

Chapter 24

Signalization Plans

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Chapter 24

Signalization Plans

24.1 General

Signalization Plans are usually a component set of plans. Projects with minor signalization may include these features on sheets in the roadway plans set or on the roadway sheets (or in another component plans set or on that component's sheets when appropriate). When prepared as component plans they must be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other signal sheets. When prepared as component plans, number the sheets consecutively with the sheet numbers prefixed by the letter "T".

The signalization plans show the construction details, electrical circuits, signal phasing and other relevant data.

Assemble the Signalization Plans as follows:

1. Key Sheet
2. Tabulation of Quantities
3. General Notes
4. Plan Sheets
5. Mast Arm Details
6. Foundation Details - Mast Arms
7. Boring Data Sheets - Mast Arms

Modification for Non-Conventional Projects:

Delete Item 2 from the above paragraph.

In addition, the signalization plans may contain sheets which were prepared separately (perhaps by a sub-consultant) and incorporated into the signalization plans early in the design process (prior to the establishment of sheet numbering). As an option, these

may be identified with the following prefixes and placed at the end of the numbered sequence of the signalization plans:

- GT-# Soil Survey and Report of Core Borings normally associated with the signalization plans set
- PTM-# Portable Traffic Monitoring Site Sheets

24.2 Key Sheet

The key sheet is the first sheet in the component plans set and must be prepared as described in **Chapter 3** of this Volume. The location map, length of project box and contract plans set information are not required on this sheet when shown on the lead key sheet. Show the index of signalization plans on the left of the sheet. Other data, including name, consultant contract number, vendor number, and certificate of authorization number of the firm (when plans are prepared by a consultant), must be shown as described in **Chapter 3** of this Volume.

If shop drawings are anticipated, the name(s) and address(es) of the Delegated Engineer(s) for shop drawing review(s) must be shown on the right side of the sheet.

24.3 Signature Sheet

See **Chapter 3** of this Volume for Signature Sheet requirements.

24.4 Tabulation of Quantities and Standard Notes

The tabulation of quantities sheet lists the item numbers, description and quantity of materials. Place this sheet behind the key sheet in plans assembly.

List pay item numbers in numerical order. Provisions must be made to show the original and final quantities per sheet or by station. Pay item notes and general notes that refer to item numbers, description of work to be performed and quantity estimates must also be shown on this sheet. If space is limited, notes may be shown on a General Notes Sheet.

On contracts with multiple Financial Project ID's, or federal aid and non-Federal Aid quantities, provisions must be made to tabulate and summarize their respective quantities.

Modification for Non-Conventional Projects:

Delete *PPM* 24.4

24.5 General Notes

The general notes sheet lists special signal design information such as controller operations, loop installations, signal heads, interconnect cable, and computer interface that is generally not covered in the FDOT Standard Specifications, Supplement or Special Provisions. Place this sheet behind the tabulation of quantities in the plans assembly. On minor projects, general notes may be combined with the tabulation of quantities sheet.

Modification for Non-Conventional Projects:

Delete the above paragraph and replace with the following:

24.5 General Notes

The general notes sheet lists special signal design information such as controller operations, loop installations, signal heads, interconnect cable, and computer interface that is generally not covered in the FDOT Standard Specifications, Supplemental or Special Provisions. Place this sheet behind the key sheet.

24.6 Plan Sheets

24.6.1 Format and Scale

Prepare Signalization Plans on standard plan format at a scale large enough to show all details clearly and legibly. The recommended scale is 1" = 40' or 1" = 50'. Usually, the complete intersection is shown on one plan sheet. However, for large intersections more sheets may be used with appropriate match lines. Place a north arrow and scale at a point of maximum visibility on the sheet.

24.6.2 Required Information

The basic information requirements include roadway geometrics, street names, construction stationing or milepost, curb and gutter, drainage inlets, sidewalks and right of way lines as similarly required on the plan portion of the roadway plan-profile sheets. Show underground and overhead utilities, signing structures, and lighting structures that may cause construction conflicts with signal components. All locations, including existing trees, should be checked for potential conflicts. A review of the signing and pavement marking plans is necessary to ensure the signal installation does not conflict.

The plan sheet must also show:

1. Signal head locations with orientation arrows and movements (movements 2 and 6 must be the major streets).
2. Details of signal heads in tabular form with pay item numbers.

Modification for Non-Conventional Projects:

Delete Item 2 and replace with the following:

2. Details of signal heads in tabular form.

3. Phasing diagram/signal operating plan (NOTE: If the SOP conforms to the ***Design Standards, Index No. 17870***, then a reference to the index is all that is required. For all other operating plans, the plan must be shown).
4. Signal controller timing chart.
5. Loop detectors.

6. Electrical service location.
7. Location of signal poles and span wires (ground elevation and elevation of roadway crown).
8. Signal wire signs.
9. Pedestrian signals.
10. Turning radii.
11. Median nose locations.
12. Location of "stop bars" and pedestrian crosswalks.
13. Coordination unit-timing chart.
14. Lane lines with orientation arrows.
15. Location of conduits.

Clearly label all equipment shown on the plan with their respective pay item numbers and quantity indicated.

Modification for Non-Conventional Projects:

Delete the above sentence and replace with the following:

Clearly label all equipment shown on the plan.

Prepare a separate signalization plan for each signalized intersection included in the construction project.

Coordinate span wire or mast arm mounted signs with the appropriate signing and pavement marking plans to avoid duplication.

The sign details for traffic signal signs must be included on the signalization plans, if signing and pavement markings are not included in the plans package.

24.7 Interconnect/Communication Plan

The interconnect/communication plan is required when signal equipment is being coordinated with other signal installations or with a computerized system. The interconnect/communication plan shows pictorially the placement of interconnect/communication cable, either underground or aerial, pull boxes or aerial junction boxes, and tabulates all related interconnect quantities. The interconnect/communication plan sheet must indicate all signal poles, service poles, and/or joint-use poles to which interconnect/communication cable will be attached.

Modification for Non-Conventional Projects:

Delete the above sentence and replace with the following:

The interconnect/communication plan shows pictorially the placement of interconnect/communication cable, either underground or aerial, and, pull boxes or aerial junction boxes.

Prepare the interconnect/communication plan on standard plan format. Unless otherwise approved, the preferred scale of the interconnect/communication plan is 1" = 100' for underground cable, and 1" = 200' for aerial cable. For simple projects, or sections of a project, "stacking" two plans on one sheet is generally permitted if clarity and legibility are maintained. Stationing must progress from left to right and multiple plan views be stacked from top to bottom.

Place a north arrow and scale at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, include a north arrow and scale in each plan portion.

The basic plan information requirements include roadway schematic, showing cross streets and driveways, cable information, pole location, pole number, utility pole identification number, pay item number and quantity.

24.8 Mast Arm Sheets

See *Design Standards, Index 17743* (Standard Mast Arm Assemblies) or *17745* (Special Mast Arm Assemblies) and the associated *IDS*.