

Chapter Sixteen
PROJECT COORDINATION
(Signing/Pavement Markings)

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Chapter Sixteen

PROJECT COORDINATION (Signing/Pavement Markings)

During the development of a signing project, the signing designer must coordinate with many units internal and external to the Signing Unit. [Chapter Fifteen](#) presents a network which describes the project development sequence for where the Signing Unit is involved in the design process. Chapter Sixteen discusses specific coordination responsibilities between the signing designer and other units. Together, the two chapters will provide an understanding of the necessary interaction among the various units in project development.

Note that Chapter Sixteen applies both to a project for which the Signing Unit is serving as the lead unit and to a project for which the Signing Unit is providing project support when another unit is project lead (e.g., the Road Design Section).

16.1 PRECONSTRUCTION PROGRAM

This Section discusses the specific coordination responsibilities between the signing designer and other Preconstruction Program units.

16.1.1 Traffic and Safety Bureau

16.1.1.1 Geometrics Unit

The Geometrics Unit is responsible for the geometric design of intersections and interchanges and, to a lesser extent, the geometric design of other road design elements. On projects for which the Signing Unit is lead, Signing coordinates with the Geometrics Unit for the pavement marking design at intersections. For a geometric-lead project, the Geometrics Unit prepares a layout of the project, and the Signing Unit superimposes the signing design on the layout. The Geometrics Unit is responsible for coordinating with the Signing Unit to develop the pavement marking plans for geometric-lead projects.

16.1.1.2 Electrical Unit

The Electrical Unit is responsible for the selection, design and placement of traffic signals and highway lighting on most MDT projects. For a signing-lead project, the coordination between the Electrical Unit and Signing Unit will be the following:

1. If signing work will include an electrical component (e.g., a flashing beacon on a STOP AHEAD sign), the Electrical Unit will perform the needed electrical work.
2. The proposed pavement markings at signalized intersections must be coordinated with the signal design (e.g., detector loop location).

On traffic signal projects for which the Electrical Unit is lead, the Electrical Unit coordinates with the Signing Unit on almost every project. Typically, the Signing Unit determines the proposed signing and pavement marking design at the intersection first. This includes, for example, the location of stop bars, words and symbols for exclusive left-turn lanes, street names, etc. Then, the Electrical Unit designs the traffic signal installation to be consistent with the other traffic control devices at the intersection.

16.1.1.3 Safety Design Unit

The Safety Design Unit is responsible for capital improvement projects that are intended to provide countermeasures to reduce the number and/or severity of crashes at identified high-crash locations. For a safety project, the Safety Design Unit determines the design for highway signing and pavement markings. The Signing Unit reviews and comments on the design and, in general, provides technical support to the Safety Design Unit. On a signing-lead project, the Signing Unit may need to coordinate with the Safety Design Unit to determine any potential project overlaps.

16.1.1.4 Traffic Investigations Unit

The Traffic Investigations Unit is responsible for a variety of traffic engineering studies for the Department. These include speed zone, school crossings and other studies. On a signing-lead project, the Signing Unit contacts the Traffic Investigations Unit to determine the existing speed zones and school crossings status within the project limits (e.g., limits of all speed zones, restrictions at school zones). If necessary, the Signing Unit will request the Traffic Investigations Unit to perform any needed studies specifically for the project. For studies performed independently by the Traffic Investigations Unit, the Signing Unit will typically determine the proposed design for the pavement markings and signs at the study site.

16.1.1.5 Safety Management Section

The Safety Management Section is responsible for reviewing the crash history on projects. The review should identify correlations between crash characteristics and existing roadway features and should identify any crash cluster areas. The Section will provide the crash data, collision diagrams and statistical trends to the Signing Unit for use in project design. The Signing Unit will use this information in the design of its projects and coordinate with the Safety Management Section on major safety signing-lead projects.

16.1.2 Highways Bureau

16.1.2.1 Photogrammetry and Survey Section

The Photogrammetry and Survey Section is responsible for conducting aerial and field surveys on all Department projects and for coordinating with the District Office. The coordination with the Signing Unit is limited to field surveys on signing-lead projects. The decision that a field survey is needed is made at the Preliminary Field Review. The survey is then conducted by the District survey crews. The Survey Section checks the survey for accuracy and completeness and forwards the information to the signing designer for use in plan development.

16.1.2.2 Road Design Section

On signing-lead projects, there is typically no coordination between the Signing Unit and Road Design Section. On road design lead projects, the following summarizes the coordination between the Units:

1. Design. The Signing Unit will prepare the permanent plans for the signing and pavement marking design.
2. Contract Plans. The Signing Unit will provide the quantities for the pavement markings, which the road designer will incorporate into the summaries. The Signing Unit will submit the plans, quantities and special provisions for the highway signs directly to the Contract Plans Bureau.
3. Railroad/Highway Crossings. When railroad crossings are located within the project limits, coordination between the Road Design Section, the Signing Unit and the Utilities Section will be necessary. An agreement for construction and maintenance needs to be secured between the railroad company, the Department and the local road authority, if needed.

16.1.3 Consultant Design Bureau

If a consultant is responsible for designing the permanent traffic control devices in a project, the Signing Unit will review and comment on the consultant's work on signing and pavement markings. The Signing Unit is also available as technical support to the consultant.

16.1.4 Environmental Services Bureau

The Environmental Services Bureau is responsible for a variety of activities related to environmental impacts and procedures. This includes air, noise and water quality analyses; biological, archeological and historical impacts; preparation of environmental documents for MDT projects; evaluation and mitigation of hazardous waste sites; and the public's involvement with the environmental document. The following summarizes the coordination between the Signing Unit and the Environmental Services Bureau:

1. NEPA/MEPA Requirements. On signing-lead projects, the Signing Unit works with the Environmental Services Bureau to ensure that the project meets the Department's environmental and public input criteria pursuant to the National Environmental Policy Act and the Montana Environmental Policy Act. This includes project documentation (i.e., categorical exclusion, EA, EIS), water quality impacts, biological impacts, historical impacts, archeological impacts, and the need for public hearings. In general, the Environmental Services Bureau makes its determination of impacts based on input from the Signing Unit.
2. Signing for Historic Sites. There are typically three types of signing projects associated with historic sites:
 - a. formal projects where the Environmental Services Bureau is the lead;
 - b. road design projects where the Environmental Services Bureau and the Signing Unit provide support to the Road Design Section; and
 - c. maintenance projects where the Environmental Services Bureau and the Signing Unit provide support to the Maintenance Division. On some maintenance projects, the Signing Unit may take the lead.

In all cases, the Signing Unit is responsible for the design of the sign, and the Environmental Services Bureau is responsible for the location, text and justification. Where applicable, the Road Design Section and Maintenance Division are responsible for implementation.

16.1.5 Right-of-Way Bureau

The Right-of-Way Bureau is responsible for all activities related to the legal right-of-way for the State highway system. This includes appraisals, acquisitions, relocation, property management and agreements with utility companies and railroad companies. Where applicable on signing-lead projects, the following summarizes the coordination between the Signing Unit and Right-of-Way Bureau.

16.1.5.1 Utilities Section

The Signing Unit most often coordinates with the Utilities Section within the Right-of-Way Bureau. This includes the following activities:

1. Utilities. The installation of major sign structures may impact utilities. In this case the signing designer initiates the process by providing the Utilities Section with a set of plans denoting the utility conflicts and listing them by station and offset from centerline, and the two units work together during the process. The Utilities Section is the lead unit for contacts with utility companies and negotiates all agreements. The Signing Unit ensures that the utility/railroad work is consistent with the signing design. The signing designer, as needed, incorporates the utility information into the signing plans.

If major sign structures will be part of a road design-lead project, the Signing Unit must convey the needed information to the road designer so that the Road Design Section can properly coordinate with the Utilities Section for utility accommodation.

2. Railroads. The following summarizes the coordination between the Utilities Section and Signing Unit on projects involving highway/railroad grade crossings:
 - a. For a signing-lead project that has an at-grade highway/railroad crossing within its project limits, the Signing Unit will typically contact the Utilities Section to determine if any needed improvements to traffic control devices have been identified at the crossing.
 - b. The Signing Unit can independently upgrade signing and pavement markings at at-grade highway/railroad crossings without approval from the railroad company. However, if there will be any work within 200 ft (60 m) of railroad tracks, the railroad company must be notified by the Utilities Section.
 - c. If the project includes work within the railroad right-of-way, the signing designer will document this within the Scope of Work Report. The Utilities

Section will determine if an agreement is necessary between MDT and the railroad company. If there will be any work within 50 ft (15.2 m) of the closest track, the contractor must obtain protective insurance for the dollar amount of work in the project.

- d. The railroad company, in coordination with the Utilities Section, is responsible for designing and installing a crossing and for any active traffic control or crossbuck signs at the crossing.

16.1.5.2 Other Right-of-Way Sections

The Signing Unit's coordination with other Sections within the Right-of-Way Bureau includes the following activities:

1. Coordination. The Signing Unit provides Right-of-Way with the needed design information to determine the right-of-way, utilities and railroad impacts.
2. Plan Preparation. The signing designer provides the Right-of-Way Bureau with a strip map and preliminary construction limits. The Right-of-Way Bureau is responsible for determining the right-of-way design and, if necessary, the Bureau prepares a separate set of right-of-way plans for each project where right-of-way impacts exist.
3. Acquisition. The Right-of-Way Bureau performs all right-of-way work and procures all takings and easements needed for the project. The Bureau notifies the Signing Unit of any design considerations resulting from negotiations with the property owners, and the Right-of-Way Bureau will provide copies of signed agreements.

16.1.6 Bridge Bureau

The Bridge Bureau is responsible for the structural design of bridges (longer than 20 ft (6.0 m)) and concrete retaining walls on State-maintained highways. The following describes the coordination between the Signing Unit and Bridge Bureau:

1. Sign Structures. For overhead sign bridges, the contractor typically performs the structural analysis and provides soil analysis, the Bridge Bureau reviews and approves the shop drawings. For cantilever signs, the Bridge Bureau typically uses a standard design. The Bureau prepares a new design if there is a special problem (e.g., poor soils). The Soils Survey Report will be provided to the Bridge Bureau by the Signing Unit.

2. Bridge-Lead Project. These projects (e.g., bridge deck rehabilitation) may require input from the Signing Unit on pavement markings and signing at the bridge.
3. Signs on Bridges. If the Signing Unit proposes to place a sign on a bridge, the Signing Unit coordinates with the Bridge Bureau.

16.1.7 Engineering Information Management Section

The Engineering Information Management Section monitors and updates the Program and Preconstruction Management System, which is used to schedule projects and develop preconstruction manpower needs.

After the Preliminary Field Review Report has been transmitted for comment, the Engineering Management Unit distributes a standardized list of activities and anticipated man-hours that must be performed before the submittal of the final plan package to the Contract Plans Bureau. The signing designer modifies the list and the required man-hours as dictated by the proposed scope of the project. The Engineering Information Management Section incorporates the project into the Program and Preconstruction Management System and provides completion dates for the project activities.

The Signing Unit is responsible for notifying the Engineering Information Management Section when activities are completed and if additional activities must be added due to a change in project scope. The Signing Unit also provides the Engineering Information Management Section with the following:

1. the Preliminary Field Review Report;
2. the Project Scope of Work Report;
3. all updates on construction cost estimates; and
4. notification of any significant issues that may impact construction costs.

16.2 CONSTRUCTION PROGRAM

16.2.1 Materials Bureau

The Materials Bureau is responsible for testing and certifying all materials used on Department projects. This includes geotechnical analyses and materials for pavements and structures. The following summarizes the coordination between the Signing Unit and Materials Bureau:

1. Testing. The Materials Bureau tests pavement markings and highway signs during construction to ensure quality control.
2. Specifications. The Materials Bureau, Signing Unit and Construction Engineering Services Bureau coordinate to revise and update the Montana Standard Specifications for Road and Bridge Construction for applicable materials (e.g., thermoplastic pavement markings).
3. New Materials/Experimental Items. The Materials Bureau determines the need for any new materials and/or experimental items in the project, and it develops the specifications and special provisions for the items. The signing designer incorporates this information into the final contract document.
4. Sign Foundations. The Geotechnical Section within the Materials Bureau will conduct a foundation review for all overhead sign structures.

16.2.2 Construction Engineering Services Bureau

The Construction Engineering Services Bureau in the Central Office, in coordination with the District Offices, is responsible for all construction activities on all State-administered projects. This includes construction specifications, supplemental specifications, construction inspections, construction staffing and approval of construction change orders. The following summarizes the coordination between the Signing Unit and Construction Engineering Services Bureau.

The Construction Engineering Services Bureau receives copies of the Preliminary Field Review Report, Scope of Work Report and the Plan-in-Hand Report. In addition, they receive the preliminary plans, which are distributed for the Plan-in-Hand Review, and the Final Plan Review. The Construction Engineering Services Bureau will review the plans and provide recommendations for changes to the Signing Unit.

16.2.3 Contract Plans Bureau

The Signing Unit and Contract Plans Bureau coordinate on the following:

1. Signing Plans. After the signing plans have been finalized, the signing designer submits the plans to the Contract Plans Bureau. The Contract Plans Bureau circulates the plans to interested parties for comment, and the signing designer will revise the plans as needed to reflect the comments.
2. Special Provisions. The signing designer is responsible for the development of any necessary special provisions relating to signing items for the project. The Contract Plans Bureau ensures that these are included within the final contract document.

16.3 OTHER MDT SECTIONS

16.3.1 Rail, Transit and Planning Division

The Rail, Transit and Planning Division is responsible for all MDT planning functions including developing the Department's program of projects, performing initial planning studies and coordinating with the Metropolitan Planning Organizations (e.g., on the Transportation Improvement Program). The following describes the coordination between the Signing Unit and the Rail, Transit and Planning Division:

1. Traffic Data. The signing designer requests traffic data for projects. The Rail, Transit and Planning Division provides the data which includes present and future annual average daily traffic, design hourly volume, percentage of trucks and directional movements at intersections and interchanges. The data should also include any major changes in traffic volumes within the project limits.
2. Reference Points. For the placement of reference points, the Signing Unit needs information from the Rail, Transit and Planning Division on stationing and true distance.
3. Route Verification. To determine the proper legend on guidance signs, the Signing Unit needs verification on route numbers and designation.
4. Programming. The Rail, Transit and Planning Division provides the Signing Unit with the necessary programming papers to initiate the signing design project. The
 - a. the Preliminary Field Review Report; and
 - b. the Project Scope of Work Report.

16.3.2 MDT District Offices

The Department's five District Offices (Missoula, Butte, Great Falls, Glendive and Billings) provide the field services needed within each geographic area. Their responsibilities include maintenance of the State highway system, construction contract administration, contacts with county and city governments, and traffic-related activities (e.g., approach permits). Specifically for preconstruction activities, the following summarizes the coordination between the Signing Unit and District Offices on signing-lead projects:

1. Coordination. In general, the Central Office will maintain a steady contact with the District Office. The District Office, for example, will be invited to all field reviews and will receive all project-related correspondence.

2. Soils. The District Office is responsible for all soils surveys. The Soils Survey Report will be submitted to the Signing Unit.
3. Informal Public Meetings. The District Office, in coordination with the Signing Unit, is responsible for scheduling and conducting informal public meetings.
4. Temporary Traffic Control. On a signing-lead project, the District Office has the opportunity to review and comment on the temporary traffic control during construction and sequence of construction operations.

In addition to the above coordination on signing-lead projects, the District Office may coordinate with the Signing Unit on the following:

1. Public Complaints. For public complaints related to signs or pavement markings, the District Office may notify the Signing Unit of the complaint. If a review determines the need for corrective action, the Signing Unit submits a recommendation to the District Office for implementation.
2. Sign Inventory. Any new or replacement of highway signs made by the District will be communicated to the Maintenance Division, Maintenance Program so that the Signing Unit and the Maintenance Program can coordinate the updating of the Department's Sign Inventory.
3. District-Lead Projects. For these projects, the coordination between the District Office and Signing Unit is similar to that between the Road Design Section and District Office.

16.3.3 Motor Carrier Services Division

Motor Carrier Services Division is responsible for monitoring and regulating truck traffic within the State of Montana. If it initiates work for a new weigh station or an existing weigh station, the Signing Unit will determine the signing and pavement marking design for the station.

16.3.4 Legal Services Unit

The Legal Services Unit is responsible for providing all legal counsel required by MDT (e.g., interpretation of State laws on highway work). In its administration of signing projects, the Signing Unit is responsible for preparing and processing, where applicable, agreements with other entities. Once prepared, the Legal Services Unit reviews, comments on and approves the text of the proposed agreement.

16.3.5 Human Resources Division

The Signing Unit coordinates with the Human Resources Division, Civil Rights Bureau, to ensure compliance with the Americans with Disabilities Act. The Bureau will, for example, provide interpretations on the intent and application of the Act.

16.3.6 Tribal Liaison

When a signing-lead project is on tribal land, the Signing Unit coordinates with the Tribal Liaison for the establishment of a TERO (Tribal Employment Rights Office) Agreement. For example, the signing designer will submit a copy of the Preliminary Field Review Report and the Scope of Work Report to the Tribal Liaison to coordinate with the Tribal governments.

16.3.7 Public Involvement Program

The Public Involvement Program is the primary focal point for all contact with the general public. This includes preparing news releases of upcoming MDT work and coordinating the presentation of public hearings and informal public meetings. On signing-lead projects, the Signing Unit coordinates with Public Involvement Program on any public contacts.

16.3.8 Maintenance Division

The Maintenance Division within the Central Office is responsible for establishing and disseminating uniform maintenance practices throughout the State and for operating the Department's Maintenance Management System. When the District installs new or replaces existing highway signs, the District will notify the Maintenance Division, Maintenance Program of the changes.

16.4 EXTERNAL UNITS

This Section discusses the specific coordination activities between the Signing Unit and the primary units external to MDT.

16.4.1 Federal Agencies

16.4.1.1 Federal Highway Administration

The Federal Highway Administration (FHWA) administers the Federal-aid program which funds eligible highway improvements nationwide. Their basic responsibility is to ensure that the State DOT's comply with all applicable Federal laws in their expenditure of Federal funds and to ensure that the State DOT's meet the applicable engineering requirements for their proposed highway projects. FHWA maintains a Division Office within each State, and this is the primary point of contact for a State DOT.

The following statements summarize the coordination between the Signing Unit and the FHWA Montana Division Office:

1. Signing Projects. Because of the relatively small cost of signing projects, the FHWA is typically not involved.
2. State-Wide Practices. The Traffic Engineering Section seeks FHWA input into projects with Federal funding and on design policies, practices and criteria which will have a widespread application.

16.4.1.2 United States Forest Service (USFS)

The USFS is responsible for the management of all national forests. The USFS and the MDT currently have a Memorandum of Understanding (MOU) and approved procedures that describe the coordination between the two agencies for the planning and the development of projects having USFS involvement. If a proposed signing project will impact a national forest, the Signing Unit must coordinate the project development with the USFS. The USFS will, for example, be invited to any field reviews and receive copies of major project reports (e.g., Scope of Work Report). In some cases, project actions will require USFS approval (e.g., right-of-way acquisition). In addition, the USFS may request signs on the Montana State highway system informing the public of National forests.

16.4.1.3 United States Postal Service (USPS)

The Signing Unit may coordinate mail box improvements with the USPS.

16.4.1.4 National Park Service (NPS)

Coordination with the NPS will be necessary where signing projects are in the vicinity of land under the jurisdiction of the NPS. Although the Department has no formal agreement with the NPS, the level of involvement on projects will be similar to that between the MDT and the USFS.

16.4.1.5 Tribal Governments/Bureau of Indian Affairs (BIA)

Coordination with the Tribal governments and the Bureau of Indian Affairs will be necessary for projects on Indian territories. The Project Design Manager will keep the Tribal governments informed on the project progress and coordinate with the MDT Tribal Liaison for TERO (Tribal Employment Rights Office) Agreements.

16.4.1.6 Bureau of Land Management (BLM)

Coordination with the BLM will be necessary where proposed signing is in the vicinity of land under the jurisdiction of the BLM. Although the Department has no formal agreement with the BLM, the level of involvement on projects will be similar to that between the MDT and the USFS.

16.4.2 State Agencies**16.4.2.1 Department of Fish, Wildlife and Parks (FWP)**

Coordination with the FWP will be necessary where proposed signing is in the vicinity of land under the jurisdiction of the FWP. Although the Department has no formal agreement with the FWP, the level of involvement on projects will be similar to that between the MDT and the USFS.

16.4.2.2 Other State Agencies

The Signing Unit coordinates with other State agencies on an as-needed basis.

16.4.3 Local Governments

The following describes the coordination between the Signing Unit and local governments:

1. Design. The Signing Unit solicits input from the local government on signing projects in that locality and, in general, keeps the local governments up-to-date on any current or planned activities.
2. Coordination. On signing-lead projects, the Signing Unit typically invites the local government to any field reviews and provides the local government with copies of major project reports (e.g., Scope of Work Report).
3. Assistance. The Signing Unit provides technical assistance to the city and county governments, upon request. The Unit responds to any verbal or written inquiries from local governments on signing issues.
4. Information from Locals. Where applicable, the Signing Unit will need to obtain information from local governments.

