

8 Detector Plan

Intersection layout shall be drawn showing:

- edge of pavement or curb line,
- lane use arrows,
- centerlines with stationing,
- lane markings,
- sidewalk ramps,
- driveways,
- right-of-way lines,
- crosswalks,
- sidewalks,
- street names,
- north arrow, and
- other features as needed.

Detector Plan sheets shall be drawn at a scale of 40:1.

NOTE: Scales smaller or larger than 40:1 are not acceptable for detector plans. The use of break lines to fit the plan on one sheet shall be the only acceptable practice. Break lines can be found in both the traffic signal tasks & workflows and the ODOT pull down menus.

All contract plans shall be plotted “B” size (11”x17”) Signal Plan sheets shall normally be drawn at a scale of 40:1. This is set with Annotation Scale. You can turn this on and off from many different locations including

- The drawing scale toolbar
- The place active cell dialog
- The place text dialog

For additional information on using Annotation Scale click on the following link:

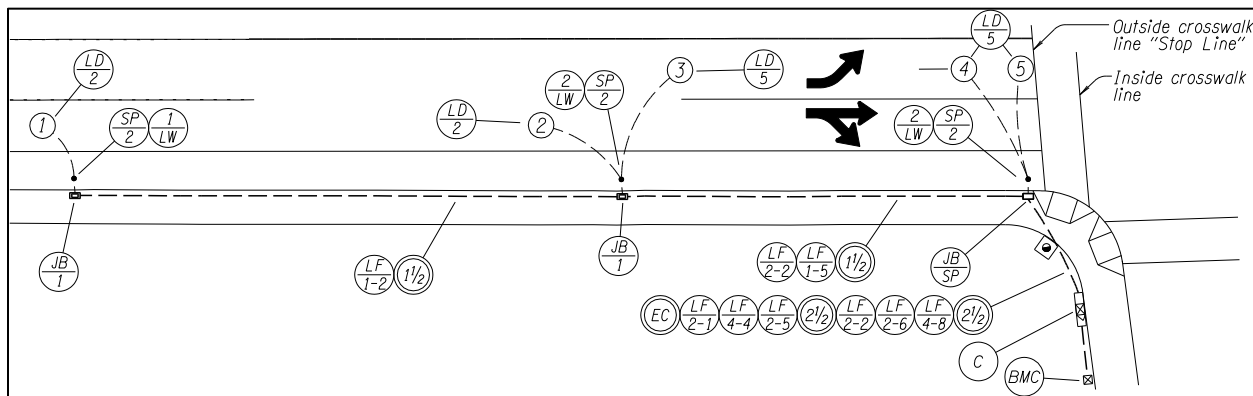
[MicroStation Users Guide](#).

The plan shall include:

- Location and type of traffic signal loops, loop wire entrance type, loop number, and notes for symbols and details used.
- All signal pole foundations for; mast arm poles, span wire poles, vehicle signal poles and pedestrian poles shall be shown. Show mast arms if using video detection.
- Underground detector conduit, detector wiring, junction boxes, traffic signal controller, service equipment, and all other equipment needed to install the detector system.
- Each installed, removed, abandoned, or retained item shall have the correct bubble and a leader(s) to the item.
- Use break lines to compress the plan into one detector plan sheet when possible. Break lines are located under the Notes & Symbols tab.
- Loop wiring diagram. The loop wiring diagram shall include each loop number, distance to the center of the loop from the stop bar, splice point (cabinet or junction box), phase, input file slot & channel, Indicate whether it is a bike loop.
- If using video/radar detection, use the Input File Dia. This is located under Signal Plans, Loop Wiring Diagrams tab in the ODOT tasks & workflows.
- If using a combination of loops & video you will need to have both the Input File Dia. and the Loop Detector Wiring Diagram.
- The standard drawing area in the lower right hand title block area shall remain blank.

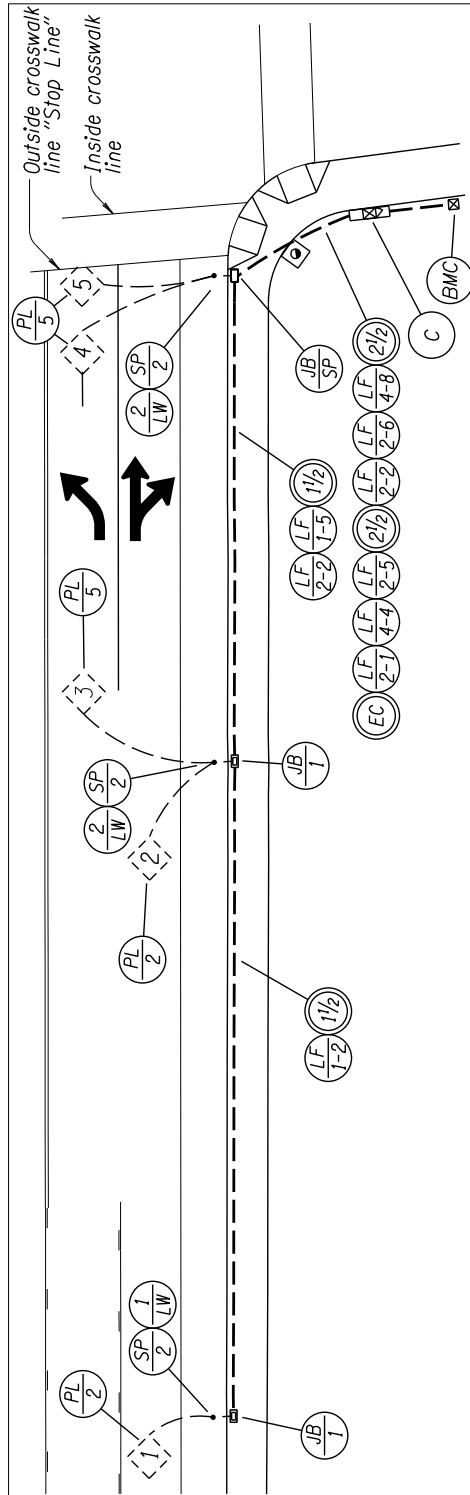
See Figure 8-4 for all items that must be shown. The two diagrams below show the difference between standard saw cut loops and preformed loop installations.

Figure 8-1 | Saw Cut Loop Details



Saw-cut loops are shown on the plans with a light weight solid line. The loop feeder is shown as a light weight dashed line. The loop feeder will enter the junction box through a “Loop entrance point”. See Standard Drawing **TM475**.

Figure 8-2 / Preformed Loop Details



Preformed loops are shown as heavy dashed diamonds and loop feeders are shown on the plans as a heavy dashed line; the preformed loop feeder extends from one side of the loop into the junction box.

Figure 8-3 shows four types of loop detector wiring diagrams that are used on ODOT detector plans. Diagram top left is the most common one used for traffic signals. The diagram shown in the top right is for temporary (one-lane, two-way) traffic signals. The middle diagram is used for ramp meter signals and the bottom diagram is used for video/radar.

Figure 8-3 / Loop Detector Wiring Diagrams

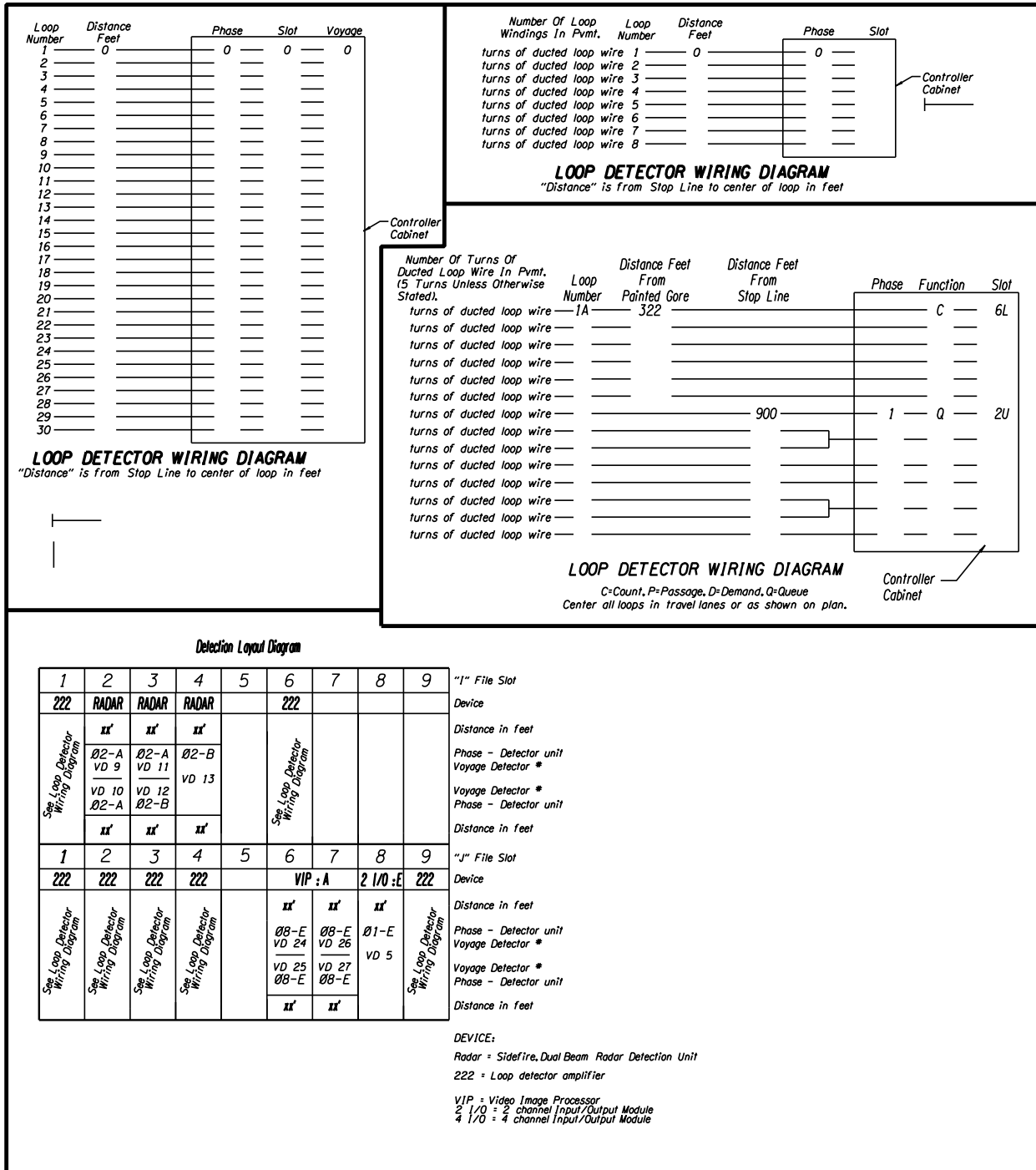
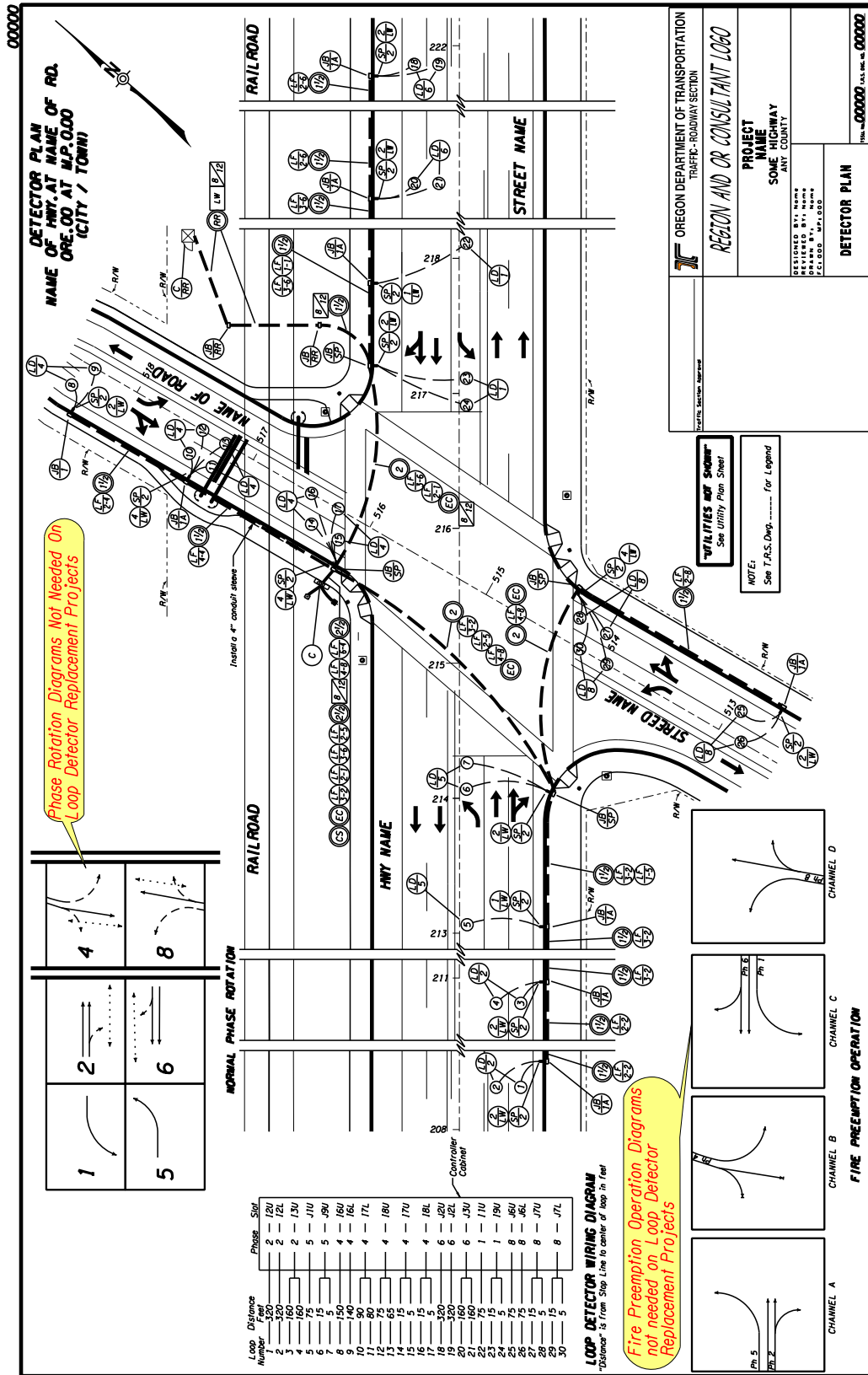


Figure 8-4 | Sample Detector Plan Sheet



Loop Replacement Detector Plans

This type of plan is common when there are traffic signals within the limits of a pavement preservation or pavement rehabilitation project.

The plan must show all standard plan sheet information such as lane use arrows, north arrow, street/highway names, dimensions, project titles, mile posts and routes that are shown on a standard detector plan.

Label your loop replacement plan sheet with the same wording that is used on a standard detector plan. Both title block & Upper right heading shall read DETECTOR PLAN. This is done to denote the fact that loop replacement plans are the most current loop plans and needed to be titled accordingly.

If the plans show replace loops “in-kind”, with no wiring or control cabinet work, show the following on your plan sheet(s):

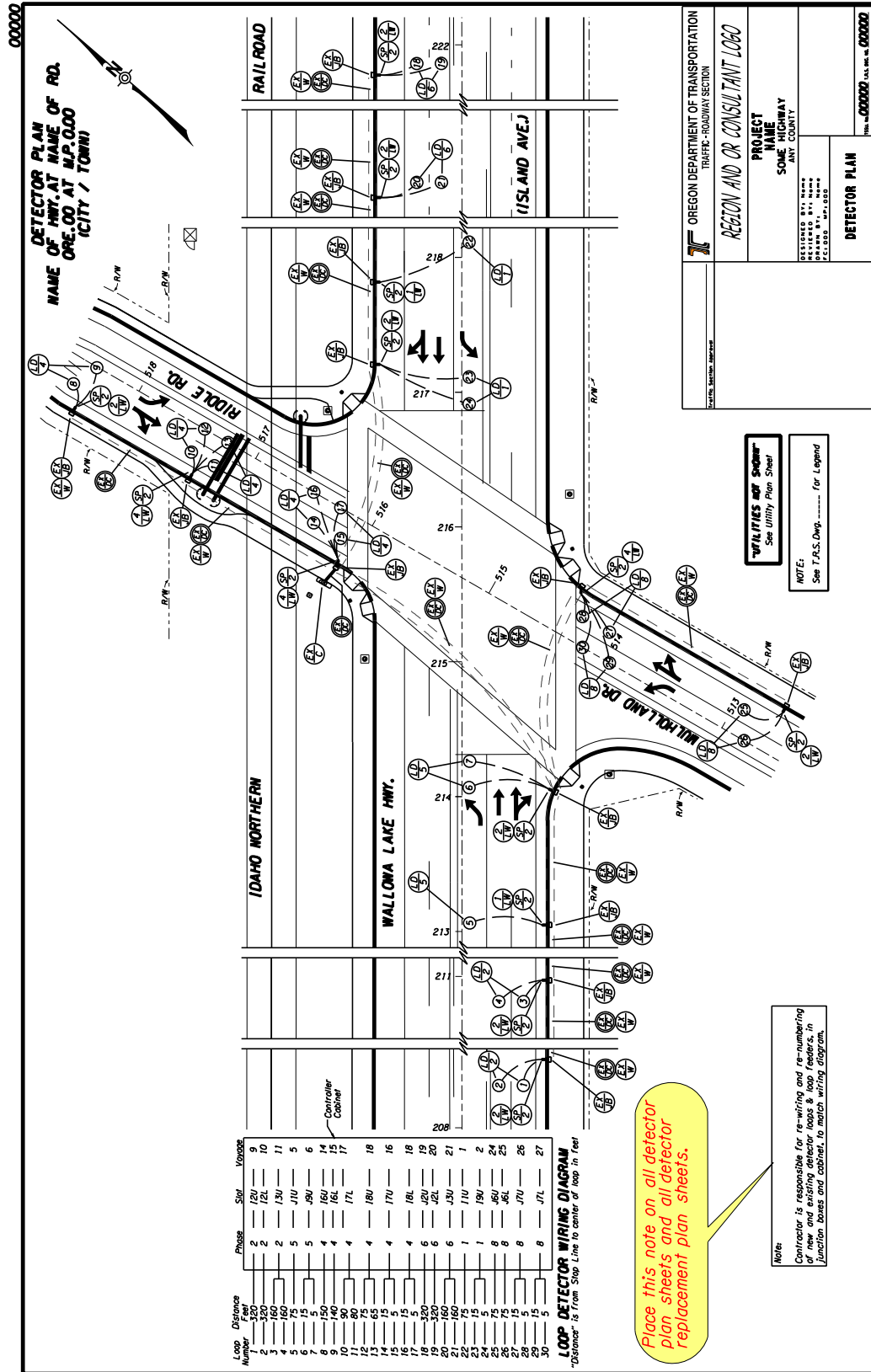
- New and existing loops must be numbered.
- Label all loops with new and existing bubbles.
- Label loop entrances that have adjacent loop work being performed.
- Label existing conduits with the existing electrical or existing detector conduit bubbles.

If the plans include replacing loops and have wiring modifications with cabinet work, show the additional items:

- Label all loops and loop entrances with the appropriate bubble
- Detector conduit bubbles (size required if new wiring is added)
- Loop feeders (phase and number)
- Junction boxes (size and type if known)
- New Loop Wiring Diagram (If loops are not numbered to ODOT’s standard then the loops must be renumbered to show the standard loop number progression. A note on the plans shall be added that instructs the contractor to renumber each end of the loop feeder with the new numbers.
- Place a bracket and “NoWork” next to loop numbers at the loop wiring diagram if no work is being done to those loops.

The plan sheet on the following page is an example of what a detector replacement plan sheet should show.

Figure 8-5 | Sample Detector Plan Sheet - Loop Replacement Project



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