitions & Key:
Alignment types [As-Constructed (ACALI), Construction (CALI), or Survey (SALI)] of existing alignments are underlined determined by their historic origin and must be provided by the surveyor. Refer to the Alignment Key (as described in this document) for alignment clarification and historical origin. For alignment definitions, please reference the Chapter 6 – Alignments of the MDOT Survey Standards of Practice – http://mdotwiki.state.mi.us/design/index.php/Chapter_6_-_Alignments

An Alignment Key must be included in the drawing and placed near the North Arrow in the upper righthand corner of the drawing. Label each alignment near the Point of Beginning of the alignment(s). The key must provide descriptions of each alignment included in the project. The key must include descriptions/definitions of existing/retraced project alignments as provided by the surveyor as a survey deliverable. A description of any proposed alignments may be provided by the designer.

Annotation of Alignments
Annotation along the alignments must be as follows:

ROADWAY + LEGAL or NON-LEGAL + (Name of alignment)

Instances where there are recurring alignments, a sequential number designation must be used, with the number coinciding with information found in the alignment key.

Example Alignment Annotations
- **M-43 LEGAL CALIL** = M-43 LEGAL CONSTRUCTION ALIGNMENT
- **M-43 LEGAL SALIL** = M-43 LEGAL SURVEY ALIGNMENT
- **US-2 NON-LEGAL ACALINL** = US-2 NON-LEGAL AS-CONSTRUCTED ALIGNMENT
- **US-2 NON-LEGAL CALINL** = US-2 NON-LEGAL CONSTRUCTION ALIGNMENT
- **US-2 NON-LEGAL CALINL1** = US-2 NON-LEGAL CONSTRUCTION ALIGNMENT 1
- **US-2 LEGAL SALIL** = US-2 LEGAL SURVEY ALIGNMENT
- **US-2 LEGAL SALIL1** = US-2 LEGAL SURVEY ALIGNMENT 1

Alignment Key
Alignment definitions/descriptions provided in the Alignment Key must include the following:
- The alignment key must have the name of the company that created the alignment.
- The name of the Professional surveyor that retraced the alignments.
- Job Number: XXXXXX, Control Section: XXXXX, XXXXX, ETC...
- List of all Retraced Alignments (provided with survey deliverables):
  - Route Name + Legal or Non-Legal + (Name of alignment) =
  - Route Name,
  - Origin Year,
  - Type of Alignment "Construction Alignment, Survey Alignment, etc.",
  - From Project Number,
  - "as retraced for" Job Number,
  - in "Year of Retracement"
- Note about the Type of ROW shown (Legal or Non-Legal)
- Horizontal Datum:_____[Ex. NAD83 (CORS2011) MCS Central Zone(2112)]
- Average Combined Scale Factor: 0.000000000000 **(Must be to 12 decimal places)**
- Grid Distance/Combined Scale Factor = Ground Distance
- Description of how Parcel lines were established. (Example, calculated by professional surveyor or derived from GIS)

Example Alignment Key
BY (COMPANY NAME), YYYY-MM-DD
Name of Surveyor
JN XXXXXX, CS XXXXX

M-43 LEGAL CALIL = M-43, 1954 CONSTRUCTION ALIGNMENT FROM PROJECT 82-24,
AS RETRACED FOR JOB NUMBER 111659 IN 2011.
M-43 LEGAL CALIL1 = M-43, 2011 CONSTRUCTION ALIGNMENT FOR JOB NUMBER 111659 FOR
THE RELOCATED CURVE FROM STATION 119+00 TO 321+96. INTENDED FOR ACQUISITION ON
JOB NUMBER 123456.
WB I-96 NON-LEGAL CALINL = I-96, 2013 WESTBOUND, CONSTRUCTION ALIGNMENT FOR WB I-
96 LANES AS PROPOSED BY ENGINEER FOR JOB NUMBER 123658.
US-127 LEGAL SALIL = US-127, 1960 SURVEY CENTERLINE FOR, CS 37013 AND 37014, AS
RETRACED FOR JN 130105C IN 2017.
US-127 LEGAL CALIL = US-127, 1960 NORTH BOUND, CONSTRUCTION ALIGNMENT FROM
PROJECT W-48-1, CS 37014-C5, AS RETRACED FOR JN 130105C IN 2017.
US-127 LEGAL CALIL1 = US-127, 1960 NORTH BOUND, CONSTRUCTION ALIGNMENT FROM
PROJECT W-47-1, CS 37013-C4, AS RETRACED FOR JN 130105C IN 2017.
US-127 LEGAL CALIL2 = US-127, 1960 SOUTH BOUND, CONSTRUCTION ALIGNMENT FROM
PROJECT W-48-1, CS 37014-C5, AS RETRACED FOR JN 130105C IN 2017.
US-127 NON-LEGAL ACALINL6= US-127, 1960 M-20 RAMP A, AS-CONSTRUCTED ALIGNMENT
FOR, CS 37013-C8, AS RETRACED FOR JN 130105C IN 2017.
US-127 NON-LEGAL ACALINL7= US-127, 1960 M-20 RAMP B, AS-CONSTRUCTED ALIGNMENT
FOR, CS 37016-C8, AS RETRACED FOR JN 130105C IN 2017.

THE EXISTING LEGAL ROW IS DEPICTED IN THIS DRAWING

HORIZONTAL DATUM NAD83 (CORS2011) MCS SOUTH ZONE (2113)
AVERAGE SITE COMBINED SCALE FACTOR: 0.999952868654
GRID DISTANCE/COMBINED SCALE FACTOR = GROUND DISTANCE

S-XXXXXX_Align_ROW_20YY-MM-DD.pdf
After the drawing is created an georeferenced alignment project pdf must be created and submitted along with the final deliverables. Please reference the latest project pdf printing instructions on the design sharepoint site at Project PDF (sharepoint.com)

Questions or comments regarding this document please contact the Survey Support Unit at MDOT-Survey_Support@michigan.gov