

Chapter 22

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22 State Force Work

Signal modifications that are performed by state forces, not a contractor, are classified as state force work. Often, these modifications are small in scope, inexpensive, and/or need to be done quickly which is why the work is not contracted out in a traditional project development process. Depending on the type of signal modification, additional ODOT crews may need to be involved (signing crew, striping crew, etc.).

22.1 Is Operational Approval Needed?

This type of work still requires operational approval (depending on the proposed modification), as per chapter 3. State force work is comprised of **modifications** to existing signal installations (the following list contains common state force work items, but is not all inclusive):

- Adding or deleting regulatory signing attached to signal equipment
- Adding or deleting signal heads
- Modifying signal head type
- Adding, deleting or modifying signal phasing
- Adding or deleting detection
- Adding or deleting crosswalks/pedestrian phases
- Adding or deleting emergency preemption
- Changing intersection lane use

State force work does NOT include standard MAINTENANCE work such as replacing signal equipment in-kind (due to end-of-service life or malfunction) and replacing detection in-kind.

22.2 Are Plan Sheets and Design Approval Required?

Plan sheets are required for all state force work. While creating plan sheets can be time consuming and seem like an unreasonable task for minor work performed by state forces that really don't need a plan sheet to understand or install the proposed changes, a plan sheet provides the mechanism for documentation, archival, and accurate installation information used by future personnel.

Design approval as per chapter 3 is required for all state force work. Due to the nature of state force work (small scope of work and the informal payment/inspection inherent in state forces performing the work), the design approval process can be typically be completed much faster than plans developed for contract.

22.3 Plan Sheet

The plan sheets for state force work should follow the guidelines used for standard contract plan development with the following exceptions:

22.3.1 Title Block

The title block should state “STATE FORCE WORK” in the project information area to clearly identify that the modifications are not contract work. See Figure 22-1.

Figure 22-1 | State Force Work Title Block

The title block is a structured form with the following components:

- Top Left:** A signature in blue ink over the text "Traffic Section Approve".
- Top Right:** "OREGON DEPARTMENT OF TRANSPORTATION" with the department's logo.
- Center:** A circular seal for "REGISTERED PROFESSIONAL ENGINEER" with the number "87,105" and the name "CHRISTINA L. LAFLEUR". The seal also includes "OREGON" and "NOV. 13, 2012". Below the seal, it says "RENEWS: 12-31-2018".
- Bottom Center:** "CORVALLIS & LYONS PAVING STATE FORCE WORK CORVALLIS-LEBANON LINN COUNTY".
- Bottom Left:** Project information: "HWY: 210 M.P.: 10.12", "TRIS 19437", and "DIV/ISSU NO. 04027".
- Bottom Right:** Design and review information: "Designer: C. LAFLEUR", "Reviewer: S. GRAMER", "Drafted: C. LAFLEUR", and "Checker: N/A".
- Bottom Far Right:** "DETECTOR PLAN" and "SHEET NO. MA01".

22.3.2 Detailing Work and Referencing Prior Plan Sheets

The plan sheet should only detail the work to be done and just show the symbology for the other signal equipment that is not impacted by the work. Also, placing a reference to prior plan sheets can be helpful so that accessing the additional information on the signal equipment that is just shown symbolically is easier. See Figure 22-2 for example note referencing prior plan sheets. This simplifies the plan sheet and makes it much easier to see what work needs to be done. See Figure 22-3 for an example of properly detailed work and symbology for all other existing equipment.

Figure 22-2 | Referencing Prior Plan Sheets

See TMS DWG No. 10243 & 2048 for reference

Avoid detailing any equipment that is not impacted by the work to be done (e.g. placing a large amount of “retain and protect” bubble notes). This tends to add little value and instead clutters the drawing making it easier to miss what work needs to be done. See Figure 22-4 for an example of excessive use of “retain and protect” bubble notes.

Figure 22-3 | Only Detailing Work to be Done (Preferred Method)

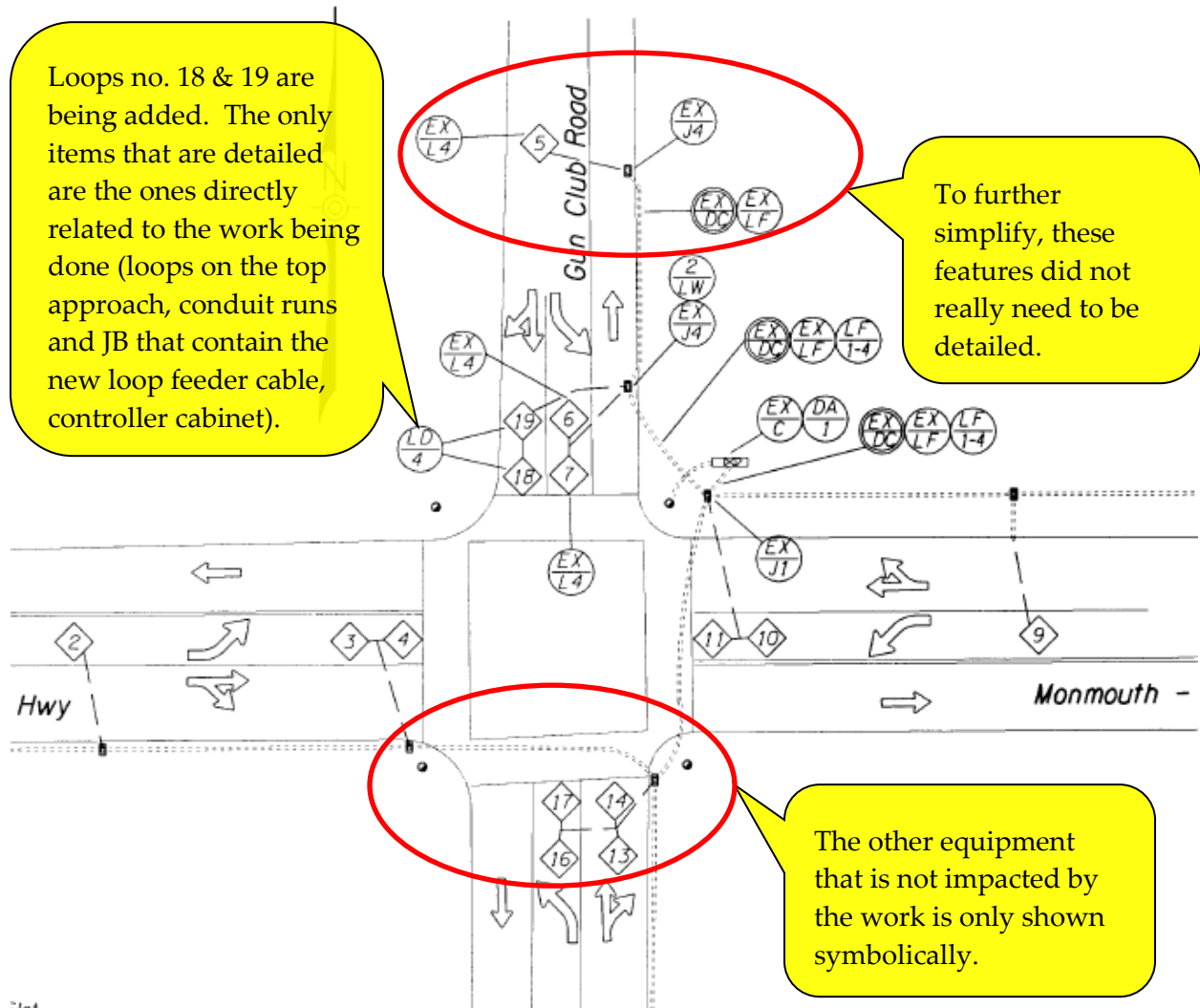
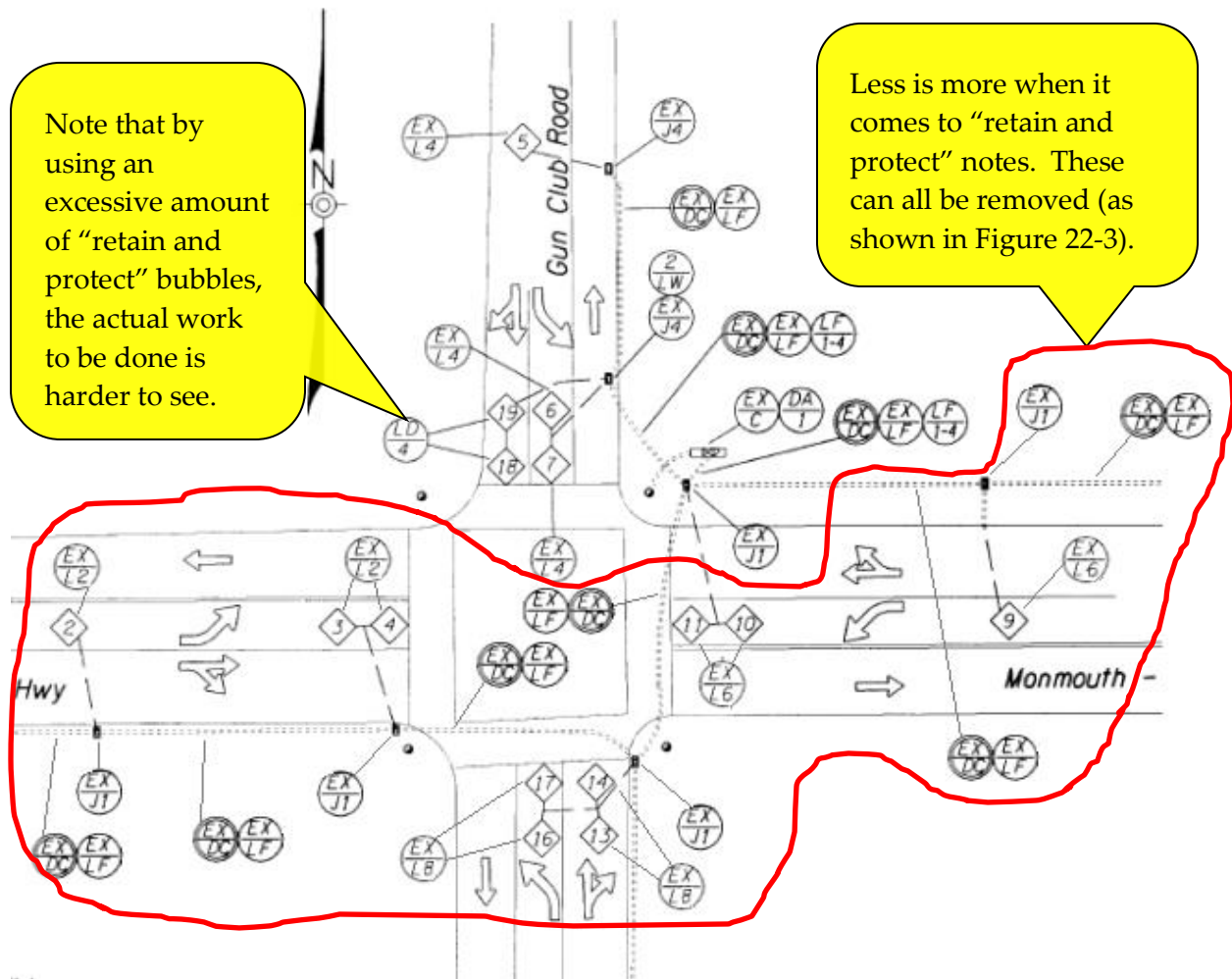


Figure 22-4 | Detailing Equipment Not Impacted by the Work (Avoid this Method)



22.4 Are Specifications, Standard Drawings and Cost Estimate Required?

Standard specifications and modifications as shown in the special provision boiler plates for the technical aspects installation (materials, certain construction methods) should be understood and followed by those performing the state force work. Other parts of the specifications pertaining to contract administration and payment simply do not apply to work done in-house. Because there is no need for a formal contract for in-house work, there is no need to formally produce specifications to accompany the plan sheets. It is assumed that those performing the work are staying current with their agency’s standards and procedures.

Similar to the specifications, those performing the work should understand and follow the most current version of the standard drawings. The standard drawings that are applicable to the state force work should be listed in the title block (just like for contract work), but do not

necessarily need to be provided with the work as those performing the work most likely have their own copies and are well informed of the current standards.

Depending on where the funding for the state force work is coming from (e.g. electrical budget, region safety or operational budget, claim against other, etc.), a cost estimate may or may not be performed by the signal designer. If a cost estimate is requested for budget planning purposes, it is best to gather the data from those performing the work because the standard cost estimating tools used for contract work will not be accurate due to factors that are inclusive to the bid item (such as profit margin).