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*MONTANA DEPARTMENT OF
TRANSPORTATION*

ROAD DESIGN MANUAL

**Chapter Three
ADMINISTRATIVE POLICIES AND
PROCEDURES**

Table of Contents

<u>Section</u>	<u>Page</u>
3.1 PROJECT REPORTS	3.1(1)
3.1.1 <u>Preliminary Field Review Report</u>	3.1(1)
3.1.1.1 General	3.1(1)
3.1.1.2 Format/Content	3.1(3)
3.1.2 <u>Alignment and Grade Review Report</u>	3.1(10)
3.1.2.1 General	3.1(10)
3.1.2.2 Format/Content	3.1(11)
3.1.3 <u>Scope of Work Report</u>	3.1(16)
3.1.3.1 General	3.1(16)
3.1.3.2 Format/Content	3.1(17)
3.1.4 <u>Plan-in-Hand Report</u>	3.1(24)
3.1.4.1 General	3.1(24)
3.1.4.2 Format/Content	3.1(28)
3.1.5 <u>Final Plan Review Report</u>	3.1(29)
3.2 CORRESPONDENCE	3.2(1)
3.2.1 <u>In-house Memoranda</u>	3.2(1)
3.2.1.1 General	3.2(1)
3.2.1.2 Signatures	3.2(1)
3.2.1.3 Distribution	3.2(1)
3.2.2 <u>Outside Correspondence</u>	3.2(2)
3.2.2.1 General	3.2(2)
3.2.3 <u>Signatures</u>	3.2(3)

Table of Contents

(Continued)

<u>Section</u>		<u>Page</u>
3.3	MEETINGS	3.3(1)
	3.3.1 <u>Project Review Meetings</u>	3.3(1)
	3.3.2 <u>Staff Meetings</u>	3.3(1)
3.4	PROJECT WORK TYPE CODES	3.4(1)

Chapter Three

ADMINISTRATIVE POLICIES AND PROCEDURES

This Chapter discusses several items related to the operational practices for the Department's Road Design Section. It contains information on the preparation of in-house project reports, outside correspondence, memoranda, meetings and project work types.

3.1 PROJECT REPORTS

This section provides information on how to prepare the Department's project reports including the Preliminary Field Review Report, Alignment Review Report, Scope of Work Report, Plan-in-Hand Report and Final Plan Review Report. When used as described, this information will provide consistent, accurate and appropriate project reports.

3.1.1 Preliminary Field Review Report

3.1.1.1 General

A preliminary field review is conducted after a project is nominated to determine major design features, project-related issues and potential problems. Representatives attending the review are summarized in Section 3.1.1.2. The Preliminary Field Review (PFR) Report provides written documentation of all major determinations made during the preliminary field review meeting. It should list the major project design features and provide a general overview of proposed major improvements for the highway. The following procedures will apply:

1. Preparation. The Project Design Manager or designee, is responsible for the preparation of the PFR Report. Organize the Report using the format discussed in Section 3.1.1.2.
2. Signature. The PFR Report is prepared for the Road Design Engineer's review and the Highways Engineer's signature.
3. Approval. The Road Design Engineer will forward the PFR Report to the Highways Engineer for his approval and signature.
4. Distribution. After the Highways Engineer has approved the Report, copies of the PFR Report will typically be distributed to the preconstruction project file and

to the following individuals (note that this is a standardized list – other people may receive copies as needed);

- a. Preconstruction Engineer,
- b. District Administrator,
- c. Rail, Transit and Planning Division Administrator,
- d. Maintenance Division Administrator
- e. Motor Carrier Services Administrator
- f. All Engineering Bureau Chiefs,
 - (1) Highways Engineer
 - Highways Design Engineer
 - Road Design Engineer
 - Hydraulics Engineer
 - Photogrammetry
 - (2) Construction (2 copies)
 - (3) Bridge
 - (4) Right-of-Way
 - Utilities
 - Access Management
 - (5) Engineering Oversight
 - (6) Traffic and Safety
 - Safety Management
 - (7) Materials
 - Geotechnical
 - Pavement Engineer
 - (8) Consultant Design
 - (9) Environmental Services
 - Engineering Section Supervisor
 - Biologist
- g. Fiscal Planning
- h. Engineering Management
- i. all other parties involved in the field review,
 - (1) City/County Officials
- j. any other individuals or units deemed appropriate.
 - (1) Secondary Roads
 - (2) Tribal Affairs Coordinator (as appropriate),
 - (3) ADA Coordinator,
 - (4) Bicycle and Pedestrian Coordinator
 - (5) FHWA (NHS projects)

5. Comments. All parties receiving a copy of the PFR Report are requested to provide comments on the Report within two weeks of the distribution date.

Concurrence of the Report will be assumed if no comments are received within three days of the date specified.

If comments are submitted that substantially alter the proposed design features or raise additional issues, a revised Preliminary Field Review Report should be distributed for additional comment. The report should consist of only the sections affected by the changes. It does not need to include all of the background information contained in the original report.

3.1.1.2 Format/Content

In general, prepare the Preliminary Field Review (PFR) Report in the order and format discussed below. This will provide a uniform presentation for all Department PFR Reports and will ensure that all appropriate information will be addressed. Not all of the subject areas listed below will be required for every PFR Report, and adjustments will need to be made to the Report as deemed necessary. The level of coverage for each item will also vary from project-to-project. Although in-depth coverage of the individual design details is usually not included in this Report, sufficient detail still must be provided to allow the reader to fully understand the proposed project.

The following provides the topic areas, in order, that should be addressed in the PFR Report:

1. Introduction. The introduction should include the date of the field review and provide a list of individuals who attended the review. The listing should also include the individual's title, organization and office location. Depending on the project, representatives at a field review may include:
 - a. the Project Design Manager
 - b. the District Administrator,
 - c. the Division Maintenance Chief,
 - d. the Engineering Services Engineer/Supervisor,
 - e. a representative from the Consultant Design Section,
 - f. a representative from the Hydraulics Section,
 - g. a representative from the Bridge Bureau,
 - h. a representative from the Environmental Services,
 - i. a representative from the Right-of-Way Bureau,
 - j. a representative from the Geotechnical Section,
 - k. a representative from the Civil Rights Bureau (ADA Coordinator),

- l. the Tribal Affairs Coordinator,
 - m. a representative from the District Construction Office,
 - n. a representative from FHWA (if applicable),
 - o. local officials (if deemed appropriate), and
 - p. others as deemed appropriate.
6. Proposed Scope of Work. This section should provide a very brief description of the proposed scope of work for the project and/or the project intent. For example, "The proposed project has been nominated to provide an overlay and roadside safety enhancements." Also include a brief discussion explaining the reason(s) why the proposed scope of work was selected.

If it is determined that an outside consultant should be considered for the design of the project, provide a division of expected responsibilities between MDT and the consultant.

7. Project Location and Limits. Some of the descriptions that may be used to briefly describe the project location include:
- a. county name;
 - b. city/town name;
 - c. Indian reservation;
 - d. route number;
 - e. functional classification;
 - f. reference points*;
 - g. project length;
 - h. crossing routes and/or local streets;
 - i. distances from major bridges on the route;
 - j. distance and direction from nearby towns/cities;
 - k. as-built project numbers;
 - l. adjacent project numbers; and
 - m. direction of the proposed project.

* Where the stationing proceeds in the opposite direction from the reference points (e.g., stationing increases from south to north while the reference points increase from north to south), note this in the Report.

8. Physical Characteristics. A brief description of the project's physical characteristics may include a discussion of the following:
 - a. year when the existing road/bridge was built or reconstructed and when it was last overlaid or rehabilitated;
 - b. pavement width and number of lanes;
 - c. surface types and thicknesses;
 - d. number and thickness of previous overlays;
 - e. the Pavement Management System's pavement condition and treatment recommendations;
 - f. general terrain of the area;
 - g. rural or urban location;
 - h. general description of the existing horizontal and vertical alignment, including all features which do not meet the proposed design criteria;
 - i. number of locations where the existing grade exceeds the proposed design maximum;
 - j. maximum gradient on the project;
 - k. general description of the existing fill and cut slopes, including slope rates, fill heights and cut depths;
 - l. lengths and widths of existing bridges;
 - m. any other unique physical characteristics related to the project; and
 - n. special features within the project limits (e.g., National Forest, State Parks, etc.).
9. Traffic Data. The traffic data listed in the PFR Report should include the following:
 - a. current AADT,
 - b. letting date AADT,
 - c. design year AADT,
 - d. DHV,
 - e. percent of trucks,
 - f. the expected daily 18,000 lb (8165 kg) Equivalent Single Axle Load (ESAL), and

- g. basis of projected traffic growth.
- 10. Accident Analysis. This section should briefly summarize the following crash history data:
 - a. number of crashes;
 - b. types of crashes;
 - c. overall crash and severity rates for the project location;
 - d. average statewide crash and severity rates for similar routes, if available;
 - e. a description of how the project compares to the statewide averages; and
 - f. a listing of locations with an unexpectedly high number of crashes and a brief description of why a higher than normal number of crashes may be occurring and proposed countermeasures to be investigated.
 - g. other remarks furnished by Safety Management regarding the crash history of the project.
- 11. Major Design Features. The PFR Report should provide a general discussion for each of the following design features, if pertinent:
 - a. Design Speed. This section should provide the expected design speed for the project. If more than one design speed is selected for the project, then clearly identify the termini for each design speed selected. For existing facilities, also identify the existing posted speed limit.
 - b. Horizontal Alignment. Identify all the major horizontal features for the proposed project, including all features which may not meet the proposed design criteria. The discussion should also indicate the roadway alignment that can be reasonably obtained and possible methods for improving the horizontal alignment. The utilization of a new alignment, offset and parallel to the existing alignment, should be discussed for all reconstruction projects.
 - c. Vertical Alignment. Provide a general description for all the major vertical alignment features on the proposed project. This discussion may identify any grades which exceed the design criteria, the vertical alignment that can be reasonably obtained and possible methods for improving the vertical alignment.
 - d. Typical Sections and Surfacing. Provide a discussion for the proposed typical section(s) of the project. This includes the final overall roadway width, travel lane widths, shoulder widths, two-way left-turn lanes, medians, side slopes, sidewalks, etc. Include separate descriptions where

- there are significant changes in the typical section (e.g., changes in lane widths). Provide a description of the type of surfacing/surfacing treatment that will be used on the project
- e. Geotechnical Considerations. This section should provide a brief listing of the major geotechnical considerations and techniques that may be required to construct the project (e.g., slope stability options).
 - f. Hydraulics. If the Location Hydraulics Study Report is attached, this section of the PFR Report will only need to list the major hydraulic features of the project (e.g., bridge replacement, culvert replacements greater than 84 in). If the Location Hydraulics Study Report is not attached, provide a discussion for the major hydraulic design elements on the project (e.g., pipe replacement, irrigation facilities, flooding or overtopping issues).
 - g. Bridges. If there are bridges on the project, include a description of the proposed work to be performed on each bridge. The description should also discuss the need for sidewalks, bicycle paths, utilities or any special features that may be included on the bridge. This section should also address any structural removals.
 - h. Traffic. Provide a brief discussion for each intersection which has been proposed for major revisions (e.g., adding turning lanes, changing an existing "Y" intersection to a "T"). In addition, this section should address all major traffic control devices that may be used within the project (e.g., traffic signals, highway lighting, major signs).
 - i. Pedestrian/Bicycle/ADA. Discuss impacts to existing facilities. Discuss implementation of new ADA features. Where there are no existing pedestrian or bicycle facilities and if there is evidence of use, include a proposal for their accommodation.
 - j. Miscellaneous Features. This section should provide a discussion for all major design elements which are not identified in one of the above design areas. Miscellaneous features may include guardrail, mailbox turnouts, on-street parking, accessibility requirements, retaining walls, fencing, etc.
 - k. Context Sensitive Design Issues. Discuss any issues which may be context sensitive and potential solutions. These are issues that may affect the development of the project and are not strictly transportation related. They may include environmental, cultural and social issues
12. Other Projects. This section should identify all other projects that are currently under construction or will be in the near future that may affect this project.

13. Location Hydraulics Study Report. If available, attach the Location Hydraulics Study Report to the PFR Report. The Location Hydraulics Study Report will be prepared by the Hydraulics Section.
14. Design Exceptions. If known at this stage, list all proposed design exceptions with a brief discussion of why an exception is considered necessary.
15. Right-of-Way. Briefly describe the existing and proposed right-of-way widths. Note if the project will use minimum or standard Right-of Way widths. Include separate descriptions where the existing or proposed right-of-way is significantly different between various typical sections. If known, provide a listing of the major right-of-way acquisitions (e.g., taking of commercial property). In addition, identify the proposed access control classification for the highway.
16. Access Control. The current access control classification for the highway should be identified and discuss if the access control will be modified on the project.
17. Utilities/Railroads. Include a listing of known utility and/or railroad companies that may be affected by the project. Also describe any railroad crossing and the type of signing/signalization. For utilities, note their location and how they may affect the project.
18. Survey. Address the need for a survey and the recommended survey methodology. Provide recommended target dates for the survey completion. This section should also discuss the need for other survey types (e.g., soil survey, S.U.E.).
19. Public Involvement. This section should discuss the type of public involvement required. (See Public Involvement Handbook) This may include meetings with local officials, an early public involvement meeting and/or a formal public hearing. Also include the proposed approach for distributing project information to the public.
20. Environmental Considerations. List the level of Environmental Document proposed by Environmental Services. Identify any major environmental concerns on the project (e.g., hazardous waste, waterways, wetlands, archaeological/cultural sites). List all proposed measures that should be evaluated to avoid and minimize impacts to wetlands. The need for obtaining a consultant to prepare the environmental documents should also be addressed.
21. Traffic Control. Identify the proposed traffic control procedure planned for the construction zone (e.g., detours, lane closures, shifting traffic, crossovers).

22. Project Management. State which office will be responsible for the plans and identify the Project Manager.
23. Ready Date. Include the ready date in the Report. The project ready date is typically three months prior to the letting date. The proposed letting date can be obtained from the Engineering Information Management Section.
1. Preliminary Cost Estimate. Include the estimated cost that has been programmed to construct the project. Also show this estimate using a cost per mile (kilometer) basis. The cost estimate should be adjusted using an inflation factor based on the project's anticipated letting date. (Use 3% inflation factor) The construction engineering (CE) cost should be listed separately. The report should also note whether or not the CE cost is included in the total construction cost. See Chapter 7 for more information on cost estimates. Use the following format for showing the cost estimate in the report:

Cost Estimate

New Structure	\$132,000
Remove Structure	\$ 10,000
Road Work	\$ 82,000
Traffic Control - Detour	<u>\$ 77,000</u>
Subtotal	\$301,000
Mobilization (12%)*	<u>\$ 36,000</u>
Subtotal	\$337,000
Contingencies (10%)*	\$ 34,000
Subtotal	\$371,000
Inflation (3% per year x 3 years)	\$ 34,000
Total CN:	\$405,000
CE (15%)*	\$ 61,000

*See Figure 7.2A for suggested rates, coordinate with Bridge Bureau as appropriate (match the numbers they feel are appropriate), and use judgment based on the level of design completed so far.

Board of Review (pre-letting) suggested rates:

24. Site Map. Project location site map should be attached.
25. Preliminary Field Review Work Sheet. The Preliminary Field Review Work Sheet should be used as a checklist to identify issues that should be addressed during the Preliminary Field Review. All information noted on the work sheet should be

discussed in the PFR Report. It is not necessary to attach the Preliminary Field Review Work Sheet to the PFR Report, however it may be attached to summarize the data contained in the PFR Report. A blank Preliminary Field Review Work Sheet form is provided at the end of Section 3.1.

3.1.2 Alignment and Grade Review Report

3.1.2.1 General

The Alignment and Grade Review (AGR) Report provides written documentation of the horizontal and vertical alignment determinations made during preliminary design and the alignment review meeting. The alignment review meeting is typically only held where major changes to the alignment are proposed. However, a review should also be conducted at this stage in the project's development if significant design issues need to be addressed, even if the alignment and grade will not be altered by the project. The proposed alignment should be submitted to the District Administrator or District Engineering Services Supervisor for review. The need for a field review of the proposed alignment will be determined by the Project Design Manager on a project-by-project basis.

1. Preparation. The Project Design Manager is responsible for the Draft AGR Report, but the designer is typically assigned to prepare the Report. Organize the Report using the format discussed in Section 3.1.2.2.
2. Approval. The designer will submit the Draft AGR Report to the Project Design Manager for review. The Project Design Manager will in turn submit it to the Road Design Engineer who will forward it to the Highways Engineer for his approval. The Project Design Manager will attach the plans as appropriate and distribute the Draft AGR Report for comment.
3. Distribution. Copies of the Draft AGR Report, plans and cross sections will typically be distributed for comment to the following individuals:
 - a. District Administrator, (w/1 set const.)
 - b. Road Design Engineer,
 - c. Rail, Transit and Planning Division Administrator,
 - d. Highways Design Engineer
 - e. Bureau Chiefs,
 - (1) Highways
 - (2) Environmental Services (w/3 sets const., 1-X-Sections)
 - (3) R/W, (w/1 set const., X-Sections)

- (4) Bridge (w/1 set const.)
 - (5) Construction, (w/1 set const.)
 - (6) Traffic and Safety, (w/1 set const.)
 - (7) Materials, (w/1 set const.)
 - f. Geotechnical, (w/1 set const., X-Sections)
 - g. Hydraulics, (w/1 set const., X-Sections)
 - h. Utilities, (w/1 set const., X-Sections)
 - i. Traffic Engineer, (w/1 set const.)
 - j. Project Design Manager, (w/1 set const., X-Sections)
 - k. District Construction Engineer, (w/1 set const., X-Sections)
 - l. District Engineering Services, (w/1 set const., X-Sections)
 - m. District/Division Maintenance, (w/1 set const.)
 - n. District R/W Supervisor, (w/1 set const., X-Sections)
 - o. any other individuals or units deemed appropriate.
 - (1) FHWA(HOP-MT) (NHS) (w/1 set const.)
 - (2) City Officials, (w/1 set const.)
 - (3) County Officials, (w/1 set const.)
 - p. Highways File
4. Summary. After a two week review by the distribution, the comments will be summarized by the Project Design Manager and the summary along with copies of the comments will be submitted to the Highways Engineer for his approval of the Alignment and Grade:

3.1.2.2 Format/Content

In general, prepare the Alignment and Grade Review (AGR) Report in the sequence and format discussed below. This will provide a uniform presentation for all Department AGR Reports and will ensure that all appropriate information will be addressed. Not all subject areas need to be covered in every AGR Report, there will not always be a field review, and adjustments will need to be made as deemed necessary.

In lieu of a field review for projects in which the alignment is not appreciably changed or controversial, the plan package may be distributed as shown in (3. Distribution) above and comments solicited and summarized for the approval of the Highways Engineer. The level of coverage for each item may also vary from project-to-project. Although an in-depth coverage of the design details is usually not provided in this report, provide sufficient detail to allow the reader to fully understand the proposed project.

The sample format can be found on the Road Design share drive. The preparer should note that the heading will need to be completely filled out, including the project number, project name, control number and project work type number.

The following provides the topic areas, in order, that should be addressed in the Draft AGR Report:

1. Introduction. The introduction should include the date of the field review and a list of those who attended the review, if one was held, including the individual's title, organization and office location. Typical representatives at an alignment field review may include:
 - a. the Project Design Manager.
 - b. the District Administrator;
 - c. the Engineering Services Supervisor;
 - d. the Design Supervisor;
 - e. other design personnel who may be involved with the project;
 - f. the Consultant, for consultant-designed projects;
 - g. FHWA (NHS – full oversight projects);
 - h. local officials (if deemed appropriate); and
 - i. others as deemed appropriate.If no field review was held, begin the report with the Scope of Work.
2. Scope of Work. Provide a brief description of the proposed scope of work. For example, "The proposed scope of work for this project is to completely reconstruct the existing roadway." The discussion should also include the selected design speed for project.
3. Project Location and Limits. Some of the descriptions that may be used to briefly describe the project location and limits include:
 - a. county name,
 - b. city/town name,
 - c. Indian reservation,
 - d. route number,
 - e. functional classification,
 - f. reference points,

- g. project length,
 - h. crossing routes and/or local streets,
 - i. distances from major bridges on the route,
 - j. distance and direction from nearby towns/cities,
 - k. as-built project numbers,
 - l. adjacent project numbers, and
 - m. direction of proposed project.
5. Physical Characteristics. This section does not need to be included in the report unless the following elements affect the selection of the alignment, grade and surfacing section:
- a. general terrain of the area;
 - b. rural or urban location;
 - c. pavement width and number of lanes;
 - d. surface types and thickness;
 - e. generalized descriptions of the horizontal and vertical alignment;
 - f. generalized descriptions of the existing fill and cut slopes, fill heights and cut depths;
 - g. lengths and widths of existing bridges; and
 - h. any other unique physical characteristic related to the project.
6. Horizontal Alignment. One of the primary purposes of the AGR Report is to identify the proposed horizontal alignment features on the project. Therefore, this section should provide more detail than other sections of the Report. The horizontal alignment elements that should be discussed in detail include:
- a. the relationship of the proposed alignment to the existing alignment,
 - b. curve radii,
 - c. alignment shifts, and any other major features affected by the horizontal alignment.

The discussion should list the various horizontal alignment design features using the appropriate stations and a brief discussion. For example:

Station 1+20 to 1+75 The alignment will be shifted to the right by 10 m by using a 500 m radius curve. The new alignment will

allow the construction of a wider roadway template without having the fill slopes encroach into the river channel on the left.

Station 1+75 to 3+00 This tangent section is approximately 10 m right of the existing alignment to avoid a conflict with the overhead power line which is parallel to the roadway on the left.

7. Vertical Alignment. Discussion of the vertical alignment is also a primary objective of the AGR Report. Therefore, the discussion should be similar to that shown for horizontal alignment in Comment #5. Some of the vertical alignment elements that should be discussed include:
 - a. raising or lowering of the existing vertical alignment,
 - b. an identification of the maximum grades
 - c. proposed steepening or flattening of existing grades,
 - d. general vertical curvature requirements,
 - e. depth of special subgrade excavations,
 - f. grade controls (e.g. existing bridges, railroad crossings)
 - g. relationship to the horizontal alignment, and
 - h. any other major features affected by the vertical alignment.

8. Surfacing and Typical Section. Briefly summarize the pavement recommendations developed by the Pavement Analysis Section, including any surfacing and/or subgrade recommendations. Specify the finished top width or widths that will result from the proposed work. The finished width is particularly critical when overlaying segments of roadway having marginal widths. The discussion should also include the recommended cross slopes and side slopes for the project. Separate discussions may be required if there are significant changes in the typical section such as auxiliary lanes or if there is a need for an additional soil survey.

9. Grading. This section should provide any information on how grading may affect the horizontal and vertical alignment. Some of the factors that may be addressed include:
 - a. type of excavation,
 - b. special soil considerations which may require shifting the alignment, and

- c. proposed balance points.
10. Hydraulics. Provide a discussion on how the hydraulic design may affect the roadway alignment. This includes:
 - a. major hydraulic structures (e.g., bridges over waterways, large culverts, irrigation channels);
 - b. waterway impacts and proposed channel changes;
 - c. flooding potential; and
 - d. permit needs for alignment revisions.
11. Bridges. If there is a bridge within the project limits, address how the bridge will impact the roadway alignment (e.g., increasing the curve radii so that the horizontal curvature is continuous across the bridge, bridge end elevations as vertical control points). The Bridge Bureau should be consulted when placing a horizontal or vertical curve alignment on bridges so that curve control points can be coordinated with structural design.
12. Traffic. Identify any revisions to the roadway alignment required to provide proper intersection alignment and profile designs, or how the alignment may impact existing traffic control devices.
13. Miscellaneous. Address any miscellaneous items relative to the design which have not been previously discussed (e.g. fencing, turn-outs, guardrail).
14. Design Exceptions. If known at this stage, discuss the need for any proposed horizontal and vertical alignment design exceptions.
15. Right-of-Way. The right-of-way discussion should address how the proposed roadway alignment will affect the existing and proposed right-of-way limits. Note if project will use minimum or standard Right-of Way widths.
16. Utilities/Railroads. Provide a discussion on how the proposed alignment will affect known utilities and/or railroads.
17. Environmental Considerations. The report should address all major environmental concerns that are affected by the roadway alignment. The report should summarize the measures taken to avoid and minimize impacts to wetlands. Also discuss where and why avoidance or minimization is not feasible. Identify the depth of environmental study required for the project (e.g., categorical exclusion, environmental assessment, environmental impact statement).

18. Traffic Control. Discuss how the proposed roadway alignment will impact the proposed traffic control strategy during construction (e.g., detours, crossovers).
19. Public Involvement. If held, briefly summarize the results of the public informational meeting. Also document the need for any further public involvement (e.g., the need for a public hearing).
20. Cost Estimate. Update the PFR cost estimate using the process described in Chapter 7.
21. Ready Date. Provide the ready date shown in the Project Management System.

3.1.3 Scope of Work Report

3.1.3.1 General

The Scope of Work (SOW) Report identifies the major design features of the subject project and provides an overview of the project improvements. The project design will proceed as described in the Report unless opposition is expressed within the specified comment period. Any disagreement in the scope of the project must be resolved prior to the final approval by the Chief Engineer of the Engineering Division. Consequently, it is essential that the Scope of Work Report be written as soon as the appropriate data is available.

Projects of very limited scope often have a combined Preliminary Field Review/Scope of Work Report (PFR/SOW). These reports follow the format for the SW report. They are distributed for comment and approval following the same procedure as the SW report.

Most projects of limited scope meet the criteria for the Statewide Programmatic Categorical Exclusion. Since the SOW report cannot be finalized until the environmental document is approved, the combined PFR/SOW report must be submitted to Environmental Services with a checklist for the Statewide Programmatic Categorical Exclusion. If the Statewide Programmatic Categorical Exclusion does not apply the final approval of the PFR/SOW report will be delayed until the project specific environmental document is approved

The designer should use the following procedure to prepare the SOW Report and to obtain management approval of the report:

1. The Project Design Manager who is responsible for the preparation of the SOW Report, will typically designate the designer to prepare the preliminary draft of the Report and all appropriate distribution memorandums.

2. The Project Design Manager will review the report, make all necessary changes and forward it to the Road Design Engineer.
3. The Road Design Engineer will initial the SOW Report Memorandum and forward it to the Highways Engineer.
4. Once concurrence has been received from the Bureau Chiefs and the FHWA*, if applicable, the Project Design Engineer or designee, will prepare another memorandum requesting the Chief Engineer's approval for the SOW Report. This memorandum is prepared for the Highways Engineer's signature. It should include the comments received and their proposed disposition. A sample memorandum used for requesting approval from the Chief Engineer, Engineering Division can be found on the share drive. After approval, copies of the SOW Report will typically be distributed as follows:

Preconstruction Engineer	District Administrator.
Highways Engineer	Utilities Supervisor
Highways Design Engineer	Right-of-Way Chief
Hydraulics Engineer	Program & Policy Analysis Administrator
Safety Mgmt. Engineer	Road Design Engineer
Materials Engineer	Construction Administrator
Geotechnical Engineer	Bridge Engineer
Environmental Services Chief	Traffic & Safety Engineer
Engr. Mgmt. Supervisor	Maintenance Administrator
Traffic Engineer	Bicycles & Pedestrians Coordinator
Access Management Engineer	Project Design Manager
Fiscal Programming Supervisor	District Construction Engineer
District Maintenance Chief	District Engineering Services Supervisor
Project Manager	FHWA (HOP-MT)(NHS)
City/County Officials	Highways File

*The FHWA will provide concurrence only on NHS projects with an estimated cost of \$3 million or more, and on Interstate projects with an estimated cost of \$1 million or more for reconstruction and \$3 million or more for pavement preservation

3.1.3.2 Format/Content

In general, prepare the Scope of Work (SOW) Report in the sequence and format discussed below. This will provide a uniform presentation for all Department SOW Reports and will ensure that all necessary design elements are addressed. Not all subject areas will be covered in every SOW Report, and adjustments will be added as necessary. The level of coverage for each item may also vary from project-to-project. Although an in-depth discussion for each design element is usually not provided in this

Report, sufficient detail must be provided to allow the reader to fully understand the proposed project. On non-reconstruction projects (e.g. Overlay, Widening etc.) where no changes to the Alignment and Grade are proposed, a combination Alignment Review/Scope of Work Report may be distributed along with plan sheets where the main thrust of the Alignment Review is a discussion of the Typical Section for the project. The following declaration should be presented on the cover sheet of the report:

“No Alignment and Grade Report will be forthcoming due to the fact that no “new” alignment and grade will be designed; however, comments regarding typical section or geometric designs shown in the plans distributed with this report are solicited”.

The following provides the topic areas, in order, that should be addressed in the SW Report:

1. Proposed Scope of Work. This section should provide a very brief description of the proposed scope of work for the project. For example, "The proposed scope of work for the subject project is to provide a 0.50 ft. overlay and roadside safety enhancements." This section should also include a brief discussion of why the proposed scope of work was selected.
2. Project Location and Limits. The following descriptions may be used to briefly describe the project location and limits:
 - a. county name;
 - b. city/town name;
 - c. Indian reservation;
 - d. route number;
 - e. functional classification;
 - f. reference points;
 - g. crossing routes and/or major local streets/interchanges;
 - h. project length;
 - i. distances from major bridges on the route;
 - j. distance and direction from nearby towns/cities;
 - k. as-built project numbers;
 - l. adjacent project numbers; and
 - m. direction of proposed project.

Note - Where the stationing proceeds in the opposite direction from the reference points (e.g., stationing increases from south to north while the reference points increase from north to south), note this in the report.

3. Physical Characteristics. A brief description of the project's physical characteristics may include a discussion of the following:
 - a. year when the existing road/bridge was built or reconstructed and when it was last overlaid or rehabilitated;
 - b. pavement width and number of lanes;
 - c. existing surface types and thicknesses;
 - d. number and thickness of overlays;
 - e. general terrain of the area;
 - f. rural or urban location;
 - g. general description of the existing horizontal and vertical alignment, including all features which do not meet the Department criteria;
 - h. number of locations where the existing grade exceeds the applicable maximum;
 - i. maximum gradient on the project;
 - j. general description of the existing fill and cut slopes, including slope rates, fill heights and cut depths;
 - k. lengths and widths of existing bridges; and
 - l. any other unique physical characteristics related to the project.
4. Traffic Data. The traffic data in the Report should include the following:
 - a. current AADT,
 - b. letting date AADT,
 - c. design year AADT,
 - d. DHV,
 - e. number and percent of trucks,
 - f. the expected daily 18,000 lb (8165 kg) ESAL, and
 - g. basis of projected traffic growth.
5. Accident Analysis. This section should briefly summarize the following crash history data:

- a. number of crashes;
 - b. types of crashes;
 - c. listing of locations with an unexpectedly high number of crashes;
 - d. overall crash and severity rates for the project location;
 - e. statewide average crash and severity rates for similar routes, if available;
 - f. a description of how the project compares to the statewide averages; and
 - g. a brief description of why higher than normal number of crashes may be occurring and proposed countermeasures.
 - h. other remarks furnished by Safety Management regarding the crash history of the project.
6. Major Design Features. The SOW Report should provide a general discussion for each of the following design features. This discussion should also include any approved design exceptions for that design element. Prepare each topic area based on the station sequencing. Although each major design element is provided its own section, the designer should address how the element will interact with other design elements. The SW Report should discuss the following topics:
- a. **Design Speed**. This section should present the expected design speed for the project. If more than one design speed is selected for the project, clearly identify the termini for each design speed selected. Also indicate the posted speed limit. If a speed zone study is recommended, it should also be noted.
 - b. **Horizontal Alignment**. Provide a brief discussion of the major horizontal features for the proposed project (e.g. "The project includes 5 horizontal curves with radii from 1500 ft to 4200 ft. Spirals will be used where required."), including all features which will not meet the applicable design criteria. The discussion should also include the maximum design criteria that can be reasonably obtained and the proposed methods for improving the horizontal alignment.
 - c. **Vertical Alignment**. Include a brief description for all the major vertical alignment features on the proposed project (e.g. "The project includes 5 crest and 6 sag vertical curves all of which provide the SSD for a 60 mph design speed. The maximum grade on the project is 3.5%"). This discussion should identify the maximum design criteria that can be reasonably obtained and the proposed methods for improving the vertical

alignment. If truck-climbing lanes are warranted, their location and extent should be described.

A more detailed discussion should be provided when design features cannot meet the design criteria for the project. The discussion should include the reasons why it is impractical to meet the design criteria and also demonstrate that safety is still sufficiently addressed.

- d. **Typical Sections.** This section should briefly describe the major cross section elements. These include roadway widths, travel lane widths, shoulder widths, two-way left turn lanes, medians, sidewalks, etc. Provide separate descriptions where there are major changes in the typical section. A detailed description of the finished top width or widths and surfacing inslopes that will result from the proposed work are particularly critical when overlaying segments of roadway having marginal widths.
- e. **Surface Design.** The pavement design discussion may include a summary of the soils report, including the results from the pavement samples taken on existing highways; the proposed pavement design, including pavement type and thickness; milling depths and widths; recycling considerations; etc.
- f. **Grading.** This section should discuss the general grading on the project. This may include a discussion on balance points, special excavation, features that may affect grading operations (bridges communities), the need for large amounts of borrow, special soil considerations, shrink/swell factors, etc.
- g. **Slope Design.** Describe the proposed slope design for the project in this section. Typical slope discussions may include slope flattening for guardrail, slope flattening for removal of guardrail, use of a barn roof section, steep side slopes, rock cuts, transverse median slopes, non-standard slope rates, etc.
- h. **Geotechnical Considerations.** This section should identify the major geotechnical features and problems on the project and any planned techniques that will be used to address these concerns.
- i. **Hydraulics.** This section should provide a brief summary of the hydraulic issues and the proposed treatment for the hydraulic design elements on the project. These may include bridge replacements over water, culvert replacements, closed drainage systems, irrigation facilities, special roadway designs within flood limits, construction requirements for replacement of structures in live streams, etc.

- j. Bridges. If there are bridges on the project, provide a description of the proposed work on the bridge for each bridge. The description should also discuss the need for sidewalks, bicycle paths, utilities or any special features that may be included on the bridge. This section should also address any removal and salvage requirements of existing structures.
 - k. Safety Enhancements. This section should describe the proposed approach for major safety enhancements. These include the flattening of slopes, removing guardrail, replacing existing guardrail, adding new guardrail, using impact attenuators, using special culvert end treatments, etc. This section should also address any recommendations provided by the Safety Management Section.
 - l. Context Sensitive Design. Discuss any issues which may be context sensitive and the solutions that will be incorporated into the project. These are issues that may affect the development of the project and are not strictly transportation related. They may include environmental, cultural and social issues. It should also be noted which issues were resolved through the public involvement process.
 - m. Traffic. Provide a brief discussion for each intersection which has proposed major revisions (e.g., adding turn lanes, converting an existing "Y" intersection to a "T"). This section should also address the traffic control devices that will be required for the project including traffic signals, highway lighting, signing (new or reused), standard or special pavement markings, islands, etc.
 - n. Pedestrian/Bicycle/ADA. Discuss impacts to existing facilities. Discuss implementation of new ADA features. Where there are no existing pedestrian or bicycle facilities and if there is evidence of use, include a proposal for their accommodation.
 - o. Miscellaneous Features. Include a general discussion for all major design elements which are not identified in one of the above design areas. Miscellaneous features may include rumble strips, mailbox turnouts, on-street parking, accessibility requirements, fencing, unusual seeding and sodding requirements, etc.
7. Design Exceptions. This section should identify any required and approved design exceptions for the project. The design exceptions should also be noted in the individual design areas listed previously in Item #6.
8. Right-of-Way. Briefly describe the existing and proposed right-of-way width requirements. Note if project will use minimum or standard Right-of Way widths.

Provide separate descriptions where the existing or proposed right-of-way is significantly different between various typical sections. Also document any major right-of-way acquisitions (e.g., taking of commercial property).

9. Access Control. The current access control classification for the highway should be identified and discuss if the access control will be modified on the project.
10. Utilities/Railroads. The report should describe any potential problems relative to utilities and/or railroads. The discussion should also describe what has already been accomplished for utility and railroad companies.
11. Environmental Considerations. The environmental document must be approved prior to completing the SOW report. Include the date and conditions of approval. Summarize any environmental commitments and concerns identified in the document. This section should also provide brief descriptions of any environmental, cultural avoidance and mitigation measures taken as well as treatment of hazardous waste sites.
12. Other Projects. Discuss the resolution of any project conflicts identified in the Preliminary Field Review and/or Alignment Review Reports and determine if the projects can be combined for bid letting.
13. Traffic Control. Provide a discussion on the proposed traffic control strategy planned for the construction zone. This may include the need for detours, lane closures, traffic shifts, crossovers, etc.
14. Public Involvement. This section should summarize the public involvement process used for the project. It should note what has been done to date, what public involvement still needs to be accomplished and any concerns raised during the public involvement meeting. The proposed disposition of each concern should also be included.

This section should also note any required agreements with Tribes and local governments.

15. Cost Estimate. This section should provide the latest cost estimate available for the project. The designer may be required to prepare a detailed estimate for this Report. Adjust the estimate for inflation and indicate the inflation factor used. List the construction engineering cost separately. For urban projects, discuss the city's cost participation for such items as storm drains, manholes and water valves. Use the following format for showing the cost estimate in the report:

Cost Estimate

New Structure	\$132,000
Remove Structure	\$ 10,000
Road Work	\$ 82,000
Traffic Control - Detour	<u>\$ 77,000</u>
Subtotal	\$301,000
Mobilization (12%)*	<u>\$ 36,000</u>
Subtotal	\$337,000
Contingencies (10%)*	\$ 34,000
Subtotal	\$371,000
Inflation (3% per year x 3 years)	\$ 34,000
Total CN:	\$405,000
CE (15%)*	\$ 61,000

*See Figure 7.2A for suggested rates, coordinate with Bridge Bureau as appropriate (match the numbers they feel are appropriate), and use judgment based on the level of design completed so far.

16. Ready Date. Include the proposed ready date in the Report. The project ready date is typically three months prior to the letting date.
17. Site Map. Project location site map should be attached.

3.1.4 Plan-in-Hand Report**3.1.4.1 General**

The plan-in-hand review is an in-depth review of all items contained in the project plans and draft special provisions. It typically consists of a sheet-by-sheet office review of the plans followed by a field review. The Project Design Manager is responsible for scheduling the plan-in-hand review. The Plan-in-Hand (PIH) Report provides a written documentation of all decisions made during the plan-in-hand office and field review meetings. The PIH Report addresses the concerns and questions raised by the review team and their proposed disposition. Use the following procedures to prepare the PIH Report:

1. Preparation. The designer is responsible for the preparation of the PIH Report. The Project Design Manager will review the Report, make all necessary changes and forward it to the Road Design Engineer.

2. Approval. The Road Design Engineer will sign and forward the Report to the Highways Engineer for approval.
3. Format. The preferred heading and approval memorandum format the designer should use when preparing the PIH Report can be found on the share drive.
4. Distribution. After approval by the Highways Engineer, copies of the PIH Report will typically be distributed to the Highways project file and to the following individuals:
 - a. all applicable Bureau Chiefs,
 - b. Highways Design Engineer,
 - c. District Administrator,
 - d. Rail, Transit and Planning Division Administrator,
 - e. all parties involved in the field review,
 - f. any other individuals or sections deemed appropriate, and
 - g. FHWA for projects that have FHWA oversight.

All parties receiving a copy of the PIH Report are requested to provide comments on the Report. Concurrence of the Report will be assumed if no comments are received by the specified date.

5. Conducting the Review. Prior to beginning the review the design project manager should summarize the scope of the project and the major issues that need to be addressed at the PIH. Depending on the scope of the project, the major issues that need to be discussed may include the following:
 - a. Sequence of operations
 - b. Constructability
 - 1) If the R-value is low, i.e. 15 or less, or A-4 through A-7 material, or soil survey shows existing moisture contents above optimum moisture, look closely at the constructability of the section and brainstorm for ideas that could improve the construction process.
 - 2) Will the existing sequence support construction activities and operations?

- 3) If the grade will require removal of the existing mat on the PTW, determine if the material under the mat will support construction equipment.
- c. Maintenance of traffic, detours and traffic control plan issues. A traffic control plan or concept should be developed to determine major issues especially on urban projects.
- d. Grading. This may include balanced grading versus waste and borrow, special borrow, selective grading and subexcavation. Determine if the mass diagram is an accurate representation of how the grading will be performed.
- e. Surfacing. Discuss the use of RAP, leveling/isolation lifts, whether or not to use different grades of oil, alternate surfacing sections, use of millings
- f. Geotechnical issues. Discuss foundations, digouts and slope stability. Determine if there is enough or representative cores and soils analysis.
- g. Major drainage structures. This may include optional vs. alternate bid items, coating requirements, channel changes, detour crossings, and riprap layout
- h. Irrigation facilities. Consider timing restrictions. Will the irrigation have the potential for saturation of subgrade, other construction related issues. Can modifications to the irrigation be done by paying the landowner to do it (cost to cure)
- i. Storm Drains. Discuss the location and capacity of inlets. Are the gutter grades adequate
- j. Utilities. Avoid and minimize impacts where practical
- k. R/W issues. Discuss properties to avoid, approach locations and grades
- l. Environmental items. This may include a discussion of commitments made in the environmental document, wetland impacts, fish and wildlife passage, cultural sites and potential for encountering hazardous waste sites.
- m. Structures & bridges. Are there any concerns with the connections, including guardrail, concrete rails, approaches, etc.

For the above items the question that needs to be asked most frequently is, “do the plans and special provisions describe and address these items accurately”.

6. The following practices should be utilized to achieve an effective plan review:
 - a. Prior to distributing PIH prints, the design team should perform a 3-sheet review to make sure the information in the summaries, plan & profile sheets and the x-sections match.
 - b. Prior to distributing PIH prints, the design team should ensure that the method of measurement and basis of payment in the special provisions and specifications correspond to the items in the summaries and on the cost estimate.
 - c. Emphasize that people who receive the PIH prints need to review the plans, x-sections and special provisions before the PIH meeting
 - d. Bring a list of specific questions to the PIH
 - e. Reviewers can provide the designer written comments or redlined plans at the PIH. The review team could then elect to discuss specific items rather than going through each comment at the PIH review. Focus on project construction rather than on minor details.
 - f. Provide a full set of plans for PIH. This means getting plans, special provisions, and cost estimate information from all the contributing areas (R/W, Environmental, Bridge, Signing, Electrical).
 - g. Emphasize that special provisions and costs estimates need adequate discussion at the PIH
7. After the PIH the following tasks must be performed:
 - a. Write a report that accurately documents the decision that were made and the changes that resulted from the PIH review. This includes documenting why various recommendations were rejected.
 - b. Make the appropriate changes to the plans and special provisions. Design project managers must ensure that functional managers make the changes to the sections of the plans package that are their responsibility

(e.g. road plans and signing plans on a BR project). However, the functional managers and designers are also accountable for developing accurate plans and special provisions and making the PIH changes.

- c. Coordinate with other disciplines as needed to provide a complete and accurate plans package. Emphasis should be placed on contacting areas affected by the PIH changes.
- d. Address unresolved issues through an issue resolution process, i.e. elevate issues through the chain-of-command as necessary.
- e. Share and distribute any “lessons learned” from the project

3.1.4.2 Format/Content

When preparing the PIH Report, the designer should consider the following:

1. Combine all office and field review comments into one Report.
2. Combine and present all comments from the office and field reviews in the order in which they appear in the plan sheets. Also present the comments for the plan and profile sheets according to increasing stations down the proposed centerline of the project.
3. The first part of the PIH Report should provide all general comments on the project.
4. Identify all comments by sheet number and station location. If appropriate, provide the distance from the proposed centerline.
5. The resolution should briefly summarize the problem, question or request raised during the review meeting and state how the designer intends to address the comment.
6. Where practical, identify the individual making the comment.
7. Include all revisions to the special provisions in the PIH Report with a brief discussion of the reason for the revisions.
8. Include an updated cost estimate for the project. The estimate should incorporate the latest unit prices provided by the District. Forward a copy of the estimate to the Engineering Management Unit and Fiscal Planning. If the

estimate differs substantially from previous estimates, include the reasons for the change in project costs.

3.1.5 Final Plan Review Report

The final plan review is an in-depth review of the final project plans and special provisions. Generally, it will consist of individual plan reviews by everyone on the distribution. Formal plan reviews or field reviews will be scheduled only for very specific circumstances. The reviewers' comments will be submitted to the designer within a specified time period. The Final Plan Review (FPR) Report presents the designer's proposed disposition of the reviewers' comments. At this stage of the project, comments should only be related to the completeness and accuracy of plans.

Responsibilities, approvals, format and distribution of the FPR Report will typically follow the same procedures as described in Section 3.1.4 for the Plan-in-Hand Report.

Montana Department of Transportation
Preliminary Field Review Work Sheet

Project No. _____
Date of Review _____
Proposed Ready Date _____

Project Name _____
Design Assignment _____
Project Work Type _____

PROJECT LOCATION

County _____

Route Name _____

"AS-BUILT" PROJECTS

Identification Number	Station	FROM (Reference Point)	Station	TO (Reference Point)
-----------------------	---------	---------------------------	---------	-------------------------

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Begin Station _____ End Station _____
Begin Reference Point _____ End Reference Point _____
Length: Urban _____, Rural _____, Total _____
Speed Zones _____

Last Major Work _____ Improved _____

ROADWAY FUNCTIONAL CLASSIFICATION

Type: _____ (See Chapter Eight for selection criteria.)

ACCIDENT DATA

Accident Rate _____ Avg. Accident Rate – Statewide: _____
Severity Rate _____ Avg. Accident Rate – Statewide: _____
Clusters _____

EXISTING GEOMETRIC DESIGN

Type of Surface _____
Existing Surface Width _____

Horizontal Curves that do not meet MDT criteria _____

"As-Built"	P.I. Station	(Reference Point)	Curve	Direction
------------	--------------	-------------------	-------	-----------

Crest Curves that do not meet MDT criteria _____

Montana Department of Transportation
Preliminary Field Review Work Sheet

Sag Curves that do not meet MDT criteria_____

Grades that do not meet MDT criteria_____

Maximum Grade_____

Existing Fill Slopes

“As-Built”_____

Fill Height_____

Slope_____

Existing Cut Slopes

“As-Built”_____

Cut Depth_____

Slope_____

Proposed Work (Type of Project)_____

Route Segment Plan Pavement Width_____ Standard Width_____

TRAFFIC DATA

Present AADT_____ DHV_____ Future AADT/year_____

Rural Functional Classification_____

Other_____

ATTENDED BY

ROADSIDE HAZARDS (Mailboxes, Utilities, Trees, Rocks, Signs, Culvert Ends, etc.)

Montana Department of Transportation
Preliminary Field Review Work Sheet

FIELD REVIEW RECOMMENDATION

Design Speed _____ Terrain _____
Finished Surface Width _____
Finish Roadway Width _____
Pedestrian Features _____
Curb & Gutter _____
Overlay Thickness _____
Back Slope _____
Inslope _____
Truck Climbing Lane _____
Adjustments (Drains, Valves, etc.) _____

Cold Milling _____

Guardrail (New, Upgrade, Structure, etc.) _____

Special Considerations _____

SURVEY

Aerial Mapping _____ Full Survey _____ Partial Survey _____

Cross Sections _____

Pipes: Condition _____; Soil Tests _____

R-Value _____ Corings _____

Materials _____

Digouts _____

Hydraulic Survey _____

Target Date of Survey Completion _____

Other Items _____

RIGHT-OF-WAY

Existing R/W Width _____

New R/W (Incl. Possible Permits) _____

Limited Access _____

Railroad Requirements _____

Define – “Clear Zone Width” _____

Montana Department of Transportation
Preliminary Field Review Work Sheet

Stockpasses:

"As-Built"	Station	(Reference Point)	Type	Remarks
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UTILITIES

Telephone_____

Power Poles_____

Railroad Conflicts_____

Sewer & Water Conflicts_____

Other_____

M.O.U. with City_____

ENVIRONMENTAL ISSUES

Environmental Document Type (will be determined by Environmental Services)_____

4(f) Lands_____

6(f) Lands_____

Wetlands_____

Possible Hazardous Waste Sites_____

Cultural Survey Required_____

Historic Bridges_____

Other (Prairie Dogs, Protected Streams, Landmarks, etc.)_____

PUBLIC HEARINGS

Formal_____ Informational_____ News Release_____

Montana Department of Transportation
Preliminary Field Review Work Sheet

TRAFFIC ITEMS

Signing (Upgraded to MUTCD Criteria) _____

Lighting, Intersections, Noise, etc. _____

GEOMETRIC DESIGN EXCEPTION

Grade _____

Fill/Cut Slopes _____

Width _____

Design Speed _____

Vertical Curves _____

Clear Zones _____

Horizontal Alignment _____

Other _____

HYDRAULIC INFORMATION

Channel Changes (Station) _____

Structures ("As-Built", Station, Reference Point, Type, Replace, Name of Drainage, Detour)

Pipes Over 84" (2100 mm) _____

Other (Backwater, Debris, etc.) _____

Montana Department of Transportation
Preliminary Field Review Work Sheet

Administer of the Floodplain (county and/or incorporated community) _____

Materials and Geotechnical Considerations _____

3.2 CORRESPONDENCE

3.2.1 In-house Memoranda

3.2.1.1 General

Memoranda are used by MDT to provide written, interdepartmental information between the various Bureaus, Sections, Districts, etc. They are used to distribute project reports, process approval requests, request project information, submit project information, distribute policies and for informational purposes. Each Bureau and Section has established its own policies for circulating incoming mail. In general for the Road Design Section, the Highways Engineer's staff will review incoming memoranda to determine who needs additional copies.

3.2.1.2 Signatures

For outgoing memoranda, the Highways Bureau has established the following signature requirements:

9. All memoranda containing substantive materials for distribution outside of the Highways Bureau and for Bureau-wide general information will require the Highways Engineer's signature.
10. All memoranda containing substantive materials for distribution outside of the Section, but within the Bureau, and for Section-wide general information will require the Section Head's Signature.
11. All general project correspondence, including those to the Districts, project information requests, and general day-to-day forms, may be signed by the Project Design Manager.
12. All correspondence originating in the Districts will be signed by the District Administrator.

3.2.1.3 Distribution

The Highways Bureau has established the following procedure for distribution of outgoing memoranda:

1. Project Information Submitted to Others. Memoranda providing project information to the Districts, other Bureaus or Sections should also include a copy to the following:

- a. Highways Engineer,
 - b. Highways Design Engineer,
 - c. Road Design Engineer,
 - d. District Administrator,
 - e. the Highways project file, and
 - f. others as needed.
2. Project Information Requests. Memoranda requesting project information from the Districts, other Bureaus or Sections should also include a copy to the following:
- a. Road Design Engineer,
 - b. District Administrator,
 - c. the Highways project file, and
 - d. others as needed.
3. District Correspondence. All correspondence sent to the District will be addressed to the District Administrator.
4. General Information. Distribution and copies of other memoranda types will be determined on a case-by-case basis.

3.2.2 Outside Correspondence

3.2.2.1 General

In general, prepare all written materials for sources outside of the Department on MDT letterhead. Letters for the Governor's signature will be on the Governor's letterhead.

The writer must exercise common sense when preparing outside correspondence to match the reader's understanding. Department letters will often be written to individuals without a transportation background; therefore, the letter should use terminology which is understandable to the general public. In contrast, letters and surveys to AASHTO, FHWA, TRB, etc., should use standard highway engineering terminology.

3.2.2.2 Signatures

In general, all letters will be forwarded through the chain of command to the individual signing the correspondence. The following presents the Department's policy for the signing of all out-going letters:

5. Letters to U.S. Congressmen, the Governor and legislators will be signed by the Director.
6. Letters responding to citizen inquiries will be signed by the Preconstruction Engineer or a higher level, depending on who initially received the letter.
7. Letters which provide substantive information to towns, counties or local officials should be signed by the Preconstruction Engineer. Routine project information sent to towns, counties or local officials may be signed by the Section Supervisor
8. Information requested by the news media should be signed by the Preconstruction Engineer or a higher level. General news releases may be signed by the Section Supervisor.
9. Information to Federal and State agencies, AASHTO, TRB, other State DOT's, etc., should be signed by the Highways Engineer.

Project information submitted to consultants, contractors, suppliers, etc., should be signed by the Section Supervisor.

3.3 MEETINGS

Good communication is a necessity. It is imperative that all meetings be well planned, attended by the proper individuals, and the information disseminated to the affected people in a timely manner. The following provides additional information for project and staff meetings in the Road Design Section.

3.3.1 Project Review Meetings

During project design, there are typically several meetings to allow others to review the project design. MDT formal review meetings include the Preliminary Field Review, the Alignment & Grade Review, the Plan-in-Hand Review and the Final Plan Review. In addition, informal meetings are often initiated to gather or disseminate information between the affected parties.

In general, the Project Design Manager will be responsible for arranging the meeting, determining the location, leading the meeting and documenting the concerns and decisions made during the meeting. Section 3.1 provides the procedures for reporting the results of major project meetings. For informal meetings, a memorandum documenting the decisions made during the meeting should be submitted to those involved with copies distributed to the project file and other individuals as deemed necessary.

3.3.2 Staff Meetings

Staff meetings are held to disseminate design and administrative information, discuss design problems, discuss policy changes and discuss personnel concerns. Staff meetings are typically held monthly. These meetings are typically attended by the Road Design Engineer, Project Design Managers, Design Supervisors and others as needed.

Individuals who have questions, concerns or ideas that may need to be addressed during the staff meeting should first discuss, or submit in writing, their ideas to the Project Design Manager. If deemed appropriate for the Road Design Section staff meeting, the interested party or the Project Design Manager will request, in writing at least one week in advance of the meeting, that the Road Design Engineer add the item to the next monthly meeting agenda. The Road Design Engineer will provide a written agenda to the Project Design Managers and Design Supervisors approximately two days prior to the meeting. This will allow all attendees time to review the agenda and properly prepare any responses before attending the meeting.

3.4 PROJECT WORK TYPE CODES

All project documents are required to provide the project work type number in the subject portion of a memorandum. Figure 3.4A provides a listing of the standardized project work type codes used by the Department. The applicable project work type number will be determined during the Preliminary Field Review. It may be revised for the Scope of Work Report.

The Engineering Management Unit will use the Preliminary Field Review and Scope of Work Reports to input the project work type number into the Department's Project Master File. Changes to the project work type after the Scope of Work Report has been approved must be agreed upon by the Engineering Management Unit and Fiscal Programming Unit. If there are any questions concerning assigning or changing project work type number, contact the Engineering Management Unit.

Number	Description
Roadway	
110	New Construction
111	New Construction – Facilities
120	Relocation
130	Reconstruction – With Added Capacity
140	Reconstruction – Without Added Capacity
141	Reconstruction – Remove and Replace Culverts
150	Major Rehabilitation – w/added capacity
151	Major Rehabilitation – w/o added capacity
160	Minor Rehabilitation
170	Restoration and Rehabilitation – PCCP
172	Restoration and Rehabilitation – Facilities
180	Resurfacing – Asphalt (Thin Lift ≤ 0.20 ft.) (including Safety Improvements)
181	Resurfacing – Asphalt (Thin Lift ≤ 0.20 ft.) (Scheduled maintenance)
182	Resurfacing – PCCP
183	Resurfacing – Seal & Cover
184	Resurfacing – Gravel
185	Resurfacing – Crack Sealing
Bridges	
210	New Bridge
220	Bridge Replacement with added capacity
221	Bridge Replacement with no added capacity
222	Bridge Replacement with a culvert with no added capacity
223	Bridge Replacement with Culvert while adding capacity.
230	Bridge Rehabilitation with added capacity
231	Major Bridge Rehabilitation without added capacity
232	Minor Bridge Rehabilitation
Safety	
310	Roadway & Roadside Safety Improvements
311	Railroad/Highway Crossing Safety Improvements
312	Structure Safety
313	Pedestrian and Bicycle Safety
Traffic Operation & Control Systems	
410	Traffic Signals and Lighting

Number	Description
411	Signing, Pavement Markings, Chevrons, etc.
412	Miscellaneous Electronic Monitoring or Information Services
Environmental	
510	Environmental
520	Landscaping, Beautification
Miscellaneous	
610	Maintenance Stockpiles
620	Bicycle and Pedestrian Facilities
630	CTEP – Monitoring and Inspection
640	Bridge Maintenance Safety Inspection
650	Miscellaneous Study Programs
660	Historic Preservation

PROJECT WORK TYPE CODES**Figure 3.4A**