

Geometric Layouts

Contact

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Purpose

The Staff Approved Layout serves as documentation that the preferred alternative for a project has been selected and approved, and that the final design phase can begin. The Staff Approved Layout is the Final Layout (MINN. STAT. 161.162, Subd. 2), and basis for final design.

Layout Requirement

A Staff Approved Layout is necessary for all projects that require [Municipal Consent](#) and any project that meets the Level 1 criteria listed below. All Level 1 Layouts require review by the State Geometrics Engineer and approval by the State Design Engineer.

Level 1 Criteria

A Level 1 Layout is required for projects meeting any of the following criteria:

- Any geometric changes to an interchange or connected ramps (excluding minor profile changes related to preservation work)
- New horizontal alignment on MnDOT roadway
- Changes to vertical alignments not related to preservation work
- Reconstruction in urban core/ urban commercial areas (i.e. small town main street)
- Rest area or weigh station work impacting acceleration/deceleration length or exit/entry noses
- Alternative intersections, including:
 - Roundabout
 - Diverging Diamond Interchange ([DDI](#))
 - Continuous Green-T ([CGT](#))
 - Restricted Crossing U-Turns ([RCUT](#))
 - [Displaced Left Turn Intersections](#) (e.g. CFI)

In cases where a large preservation-type project has a small area that qualifies for Level 1, limit the layout submitted to the area containing the Level 1 work.

Level 2 & 3 Criteria

Level 2 and 3 Layout approvals are an internal MnDOT process requirement. They serve as a “*milestone product of reference*” for final design and as a companion product to the project Design Memorandum. These layouts are reviewed and approved at the District level and may serve as the Final Layout for Municipal Consent and other District needs. GDSU is available to provide input or assistance with Level 2 and Level 3 Layouts as requested by District staff. It is MnDOT practice to create Level 2 and 3 Layouts and obtain staff approval for:

- Documentation of approval of the staff approved alternative
- Internal project development processes (coordination with all functional units)
- Public engagement
- Communication with external partners
- Cooperative Agreements

Level 1 Layout Process

Early Coordination

GDSU is available to provide assistance during early project alternative analysis. This can include idea/concept development, drafting of complicated elements, design standards guidance, and review of preliminary designs. Designers are encouraged to interact with GDSU during this phase, regardless of layout level. GDSU can also assist in coordinating with the [FHWA](#).

Preliminary Review and Comment (*P6 Task LAY1045*)

Provide concept drawings, details, and supporting information sufficient to develop acceptance of the overall concept. All unique or potentially contentious design elements should be discussed and agreed upon at this point so the formal review can focus on conformance to design guidance, standards, and quality of design.

15 working days are scheduled for this task as it is prioritized below formal reviews. GDSU strives to reduce this review and comment period when workload allows.

Formal Review and Comment (*P6 Task LAY1060*)

Once a preferred alternative is chosen, a layout is created that provides all geometric plan and profile information necessary for review, and conforms to [MnDOT CADD Standards](#) (see [Layout Content Review Form](#) and [Creating a Layout](#) for detailed instructions).

Districts should submit **unsigned** layouts to GDSU for review and comment, with the following documentation:

HPDP / Minnesota Department of Transportation

- Layout submittal form: [Layout Submittal: Review & Comment](#)
- Design Memo
- Any additional documentation to describe the project and assist in the review (e.g. ICE Report, Scoping Report, or HSM analysis)

GDSU strives to provide a formal comment letter within 10 working days. Additional review time is necessary for projects containing roundabouts (Roundabout Review Team review required or projects that require FHWA review and approval.

Comment Resolution

A written response to all GDSU comments must be provided by District staff and a consensus must be reached between the project team and GDSU. GDSU will either accept the District's response and request that a signed layout be submitted for approval, or begin a resolution process with the Project Manager/Team. GDSU's goal is to resolve comments in a manner that is appropriate and sensitive to the project schedule and provides continuity to project decisions and agreements. This can be done in email, letters, or meetings, based on the complexity and scope of the issue.

Layout Approval (P6 Task LAY1080)

Once comments are resolved the layout may be submitted for approval with:

- Layout submittal form: [Level 1 Submittal: Review & Approval](#)
- All District signatures
- An updated Design Memo (if necessary)

The layout is then reviewed for compliance with agreed upon comments and presented to the State Geometrics Engineer for review and the State Design Engineer for approval. This process is normally completed within 5 working days and the layout is returned to the Project Manager, along with an approval letter. When the approval letter identifies required changes, they must be incorporated and included on the Distribution Copy.

Layout Changes after Approval

Project Managers are responsible for recognizing design changes that impact the intent of the design and that require updates to the Staff Approved Layout. These changes require agreement by GDSU. The agreed upon changes can be added to the Staff Approved Layout and all appropriate groups can be notified by reissuing the Distribution Copy.

Study Layout

If a layout does not have a programmed letting date, the layout should be approved as a Study Layout. Study Layouts have a shelf life of 3 years. If the project is programmed for letting within 3 years of the approval date, Project Managers should replace the signature block to remove the Study Layout stamp and resubmit the layout for approval. If the project is programmed for letting outside of the shelf life, Project Managers must resubmit the layout for full review to check for compliance with current design standard.

GDSU Distribution of Staff Approved Level 1 Layout

- On the Title Block: GDSU staff will mark the staff approval date and color the rectangle red.
- This template provides a list of all offices requiring notification of the Staff Approved Layout and their preferred method of receiving the layout: [Distribution of Approved Layout](#)