Chapter Twenty-two
PROJECT COORDINATION (Geometrics)

Table of Contents

Table of Contents
(Continued)

Section **Page**

Chapter Twenty-two
PROJECT COORDINATION (Geometrics)

During the development of a geometric design project, the geometric designer must coordinate with many units internal and external to the Geometrics Unit. Chapter Twenty-one presents a network which describes the project development sequence for where the Geometrics Unit is involved in the design process. Chapter Twenty-two discusses specific coordination responsibilities between the geometric 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 Twenty-two applies both to a project for which the Geometrics Unit is serving as the lead unit and to a project for which the Geometrics Unit is providing project support when another unit is project lead (e.g., Road Design Section).

22.1 PRECONSTRUCTION PROGRAM

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

22.1.1 Traffic and Safety Bureau

22.1.1.1 Signing Unit

The Signing Unit is responsible for the selection, design and placement of signs and pavement markings on most MDT projects. For geometric-lead projects, 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 determining the pavement markings for geometric-lead projects in coordination with the Signing Unit. On projects for which the Signing Unit is lead, Signing coordinates with the Geometrics Unit for the pavement marking design at intersections.

22.1.1.2 Electrical Unit

The Electrical Unit is responsible for the selection, design and placement of traffic signals and highway lighting on most MDT projects. For geometric-lead projects where a traffic signal will be installed, the Geometrics Unit is responsible for performing the

initial capacity analysis. The Geometrics Unit then prepares a layout of the intersection and the Electrical Unit superimposes the signal and/or highway lighting design on the layout. On traffic signal projects for which the Electrical Unit is lead, the Electrical Unit coordinates with the Geometrics Unit to determine if any minor geometric improvements are necessary at the intersection (e.g., turning radii).

22.1.1.3 Safety Design Unit

The Safety Design Unit is responsible for capital improvement projects which are intended to correct an identified high-crash location. On geometric-lead projects, the Geometrics Unit may need to coordinate with the Safety Design Unit to determine any potential project overlaps. On a safety design-lead project, the Geometrics Unit provides expertise on geometrics to the Safety Design Unit, if needed.

22.1.1.4 Traffic Investigations Unit

The Traffic investigations Unit is responsible for performing traffic engineering studies (e.g., speed studies, school crossings) and for recommendations to establish speed zones and school crossings. For geometric-lead projects, the coordination between the Geometrics Unit and Investigations Unit is to verify established speed zones and school crossings. The Geometrics Unit will use this information to establish guidelines for geometric designs (e.g., turn-lane lengths in urban locations). The Investigations Unit may also perform spot engineering studies for geometric-lead projects when requested.

On a project for which the Investigations Unit is responsible, there is no coordination with the Geometrics Unit.

22.1.1.5 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 Geometrics Unit for use in project design. The Geometrics Unit will determine if any countermeasures (e.g., installation of left-turn lanes) are necessary.

22.1.2 Highways Bureau

22.1.2.1 Hydraulics Section

The Hydraulics Section is responsible for hydrologic and hydraulic analyses for both roadway drainage appurtenances and bridge waterway openings. Where applicable, the following summarizes the coordination between the Geometrics Unit and Hydraulics Section where the Geometrics Unit is the lead:

1. Culverts. For all box culverts and all pipe culverts with diameters greater than 2 ft (600 mm), the Hydraulics Section will perform all work on the culvert design. This includes:

   a. hydrological analysis to calculate design flow rate based on the drainage basin characteristics;

   b. hydraulic analysis to select culvert dimensions and layout (e.g., longitudinal slope);

   c. selection of culvert material (e.g., reinforced concrete, corrugated metal);

   d. structural/service life design of the culvert; and

   e. end treatments.

   The geometric designer is responsible for the design of minimum-sized pipes 2 ft (600 mm). These may be judged to be adequate, based on input from the District maintenance personnel that an existing 2 ft (600 mm) pipe culvert has performed adequately. However, the Hydraulics Section will provide assistance as required to support the decision to use a 2 ft (600 mm) culvert.

2. Storm Drainage Trunk Line. The geometric designer will present the proposed geometric design to the Hydraulics Section documenting, for example, pavement widths, cross slopes, longitudinal grades, location of intersecting roads and approaches, etc. Based on this information, the Hydraulics Section is responsible for all work related to the design of a closed drainage system. This includes:

   a. flow calculations in the system;
   b. pipe size and material, including optional material;
   c. spacing of inlets;
   d. pipe slopes; and
   e. outfall location and design.

The geometric designer will determine the exact location of inlets to ensure that the inlets are located at low spots and to avoid conflicts with utilities, curb ramps, etc.

3. Irrigation/Sprinkler Systems. The Hydraulics Section is responsible for all designs related to an irrigation system (e.g., siphon details) for pipes larger than 1.5 ft (450 mm) in diameter and for the design of sprinkler systems. The geometric designer is responsible for relocating minor irrigation lateral ditches outside of the right-of-way. The Hydraulics Section will assist the geometric designer as required during the design of these minor irrigation facilities.

4. Roadside Ditches. The geometric designer determines the dimensions of the roadside ditch based on the criteria presented in Chapters Eleven and Twelve of the Montana Road Design Manual. Typically, no analysis is performed to determine hydraulic capacity. However, where determined necessary, the Hydraulics Section will evaluate the potential for erosion in the ditch and, if needed, recommend a permanent protective lining.

5. FEMA Regulations. The Hydraulics Section is responsible for determining that the project design is consistent with regulations promulgated by the Federal Emergency Management Agency (e.g., development within delineated floodplains).

6. Curb Ramps. To meet the requirements of the *Americans with Disabilities Act*, a project may require the installation of curb ramps which may, in turn, interfere with an existing curb inlet. In this case, the geometric designer and Hydraulics Section will work together to resolve the conflict.

7. Documentation. The following will apply to roadway drainage appurtenances:

   a. The Hydraulics Section will submit the necessary information documenting its recommendations for the roadway drainage design.

   b. The geometric designer will incorporate all details into the geometric design plans and cross sections.

   c. The geometric designer will calculate all quantities for the roadway drainage appurtenances.

8. Site Plans (Minor) and Approach Evaluations. During the evaluation of site plans and approaches, the Hydraulics Unit may have not been given a copy of the plans. For these cases, the Geometrics Unit should notify the Hydraulics Unit if there are any hydraulic concerns in these evaluations.

22.1.2.2 Photogrammetry and Survey Section

The Photogrammetry and Survey Section is responsible for conducting aerial and field surveys, in coordination with the District Office, for all Department projects. The following summarizes the coordination with the Geometrics Unit when the Geometrics Unit is the lead:

1. Field Surveys. 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. For data collector surveys, the surveyor will provide a 3D map file and a Digital Terrain Model. A 2D MicroStation map file is created by the Geometrics Unit with the topography information to be used as a base map. For manually conducted surveys, the designer will be responsible for plotting the survey data using the Department's CADD system. In addition to the field notes, the designer should obtain a copy of the as-built plans (if available) for informational purposes. The as-built plans can be obtained at the MDT Central Office in Helena.

2. Aerial Surveys. The decision that an aerial survey is needed is made at the Preliminary Field Review. The Photogrammetry and Survey Section plots the necessary flight lines and requests that targets be provided. A District survey crew will conduct the control traverse survey and will provide any needed additional survey information. The Photogrammetry and Survey Section will prepare a strip map and a digital terrain model of the project. The designer will strip cross sections from the Digital Terrain Model as needed.

3. Control Traverse Diagram. The Photogrammetry and Survey Section checks the control traverse survey data and then plots the control traverse diagram. The geometric designer will retrieve the control traverse plot and coordinates table for inclusion in the plans.

22.1.2.3 Road Design Section

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

1. Highway Capacity. The Geometrics Unit performs all needed highway capacity analyses for the project. This includes, for example, the warrants and limits of truck climbing lanes. The Geometrics Unit incorporates the results of its analyses into the design of the intersections. The road designer incorporates the results into the design of other highway elements (e.g., number of lanes).

2. Intersections At-Grade. The Geometrics Unit performs all work on the geometric design of major intersections at-grade. The Unit prepares all necessary detail sheets to clearly identify all geometric features. The road designer will place these in the final plans and will calculate all roadway quantities for the intersection work. The Geometrics Unit will revise the details as needed.

3. Interchanges. The Geometrics Unit determines the interchange type and basic geometric configuration. The road designer prepares the detailed design of the interchange.

4. Medians. The Geometrics Unit is responsible for selecting the median type and for determining the basic geometric dimensions of the median (e.g., width, location of openings, width of openings). The road designer prepares the detailed design of the median.

5. Other Geometric Design Features. The Geometrics Unit will review and comment on the other proposed geometric design features (e.g., horizontal and vertical alignment).

22.1.3 Consultant Design Bureau

The Department may use a consultant on geometric design projects. When a consultant is used, the Consultant Design Bureau is the primary contact with the consultant. The Geometrics Unit will provide technical support on the project and review the plans prepared by the consultant. When the Consultant Design Bureau is performing the design as the lead unit, the coordination between the Consultant Design Bureau and the Geometrics Unit will be similar to the coordination required between the Geometrics Unit and Road Design Section.

22.1.4 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 Geometrics Unit and Environmental Services Bureau when the Geometrics Unit is the lead unit:

1. Permits/Approvals. The geometric designer provides the Environmental Services Bureau with the project information needed for securing several environmental permits/approvals (when required):

   a. Section 402, Temporary Erosion Control permit (Department of Health and Environmental Sciences (DHES) or the Federal EPA);

   b. U.S. Army Corps of Engineers Section 404/Section 10 permit(s);

   c. U.S. Fish and Wildlife, U.S. Forest Service, Bureau of Land Management approvals; and

   d. any applicable regional and State permits (see Comment #9).

   The Environmental Services Bureau coordinates with the applicable Federal or State agency and processes the permit information and gains agency approval. The Environmental Services Bureau notifies the Geometrics Unit when the permit or approval is received.

2. NEPA/MEPA Requirements. The Geometrics 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 Geometrics Unit.

3. Section 4(f). A Section 4(f) approval is required if a project will impact publicly owned land (e.g., public park, recreational area, wildlife/waterfowl refuge). An approval will be granted only if there is no feasible and prudent alternative. Where a Section 4(f) approval is required, the geometric designer will provide the necessary project information to the Environmental Services Bureau, who will secure the approval.

4. Section 6(f). Federal law places restrictions on the use of land acquired with funds authorized by the Land and Water Conservation Act of 1965 as administered by the U.S. Department of Interior (Section 6(f) of the LWCF). Where a Section 6(f) approval is required, the geometric designer will provide the necessary project information to the Environmental Services Bureau, who will secure the approval.

5. Mitigation Features. The Environmental Services Bureau and Geometrics Unit will work together on the plan for mitigation of environmental impacts.

6. Early Coordination. The Environmental Services Bureau determines the need for early coordination on environmental issues with other State, Federal and public entities and makes all direct contacts, with input from the Geometrics Unit.

7. Hazardous Wastes. The Environmental Services Bureau identifies all hazardous waste sites and determines any needed mitigation measures. The Environmental Services Bureau will coordinate the mitigation if it will be performed before letting the construction project to contract. They will provide the Geometrics Unit with any necessary provisions. The geometric designer is responsible for incorporating these into the construction plans and specifications, if the hazardous waste removal or site mitigation will be accomplished by the road contractor.

8. Erosion Control During Construction. The geometric designer is responsible for developing a plan for temporary erosion control during construction. The Environmental Services Bureau will review and comment on the plan and will secure approval from the Montana Department of Health and Environmental Sciences or Federal EPA.

9. Montana Department of Fish, Wildlife and Parks (MDFWP). The need for coordination with the MDFWP will be determined by the Environmental Services Bureau on a project-by-project basis. If needed, the geometric designer will provide a set of plans to the Environmental Services Bureau, who will apply for a Stream Protection Act 124 permit. The Environmental Services Bureau will coordinate with the MDFWP to secure approval and notify the Geometrics Unit when approval is received.

10. Section 106. For all Federally funded projects, MDT must identify archeological and historic sites in the vicinity of the project. The identified sites must be evaluated to determine if they are eligible for the National Register of Historic Places (NRHP). MDT submits recommendations for eligibility to the State Historic Preservation Officer (SHPO) for its concurrence. If a site is considered eligible for the NRHP and if the project will impact the site, the Department is mandated to mitigate the adverse effects. Mitigation is accomplished through written agreements among MDT, the Advisory Council on Historic Preservation and the Montana SHPO. A project cannot proceed unless the MDT's NRHP determination and any necessary mitigation measures are approved by SHPO.

11. Wetland Mitigation. For wetland mitigation sites, the Environmental Services Bureau will determine the location of the site, review the hydrology with the Hydraulics Section to ensure an adequate water supply, and provide a conceptual plan of the site. The geometric designer is responsible for the

preparation of plans, cross sections and summaries of quantities and for providing any special provisions that apply to construction items.

22.1.5 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. The following summarizes the coordination between the Geometrics Unit and Right-of-Way Bureau when the Geometrics Unit is the lead:

1. Coordination. The Geometrics Unit provides the Right-of-Way Bureau with the necessary design information to determine the right-of-way, utilities and railroad impacts.

2. Plan Preparation. The geometric 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 preparing 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 Geometrics Unit of any design considerations resulting from negotiations with the property owners and will provide copies of signed agreements.

4. Utility/Railroad Agreements. The geometric designer places all utility topography on the construction plans. After determining there are potential project impacts on utilities and/or railroads, the geometric designer initiates the process by providing the Right-of-Way Bureau 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 that are potentially in conflict will also be placed on the cross sections by the geometric designer. The Right-of-Way Bureau is the lead unit for contacts with utility/railroad companies and negotiates all agreements. The Geometrics Unit ensures that the utility/railroad work is consistent with the geometric design. The geometric designer, as needed, incorporates the utility/railroad information into the geometric design plans.

22.1.6 Bridge Bureau

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

describes the coordination between the Geometrics Unit and Bridge Bureau when the Geometric Unit is lead:

1. Roadway Geometrics. The geometric designer provides the Bridge Bureau with preliminary horizontal and vertical alignments. The bridge designer determines a preliminary structure length and depth of superstructure and provides approximate bridge end elevations. The geometric designer modifies the alignment as necessary, based on the preliminary grade recommendations from the bridge designer. The Bridge Bureau reviews and comments on the proposed roadway geometrics.

   The Bridge Bureau determines the bridge width according to criteria in the Montana Structures Manual. The proposed bridge width will not be less than the roadway width summarized in the Geometric Design Tables in Chapter Twelve of the Montana Road Design Manual.

2. Approach Roadway. Even where only minor roadway work is necessary at, for example, a bridge replacement, the Geometrics Unit is responsible for all roadway work.

3. Roadside Safety Appurtenances. The Bridge Bureau will select the type and design of the bridge rail. The geometrics designer will determine the design of the approaching guardrail transition into the bridge rail.

4. Sidewalks. Sidewalk requirements on bridges will be determined jointly by the Bridge Bureau, the Geometrics Unit and the District.

5. Traffic Control Plan (TCP). The geometrics designer is typically responsible for developing a strategy for the maintenance and protection of traffic during construction across any bridges within the project limits. This may include, for example, providing one lane of traffic across a two-lane, two-way bridge, providing a detour around the bridge or, on a multilane facility, providing a crossover between the two roadways. The Bridge Bureau assists in the development of the proposed TCP. The Bridge Bureau may prepare additional TCP requirements.

   The Bridge Bureau will develop a traffic control requirements across the structure when part-width construction is used or when the removal of an existing structure and the construction of the new structure, must be performed in a specific sequence.

6. Plan Preparation. The Bridge Bureau prepares all necessary structural design plan sheets and submits these to the Contract Plans Bureau for direct insertion into the final plan assembly.

22.1.7 Engineering Information Management Section

The Engineering Information Management Section monitors and updates the Program and Project 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 Information Management Section 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 geometric 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 Project Management System and provides completion dates for the project activities.

The Geometrics Unit is responsible for:

1. notifying the Engineering Information Management Section when activities are completed and if additional activities must be added due to a change in project scope, and

2. providing updates to the Engineering Information Management Section on construction cost estimates.

22.2 CONSTRUCTION PROGRAM

The Construction Program 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 Geometrics Unit and Construction Program.

22.2.1 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. Normally, the District materials personnel performs the field sampling. The following summarizes the coordination between the Geometrics Unit and Materials Bureau:

1. Geotechnical. The Geotechnical Section prepares a Geotechnical Report for geometric projects when deemed necessary. The Report presents the soil and rock types, bearing capacities, slope stability, rock cut recommendations, muck excavation, subdrainage needs, erosion control strategies, etc. The Geometrics Unit comments on the Geotechnical Report and works with the Geotechnical Section only to resolve any conflicts. The geometric designer incorporates the geotechnical recommendations into the project plans.

2. Pavement Design. The Materials Bureau recommends alternative pavement types (concrete or bituminous) and surfacing treatments (e.g., recycling, crack and seat) and designs the pavement structure. The geometric designer incorporates the pavement design into the geometric design plans.

3. New Materials/Experimental Items. The Materials Bureau determines the need for any new materials and/or experimental items in the project and develops the specifications and special provisions for the items. The geometric designer incorporates this information into the final contract document.

22.2.2 Construction Engineering Services Bureau

The Construction Engineering Services Bureau receives copies of the Preliminary Field Review Report, Alignment 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 Geometrics Unit.

The geometric designer is responsible for developing the initial proposal for the maintenance and protection of traffic through the construction zone, including the sequence of construction operations and the need for any detours. The designer will also prepare the design for any proposed detours. The Construction Engineering Services Bureau and District construction personnel will review and revise the geometric designer's proposed strategy at the plan-in-hand review. The geometric designer incorporates the recommended charges. The final plans are then submitted to the Contract Plans Bureau, who will distribute the plans to the Construction Engineering Services Bureau for further review and comments.

22.2.3 Contract Plans Bureau

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

1. Geometric Design Plans. After the geometric design plans have been finalized, the geometric designer submits the plans to the Contract Plans Bureau. The Contract Plans Bureau circulates the plans to interested parties for comment. The geometric designer will revise the plans as needed to reflect the comments.

2. Special Provisions. The geometric designer is responsible for the development of any necessary special provisions relating to geometric design items for the project. The Contract Plans Bureau ensures that these are included within the final contract document.

22.3 OTHER MDT SECTIONS

22.3.1 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 Geometrics Unit and the Rail, Transit and Planning Division:

1. Interstate Access Points. The Rail, Transit and Planning Division is responsible for developing the package of information to gain FHWA approval for new access points onto the Interstate system. The Geometrics Unit will provide assistance and information as needed to the Division.

2. STIP/TIP. The Geometrics Unit coordinates with the Project Analysis Bureau within the Rail, Transit and Planning Division on the preparation of the Transportation Improvement Program (TIP) for metropolitan areas and with the Project Analysis Section on the preparation of the Statewide Transportation Improvement Program (STIP).

3. Traffic Data. The geometric designer requests traffic data for projects. The Rail, Transit and Planning Division obtains the data which includes average annual daily traffic, design hourly volume, percentage of trucks, directional movements at intersections and interchanges, and daily equivalent single-axle loads (ESAL). The data should also include any major changes in traffic volumes within the project limits.

4. Programming. The Rail, Transit and Planning Division provides the Geometrics Unit with the necessary programming papers to initiate the geometric design project. The geometric designer submits the following to the Rail, Transit and Planning Division:

    a. the Preliminary Field Review Report, and
    b. the Project Scope of Work Report.

5. System Impact Actions. The Rail, Transit and Planning Division is responsible for coordinating with the Geometrics Unit the review of major developments impacting the Department's Transportation System.

22.3.2 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 inspection services, 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 Geometrics Unit and District Offices when the Geometrics Unit is lead:

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. Aerial Survey. When an aerial survey is conducted, the District Office is responsible for the control traverse and "pick-up" field survey to locate items which may be missed by the aerial survey (e.g., underground utilities). For projects designed in the Central Office, the District conveys this information to the Central Office for plotting.

3. Soils. The District Office is responsible for all soils surveys. Its report is submitted to the Materials Services Section in the Central Office. The District Office will also provide recommendations for shrink/swell factors for project soils.

4. Informal Public Meetings. The District Office, in coordination with the Geometrics Unit, is responsible for scheduling and conducting informal public meetings.

5. Construction Cost Estimate. The District Office will provide the Central Office with unit prices to assist in the preparation of the construction cost estimate.

6. Temporary Traffic Control. On a geometric-lead project, the District reviews the proposed temporary traffic control plan and modifies it as necessary. The District also provides a quantity estimate for traffic control units required for the project.

When the District design staff is the lead, the project coordination between the Geometrics Unit and the District will be similar to the coordination between the Road Design Section and the Geometrics Unit.

In addition to the above coordination on geometric-lead projects, the maintenance section within the District Office may coordinate with the Geometrics Unit on the following:

1. Intersections. Maintenance may identify an operational or safety problem at an intersection and request a review by the Geometrics Unit. Once a design configuration is prepared by Geometrics, the District will perform the field work.

2. Approaches. When requested by the District, the Geometrics Unit reviews approaches for operational safety and all proposed approaches needing a variance. The District Office signs all approach permits.

22.3.3 Motor Carrier Services Division

Motor Carrier Services Division is responsible for monitoring and regulating truck traffic within the State of Montana. The following summarizes the coordination between the Geometrics Unit and Motor Carrier Services Division:

1. Weigh Stations. Motor Carrier Services Division will determine the need for new weigh stations or work on an existing weigh station. Once the project is initiated, the Geometrics Unit performs the design work for the station, and the Motor Carrier Services Division reviews and comments on the proposed design.

2. Truck Size Regulation. Periodically, the Motor Carrier Services Division will evaluate whether to modify the State's legal limits on truck dimensions (e.g., height, length). The Geometrics Unit evaluates the operational impacts on the geometrics of intersections and interchanges throughout the State, and it submits a recommendation to Motor Carrier Services Division.

22.3.4 Legal Services Unit

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 geometric design projects, the Geometrics 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.

22.3.5 Tribal Liaison

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

22.3.6 Human Resources

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

22.3.7 Public Involvement Program

The Public Involvement Program within the Director's Office 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 geometrics design projects, the Geometrics Unit coordinates with the Public Involvement Officer on any public contacts.

22.4 EXTERNAL UNITS

This Section discusses the specific coordination activities between the Geometrics Unit and selected major units external to MDT.

22.4.1 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. Section 24.6 describes FHWA's involvement in project development.

22.4.2 Local Governments

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

1. Design. The Geometrics Unit solicits input from the local government on geometric design projects in that locality and, in general, keeps the local governments up-to-date on any current or planned activities. For example, larger municipalities may have their own design criteria, which must be considered during the design process.

2. Coordination. The Geometrics 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 Geometrics 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 geometric design issues.

4. Information From Locals. Where applicable, the Geometrics Unit will need to obtain information from local governments.