**Memorandum**

|  |  |
| --- | --- |
| To: | [Name], P.E.[Choose proper title] Engineer |

|  |  |
| --- | --- |
| From: | [Name], P.E.[Choose proper title] Engineer |

|  |  |
| --- | --- |
| Date: | Date Submitted to Engineer |

|  |  |
| --- | --- |
| Subject: | [Project Number] |
|  | [Project Name] |
|  | UPN [UPN] |
|  | Work Type [Work Type] |

Please approve the Alignment and Grade Review for this project.

|  |  |  |  |
| --- | --- | --- | --- |
| Approved |  | Date |  |
|  | [Name] |  |  |
|  | [Choose proper title] Engineer |  |  |

We are requesting those on the distribution list provide any comments within two weeks of the approval date.

Distribution:

|  |  |
| --- | --- |
| [Choose District Administrator] District Administrator | Rob Stapley, Rail, Transit, & Planning Division Administrator |
| Damian Krings, Highways Engineer | Tom Martin, Environmental Services Bureau Chief |
| Andy Cullison, Bridge Engineer | Jeff Jackson, Geotechnical and Pavement Bureau Chief |
| Gabe Priebe, Traffic and Safety Engineer | Joe Green, Construction Bureau – VA Engineer |
| Jason Gilliam, Right-of-Way Bureau Chief | Jon Swartz, Maintenance Division Administrator |
|  | [Choose a name], FHWA - Operations Engineer (PODI) |

cc:

Located at the end of this document

# Introduction

The introduction should include the date of the plan review meeting and a list of those who attended the review, if one was held, including the individual's title, organization, and office location. If no meeting was held, begin the report with the Scope of Work.

# Scope of Work

Provide a brief description of the proposed scope of work. The discussion should also include the selected design speed for project.

# Project Location and Limits

1. county name
2. city/town name
3. Indian reservation
4. route number
5. functional classification
6. reference points
7. project length
8. crossing routes and/or local streets
9. distances from major bridges on the route
10. distance and direction from nearby towns/cities
11. as-built project numbers
12. adjacent project numbers
13. direction of the proposed project

# Work Zone Safety and Mobility

At this time, Level [Choose Level] construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. The plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). A limited Transportation Operations (TO) component and a limited Public Information (PI) component to address interchange ramp closures and wide load detours will also be included in the plan package. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

# 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:*

1. general terrain of the area
2. rural or urban location
3. pavement width and number of lanes
4. surface types and thickness
5. generalized descriptions of the horizontal and vertical alignment
6. generalized descriptions of the existing fill and cut slopes, fill heights, and cut depths
7. lengths and widths of existing bridges
8. any other unique physical characteristic related to the project
9. design speed.

# Context Specific Criteria and Scope Specific Considerations

*Context specific design criteria and/or scope specific considerations may be established in place of baseline design criteria values for projects or locations where deviation is desirable. See pages 5 and 6 of the* [*Baseline Criteria Practitioner’s Guide*](https://www.mdt.mt.gov/other/webdata/external/cadd/RDM/STANDARDS/BASELINE-CRITERIA-PRACTITIONERS-GUIDE.pdf) *for more details.*

*Context specific design criteria and scope specific considerations are documented in milestone reports through the SOW report.*

*Discuss context specific criteria and scope specific considerations for the project that differ from baseline criteria. Be sure to include rationale for each criterion. (Summarize Context Specific Criteria and Scope Specific Considerations in the following table)*

|  |
| --- |
| **Project Context Specific Criteria /Scope Specific Considerations** |
| **Controlling Element** | **Existing Condition** | **Baseline Value** | **Proposed Criteria** | **Location** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Since these established context specific criteria and/or scope specific considerations define the “new” design criteria for the project, all design elements must meet these criteria. Further deviations from these established context specific criteria or scope specific considerations require a variance or design exception, as described in the* ***Design Exceptions and Variances*** *Section.*

# 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.

# Horizontal Alignment

This section should provide more detail than other sections of the report.

1. the relationship of the proposed alignment to the existing alignment
2. curve radii
3. alignment shifts, and any other major features affected by the horizontal alignment.

List the various horizontal alignment design features using the approximate station ranges and a brief discussion.

# Vertical Alignment

1. raising or lowering of the existing vertical alignment
2. an identification of the maximum grades
3. proposed steepening or flattening of existing grades
4. general vertical curvature requirements
5. depth of special subgrade excavations
6. grade controls (e.g., existing bridges, railroad crossings)
7. relationship to the horizontal alignment
8. any other major features affected by the vertical alignment.

# Surfacing

Briefly summarize the pavement recommendations developed by the Pavement Analysis Section, including any surfacing and/or subgrade recommendations. Separate discussions may be required if there is a need for an additional soil survey.

# Typical Section

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.

# Grading

This section should provide any information on how grading may affect the horizontal and vertical alignment.

1. type of excavation
2. special soil considerations which may require shifting the alignment
3. proposed balance points

# Geotechnical Considerations

This section should provide a brief listing of the major geotechnical considerations and techniques that may be planned to address geotechnical issues.

# Hydraulics

1. major hydraulic structures (e.g., bridges over waterways, large culverts, irrigation channels)
2. waterway impacts and proposed channel changes
3. flooding potential
4. permit needs for alignment revisions.

# Permanent Erosion and Sediment Control (PESC) Features

Identify all known locations of potential PESC measures throughout the project, and if known the possible PESC features to be recommended.

# 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.

# 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.

# Intelligent Transportation Systems (ITS) Features

Identify any ITS solutions that should be designed within this project.

# Miscellaneous

Address any miscellaneous items relative to the design which have not been previously discussed.

# Design Exceptions and Variances

If known at this stage, discuss the need for any proposed horizontal and vertical alignment design exceptions or variances.

# 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. If applicable, document the reasons discussed to design and acquire the right-of-way to the minimum allowable width. The minimum allowable right-of-way width should only be used where the clear zone is within the right-of-way.

Provide a discussion on the estimated amount of Right-of-Way (R/W) necessary to complete the project, including the cost estimate. Update the R/W cost estimate in PPMS as needed. If the R/W phase has been programmed, indicate whether a modification to the federal aid agreement for R/W is (or is not) necessary. Provide justification if a modification is necessary.

# Utilities/Railroads

Provide a discussion on how the proposed alignment will affect known utilities and/or railroads.

Provide a discussion on the estimated amount of Incidental Construction (IC) necessary to complete the project, including the cost estimate. Update the IC cost estimate in PPMS as needed. If the IC Phase has been programmed, indicate whether a modification to the federal aid agreement for IC is (or is not) necessary. Provide justification if a modification is necessary.

# Maintenance Items (Note: only include this section if Maintenance items were part of AGR)

List issues that were discussed during field or plan reviews that relate specifically to Maintenance. If Maintenance forces have agreed to complete work prior to construction of this project, list those tasks. Examples may include the following:

Maintenance forces have agreed to complete the following tasks prior to contract letting:

* Clean the culverts and cattleguards before construction (specific sites should be noted if identified during field review)
* Perform crack sealing prior to the seal and cover
* Remove trees from the clear zone
* Trim trees and brush to improve sign visibility

The following items will be included in the project and will be paid for using state funds and charged to Maintenance:

* List specific items that will be included in the contract

*For short sections of roadway such as culvert or slide repair or small bridge replacement:* Maintenance has agreed [to complete the seal and cover] [with the design team that the seal and cover may be eliminated from this section of roadway].

# Agreements

List all agreements that may/will be needed for the project (PSA, off-site detour, 3rd party funding, milling, construction and maintenance, right-of-entry, etc.). Utility and railroad agreements may be listed in this section; however, they will be documented in detail in their respective sections of this report. Discuss the timeline, what entity the agreement will be with, and who will be responsible for obtaining them. Document the status of any completed or in-progress agreements. Identify any concerns with obtaining agreements. Agreements should be obtained as soon as practicable and not left to the very end of project development. Preferably they would be obtained prior to Scope of Work Approval, when possible, but agreements that require detailed information that hasn’t been finalized by SOW Approval may be obtained later in the project development process once that information has been determined.

# 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).

Summarize recommended wildlife accommodation options (from the WARM) and subsequent efforts to identify the type and feasibility of accommodations currently under consideration. If no wildlife needs are identified or accommodations are not feasible based on project scope, indicate that wildlife accommodations will not be considered for the project.

# Experimental Features and Proprietary Products

Discuss any project features that might be considered as experimental. Think about technological advances or concepts that have the potential to accelerate construction, enhance constructability, reduce costs, or improve the overall project quality.

Discuss the use of any Proprietary Products per the “Proprietary Products” design memo dated November 1, 2019.

Note: Buy America requirements apply to experimental and proprietary features and must be accounted for in project development.

# Traffic Control

Discuss how the proposed roadway alignment will impact the proposed traffic control strategy during construction (e.g., detours, crossovers).

Include a discussion on traffic control issues related to work zone safety and mobility. For projects with wide load considerations, discuss whether detours or crossovers will be used.

# Public Involvement

The project Level of Impact (LOI) has been determined to be [Choose Level], and level of public involvement [Choose Level], as defined by MDT’s Public Involvement Plan.

*Identify any changes from PFR report regarding the LOI or level of public involvement. If LOI has changed to “substantial”, describe why and include reference to the project-specific public involvement plan to be developed by the PM and endorsed by the Project Sponsor.*

*Identify any public involvement activities completed to date and summarize public feedback and any major project decisions resulting from the PI process. Include reference to communication log and stakeholder contact list if applicable. Document any changes to the project public involvement plan (regardless of if LOI or Level of Public Involvement changed).*

Note if the project is considered a “substantial” project. 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).

Include a discussion on public involvement issues related to work zone safety and mobility.

# Preliminary Construction Cost Estimate

Note if the entire project is G-match. Include what the Project Total CN+CE (TOTAL costs w/INF + IDC) was at the previous milestone report.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated cost | Inflation (INF)(from PPMS) | TOTAL costsw/INF + IDC(from PPMS) |
| **(IM, NH STPP, etc.) CN** | **$** | **$** | **$0** |
|  |  |  |  |
| **HSIP CN** | **$** | **$** | **$0** |
|  |  |  |  |
| **(list all other) CN** | **$** | **$** | **$0** |
|  |  |  |  |
| **TOTAL CN** | **$** | **$** | **$0** |
|  |  |  |  |
| **CE** (\_\_%) | **$** | **$** | **$0** |
|  |  |  |  |

*Project TOTAL from all the funding types above:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Project TOTAL CN + CE** | **$** | **$** | **$0** |

The estimate above includes $XXXXX for traffic control, XX% allowance for contingency, and XX% for mobilization.

Note: Inflation is calculated in PPMS to the letting date. If there is no letting date, the project is assumed to be inside the current TCP and is given a maximum of 5 years until letting. IDC is calculated at 13.56% for FY 2024.

# Preliminary Engineering

The percent PE expended is XX%. A review of the expended preliminary engineering and hours used compared to the anticipated amounts required for completing the project design indicates that a modification is / is not needed. *{Pick one of the following choices, delete the others, and include additional justification for the PE modification if necessary.}*

*NOTE: If a modification is needed, a PE Mod Request must be submitted separately to the Engineering Fiscal Officer (follow PE modification process). Modifications will not be executed through this milestone report alone.*

* There was a major scope change after the preliminary field review which significantly altered the amount of design work required. *{include additional justification}*
* The project limits have changed. *{include a discussion on the effects or impacts (if any) on design due to the change in project length}*
* There was a project split. *{include a short description of the project split and the impact on PE}*
* The project was transferred to/from Consultant Design. *{include a discussion on the changes needed to PE}*
* The PE expenditures to date have been significantly higher/lower than anticipated. *{include a discussion of where the over or under-runs occurred and whether additional or fewer hours will be needed to complete the design – note that sometimes addressing potential risk up front may use significant hours early in project development; these hours may or may not be saved later in the design process}*
* A revision to the preliminary engineering cost estimate is necessary based on the design requirements identified during the project design, development of the scope of work, and hours needed to finalize project requirements.

# Ready Date

Provide the ready date shown in the Project Management System. Give tentative letting date if the project is within the Tentative Construction Plan, or the target letting date if the project is outside the TCP. Discuss the health of the project based on EPS and the potential for design issues to affect the design timeline. Also include a discussion on major design activities that should have their hours and durations adjusted based on information gathered at the AGR. Include the proposed letting date as shown in the Tentative Construction Program. The current PE End Date is XX/XX/XXXX. [*As identified in the PE Obligation and Expenditure 9102 Report. The report can be found at* [*PE Obligation and Expense Report*](http://wlprd.mdtint.mt.gov:7777/pub-reports/prod/bv/pe_obl_and_exp/)*. Select the most recent report.*] A review of the remaining EPS schedule, critical path activities, and target letting date indicates that a modification to the PE End Date is/isn’tneeded. [*Modification to the PE End Date requires a PE End Date modification request. The PE End Date should be set approximately for August 1 of the year following the letting year to allow sufficient time to close the PE phase. Finally, review the need for a modification to the PE End Date after the Tentative Construction Plan is updated each fall.]*

cc:

|  |
| --- |
| [EPSProjectManager], EPS Project Manager |
| MDT Headquarters Milestone Report Distribution <mdthqmilestonereport@mt.gov> |
| [Choose a District Distribution] |  |
| [Choose a Maintenance Chief] |  |

Optional (remove if not used)

|  |
| --- |
| Vacant, Eng. Manager, Bridge Management System *[if there are structures on the project]* |
| Andy White, Secondary Roads Engineer *[project is on or crosses a secondary route]* |
| Jeremy Terry, Road Design Engineer *[Road involvement]* |
| Shelby Clark, Bicycle/Pedestrian Coordinator *[omit if is obviously no bike/ped involvement]* |
| County Officials *[secondary program, any route that is county maintained, or involves a county agreement]* |
| Tribal Government Officials *[on or adjacent to a reservation]* |
| City/Municipal Officials *[projects within city/urban limits:* [*MDT Urban Maps | Montana Department of Transportation (MDT) (mt.gov)*](https://www.mdt.mt.gov/travinfo/maps/urban-maps.aspx)*]* |
| STREET, JOHN THOMAS A CIV USAF AFGSC 341 CES/CEMD, Malmstrom Air Force Base <john\_thomas.street@us.af.mil> [USAF access routes: [*\\state\mdt\prd\GreatFalls\GTF\ALL\_STAFF\T\_and\_E\_Routes*](file:///%5C%5Cstate%5Cmdt%5Cprd%5CGreatFalls%5CGTF%5CALL_STAFF%5CT_and_E_Routes)*]* |