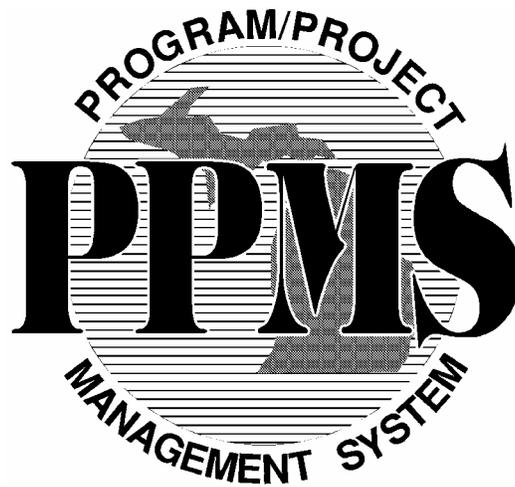




PROGRAM/PROJECT MANAGEMENT SYSTEM



COMBINED PRECONSTRUCTION PROCESS DOCUMENTATION MANUAL (TASK MANUAL)

Updated February, 2005

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1 OVERVIEW OF THE MANUAL

1.1 INTRODUCTION

The purpose of this manual is to document the Michigan Department of Transportation (MDOT) preconstruction process as it pertains to project development. The preconstruction process includes a wide variety of work steps beginning with the early study for Improve/Expand projects, and after the "Call for Projects" for Preserve Projects, and ending with the construction contract award.

The MDOT has recognized that the preconstruction process is very complex and that managing the process can best be accomplished by using a structured scheduling and reporting system. A scheduling and reporting system makes use of standard tasks which can be linked together to form a network. This manual documents the standard Program/Project Management System (P/PMS) network and provides descriptions for tasks included in the network.

The network and tasks were developed in cooperation with over 100 MDOT staff and managers. Input from each management unit involved in the preconstruction process was incorporated into the network and task descriptions. The network and task descriptions will continue to be updated so that they closely represent the current preconstruction process.

1.2 MANUAL ORGANIZATION

This manual is organized to allow the reader to quickly reference task descriptive information. There are two primary methods by which a task can be identified and referenced. Users with an understanding of design processes can use the network to identify the task of interest and then use the task number to locate the descriptive data. The tasks in the Global Network have task numbers and titles which correspond to the task descriptions in Chapter III. The descriptions are organized by task number in ascending order.

Another option is to use the index in Appendix A. This index lists the detail tasks' titles and numbers by reporting management units in alphabetical order. The task information and location in the development process can then be identified in the description listing and network by means of the task number.

The following are descriptions of the manual's chapters which should help you become familiar with the overall manual organization:

- This chapter, Overview of the Manual, describes the content and purpose of the manual.
- Chapter II, P/PMS Task Networks, introduces the two levels of networks used in P/PMS: The Summary Block Network and The Global Network. The Chapter includes a diagram for The Summary Block Network, and a reference to The Global Network file online. The P/PMS Global Network is now found on-line as an Adobe Acrobat document for best viewing and ease of printing.
- Chapter III, P/PMS Task Descriptions, describes each task and associated work. The descriptions also detail the start and finish of a task as well as the management unit that is responsible for entering these dates into P/PMS.
 - Except where specifically noted, the same Task Descriptions and Work Steps will apply to both MDOT and Consultant performed tasks.
- Appendix A contains a list of management units responsible for reporting actual start and finish dates and associated tasks.
- Appendix B contains a list of organizational units and tasks which they will be reporting time to.
- Appendix C contains a list of network milestones and descriptions.
- Appendix D contains a list of commonly used acronyms in this manual.
- Appendix E is a glossary of project management terminology.
- Appendix F describes the step-by-step process involved to add and/or review a task. New items or steps not previously involved are highlighted in bold.

2 P/PMS TASK NETWORKS

2.1 INTRODUCTION

Each design project is unique compared to other design projects. Projects differ in many ways, such as treatment of special requirements (wetlands, hazardous waste, historic structures, etc.), the magnitude of effort required, and who will accomplish the work (in-house, consultant, municipality). Even with this uniqueness, the overall approach is standardized from one project to another. The P/PMS networks are based on the standardized approach to highway project development.

The P/PMS networks are broken into two levels. Level 1 is made up of the summary blocks. Level 2 is made up of the detail tasks. Level 2 consists of approximately 80 to 100 tasks and milestones. The scheduling and reporting of work is done at the detail task level. The detail task information is rolled up to the summary blocks. There are approximately 16 summary blocks. Upper-level management will typically want information for projects at the summary level, except when there are schedule exceptions where the detail tasks might provide insight into the situation. The managers responsible for the project and carrying out the actual work will focus on the detail tasks. This will allow for better coordination and communication between the various groups.

2.2 LEVEL 1 - SUMMARY NETWORK

The Summary Block Network is made up of approximately 16 blocks, each representing a functionally related group of detail tasks. The actual number of blocks appearing in a project's summary block network depends on the overall scope of the project. For example, the P/PMS will drop the right-of-way-related blocks from the summary block network for projects which do not require additional right of way. In this manner, a network is created which reflects the uniqueness of the specific project requirements. The Project Manager is given the opportunity to refine the network to make it unique to the specific project.

All dates and other task information are rolled up from the detail tasks linked to the summary block. For example, the start of a summary block corresponds to the earliest start of all the detail tasks linked to that summary block. Likewise, the finish of the summary block will correspond to the latest finish of all the detail tasks linked to that summary block. In this manner, managers can get a broader view of a project and still have the option of getting more detail information if it is required. Other task information which gets rolled up includes resource requirements and estimated costs.

The network in Figure II-1 is the P/PMS Summary Block Network. Each box represents a summary block. The network is a precedence network where the lines are used to describe the

relationship or constraints between tasks. The four-digit number along the top edge of the box refers to the global task network (see Section II.3). Each detail task with the same leading two digits will have its dates, costs and resource requirements summarized as part of the corresponding summary block.

2.3 LEVEL 2 - GLOBAL NETWORK

The Global Network consists of approximately 80 to 100 tasks and milestones. Generally, each task represents roughly 5% of the total labor requirement and/or duration for a project. Several additional detail tasks, which do not fit this rule, were included because they have a special role within the project development process. Like the Summary block network, the Global Network is modified to reflect the characteristics of each project. For example, the tasks needed to secure a permit will be dropped if permits are not required. This "switching off" of tasks occurs for several other sets of tasks (Environmental, Right-of-Way, Utilities, etc.).

The detail tasks are used to report labor-hours through the payroll system, to report task progress (start, finish and estimated completion date) through Project Manager Input, and to schedule work for the various management units. Project Managers tend to focus on the Global Network since it allows the various groups to communicate the status of their current work effort. All groups will now be able to track the work steps within the detail tasks to ensure that work is accomplished on time and within the budget.

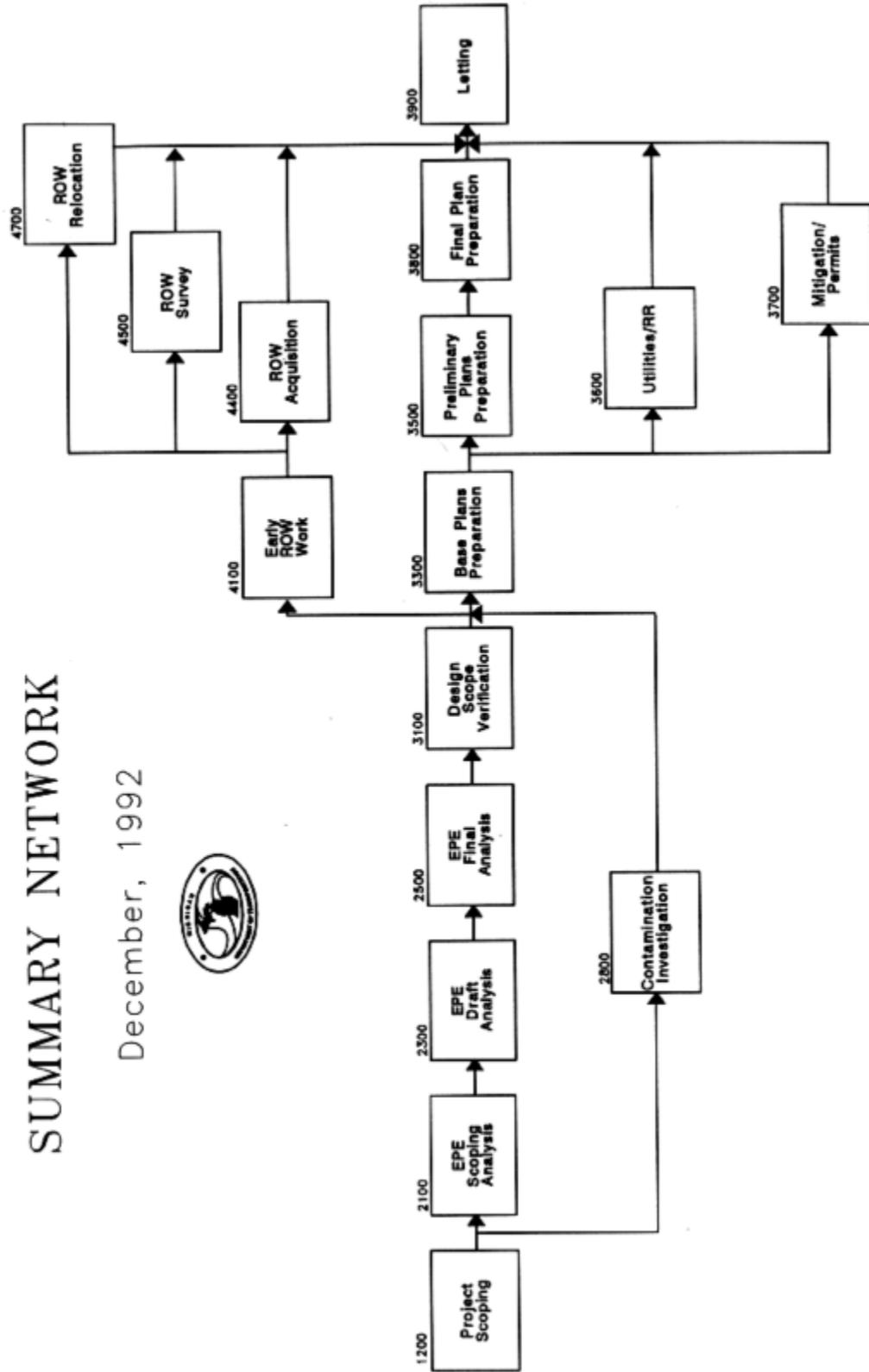
Figure II-1 Summary Block Network

PROGRAM/PROJECT MANAGEMENT SYSTEM

(P/PMS)

SUMMARY NETWORK

December, 1992



The network configuration of the P/PMS Global Network may be found on-line on our web page on the Interchange at http://interchange/computing/design/ppmspdf/global_bw.pdf . Each box represents a detail task. Ovals represent milestones which occur at strategic times in the project development process. The network is a precedence network where the lines are used to describe the relationships or constraints between tasks. In the Global Network, three types of constraints are shown — finish to start, finish to finish, and start to start. Each task has a unique number along the top of the box. This number corresponds to the task description in Chapter III and task codes used in the MDOT payroll system. The first two numbers of the task identify the summary task. The detail task information will be rolled up into the summary task.

P/PMS tasks serve as the discrete units for which time and resources are planned, scheduled and reported. A standardized set of tasks is to be used in P/PMS. As new tasks are identified, they will be defined and incorporated into the network. The tasks should reflect the work of the Department so that projects can be easily incorporated into P/PMS. Standardizing the tasks between projects allows managers and other transportation employees to understand the work proposed for a project. Still, every project is unique and some portion of the work will have trouble fitting into the standard set of tasks. If this becomes a persistent problem, then the Project Managers should discuss this with the P/PMS Staff so that additional tasks can be included.

3 TASK DESCRIPTIONS

3.1 INTRODUCTION

The Global Network consists of approximately 80 to 100 tasks and milestones. The scheduling and reporting of work is done at the detail task level. This chapter, Task Descriptions, describes each of the tasks that make up the Global Network. The following data is provided for each of the detail tasks:

- Task Number — serves to identify the task; it is also used to report time in the payroll system (i.e., Task Number).
- Date — the date the description was last updated.
- Task Title — descriptive phrase describing the work.
- Reporting Management Unit — the management unit(s) that is responsible for entering the actual start and complete dates for the task.
- Task Start — the anticipated start date of the task which all groups can recognize.
- Task Finish — the anticipated finish date of the task which all groups can recognize.
- Task Description — general discussion of the work associated with the task.
- Work Steps — work steps which are typically associated with the task. The list is general in nature.

Appendix B is an index of the task descriptions by the reporting management unit.

P/PMS TASK DESCRIPTIONS

3.2 TASK DESCRIPTIONS

The purpose of the task descriptions is to assist the reader in understanding the general flow of work during project development. The descriptions are general in nature. They are intended to convey the general scope of work — they are not a "cookbook" on how to develop a highway project. This document does not address every aspect of project development. A great deal more detail would be required to cover all circumstances.

The MDOT Preconstruction Tasks List (Figure III-1) on the following pages lists in numerical order the current tasks included in the Global Network. Following the task listing are the individual Task Description sheets, also in numerical order.

Except where specifically noted, the same Task Descriptions and Work Steps will apply to both MDOT and Consultant performed tasks.

P/PMS TASK DESCRIPTIONS

Figure III-1

MDOT PRECONSTRUCTION TASKS LIST

Study

1220 **Project Scoping**
Scope Verification and Initiation of EPE Activities

Early Preliminary Engineering

2110 **EPE Scoping Analysis**
Obtain Early Preliminary Engineering Consultant
2120 Prepare Traffic Analysis Report
2130 Prepare Project Justification
2140 Develop and Review Illustrative Alternatives
2155 Request/Perform Safety Analysis
2160 Prepare and Review EIS Scoping Document

EPE Draft Analysis
2310 Conduct Technical SEE Studies
2320 Conduct EPE Aerial Photography
2330 Collect EPE Geotechnical Data
2340 Develop and Review Practical Alternatives
2360 Prepare and Review EA or DEIS
2380 Circulate EA or DEIS

EPE Final Analysis
2510 Determine and Review Recommended Alternative
2525 Prepare and Review Engineering Report
2530 Prepare and Review Request for FONSI or FEIS
2550 Obtain FONSI or ROD
2560 Obtain Preliminary Engineering Authorization

Contamination Investigation
2810 Project Area Contamination Survey (PCS)
2820 Conduct Preliminary Site Investigation (PSI) for Contamination

Preliminary Engineering

Design Scope Verification
3130 Verify Design Scope of Work and Cost
3140 Obtain Design Consultant
3150 Categorical Exclusion Environmental Clearance
3160 Obtain Design Survey Consultant

P/PMS TASK DESCRIPTIONS

Base Plans Preparation

3310	Prepare Aerial Topographic Mapping
3320	Conduct Photogrammetric Control Survey
3330	Conduct Design Survey
3340	Conduct Structure Survey
3350	Conduct Hydraulics Survey
3360	Prepare Base Plans
3361	Review and Submit Preliminary ROW Plans
3370	Prepare Structure Study
3375	Conduct Value Engineering Study
3380	Review Base Plans
3390	Develop the Maintaining Traffic Concepts
3505	Preliminary Pavement Design and Selection

Preliminary Plans Preparation

3510	Perform Roadway Geotechnical Investigation
3520	Conduct Hydraulic/Hydrologic and Scour Analysis
3522	Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
3530	Conduct Structure Foundation Investigation
3535	Conduct Structure Review for Architectural and Aesthetic Improvements
3540	Develop the Maintaining Traffic Plan
3551	Develop Traffic Signal Operations Plan
3552	Develop Preliminary Permanent Pavement Marking Plan
3553	Develop Preliminary Non-Freeway Signing Plan
3554	Develop Preliminary Freeway Signing Plan
3560	Conduct Preliminary Geometrics and Roadside Safety Reviews
3565	Preliminary Constructability Review
3570	Prepare Preliminary Structure Plans
3580	Develop Preliminary Plans
3581	Review and Submit Final ROW Plans
3590	Review Preliminary Plans (Hold THE Plan Review Meeting)

Utilities/Railroad

3610	Compile Utility Information
3630	Prepare and Process Participation/Special Operational Agreements
3650	Coordinate Railroad Involvement for Grade Separations
3655	Coordinate Railroad Involvement for At-Grade Crossings
3660	Resolve Utility Issues
3670	Develop Municipal Utility Plans
3672	Develop Special Drainage Structures Plans
3675	Develop Electrical Plans

P/PMS TASK DESCRIPTIONS

	Mitigation/Permits
3710	Develop Required Mitigation
3720	Submit Environmental Permit Applications
3730	Obtain Environmental Permit
	Final Plan Preparation
3810	Conduct Final Geometrics and Roadside Safety Reviews
3821	Prepare/Review Traffic Signal Plan
3822	Complete Permanent Pavement Marking Plan
3823	Complete Non-Freeway Signing Plan
3824	Complete Freeway Signing Plan
3830	Complete the Maintaining Traffic Plan
3840	Develop Final Plans and Specifications
3850	Develop Structure Final Plans and Specifications
3860	Final Constructability Review
3870	Hold Omissions/Errors Check (OEC) Meeting
3880	CPM Quality Assurance Review
	Letting
3910	Prepare Final Project Package and Obtain Authorization
3920	Advertise and Let Project
3930	Award Project Construction Contract
	<u>Right Of Way</u>
	Early Right Of Way Work
4110	Obtain Right of Way Authorization
4115	Obtain Right of Way Turnkey Consultant
4120	Obtain Preliminary Title Commitments
4130	Prepare Marked Final Right Of Way Plans
4140	Prepare Property Legal Instruments
	ROW Acquisition
4411	Preliminary Interviews
4412	Real Estate Services Assignment Proposal and Fee Estimate (Form 633s)for Appraisal Work Authorization
4413	Appraisal Reports
4420	Appraisal Review Reports
4430	Acquire Right Of Way Parcels
4510	Conduct Right Of Way Survey & Staking
	ROW Relocation
4710	Relocation Assistance
4720	Prepare Improvement Removal Plan

P/PMS TASK DESCRIPTIONS

P/PMS TASK DESCRIPTIONS

3.2.1 Study

Project Scoping (1200 Series)

TASK NUMBER: 1220

Sheet 1 of 2
DATE: July, 1999

TASK TITLE: Scope Verification and Initiation of EPE Activities

REPORTING MANAGEMENT UNIT: Design - Project Development

TASK START: Action on the PPS by Highway Steering Committee.

TASK FINISH: Approval of the project's scope, cost and schedule by Highway Steering Committee.

TASK DESCRIPTION:

After being approved by the Highway Steering Committee, a Project Manager is assigned to the project. The Project Manager reviews the preliminary project statement and cost estimate. The Project Manager then establishes and organizes the Project Study Team to develop the project's scope, cost and schedule. The team identifies the issues and begins to discuss the range of alternatives.

The various members of the Study Team carry out their respective responsibilities which can include:

- establishment of job number;
- completion of the Environmental Study Form;
- establishment of a public involvement plan;
- preparation of the project, network and schedule; and
- All other tasks required to develop the project's scope, cost and schedule.

The purpose of the Environmental Study Form is to determine the complexity of the study and whether it is a major action (EIS or EA) project. The Environmental Study Form is prepared and circulated to the appropriate groups. These can include:

- Department management units,
- MDOT Modal Subcommittee,
- other state agencies, and
- FHWA.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 1220

Sheet 2 of 2
DATE: July, 1999

TASK TITLE: Scope Verification and Initiation of EPE Activities

REPORTING MANAGEMENT UNIT: Design - Project Development

TASK DESCRIPTION: (Continued)

As part of this task, the Project Manager, in association with the Study Team, develops a project network and schedule. The network defines the various project work tasks and associated resource requirements. To develop the network, resource assignments must be made. Using what-if's of the project network, Division Management is then able to make a determination whether the work is to be done in-house or by a consultant.

Based on the analysis done by the various Project Study Team members, a more accurate project cost estimate and scope is developed. A document is prepared which describes the project's proposed scope, cost and schedule. The document is then submitted to the Highway Steering Committee. The committee reviews the document and approves or disapproves the project's scope, cost and schedule.

WORK STEPS:

1. Assignment of Project Manager to the project.
2. Input actual start date into appropriate data system.
3. Establish chargeable job number.
4. Establish and organize the Project Study Team.
5. Project Study Team meets to identify issues and range of alternatives.
6. Study and conduct analysis of the issues and range of alternatives.
7. Develop a draft project task network and schedule.
8. Establish public involvement plan.
9. Determine the groups to be responsible for the various work responsibilities, including whether the job will be done in-house or by consultant.
10. Input actual finish date into appropriate data system.
11. Prepare the project scope, cost and schedule document.

P/PMS TASK DESCRIPTIONS

3.2.2 Early Preliminary Engineering

EPE Scoping Analysis (2100 Series)

TASK NUMBER: 2110

Sheet 1 of 2
DATE: July, 1999

TASK TITLE: Obtain Early Preliminary Engineering Consultant

REPORTING MANAGEMENT UNIT: Design - Project Development

TASK START: Department approval of Project's scope, schedule and cost.

TASK FINISH: Date of an executed contract agreement signed by all parties.

TASK DESCRIPTION:

The approval of the project's scope, schedule and cost initiates the engineering and/or environmental process. Based on the size and complexity of the project and/or availability of the in-house resources, it may be necessary to contract with consultants for a portion of, or the entire, Early Preliminary Engineering/Project Development effort.

This task deals with all the tasks necessary to obtain consultant services for early preliminary engineering which may include project location, environmental technical studies and environmental document preparation. There are two methods to retain a consultant for this effort:

- Indefinite Agreement, and
- Individual Contract.

The Indefinite Agreement is an open-ended contract which is used to retain consultants on an as-needed basis. The contract has time and total dollar limits.

The Individual Contract is specific to the project. The contract describes the scope, cost and schedule as agreed to by both the consultant and the Department.

This task is considered complete when there is an actual executed agreement signed by all parties.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2110

Sheet 2 of 2
DATE: July, 1999

TASK TITLE: Obtain Early Preliminary Engineering Consultant

REPORTING MANAGEMENT UNIT: Design - Project Development

WORK STEPS:

1. Utilize a list of pre-qualified consultants or use existing list.
2. Input actual start date into appropriate data system.
3. Prepare Request for Proposals (RFP).
4. Request Letter of Interest from consultant for upcoming contract.
5. Review and score letters of interest to determine short list of consultants (top 3).
6. Distribute RFP to the short list of interested consultants.
7. Hold Pre-bid meeting, if appropriate.
8. Receive and review proposals.
9. Short list and interview.
10. Recommend consultant as top candidate.
11. Negotiate recommended selection proposal with top candidate.
12. Submit proposal for review and acceptance by Commission Audit.
13. Assure adequate funding is in place with Program Administration.
14. Prepare final contract document.
15. Circulate document for signatures.
16. Award project.
17. Input actual finish date into appropriate data system.
18. Hold briefing meeting and give notice to proceed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2120

Sheet 1 of 4
DATE: May, 2004

TASK TITLE: Prepare Traffic Analysis Report

REPORTING MANAGEMENT UNIT: Planning - Project Planning

TASK START: Receipt of request for Traffic Analysis.

TASK FINISH: Distribution of Traffic Analysis Report.

TASK DESCRIPTION:

The Project Planning Section prepares comprehensive traffic reports for all Preserve, Improve, and Expand projects studied by the Department. The Traffic Analysis Report (TAR) provides detailed traffic information for base year and future year alternatives to assist in determining design requirements and noise and air quality impacts of projects. Information provided in the TAR is used in the design of roadway cross sections; pavement design and signalization requirements; and for establishing the level of service (LOS), noise mitigation needs, and air quality compliance for each of the alternatives. Traffic is forecasted 20 years for impact analysis and design as required by the Federal Highway Administration and/or Act 51.

These studies include:

- socio-economic data (population trends, present land use, planned new developments);
- base year traffic information such as average annual daily traffic (ADT), design hour volumes (DHV), AM and PM peak hour turning movements, percent commercial, weave movements and kip axle equivalents;
- forecast of future traffic volumes (ADT's, DHV's, peak hours, commercial, weave movements, and kip axle equivalents); and
- assumptions used to determine growth factors in the analysis.

Special studies are done when the data for an alternative is incomplete or old. The types of studies include:

- Volume Classification Study,
- Single Station Origin - Destination Study, and
- External Origin - Destination Study.

Detailed information on these special study types, as well as extra information for Consultants, is provided in the *Supplemental Information* following the Work Steps.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2120

Sheet 2 of 4
DATE: May, 2004

TASK TITLE: Prepare Traffic Analysis Report

REPORTING MANAGEMENT UNIT: Planning - Project Planning

WORK STEPS:

1. Assess data needs and availability. Review existing traffic data and previous traffic studies in the project area. Request additional studies if required, such as external origin - destination studies or single station studies. This decision is based on data availability for the alternative and the timeliness of the data (age).
2. Input actual start date into appropriate data system.
3. Collect additional traffic data as required. Request traffic counts, turning movements, commercial classification counts, origin and destination studies, and truck weight information as needed from the Data Collection Section.
4. Collect socio-economic data
 - a. Population data
 - b. Land use information
 - c. Planned new developments
5. Utilize traffic demand models maintained by the Demand Estimation and Travel Impact Analysis Section and/or the Metropolitan Planning Organizations (MPO). See *Supplemental Information* for more details.
6. Perform special/technical studies, if appropriate, which can include external origin - destination or single station studies.
7. Prepare written report of traffic conditions and assumptions used to determine forecasted traffic. Include traffic schematics of intersections, interchanges, and weave movements for base and future years.
8. Input actual finish date into appropriate data system.
9. Transmit final report to the group requesting the report and to various other divisions as required within the Department.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2120

Sheet 3 of 4
DATE: May, 2004

TASK TITLE: Prepare Traffic Analysis Report

REPORTING MANAGEMENT UNIT: Planning - Project Planning

SUPPLEMENTAL INFORMATION

I. Types of Special/Technical Studies

A. Volume Classification Study

1. Request from the Data Management Section
2. Traffic volume data may include:
 - a. Include directional 24-hour volumes classified by vehicle types
 - b. Turning movement volumes
 - c. Weave-merge movements within traffic flow
 - d. Speed studies
 - e. Peak-hour volumes
3. This data is used to analyze the current traffic volume, the percent of the volume during peak hour and/or the development of the design hour volume, the percentage distribution of automobiles, small and large trucks and the exchange of vehicles at intersections and/or interchanges.
4. This base data is then used to develop traffic projections for the Traffic Analysis Report using a history of traffic volumes along the route and/or local land use development projections.

B. Single Station Origin-Destination Study

1. Request to the Data Management Section
 - a. Conduct a survey of motorists at one location along a highway.
 - b. Involves stopping a sample of motorists to obtain travel information including:
 - 1) origin
 - 2) destination
 - 3) purpose
 - 4) number of passengers
 - 5) frequency of occurrence
2. Information indicates purpose of trip and the probability that relocation in highway location would impact or change their trip-distribution patterns.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2120

Sheet 4 of 4
DATE: May, 2004

TASK TITLE: Prepare Traffic Analysis Report

REPORTING MANAGEMENT UNIT: Planning - Project Planning

SUPPLEMENTAL INFORMATION (Continued)

- C. External Origin-Destination Study
 - 1. Similar to single station study
 - 2. Utilized around urban areas that may be served with multiple state trunk line facilities
 - 3. Sampling and questionnaire process similar to Single Station Origin-Destination Study
 - a. Questions regarding stops and location within the urban area
 - b. Urban area subdivided into Traffic Analysis Zones containing homogeneous types of land use which are bordered by local street networks or topography.
 - 4. This information is used to examine travel through and into the community and could, with proper synthesis of local data, be used to develop a local traffic model process.
 - 5. This data can be used to analyze the impact of highway relocation within or bypassing the community.

II. Forecasting Software

- A. Utilize appropriate traffic analysis, modeling, and forecasting software including but not limited to:
 - 1. TRANSCAD
 - 2. Highway Capacity Software
 - 3. CORSIM
 - 4. Synchro
- B. Both capacity and level of service are to be reported. Queue analysis shall be performed where needed.

III. Display of Traffic Analyses

- A. Graphically Utilize appropriate traffic analysis, modeling, and forecasting software including but not limited to:
 - 1. TRANSCAD
 - 2. Highway Capacity Software
 - 3. CORSIM
 - 4. Synchro
- B. Use separate layers for traffic forecasting process.
- C. The traffic analyses must allow the reader to 'reconstruct' the analyst's steps and arrive at the same conclusions.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2130

Sheet 1 of 4
DATE: May, 2004

TASK TITLE: Prepare Purpose of and Need for Project

REPORTING MANAGEMENT UNIT: Planning - Project Planning/Design - Consultant Administration

TASK START: Project scope, cost and schedule approval, or notice to proceed.

TASK FINISH: Transmittal of the written description of the purpose of and need for the proposed project to the Environmental Section for inclusion in the EA or DEIS.

TASK DESCRIPTION:

The Project Planning Section prepares a written description of the transportation problem(s) or other need(s) which the proposed project is intended to address. The description should clearly demonstrate that a "need" exists, and should define the "need" in terms understandable by the general public. The discussion should clearly describe the problem(s) which the proposed project is to correct. It will form the basis for the "no action" discussion in the "alternatives" section of the EA or DEIS, and assist with the identification of reasonable alternatives and the selection of the recommended alternative.

The length of a project justification report will vary with the scope of the proposed project. The items that could be included in the explanation of the need for the proposed project are listed after the Work Steps in the *Supplemental Information*. This list is not all-inclusive or applicable in every situation.

A condensed version of this report is usually needed for inclusion in the Scoping Document for a Class I Action. For an EA or a DEIS, the complete description of the purpose of and need for the proposed project is submitted to members of the Project Study Team for internal review. After any needed revisions are made, the report is transmitted to the Environmental Section for inclusion in the EA or DEIS.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2130

Sheet 2 of 4
DATE: May, 2004

TASK TITLE: Prepare Purpose of and Need for Project

REPORTING MANAGEMENT UNIT: Planning - Project Planning/Design - Consultant Administration

WORK STEPS:

1. Collect and organize data required for the Project Purpose and Need.
2. Input actual start date into appropriate data system.
3. Prepare Project Purpose and Need.
4. Coordinate among Study Team members, including FHWA, to address specific aspects of the Project Purpose and Need.
5. Transmit the Project Purpose and Need to the Environmental Section.
6. Input actual finish date into appropriate data system.
7. Environmental Section transmits Project Purpose and Need to appropriate regulatory agencies for formal approval.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2130

Sheet 3 of 4
DATE: May, 2004

TASK TITLE: Prepare Purpose of and Need for Project

REPORTING MANAGEMENT UNIT: Planning - Project Planning/Design - Consultant Administration

SUPPLEMENTAL INFORMATION:

The following items could be included in the explanation of the need for the proposed project. This list is not all-inclusive or applicable in every situation.

I. Project Status

- A. Brief description of project's history, including actions taken to date.
- B. Involvement of other agencies and governmental units.
- C. Tasks pending.
- D. Schedules

II. System Linkage

- A. Is the proposed project a 'connecting link'?
- B. Reveal how the proposed project fits into the transportation system.
- C. Determine proposed capacity.
- D. Determine freight network compatibility
 - 1. Intrastate, interstate, and international freight
 - 2. Show system linkages
 - 3. Discuss economic implications of project/facility on intrastate, interstate, and international freight.
 - 4. Discuss economic issues within the context of the freight network.
 - 5. Compare modes, including rail, air, and water to land.

III. Capacity

- A. Check if present facility is inadequate for:
 - 1. Present traffic
 - 2. Proposed traffic
- B. Determine projected traffic
- C. Determine capacity needed
- D. Determine levels of service for existing and proposed facility.
- E. For freeway improvements include:
 - 1. Analyze the facility within the context of Chapter 22 of the Highway Capacity Manual called Freeway Facilities.
 - 2. If Chapter 22 is not practical, still analyze the project within the conceptual framework.
 - a. Describe operations for upstream and downstream connecting facilities
 - b. Show how these operations interact with the subject facility

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2130

Sheet 4 of 4
DATE: May, 2004

TASK TITLE: Prepare Purpose of and Need for Project

REPORTING MANAGEMENT UNIT: Planning - Project Planning/Design - Consultant Administration

SUPPLEMENTAL INFORMATION: (continued)

IV. Transportation Demand

- A. Include relationships to any statewide plan or adopted urban transportation plan.
- B. Give an explanation of the project's traffic forecasts that are significantly different from those estimated from the 23 U.S.C. 134 planning process.
- C. Check for federal, state, or local governmental mandate for the project.

V. Legislation

- A. Check for a federal, state, or local governmental mandate for the project.

VI. Social Demands or Economic Development

- A. What projected economic development plans/land use changes indicate the need for the project and/or to improve highway capacity?
 1. New employment/businesses
 2. Schools
 3. Recreation
 4. Land use plans
 5. Others

VII. Modal Interrelationships

- A. How will the proposed project interface with and serve to compliment:
 1. Airports
 2. Rail and port facilities
 3. Mass transit services
 4. Others

VIII. Safety

- A. Is the proposed project necessary to correct an existing or potential safety problem?
- B. Is the existing accident rate excessively high?
- C. How will the proposed project potentially improve safety?

IX. Roadway Deficiencies

- A. Is the proposed project necessary to correct existing deficiencies, and how, such as:
 1. Substandard geometrics
 2. Load limits for structures
 3. Inadequate cross-sections
 4. High maintenance costs

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2140

Sheet 1 of 4
DATE: May, 2004

TASK TITLE: Develop and Review Illustrative Alternatives

REPORTING MANAGEMENT UNIT: Region - Project Development/Design - Project Development/Consultant Coordination

TASK START: Receipt of Notification to Proceed with EPE or approval of Cost, Scope and Schedule.

TASK FINISH: Date of Public Information Meeting.

TASK DESCRIPTION:

The development of the illustrative alternatives is initiated by Design - Project Development and carried out in conjunction with Transportation Planning, Real Estate, Design and the Region Project Development Engineer. Initially this effort begins with collection of project-related information. The types of information include, but are not limited to:

- existing maps;
- aerial photography;
- existing traffic information and analyses;
- operational and safety statistics;
- project need or purpose statement;
- land use;
- property information (plat & tax maps);
- base maps;
- preliminary indication of social, economic and environmental issues; and
- Community master plans.

Coordination with other government agencies will be initiated. Meetings are held with cities, townships, counties or other state agencies to discuss the possible alternatives for the project.

Possible alignments are drawn and documented. Further investigation is done to better understand the issues associated with the project.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2140

Sheet 2 of 4
DATE: May, 2004

TASK TITLE: Develop and Review Illustrative Alternatives

REPORTING MANAGEMENT UNIT: Region - Project Development/Design - Project Development/Consultant Coordination

TASK DESCRIPTION: (Continued)

Based on the information gathered, illustrative alternatives are formally prepared. The full range of alternatives is considered and documented, including the "do nothing" alternative. The illustrative alternatives are documented and drawn on aerial maps. The type of information provided for each of the illustrative alternatives can include:

- approximate construction limits,
- possible traffic staging during construction,
- residential and commercial displacements,
- general cross sections,
- cost of alternatives,
- right-of-way commitments,
- brief listing of advantages and disadvantages for each alternative
- environmental considerations
- utilities involvement
- waterway crossings
- existing field conditions

The documentation also includes the minutes from meetings held or correspondence received concerning the project.

The illustrative alternatives are then submitted for review. The illustrative alternatives are reviewed by the Study Team to ensure that all alternatives have been identified and documented. The level of detail will depend on the project, but should be sufficient to serve as a basis for discussion at the Public Information Meeting or agency meetings. Exhibits and documents should also be suitable for presentation at the meetings. Based on the comments received, changes are made to address the review recommendations by members of the Study Team.

A request is prepared for a public information meeting. The necessary documents and exhibits are then prepared. The meeting is then held to make the public aware of the alternatives being considered.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2140

Sheet 3 of 4
DATE: May, 2004

TASK TITLE: Develop and Review Illustrative Alternatives

REPORTING MANAGEMENT UNIT: Region - Project Development/Design - Project Development/Consultant Coordination

WORK STEPS:

1. Identify potential alternatives.
2. Input actual start date into appropriate data system.
3. If alternatives are eliminated:
 - a. Describe why they have been eliminated.
 - b. Include a proposed action for each alternative along with a no-action alternative and combination alternative, if possible.
4. Gather or request data for alternatives.
5. Meet with governmental agencies, cities, townships, counties and other interested parties. Documentations should include the minutes from meetings held or correspondence received concerning the project.
6. Prepare Draft Illustrative Alternatives document, including aerial maps.
7. Participate in the development of EIS scoping documentation.
8. Submit Draft Illustrative Alternatives document for review.
 - a. The illustrative alternatives are reviewed by the Study Team.
 - b. Prepare sufficient level of detail and suitable exhibits and documents to serve as a basis for discussion at the Public Information Meeting or agency meetings.
9. Based on the comments received, changes are made to address the review recommendations by members of the Study Team. The review steps are followed below:
 - a. Review Draft Illustrative Alternatives Report.
 - b. If appropriate, hold meeting to discuss alternatives.
 - c. Organize and document review recommendations.
 - d. Distribute review recommendations.
 - e. Review revisions to the report.
 - f. Approve illustrative alternatives.
10. Incorporate approved recommendations into the document.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2140

Sheet 4 of 4
DATE: May, 2004

TASK TITLE: Develop and Review Illustrative Alternatives

REPORTING MANAGEMENT UNIT: Region - Project Development/Design - Project Development/Consultant Coordination

WORK STEPS: (continued)

11. Distribute Final Illustrative Alternatives document to appropriate groups.
12. Prepare for Public Information Meeting and/or develop materials to inform parties of the project and status.
13. Input actual finish date into appropriate data system.
14. Conduct Public Information Meeting(s).

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 2155

DATE: June 22, 2004

TASK TITLE: Request/Perform Safety Analysis

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

TASK START: Receive request for project safety analysis from Systems/Project Manager

TASK FINISH: Submit analysis document to Systems/Project Manager and others

TASK DESCRIPTION:

The following description outlines and charts the process details for accomplishing the task To Request/Perform Project Scope Safety Analyses and to Determine Safety Elements of Total Project Scope. Federally-Funded 3R/4R projects require a crash history/safety analyses and appropriate response (fix or design exception) in the project scope of project certification. If it is not feasible for MDOT staff to perform this task, retaining the services of a qualified consultant to perform this P/PMS Task is an option.

This task applies to both Road and Bridge program jobs. The primary purpose of this task is to scope-a-fix for traffic safety issues and elements in accordance with MDOT 3R/4R and CPM project guideline requirements. Secondly, this task may support design exceptions to project requirements, or become a factor in revising the intended project type (i.e.; from 3R to 4R).

The Systems/Project Manager initiates this Task by submitting a request to the appropriate Region or TSC Traffic and Safety Coordinator. With the request, the Systems/Project Manager will supply:

- Job number for scoping
- C.S. and/or P.R.#s with respective milepoints limits
- Project Description
- Intended Project Type (3R, 4R, CPM, etc.)
- Bridge numbers, milepoints, etc.
- Detailed maps and/or diagrams where needed for exact locating
- Preliminary safety concerns
- Potential design exception needs
- Date needed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2155

Sheet 2 of 2
DATE: June 22, 2004

TASK TITLE: Request/Perform Safety Analysis

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

WORK STEPS:

1. The Region or TSC Traffic Safety Coordinator will verify submitted information, and then utilize C.S. /P.R. /Mi. Pt. to obtain safety-related data and information, such as:
 - a. Crash Data (3 years minimum)
 - b. History Profile (Analyses, Recommendations, Traffic Control Devices)
 - c. Current road/roadside features (Photolog, As-Built Plans, or On-Site)
2. The Region or TSC Traffic Safety Coordinator will analyze safety-related data and information to formulate conclusions and recommendations. Analysis process should include:
 - a. Identification of crash concentrations
 - b. Identification of crash type patterns
 - c. Identification of crash cause patterns
 - d. Identification of Geometric deficiencies
 - e. Determination of crash reduction alternatives, including “No safety enhancements to project scope required.”
3. The Region or TSC Traffic Safety Coordinator should review the safety improvement alternatives, determine costs, and select optimum strategies for implementation in coordination with the Project Development and/or Systems Manager. The final decision as to whether a safety improvement will be project-funded or Safety Programs-funded requires consult and coordination among the Region Systems Manager, Safety Programs System Manager, and the TSC Manager.
4. The Region or TSC Traffic Safety Coordinator will prepare a memo to document the findings, conclusions, and safety improvement recommendation(s) resulting from the analysis.
5. The Region or TSC Traffic Safety Coordinator will distribute the documenting memo as follows:
 - a. Original to the Project Manager for project requirements.
 - b. CC’s as appropriate to implement operational (non-construction) improvements.
 - c. CC to Geometric Safety and Traffic Control Devices Units, Traffic and Safety Support Area, Lansing for reference during future plan reviews.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2160

Sheet 1 of 3
DATE: May, 2004

TASK TITLE: Prepare and Review EIS scoping documentation

REPORTING MANAGEMENT UNIT: Planning- Environmental Analysis

TASK START: Approval of Project Scope, Cost and Schedule, or Notice to proceed when a consultant is used.

TASK FINISH: Distribution of the EIS scoping documentation.

TASK DESCRIPTION:

The purpose of the EIS scoping documentation is to provide preliminary assessments regarding specific areas of impact and to identify issues of potential concern. This report briefly describes alternatives under consideration and identifies the social, economic and environmental issues that are expected to be factors in evaluating highway improvements. Issues identified as "significant" will be dealt with, in detail, in the Environmental Impact Statements (EIS). Issues labeled as "less significant" will also be addressed in the EIS, but in less detail, since it is not expected that these issues will be important factors in the selection of a project alternative.

Initially, meetings are held to establish early coordination and liaison for the development of the document. The purpose of these meetings is to clarify work responsibilities and deadlines, and to clarify administrative procedures to be used on the project. The appropriate Study Team members will be invited to the meeting so that area-wide issues, data needs and data availability can be reviewed and clarified.

The Study Team will then assist in preparing the EIS scoping documentation. A public information program may be developed as part of this task. The program could have been included as part of the consultant proposal. This program typically includes a public information meeting which is held to inform the general public of the proposed project. Project specific newsletters may also be required to keep interested individuals, businesses, organizations and the public informed about the project's status.

The Environmental Section receives/provides a draft copy of the EIS scoping documentation. The appropriate office checks that the draft is complete. Copies are then distributed for review. The groups reviewing the draft document will depend on the issues associated with the project. The groups can include:

- Design - Project Development,
- Region Project Development Engineer,

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2160

Sheet 2 of 3
DATE: May, 2004

TASK TITLE: Prepare and Review EIS scoping documentation

REPORTING MANAGEMENT UNIT: Planning- Environmental Analysis

TASK DESCRIPTION: (Continued)

- Highway Design,
- Real Estate,
- FHWA,
- Planning - Project Development,
- Traffic and Safety, and
- Other members of the Study Team.

A meeting may be held to discuss the draft document. If appropriate a field visit may be held at the proposed project location to discuss and evaluate the proposed project environmental scope.

This document is distributed to agencies having project review or permit authority in order to achieve a consensus among agencies as to those issues which should be emphasized in the DEIS. The EIS scoping documentation is revised to reflect comments received from representatives of state and federal agencies, based upon their review of the preliminary document.

The review comments and recommendations are documented and distributed. After the needed changes have been made, the final version of the document is checked to ensure that the recommendations have been incorporated into the document. Approval is then given for document distribution by the Contract Administrator or the Project Manager.

WORK STEPS:

1. Meet with Study Team.
2. Input actual start date into appropriate data system.
3. Gather project-related data.
 - a. Identify and eliminate from detailed study those issues that are not significant, or issues that have been analyzed in previous environmental reviews.
 - b. Indicate other environmental studies that are related to the EIS under consideration.
4. Identify possible issues associated with the project.
5. Prepare draft EIS scoping documentation.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2160

Sheet 3 of 3
DATE: May, 2004

TASK TITLE: Prepare and Review EIS scoping documentation

REPORTING MANAGEMENT UNIT: Planning- Environmental Analysis

WORK STEPS: (continued)

6. Submit the draft EIS scoping documentation for review.
Review Steps:
 - a. Receive/provide the draft copy of the EIS scoping documentation.
 - b. Check document for completeness.
 - c. Make copies of document and distribute to appropriate groups for review.
 - d. Review document.
 - e. Hold meeting to discuss project issues and alternatives included in the draft document, if appropriate.
7. Participate in the public information meeting and/or assist in the development of materials to inform parties of the project and status.
8. Make field visit to proposed project location, if appropriate.
9. Collect input from public or other agencies concerning project-related issues.
 - a. Identify other agencies that have a role in the study and make assignments where necessary.
 - b. Determine any other environmental reviews or requirements that may be necessary, and integrate this information into the EIS.
10. Document review comments and recommendations.
11. Conduct formal agency scoping meetings, as needed.
 - a. Include the participation of local, state and federal agencies, as well as proponents and opponents of the proposed project
12. Incorporate comments into the final EIS scoping documentation, or check final version to ensure that recommendations have been incorporated into the document.
13. Input actual finish date into appropriate data system.
14. Approve document for distribution, and distribute final document.

P/PMS TASK DESCRIPTIONS

EPE Draft Analysis – (2300 Series)

TASK NUMBER: 2310

Sheet 1 of 3
DATE: May, 2004

TASK TITLE: Conduct Technical SEE Studies

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK START: Project scope, cost and schedule approval; Notice to proceed; or distribution of EIS scoping documentation.

TASK FINISH: Transmittal of Technical SEE Studies to the Environmental Section for inclusion in the EA or DEIS.

TASK DESCRIPTION:

The Environmental Section or a consultant(s) conducts comprehensive studies of the potential social, economic and environmental (SEE) impacts of the proposed project and alternatives. The specialist responsible for each concern listed in the FHWA Technical Advisory T 6640.8A identifies and assesses the potential beneficial and adverse impacts of the proposed project and alternatives on the area of concern. The "no-action" alternative and impacts during construction are included. The specialist also prepares a description of the affected environment and, if necessary, a description of possible measures needed to mitigate impacts.

The number of SEE concerns and the amount of analysis needed will vary with the scope of a project and alternatives, but may include the following:

- recreational/parkland impacts,
- land use impacts,
- the need for permits,
- farmland impacts,
- social impacts,
- acquisition and relocation impacts,
- economic impacts,
- joint development,
- considerations relating to pedestrians and bicyclists,
- air quality impacts,
- contaminated/hazardous waste sites,
- visual impacts,
- energy,
- secondary impacts,
- water body modification and wildlife impacts,
- floodplain impacts,
- impacts on wild and scenic rivers,
- coastal zone impacts,
- impacts on threatened and endangered species,
- historic and archaeological preservation (including land use history identifying sensitive areas),
- noise impacts,
- environmental justice,
- water quality impacts, and
- wetland impacts.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2310

Sheet 2 of 3
DATE: May, 2004

TASK TITLE: Conduct Environmental Technical Studies

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK DESCRIPTION: (Continued)

The following information about each applicable SEE factor needs to be included in the EA or DEIS for each alternative, including the no-action alternative:

- A summary of studies undertaken, any major assumptions made and supporting information on the validity of the methodology (where the methodology is not generally accepted as state-of-the-art).
- Sufficient supporting information or results of analyses to establish the reasonableness of the conclusions about impacts.
- A discussion, evaluation and resolution of important SEE issues for each alternative (fatal flaw analysis).

The Environmental Section has a coordination role during this task which will include:

- project meetings;
- control administration;
- schedules and status reports; and
- contact and coordination among the FHWA and other members of the project Study Team, the public, other agencies and departments, local government officials, and environmental and other special interest groups.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2310

Sheet 3 of 3
DATE: May, 2004

TASK TITLE: Conduct Environmental Technical Studies

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

WORK STEPS:

1. Input actual start date into appropriate data system.
2. Determine all SEE concerns and the amount of analysis needed for each concern through technical study(ies).
 - a. This means that the significance action must be analyzed in several contexts:
 - i. Society as a whole
 - ii. the affected region
 - iii. the affected interests
 - iv. the locality.
 - b. Both short-term and long-term effects are relevant and thus must be considered. Depending on the scope of a project and its alternatives, the number and types of concerns will vary.
3. A feasibility study must be completed for each alternative, including all applicable SEE factors. The no-action alternative must also be included.
4. Determine impacts.
5. Recommend mitigation alternatives.
6. Input actual finish date into appropriate data system.
7. Transmit final report.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 6

TASK NUMBER: 2320

DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

TASK START: Receipt of "Photogrammetric Services Request" Form

TASK FINISH: Request for Photogrammetric Control Survey or transmittal of photographic products.

TASK DESCRIPTION:

This task includes aerial photography for both projects requiring mapping services and photography only. This procedure provides documentation on the project's existing field conditions and land use practices. Upon the receipt of the "Photogrammetric Services Request" form the Requestor will meet with the Photogrammetry Unit to verify project limits and the desired deliverables.

Photography for Mapping:

Photography for mapping is typically flown from April to May after the snow has melted and before leaf out or November to December before snow appears and when leaves have fallen from trees. Spring is favored because the snow has matted the vegetation and the sun is higher in the sky producing shorter shadows. Requests for photography should be submitted well in advance of flying season. This allows for surveys and flights to be scheduled as soon as weather permits.

Mapping is primarily performed from black and white photography. The scale of photography will depend on the required accuracy of the mapping. Accuracies range from +/- .05 to +/- .06 feet for low altitude (1:1000 helicopter photography), to +/- 0.15 to +/- 0.25 feet for high altitude (1:12000 fixed wing photography). Low altitude photography is generally used on projects requiring ground survey accuracy that have heavy traffic conditions making a ground survey dangerous and expensive. High altitude photography is used to create maps for route location studies where the exact corridor is unknown. Photography scales of 1:3000 (+/- 0.15 feet estimated accuracies) and 1:5000 (+/- 0.25 feet estimated accuracies) are typically used for most Design projects.

A precision aerial mapping camera will be used that has a nominal focal length of 6 inches (153 mm) and having a nominal 9 inch by 9 inch film format. A motion compensation system is recommended. The entire project area will be covered with overlapping images by at least 60%. The flight line and each photograph will be centered on the median centerline of the highway in order to provide complete coverage of the paved portions of the roadway.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2320

Sheet 2 of 6
DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

TASK START: Receipt of "Photogrammetric Services Request" Form

TASK FINISH: Request for Photogrammetric Control Survey or transmittal of photographic products.

TASK DESCRIPTION: (continued)

Mapping projects require that photo control targets are placed on the ground prior to photography. Once surveyed, the targets will help to orient the photographs to the ground so that they can be used for photogrammetric mapping. The type, amount, locations, and accuracy of the ground control will be specified by the Photogrammetry Unit for each project. The Photogrammetry Unit will make a separate request to the Design Survey Unit to obtain the required photo control.

Unless specified, the general specifications for vertical aerial photography shall follow the criteria set for the in the DRAFT Aerial Photography Standards, ASPRS Professional Practice Division, Specifications and Standards Committee; September 1995. Or as set forth in the SURVEY AND MAPPING MANUAL; U.S. Department of Transportation, Federal Highway Administration; November 1985.

Photography Only:

Photography that will not be used for mapping purposes can be taken during any time of the year depending of the requestor's preferences for leaves on or off. Photography can be black and white, color, or infrared. Photography scales will depend on the level of detail the requestor needs from the photography and the area of desired photographic coverage.

Products available are photographs, mosaics, enlargements, photo plan sheets, and scaled enlargements in paper, film, or digital format. Photo plan sheets and scaled enlargements may require a limited amount of targeting and/or ground survey in order to determine proper photo to ground scaling ratios.

All of the tasks cited above relate to and lead to Task 3310, and should be referenced on billing.

Additional details, especially pertaining to consultants, can be found in the Supplemental Information section following the work steps.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2320

Sheet 3 of 6
DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

WORK STEPS:

Photography for Mapping, Photo Plan Sheets or Scaled Enlargements:

1. Receive request for Photogrammetric Mapping.
2. Input actual start date into appropriate data system.
3. Prepare flight map.
4. Determine location of photo control targets.
5. Send Targeting Request to Design Survey.
6. Receive confirmation that targets are in place.
7. Schedule flight.
8. Fly project depending on weather conditions and season.
9. Develop film and have prints made.
10. Identify targets on prints, add additional points if needed.
11. Input actual finish date into appropriate data system.
12. Request Photogrammetric Control Survey task 3320.

Photography:

1. Receive request for Photography.
2. Input actual start date into appropriate data system.
3. Prepare flight map.
4. Schedule flight.
5. Fly project depending on weather conditions and season.
6. Develop film and have prints made.
7. Create desired products including photographs, mosaics, enlargements, photo plan sheets, and scaled enlargements. Photo plan sheets and scaled enlargements may require photo control targeting (steps 3, 4, and 5 from above) and a limited amount of ground survey measurements that are performed by Design Surveys or the Photogrammetry Unit
8. Input actual finish date into appropriate data system.
9. Transmit photographic products to the requestor in desired format (paper, film, or digital image).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2320

Sheet 4 of 6
DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

SUPPLEMENTAL INFORMATION:

- I. MDOT provides:
 - A. Portions of USGS Quadrangle maps showing the project locations.
 - B. Specific coverage with respect to length and width will be identified for each project during the scope verification process.

- II. Project Schedule
 - A. Plan a completion date for project.
 - B. Prepare the proposed implementation schedule.
 1. Required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts.
 2. Dates used in preparing the Consultant's Monthly Progress Reports.

- III. Deliverables
 - A. Original black and white negatives.
 1. 9 X 9 inch aerial film roll format.
 2. Kodak or comparable.
 3. Use aerial film 2495 or finer grained 2412 film.
 - B. Exposed aerial film
 1. Processed (developed) into negative images.
 2. Negatives
 - a. Remain un-cut
 - b. Titled
 - c. Numbered consecutively
 - d. Numbering scheme specified by Project Manager
 - C. Flight index map
 1. Flight lines
 2. Flight numbers
 3. Photograph numbers
 - a. Beginning and ending numbers will be submitted for each flight line.
 - D. Printing
 1. Two sets of trimmed photographic paper positive contact print photographs of all exposures.
 2. One set of trimmed film dia-positives required for the project.
 - E. Survey Report
 1. Number of each target placed.
 2. Location of each target (copy of target diagram may be used).
 3. Type of target (painted or otherwise).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2320

Sheet 5 of 6
DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

SUPPLEMENTAL INFORMATION (continued)

4. At least two witnesses to permanent objects from location of target.
 - F. Provide camera calibration report.
 - G. Paper prints and diapositives
 1. Each flight of each set will be in separate envelopes.
 2. Labeled envelopes
 - a. Project Name (Route Name)
 - b. Project Numbers (CS and JN)
 - c. Date of Photography
 - d. Photo Scale
 - e. Flight Line Number
 - f. Range of photo numbers contained in the envelope
- IV. Cost Proposal for the Tasks and Deliverables Above
- A. Costs for Mobilization to site.
 - B. Costs for Flight, shown as a total for the project based on a per flight line mile cost.
 - C. Costs for Tasks B, C, and D (Developing, Indexing, Printing and Producing a set of film diapositives).
 - D. Cost For E (Pre-flight Targeting).
- V. Payment schedule
- VI. Traffic Control and MDOT Permits
- A. Consultants are responsible for:
 1. All traffic control required to perform the tasks outlined in the Project Scope of Design Services.
 2. Obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW).
 - B. Information obtained through Pam Sebenick, Utilities/Permits Section, Real Estate Division at (517) 373-2200.
- VII. Pre-Qualification and Subcontracting of Contract Work
- A. If Consultant is not pre-qualified, it must be completed by a Subcontractor that is pre-qualified for that task(s).
 - B. Any questions should be directed to Phil Brooks, Prequalification Manager, at (517) 335-2514.
 - C. The Department's pre-qualification is not a guarantee or warranty of the subcontractor's ability to perform or complete the work subcontracted.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2320

Sheet 6 of 6
DATE: May, 2004

TASK TITLE: Conduct Aerial Photography

REPORTING MANAGEMENT UNIT: Design - Photogrammetry

SUPPLEMENTAL INFORMATION (continued)

- D. The consultant remains fully responsible
 - 1. To the Department for completion of the work.
 - 2. In accordance to the authorization as if no portion of it had been subcontracted.
- E. Subcontractor
 - 1. Communicate through the Consultant to the MDOT Project Manager.
 - a. Requirement may be waived with a written communication plan approved by the MDOT Project Manager.
 - b. The Department may direct the immediate removal of any Subcontractor working in violation of this subsection.
 - c. Any costs or damages incurred are assumed by the Consultant by acceptance of the authorization.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2330

Sheet 1 of 2
DATE: May, 2004

TASK TITLE: Collect EPE Geotechnical Data

REPORTING MANAGEMENT UNIT: Region - Construction and Technology

TASK START: Receipt of request for EPE Geotechnical Investigation.

TASK FINISH: Distribution of EPE Geotechnical Investigation Report.

TASK DESCRIPTION:

As part of this task a geotechnical investigation is performed for the EPE phase of a project. The work included as part of the investigation will depend on the scope and special requirements of the project. The type of information required may include:

- wetlands conditions,
- wetlands monitoring, and
- soil borings along each alternative being considered.

This information is then used in making a determination of the recommended alternative.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2330

Sheet 2 of 2
DATE: May, 2004

TASK TITLE: Collect EPE Geotechnical Data

REPORTING MANAGEMENT UNIT: Region - Construction and Technology

WORK STEPS:

1. Receive a request for an EPE geotechnical investigation.
2. Input actual start date into appropriate data system.
3. Assign a crew to conduct the investigation.
4. Check with the Region Real Estate Agent for ownership and to negotiate a right of entry, if necessary.
5. Conduct an on-site visit, including Miss Dig if necessary.
6. Conduct investigation.
7. Perform on-site or laboratory tests, record data, and collect information.
8. If appropriate, collect well monitoring data.
9. The Region Soils and Materials Engineers analyze the data and the borings to develop a recommendation.
10. Input actual finish date into appropriate data system.
11. A memo is written by the Engineer and sent to the requester.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2340

Sheet 1 of 3
DATE: May, 2004

TASK TITLE: Develop and Review Practical Alternatives

REPORTING MANAGEMENT UNIT: Design - Project Development/Consultant
Coordination

TASK START: Date of the Public Information Meeting.

TASK FINISH: Date of the Public Hearing.

TASK DESCRIPTION:

During this task, the illustrative alternatives are examined in greater detail. Comments from the informational meeting are used to evaluate the illustrative alternatives. From the illustrative alternatives, the practical alternatives are identified. The level of detail with which each alternative is examined will vary from project to project. This work typically involves developing evaluation criteria to apply to the illustrative alternatives, which then leads to a set of practical alternatives. These criteria include:

- project cost,
- utilities impacts,
- right-of-way requirements,
- traffic congestion
- accessibility
- mobility
- environmental and social impacts
- project development time,

Other controls will influence the alternatives' alignment and layout which will be presented and analyzed in the draft environmental document. Many of these are similar to above. The types of controls can include:

- social, economic, and environmental (SEE) impacts,
- horizontal alignment (curve radii, sight distance),
- vertical alignment,
- grades,
- geotechnical investigation,
- structure spans and locations,
- structure approaches,
- roadway cross-sections,
- vertical and horizontal clearances, and
- construction costs.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2340

Sheet 2 of 3
DATE: May, 2004

TASK TITLE: Develop and Review Practical Alternatives

REPORTING MANAGEMENT UNIT: Design - Project Development/Consultant
Coordination

TASK DESCRIPTION: (Continued)

In cooperation with Geometrics, a determination is made for each alternative regarding:

- ramp configuration,
- level of service,
- volume/capacity ration\
- queue analysis
- delay analysis
- number of lanes, and
- possible signalization.

Right of Way limits are determined by Project Development/Consultant. This information is used to determine:

- property taking,
- relocation of residential/commercial occupants, and
- right of way cost.

The results are documented in a written document with accompanying drawings and sketches. The report is then submitted for review. Changes are then made to the document to incorporate the review recommendations.

The practical alternatives are reviewed to ensure that the alternatives being considered have been examined in sufficient detail to identify potential issues or design considerations and are responsive to comments made by the public and other agencies. The level of detail will depend on the project but will need to be complete enough to evaluate the impacts of the various alternatives.

NOTE: Also as part of this task, assistance is provided in the preparation of the draft environmental document (Task 2360). Once the draft document is approved for circulation, preparations are made for the public hearing. The necessary exhibits and materials to be distributed are prepared for the hearing.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2340

Sheet 2 of 3
DATE: May, 2004

TASK TITLE: Develop and Review Practical Alternatives

REPORTING MANAGEMENT UNIT: Design - Project Development/Consultant
Coordination

WORK STEPS:

1. Evaluate illustrative alternatives, incorporating comments from the Public Information Meeting.
2. Input actual start date into appropriate data system.
3. Identify practical alternatives.
4. Develop practical alternatives design.
5. Document the proposed design for the practical alternatives.
6. Prepare a document for the practical alternatives.
7. Submit the Draft Practical Alternatives document to the Study Team for review.

Review Steps:

1. Review Draft Practical Alternatives Report.
 2. If appropriate, hold meeting to discuss alternatives.
 3. Organize and document review recommendations.
 4. Distribute review recommendations.
 5. Review revisions to the report.
 6. Approve practical alternatives.
8. Incorporate the review recommendations into the document.
 9. Prepare for the public hearing.
 10. Input actual finish date into appropriate data system.
 11. Participate in the public hearing.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 2360

DATE: May, 2004

TASK TITLE: Prepare and Review EA or DEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK START: Submission of the written description of the proposed project and alternatives.

TASK FINISH: FHWA signature approval of EA or DEIS.

TASK DESCRIPTION:

This task includes the work effort required to prepare an Environmental Assessment (EA) or a Draft Environmental Impact Statement (DEIS). Either document must be prepared in accordance with Federal, State, and local government guidelines.

Based on the results of the technical environmental studies (Task 2310), EIS scoping documentation (Task 2160) (if appropriate) and other related studies, the EA or DEIS for the project is prepared. The EA or DEIS summarizes:

- project description, justification & history;
- all reasonable alternatives to the proposed action including the no action alternative;
- the affected environment;
- the social, economic and environmental impacts of the proposed project and alternatives, as developed in the technical studies;
- the transportation impacts;
- potential mitigating measures which may be taken; and
- history of coordination with other agencies and public involvement tasks.

A preliminary draft of the EA or DEIS is submitted for internal review. A check is made to ensure that the document is complete. If the document is incomplete it is returned to the group preparing the document. If the document is complete, copies are made and distributed to the appropriate groups.

The review includes different groups from throughout the Department and will depend on the issues associated with the project. On most reviews the following groups are given an opportunity to review the document:

- Project Development - Design,
- Project Development - Planning,

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2360

Sheet 2 of 3
DATE: May, 2004

TASK TITLE: Prepare and Review EA or DEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK DESCRIPTION: (Continued)

- Environmental Section,
- Real Estate,
- Highway Design,
- Region Project Development Engineer,
- other members of the Study Team, and
- Cooperating agencies.

Recommendations are then made and the document is revised to address the identified concerns.

Once the document has been completed, the draft is submitted to FHWA for its review. The document must meet all Federal and State requirements before it can be approved for printing and public distribution, then to the FHWA for review. The FHWA may recommend revisions. After the FHWA's revisions are incorporated into the EA or DEIS, the FHWA authorizes the printing and distribution of the EA or DEIS for public and agencies' review and comments.

As part of this task, an evaluation of the 4F/6F requirements is made. If a proposed project requires the use of "Section 4(f) land," preparation of a Section 4(f) Evaluation is required. For projects processed with an EA or DEIS, the Section 4(f) Evaluation is included as a separate section of the document. A Section 4(f) Evaluation describes the type and extent of involvement with the 4(f) land, any feasible and prudent alternative(s) to the involvement, any measures to minimize the impact on the 4(f) land, and the results of coordination with the public official(s) having jurisdiction over the 4(f) property.

The Section 6(f) requirements are applied to all projects which impact recreational lands purchased or improved with land and water conservation funds. The purpose of the requirements is to preserve, develop and assure the quality and quantity of outdoor recreational resources for present and future generations. The Section 6(f) study is similar to the Section 4(f) study in that it looks at feasible alternatives and possible measures for minimizing the impacts of the proposed alternative on the area of concern.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2360

Sheet 3 of 3
DATE: May, 2004

TASK TITLE: Prepare and Review EA or DEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

WORK STEPS:

1. Receive inputs from the other groups, including a description of alternatives, technical studies, traffic analysis report, and project justification.
2. Input actual start date into appropriate data system.
3. Complete a preliminary draft of the EA or DEIS, including an evaluation of 4F/6F requirements as applicable.
4. Submit the preliminary draft for internal review.

Review Steps:

1. Review the draft document.
 2. Make recommendations.
 3. Incorporate review recommendations into the document.
 4. Check the complete document for changes made to address review recommendations.
5. Submit revised preliminary document to FHWA for review and approval.
 6. Incorporate FHWA review recommendations into the document.
 7. Input actual finish date into appropriate data system.
 8. Upon FHWA approval, print and distribute the EA or DEIS.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 2380

DATE: July, 1999

TASK TITLE: Circulate EA or DEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK START: FHWA approval for the printing and distribution of the EA or DEIS.

TASK FINISH: Distribution of the public hearing comments and transcript.

TASK DESCRIPTION:

To ensure that the public's views are heard and fully considered in the highway decision-making process, the EIS or EA is made available for review. Several methods are used to inform the public of the availability of the DEIS or EA and to distribute the document. The methods include:

- legal notices and press releases in the local media,
- mailings to individuals known to be interested in the project, and
- publication of Notice of Availability of the DEIS in the Federal Register.

Notices published in the local media indicate where the document is available for review, how copies may be obtained, and where comments should be sent. These notices are published a minimum of 15 days prior to the public hearing. An EA must be available for comment for 30 days and a DEIS must be available for public comment for 45 days. A minimum of 45 days for comments is required for both an EA or DEIS containing a Section 4(f) Evaluation. These time frames must be accommodated as part of the period ranging from the publication of the first notice to the closing of public comments following the hearing. The document is sent to:

- local, state and Federal government agencies with responsibility for anticipated project impacts,
- public officials,
- private interest groups, and
- private individuals impacted by the project.

Distribution of the DEIS or EA permits the public and agencies to give input on the documents. (Reference - MDOT Procedures and Federal requirements.)

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2380

Sheet 2 of 2
DATE: July, 1999

TASK TITLE: Circulate EA or DEIS

REPORTING MANAGEMENT UNIT: Planning - Public Involvement

TASK DESCRIPTION: (Continued)

When a public hearing is held, those interested in commenting on the project can do so either orally at the hearing or by providing written comments during the comment period which closes no sooner than 10 days after the hearing. The court reporter compiles the comments and provides it to MDOT as part of the hearing transcript. Written comments received are added as part of the public record. The transcript is then provided to the appropriate staff, usually the Project Manager and the Environmental Coordinator of the project, as well as the FHWA.

WORK STEPS:

1. Prepare document for printing.
2. Input actual start date into appropriate data system.
3. Prepare a distribution list of recipients.
4. Print document.
5. Prepare a brochure and speech for the public hearing.
6. Prepare public hearing exhibits.
7. Set date and secure site for public hearing.
8. Prepare and publish legal notices and press release.
9. Prepare and publish Notice of Availability in Federal Register.
10. Distribute document.
11. Hold pre-hearing task group meeting.
12. Conduct hearing for DEIS/EA as required.
13. Certify public hearing.
14. Input actual finish date into appropriate data system.
15. Assemble comments and transcript and send copies to environmental coordinator, Project Manager and FHWA.

P/PMS TASK DESCRIPTIONS

EPE Final Draft Analysis – (2500 Series)

TASK NUMBER: 2510

Sheet 1 of 2
DATE: July, 1999

TASK TITLE: Determine and Review Recommended Alternative

REPORTING MANAGEMENT UNIT: Design - Project Development/Consultant
Coordination

TASK START: Receipt of transcript from the public hearing and comments from the circulation of the draft environmental document.

TASK FINISH: Date of MDOT approval of the recommended alternative.

TASK DESCRIPTION:

The recommended alternative establishes the basis for the design and ultimately the construction of the project. The selection of the recommended alternative weighs the impact of the alternative as compared with the other practical alternatives. The level of detail required to make this choice varies from project to project. The documentation must provide information regarding the alternative in sufficient detail and format to reach a decision.

During this task, the comments from the circulation of the draft environmental document and public hearings are reviewed. A meeting is held with the appropriate groups to discuss the action required for the various comments.

Depending on the type of comments received, further refinement of project design may be required. This typically involves changes to the alternatives still under consideration such as:

- detailed design of sections of the project to address mitigation measures,
- adjustments in the proposed alignments, and
- collection of additional data to evaluate proposed configurations.

When sufficient information is available, a decision is made as to the recommended alternative.

The necessary documentation is then submitted for review and approval by the Study Team and the Highway Steering Committee. For the Study Team to make a decision, the document must make a reasonable comparison between the shortcomings and strong points associated with each practical alternative. The level of detail will vary from project to project. The documentation must provide information regarding the alternative in sufficient detail and format to reach a decision.

The Engineering Report will be prepared for the recommended alternative upon approval. This is provided to the Designer to ensure that the scope developed in the EPE process continues through the design phase of the project.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2510

Sheet 2 of 2
DATE: July, 1999

TASK TITLE: Determine and Review Recommended Alternative

REPORTING MANAGEMENT UNIT: Design - Project Development/Consultant
Coordination

WORK STEPS:

1. Review comments received from the circulation of the Draft Environmental Document and public hearing.
2. Input actual start date into appropriate data system.
3. Hold Study Team meeting to discuss comments.
4. If required, further develop the proposed design for alternatives still under consideration.
5. Determine the recommended alternative.
6. Further refine the proposed design for the Recommended Alternative.
7. Submit Draft Recommended Alternative document to Study Team.

Review Steps:

1. Review recommended alternative documentation.
 2. If appropriate, hold Study Team meeting to discuss alternative.
 3. If required, request additional information.
 4. Determine the Study Team's recommended alternative.
8. Organize documentation and submit for Department review and approval by Highway Steering Committee.
 9. The Highway Steering Committee reviews and approves the Study Team's recommended alternative.
 10. Input actual finish date into appropriate data system.
 11. Initiate development of the Engineering Report to reflect approved recommended alternative.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2525

Sheet 1 of 4
DATE: May, 2004

TASK TITLE: Prepare and Review Engineering Report

REPORTING MANAGEMENT UNIT: Design - Project Development

TASK START: Determination of Recommended Alternative

TASK FINISH: Distribution of Final Engineering Report

TASK DESCRIPTION:

This report establishes the need for action. It describes the practical alternatives in depth and their impacts. This task documents the reasons for the choice of the Recommended Alternative. The type of information required may include:

- Project Background

- Purpose and Need for Action

- Transportation Demand

 - System Linkage

 - Traffic Volumes

 - Capacity/Level of Service

- Description of Practical Alternatives

- Summary of Impacts

- Cost

- Preferred Alternative

 - Description of Preferred Alternative

 - Typical Cross Sections and Right-of Way

 - Drainage

 - Mitigation

 - Preliminary Cost Estimate.

A draft copy of the Engineering Report will be distributed to MDOT staff, the FHWA and other members of the project team for review and comment. Comments received from the review will be incorporated in the final version of the Engineering Report, and upon approval by the Project Manager, will be printed and distributed to pre-arranged parties.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2525

Sheet 2 of 4
DATE: May, 2004

TASK TITLE: Prepare and Review Engineering Report

REPORTING MANAGEMENT UNIT: Design - Project Development

WORK STEPS:

1. Gather all required information for preparing the Engineering Report, including, but not limited to:
 - Purpose of and need for action (see Task 2130).
 - Description of Practical Alternatives (see Task 2340).
 - Description of and Reason for Recommended Alternative (see Task 2510).

See Supplemental Information for additional details.
2. Input actual start date into appropriate data system.
3. Write Engineering Report.
4. Send draft copy of Engineering Report to appropriate MDOT staff, FHWA, and any other project team members for review and comments.
5. Incorporate comments into final document for approval by the Project Manager.
6. Input actual finish date into appropriate data system.
7. Print and distribute the final Engineering Report to the appropriate parties.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2525

Sheet 3 of 4
DATE: May, 2004

TASK TITLE: Prepare and Review Engineering Report

REPORTING MANAGEMENT UNIT: Design - Project Development

SUPPLEMENTAL INFORMATION:

Document the reasons for the choice of the Recommended Alternative. The type of information required may include the following:

- A. Project Initiation and Data Collection
- B. Purpose and Need for Action (Task 2130)
- C. Project Background
 - 1. Design criteria
 - 2. Assumptions
 - 3. Risk analyses
 - 4. Structural Details
- D. Transportation Demand & other references
 - 1. System Linkage
 - 2. Traffic Volumes
 - 3. Capacity/Level of Service
 - 4. Geometrics
 - 5. Water Quality Analysis
 - 6. Utilities
 - a. Location and names
 - b. Utility plan
 - c. Profile plots
- E. Existing Social, Economic, and Environmental Conditions
- F. Description of Practical Alternatives (Task 2340)
- G. Public Involvement Process
- H. Summary of Impacts
- I. Work breakdown schedule that completely defines the project with all necessary work packages. List of Figures, Tables, Appendices and Acronyms are to be included.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2525

Sheet 4 of 4
DATE: May, 2004

TASK TITLE: Prepare and Review Engineering Report

REPORTING MANAGEMENT UNIT: Design - Project Development

SUPPLEMENTAL INFORMATION (continued)

J. Project Schedule

1. Date
2. Task Number
3. Description
4. Example of Project Schedule

Date	Task Number	Description
Mar-03	2525	Prepare Engineering Report
May-03	2525	Review Engineering Report
Dec-03	2525	Complete Engineering Report

K. Preferred Alternatives

1. Description of Preferred Alternatives.
2. Typical Cross Sections and Right-of-Way
3. Drainage
4. Mitigation
5. Preliminary Cost Estimate

L. Project Status

M. Conclusion

1. Supporting comments
2. List of objectives
3. Closing statement

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 2530

DATE: July, 1999

TASK TITLE: Prepare and Review Request for FONSI or FEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK START: Receipt of Study Team recommendation.

TASK FINISH: FHWA approval of FEIS document or Request for FONSI.

TASK DESCRIPTION:

After receipt of the Study Team's recommended alternative, the final environmental document is developed. The comments and recommendations received from the draft environmental document review process and public hearing are compiled and analyzed for inclusion into the document. The final environmental document identifies the recommended alternative, summarizes citizen involvement in the public review process, and describes the final mitigation developed for the recommended alternative. This includes the conceptual wetland mitigation plan and other measures necessary to mitigate environmental impacts of the recommended alternative.

The request for FONSI with supporting documentation, or the request for a FEIS, is submitted to the Study Team and FHWA for review. The review ensures that all issues raised during the circulation of the EA or DEIS are addressed. Comments made by the public and agencies are responded to in the document.

The recommended alternative is fully described and all mitigation measures are identified. The reasons for selecting the recommended alternative are also included. This decision balances the considerations for safe and effective transportation with the goals of environmental protection and enhancement. The review checks for completeness and accuracy of all materials submitted. Recommendations are finalized during the review process. There may be several episodes of review and revision before the document is finalized.

Completion of the final environmental document results in the selection of the project's location and design. This task ends when the Request for FONSI is approved for submittal to the FHWA or the FEIS is approved by the FHWA for distribution.

FHWA approval of the FEIS document allows for distribution of the FEIS and public notice of FEIS approval in the Federal Register. FHWA approval of the Request for FONSI allows it to be formally submitted to FHWA for issuance of a FONSI.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2530

Sheet 2 of 2
DATE: July, 1999

TASK TITLE: Prepare and Review Request for FONSI or FEIS

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

WORK STEPS:

1. Prepare responses to comments received.
2. Input actual start date into appropriate data system.
3. Develop final mitigation for recommended alternative.
4. Prepare final environmental document.
5. Submit final environmental document for internal review.

Review Steps:

1. Review those portions of the document which are to be included as needed.
 2. Provide comments.
 3. Make revisions to final document based on review comments.
 4. Review completed final document.
6. Submit document to FHWA for approval.
 7. Input actual finish date into appropriate data system.
 8. FHWA approval of FEIS document or Request for FONSI.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2550

Sheet 1 of 1
DATE: May, 2004

TASK TITLE: Obtain FONSI or ROD

REPORTING MANAGEMENT UNIT: Planning - Environmental Analysis

TASK START: FHWA approval of Request for FONSI or FEIS document.

TASK FINISH: Issuance of Record of Decision/FONSI.

TASK DESCRIPTION:

After the FEIS is signed by the FHWA, it is distributed to interested public officials, agencies and the public for a 30-day comment period. A "Notice of Availability" is also published in the Federal Register. Upon conclusion of the comment period and resolution of any issues that are raised during the comment period, the FHWA issues a Record of Decision (ROD). This completes the environmental clearance for an EIS.

Documentation supporting a FONSI is prepared and provided with the request for a FONSI. The request is approved by the FHWA in the Region office and the FONSI is granted. The documentation supporting a Request for a FONSI and the FONSI are distributed to interested public officials, agencies and the public for information purposes. This completes the environmental clearance for an EA.

WORK STEPS:

1. Prepare document for printing.
2. Input actual start date into appropriate data system.
3. Update distribution list of recipients.
4. Make copies of final documents.
5. Prepare and publish Notice of Availability in Federal Register.
 - a. Notice of Availability should be sent to appropriate governments, including local, state and federal.
6. ROD document is signed when the FHWA has concurred that all issues have been addressed with regard to mitigation.
7. Input actual finish date into appropriate data system.
8. The FONSI is signed when the FHWA accepts the conclusions supported in the request for FONSI.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2560

Sheet 1 of 2
DATE: May, 2004

TASK TITLE: Obtain Preliminary Engineering Authorization

REPORTING MANAGEMENT UNIT: Planning - Program Management

TASK START: Receipt of request for Preliminary Engineering Programming.

TASK FINISH: Issuance PE job number.

TASK DESCRIPTION:

Obtaining authorization for Preliminary Engineering requires obtaining the necessary approvals and coding to enable charges to be made to the Preliminary Engineering (PE) work phase. This task includes the programming process required to earmark state funds for the project. It may also include additional tasks that are required to obligate Federal funds.

Upon receipt of the request for PE programming, Program Administration begins the authorization process. The appropriate documents are prepared. These documents include:

- Project Authorization and Job Number Request (Form 2601)
- Program Revision Request (Form 2604)
- Project Data Sheet Form (Form 2602)

For Federal projects, FHWA forms (Form PR-1) and project maps are also included. These documents program Federal and state funds. When all necessary approvals have been received, the documents are distributed. The work units are then given the Job Number Request (Form 2601) which provides the required coding (Job Number, Phase, Federal Project Number, accounting codes) and constitutes authorization to begin charging to the project.

When the Job Number Request (Form 2601) is distributed, copies go to various areas in MDOT. One area is Project Accounting in the Bureau of Finance. Upon their receipt of Form 2601 for state projects, the job number is established in accounting records. For FHWA projects, Form 2601 and FHWA Form PR-37 are required prior to establishing the coding in the system. The system then accounts for all dollars and person-hours expended.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2560

Sheet 2 of 2
DATE: May, 2004

TASK TITLE: Obtain Preliminary Engineering Authorization

REPORTING MANAGEMENT UNIT: Planning - Program Management

WORK STEPS:

1. Prepare Project Authorization.
 - a. Prepare job number request form (Form 2601).
 - b. Prepare program revision request (Form 2604).
 - c. Prepare project data sheet form (Form 2602).
2. Input actual start date into appropriate data system.
3. Establish job number for PE work phase.
4. Submit Project Authorization for various required approvals
 - a. Dollar amount being programmed
 - b. Program category. Approvals may be given by the Program Administration Engineer and above, up to the Director.
5. Upon approval, distribute Project Authorization.
 - a. Approvals may be given by the Program Administration Engineer and above, up to the Director.
6. Issue Form 2601 for state-funded projects.
7. For Federally funded projects:
 - a. Initiate FHWA programming and obligation.
 - b. The Project Manager submits the draft.
 - c. Project maps are submitted.
 - d. Finance finalizes PR-1 to initiate this process.
8. Input actual finish date into appropriate data system.
9. Upon receiving FHWA authorization, issue Job Number Request (Form 2601) for federally funded projects.

P/PMS TASK DESCRIPTIONS

Contamination Investigation – (2800 Series)

TASK NUMBER: 2810

Sheet 1 of 2
DATE: May, 2004

TASK TITLE: Project Area Contamination Survey (PACS)

REPORTING MANAGEMENT UNIT: Project Manager

TASK START: Notification to conduct the Project Area Contamination Survey (PACS)

TASK FINISH: Identification of contaminated sites on plans.

TASK DESCRIPTION:

The purpose of this task is to investigate parcels of property for known or potential sites of environmental contamination that could affect the project's design, cost, or schedule. This task is done for all Preserve, Improve, and Expand projects studied by the Department. The primary objective in conducting the Project Area Contamination Survey (PACS) is to determine if further investigation and remediation with regard to hazardous waste is required to in areas conflicting with project construction activities.

The Project Manager requests the PACS from the Real Estate Environmental Assessment Unit, the Region Resource Specialist, and the Project Coordination Unit, Environmental Section, of the Project Planning Division. The following records and historical information are gathered:

- historical records,
- site contamination lists from DEQ databases, and
- aerial photographs.

This information is used to identify the type of ownership and land use practices (commercial, industrial, and residential). A visit is then made by the Resource Specialist to the project site to make a visual inspection. The first site visit is used to identify properties which should be investigated further. The information collected, as well as the findings, are compiled by the Regional Resource Specialist and reported to the Project Manager. Potential contaminated sites are identified on the design plans.

If no potential sites of environmental contamination were discovered, the findings are included in the report. This determination would end the hazardous waste investigation unless new information became available during either the preconstruction or construction processes.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2810

Sheet 2 of 2
DATE: May, 2004

TASK TITLE: Project Area Contamination Survey (PACS)

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS:

1. The Project Manager sends a project description and requests a list of potential contaminated sites from:
 - a. Environmental Assessment Unit (EAU), Real Estate Division,
 - b. Regional/TSC Resource Specialist (RRS),
 - c. Project Coordination Unit (PCU), Environmental Section of the Project Planning Division. (Start of #2810)
2. Input actual start date into appropriate data system.
3. The EAU and PCU coordinate with the Region/TSC Resource Specialist to conduct a Project Area Contamination Survey (PACS) by:
 - a. Searching state/local historical records
 - b. Getting site contamination lists from DEQ databases
 - c. Viewing aerial photographs
 - d. Interviewing state and local officials and citizens.
4. The Regional Resources Specialist performs a visual inspection of the project area.
5. The EAU, RRS, and PCU report back to the Project Manager with a list of potential contaminated sites.
6. The Project Manager notes the location of any potential contaminated sites on the plans.
 - a. If no known or potential sites are found, these findings are also included in the report, and:
 - i. There is NO PPMS TASK 2820 required, and the Project Manager revises the PPMS network.
 - ii. This determination ends the hazardous waste investigation unless new information becomes available during the preconstruction or construction process.
7. Input actual finish date into appropriate data system.
8. If potential contamination sites conflict with project work, the Project Manager requests the Grading/Drainage & Consulting Contracting Unit (G/DCCU) of the Construction and Technology Division to prepare a scope of field work with a cost estimate for the Project Manager. (Start of #2820)

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2820

Sheet 1 of 5
DATE: May 2004

TASK TITLE: Conduct Preliminary Site Investigation (PSI) For Contamination

REPORTING MANAGEMENT UNIT: Construction and Technology Division -
Grading/Drainage and Consultant Contracting Unit
(G/DCCU)

TASK START: Project Manager requests G/DCCU to provide for site investigation services by consultant

TASK FINISH: Distribution of the PSI report.

TASK DESCRIPTION:

A Preliminary Site Investigation (PSI) is conducted at sites identified by the Project Contamination Survey (PCS) as potentially impacted by hazardous or polluting materials. The PSI involves the collection and chemical analysis of soil and/or water samples from individual sites. Information gathered by the PCS is used to confirm the presence of surface and subsurface environmental contamination and to prepare a rough estimate of pay items and of the construction costs related to contamination (work plans and price proposals).

All information is compiled in the PCS report which is then forwarded to the Project Manager (PM) and to the Region Resource Specialist. Transmittal of the report ends the PSI phase.

If contamination is identified, the Michigan Department of Environmental Quality (DEQ) requires notification within 24 hours of the discovery. The property owner is also notified of the contamination and will be provided with a copy of the final PSI report.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2820

Sheet 2 of 5
DATE: May 2004

TASK TITLE: Conduct Preliminary Site Investigation (PSI) For Contamination

REPORTING MANAGEMENT UNIT: Construction and Technology Division -
Grading/Drainage and Consultant Contracting Unit
(G/DCCU)

WORK STEPS:

1. If potential contamination sites conflict with project work, the Project Manager requests the Grading/Drainage & Consulting Contracting Unit (G/DCCU) of the Construction and Technology Division to provide for site investigation services by consultant. (Start of #2820)
2. Input actual start date into appropriate data system.
3. A scope of consultant work will be prepared by G/DCCU and given to consultants under contract. Consultants also refer to Supplemental Information following the Work Steps for more details.
4. Interested consultants will return a cost estimate to G/DCCU for the work.
5. G/DCCU will forward the cost estimate to the Project Manager for their approval.
6. The consultant authorized to perform the work by G/DCCU will be responsible for the following steps:
 - a. Prepares the Health and Safety Plan, obtains clearance from Miss Dig, and assembles or coordinates with the Region/TSC all necessary resources and personnel.
 - b. Conducts/coordinates borings, monitors well installation and/or sample collection as necessary to complete the field work.
 - c. Notifies the Department of Environmental Quality (DEQ) of any contaminated or hazardous materials found during field work.
 - d. Submits collected samples to their laboratory for analysis, receives the results from the laboratory, reviews and interprets them.
 - e. Utilizing all U.S. EPA and DEQ guidance and policies, develops and submits a report to the G/DCCU.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2820

Sheet 3 of 5
DATE: May 2004

TASK TITLE: Conduct Preliminary Site Investigation (PSI) For Contamination

REPORTING MANAGEMENT UNIT: Construction and Technology Division -
Grading/Drainage and Consultant Contracting Unit
(G/DCCU)

WORK STEPS: (continued)

7. Input actual finish into appropriate data system.
8. G/DCCU reviews the contents of the report and sends an acceptable copy to the Environmental Assessment Unit containing the location, nature, extent and volume of any contamination found, and recommendations for dealing with it. Recommendations will include any permits or special procedures and/or provisions that are required, and pay items with an estimate of quantities for construction costs relating to any contamination present. If a known underground storage tank (UST) is identified, the G/DCCU will use their pre-qualified UST removal contractor and remove the tank prior to construction.

The Project Manager receives information and includes the pay items in the Plans, Specifications and Estimate by the Plan Review by the development of Final Plans, PPMS Task 3840. (End of #2820)

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2820

Sheet 4 of 5
DATE: May 2004

TASK TITLE: Conduct Preliminary Site Investigation (PSI) For Contamination

REPORTING MANAGEMENT UNIT: Construction and Technology Division -
Grading/Drainage and Consultant Contracting Unit
(G/DCCU)

SUPPLEMENTAL INFORMATION:

1. Consultant obtains and reviews PACS Report.
2. Consultant prepares and submits a Site Investigation work plan and price proposal within two to five work days of receiving the PACS Report and project plans. The work plan will provide the Project Manager with sufficient information to assure that all environmental contamination will be defined during the site investigation, including the limits and sources of the contamination.
 - a. The plan should include, but may not be limited to:
 - i. Maps showing proposed monitoring wells
 - ii. Location and type of sampling proposed
3. Consultant revises the work plan as requested by the Project Manager.
4. Consultant provides a priced proposal for specific services.
5. Consultant performs the following services within a 90 to 120 day time frame:
 - a. Conduct site investigation.
 - i. Utilities
 - 1) Consultant must contact MISS DIG a minimum of three working days prior to performing work.
 - 2) Consultant is also responsible for locating any utilities not covered or marked by MISS DIG, including ones on MDOT property.
 - 3) Consultant is responsible for marking the locations of the proposed work prior to MISS DIG staking the site.
 - 4) Consultant must record and provide MISS DIG's confirmation number to the Project Manager prior to the start of work.
 - 5) Any utilities damaged during the course of work are the responsibilities of the consultant to repair.
 - ii. Consultant Use of Premises
 - 1) Operations at the site shall be confined to areas permitted by applicable laws, ordinances, permits, and by the contract documents. The consultant shall not unreasonably encumber the site with materials and equipment.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 2820

Sheet 5 of 5
DATE: May 2004

TASK TITLE: Conduct Preliminary Site Investigation (PSI) For Contamination

REPORTING MANAGEMENT UNIT: Construction and Technology Division -
Grading/Drainage and Consultant Contracting Unit
(G/DCCU)

SUPPLEMENTAL INFORMATION: (continued)

- 2) Consultants shall assume full responsibility for the protection and safekeeping of all materials, products, and equipment stored on the site or at another location.
- b. Utilizing all U.S. EPA and MDEQ guidelines and policies and all available construction plans, develop and submit a PSI report to the Project Manager containing the following:
 - i. Location of contamination
 - ii. Nature of contamination
 - iii. Extent of contamination
 - iv. Volume of contamination
- c. Recommend any ways of dealing with the contamination
 - i. Recommendations will include:
 - 1) Permits
 - 2) Special procedures
 - 3) Required provisions
 - 4) Pay items with an estimate of construction costs
 - ii. The site investigation must contain specified information which can be found in the Supplemental Information on page 3 of 3.
- d. Revise report as required. No payment will be made until report is approved.
- e. If additional site investigation work is required, a new authorization will be required and steps 2, 3, and 4 will be repeated.

P/PMS TASK DESCRIPTIONS

3.2.3 Preliminary Engineering

Design Scope Verification – (3100 Series)

TASK NUMBER: 3130

Sheet 1 of 3
DATE: Dec, 1997

TASK TITLE: Verify Design Scope of Work and Cost

REPORTING MANAGEMENT UNIT: Project Manager

TASK START: Receipt of Preliminary Engineering Authorization.

TASK FINISH: Verification of the job scope by the Project Manager.

TASK DESCRIPTION:

During this task, the Project Manager distributes existing plans and other available information to verify the scope of work as previously defined by the Region/TSC or Lansing Project Development. This was done during the Call-for-Projects process in the Region/TSC or as described in the environmental document by Lansing Project Development. Verifying and documenting the design scope early in the process will minimize possible scope changes occurring during the design development process, thus insuring sufficient funding and reducing redesigns. A scope verification meeting is held along with a field inspection. Attendees at the meeting typically include:

- FHWA(on non-exempt projects)
- Design unit(s)
- Environmental
- Geometrics(Lansing Traffic and Safety)
- Construction(Lansing)
- Region/TSC
 - Project Development
 - Traffic and Safety
 - Soils/Materials
 - Utilities/Permits
 - Resident Engineer
 - Maintenance
 - Real Estate (if applicable)
 - Survey (if applicable)

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3130

Sheet 2 of 3
DATE: Dec, 1997

TASK TITLE: Verify Design Scope of Work and Cost

REPORTING MANAGEMENT UNIT: Project Manager

TASK DESCRIPTION: (Continued)

Items to be distributed prior to the scope verification meeting may include:

- a completed copy of the scoping plan sheet
- old plans and/or a sketch of the proposed typical for the work,
- pavement coring information,
- utilities information,
- ADT data,
- the Project Concept Statement,
- a cost estimate,
- the Environmental Study Form, and
- other useful background information.

Items that should be discussed at the scope verification meeting may include:

- preliminary cost estimate,
- job description,
- job limits,
- environmental impacts and mitigation measures,
- hazardous waste coordination efforts,
- job schedule,
- traffic and safety considerations,
- soils information,
- geometrics information,
- right of way information,
- utilities information,
- political considerations,
- plans for traffic maintenance during construction,
- waterway crossings, and
- affected flood plains.
- incentive/disincentive clauses
- local agreements

If the meeting results in a significantly changed scope of work and/or a cost increase, it will be the responsibility of the office that originally scoped the job to revise the job scope and/or request reprogramming of the job. The Project Manager will also review and, if necessary, revise the initial P/PMS network.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3130

Sheet 3 of 3
DATE: Dec, 1997

TASK TITLE: Verify Design Scope of Work and Cost

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS:

1. Receive notice of Preliminary Engineering Authorization.
2. Input actual start date into appropriate data system.
3. Develop information packet and request any studies or data collection necessary to verify design scope and cost.
4. Identify scope verification meeting attendees.
5. Request scope verification meeting through the job initiator.
6. Attend scope verification meeting.
7. Request any additional studies or data collection efforts to verify design scope and cost.
8. Review initial P/PMS network.
9. Input actual finish date into appropriate data system.
10. Approve design scope, cost estimate and schedule or notify the office that originally scoped the job to reprogram the job (all attendees of the scope verification meeting should receive a copy of this notification).

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3140

DATE: Feb, 1993

TASK TITLE: Obtain Design Consultant

REPORTING MANAGEMENT UNIT: Design - Consultant Administration

TASK START: Notification that job is assigned to Consultant Management Section.

TASK FINISH: Date of an executed contract agreement signed by all parties.

TASK DESCRIPTION:

This task deals with all the tasks necessary to obtain consultant services for design. There are two methods to retain a consultant for this effort:

- design services contract, and
- individual contract.

The design services contract is an open-ended contract which is used to retain the consultant on an as-needed basis. The contract has time and total dollar limits. Only the negotiation of labor hours for the design services contracts will be tracked as part of P/PMS (steps 12 -14 of the work tasks). This task, for an as-needed contract, will typically require a shorter duration and smaller resources commitment as compared with the process for an individual contract.

The individual contract is specific to the job. The contract describes the scope, cost and schedule as agreed to by both the consultant and the Department.

This task is considered complete when there is an actual executed agreement signed by all parties.

WORK STEPS:

Design Services Contract:

1. Develop advertisement requesting letters of interest.
2. Input actual start date into appropriate data system.
3. Place advertisement.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3140

Sheet 2 of 3
DATE: Jan, 1995

TASK TITLE: Obtain Design Consultant

REPORTING MANAGEMENT UNIT: Design - Consultant Administration

WORK STEPS: (Continued)

4. Receive letters of interest and conduct financial audit.
5. Input actual finish date into appropriate data system.
6. Establish selection committee.
7. Evaluate letters of interest.
8. Short list consultants.
9. Notify consultants who were short listed.
10. Submit request for contract to Finance to proceed with contracting effort/process.
11. Prepare final contract document.
12. Obtain necessary approvals.
13. Circulate document for signature.
14. Select consultant for individual job based on scope.
15. Estimate labor-hours and cost (in-house estimate).
16. Request labor-hour and cost estimate from consultant for specific job.
17. Negotiate hours and cost.
18. Submit to Commission Audit for review.
19. Input actual finish date into appropriate data system.
20. Authorize consultant to proceed with job.

Work Tasks 1-13 are done outside of the job effort and are not included in the duration or resource requirement.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3140

Sheet 3 of 3
DATE: Jan, 1995

TASK TITLE: Obtain Design Consultant

REPORTING MANAGEMENT UNIT: Design - Consultant Administration

WORK STEPS: (Continued)

Individual Contract:

1. Prepare scope of work in sufficient detail to determine in-house and consultant costs.
2. Input actual start date into appropriate data system.
3. Develop advertisement requesting letters of interest.
4. Place advertisement.
5. Receive letters of interest and conduct financial audit.
6. Establish selection committee.
7. Evaluate letters of interest.
8. Short list consultants.
9. Notify consultants who were short listed.
10. Prepare and distribute Request for Proposals (RFP).
11. Receive and review proposals and interview consultants, if appropriate.
12. Recommend consultant as top candidate and request price proposal.
13. Receive financial proposal from consultant.
14. Negotiate proposal with top candidate.
15. Submit request for contract to Finance to proceed with contracting effort/process.
16. Verify availability of funding with Program Administration.
17. Prepare final contract document.
18. Obtain necessary approvals
19. Circulate document for signature.
20. Input actual finish date into appropriate data system.
21. Hold briefing meeting and give notice to proceed.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3150

DATE: April, 1999

TASK TITLE: Categorical Exclusion Environmental Clearance

REPORTING MANAGEMENT UNIT: Planning - Environmental Section - Project
Coordination

TASK START: Receipt of programming information and job description; usually the receipt of preliminary plans.

TASK FINISH: Transmittal of clearance information to Design and Finance.

TASK DESCRIPTION:

All state trunk line jobs which involve federal funds are subject to the requirements of the National Environmental Policy Act of 1969 (NEPA), and subsequent implementing regulations and clarifying directives of the Federal Highway Administration (FHWA). That means they must go through an environmental clearance process.

Most state trunk line jobs are relatively small, such as minor reconstruction, resurfacing, and shoulder work, and do not normally result in any significant negative environmental impacts. In these cases, the environmental clearance process consists of review and documentation by MDOT's Environmental Section staff.

The purpose of the categorical exclusion environmental clearance process is to ensure that potential social, economic, and environmental impacts (SEE) are adequately identified, analyzed, and documented so that they can be taken into consideration during the job design process, and proper approvals obtained.

The number of SEE concerns and the amount of analysis needed will vary with the scope of work on a job, but may include the following:

- Rare and endangered plant and animal species impacts
- Historic and archaeological sites impacts
- Parks and wildlife refuges impacts
- Prime agricultural and ACT 116 lands impacts
- Coastal zone impacts
- Permit requirements
- Visual/tree removal impacts
- Wetland impacts
- Stream/lake/drain impacts
- Floodplain impacts
- NPDES impacts (National Pollution Discharge Elimination System)
- Social and economic impacts
- Detour impacts
- Noise impacts
- Air quality impacts

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3150

Sheet 2 of 3
DATE: April, 1999

TASK TITLE: Categorical Exclusion Environmental Clearance

REPORTING MANAGEMENT UNIT: Planning - Environmental Section – Project
Coordination

TASK START: Receipt of programming information and job description; usually the receipt of preliminary plans.

TASK FINISH: Transmittal of clearance information to Design and Finance.

TASK DESCRIPTION: (Continued)

An Environmental Study Form (Form 1775) is prepared and circulated for all department jobs. The Environmental Study Form is used to document the following:

The location of the job and scope of work as it is known at the time of the environmental review.

- The potential environmental impacts of a job.
- An analysis of the potential environmental impacts.
- The proposed mitigation to eliminate or minimize environmental impacts.
- The environmental classification and clearance information needed to obtain federal funding.

The following information needs to be provided by job initiators in order to complete Form 1775:

- A completed 2604 for the addition of jobs or phases.
- A completed Project Concept Statement that accurately describes the job.
- A completed Scoping Verification Checklist.
- A completed Program Revision Request Form on MPINS for any job changes.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3150

Sheet 3 of 3
DATE: April, 1999

TASK TITLE: Categorical Exclusion Environmental Clearance

REPORTING MANAGEMENT UNIT: Planning - Environmental Section - Project
Coordination

TASK START: Receipt of programming information and job description; usually the receipt of preliminary plans.

TASK FINISH: Transmittal of clearance information to Design and Finance.

WORK STEPS:

1. Obtain job programming and supporting information.
2. Input actual start date into appropriate data system.
3. Assess potential SEE impacts.
4. Analyze SEE impacts.
5. Propose mitigation to eliminate or minimize environmental impacts.
6. Classify and clear job to obtain funding.
7. Input actual finish date into appropriate data system.
8. Transmit information to Design and Finance.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3160

Sheet 1 of 1
DATE: July, 2000

TASK TITLE: Obtain Design Survey Consultant

REPORTING MANAGEMENT UNIT: Design - Survey Unit

TASK START: Receipt of Survey Action Request by Management Unit

TASK FINISH: Job Authorization (Proposal Acceptance Form is signed and returned to Contract Administration)

TASK DESCRIPTION:

This task deals with all the steps necessary to obtain survey consultant services for design through the use of a design services contract.

The design services contract is an open-ended contract which is used to retain the consultant on an as-needed basis. The contract has time and total dollar limits. Only the negotiation of labor hours for the design services contracts will be tracked as part of P/PMS.

This task is considered complete when the Proposal Acceptance Form is signed and returned to Contract Administration.

WORK STEPS:

1. Receipt of Survey Action Request
2. Input actual start date into appropriate data system.
3. Assign job to Survey Consultant Manager
4. Communicate technical and financial details to requestor.
5. Prepare scope of work and hour estimate in sufficient detail to determine in-house and consultant costs.
6. Short list consultants.
7. Convene Selection Committee and select consultant.
8. Prepare Authorization request and Fixed Fee form and submit to Contract Administration, who will prepare and send Request for Proposal (RFP) to selected consultant.
9. Receive technical and financial proposal from consultant.
10. Negotiate proposal with selected candidate.
11. Verify availability of funding with Program Administration.
12. Input actual finish date into appropriate data system.
13. Sign Proposal Acceptance Form from Contract Administration.

P/PMS TASK DESCRIPTIONS

Base Plan Preparation – (3300 Series)

TASK NUMBER: 3310

Sheet 1 of 2
DATE: Aug, 1999

TASK TITLE: Prepare Aerial Topographic Mapping

REPORTING MANAGEMENT UNIT: Design - Photogrammetry/Consultant Coordination

TASK START: Receipt of Photogrammetric Control Survey.

TASK FINISH: Transmittal of photogrammetric mapping.

TASK DESCRIPTION:

The Photogrammetry Unit will meet with the requestor to verify that the mapping limits have not changed since the initial "Photogrammetric Services Request" form. Aerial Triangulation is then performed to orient the photographs to the ground and assign coordinates to the photographs. The aerial triangulation process can detect errors in the Photogrammetric Control Survey which can require additional time and field measurements to resolve. Once the Aerial Triangulation Results are acceptable the mapping can begin.

Mapping products available include planimetric, terrain and ortho-photographs. Planimetric mapping is the line and symbol representation of the man made and natural features captured on the film, i.e., roads, buildings, rivers, trees, poles, etc. Terrain mapping uses a series of points and lines (break lines) to represent the shape of the ground. Areas of dense vegetation and shadows can cause the ground to be un-measurable with photogrammetric techniques and are represented as obscured areas which are void of data. From the terrain mapping contours and digital terrain models (DTM) can be produced. Ortho-photographs are produced by rectifying the photographs to the DTM. This process removes all scale variations that are inherent in aerial photographs and produces images that have a uniform scale. The resulting ortho-photos can then be used as a map to make measurements.

Additional "pickup" survey information may be required that is not obtainable from aerial photographs and photogrammetric mapping, i.e., bridge under clearances, manhole soundings, river bottom measurements, and obscured area mapping. Occasionally designers need very accurate elevations along existing pavement, especially in areas of super-elevation and where new pavement will tie into existing. This information can then be merged into the photogrammetric mapping to create a combined product.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3310

Sheet 2 of 2
DATE: Aug, 1999

TASK TITLE: Prepare Aerial Topographic Mapping

REPORTING MANAGEMENT UNIT: Design - Photogrammetry/Consultant Coordination

WORK STEPS:

1. Receive Photographic Control Survey.
2. Input actual start date into appropriate data system.
3. Meet with the requestor to verify the mapping limits.
4. Perform aerial triangulation.
5. Perform Planimetric and Terrain Mapping.
6. If requested create ortho-photographs.
7. Prepare map to design scale and transmittal letter.
8. Input actual finish date into appropriate data system.
9. Transmit photogrammetric mapping and letter.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3320

Sheet 1 of 2
DATE: Aug, 1999

TASK TITLE: Conduct Photogrammetric Control Survey

REPORTING MANAGEMENT UNIT: Design - Survey/Statewide Survey Administration

TASK START: Receipt of request for marking control targets.

TASK FINISH: Transmittal of control data.

TASK DESCRIPTION:

This task includes the effort to locate and to mark targets required for the aerial mapping and to set permanent control monuments for the job. The control coordinate system that is established as part of this task is the basis for all future surveying and design of the job. The level of effort required is based on the size and requirements of the job.

Prior to flying a job for aerial mapping, targets are located and marked on the ground. The targets are marked using a large yellow cross. The targets are used to relate the actual ground to the photographs for mapping.

The control monuments, which are established for the job as part of this task, are identified using the State Plane coordinates and an elevation. These coordinates are then extended to the pre-selected photogrammetric control targets.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3320

Sheet 2 of 2
DATE: Aug, 1999

TASK TITLE: Conduct Photogrammetric Control Survey

REPORTING MANAGEMENT UNIT: Design - Survey/Statewide Survey Administration

WORK STEPS:

1. Receive target establishment request.
2. Input actual start date into appropriate data system.
3. Develop survey order and assign to the appropriate group.
4. Set targets.
5. Notify Photogrammetry of target placement.
6. Receive control survey request.
7. Develop survey order and assign to the appropriate group.
8. Research and compile existing horizontal and vertical controls in the area.
9. Run bench loop to establish elevations.
10. Establish primary and photo control (State Plane Coordinates) using global positioning or existing horizontal and vertical controls.
11. Compute coordinates for photo targets.
12. Prepare and compile field notes and job reports.
13. Input actual finish date into appropriate data system.
14. Transmit results to Photogrammetry.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3330

Sheet 1 of 2
DATE: June, 2003

TASK TITLE: Conduct Design Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

TASK START: Receipt of request to conduct design survey.

TASK FINISH: Completion of survey/forward copy to Records Center

TASK DESCRIPTION:

Consultants – See Scope of Design Services for job specific survey scope.

The field survey documents the job's existing conditions, drainage systems, utility lines, right of way, soil borings, control points and elevations. The design survey aids in the determination of the job location, geometric design, quantities, cost and hydraulic design. The notes are also used in the design and construction phase to plot a plan representation, profiles and cross-sections of the job. The design survey documents:

Existing Field Conditions — the survey crew records any topographic features which will influence or be influenced by the job design. These include existing structures, barriers, highway facilities, vegetation and concrete works. Also, cross-sections and profiles are prepared which define the ground contour within the anticipated limits of construction.

Drainage Systems — the drainage considerations in the survey include any bodies of water, open channels or pipe systems.

Utilities — the utility information consists of the location and ownership of all railroads, power lines, communications lines, substations and pipelines, and other utilities facilities.

Right of Way Considerations — the survey crew establishes the alignment and obtains taxation records to gain right of entry and for future ROW research.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3330

Sheet 2 of 2
DATE: June, 2003

TASK TITLE: Conduct Design Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

WORK STEPS:

1. Receive design survey request.
2. Input actual start date into appropriate data system.
3. Develop survey order and assign to appropriate groups.
4. Gather existing plans, control points, bench marks, old survey notes, right of way information, and other available information.
5. Obtain utility records from utility companies and incorporate into coordinate system.
6. Obtain tax descriptions, property corners, government corners and other property information.
7. Locate and/or establish and witness government corners.
8. Establish bench marks, if appropriate.
9. If necessary, conduct additional control survey work.
10. Collect/annotate topography, other features and, if necessary, terrain elevations.
11. Investigate and describe underground structures and incorporate into coordinate system.
12. Establish alignment.
13. Prepare and compile field notes, government corner witnesses and/or job report.
14. Input actual finish date into appropriate data system.
15. Transmit results to Records Center and the appropriate unit(s).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3340

Sheet 1 of 3
DATE: June, 2003

TASK TITLE: Conduct Structure Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

TASK START: Receipt of request for structure survey.

TASK FINISH: Transmittal of survey data.

TASK DESCRIPTION:

This task is used to collect information regarding structures associated with a job. The procedure listed covers not only the survey of structures and primary bridges, but also sound walls and similar structures. The survey is similar to and must conform to the requirements for design surveys, given in PPMS Task 3330. It must be completed before preliminary plans are prepared. The work typically includes:

- super- and substructure,
- roadway approaches (if appropriate),
- footing elevation,
- span length, and
- railroad alignment (if appropriate).

Structure reference points need to be re-established and witnessed as part of this task. The reference points are used to establish a reference line for the structure design. This task is not typically required for structures with a span less than 20 feet (6 meters).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3340

Sheet 2 of 3
DATE: June, 2003

TASK TITLE: Conduct Structure Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

WORK STEPS:

1. Receive structure survey request.
2. Review the information attached to the scope of design services.
3. Input actual start date into appropriate data system.
4. Develop survey order and assign to appropriate groups.
5. Gather existing plans, control points, bench marks, old survey notes, right of way information and other available information.
6. Make a list of utilities with installations in the job areas, which includes addresses, names, and phone numbers of contact person.
7. Obtain utility records from utility companies and incorporate into coordinate system.
8. Obtain tax descriptions, property corners, government corners and other property information.
9. Locate and/or re-establish and witness government corners, incorporate into coordinate system.
10. Establish bench marks at structure, if appropriate.
11. If necessary, conduct additional control survey work.
12. Collect/annotate topography, other features and, if necessary, terrain elevations.
13. Collect mapping data and bridge measurements.
14. Establish alignment.
15. Investigate and describe underground structures and incorporate into coordinate system.
16. Prepare and compile field notes, survey control and government corner witnesses, computer files and surveyor's job report into survey profile.
17. Transmit survey portfolio to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3340

Sheet 3 of 3
DATE: June, 2003

TASK TITLE: Conduct Structure Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

WORK STEPS: (Continued)

18. Receive review comments and resolve. Submit revised materials to the MDOT Project Manager for approval.
19. Receive approval and evaluation.
20. Input actual finish date into appropriate data system.
21. Transmit results to the appropriate unit.

SUPPLEMENTAL INFORMATION:

For more information, refer to the following:
Bridge Design Manual
MDOT Design Survey Standards of Practice

Items to be purchased:

1. Michigan Design Manual, Bridge Design

Items to be provided:

2. MDOT Design Survey Standards of Practice

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3350

Sheet 1 of 4
DATE: January, 2004

TASK TITLE: Conduct Hydraulic Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

TASK START: Receipt of request for hydraulic survey

TASK FINISH: Transmittal of survey data to Design Engineer - Hydraulics

TASK DESCRIPTION:

This task is used to gather information to be used for the hydraulic analysis (PPMS task 3520 or 3522) of an existing or proposed structure(s). The survey provides channel geometry data for the stream and the floodplain, both upstream and downstream of the site.

The location(s) to be surveyed are specified in the Scope of Design Services (see sample Attachment A).

This task can also include data collection for:

- shoreline protection
 - determination of floodplain limits
 - stream scour analysis
 - other investigations as directed by the Design Engineer - Hydraulics.
-

WORK STEPS:

1. Receive hydraulics survey request from Design Engineer - Hydraulics.
2. Input actual start date into appropriate data system.
3. Develop survey order and assign to appropriate groups.
4. Gather and review existing plans, control points, bench marks, old survey notes, right of way information and other available information.
5. ***MDOT or Consultant Surveyor*** - Two weeks prior to starting the hydraulic survey, the surveyor shall contact the Design Engineer – Hydraulics to schedule a site visit with a MDOT hydraulics engineer.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3350

Sheet 2 of 4
DATE: January, 2004

TASK TITLE: Conduct Hydraulic Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

WORK STEPS: (Continued)

6. ***MDOT or Consultant Surveyor*** - Meet with a MDOT hydraulics engineer at the site to discuss details of the survey and to clarify the intent of the survey. The MDOT hydraulics engineer will provide any pertinent information available from the MDOT. Notes must be taken at the site visit and submitted promptly to the survey coordinator and Design Engineer - Hydraulics.
7. Prior to performing the survey, the surveyor must contact all landowners upon whose lands they will enter. The contact may be personal, phone or letter, but must be documented. This notice must include reasons for the survey on private land, the approximate time of the survey, the extent of the survey including potential brush cutting, and an MDOT contact person (the MDOT project manager).
8. All vertical elevations shall be referenced to the National American Vertical Datum of 1988 (NAVD 1988) or job datum if different. Two bench marks shall be established at the stream crossing, one on each side of the stream. All bench marks must be accurately described. Bench mark leveling shall be a closed loop of at least third-order accuracy which requires an error of closure between known bench marks of not more than 0.06 feet times the square root of the distance in miles.

All cross-sections shall be taken normal to the direction of flood flow and shall be tied to a roadway alignment baseline established so the sections may be accurately plotted. The sections shall be extended to the edge of the floodplain, to the elevation of the top of the road at the structure, or to a distance beyond the river bank agreed upon with the MDOT hydraulic engineer during the site visit. Note any high water marks and the date of occurrence, if available.

9. Conduct the hydraulic survey. At a minimum, the survey will include all work included in the sample "Attachment A". Specific requirements for cross section locations, structure data, water surface elevations, and other information will be provided to the consultant surveyor at the time of the site visit with the MDOT hydraulic engineer.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3350

Sheet 3 of 4
DATE: January, 2004

TASK TITLE: Conduct Hydraulics Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

WORK STEPS: (Continued)

10. The survey notes must be submitted to the Design Survey Unit in 10 inch by 12 inch divided portfolios with flap covers. Each portfolio must be labeled on the outside as follows:

Hydraulic Survey notes for:

Route

Location and Job Limits

By

Michigan Professional Surveyor License Number

- The notes for the hydraulic survey must be packaged in a separate portfolio. All field measurements, notes, sketches, and calculations must be included in the final transmission. The consultant surveyor must ensure that all required information is legible and in a form which is easily accessible to the Hydraulics/Hydrology Unit.
11. Surveyors shall submit cross-sections, other survey data, and original field notes to the MDOT Lansing Design/Surveys Unit. The MDOT Surveys Unit will review and reduce the data and transmit the data to the Design Engineer – Hydraulics. Retain a copy of the submittal as part of the job record.
 12. Surveyors shall receive any items returned as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. Keep copies of MDOT's comments and the revised materials for the job record.
 13. **Consultants** - Receive the completed MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within four weeks of the Hydraulic Survey package submittal.
 14. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3350

Sheet 4 of 4
DATE: Jan, 2004

TASK TITLE: Conduct Hydraulics Survey

REPORTING MANAGEMENT UNIT: Region - Survey/Design - Survey

Scope of Design Services - Sample Attachment A

1. All pertinent structure data including water surface elevations, flow lines, and underclearance elevations, both upstream and downstream, at the structure. Include a sketch of the structure showing all of this information.
2. One road profile along the crown of the existing roadway. If the road is on a superelevation, take the profile along the high point of the road.
3. Two cross sections, one at the upstream and one at the downstream face of the structure excluding roadway embankment.
4. All pertinent structure data including water surface elevations, flow lines, and underclearance elevations at any other structures encountered within the reach of the survey. Include sketches of these structures showing all of this information.
5. First floor elevations of all buildings within the survey limits.
6. The riparian owners in the four quadrants of the structure.
7. Water surface elevations at each section must be provided, with the date taken. The water surface elevations at each cross section shall be taken at the left edge of water and right edge of water. **All water surface elevations should be taken on the same day if possible.** If not, note the date taken and any event which may affect the evaluation.
8. A point list in ASCII format shall be provided, containing columns for point number, North (or Y), East (or X), elevation, and description.
9. One control sketch to scale, or CAD drawing, showing the relationship of the cross-sections to the structure and the road.
10. One control sketch to scale, or CAD drawing, of the area at the stream crossing, showing a basic map of the bridge including abutments and cross section shots (numbered).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3360

Sheet 1 of 5
DATE: July, 2003

TASK TITLE: Prepare Base Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Consultant Coordination

TASK START: Approval of the design scope of work or authorization to proceed.

TASK FINISH: Distribution of completed base plans to appropriate work centers.

TASK DESCRIPTION:

The base plans show existing topography and field conditions and provide a general layout of the proposed job design, which is based on the defined scope of work. These plans show the preliminary limits of the job and document the proposed line, grade and typical cross sections. The plans also show the known right of way, structures and railroads.

The work associated with the preparation of the base plans will vary from job to job. For example, in preparing base plans for a Preserve job, the work is minimal because existing plans can be used to develop base plans. In the case of new construction or major reconstruction, the work is much greater and can include several drafts with several on-site visits. The base plans typically include:

- existing topography and conditions,
- approximate construction limits,
- preliminary horizontal and vertical alignments,
- intersection and interchange schematics,
- preliminary typical cross sections,
- potential structure involvement,
- preliminary vertical and horizontal clearances,
- environmental issues and impacts,
- known existing utilities, and
- general geometrics.

As part of this effort, preliminary right of way plans are developed and sent to the Real Estate Division. The preliminary ROW plans should document:

- government sections lines and quarters,
- subdivisions,
- ties to survey alignment (if available),
- proposed & existing ROW lines.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 5

TASK NUMBER: 3360

DATE: July, 2003

TASK TITLE: Prepare Base Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Consultant Coordination

WORK STEPS:

1. Review existing plans and other available information. Refer to the supplemental information at the end of this task for use in preparing your plans.
2. Input actual start date into appropriate data system.
3. If necessary, request additional field survey and/or aerial mapping.
 - a. If surveying is a Consultant task, then obtain required survey information.
 - b. If surveying is NOT a Consultant task, then send a request and reason for additional survey information to the MDOT Project Manager.
4. Develop proposed job design using aerial mapping, field survey notes and/or old plans. The base plans show existing topography and field conditions and provide a general layout of the proposed job design, which is based on the defined scope of work. These plans show the preliminary limits of the job and document the proposed line, grade and typical cross sections. The plans also show known right of way, structures and railroads. Utilize your MDOT Project Manager as a resource person.
5. Develop title sheet, note sheet, typical sheet, & plan sheets.
6. If Right Of Way is included in the Contract, then prepare Preliminary Right Of Way Plans (PROW). Refer to Michigan Design Manual, Road Design (SI), Volume 3, Chapter 5 for guidance in the preparation of PROW Plans. The submittal of the PROW package is P/PMS TASK 3361- PRELIMINARY RIGHT-OF-WAY PLANS. If the Consultant is unfamiliar with MDOT ROW procedures and requirements, please contact the MDOT Project Manager to arrange a meeting to discuss ROW. If ROW is not part of the Contract, but determined necessary for construction, contact the MDOT Project Manager immediately. Some examples of when Fee ROW, grading permits or easements will be required are:
 - a. Closing, relocating or re-grading driveways beyond existing ROW.
 - b. Work or grading outside existing ROW.
 - c. Clear vision (sight distance) requirements.
7. Submit preliminary right of way plans to Design Division ROW Engineer & Real Estate.
8. Check the base plans conformance to the job as defined in the Project Concept Statement and minutes from the Scope Verification meeting

P/PMS TASK DESCRIPTIONS

Sheet 3 of 5

TASK NUMBER: 3360

DATE: July, 2003

TASK TITLE: Prepare Base Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Consultant Coordination

WORK STEPS: (Continued)

9. Prepare a list of questions, requests for information and concerns that need to be addressed at the Base Plan Review Meeting (PRE-GI). Examples are: coordination with County Drain Commissioner, additional soils investigation, contaminated parcels, signals, permanent signing, lighting, railroad crossings, bridge improvements, geometric improvements, utility involvement, etc.
10. Prepare Base Plan submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating readiness for Base Plan Review Meeting (PRE-GI). The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. If surveying is a Consultant task, then include a copy of the MDOT letter approving the survey.
 - c. Reproducible base plan sheets including all areas of work; eg, bridge study plans, traffic signal plans, etc. Section Three of this task includes a partial listing of detailed requirements for the items that may be required on the base plans.
 - d. Estimate of Probable Construction Cost (quantities and unit prices).
 - e. Maintaining Traffic Concepts.
 - f. List of outstanding questions and/or considerations.
11. **Consultants** - Check submittal package in accordance with Consultant's QA/QC plan
12. Submit base plans and materials to the MDOT Project Manager.
13. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
14. Make necessary changes and resubmit the revised materials. Keep copies of the MDOT Project Manager's comments, the marked-up prints (if they were included), and the revised materials for the job record.
15. Distribution of completed base plans to appropriate work centers.
(E.g. utility companies, geometrics, Region/TSC, etc.)
16. Input actual finish date into appropriate data system.
17. **Consultants**-Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of the Base Plan package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3360

Sheet 4 of 5
DATE: July, 2003

TASK TITLE: Prepare Base Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Consultant Coordination

SUPPLEMENTAL INFORMATION

1. Title Sheet
 - a. Location map
 - b. POB & POE
 - c. Traffic data
 - d. Funding, control section and job number
 - e. North arrow
 - f. County, city/village, section, town and range
 - g. Unit leader/consultant
 - h. Station equations and structure numbers
 - i. Legend
 - j. Plan sheet index (Plan sheets should be numbered as P-GI 1, P-GI 2, etc.)
2. Job Scoping Plan Sheet
3. Typical Cross Sections
 - a. Existing
 - i. Stationing
 - ii. ROW
 - iii. Pavement and shoulder widths
 - iv. Depth and width of bituminous/concrete, base and subbase
 - v. Crown location and pavement slope
 - vi. Removal items
 - 1) Pavement
 - 2) Curb and gutter
 - 3) Earth excavation
 - b. Proposed
 - i. Stationing
 - ii. ROW
 - iii. Survey and construction centerline
 - iv. Crown location and pavement slope
 - v. Lane and shoulder widths
 - vi. Width and depth of bituminous/concrete, base, subbase and embankment
 - vii. Plan grade location with point of rotation
 - viii. Type of curb and gutter
 - ix. Type and location of underdrain
 - x. Bituminous application table
 - xi. Superelevation with transition stationing
 - xii. Slope restoration or seeding/sodding items

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3360

Sheet 5 of 5
DATE: July, 2003

TASK TITLE: Prepare Base Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Consultant Coordination

SUPPLEMENTAL INFORMATION: (Continued)

4. Note Sheet
 - a. Standard notes
 - b. Utilities
 - i. company name
 - ii. address
 - iii. phone number
 - iv. contact person
 - c. Standard plans/special details
 - d. Pay items for miscellaneous quantities
5. Standard Symbol Sheet (legend sheet)
6. Removal and Construction Sheets
 - a. Existing and proposed ROW with easements and grading permits
 - b. Stationing
 - c. Bearings
 - d. Curve data
 - e. Superelevation
 - f. Limits of removal items
 - i. Pavement
 - ii. crush and shape
 - iii. cold milling
 - g. Limits of construction items
 - i. bituminous approach
 - ii. miscellaneous concrete
7. Profile Sheets
 - a. Existing and proposed elevations
 - i. PI stationing
 - ii. curve lengths
 - iii. tangent grades
 - iv. superelevation with transitions
 - b. Existing sewer, culvert and drainage structures
 - c. Existing ground profiles and ground points
8. Soil Boring/Pavement Coring Sheet
9. Plan Sheets from other work areas.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3361

Sheet 1 of 4
DATE: March 2005

TASK TITLE: Review and Submit Preliminary Right of Way (PROW) Plans

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

TASK START: Completion of PROW plans.

TASK FINISH: Submittal of PROW plans to Real Estate Division.

TASK DESCRIPTION:

This procedure outlines the steps for the submittal of Preliminary Right Of Way (PROW) plans, which are developed as part of P/PMS TASK 3360 - PREPARE BASE PLAN.

Review and process PROW plans. The preliminary ROW plans should include:

- government section lines, section numbers with Town and Ranges
 - ties to survey alignment(if available)
 - subdivisions
 - proposed and existing ROW lines
 - all Requirements For Preliminary ROW Plans as stated in the Road Design Manual - English, Chapter 5
-

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3361

Sheet 2 of 4
DATE: March 2005

TASK TITLE: Review and Submit Preliminary Right of Way (PROW) Plans

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

WORK STEPS (In-House):

Design Unit/Consultant Coordination

1. Review completed PROW plans.
2. Input actual start date into appropriate data system.
3. Verify "B" phase (ROW) is programmed; if not, process 2604.
4. Complete draft PROW memo, Design Form 0271 from MDOT website.
5. Submit plans (half size (11" x 17"), to scale and memo) to Design ROW Engineer-Quality Assurance
6. Submit plans (1 full size, 2 half size (11" x 17"), to scale, electronic files and memo) to Lansing Real Estate Technical Unit.
7. Submit plans (1 full size, 1 half size (11" x 17"), to scale, electronic files and memo) to Region Real Estate Agent. (may require more copies-please check).

Design ROW Engineer-Quality Assurance

1. Review plans and memo*.
2. Identify and note corrections/deficiencies.
3. Plans with both ROW and Design comments sent to Design Unit/Consultant Coordination.

Lansing Real Estate Technical Unit/ Region Real Estate Agent

1. Review plans and memo*.
2. Identify and note corrections/deficiencies.
3. Plans with ROW comments sent to Design Unit/Consultant Coordination.
4. Region Real Estate Agent notifies Design Unit/Consultant Coordination of acceptance or rejection.

Design Unit/Consultant Coordination

1. Incorporates corrections into plans, or if accepted with missing item, or if OK.
2. Completes and signs PROW memo, Design Form 271 from MDOT website. (Note: memo must be signed by Licensed Engineer).
3. Sends out plans for printing.
4. Distributes PROW plans and memo to all areas identified on Design Form 271 from MDOT website.
5. Files PROW plans and memo in project files.

**Occurs simultaneously*

-- See following pages for steps as performed by Consultant --

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3361

Sheet 3 of 4
DATE: March 2005

TASK TITLE: Review and Submit Preliminary Right of Way (PROW) Plans

REPORTING MANAGEMENT UNIT: Designer-Design/Consultant Coordination

WORK STEPS (Consultant):

1. Prepare PROW submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is the PROW submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. 1/2" high density diskette(s) or CD of all drawings utilizing the Intergraph MicroStation system format.
 - c. Reproducible plans (1 full size and 1half size (11" x 17"), to scale.
 - d. Fill out a draft PROW memo, Design Form 271 from the MDOT website.
 - e. Copies of the survey notes pertaining to government and property corners.
2. Check submittal package in accordance with the Consultant's QA/QC plan.
3. Submit the PROW package to the MDOT Project Manager.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes. Resubmit the entire PROW package including a written response to all comments.
6. Receive a half-size set of PROW plans from the MDOT Project Manager. These prints are for the Consultant's files.
7. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the PROW package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3361

Sheet 4 of 4
DATE: March 2005

TASK TITLE: Review and Submit Preliminary Right of Way (PROW) Plans

REPORTING MANAGEMENT UNIT: Designer-Design/Consultant Coordination

SUPPLEMENTAL INFORMATION

For more details regarding the preparation of ROW plans refer to the following:

A. Michigan Road Design Manual - English, Chapter 5.

B. The following is additional information relating to CADD levels and ROW information:

- * 50 Parcel lines, parcel numbers, ownership arrows.
- 51 Lot lines and numbers.
- * 52 Property Corner Information.
- * 53 Special ROW notes and Dimensions.
- 54 English units in parentheses only on Metric Plans.
- * 55 Special ROW notes and Dimensions.

* **These levels are for MDOT Real Estate Support Area use only.**

Level 54 shall contain the equivalent English units to all metric ROW references to aid the MDOT Real Estate Support Area in their communication with the public.

The above-mentioned levels shall not contain unrelated items such as curve data, drainage, utilities, design notes or other text unrelated to ROW plan sheet preparation. Any changes required by MDOT to ensure the final product is within requirements shall be the responsibility of the Consultant. A disk(s) CD(s) with the final layouts as approved by the MDOT Project Manager shall be made and delivered by the Consultant to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3370

DATE: Nov. 2003

TASK TITLE: Prepare Structure Study

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

TASK START: Approval of the design scope of work or authorization to proceed.

TASK FINISH: Approval of the study by the Bridge Design Engineer.

TASK DESCRIPTION:

This task is usually included in bridge jobs and is coordinated with other structure related tasks.

Based on the overall job scope, the EPE plans and the Base plans, a study is done for each structure included in a job. The structure study document includes:

- structure type and size,
- appropriate construction limits,
- bridge clearances, and
- approximate footing elevations.

Refer to Section 3.01 of the Design Manual/Bridge for a complete list of the contents.

WORK STEPS:

1. Obtain and review/evaluate the Scope of Design Services, along with the job data and materials provided by MDOT. These materials may include, but are not limited to, the following: survey data, soil data, maintenance report, field notes, existing plans, EPE plans, and base plans.
2. Input actual start date into appropriate data system.
3. Prepare Structure Study Plans and Estimate of Probable Construction Cost as defined in the Michigan Design Manual, Bridge Design, Section 3.01.
4. Document findings of structure study.
5. **Consultant** - Prepare a submittal cover letter stating the results of the Structure Study. The cover letter shall also state that the submittal was prepared and checked by the procedures specified in the Consultant's QA/QC plan. Include the names of those who did the QA/QC check.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3370

Sheet 2 of 2
DATE: Nov. 2003

TASK TITLE: Prepare Structure Study

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

TASK START: Approval of the design scope of work or authorization to proceed.

TASK FINISH: Approval of the study by the Bridge Design Engineer.

WORK STEPS: (Continued)

6. Submit the completed Structure Study and Estimate to the MDOT Project Manager for review.
7. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
8. Make necessary changes and resubmit the entire package including a written response to all comments.
 - a. *Consultant:* Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
9. If necessary, return the revised Structure Study to the MDOT Project Manager along with written responses to review comments. This process may need to be repeated until the study is approved.
10. Receive approval of Structure Study Plans and Estimate of Probable Construction Cost from MDOT Project Manager.
11. *Consultant* - Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of submitting the Structure Study.
12. Request soil borings.
13. Obtain approval of Bridge Engineer.
14. Input actual finish date into appropriate data system.
15. Obtain approval of FHWA, if appropriate.

SUPPLEMENTAL INFORMATION:

For more information, refer to the following:

Items to be purchased:

1. Michigan Design Manual, Bridge Design

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3
DATE: June 2003

TASK NUMBER: 3375

TASK TITLE: Conduct Value Engineering Study

REPORTING MANAGEMENT UNIT: Value Engineering Coordinator

TASK START: Identification of Need for Value Engineering.

TASK FINISH: Distribution of Final Value Engineering Report.

TASK DESCRIPTION:

This task completes the Federal requirement that a Value Engineering Study be held prior to Advertising any project for work on the NHS with a Total Cost (EPE, PE, ROW, Construction, & CE) greater than \$25 million and using any amount of Federal Aid. Although the federal law says each Advertised job number must meet this Value Engineering requirement, MDOT applies the VE Study requirement to any group of projects in a corridor whose total cost exceeds \$25 million, to be able to apply the benefits of the VE study to each individual job. VE studies are most usually held when design plans are about 30-40% complete and at least 2 months prior to The Plan Review. This provides the VE Study Team with the best preliminary information to analyze, at a time when the plan preparation process still allows for new or different input to be considered and incorporated.

The Value Engineering Coordinator reviews department data to identify those projects/corridors where programmed work appears to approach or exceed \$25 million. After discussion with the Design Project Manager to learn the approximate date when plans are expected to reach 30-40% complete, the VE Coordinator selects a consultant firm to conduct the VE Study from a list of those pre-qualified, issues a Scope of Work, and receives and approves the proposal. The VE firm's Team Leader arranges the VE Study dates with the Design Project Manager, Bridge Coordinator, and the VE Coordinator.

Approximately three weeks prior to the VE Study date, the Design Project Manager collects and furnishes the VE Team Leader with one full-sized set of plans, 2 or 3 half-sized sets, a CD of the plans, a recent Cost Estimate (major items, quantities, and costs), and any other pertinent information. The VE Team conducts the VE Study, with the Design Project Manager (and other staff) attending the first morning of the VE Study to present the project and answer questions.

At the conclusion of the 40-hour VE Study, the VE Team reports its VE Recommendations to a group of MDOT and FHWA staff (and design consultants) invited by the VE Coordinator. Immediately afterward, the VE Coordinator heads a Decision Meeting of those present, including the VE Study Team, to determine the outcome of each VE Recommendation. This concludes the project's federal VE Study requirement. There is no federal requirement to incorporate any of the VE outcomes.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 3
DATE: June 2003

TASK NUMBER: 3375

TASK TITLE: Conduct Value Engineering Study

REPORTING MANAGEMENT UNIT: Value Engineering Coordinator

TASK DESCRIPTION: (Continued)

To conclude the VE Study Contract deliverables, the VE Coordinator prepares a letter to the VE firm stating the Decision Outcome of each of the VE Recommendations, and has a draft of that letter reviewed by the Design Project Manager and a few others that actively participated in the VE Decisions. After incorporating any review comments, the VE Letter is sent to the VE firm, indicating the Decisions and the requested number of Final VE Reports (one per person attending). The Final VE Report is prepared by the VE firm and given to the VE Coordinator, which completes the VE Contract. The VE Coordinator distributes the Final VE Report, and that concludes the VE Study.

The FHWA VE Coordinator requests MDOT input into FHWA's annual compilation of VE Studies held and of VE Change Proposals received from construction contractors. The VE Coordinator reviews the FHWA summary of VE Studies held, and the VE Change Proposal (VECP) Coordinator provides the requested VECP information.

P/PMS TASK DESCRIPTIONS

Sheet 3 of 3
DATE: June 2003

TASK NUMBER: 3375

TASK TITLE: Conduct Value Engineering Study

REPORTING MANAGEMENT UNIT: Value Engineering Coordinator

WORK STEPS:

1. The Project Manager activates the VE Task when any NHS project's Total Cost is expected to approach or exceed \$25 million. This task will be activated for each job within a corridor, if it is a corridor of jobs that meets the project criteria.
2. The VE Coordinator identifies those projects that will require a VE Study.
 - a. A listing of potential projects requiring VE Studies is kept by the VE Coordinator.
 - b. The VE Coordinator may use discretion in lowering the threshold by which a VE Study is required so that cost increases do not exceed \$25 million.
3. The VE Coordinator confirms the need for a VE Study with the Design Project Manager, who will then activate the VE Task in P/PMS.
 - a. The VE Coordinator also Selects and Contracts with a VE Firm to conduct the VE Study, including issuing a Scope of Work.
4. The VE Coordinator inputs the actual start date into the appropriate data system.
5. The Design Project Manager furnishes plans, cost, and project information to the VE Firm.
6. The VE Firm conducts a 40-hour VE Study (usually one work week, M – F).
 - a. The Design Project Manager verbally presents the project at the start of the study, and remains 'on-call' for any further questions.
7. The VE Firm presents their VE Recommendations, and the VE Coordinator conducts the decision portion immediately following.
 - a. The VE Coordinator heads a Decision Meeting of the Study Team and those present at the recommendations to determine the outcome of each VE Recommendation. This satisfies the Federal VE Requirement.
8. The VE Coordinator writes the VE Firm, detailing MDOT's decision on each VE Recommendation.
9. The VE Firm prepares a Final VE Report, and furnishes the number of copies requested to the VE Coordinator. This completes the VE Contract.
10. The VE Coordinator distributes the Final VE Report.
11. The VE Coordinator enters the actual finish date into the appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3380

Sheet 1 of 2
DATE: Nov. 2003

TASK TITLE: Review Base Plans (Pre-GI)

REPORTING MANAGEMENT UNIT: Design - Project Manager

TASK START: Request for Base Plan Review sent from the Project Manager to Quality Assurance.

TASK FINISH: Distribution of Base Plan Review Comments by Quality Assurance.

TASK DESCRIPTION:

The Quality Assurance Unit will distribute the base plans to the various groups who will be participating in the field inspection and plan review. A time is set for the meeting and field visit. The Project Manager notes on the review request any special groups that should be included in the review effort. The Quality Assurance Unit coordinates and conducts the review meeting and field visit. The comments received at the Base Plan Review are documented by the Project Manager, and approved and distributed to all reviewers by Quality Assurance.

The base plan review document will include information about variances from the original job scope.

Groups from outside the Department may be included in the base plan review. The types of outside groups include:

- municipalities,
- private utilities,
- County/Twp. Agencies,
- other state Departments, and
- Federal Highway Administration.

The Consultant attends the Base Plan Review Meeting to discuss and resolve review comments.

The purpose of a Base Plan Review Meeting is not to design the job in the field, but to review the thoughts of the designer. A good final design product starts with a good Base Plan Review Meeting and the Base Plan Review is only as good as the information provided.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3380

Sheet 2 of 2
DATE: Nov. 2003

TASK TITLE: Review Base Plans (Pre-GI)

REPORTING MANAGEMENT UNIT: Design - Project Manager

WORK STEPS:

1. Request for Pre-GI sent to Quality Assurance along with base plans.
2. Input actual start date into appropriate data system.
3. Quality Assurance determines if plans have been completed in sufficient detail to justify review and evaluates them relative to the job scope document; if not satisfactory, they return them to designer.
4. QA identifies groups to be included in plan review.
5. *Consultant* - receive notice from the MDOT Project Manager stating the location, date and time of the Base Plan Review Meeting.
6. QA distributes plans.
7. Plans are reviewed by participants.
8. QA coordinates and conducts review meeting and site visit.
9. *Consultant* - attend the meeting and site visit. The meeting and site visit may require more than one day.
 - a. Try to hold the number of Consultant participants to essential (two or three) personnel.
 - i. Record meeting minutes
 - ii. Utilize the MDOT expertise at the meeting to resolve job issues
 - b. Distribute meeting minutes to all attendees.
10. Project Manager documents the review recommendations.
11. Quality Assurance approves and distributes review recommendations.
12. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3390

Sheet 1 of 2
DATE: Dec. 2003

TASK TITLE: Develop the Maintaining Traffic Concepts

REPORTING MANAGEMENT UNIT: Region/TSC - Traffic and Safety

TASK START: Receipt of Scope Verification Meeting Minutes.

TASK FINISH: Receipt of Completed Base Plans

TASK DESCRIPTION:

This procedure covers the initial development of a plan to maintain and control traffic during construction.

The Region/TSC Traffic and Safety Engineer, along with the appropriate MDOT work centers*, develops the concepts for the routing of traffic during job construction. In developing the concepts, the Region/TSC Traffic and Safety Engineer should consider the various stages of construction, laneage requirements and hourly and seasonal restrictions.

*Representatives should include the following: Project Manager, Resident Engineer, and Region/TSC Project Development Engineer. Other disciplines may be invited as needed.

WORK STEPS:

1. Review the type of construction task(s) included in the job with appropriate work centers.
2. Input actual start date into appropriate data system.
3. Send a request for current traffic data, projected construction year traffic data and future traffic data (15 year or 20 year) to the MDOT Project Manager.
4. Evaluate current traffic data.
5. Review the traffic data and the job site to determine job specific construction zone traffic requirements.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3390

Sheet 2 of 2
DATE: Dec, 2003

TASK TITLE: Develop the Maintaining Traffic Concepts

REPORTING MANAGEMENT UNIT: Region/TSC - Traffic and Safety

WORK STEPS: (Continued)

6. Prepare preliminary recommendations for maintaining traffic. Items that should be considered for inclusion in the recommendations are:
 - a. Method for maintaining traffic
 - b. Need for detour, staging, flagging operation
 - c. Need for temporary widening or shoulder upgrading
 - d. Time constraints and laneage requirements
 - e. Local considerations
 - f. Need for temporary traffic signals
 - g. Construction zone speed limits
 - h. Special events
 - i. Recommendations for expedited construction due to critical target dates
7. Send recommendations to Project Manager for inclusion into the base plans.
8. **Consultant** - Submit the recommendations with the Base Plan submittal package for discussion at the Base Plan Review meeting. The Base Plan Review meeting will not be scheduled unless the recommendations are received.

SUPPLEMENTAL INFORMATION:

For more information regarding preparation of maintaining traffic plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. Standard Highway Signs Manual
5. A Policy on Geometric Design of Highways and Streets 1994 (AASHTO)
6. Average Unit Prices for Traffic Control Items
7. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 8)

Items available through the MDOT Bulletin Board System:

1. Maintaining Traffic Typical Diagrams
2. Typical Maintaining Traffic Special Provision

P/PMS TASK DESCRIPTIONS

P/PMS TASK DESCRIPTIONS

Preliminary Plan Preparation

TASK NUMBER: 3505

Sheet 1 of 2
DATE: July 9, 2001

TASK TITLE: Preliminary Pavement Design and Selection

REPORTING MANAGEMENT UNIT: Region/TSC Soils (Pavement Design) Engineer or
Pavement Design Specialist

TASK START: Receipt of Request for Preliminary Pavement Design.

TASK FINISH: Completion of Preliminary Pavement Design and inclusion in Preliminary
Plans.

TASK DESCRIPTION:

At this time the P.M. should verify that the Pavement Design & Selection Policy has been followed. Depending on the type of work and estimated pavement cost a Life cycle Cost Analysis may be required. If the procedure has not been followed the P.M./Design Engineer should contact the Pavement Design Engineer/Region soils Engineer in order that the process can be followed and completed.

A preliminary pavement design should be performed in order to identify job costs. The preliminary pavement design should be based upon the best available data that has been obtained at this time. The data may include:

- 20 year Design ESAL's(Equivalent Single Axle Loads)
- Roadbed soil support value
- soil borings/pavement cores
- FWD(Falling Weight Deflectometer) Data
- drainage
- geometry of typical section
- PMS Data
- Fix history

The pavement design is to be performed in accordance with the 1993 AASHTO "Guide for Design of Pavement Structures" and the AASHTO pavement software DARWin Version 2.0", 1993 or later. If the data used for the pavement design is final then the preliminary pavement design may become final if the Pavement Design & Selection Policy has been followed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3505

Sheet 2 of 2
DATE: July 9, 2001

TASK TITLE: Preliminary Pavement Design and Selection

REPORTING MANAGEMENT UNIT: Region/TSC Soils (Pavement Design) Engineer or
Pavement Design Specialist

WORK STEPS:

1. Identify preliminary fix.
2. Input actual start date into appropriate data system.
3. Verify Pavement Design & Selection Policy has been followed.
4. Obtain 20 year design ESAL's.
5. Obtain soil borings/pavement cores.
6. Obtain recommended sgrade soil support value from region soils engineer. FWD data may be used as an aid in the recommendation.
7. Obtain and review PMS data.
8. Review drainage availability.
9. Obtain proposed typical cross section geometry for the job.
10. Review fix history and old plans of the job.
11. Determine appropriate design parameters.
12. Perform pavement design in accordance with the 1993 AASHTO "Guide for Design of Pavement Structures" and the AASHTO pavement software DARWin Version 3.01"
13. Input actual finish date into appropriate data system.
14. Verify that MDOT minimum thicknesses are met for all layers of the pavement section and that the appropriate hot mix asphalt mix type and/or concrete pavement type is being set up.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3510

Sheet 1 of 14
DATE: Dec. 2003

TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

TASK START: Receipt of a request for data on an existing pavement, or receipt of a request for roadway geotechnical investigation.

TASK FINISH: The distribution of findings/geotechnical investigation report.

TASK DESCRIPTION:

For preserve jobs, this task entails gathering existing soils and pavement data, and typically involves taking pavement cores and/or shoulder borings, and researching old plans to see what currently exists. Analysis is done on pavement cores to determine pavement depth, physical condition and recycle potential. Hand-auger borings are typically done through core holes to determine depth of existing gravel and sub-base, if applicable.

This information may have been obtained as part of the Pavement Management System or as part of the Call for Projects. The information is needed to verify the proposed design scope of work. This work should be completed prior to initiation of the base plans.

For improve/expand jobs, the geotechnical investigation typically involves soil survey, swamp soundings, shoulder borings, culvert borings, cut borings, or pavement coring; in general, any hand or power auger borings needed to help assess the level of impact and cost of a job, as an aid for determining recommended alternatives. This data may also include steps typically performed for preserve jobs (see above). The data and analysis are incorporated into a document and/or a memo.

This work includes full depth coring of composite and flexible pavements for determination of pavement thicknesses and conditions. Soil borings shall be taken at all locations through the core hole to determine subbase and subgrade conditions.

WORK STEPS:

1. Receive request for existing pavement data/geotechnical investigation.
2. Input actual start date into appropriate data system.
3. Research existing pavement history, if applicable.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3510

Sheet 2 of 14
DATE: Dec. 2003

TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

WORK STEPS, contd:

4. Assign a crew to conduct the investigation.
5. The Consultant is responsible for taking all pavement cores and soil borings at the frequencies identified herein. All coring should be done with a 100 mm or 150 mm core barrel.
6. The Consultant is responsible for maintaining traffic during all operations. The Consultant's method of maintaining traffic shall have prior approval by the Regional Traffic and Safety Engineer, and be in accordance with the MUTCC and the MDOT maintaining traffic details.
7. The Consultant is responsible for locating utilities by calling MISS DIG (800-482-7171). The Consultant is also responsible for locating other utilities not on the MISS DIG system.
8. The Consultant is responsible for preparing all core and boring reports including the following as a minimum.
 - a. Date and site of core.
 - b. The location by station in metric (located from the P.O.B. or P.O.E. if stationing is not provided), including lateral and longitudinal offsets referencing lanes and cross streets. Label mainline, shoulder, turn lane, etc.
 - c. Core Identification number
 - d. Graphic profile indicating depth of each layer in the core, in millimeters, the type of pavement material and condition (especially for concrete), depth of steel and coarse aggregate type. The graphic profile should be extended to show the aggregate base (mm), sand subbase (mm), and subgrade (meters) conditions where soil borings are taken through the core holes. If the soil boring information can be completely conveyed in the core report, then a separate soil boring log need not be attached.
 - e. Indication of presence of water, where soil borings are taken through the core holes.
 - f. Names of the coring crew members.

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TASK NUMBER: 3510

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DATE: Dec. 2003

TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

WORK STEPS, contd:

9. The Consultant is responsible for classifying all soils using the Michigan Department of Transportation Uniform Field Soil Classification System (Modified Unified Description) as shown in Appendix A. Standard penetration values are not needed.
10. The Consultant is responsible for patching all core holes prior to leaving the specific location with bituminous patching material.
11. The Consultant is responsible for maintaining all field notes and cores for 60 days after submitting reports. After 60 days all cores shall be disposed of by the consultant.
12. Check with the Region Real Estate agent for land ownership and right of entry, if necessary.
13. Conduct a field investigation.
14. Perform on-site and/or laboratory tests, record data and collect information.
15. The Region C & T Engineer/Consultant then analyzes the data and the borings to develop a recommendation.
16. Input actual finish date into appropriate data system.
17. A report of the findings/geotechnical investigation report is then written by the Engineer and sent to the requester.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3510

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TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

INFORMATION AND/OR SERVICES THAT WILL BE SUPPLIED BY MDOT

All questions can be directed towards the MDOT Regional Soils Engineer.

CORING AND BORING FREQUENCY

Refer to the specifications in the Consultant Responsibilities portion of the Scope of Design Services.

JOB DELIVERABLES

The Consultant shall deliver a copy of all completed reports to the MDOT Regional Soils Engineer and the Design Project Manager within two weeks of completion.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3510

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DATE: Dec. 2003

TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

APPENDIX A

Michigan Department of Transportation

Uniform Field Soil Classification System (Modified Unified Description)

Introduction

The purpose of this system is to establish guidelines for the uniform classification of soils by inspection for MDOT Soils Engineers and Technicians. It is the intent of this system to describe only the soil constituents that have a significant influence on the visual appearance and engineering behavior of the soil. This system is intended to provide the best word description of the sample to those involved in the planning, design, construction, and maintenance processes. A method is presented for preparing a "word picture" of a sample for entering on a subsurface exploration log or other appropriate data sheet. The classification procedure involves visually and manually examining soil samples with respect to texture (grain-size), plasticity, color, structure, and moisture. In addition to classification, this system provides guidelines for assessment of soil strength (relative density for granular soils, consistency for cohesive soils), which may be included with the field classification as appropriate for engineering requirements. A glossary of terms is included at the end of this document for convenient reference.

It should be understood that the soil descriptions are based upon the judgment of the individual making the description. Laboratory classification tests are not intended to be used to verify the description, but to further determine the engineering behavior for geotechnical design and analysis, and for construction.

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TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
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Primary Soil Constituents

The primary soil constituent is defined as the material fraction which has the greatest impact on the engineering behavior of the soil, and which usually represents the soil type found in the largest percentage. To determine the primary constituent, it must first be determined whether the soil is "Fine-Grained" or "Coarse-Grained" or "Organic" as defined below. The field soil classification "word picture" will be built around the primary constituent as defined by the soil types described below.

Coarse-Grained Soils: More than 50% of the soil is *RETAINED* on the 0.075 mm (#200) sieve. A good rule of thumb to determine if particles will be retained or pass the 0.075 mm sieve: If individual particles can be distinguished by the naked eye, then they will likely be retained. Also, the finest sand particles often can be identified by their sparkle or glassy quality.

Gravel Identified by particle size, gravel consists of rounded, partially angular, or angular (crushed faces) particles of rock. Gravel size particles usually occur in varying combinations with other particle sizes. Gravel is subdivided into particle size ranges as follows: (Note that particles > 75 mm are cobbles or boulders, as defined in the Glossary of Terms.)

Coarse - Particles passing the 75 mm (3 inch) sieve, and retained on the 19 mm (3/4 inch) sieve.

Fine - Gravel particles passing the 19 mm (3/4 inch) sieve, and retained on the 4.76 mm (#4 U.S. standard) sieve.

Note: The term "gravel" in this system denotes a particle size range and should not be confused with "gravel" used to describe a type of geologic deposit or a construction material.

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Sand Identified by particle size, sand consists of rock particles, usually silicate (quartz) based, ranging between gravel and silt sizes. Sand has no cohesion or plasticity. Its particles are gritty grains that can easily be seen and felt, and may be rounded (natural) or angular (usually manufactured). Sand is subdivided into particle size ranges as follows:

Coarse - Particles that will pass the 4.76 mm (#4 U.S. Standard) sieve and be retained on the 2 mm (# 10 U.S. Standard) sieve.

Medium - Particles that will pass the 2 mm (#10 U.S. Standard) sieve and be retained on the 0.425 mm (# 40 U.S. Standard) sieve.

Fine - Particles that will pass the 0.425 mm (#40 U.S. Standards) sieve and be retained on the 0.075 mm (# 200 U.S. Standard) sieve.

Well-Graded - Indicates relatively equal percentages of Fine, Medium, and Coarse fractions are present.

Note: The particle size of coarse-grained primary soils is important to the Soil Engineer! Always indicate the particle size or size range immediately before the primary soil constituent.

Exception: The use of 'Gravel' alone will indicate both coarse and fine gravel are present.

Examples: **Fine & Medium Sand; Coarse Gravel.**

Include the particle shape (angular, partially angular, or rounded) when appropriate, such as for aggregates or manufactured sands. Example: **Rounded Gravel.**

Fine-Grained Soils: More than 50% of the soil PASSES the 0.075 mm (#200) sieve.

Silt Identified by behavior and particle size, silt consists of material passing the 0.075 mm (#200) sieve that is non-plastic (no cohesion) and exhibits little or no strength when dried. Silt can typically be rolled into a ball or strand, but it will easily crack and crumble. To distinguish silt from clay, place material in one hand and make 10 brisk blows with the other; if water appears on the surface, creating a glossy texture, then the primary constituent is silt.

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Clay Identified by behavior and particle size, clay consists of material passing the 0.075 mm (#200) sieve AND exhibits plasticity or cohesion (ability of particles to adhere to each other, like putty) within a wide range of moisture contents. Moist clay can be rolled into a thin thread (3 mm) that will not crumble. Also, clay will exhibit strength increase with decreasing moisture content, retaining considerable strength when dry.

Clay is often encountered in combination with other soil constituents such as silt and sand. If a soil exhibits plasticity, it contains clay. The amount of clay can be related to the degree of plasticity; the higher the clay content, the greater the plasticity.

Note: When applied to laboratory gradation tests, silt size is defined as that portion of the soil finer than the 0.075 mm sieve and coarser than the 0.002 mm sieve. Clay size is that portion of soil finer than 0.002 mm. For field classification, the distinction will be strictly based upon cohesive characteristics.

Organic Soils:

Peat Highly organic soil, peat consists primarily of vegetable tissue in various stages of decomposition, accumulated under excessive moisture conditions, with texture ranging from fibrous to amorphous. Peat is usually black or dark brown in color, and has a distinct organic odor. Peat may have minor amounts of sand, silt, and clay in various proportions.

Fibrous Peat - Slightly or un-decomposed organic material having identifiable plant forms. Peat is relatively very light-weight and usually has spongy, compressible consistency.

Amorphous Peat (Muck) - Organic material which has undergone substantial decomposition such that recognition of plant forms is impossible. Its consistency ranges from runny paste to compact rubbery solid.

Marl Marl consists of fresh water sedimentary deposits of calcium carbonate, often with varying percentages of calcareous fine sand, silt, clay and shell fragments. These deposits are unconsolidated, so marl is usually lightweight. Marl is white or light-gray in color with consistency ranging from soft paste to spongy. It may also contain granular spheres, organic material, or inorganic soils. Note that marl will react (fizz) with weak hydrochloric acid due to the carbonate content.

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Secondary Soil Constituents

Secondary soil constituents represent one or more soil types other than the primary constituent which appear in the soil in significant percentages sufficient to readily affect the appearance or engineering behavior of the soil. To correlate the field classification with laboratory classification, this definition corresponds to amounts of secondary soil constituents > 12% for fine-grained and >30% for coarse-grained secondary soil constituents. The secondary soil constituents will be added to the field classification as an adjective preceding the primary constituent. Two or more secondary soil constituents should be listed in ascending order of importance. Examples: **Silty** Fine Sand; **Peaty** Marl; **Gravelly**, **Silty** Medium Sand; **Silty**, **Sandy** Clay.

Tertiary Soil Constituents

Tertiary soil constituents represent one or more soil types which are present in a soil in quantities sufficient to readily identify, but NOT in sufficient quantities to significantly affect the engineering behavior of the soil. The tertiary constituent will be added to the field classification with the phrase “with ___” at the end, following the primary constituent and all other descriptors. This definition corresponds to approximately 5-12% for fine-grained and 15-29% for coarse-grained tertiary soil constituents. Example: Silty Fine to Coarse Sand with **Gravel and Peat**.

Soil types which appear in the sample in percentages below tertiary levels need not be included in the field classification. However, the slight appearance of a soil type may be characteristic of a transition in soil constituents (more significant deposits nearby), or may be useful in identifying the soil during construction. These slight amounts can be included for descriptive purposes at the end of the field classification as “Trace of ___.”

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Additional Soil Descriptors

Additional descriptors should be added as needed to adequately describe the soil for the purpose required. These descriptors should *typically* be added to the field classification before the primary and secondary constituents, in ascending order of significance (Exceptions noted below). Definitions for several descriptive terms can be found in the Glossary of Terms below. Other terms may be used as appropriate for descriptive purposes, but not for soil constituents.

Color	Brown, Gray, Yellow, Red, Black, Light-, Dark-, Pale-, etc.
Moisture Content	Dry, Moist, Saturated. Judge by appearance of sample before manipulating.
Structure	Fissured, Friable, Blocky, Varved, Laminated, Lenses, Layers, etc.

Examples: **Gray-Brown Laminated** Silty Clay; **Light-Brown Saturated** Fine & Medium Sand.

Exceptions: Certain descriptive terms such as "Fill", may be more appropriate after the primary constituent or at the end of the field classification. Also, the description of distinct soils (inclusions) within a larger stratum should be added after the complete field classification of the predominant soil.

Examples of exceptions: Firm Brown Sandy Clay **Fill**, with Coarse Angular Gravel and Asphalt;
Gray Silty Clay with Saturated Marl, **Lenses of Saturated Fine Sand.**

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Soil Strength Assessment

Soil strength refers to the degree of load-carrying capacity and resistance to deformation which a particular soil may develop. For cohesionless granular soils (sand, gravel, and silt) the relative in-place density is a measure of strength. The in-place consistency for cohesionless soils can be estimated by the Standard Penetration Test (SPT - Blow counts) and by resistance to drilling equipment or “pigtail” augers as described below. For cohesive soils, “consistency” is a measure of cohesion, or shear strength. The shear strength of clay soils can be estimated in the field using the manual methods described below, the

SPT, or resistance to drilling equipment. Note that for clay soils, loss of moisture will result in increased strength; therefore, consistency of clay soils should be estimated at the natural moisture content.

The soil consistency, when appropriate and available, should be added to the field classification at the very beginning, using the terminology described below. Examples: **Loose** Brown Rounded Fine Gravel; **Plastic** Gray Moist Sandy Clay.

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TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
Consultant Coordination

Cohesionless Soil

Classification	Standard Penetration, N	Relative Density, %	Resistance to Advancement of a 1.2 m Long, 38 mm Diameter Spiral (Pigtail) Auger
Very Loose	< 4	0 - 15	The auger can be forced several inches into the soil, without turning, under the bodyweight of the technician.
Loose	4 - 10	15 - 35	The auger can be turned into the soil for its full length without difficulty. It can be chugged up and down after penetrating about 1/3 m, so that it can be pushed down 25 mm into the soil.
Moderately Compact	10 - 30	35 - 65	The auger cannot be advanced beyond $\pm 3/4$ m without great difficulty. Considerable effort by chugging required to advance further.
Compact	30 - 50	65 - 85	The auger turns until tight at $\pm 1/3$ m; cannot be advanced further.
Very Compact	> 50	85 - 100	The auger can be turned into the soil only to about the length of its spiral section.

Cohesive Soil

Classification	Manual Index for Consistency	Cohesion (psf)	Cohesion (kPa)	Standard Penetration, N
Very Soft	Extrudes between fingers when squeezed	0 - 250	0 - 12	< 2
Soft	Molded by light to moderate finger pressure	250 - 500	12 - 24	2 - 4
Plastic	Molded by moderate to firm finger pressure	500 - 1000	24 - 48	4 - 8
Firm	Readily indented by thumb, difficult to penetrate	1000 - 2000	48 - 96	8 - 15
Stiff	Readily indented by thumbnail	2000 - 4000	96 - 192	15 - 30
Hard	Indented with difficulty by thumbnail	4000 - 8000	192 - 384	> 30

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TASK TITLE: Perform Roadway Geotechnical Investigation

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Glossary of Terms

Blocky	Cohesive soil which can be broken down into small angular lumps which resist further breakdown.
Boulder	A rock fragment, usually rounded by weathering or abrasion, with average dimension of 300 mm (12") or more.
Calcareous	Soil containing calcium carbonate, either from limestone deposits or shells. The carbonate will react (fizz) with weak hydrochloric acid.
Cemented	The adherence or bonding of coarse soil grains due to presence of a cementitious material. May be <i>weak</i> (readily fragmented), <i>firm</i> (appreciable strength), or <i>indurated</i> (very hard, water will not soften, rock-like)
Cobble	A rock fragment, usually rounded or partially angular, with an average dimension 75 to 300 mm (3" - 12").
Dry	No appreciable moisture is apparent in the soil.
Fat Clay	Fine-Grained soil with very high plasticity and dry strength. Usually has a sticky or greasy texture due to very high affinity for water. Remains plastic at very high water contents (Liquid Limit >50).
Fill	Man-made deposits of natural soils and/or waste materials. Document the components carefully since presence and depth of fill are important engineering considerations.
Fissured	The soil breaks along definite planes of weakness with little resistance to fracturing.
Frequent	Occurring more than one per 300 mm (1') thickness.
Friable	A soil which is easily crumbled or pulverized into smaller, non-uniform fragments or clumps.

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TASK TITLE: Perform Roadway Geotechnical Investigation

REPORTING MANAGEMENT UNIT: Region - Construction and Technology/Design -
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Laminated	Alternating horizontal strata of different material or color, usually in increments of 6 mm (1/4") or less.
Layer	Horizontal inclusion or stratum of sedimentary soil greater than 100 mm (4") thick.
Lens	Inclusion of a small pocket of a sedimentary soil between 10 and 100 mm thick, often with tapered edges.
Moist	Describes the condition of a soil with moderate to water content relative to the saturated condition (near optimum). Moisture is readily discernable but not in sufficient content to adversely affect the soil behavior.
Mottled	Irregularly marked soil, usually clay, with spots of different colors.
Muck	See <i>Amorphous Peat</i> , under Primary Soil Constituents heading.
Occasional	Occurring once or less per 300 mm thickness.
Organic	Indicates the presence of material which originated from living organisms, usually vegetative, undergoing some stage of decay. May range from microscopic size matter to fibers, stems, leaves, wood pieces, shells, etc. Usually dark brown or black in color, and accompanied by a distinct odor.
Parting	A very thin soil inclusion of up to 10 mm thickness.
Saturated	All of the soil voids are filled with water (zero air voids). Practically speaking, the condition where the moisture content is sufficient to substantially affect the soil behavior.
Trace	Indicates appearance of a slight amount of a soil type, which may included in the classification for descriptive or identification purposes only. The Trace soil would have no effect on the soil behavior. Other modifiers such as "Slight" or "Heavy" should not be used with "Trace."
Varved	The paired arrangement of laminations in glacial sediments that reflect seasonal changes during deposition; Fine sand and silt are deposited in the glacial lake during summer, and finer particles are usually deposited in thinner laminations in winter.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3520

DATE: Feb. 2004

TASK TITLE: Hydraulic Analyses for Bridges and Culverts, and Scour Analysis

REPORTING MANAGEMENT UNIT: Design - Hydraulics

TASK START: Receipt of request for analysis.

TASK FINISH: Distribution of recommendation to design unit.

TASK DESCRIPTION:

This task determines the size of the waterway opening for a bridge or culvert structure(s). Appropriate hydraulic analyses are performed based on the MDOT **Drainage Manual**.

For structures with drainage areas greater than two square miles, the hydraulic analysis is coordinated with the Michigan Department of Environmental Quality (DEQ) to obtain preliminary approval of the proposed design. Hydraulic analyses for structures with drainage areas less than two square miles are done under Task 3522, either by the road design unit or per request to the Design Engineer – Hydraulics. For bridge structures, a scour analysis is done to evaluate the adequacy of the structure's foundation.

Consultants working on a bridge are directed to the MDOT **Bridge Design Manual**, Appendix 5.03.03 A.1.e, “Scope of Work Statement for Hydrologic, Hydraulic, and Scour Analysis”.

Upon receipt of a request for a hydraulic and/or scour analysis for a waterway crossing from a bridge or road design unit, the Hydraulics unit requests/obtains the following Tasks and information:

- ! Design discharge (flow) and floodplain data from the DEQ
- ! Hydraulic survey (Task 3350)
- ! If applicable, soils information (Task 3530).

After receipt of the discharge information and hydraulic survey, the hydraulic analyses of the existing and proposed conditions are performed and a Hydraulic Report prepared. The Report is forwarded to DEQ for concurrence. Following DEQ's concurrence on the hydraulics analysis the scour analysis (if necessary) is completed. Soil information is used in the scour analysis and the design of a scour countermeasure. The findings of the hydraulic report, a copy of DEQ's concurrence, and the scour analysis findings are forwarded to the design unit/project manager and Region Environmental Permit Coordinator for inclusion in the hydraulic summary table in the plans and preparation of a DEQ permit application (tasks 3720 and 3730 respectively). The scour data is reviewed by the bridge design unit, in coordination with the C&T Geotechnical Services Unit (task 3530), for structural stability and selection of appropriate scour countermeasure design. The Design Engineer - Hydraulics may provide riprap design as a scour countermeasure.

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TASK NUMBER: 3520

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DATE: Feb. 2004

TASK TITLE: Hydraulic Analyses for Bridges and Culverts, and Scour Analysis

REPORTING MANAGEMENT UNIT: Design - Hydraulics

WORK STEPS:

1. Request data for investigation and analysis including hydraulic survey (Task 3350), soil information (Task 3530), and design discharge (flow) information from DEQ. Discharge requests are made to the DEQ Hydraulic Studies Unit and shall be coordinated through the Design Engineer – Hydraulics. The request, at a minimum, should include the 2 % chance (50-year), 1% chance (100-year) and the 0.2 % chance (500-year) flood flows.
2. Input actual start date into appropriate data system.
3. Conduct and document a site investigation of the stream and surrounding floodplain area. Take photographs upstream and downstream of the waterway crossing, including the over bank areas. Include any existing structures that may be modeled in the hydraulic analysis.
4. Conduct hydraulic and scour analyses. Coordinate sizing of waterway opening with design squad. Complete a hydraulic report.
5. **Consultant:** Coordinates steps #1 through #4 with the Design Engineer – Hydraulics. Submits 2 copies of the hydraulic report to the Design Engineer - Hydraulics for review and approval. If changes are needed, the report will be returned to the consultant for corrections until the report is deemed acceptable by MDOT.
6. Design Engineer – Hydraulics approves and submits hydraulic report for DEQ preliminary review and approval.
7. Upon DEQ approval, perform a scour analysis if required per MDOT Drainage Manual. Request review of scour analysis by both the Bridge Design Unit and Geotechnical Services Unit (Task 3530) for structure stability and need for scour countermeasure.
8. Send summary memo to the appropriate design squad with copy to the Region Environmental Permit Coordinator for Tasks 3720. The memo shall contain a copy of the DEQ approval memo, a structure hydraulic summary data table, and scour info.
9. Coordinate with bridge/road design on selection of scour countermeasure and stream stability designs. If needed, provide riprap design, description of riprap limits or provide sketches for riprap placement.
10. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3522

Sheet 1 of 4
DATE: Feb, 2004

TASK TITLE: Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP's)

REPORTING MANAGEMENT UNIT: Design - Hydraulics

TASK START: Receipt of request for analysis or assistance.

TASK FINISH: Distribution of recommendation to design unit.

TASK DESCRIPTION:

This task determines the existing and proposed drainage system needs for a job. Appropriate hydraulic analyses are based on the MDOT Drainage Manual.

Hydraulic analysis for structures with drainage areas greater than two square miles are done under Task 3520. Contact the Design Engineer – Hydraulics for assistance with this task.

Stormwater conveyance system such as a storm sewer, drain/ditch, and bridge deck drainage are analyzed and designed with this task. Drainage outlets must be identified and analyzed to determine if adequate capacity is available for the conveyance system discharge. If county drainage systems are to be used as the conveyance system outlet, the system needs the review of the MDOT Drainage Coordinator or Drainage Specialist.

Structural BMP's are also determined with this task. They are used to ensure the water quality requirements of MDOT's National Pollution Discharge Elimination System (NPDES) municipal stormwater permit will be met. The Drainage Specialist coordinates the selection of BMP's with the MDOT Aquatic Resource Manager. BMP's may include retention/detention/infiltration basins and are evaluated by the Drainage Specialist. The Drainage Specialist will review designs of structural BMP's upon request of the MDOT Project Manager.

Design flows are computed and routed through the stormwater conveyance system. Adequate energy dissipation structures and a Special Drainage Structure Plan (Task 3672) may be needed. Storm sewer and other stormwater conveyance system designs are done by the road design units, and reviewed upon request by the Design Engineer - Hydraulics. However, the Project Manager or road design unit may request design assistance from the Design Engineer – Hydraulics.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3522

Sheet 2 of 4
DATE: Feb, 2004

TASK TITLE: Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP's)

REPORTING MANAGEMENT UNIT: Design - Hydraulics

TASK DESCRIPTION: (Continued)

The following information should be obtained to complete a drainage study and hydraulic analysis:

- Hydrologic information for the computation of design flows for each system
- If required Hydraulic Survey (Task 3350) from the Design Statewide Survey Section,
- If applicable, Structure Foundation Investigation (Task 3530) from the Construction and Technology Geotechnical Services Unit.
- Determine adequate capacity of receiving waterways, and designate county or intercounty drains
- Local regulations regarding allowable discharges.
- Drainage/cost share agreements between MDOT and the local agency.

Proposed structure types and sizes, profile grades, and any special provisions are included in the drainage study. Information in the drainage study will be incorporated into the design plans by the Project Manager/design unit.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3522

Sheet 3 of 4
DATE: Feb, 2004

TASK TITLE: Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP's)

REPORTING MANAGEMENT UNIT: Design - Hydraulics

WORK STEPS:

1. Gather hydrologic data for design flows and discharges that include potential future development within the drainage area per Federal Aid Policy Guides for each stormwater conveyance system. Determine existing outlet capacity
2. Input actual start date into appropriate data system.
3. Request review by MDOT Aquatic Resource Manager on any job specific structural BMP's to meet stormwater quality requirements. Request should be made through the Drainage Specialist.
4. Based on hydraulic analyses, determine the adequacy of existing system using projected design flows and determine needed stormwater conveyance system(s), system improvements, and structural BMP's.
5. If any part of the proposed drainage requires an environmental permit, provide preliminary permit information to the Project Manager and Region Environmental Permit Coordinator 6 months prior to the plan completion date.
6. If requested by the Project Manager, the Environmental Section of Project Planning will coordinate a meeting with all pertinent parties to review stormwater recommendations for structural BMP's.
7. Submit drainage study with recommend structure types and sizes, including any special provisions, to the Project Manager. Coordinate Special Drainage Structures Plan (Task 3672) design as necessary.
8. **Consultants:** Coordinate steps 1 through 7 with the Project Manager. Prior to the Plan review, submit drainage study to Project Manager for review and approval. Submit design calculations, drainage maps and plans as part of the drainage study. If changes are needed, the drainage study will be returned to the consultant for corrections until the report is deemed acceptable by MDOT.
9. Project Manager may request design review assistance from the Design Engineer – Hydraulics and/or the Drainage Specialist.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3522

Sheet 4 of 4
DATE: Feb, 2004

TASK TITLE: Conduct Drainage Study, Storm Sewer Design, and Structural Best Management Practices (BMP's)

REPORTING MANAGEMENT UNIT: Design - Hydraulics

WORK STEPS: (Continued)

10. Obtain or amend necessary agreements with the local agencies. Please see P/PMS Task 3630 – Prepare and Process Participation/Special Operational Agreements. Requests for agreements shall be made to the Design Engineer – Governmental and Railroad Coordination Unit and must be reviewed by the Drainage Coordinator/Drainage Specialist.
11. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3
DATE: Sep., 2004

TASK NUMBER: 3530

TASK TITLE: Conduct Structure Foundation Investigation

REPORTING MANAGEMENT UNIT: Construction and Technology - Geotechnical Unit
or Project Manager

TASK START: The receipt of a request for a foundation investigation, or written into consultant contract.

TASK FINISH: The distribution of the final Geotechnical Report to Project Manager, or receipt of final Geotechnical Report by Project Manger from consultant.

TASK DESCRIPTION:

A foundation investigation is necessary for all new structures, and those existing structures which are to be widened or where the proposed substructure loads will increase. The investigation typically begins with the receipt of a request for a foundation investigation, which includes the designer's vision of the structure type, size and location. In the case consultants, the need is determined in the scoping process and written into the consultant contract. The foundation investigation shall be in accordance with MDOT control document "Geotechnical Investigation and Analysis Requirements for Structures" as found in the MDOT BBS.

Based on the information received, any existing soil borings are gathered and a determination is made as to the adequacy of the existing information and the need for additional soils information. Soil borings are normally required and access to private property must be obtained. Survey control points are required to identify the location of the borings. A boring pattern is established and utility clearances are obtained.

For bridge structures over water, the potential for scour must be evaluated by the Hydraulics Unit. Soil stratigraphy is required for scour analysis to evaluate the adequacy of the structure's foundation, and additional soil borings may be located in the river channel to provide this information.

Once the pattern has been established, soil borings are performed with in-situ testing and laboratory analysis to determine the engineering behavior of the soils within the influence of the proposed substructure. The appropriate foundation treatment is selected, and a Geotechnical Report is sent to the Project Manager.

In the case of a consultant contract, the consultant often subcontracts an engineering firm to perform the above testing and distributes the results back to the Project Manager. This procedure covers a geotechnical investigation that must meet the requirements presented in the Michigan Design Manual, Bridge Design, Appendix 5.01.07 (6). This investigation is necessary for all new structures and those existing structures that are to be widened or subjected to increased loads. The product of this task is a Geotechnical Report.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3530

Sheet 2 of 3
DATE: Dec. 2003

TASK TITLE: Conduct Structure Foundation Investigation

REPORTING MANAGEMENT UNIT: Construction and Technology - Geotechnical Unit
or Project Manager

WORK STEPS:

1. Receive a request for a foundation investigation, or need is written into consultant contract. The foundation investigation shall be in accordance with MDOT control document "Geotechnical Investigation and Analysis Requirements for Structures" as found in the MDOT BBS.
2. Input actual start date into appropriate data system.
3. Research, review and evaluate existing information such as existing borings, existing recommendations, etc., if available.
4. Obtain property access and request utility clearance.
5. Consultants must obtain all necessary permits, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section, required to perform this survey on any public and/or private property.

For protection of underground utilities and according to Public Act 53, 1974, the Consultant shall dial Miss Dig 1-800-482-7171 a minimum of three full working days, excluding Saturdays, Sunday, and holidays, before beginning each excavation in areas where public utilities have not been previously located. Utility members will thus be routinely notified. This does not relieve the Consultant of the responsibility of notifying utility owners who may not be a part of the Miss Dig alert system.

The Department's freeway lighting system, the IVHS, and other miscellaneous electrical systems are not a part of Miss Dig. Contractors working in the Metro District shall call:

Freeway Lighting

Freeway Lighting Contract Manager (810) 569-3993

IVHS and Freeway Operations

MITSC (Michigan Intelligent

Transportation Systems Center)(313) 256-9800

Lighting and Traffic

Public Lighting Department (313) 224-0500

Contractors working outside the Metro District should contact the maintenance representative at the MDOT District Office to have lighting systems staked.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3530

Sheet 3 of 3
DATE: Dec. 2003

TASK TITLE: Conduct Structure Foundation Investigation

REPORTING MANAGEMENT UNIT: Construction and Technology - Geotechnical Unit
or Project Manager

WORK STEPS: (Continued)

6. Take soil borings, perform in-situ testing and collect soil samples
7. Perform laboratory analyses.
8. Prepare the Geotechnical Report submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating conformance to MDOT's control document "Geotechnical Investigation and Analysis Requirements for Structures" as found in the MDOT BBS dated June, 1990, and updated in March 2004.
 - b. List of outstanding questions and/or considerations.
9. Input actual finish date into appropriate data system.
10. Prepare and submit Geotechnical Report to the Project Manager.
11. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
12. Make necessary changes and resubmit the revised materials. Keep copies of the MDOT Project Manager's comments and the revised materials for the job record.
13. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of submitting the Geotechnical Report.

SUPPLEMENTAL INFORMATION

For more information, refer to the following:

Items to be purchased:

Michigan Design Manual, Bridge Design

Items available through the MDOT Bulletin Board System:

MDOT's control document "Geotechnical Investigation and Analysis Requirements for Structures", dated June, 1990, and updated in March 2004.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3535

DATE: July 7, 2003

TASK TITLE: Conduct Structure Review for Architectural & Aesthetic Improvements

REPORTING MANAGEMENT UNIT: Design – Roadside Development

TASK START: Receipt of request for review.

TASK FINISH: Distribution of recommendation to design unit.

TASK DESCRIPTION:

This task determines the type of aesthetic treatment and architectural details for bridges, retaining walls, noise barriers and other structures.

Upon receipt of a request for an aesthetic/architectural review from a bridge or road design unit, TSC or Region, the unit gathers the following information:

- Structure type and location
- Region Corridor Aesthetics Plans
- Aesthetic Project Opportunities Inventory
- Scenic Corridor Management Plans
- Architectural treatments on existing structures within the corridor
- Local/community interests or commitments

The aesthetic review is performed. Proposed architectural details and any special provisions are included. Information is forwarded to the Project Manager for incorporation into the design plans.

WORK STEPS:

1. Gather structure design information.
2. Input actual start date into appropriate data system.
3. Conduct aesthetic enhancements study as necessary.
4. Provide technical input in the EPE phase for Improve/Expand jobs at public meetings and/or workshops, etc.
5. Determine type of architectural/aesthetic treatment; coordinate with TSC/Region/Local agency
6. Develop details and special provisions as necessary.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3535

Sheet 2 of 2
DATE: July 7, 2003

TASK TITLE: Conduct Structure Review for Architectural & Aesthetic Improvements

REPORTING MANAGEMENT UNIT: Design – Roadside Development

WORK STEPS: (Continued)

7. Recommend architectural details, including any special provisions, to the Project Manager.
8. Input actual finish date into appropriate data system.
9. Provide construction assistance, as needed.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3540

DATE: Dec. 2003

TASK TITLE: Develop the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

TASK START: Receipt of Base Plans

TASK FINISH: Distribution of maintaining traffic plan.

TASK DESCRIPTION:

The Region/TSC Traffic and Safety Engineer, along with the appropriate MDOT work centers* and/or a consultant, develops a plan for the routing of traffic during job construction. The plan and level of detail will vary from job to job. The plan will detail the maintaining traffic concepts previously submitted to the Project Manager for inclusion into the base plans. The objective of the traffic control plan is to maintain a safe and effective system by minimizing the obstruction of traffic and maximizing motorist and worker safety.

* Representatives should include the following: Project Manager, Resident Engineer, and Region/TSC Project Development Engineer. Other disciplines may be invited as needed.

WORK STEPS:

1. Receive and evaluate base plans review comments.
2. Input actual start date into appropriate data system.
3. Select appropriate traffic control method(s).
4. Contact the local governmental agency to determine if local issues will have a bearing on the construction of the job (ordinances, tree cutting, work hours, parade routes, local festivals, special events, public relations, etc.).
5. If Scope of Design Services includes traffic signal modifications, then follow the procedures and requirements (including Consultant prequalification) detailed in P/PMS TASK 3551 - DEVELOP/REVIEW PRELIMINARY TRAFFIC SIGNALS PLAN.
6. Prepare draft Construction Zone Traffic Control Plan package, including:
 - a. Special Provision for Maintaining Traffic
 - b. Maintaining traffic quantities
 - c. Maintaining traffic diagrams and typical plans
 - d. Signing details, temporary pavement markings, traffic signal modifications, etc.
 - e. Staging typical cross-sections and plans as required

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3540

Sheet 2 of 3
DATE: Dec. 2003

TASK TITLE: Develop the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

WORK STEPS: (Continued)

7. Submit preliminary Construction Zone Traffic Control Plan package to MDOT Project Manager. Include a cover letter stating readiness for the first maintaining traffic coordination meeting. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
8. Receive confirmation of the date, time and location of the meeting.
9. Attend the first maintaining traffic coordination meeting. Record the meeting minutes.
10. Send a copy of the meeting minutes to all attendees.
11. Revise the traffic control items to reflect the recommendations made at the first maintaining traffic coordination meeting.
12. Submit the revised Construction Zone Traffic Control Plan package with the Preliminary Plan submittal package for discussion at the Preliminary Plan Review Meeting.
13. Send recommendations to Project Manager for discussion at THE Plan Review Meeting. THE Plan Review Meeting will not be scheduled unless the recommendations are received.
14. Input actual finish date into appropriate data system.
15. Attend THE Plan Review Meeting.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3540

Sheet 3 of 3
DATE: Dec. 2003

TASK TITLE: Develop the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

SUPPLEMENTAL INFORMATION

For more information regarding preparation of maintaining traffic plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. Standard Highway Signs Manual
5. A Policy on Geometric Design of Highways and Streets 1994 (AASHTO)
6. Average Unit Prices for Traffic Control Items
7. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 8)

Items available through the MDOT Bulletin Board System:

1. Maintaining Traffic Typical Diagrams
2. Typical Maintaining Traffic Special Provision
3. Blank forms for developing special sign fabrication details

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3551

DATE: Jan. 2004

TASK TITLE: Develop Traffic Signal Operations Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Operations/Analysis Subunit

TASK START: Receipt of request for review of Traffic Signal Operations Concept from Region/TSC Traffic and Safety.

TASK FINISH: Distribution of the Traffic Signal Operations Recommendations to requestor.

TASK DESCRIPTION:

This task entails the preparation of preliminary traffic signal plans for the new installation or modernization of existing electronic traffic signal control devices. New traffic signal work typically includes the installation of: signal support poles and/or pedestals, span wire, traffic and pedestrian signals, and traffic signal controller. Modernization traffic signal work typically includes the replacement, as needed, of: signal support poles and/or pedestals, span wire (if appropriate), traffic and pedestrian signals, and traffic signal controller. Design works for other electronic traffic control devices are included in this task too. Examples of other devices include flashers on signs and electronic speed limit signs.

Consultants:

The location(s) and type of work for each traffic signal is stated in the Scope of Design Services.

NOTE: If the traffic signal falls under the jurisdiction of a local agency, the design and preparation details will be defined in the Scope of Design Services.

WORK STEPS:

1. Receive request for review of Traffic Signal Operations Concept from Region/TSC Traffic and Safety.
2. *Consultant:* Receive comments and/or correspondence from Base Plan Review from the MDOT Project Manager.
3. Input actual start date into appropriate data system.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 5

TASK NUMBER: 3551

DATE: Jan. 2004

TASK TITLE: Develop Traffic Signal Operations Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Operations/Analysis Subunit

WORK STEPS: (Continued)

4. *Consultant:* Request a meeting with the Traffic Signals Unit (Area Layout Technician) and Automated Roadway Data Subunit of the MDOT Traffic and Safety Division through the MDOT Project Manager to become familiar with MDOT's signal design requirements. The purpose of this meeting is to review this scope of work, location of data sources and contact persons, and relevant MDOT operations. The Consultant shall review and clarify job issues, such as data needs and availability and signal work for construction staging. Discussion will clarify critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, and utility conflict resolution. Items the Consultant will receive at this meeting:
 - a. Appropriate Traffic and Safety Notes
 - b. Availability of photolog
 - c. Typical MDOT signal plan set and proposal components
 - d. Available design plans and/or geometric layout for each location
 - e. Available signal phasing or operational information for each location
 - f. Traffic and Safety Division Signal Plan (CADD) Requirements
5. *Consultant:* Request a meeting with the District Materials/Testing Engineer or Soils Engineer through the MDOT Project Manager to discuss the geotechnical requirements for this job.
 - a. If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is a Consultant task, then obtain the required soil borings, complete the related analysis, identify any suspected contamination of the boring site, and prepare strain pole foundations design if required. The following information shall be provided for proper analysis of strain pole foundations:
 - i. Accurate pole location information.
 - ii. Soil classification.
 - iii. Standard penetration values every 750 mm for 1.5 X foundation depth.
 - iv. Ground water table elevation.
 - v. Unconfined compressive strength. If it is found to be less than 119.7 kPa, then the Consultant shall run an unconfined compressive strength lab test(s).

The Consultant shall submit the geotechnical investigation to the District Materials/Testing Engineer or Soils Engineer for review, approval, and recommendations.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3551

Sheet 3 of 5
DATE: Jan. 2004

TASK TITLE: Develop Traffic Signal Operations Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Operations/Analysis Subunit

WORK STEPS: (Continued)

- b. If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is **NOT** a Consultant task, then send a request for the geotechnical investigation to the MDOT Project Manager.
6. Make all necessary field investigations and studies of all existing overhead and underground utilities. Show underground utilities on plans with each utility specifically identified.
7. Collect and/or evaluate traffic signal data, including:
 - a. traffic volume information,
 - b. signal timing, and
 - c. signal layout drawings.
8. If available, review existing plans and perform operational analysis.
9. Design and develop preliminary traffic signal plans, engineering documents and related work necessary for new installation or modernization of electronic traffic signal control devices, including Construction Staging as appropriate.
10. Check right-of-way restrictions, overhead utilities and/or underground utilities to determine if the placement of a supporting structure creates a conflict. If conflicts are found, contact the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3551

Sheet 4 of 5
DATE: Jan. 2004

TASK TITLE: Develop Traffic Signal Operations Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Operations/Analysis Subunit

WORK STEPS: (Continued)

11. *Consultant:* Submit four sets preliminary traffic signal plans, special provisions and estimates for review and approval by the MDOT Project Manager prior to preparing the Preliminary Plan submittal package. Preliminary plans include, but are not limited to:
 - a. construction details
 - b. condition diagram to nearest half meter (Scale: 1:400)
 - c. possible underground and/or overhead utility conflicts
 - d. all pertinent operational features; i.e., lane lines & usage, street width, etc.
 - e. signal phasing diagram(s) if required
 - f. traffic signal removal and installation plan sheets
 - g. traffic signal removal and proposed wiring diagrams
 - h. list of Materials and Quantities.
 - i. span calculation diagrams
 - j. appropriate note blocks for contact persons, etc.
 - k. soil boring information including depths, soil description, water level, and foundation depths
 - l. draft special provisions and specifications
12. *Consultant:* Receive any items returned by the MDOT Project Manager as incomplete or deficient.
13. *Consultant:* Make necessary changes and resubmit the entire package including a written response to all comments. Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
14. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the preliminary traffic signal submittal.
15. *Consultant:* Check preliminary traffic signal items in accordance with Consultant's QA/QC plan.
16. *Consultant:* Incorporate the preliminary traffic signal plans, special provisions and estimates into the Preliminary Plan submittal package.
17. Input actual finish date into appropriate data system.
18. Distribute traffic signal operational recommendations to the requestor.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3551

Sheet 5 of 5
DATE: Jan. 2004

TASK TITLE: Develop Traffic Signal Operations Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Operations/Analysis Subunit

SUPPLEMENTAL INFORMATION

For more information regarding preparation of signal plans, estimates and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. National Manual of Uniform Traffic Control Devices
3. 1996 Standard Specifications for Construction
4. Michigan Vehicle Code
5. Local and National Electrical Codes

Items available through the MDOT Bulletin Board System:

1. MDOT - Pay Item Code Book
2. MDOT Typical Signal Construction Detail Sheets
3. MDOT Typical Signal Information Note Sheet
4. MDOT Typical Signal Legend Sheet
5. Cell library
6. Blank standard plan sheet with borders and title block
7. MDOT Special Provisions
8. MDOT Supplemental Specifications

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3552

DATE: Jan. 2004

TASK TITLE: Develop Preliminary Permanent Pavement Marking Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultants

TASK START: Receipt of base plans/submittal of base plans to consultant.

TASK FINISH: Distribution of the Preliminary Pavement Marking Plan.

TASK DESCRIPTION:

This task includes the work effort required to develop preliminary permanent pavement marking quantities and plans for pavement markings on MDOT design jobs. Most jobs will typically only require pay items and quantities to be included on the note sheet. Detailed drawings will be required for non-typical areas, such as interchanges, complex intersections and individual locations where the pavement marking layout needs to be detailed.

WORK STEPS:

1. *Consultant:* Receive comments and/or correspondence from Base Plan Review via the MDOT Project Manager.
2. Input actual start date into appropriate data system.
3. Collect and evaluate data, including:
 - a. performing field review,
 - b. design criteria, including choice of materials,
 - c. accident data, and
 - d. base plans.
4. *Consultant:* Contact the MDOT Project Manager and request a meeting with the Region Traffic & Safety Engineer. At this meeting the Consultant will be briefed as to the pavement marking requirements for this job.
5. *Consultant:* Incorporate Base Plan Review comments and develop the preliminary pavement marking plans and estimates.
6. Develop preliminary pavement marking plan and quantities, including special provisions as appropriate.
7. *Consultant:* Incorporate the preliminary pavement marking plans and estimates into the Prepare Preliminary Plan submittal package.
8. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3552

Sheet 2 of 2
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Permanent Pavement Marking Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultants

WORK STEPS: (Continued)

9. Submit preliminary pavement marking plan to Project Managers for inclusion in the Preliminary Plans for distribution and THE Plan Review.

SUPPLEMENTAL INFORMATION

For more information regarding preparation of pavement marking traffic plans refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)

Items available through the MDOT Bulletin Board System:

1. Pavement Marking Typical Plans
2. MDOT Pavement Marking Policy

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3553

DATE: Jan. 2004

TASK TITLE: Develop Preliminary Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultant

TASK START: Receipt of base plans/submittal of base plans to consultant.

TASK FINISH: Distribution of the Preliminary Non-Freeway Signing Plan to Project Manager.

TASK DESCRIPTION:

This task entails developing quantities, plans and special provisions for non-freeway signing on MDOT design jobs.

The Responsible Reporting Management Unit shall review the existing non-freeway signs for replacement, upgrading, or relocation. The existing sign legends shall also be reviewed. The Responsible Reporting Management Unit shall also make recommendations for additional signs. The Responsible Reporting Management Unit shall also review the adequacy of the existing support system to meet current MDOT sign support standards and clear zone criteria.

In general, high-intensity signs are expected to last 10 to 15 years. Any high-intensity sign two years or older should be considered for replacement. Signs which do not conform to the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), or MDOT's Standard Highway Signs Manual, or have deteriorated to an extent that they no longer reflect light at night, or are damaged, or are incorrectly installed or located, or are structurally deficient, will be replaced.

MDOT will evaluate any large sign support structures such as trusses, cantilevers and bridge-mounted sign structures. The evaluations and treatment recommendations will be provided to the Consultant as necessary. Determination of the replacement or retention of a structure will be made by MDOT. MDOT will specify repairs required to retained overhead and bridge-mounted structures.

WORK STEPS:

1. *Consultant:* Receive comments and/or correspondence from Base Plan Review via the MDOT Project Manager.
2. Input actual start date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3553

Sheet 2 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultant

WORK STEPS: (Continued)

3. Collect and evaluate data, including:
 - non-freeway sign inventory data,
 - performing field review,
 - design criteria,
 - base plans.
4. *Consultant:* Contact the MDOT Project Manager and request a meeting with the Region Traffic & Safety Engineer. At this meeting the Consultant will be briefed as to the signing requirements for this job.
5. *Consultant:* Request a meeting with the Traffic Signing and Delimitation (TSAD) Unit and the Automated Roadway Data Subunit of the MDOT Traffic and Safety Division through the MDOT Project Manager to become familiar with MDOT's requirements. Items the Consultant will receive at this meeting:
 - a. Appropriate Traffic and Safety Notes (Signing Package)
 - b. Example MDOT signing plan set and proposal
 - c. TSAD Signing Notes
 - d. MDOT Guidelines for Signing on State Trunkline Highways
 - e. Availability of photolog
 - f. Traffic and Safety CADD Procedures
 - g. Copy (disk) sign sizing program
 - h. Latest sign upgrading job plans if available
 - i. Copy of the sign inventory
6. *Consultant:* Request copies of the Traffic Control Orders (TCO's) from the MDOT Project Manager. Determine if signing for speed limits and parking restrictions are located in accordance with the existing TCO's.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3553

Sheet 3 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultant

WORK STEPS: (Continued)

7. Begin creating the preliminary non-freeway signing plans. Consider the following requirements:
 - a. Use the road CADD files for the basis of the preliminary non-freeway signing plans. Do not include road design or right-of-way details.
 - b. Preliminary non-freeway signing plans will be created as a continuous alignment (line roll).
 - c. The preliminary non-freeway signing plans will show the major features of the existing roadway including cross roads, interchanges, ramps, grade separations, rest areas, weight stations, and overhead and ground-mounted signs.
 - d. The horizontal alignment and laneage of the roadways shall be included.
 - e. Show all existing signs at the approximate location. Include the existing sign legends, stationing, offset and necessary distance references.
 - f. Maintain the ability to move an entire sign drawing to anywhere on the preliminary signing plans. This facilitates proper placement of additional signs and replacement signs as the plans are developed.
 - g. Include special provisions as applicable/appropriate.
8. Conduct a field review to verify the existing sign inventory. Correct the inventory to reflect the actual field conditions. As a minimum, record the following information for all existing signs:
 - a. Size and type
 - b. Offset
 - c. Message
 - d. Location
 - e. Support system
 - f. Type of sign support foundation
9. *Consultant:* Send a request to MDOT to analyze each structure and identify maintenance and replacement needs. As part of the request include the location, structure number and type of structure to be analyzed. Following the design analysis, this information will be given to the Consultant by MDOT. MDOT will determine needs and repairs for structural work.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3553

Sheet 4 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultant

WORK STEPS: (Continued)

10. Develop the preliminary non-freeway signing plans.
 - a. The preliminary non-freeway signing plans shall show the existing signs, proposed signs, all supporting structures, and signs to be removed. Existing signs shall be shown either as removed, retained, or replaced.
 - b. Include fabrication details for unique signs. Sign designs for non-standard signs will be shown on separate detail sheets. Standard signs may be referred to by the standard sign numbering system (for example, R5-6).
 - c. The selection of signs, location, letter size, color, etc. shall be according to the 1994 MMUTCD.
 - d. Incorporate the MDOT structure analysis.
11. *Consultant:* Submit the preliminary non-freeway signing plans, special provisions and estimates for review and approval to the MDOT Project Manager prior to preparing the Preliminary Plan submittal package.
12. *Consultant:* Receive any items returned by the MDOT Project Manager as incomplete or deficient.
13. *Consultant:* Make necessary changes and resubmit the entire package including a written response to all comments. Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
14. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the preliminary non-freeway signing plan submittal.
15. *Consultant:* Check preliminary non-freeway signing items in accordance with Consultant's QA/QC plan.
16. *Consultant:* Incorporate the preliminary non-freeway signing plans, special provisions and estimates into the Preliminary Plan submittal package.
17. Input actual finish date into appropriate data system.
18. Submit preliminary non-freeway signing plan to Project Managers for inclusion in the Preliminary Plans for distribution and THE Plan Review.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3553

Sheet 5 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety or Consultant

SUPPLEMENTAL INFORMATION

For more information regarding preparation of non-freeway signing plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. MDOT Standard Highway Signs Manual
5. Average Unit Prices for Traffic Control Items
6. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)
7. AASHTO Roadside Design Guide
8. MDOT Traffic and Safety Division Sign Support Typical Plans

Items available through the MDOT Bulletin Board System:

1. Signing plan note sheets
2. Cell library
3. Blank standard plan sheet with borders and title block
4. MDOT Supplemental Specification
5. MDOT Special Provisions

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

DATE: Jan. 2004

TASK NUMBER: 3554

TASK TITLE: Develop Preliminary Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation - Reflective Systems Design

TASK START: Receipt of base plans.

TASK FINISH: Distribution of the Preliminary Freeway Signing Plan.

TASK DESCRIPTION:

This task entails developing quantities, plans and special provisions for freeway signing on MDOT design jobs.

The Responsible Reporting Management Unit shall review the existing freeway signs for replacement, upgrading, or relocation. The existing sign legends shall also be reviewed. The Responsible Reporting Management Unit shall make recommendations for additional signs. The Responsible Reporting Management Unit shall also review the adequacy of the existing support system to meet current MDOT sign support standards and clear zone criteria.

In general, high-intensity signs are expected to last 10 to 15 years. Any high-intensity sign two years or older should be considered for replacement. Signs which do not conform to the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), or MDOT's Standard Highway Signs Manual, or have deteriorated to an extent that they no longer reflect light at night, or are damaged, or are incorrectly installed or located, or are structurally deficient, will be replaced.

MDOT will evaluate any large freeway sign support structures such as trusses, cantilevers and bridge-mounted sign structures. The evaluations and treatment recommendations will be provided to the Consultant. Determination of the replacement or retention of a structure will be made by MDOT. MDOT will specify repairs required to retained overhead and bridge-mounted structures.

WORK STEPS:

1. *Consultant:* Receive comments and/or correspondence from Base Plan Review via the MDOT Project Manager.
2. Input actual start date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3554

Sheet 2 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation - Reflective Systems Design

WORK STEPS: (Continued)

3. Collect and evaluate data, including:
 - freeway sign inventory data,
 - performing field review,
 - design criteria,
 - base plans.
4. *Consultant:* If this job involves any non-freeway signing, contact the MDOT Project Manager and request a meeting with the Region Traffic & Safety Engineer. At this meeting the Consultant will be briefed as to the signing requirements for this job.
5. *Consultant:* Request a meeting with the Traffic Signing and Delination (TSAD) Unit and the Automated Roadway Data Subunit of the MDOT Traffic and Safety Division through the MDOT Project Manager to become familiar with MDOT's requirements. Items the Consultant will receive at this meeting:
 - a. Appropriate Traffic and Safety Notes (Signing Package)
 - b. Example MDOT signing plan set and proposal
 - c. TSAD Signing Notes
 - d. MDOT Guidelines for Signing on State Trunkline Highways
 - e. Availability of photolog
 - f. Traffic and Safety CADD Procedures
 - g. Copy (disk) sign sizing program
 - h. Latest sign upgrading job plans if available
 - i. Copy of the sign inventory
6. *Consultant:* Request copies of the Traffic Control Orders (TCO's) from the MDOT Project Manager. Determine if signing for speed limits and parking restrictions are located in accordance with the existing TCO's.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3554

Sheet 3 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation - Reflective Systems Design

WORK STEPS: (Continued)

7. Begin creating the preliminary freeway signing plans. Consider the following requirements:
 - a. Use the road CADD files for the basis of the preliminary freeway signing plans. Do not include road design or right-of-way details.
 - b. Preliminary freeway signing plans will be created as a continuous alignment (line roll).
 - c. The preliminary freeway signing plans will show the major features of the existing roadway including cross roads, interchanges, ramps, grade separations, rest areas, weight stations, and overhead and ground-mounted signs.
 - d. The horizontal alignment and laneage of the roadways shall be included.
 - e. Show all existing signs at the approximate location. Include the existing sign legends, stationing, offset and necessary distance references.
 - f. Maintain the ability to move an entire sign drawing to anywhere on the preliminary signing plans. This facilitates proper placement of additional signs and replacement signs as the plans are developed.
 - g. Include special provisions as applicable/appropriate.
8. Conduct a field review to verify the existing sign inventory. Correct the inventory to reflect the actual field conditions. As a minimum, record the following information for all existing signs:
 - a. Size and type
 - b. Offset
 - c. Message
 - d. Location
 - e. Support system
 - f. Type of sign support foundation
9. *Consultant:* Send a request to MDOT to analyze each structure and identify maintenance and replacement needs. As part of the request include the location, structure number and type of structure to be analyzed. Following the design analysis, this information will be given to the Consultant by MDOT. MDOT will determine needs and repairs for structural work.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3554

Sheet 4 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation - Reflective Systems Design

WORK STEPS: (Continued)

10. Develop the preliminary freeway signing plans.
 - a. The preliminary freeway signing plans shall show the existing signs, proposed signs, all supporting structures, and signs to be removed. Existing signs shall be shown either as removed, retained, or replaced.
 - b. Include fabrication details for unique signs. Sign designs for non-standard signs will be shown on separate detail sheets. Standard signs may be referred to by the standard sign numbering system (for example, R5-6).
 - c. The selection of signs, location, letter size, color, etc. shall be according to the 1994 MMUTCD.
 - d. Incorporate the MDOT structure analysis.
11. *Consultant:* Submit the preliminary freeway signing plans, special provisions and estimates for review and approval to the MDOT Project Manager prior to preparing the Preliminary Plan submittal package.
12. *Consultant:* Receive any items returned by the MDOT Project Manager as incomplete or deficient.
13. *Consultant:* Make necessary changes and resubmit the entire package including a written response to all comments. Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
14. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the preliminary freeway signing plan submittal.
15. *Consultant:* Check preliminary freeway signing items in accordance with Consultant's QA/QC plan.
16. *Consultant:* Incorporate the preliminary freeway signing plans, special provisions and estimates into the Preliminary Plan submittal package.
17. Input actual finish date into appropriate data system.
18. Submit preliminary freeway signing plan to Project Managers for inclusion in the Preliminary Plans for distribution and THE Plan Review.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3554

Sheet 5 of 5
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation - Reflective Systems Design

SUPPLEMENTAL INFORMATION

For more information regarding preparation of freeway signing plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. MDOT Standard Highway Signs Manual
5. Average Unit Prices for Traffic Control Items
6. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)
7. AASHTO Roadside Design Guide
8. MDOT Traffic and Safety Division Sign Support Typical Plans

Items available through the MDOT Bulletin Board System:

1. Signing plan note sheets
2. Cell library
3. Blank standard plan sheet with borders and title block
4. MDOT Supplemental Specification
5. MDOT Special Provisions

P/PMS TASK DESCRIPTIONS

Sheet 1 of 1

TASK NUMBER: 3560

DATE: Aug., 1999

TASK TITLE: Conduct Preliminary Geometrics and Roadside Safety Reviews

REPORTING MANAGEMENT UNIT: Traffic and Safety - Geometrics

TASK START: Receipt of Preliminary Plans.

TASK FINISH: Submission of geometrics comments to Project Manager.

TASK DESCRIPTION:

This task encompasses the review and evaluation of the proposed job geometrics and roadside safety features. This is an ongoing effort throughout the development and evaluation of the preliminary plans. It is important that periodic communications be made so that the preliminary plans can be completed and the job geometrics and safety features accepted.

The evaluation made by the Department's Geometrics Unit addresses areas such as:

- sight distances,
 - design speeds,
 - curve and interchange placement,
 - turning radii,
 - exit and entrance ramps,
 - driveways,
 - turn lanes,
 - capacity,
 - roadside safety, and
 - Intersection design.
-

WORK STEPS:

1. Evaluate proposed job geometrics and roadside safety features.
2. Input actual start date into appropriate data system.
3. Prepare and submit comments.
4. Attend THE Plan Review Meeting
5. Meet with designer to review comments, as needed.
6. Input actual finish date into appropriate data system.
7. Approve job geometrics and roadside safety features or return to step 4.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3565

Sheet 1 of 1
DATE: Sept, 1997

TASK TITLE: Preliminary Constructability Review

REPORTING MANAGEMENT UNIT: Region/TSC Resident Engineer

TASK START: Assignment as Resident Engineer.

TASK FINISH: Attendance at THE Plan Review Meeting.

TASK DESCRIPTION:

This task consists of reviewing and evaluating proposed constructability items in the plan/proposal package during the plan development process. This includes periodic reviews and consultations with the Project Manager prior to THE Plan Review Meeting. Items include:

- Staging
 - Maintaining traffic
 - Erosion control
 - Scheduling (Critical Path)
 - Pay items
-

WORK STEPS:

1. Notification of assignment to job.
2. Input actual start date into appropriate data system.
3. Receipt of preliminary plans and/or preliminary proposal documents for review.
4. Prepare comments.
5. Meet with to discuss, or
6. Return comments to Project Manager.
7. Input actual finish date into appropriate data system.
8. Review plans prior to, attend, and provide input at THE Plan Review Meeting.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3570

DATE: Jan. 2004

TASK TITLE: Prepare Preliminary Structure Plans

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

TASK START: Approval of Bridge Structure Study, if required, or approval of Design Scope of Work, and authorization to proceed.

TASK FINISH: Submission of Preliminary Structure Plans for THE Plan Review Meeting.

TASK DESCRIPTION:

This task is usually included in bridge jobs and is coordinated with other structure related tasks. The Structure Study shall be approved before starting this task.

The Preliminary Structure Plans document the suggested layout for the proposed structure design. In preparing the general plan and elevation, the structural design is based on the structure study or existing plans. Additional plans are also prepared to further detail the structure design. The preliminary structure plans submission includes:

- foundation report;
- appropriate explanatory remarks;
- preliminary structure design;
- preliminary engineer's estimate; and
- design concerns.

A complete list of inclusions to these plans can be found in the Design Manual/Bridge Section 3.02.

During the preparation of the Preliminary Structure Plans, the plans progress from the study sketches to a detailed General Plan of Site sheet and a General Plan of Structure sheet.

The assigned structure designer coordinates with the roadway designer (as applies) and the Project Manager. This interaction leads to plans which provide for the best overall design (i.e., acceptable grades, well-designed approaches, limited future corrections in the design, etc.). Consideration is given to the impacts of plans on other groups.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3570

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Prepare Preliminary Structure Plans

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

WORK STEPS:

1. Receive and review job data, including comments on the approved Structure Study Plans.
2. Input actual start date into appropriate data system.
3. If necessary, acquire soil boring information:
 - a. *Consultants:* If obtaining soil borings is a Design Consultant task, then obtain required soil information.
 - b. If obtaining soil borings is NOT a Design Consultant task and soil borings are required, then send a request for additional soil information to the M•DOT Project Manager.
4. Evaluate roadway plans, bridge sketches, utilities, hydraulic and scour analysis, and permit requirements.
5. Submit pertinent information for agreements/permits to MDOT Project Manager. See Section 3.02.05 and Chapter 14 of the Michigan Design Manual, Bridge Design.
6. Prepare Preliminary Structure Plans and Estimate of Probable Construction Cost as defined in the Michigan Design Manual, Bridge Design, Section 3.02. Some items included are:
 - a. general Plan of Site,
 - b. general Plan of Structure,
 - c. soil borings and foundation recommendations,
 - d. staging plans, and
 - e. scour protection measures.

Contact the MDOT Project Manager immediately if the cost estimate varies significantly from the programmed construction cost estimate.

7. Document any decisions made while developing the Preliminary Plans.
8. Check the Preliminary Plans for conformance to the Structure Study review comments.
9. Prepare a list of questions, requests for information and concerns that need to be addressed at the Preliminary Plan Review Meeting (GI). Examples are: coordination with County Drain Commissioner, additional soils investigation, contaminated parcels, signals, permanent signing, lighting, railroad crossings, bridge improvements, geometric improvements, utility involvement, etc.

P/PMS TASK DESCRIPTIONS

Sheet 3 of 3

TASK NUMBER: 3570

DATE: Jan. 2004

TASK TITLE: Prepare Preliminary Structure Plans

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

WORK STEPS: (Continued)

10. Prepare Preliminary Plan submittal package. Check submittal package in accordance with QA/QC requirements. Contact the MDOT Project Manger if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating readiness for the Plan Review Meeting. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan. Include the names of those who did the QA/QC check.
 - b. Reproducible plan sheets including all areas of work; e.g., preliminary bridge plans, traffic signal plans, approach plans, etc.
 - c. Draft job specific special provisions for items not covered by MDOT Standard Specifications.
 - d. Draft Special Provisions for Maintaining Traffic and preliminary staging plans.
 - e. Preliminary job quantity and cost estimate by pay items. Any agency participation anticipated for this job shall be stated and the estimated quantities and costs shall be tabulated by agency.
 - f. Written responses to Structure Study review comments.
 - g. List of outstanding questions and/or considerations.
11. Submit preliminary plans and materials to the MDOT Project Manager. (Two half size sets)
12. Receive any items returned by the MDOT Project Manger as incomplete or deficient. Make necessary changes and resubmit the revised materials. Keep copies of the MDOT's comments, the marked up prints (if it was included), and the revised materials for the job record.
13. *Consultants:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the Preliminary package submittal.
14. Input actual finish date into appropriate data system.
15. Submit for THE Plan Review Meeting.

SUPPLEMENTAL INFORMATION

For more information, refer to the following:

Items to be purchased:

Michigan Design Manual, Bridge Design

P/PMS TASK DESCRIPTIONS

Sheet 1 of 11

TASK NUMBER: 3580

DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

TASK START: Completion of base plans.

TASK FINISH: Submission of request for THE Plan Review Meeting.

TASK DESCRIPTION:

During this task the designer incorporates the base plan review comments into the plans. The job geometrics are detailed. The design is developed in sufficient detail for THE Plan Review Meeting. This task is completed when the Preliminary Plan Review submittal package is accepted by the MDOT Project Manager.

The plan also provides a proposed pavement design which was developed based on the roadway geotechnical data gathered and AASHTO guidelines.

Final ROW plans are prepared, when appropriate, as part of this task. These plans reflect the anticipated right of way requirements for the job.

Coordination with the Geometrics Unit is carried out throughout this task. Several submissions may be required to ensure that all geometric concerns are addressed prior to the submission for THE Plan Review Meeting.

WORK STEPS:

1. Receive marked up prints with comments and/or correspondence from Base Plan Review via the MDOT Project Manager. Remain aware that additional comments may arrive at a later date.
2. Input actual start date into appropriate data system.
3. Prepare and submit to the MDOT Project Manager an updated job quantity and construction cost estimate reflecting Base Plan Review comments within two weeks following receipt of the marked up prints. The estimate should have quantities and unit prices for major items of work. Other portions job can be estimated using lump sums or percentages.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 2 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design – Road/Consultant Coordination

WORK STEPS: (Continued)

4. Incorporate Base Plan Review comments and develop the preliminary plans, specifications and estimates, including, but not limited to:
 - a. Typical cross sections
 - b. Detail sheets
 - c. Note sheet
 - d. Benchmark/witness sheet
 - e. Plan and profile sheets, with drainage systems as applies (ditches, sewers, storm drains)
 - f. Boring/core sheets
 - g. Stage construction sheets/maintaining traffic.
 - h. Refine horizontal and vertical alignments and develop working cross sections and slope stake lines, if necessary.
 - i. Request pavement design and geotechnical data, if necessary.
 - j. Resolve any outstanding issues and/or conflicting comments with the MDOT Project Manager.
 - i. *Consultant:* Upon resolution of a conflict, the Consultant must document, in a letter to the MDOT Project Manager, the solution to the conflict and the engineering judgment used by the Consultant in reaching this decision.
 - k. This step also includes plotting existing utilities and identifying conflicts.
5. *Consultant:* If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is **NOT** a Consultant task, then send a request for additional soil information to the MDOT Project Manager.
6. *Consultant:* If P/PMS TASK 3540 - DEVELOP CONSTRUCTION TRAFFIC CONTROL PLAN is **NOT** a Consultant task, then coordinate staged construction plans and Special Provisions for Maintaining Traffic through the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 3 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

WORK STEPS: (Continued)

7. Right Of Way

- a. If Right Of Way is included in the Contract, then prepare Final Right Of Way Plans (FROW). Refer to Michigan Design Manual, Road Design (SI), Volume 3, Chapter 5 for guidance in the preparation of FROW Plans. The submittal of the FROW package is P/PMS TASK 3581 - FINAL RIGHT-OF-WAY PLANS. If the Consultant is unfamiliar with MDOT ROW procedures and requirements, please contact the MDOT Project Manager to arrange a meeting to discuss ROW.
- b. **If ROW is not part of the Contract, but determined necessary for construction, contact the MDOT Project Manager immediately.** Some examples of when Fee ROW, grading permits or easements will be required are:
 1. Closing, relocating or re-grading driveways beyond existing ROW.
 2. Work or grading outside existing ROW.
 3. Clear vision (sight distance) requirements.
- c. If a significant change in ROW is anticipated for a parcel, the Consultant shall notify the MDOT Project Manager in writing as soon as the need is recognized in order for the MDOT Project Manager to initiate a ROW Hold for the affected parcel(s). A ROW Hold requests the MDOT Real Estate Division to suspend the current activity for the specified parcel(s). Upon the resolution of the ROW change, the Consultant shall notify the MDOT Project Manager in writing or if required, through a ROW Revision, the status of the parcel(s) so that the MDOT Project Manager can initiate release of the ROW Hold.
- d. If changes are required to the previously submitted FROW, then the Consultant shall notify the MDOT Project Manager as soon as the need is recognized. Every effort should be made to utilize the existing or FROW if possible. Refer to P/PMS TASK 3581 – FINAL RIGHT-OF-WAY PLANS for further direction on preparing a ROW Revision. Examples of when ROW Revisions will be required are:
 - i. When alterations are made to the Final ROW plans; ie, alterations to the alignments, ties, and existing or proposed ROW lines.
 - ii. When design changes cause a significant impact to site conditions.
 - iii. When necessary corrections and/or changes to the drawings are directed by MDOT.

P/PMS TASK DESCRIPTIONS

Sheet 4 of 11

TASK NUMBER: 3580

DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

WORK STEPS: (Continued)

The Consultant shall have MDOT's approval before utilizing any ROW Revisions for design purposes.

8. If water mains and/or sanitary sewers are present within the job limits, the CONSULTANT shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The CONSULTANT shall submit a report to the Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager.
 - a. If relocation of water main and/or sanitary sewer is necessary refer to P/PMS Task 3670 - Develop Municipal Utility Plans. If P/PMS Task 3670 is not part of the Scope of Work, contact the MDOT Project Manager immediately.
9. Coordinate with utilities, local governments and other governmental agencies.
10. Establish pay items and develop special provisions as necessary.
11. Prepare a preliminary cost estimate and if necessary, submit a request for a municipal agreement.
12. Check the preliminary plans for conformance to the job as defined in the Base Plan Review meeting minutes.
13. Prepare a list of questions, requests for information and concerns that need to be addressed at The Plan Review Meeting. Examples are: coordination with County Drain Commissioner, additional soils investigation, contaminated parcels, signals, permanent signing, lighting, railroad crossings, bridge improvements, geometric improvements, utility involvement, etc.
14. Prepare the Preliminary Plan submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating readiness for The Plan Review Meeting. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 5 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

WORK STEPS: (Continued)

- b. Two full size reproducible plan sets and one half size set of plans including all areas of work; e.g., preliminary bridge plans, traffic signal plans, etc. Part Three of this task includes a partial listing of detailed requirements for the items that may be required on the preliminary plans.
 - c. Draft job specific special provisions for items not covered by MDOT Standard Specifications.
 - d. Draft Special Provisions for Maintaining Traffic and preliminary staging plans.
 - e. Preliminary job quantity and cost estimate by pay item. Any agency participation anticipated for this job shall be stated, and the estimated quantities and costs shall be tabulated by agency.
 - f. Written responses to the Base Plan Meeting review comments.
 - g. List of outstanding questions and/or considerations.
 - h. Guardrail worksheets
 - i. Index to Frequently Used Special Provisions and Supplemental Specifications.
 - j. Draft copy of any Design Exceptions.
15. Check submittal package in accordance with QA/QC requirements.
16. Submit the preliminary plans and materials to the MDOT Project Manager.
17. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials. Keep copies of MDOT's comments, the marked up prints (if it was included), and the revised materials for the job record.
18. Input actual finish date into appropriate data system.
19. *Consultants:* Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of the Base Plan package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 6 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION

The following items should be included on plans submitted for Grade Inspection (GI). This list is not intended to be all inclusive. Some sheets may be supplied by MDOT.

A. Title Sheet

1. Location map
2. POB & POE (stationing and mile points)
3. Traffic data and design speed (include locations of speed changes)
4. Funding, control section and job number
5. North arrow
6. County, city/village, section, town and range
7. Unit leader/consultant
8. Station equations and structure numbers
9. Legend
10. Detour route
11. Plan sheet index (Plan sheets should be numbered as GI 1, GI 2, etc.)
12. Job length
13. Description of work
14. Construction influence area
15. List of possible Special Use Permits (for discussion only)

B. Job Scoping Plan Sheet - this is a plan-sized version of the Project Scoping Checklist which details the realm of the design being reviewed. This sheet only appears in the plans printed for The Plan Review

C. Vicinity Map - relocating or altering an existing alignment that requires significant ROW acquisition.

1. Parcel lines with parcel numbers
2. Stationing with proposed ROW widths

D. Drainage Map

1. County drains
2. Cross culvert locations
3. Directions of flow

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 7 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION (Continued)

E. Typical Cross Sections

1. Existing

- a. stationing
- b. ROW
- c. lane and shoulder widths
- d. depth and width of bituminous/concrete, base and subbase
- e. crown location and pavement slope
- f. removal items
 - I. pavement
 - II. curb and gutter
- g. earth excavation
- h. side slopes
- i. guardrail locations (type and length)
- j. Superelevation

2. Proposed

- a. stationing
- b. ROW
- c. survey and construction centerline
- d. crown location and pavement slope
- e. lane and shoulder widths
- f. width and depth of bituminous/concrete, base, subbase and embankment
- g. plan grade location with point of rotation
- h. type of curb and gutter
- i. type and location of underdrain
- j. bituminous application table
- k. superelevation with transition stationing
- l. slope restoration or seeding/sodding items
- m. side slopes
- n. guardrail locations

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 8 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION (Continued)

- F. Miscellaneous Detail Sheet
 - a. cross roads
 - b. turn lanes, passing flares and intermittent widening
 - c. guardrail layout (with worksheets)
 - d. median cross-overs
 - e. detour routes
 - f. temporary cross-overs or run-arounds
 - g. parking areas
 - h. ramp terminal details
 - i. intersection layout
 - j. curbed islands, special drainage structures, etc.

- G. Note Sheet
 - 1. Standard notes
 - 2. Utilities
 - a. company name
 - b. address
 - c. phone number
 - d. contact person

 - 3. Standard plans/special details
 - 4. Miscellaneous quantities

- H. Standard Symbol Sheet (legend sheet)

- I. Witnesses and Benchmarks

- J. Alignment Sheets

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 9 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION (Continued)

K. Removal and Construction Sheets

1. Existing and proposed ROW with easements and grading permits
 - a. Limited access
 - b. Clear vision corners
 - c. Permits to grade, to relocate drives, or consent to close drives
2. Stationing
3. Bearings
4. Curve data
5. Superelevation
6. Limits of removal items
 - a. pavement
 - b. crush and shape
 - c. rubblizing
 - d. cold milling
 - e. slopestake lines
7. Limits of construction items
 - a. bituminous approach
 - b. miscellaneous concrete
8. Utilities (water, telephone, electrical, gas, cable)
9. Culvert location
10. Lane additions/drops/transitions/right turn /passing flare
11. Roadside obstacles
 - a. trees
 - b. retaining walls
 - c. headwalls
 - d. signs, light poles, etc.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 10 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION (Continued)

L. Profile Sheets

1. Existing and proposed elevations
 - a. ditches
 - b. PI stationing
 - c. curve lengths
 - d. tangent grades
 - e. superelevation with transitions
2. Existing and proposed sewer, culvert and drainage structures
3. Existing ground profiles and ground points
4. Sidewalk profiles and/or top of curb profiles
5. Cross road or street profiles
6. Water table
7. Rock, peat, muck, undercut locations
8. Existing utilities (water, telephone, electrical, cable, gas)
9. Earthwork quantities
10. Sideslopes
11. Location and type of curb and gutter

M. Interchange/Ramp/Crossroad Plan and Profile Sheets

N. Preliminary Wetland Mitigation Sheets

O. Preliminary Rest Area/Landscaping Sheets

1. Ramp curve date
2. Clear vision areas

P. Detail Grade Sheets

Q. Construction Staging/Maintaining Traffic Sheets

R. Soil Boring/ Pavement Coring Sheets

S. Permanent Signing Plans

T. Pavement Marking Sheets

U. Traffic Signal Plans

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3580

Sheet 11 of 11
DATE: Jan. 2004

TASK TITLE: Develop Preliminary Plans

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Consultant Coordination

SUPPLEMENTAL INFORMATION (Continued)

V. Utility Sheets

1. Lighting
2. Water
3. Sewer

W. Special Details

X. Bridge Plans

ADDITIONAL ITEMS TO BE INCLUDED

Index to Standard Special Provisions
Index to Standard Supplemental Specifications
Drafts of Unique Special Provisions
Detailed Cost Estimate
Preliminary Maintaining Traffic Special Provision
Guardrail Worksheets

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3581

DATE: March 2005

TASK TITLE: Review and Submit Final Right of Way (FROW) Plans

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

TASK START: Completion of FROW plans.

TASK FINISH: Submittal of FROW plans to Real Estate Division.

TASK DESCRIPTION:

This procedure outlines the steps for the submittal of Final Right-Of-Way (FROW) plans and Right-Of-Way Revisions. Both submittals are developed as part of P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS. Right-Of-Way Revisions may occur as part of P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS.

WORK STEPS: (In-House)
Design Unit/Consultant Coordination

1. Review completed FROW plans with comments received from the PROW submittal.
2. Insure completeness of plans for Requirements for Final ROW Plans as stated in the Road Design Manual - English, Chapter 5.
3. Input actual start date into appropriate data system.
4. Verify "B" phase (ROW) is programmed; if not, process 2604.
5. Complete draft FROW memo, Design Form 271B from the MDOT website.
6. Submit plans (half size (11" x 17")), to scale and memo) to Design ROW Engineer-Quality Assurance.
7. Submit plans (1 full size, 2 half size (11" x 17")), to scale, electronic files and memo) to Lansing Real Estate Technical Unit.
8. Submit plans (1 full size, 1 half size (11" x 17")), to scale, electronic files and memo) to Region Real Estate Agent. (may require more copies-please check).

Design ROW Engineer-Quality Assurance

1. Review plans and memo*.
2. Identify and note corrections/deficiencies.
3. Plans with both ROW & Design comments sent to Design Unit/Consultant Coordination.

Lansing Real Estate Technical Unit/ Region Real Estate Agent

1. Review plans and memo*.
2. Identify and note corrections/deficiencies.
3. Plans with ROW comments sent to Design Unit/Consultant Coordination.
4. Region Real Estate Agent notifies Design Unit/Consultant Coordination of acceptance or rejection.
**Occurs simultaneously.*

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3581

Sheet 2 of 5
DATE: March 2005

TASK TITLE: Review and Submit Final Right of Way (FROW) Plans

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

WORK STEPS: (In-House)

Design Unit/Consultant Coordination

1. Incorporates corrections into plans, or if accepted with missing item, or if OK.
2. Completes and signs FROW memo, Design Form 271B from MDOT website. (Note: memo must be signed by Licensed Engineer).
3. Sends out plans for printing.
4. Distributes FROW plans and memo to all areas identified on Design Form 271B.
5. Files FROW plans and memo in project files.
6. If plans accepted with missing items, submits affected plans and ROW Revision memo, Design Form 271A from MDOT website, when all missing items have been incorporated into the plans.
7. Distributes ROW Revision plans and memo to all areas identified on Design Form 271A.

-- See following pages for steps as performed by Consultant --

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3581

Sheet 3 of 5
DATE: March 2005

TASK TITLE: Review and Submit Final Right of Way (FROW) Plans and ROW Revisions

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

WORK STEPS: (Consultant)

FINAL RIGHT-OF-WAY PLANS

1. Prepare FROW submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is the FROW submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the CONSULTANT'S QA/QC plan.
 - b. Complete draft FROW memo, Design Form 271B from the MDOT website.
 - c. 3 1/2" high density diskette(s) or CD of all drawings utilizing the Intergraph MicroStation system format.
 - d. Reproducible plans (1 full size and 1 half-size (11" x 17"), to scale) created from construction plans.
2. Check the submittal package in accordance with the Consultant's QA/QC plan.
3. Submit the FROW package to the MDOT Project Manager.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
 - a. Make necessary changes.
 - b. Resubmit the entire FROW package including a written response to all comments.
 - c. Reproducible plans (standard-size (24" x 36")) plan sheets created from construction plan tracings.
 - d. Complete draft FROW memo, Design Form 271B from the MDOT website.
 - e. 3 1/2" high density diskette(s) or CD of all drawings utilizing the Intergraph MicroStation system format.
 - f. Reproducible plans (half-size (11" x 17"), to scale) construction plans.
5. Receive a half-size set of the FROW plans from the MDOT Project Manager. These prints are for the Consultant's files. These plans will have the signed MDOT ROW approval block in the upper right hand corner.
6. Consultant updates the upper right corner box in the CADD files with the date of submission of FROW to all the plans in the FROW submission.
7. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the FROW package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3581

Sheet 4 of 5
DATE: March 2005

TASK TITLE: Review and Submit Final Right of Way (FROW) Plans and ROW Revisions

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

WORK STEPS: (Consultant)

RIGHT OF WAY REVISIONS

1. Prepare ROW Revision submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is a ROW Revision submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. 3 1/2" high density diskette(s) or CD of all affected drawings utilizing the Intergraph MicroStation system format.
 - c. Reproducible plans (standard-size (24" x 36")) plan sheets created from construction plan tracings of all affected sheets.
 - d. Reproducible plans (half-size (11" x 17"), to scale) construction plans of all affected sheets.
 - e. Marked up prints of the affected sheets highlighting the ROW revisions.
 - f. Complete draft of ROW Revision memo, Design Form 271A from MDOT website with written description of each individual ROW revision.
2. Check the submittal package in accordance with the Consultant's QA/QC plan.
3. Submit the ROW Revision package to the MDOT Project Manager.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes. Resubmit the entire ROW Revision package including a written response to all comments.
6. Receive a half-size print of the ROW Revision plan sheets from the MDOT Project Manager. These prints are for the Consultant's files. These plans will have the signed MDOT ROW approval block in the upper right hand corner.
7. Consultant updates the upper right corner box in the CADD files with the date of submission of ROW Revision to all the plans in the ROW Revision submission.
8. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the ROW Revision package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3581

Sheet 5 of 5
DATE: March 2005

TASK TITLE: Review and Submit Final Right of Way (FROW) Plans

REPORTING MANAGEMENT UNIT: Design Unit/Consultant Coordination

SUPPLEMENTAL INFORMATION

For more details regarding the preparation of ROW plans refer to the following:

- A. Michigan Road Design Manual - English, Chapter 5.
 - B. Michigan Road Design Manual - English, Chapter 1, Appendix A – CADD Workstation Guides and Parameters.
 - C. The following is additional information relating to CADD levels and ROW information:
 - * 50 Parcel lines, parcel numbers, ownership arrows.
 - 51 Lot lines and numbers.
 - * 52 Property Corner Information.
 - * 53 Special ROW notes and Dimensions.
 - 54 English units in parentheses only on Metric plans.
 - * 55 Special ROW notes and Dimensions.
- * **These levels are for MDOT Real Estate Support Area use only.**

Level 54 shall contain the equivalent English units to all metric ROW references to aid the MDOT Real Estate Support Area in their communication with the public.

The above-mentioned levels shall not contain unrelated items such as curve data, drainage, utilities, design notes or other text unrelated to ROW plan sheet preparation. Any changes required by MDOT to ensure the final product is within requirements shall be the responsibility of the Consultant. A disk(s) CD(s) with the final layouts as approved by the MDOT Project Manager shall be made and delivered by the Consultant to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3590

DATE: Jan. 2004

TASK TITLE: Review Preliminary Plans (Hold THE Plan Review Meeting)

REPORTING MANAGEMENT UNIT: Design - Quality Assurance

TASK START: Receipt of Request for THE Plan Review Meeting

TASK FINISH: Distribution of THE Plan Review Meeting Comments

TASK DESCRIPTION:

THE Plan Review Meeting is important to assure that the plan development is proceeding according to the scope as defined and agreed to at the scope verification meeting. The Quality Assurance Unit reviews the material submitted to insure all the required information is included as listed in Chapter 14 (Procedures) of the Road Design Manual for a listing of required items. Quality Assurance schedules the meeting, distributes all the material and notifies all the participants of the meeting.

The Consultant attends the Plan Review Meeting to discuss and resolve review comments.

The purpose of the Plan Review Meeting is not to design the job in the field, but to review the thoughts of the designer. A good final design product depends on a good Plan Review Meeting and the Plan Review is only as good as the information provided.

As part of this task, the **Design/Construction Package Evaluation** (MDOT Form 285-2) should be filled out by all Designated Evaluators (as identified on the form) for the process steps up to and including 80% plan completion.

The participants review the material prior to the meeting. At the meeting the various disciplines provide comments concerning the job. Unresolved issues are noted and resolved as soon as possible after the meeting by Quality Assurance and/or the Project Manager. Those involved in each issue are notified of the outcome. If enough unresolved issues are encountered during the meeting another meeting may have to be scheduled after the issues are settled. Quality Assurance documents the review comments and distributes them to the participants.

The Federal Highway Administration should be notified of THE Plan Review Meeting for all jobs classified as “non-exempt”.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 3

TASK NUMBER: 3590

DATE: Jan. 2004

TASK TITLE: Review Preliminary Plans (Hold THE Plan Review Meeting)

REPORTING MANAGEMENT UNIT: Design - Quality Assurance

TASK DESCRIPTION: (Continued)

Plans and other material are distributed to the following:

Engineer of Construction and Technology	Lansing Project Development Engineer (if
Region/TSC Field Engineer	Project Manager)
Region/TSC Operations Engineer	Environmental Liaison Section
Region/TSC Project Development Engineer	
Region/TSC Construction Engineer	
Region/TSC Soils Engineer	
Region/TSC Traffic and Safety Engineer	
Region/TSC Maintenance Engineer	
Region/TSC Utilities/Permits Engineer	
Region/TSC Real Estate Agent (if applicable)	
Resident Engineer	City or Village (if applicable)
FHWA (non-exempt)	County (if applicable)
Railroad Coordination (if applicable)	County Drain Commissioner (if applicable)
Geometrics-Lansing Traffic and Safety	County Road Commission
Lansing Utilities/Permits	

WORK STEPS:

1. Receive request to schedule THE Plan Review Meeting, a set of plans and drafts of maintaining traffic and all applicable unique special provisions.
2. *Consultant:* Receive notice from the MDOT Design Division's Quality Assurance Unit stating the location, date and time of the Plan Review meeting.
3. Input actual start date into appropriate data system.
4. Review plans to determine if all the necessary information and detail are included.
5. Identify participants to be included in THE Plan Review.
6. Schedule the meeting and field review for participants.
7. Distribute plans and special provisions.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3590

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Review Preliminary Plans (Hold THE Plan Review Meeting)

REPORTING MANAGEMENT UNIT: Design - Quality Assurance

WORK STEPS: (continued)

8. Review plans and special provisions. Appropriate Designated Evaluators should complete the pertinent portions of the Design/Construction Package Evaluation Form.
9. *Consultant:* Attend the meeting and the site visit. The meeting and site visit may require more than one day. Hold the number of Consultant participants to essential (two or three) personnel. Although the MDOT Quality Assurance Representative will take the meeting minutes, it may prove helpful to the Consultant to take their own notes to have an independent record.
10. In-House - Coordinate and conduct meeting and field review, and identify conflicts requiring immediate resolution.
11. Quality Assurance and Project Manager resolve conflicts and Quality Assurance documents the review recommendations.
12. Input actual finish date into appropriate data system.
13. Quality Assurance distributes review recommendations.

P/PMS TASK DESCRIPTIONS

P/PMS TASK DESCRIPTIONS

Utilities/Railroad – (3600 Series)

TASK NUMBER: 3610

Sheet 1 of 1
DATE: Sept., 1999

TASK TITLE: Compile Utility Information

REPORTING MANAGEMENT UNIT: Project Manager

TASK START: Completion of Base Plans.

TASK FINISH: Inclusion of Utility Information on Preliminary Plans

TASK DESCRIPTION:

The objective of this task is to gather information to determine the location of all utilities which could be impacted by the job. The types of utilities include private and governmental utilities such as:

- electrical,
- water,
- cable,
- sewer,
- gas,
- communication, and
- county drains.

Once the scope has been verified and base plans are complete, the Project Manager distributes plans to the utilities (companies and governmental) requesting preliminary input and information. Information required from the utility includes location of utilities on a marked-up set of plans. A preliminary utility meeting is conducted, if necessary. Formal responses are received from all utilities by the Project Manager.

WORK STEPS:

1. Transmit base plans to utilities.
2. Input actual start date into appropriate data system.
3. Hold/attend preliminary utility meeting, if beneficial.
4. Receive utility information.
5. Input actual finish date into appropriate data system.
6. Plot utility information on preliminary plans.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3630

DATE: Sept., 1999

TASK TITLE: Prepare and Process Special Participation/Special Operational Agreements

REPORTING MANAGEMENT UNIT: Local Agency Programs - Governmental/RR
Coordination

TASK START: Receipt of request for first agreement/contract.

TASK FINISH: Execution and distribution of final agreement/contract.

TASK DESCRIPTION:

This task involves the negotiating and drafting of agreements with local governmental agencies, private parties, or other state and Federal agencies. The agreements cover participation, construction, or long-term rights and obligations with respect to trunk line work, or tasks along a trunk line, right of way or outside of the right of way facilitating a trunk line function. Act-51 participation, parking restrictions, utility construction, bikeway maintenance, added construction, etc. are examples of items covered.

Requests for agreements may come from a variety of sources such as regions, other bureaus, and other state Departments. Governmental Coordination will determine if an agreement is required and the type of agreement. They will determine the requirements within the agreement in accordance with Federal and state law and Departmental policy and practices.

The processing of agreements consists of obtaining Department and state approval, and agreement with the participating party. Governmental Coordination prepares the draft contract or reviews the supplied draft, and then processes the contract through reviews as required for the type of contract. Reviews may include Commission Audit, Finance, Attorney General, etc. Governmental Coordination transmits the approved contract to the local agency and places the job on the appropriate approval agenda for the Commission, Administration Board, and/or Director. The contract is then executed. The executed contract is transmitted to the local agency and distributed within the Department.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3630

Sheet 2 of 2
DATE: Sept., 1999

TASK TITLE: Prepare and Process Special Participation/Special Operational Agreements

REPORTING MANAGEMENT UNIT: Local Agency Programs - Governmental/RR
Coordination

TASK START: Receipt of request for first agreement/contract.

TASK FINISH: Execution and distribution of final agreement/contract.

WORK STEPS:

1. Receive requests for agreements and determine need for and type of agreement.
2. Input actual start date into appropriate data system.
3. Establish and maintain an information file on agreements (paper and computer).
4. Review plans for situations requiring agreements.
5. Sign off on certification acceptance.
6. Request and collect information for agreements.
7. Negotiate terms of agreement.
8. Draft agreement.
9. Review and make necessary changes to draft contract.
10. Process contract through internal reviews and approvals.
11. Transmit contract to local agency for execution.
12. Monitor status of agreement and revise agreement, if necessary.
13. Obtain Director's or appropriate Department Manager's signature.
14. Input actual finish date into appropriate data system.
15. Distribute executed contract.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3650

Sheet 1 of 3
DATE: Aug, 2002

TASK TITLE: Coordinate Railroad Involvement for Grade Separations

REPORTING MANAGEMENT UNIT: Administrative Products Supervising Area-
Governmental and Railroad Coordination Unit

TASK START: Receipt of request for railroad coordination.

TASK FINISH: Certification acceptance sign off.

TASK DESCRIPTION:

This task involves the process of reviewing the job for railroad(s) involvement, making the initial contact with the railroad(s), and authorizing the railroad(s) to proceed with preliminary engineering where required. This is followed up by negotiating with the railroad(s) on the requirements to facilitate the job, processing of permits and licenses, and drafting of agreements as required.

All special provisions and coordination clauses required for the job are developed, reviewed and approved by the railroad company.

Any required agreements are transmitted to Finance for processing upon execution of the agreement; formal authorization is issued to the railroad for needed force account work.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3650

Sheet 2 of 3
DATE: Aug, 2002

TASK TITLE: Coordinate Railroad Involvement for Grade Separations

REPORTING MANAGEMENT UNIT: Administrative Products Supervising Area-
Governmental and Railroad Coordination Unit

WORK STEPS:

1. Notification of scoping meetings for upcoming jobs (for large complicated jobs).
2. Input actual start date into appropriate data system.
3. Begin agreement preparation, if required, and special provisions.
4. Contact involved railroad(s).
5. Receipt of preliminary plans from designer.
6. Review and mark-up of preliminary plans and return to designer.
7. Receive "revised" preliminary plans back from designer.
8. Send preliminary plans to, and request estimates from, railroad(s).
9. Review proposed job with railroad(s).
10. Receive estimates from railroad(s).
11. Review estimates and renegotiate with railroad(s) if needed.
12. Obtain final MDOT approved estimates.
13. Program railroad force account Job Number in MPINS.
14. Negotiate required agreements with railroad(s).
15. Negotiate terms and conditions of railroad(s) involvement.
16. Draft agreements
17. Receive final approval of final plans from railroad(s).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3650

Sheet 3 of 3
DATE: Aug, 2002

TASK TITLE: Coordinate Railroad Involvement for Grade Separations

REPORTING MANAGEMENT UNIT: Administrative Products Supervising Area-
Governmental and Railroad Coordination Unit

WORK STEPS (continued):

18. Process railroad agreements.
19. Request obligation of funds thru MFOS and receive FHWA approval for railroad force account Job Number.
20. Monitor status of agreements.
21. Receive executed agreements.
22. Authorize railroad force account work.
23. Enter work items for railroad force account Job Number into Trns*port - Proposal & Estimates System.
24. Input actual finish date into appropriate data system.
25. Sign off on certification acceptance when all requirements are fulfilled.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2
DATE: June 2002

TASK NUMBER: 3655

TASK TITLE: Coordinate Railroad Involvement for At-Grade Crossings

REPORTING MANAGEMENT UNIT: Administrative Products Supervising Area-
Governmental and Railroad Coordination Unit

TASK START: Receipt of request for railroad coordination.

TASK FINISH: Certification acceptance sign off.

TASK DESCRIPTION:

This task involves the process of reviewing the job for railroad(s) involvement, making the initial contact with the railroad(s), and authorizing the railroad(s) to proceed with preliminary engineering where required. This is followed up by negotiating with the railroad(s) on the requirements to facilitate the job, processing of permits and licenses, and drafting of agreements as required.

All special provisions and coordination clauses required for the job are developed, reviewed and approved by the railroad company.

Any required railroad agreements are written and processed for execution, and formal authorization is then issued to the railroad for needed force account work.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 2
DATE: June 2002

TASK NUMBER: 3655

TASK TITLE: Coordinate Railroad Involvement for At-Grade Crossings

REPORTING MANAGEMENT UNIT: Administrative Products Supervising Area-
Governmental and Railroad Coordination Unit

WORK STEPS:

1. Review preliminary plans for railroad involvement.
2. Input actual start date into appropriate data system.
3. For jobs requiring railroad work, conduct railroad scoping meeting/Diagnostic Team Review (DTR).
4. Request work estimate from railroad.
5. Receive estimate from railroad, revise with railroad as necessary, secure Jack & Bore permit if required.
6. Program Job Number for railroad force account work in MPINS.
7. Obligate funds in MFOS for railroad force account work and issue railroad force account authorization.
8. Develop railroad related bid documents for roadway job.
9. Send roadway final plans and bid documents to railroad.
10. Input actual finish date into appropriate data system.
11. Sign off on certification acceptance for roadway job as all requirements are met.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3660

Sheet 1 of 2
DATE: Sept., 1999

TASK TITLE: Resolve Utility Issues

REPORTING MANAGEMENT UNIT: Region - Utilities and Permits

TASK START: Receipt of Preliminary Plans from Project Manager

TASK FINISH: Sign off on Certification Acceptance.

TASK DESCRIPTION:

This task involves coordination with utilities to determine what effort is required by the impacted utilities to relocate or protect during construction. The types of utilities include private and governmental utilities such as:

- electrical,
- water,
- cable,
- sewer,
- gas,
- communications, and
- county drains.

The Region/TSC Utilities Engineer reviews the plans and, if necessary, distributes plans, schedules a utility meeting and sends notification to the utilities.

The Region/TSC Utilities Engineer shall determine those to be invited to the utility meeting. Those commonly invited are:

- Utility companies and governmental utilities,
- MDOT Design Unit/Utilities Units,
- MDOT Lansing Utilities and Permits, Governmental Engineering, Coordination and Drainage Sections,
- MDOT Project Manager, and
- Region/TSC Construction Engineer.

At the utility meeting, the job's schedule and staging are discussed. Each utility submits marked up plans and has the opportunity to discuss conflicts and proposed actions to resolve the conflicts. A consensus is reached at the meeting resolving any conflicts.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3660

Sheet 2 of 2
DATE: Sept., 1999

TASK TITLE: Resolve Utility Issues

REPORTING MANAGEMENT UNIT: Region - Utilities and Permits

TASK DESCRIPTION: (Continued)

The utility companies submit a proposed plan of their relocation which incorporates the decisions made at the utility meeting. The proposed plans are then reviewed by the Department and incorporated into the final plans. Upon final plan review, authorization and/or agreements are provided to the utility companies or local agencies, if required.

The Lansing Utility and Permits Section prepares a coordination clause for work to be performed during job construction and submits the clause to Design if the utility conflict cannot be cleared prior to the start of contract work.

The utility status clearance is then prepared and distributed. Certification Acceptance is then signed off.

WORK STEPS:

1. Receive Preliminary Plans from the Project Manager or the Utilities and Permits Section.
2. Input actual start date into appropriate data system.
3. If necessary, distribute plans, schedule and conduct utility meeting.
4. Resolve conflicts on issues.
5. Transmit information to Project Manager.
6. Attend THE Plan Review, if necessary.
7. Incorporate any changes into related utility plans, and include in final plans.
8. Authorize work by utilities if eligible for reimbursement.
9. Prepare and submit coordination clause and distribute to Project Manager.
10. Input actual finish date into appropriate data system.
11. Submit approved utility status clearance to Project Manager and other appropriate parties and sign off on Certification Acceptance.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3670

DATE: Jan. 2004

TASK TITLE: Develop Municipal Utility Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

TASK START: Receipt of base plans.

TASK FINISH: Municipal utility approval and receipt of DEQ permit(s).

TASK DESCRIPTION:

This procedure outlines the steps for the development and coordination of municipal utility plans, specifications and estimates. This procedure covers the work for water main and sanitary sewer design.

NOTE: Any request for utility betterments by local agencies must have MDOT concurrence before being incorporated into the plans.

The municipal utility plans provide a proposed alignment for the municipal utilities impacted by the job. The types of municipal utilities include water mains and sanitary sewers. The preliminary municipal utility plans may be prepared by the Department's Design Municipal Utilities Unit, consultant, municipality or a combination of these design groups depending on Department or local agency policies or other factors.

The preliminary municipal utility plans typically show:

- current alignments and sizes for existing municipal utilities, and
- proposed alignments and sizes of municipal utilities to be installed or replaced.

The work is initiated with the receipt of the base plans. The Design - Municipal Utilities Unit oversee the design that prepares the plans. The design group collects information from a variety of sources including: the base plans, survey notes, contacts with region and local agencies, and any requests from local agencies. The design group prepares preliminary plans based on the information gathered. The preliminary municipal utility plans are then submitted for incorporation into the preliminary job plans for THE Plan Review.

The final municipal utility plans provide the final alignment and profiles for the municipal utilities to be installed or relocated as part of the job.

The design group preparing the final municipal utility plans receives and reviews the preliminary plan, review comments, utility meeting minutes and comments from the local agency. The group incorporates any agreed-upon changes into the plans. The design group develops the final plans, specifications, special details and a cost estimate. The information required for the agreement is sent to Governmental Coordination and Railroads.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3670

Sheet 2 of 5
DATE: Jan. 2004

TASK TITLE: Develop Municipal Utility Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

TASK DESCRIPTION: (Continued)

The completed plans and associated documentation are sealed by a Michigan Licensed Professional Engineer, if appropriate, and distributed to the municipal utility owner for review and permit application.

Municipal utility permits are required by state law from the Michigan Department of Environmental Quality (DEQ) for any work on water and sanitary sewer systems. The municipal utility owner or his agent is responsible for acquiring the required permit from the DEQ with possible assistance from the design group.

The final plans and specifications are also distributed to the Project Manager to be incorporated into the final plans. The final plans and specifications are then reviewed by the Department later as part of the OEC Meeting (task 3870).

If required by either the DEQ or the municipality, changes are made to the municipal utility plans. Coordination with the municipal utility owners, other Department management units and/or state agencies is carried out by the Design - Municipal Utilities Unit and the design group so that all groups are made aware of the changes. The revised plans along with the necessary certification acceptance documents are submitted to the **Project Manager**. This task is complete upon receipt of notification from the municipality of its approval and a copy of the approved permit.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3670

Sheet 3 of 5
DATE: Jan. 2004

TASK TITLE: Develop Municipal Utility Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

WORK STEPS:

1. This task begins in conjunction with P/PMS Task 3580 - Develop Preliminary Plans. The MDOT Design - Municipal Utility Unit will oversee any consultant that prepares the plans.
2. Information is collected from a variety of sources including: the base plans, survey notes, contacts with the local agencies and any requests from local agencies.
3. Input actual start date into appropriate data system.
4. Contact municipal utility.
5. Conduct municipal utility relocation study.
6. Prepare the preliminary plans based on the information gathered. The preliminary municipal utility plans typically show:
 - a. Current alignments and sizes for existing municipal utilities
 - b. Proposed alignments and sizes of municipal utilities to be installed or replaced.
7. Participate in the utility meeting (Task 3660).
8. The preliminary municipal utility plans are incorporated into the preliminary job plans for THE Plan Review.
9. Receive preliminary plan and review comments.
10. Incorporate all municipal utility comments and develop the final municipal utility plans, profiles, special provisions and estimates. Resolve any outstanding issues and/or conflicting comments with the MDOT Project Manager.
 - a. *Consultant:* Upon resolution of a conflict, the Consultant must document, in a letter to the MDOT Project Manager, the solution to the conflict and the engineering judgment used by the Consultant in reaching this decision.
11. Submit information for agreements to Governmental Coordination and Railroads.
12. *Consultant:* Submit the final municipal utility plans, profiles, special provisions and estimates for review and acceptance to the municipality and the Design Engineer –

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3670

Sheet 4 of 5
DATE: Jan. 2004

TASK TITLE: Develop Municipal Utility Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

WORK STEPS: (continued)

Municipal Utilities prior to preparing the Omissions Errors Check (OEC) submittal package. A copy of the transmittal letter shall be sent to the MDOT Project Manager.

13. In-House - Distribute copy of plans to Project Manager.
14. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
15. Make necessary changes and resubmit the entire package including a written response to all comments.
 - a. *Consultant:* Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
16. Check final municipal utility items in accordance with QA/QC plan.
17. Submit full sized plans and specifications to the municipality with a request that they obtain the appropriate Michigan Department of Environmental Quality (MDEQ) approvals and/or permit(s). The prints must be signed and sealed by a Professional Engineer. Contact the Design Engineer - Municipal Utilities for the number of prints required.
18. *Consultant:* Incorporate the final municipal utility plans, profiles, special provisions and estimates into the OEC submittal package.
19. *Consultant:* The Consultant shall incorporate all municipal utility comments from the OEC meeting into the final municipal utility plans, profiles, special provisions and estimates.
20. *Consultant:* Attend any meetings with the municipal utility owners as requested by the Design Engineer - Municipal Utilities.
21. Receive permit and municipality approval and distribute to Project Manager.
22. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3670

Sheet 5 of 5
DATE: Jan. 2004

TASK TITLE: Develop Municipal Utility Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

SUPPLEMENTAL INFORMATION

For more details regarding the preparation final municipal utility plans, special provisions and estimates, refer to the following:

Items to be purchased:

1. AWWA Standards
2. Michigan Design Manual, Road Design (SI), Volume 3, Chapter 9
3. Ten States Standards for Water Works and Wastewater Facilities

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3672

DATE: Sept., 1999

TASK TITLE: Develop Special Drainage Structures Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

TASK START: Receipt of preliminary plans.

TASK FINISH: Final Plans turned into Specifications and Estimates Unit.

TASK DESCRIPTION:

The Design of Special Drainage Structures including storm water pumping stations.

The design of special drainage structures involves the preparation of preliminary plans, final plans, specifications, special provisions and supplemental specifications for various highway drainage structure jobs including, but not limited to, storm water pumping stations, tunnel storm sewers, junction chambers, energy dissipation structures, box/slab culverts connection details and special collar details for various types of structures originating from the bridge and road design sections and special headwall details for various types and shapes of concrete culverts. The special drainage structure plans may be prepared by the Department's Municipal Utilities Design Unit, consultant, or a combination of these design groups depending on the availability of Department personnel or other factors.

The special drainage structure plans typically show:

- Plans, profiles, and details of existing special drainage structures to be modified
- Plans, profiles, and details of proposed special drainage structures.

The work is initiated with the receipt of the preliminary plans. The design group collects information from a variety of sources including: the existing plans, base plans, survey notes, contacts with maintenance, C&T, and regions. The design group prepares plans based on the information gathered. The special drainage structure plans are then submitted for incorporation into the job plans for the Plan Review.

The design group preparing the special drainage structure plans receives and reviews the plan review comments. The group incorporates any agreed-upon changes into the plans. The design group develops the final plans, specifications, special details and a cost estimate.

The plans and specifications are distributed to the Project Manager to be incorporated into the final plans. The final plans and specifications are then reviewed by the Department later as part of the OEC Meeting (task 3870).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3672

Sheet 2 of 2
DATE: Sept., 1999

TASK TITLE: Develop Special Drainage Structure Plans

REPORTING MANAGEMENT UNIT: Design - Municipal Utilities

WORK STEPS:

1. Collect information. Initiate Soil Borings (task 3530).
2. Input actual start date into appropriate data system.
3. Along with the Project Manager, coordinates and conducts liaison activities with government agencies, private individuals and bureaus, divisions and sections within MDOT to obtain input for design preparation of special drainage structure plans and specifications.

Note: Design flows to be handled by the drainage structure (i.e. culvert, storm sewer, energy dissipater etc.) must be reviewed and approved by the Design Engineer - Hydraulics/Hydrology (Tasks #3520 & #3522).

4. Prepare special drainage structure plans, profiles and details.
5. Participate in the utility meeting (task 3660).
6. Submit special drainage structure plans to be incorporated into the road plans for the Plan Review (task 3590).
7. Receive plan review comments.
8. Complete special drainage structure plans, profiles, specifications, special details and cost estimate.
9. Distribute copy of plans to Project Manager (task 3840).
10. Input actual finish date into appropriate data system.
11. Participate in OEC meeting (task 3870).

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3675

DATE: April, 2004

TASK TITLE: Develop Electrical Plans

REPORTING MANAGEMENT UNIT: Design - Electrical

TASK START: Receipt of base plans.

TASK FINISH: Distribution of the final electrical plans.

TASK DESCRIPTION:

The electrical plans provide a proposed layout for new or existing electrical facilities impacted by the job. The types of electrical facilities may include freeway lighting, municipal street lighting, rest area electrical, weigh station electrical, bascule bridges, pump houses and/or any other electrical systems required for highway construction jobs. The plans may be prepared by Department's Design - Electrical unit, consultant, municipality or a combination of these design groups depending on Department or local agency policies or other factors.

The preliminary electrical plans typically show:

- existing electrical layout
- proposed electrical layout, and
- other utilities.

The work is initiated with the receipt of the base plans. The Design - Electrical Unit oversees the design group that prepares the plans. The design group collects information from a variety of sources including: the base plans, survey notes, contacts with region personnel, local agencies, private and municipal utilities. The design group prepares preliminary plans based on the information gathered. The preliminary electrical plans are then submitted to the Project Manager for incorporation into the plans for THE Plan Review.

The final electrical plans provide the final layout for the electrical facilities to be installed or relocated as a part of the job. The design group preparing the final electrical plans receives and reviews the preliminary plan review comments, utility meeting minutes and comments from the local agency. The design group incorporates any agreed upon changes into the plans. The final plans, specifications, special details and cost estimates are then developed. Information required for any agreement is sent to Governmental Coordination and Railroads.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3675

Sheet 2 of 5
DATE: April, 2004

TASK TITLE: Develop Electrical Plans

REPORTING MANAGEMENT UNIT: Design - Electrical

TASK DESCRIPTION: (Continued)

The completed plans and associated documentation are sealed by a Michigan Licensed Professional Engineer, if appropriate, and distributed to the municipal utility owner for review. The plans and specifications are also distributed to the Project Manager to be incorporated into the final plans. The final plans and specifications are then reviewed by the Department as part of the OEC Meeting (Task 3870).

NOTE: Durations and labor hours for this task must be adjusted in accordance with the current standards listed by the Electrical Unit. Generated durations and labor hours are based on a lighting job.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3675

Sheet 3 of 5
DATE: April, 2004

TASK TITLE: Develop Electrical Plans

REPORTING MANAGEMENT UNIT: Design - Electrical

WORK STEPS: (Consultant)

Any jobs which require freeway lighting should be completed by MDOT's Design Electrical Unit unless their work load will not allow it.

The following scope of work applies to the relocation or installation of new lighting on free access trunkline. The scope is generic and should be reviewed for each particular job to assure it is scoped properly.

The consultant shall be responsible for the following:

1. Contacting the owning agency of the existing lighting system and setting up a meeting involving the consultant, department, the owning agency, the utility company and other parties necessary to upgrade the lighting system.
2. Securing any agreements necessary between the department and the agency who will own, operate and maintain the lighting system.
3. Conducting field survey if needed.
4. Contacting the utility company or companies for either a new electrical power feed point and/or relocation of the existing.
5. Contact the owner of the proposed lighting system in conjunction with the department to determine the desired levels of illumination on the proposed roadway.
6. Providing a complete set of preliminary and final plans, including specifications, standard plans and cost estimates. Preliminary and final plans, shall include, but are not limited to the following:
 - a. Providing a lighting layout and the necessary calculations to assure that the desired illumination levels are provided.
 - b. Plans should include temporary lighting where required.
 - c. Where required, the consultant shall obtain any soil boring which may be required for the installation of light standard foundations.
 - d. Provide on the plans, all conduit runs, identify conductors in conduit, locate hand holes, light standards, power feeds and control cabinet locations.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3675

Sheet 4 of 5
DATE: April, 2004

TASK TITLE: Develop Electrical Plans

REPORTING MANAGEMENT UNIT: Design - Electrical

WORK STEPS: (Consultant - continued)

- e. Provide a wiring diagram for the proposed lighting system and voltage drop calculations.
 - f. Prepare documents and specifications required for maintaining traffic.
 - g. Design all electrical components needed for the job, including photo control, lighting control cabinets and all other electrical equipment required to make a complete and operating lighting system.
 - h. Provide a complete set of specifications and cost estimate.
7. Coordinating periodic meetings between the owner of the lighting system, the department and the consultant to assure that the design is satisfactory to the owner of the future lighting system.
 8. The review and approval of shop drawings.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3675

Sheet 5 of 5
DATE: April, 2004

TASK TITLE: Develop Electrical Plans

REPORTING MANAGEMENT UNIT: Design - Electrical

WORK STEPS: (Both In-House and Consultant)

1. Collect information.
2. Input actual start date into appropriate data system.
3. Contact municipal utility, region, local agencies, and involved Department personnel for their input.
4. Scope of electrical work is required as there are several different types of design possible as described in **TASK DESCRIPTION**. (See **NOTE**)
5. Prepare preliminary electrical plans, specifications and cost estimate.
6. Participate in the utility meeting.
7. Submit preliminary electrical plans for THE Plan Review.
8. Receive comments from THE Plan Review and make the necessary corrections to the plans and specifications.
9. Prepare final electrical plans, profiles, specifications, special details and cost estimate.
10. Submit information for agreements to Governmental Coordination and Railroads.
11. Distribute final plans and related documents to municipal utility owner for review and permit application. If consultant design, the plans and specifications must be signed and sealed by a Michigan Professional Engineer
12. Input actual finish date into appropriate data system.
13. Distribute copy of plans to Project Manager.

P/PMS TASK DESCRIPTIONS

Mitigation/Permits – (3700 Series)

TASK NUMBER: 3710

Sheet 1 of 2
DATE: Jan. 2004

TASK TITLE: Develop Required Mitigation

REPORTING MANAGEMENT UNIT: Planning - Compliance and Mitigation

TASK START: When 1775 form is created.

TASK FINISH: Submission of mitigation requirements for inclusion in final plans.

TASK DESCRIPTION:

Mitigation requirements are formulated based on the environment. These requirements will be incorporated into the job plans and specifications. The purpose of these requirements is to minimize the social, economic and environmental impacts and/or replace the environmental resources taken by the job. These mitigation requirements can address such areas as:

- flood plains,
- storm water run off,
- endangered species,
- wetlands,
- historical/archeological sites,
- noise
- migratory birds
- Section 4(f), 6(f) lands
- Act 116 land (farmland),
- coastal zone,
- streams and lakes,
- and navigable waterways
- erosion control
- air quality
- tree removals

For consultants, this procedure begins with the submission of the base plans and ends with the submission of permit applications to the M•DOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3710

Sheet 2 of 2
DATE: Jan. 2004

TASK TITLE: Develop Required Mitigation

REPORTING MANAGEMENT UNIT: Planning - Compliance and Mitigation

WORK STEPS:

1. Review relevant materials, including studies and reports developed during EPE, and any information received with the scope of design services. Address any questions to the M•DOT Project Manager.
2. Input actual start date into appropriate data system.
3. Conduct a field review verifying job scope.
4. Attend scoping and GI meetings to discuss mitigation measures.
5. Send memos to Project Managers and Region Resource Specialists at the time of GI meetings, when study forms are put in the “Wait” file and when the job is cleared, informing them of current mitigation measures.
6. Review plans.
7. Review 1775 form for specialist’s comments on mitigation requirements.
8. Look for mitigation areas to minimize or avoid impacts in association with appropriate units (Design, Environmental, etc.)
9. Contact resource agencies as necessary to coordinate mitigation measures.
10. Review final plans.
11. Input actual finish date into appropriate data system.
12. Prepare appropriate documentation.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 1 of 9
DATE: March 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

TASK START: Identification of need for permit.

TASK FINISH: Prior to 120 days before the approved OEC meeting date.

TASK DESCRIPTION:

Nearly all of this work is performed by the Region Environmental Permit Coordinators. This task should begin early in the project development process, usually after the need for a permit is identified in the environmental clearance process. The process is to be completed; i.e., the permit application is to be assembled and submitted, 120 days before the OEC is to be held in order to allow the issuing regulatory agencies time to process and issue the permit(s).

Permits are generally required when a job requires work in:

- wetlands
- coastal zones
- navigable waterways
- streams, lakes, and county drains, and intermittent stream channels (Tasks 3520 & 3522)
- floodplains (Task 3520)
- endangered species habitat

The permit authorizes the permittee to perform work on a given job within the specific conditions of the permit. Conditions may include monitoring programs, special construction methods, and/or mitigation measures for environmental damage caused by the job.

NOTE: Additional information regarding Environmental Permits may be found in the MDOT Road Design Manual (Chapter 10) and the MDOT Drainage Manual (Chapter 2). More specific information for consultants may also be found in Attachment A to this task. See Pages 6-9.

Information necessary for completion of the permit application:

A. All jobs to include:

1. Job location map indicating approximate locations of each proposed regulated activity. This must have road names readable at a 8 ½ x 11 size. (Example: a USGS quad enlarged with culvert extensions at county drains circled.)
2. County, township, range and section numbers of regulated activities.
3. Estimated job letting date, construction start date, and completion date.
4. Three sets of ½ size plans (11" x 17") and a readable set of 8 ½" x 11" plan sheets, including cross sections of regulated activities.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 2 of 9
DATE: March 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

TASK DESCRIPTION: (Continued)

5. Provide information on soil erosion and sedimentation controls planned in conjunction with the regulated activities (obtain from Region Soils Engineer/Lansing C&T staff).
6. List of names and addresses of riparian owners on the four quadrants of the watercourse if work will be public noticed by MDEQ. (examples of work requiring public notice are culvert extensions that total more than 24 feet or a replacement of a culvert with a 25 square foot waterway area).
7. Include information on any temporary structures (such as haul roads or access pads) or measures to be used in the regulated area during construction.

B. For new culverts, culvert repair, or culvert extensions at regulated streams and drains, plans should show the following:

1. Plan view of the culvert and road.
2. Cross-section and profile view of the culvert (or pipe crossings if streams or county drains are involved) and road. For jobs that have similar treatment for all culvert work, a typical cross-section that applies can be used. Jobs that fall into the Army Corp of Engineers jurisdiction, however, require a cross-section for each regulated culvert including elevations. (See Task 3350).
3. Dimensions of pipe/culvert openings. (See Task 3520 and 3522).
4. Earth excavation and embankment in cubic yards needed to complete the crossing structure job. Volumes should be specific for dredge and fill within stream, dredge and fill within wetland, dredge and fill within floodplain.
5. Volume of riprap in cubic yards needed to complete the crossing structure job. Volumes and dimensions must be specific for riprap above and below the ordinary high water mark.
6. For culvert replacements or new culverts, the MDOT bridge and culvert data form must be completed. Information to be provided includes elevations of the invert, high water, and road grades at the structure and the low point of approach. (Note: Under tasks 3520 and 3522 Design Engineer – Hydraulics provides same data in another form per MDOT Drainage Manual.)
7. A copy of the hydraulic certification and the DEQ approval memo for bridge or culverts with a drainage area of 2 or more square miles are obtained from the Design Engineer – Hydraulics per Task 3520. For culverts with drainage area less than 2 square miles, hydraulic certification may be obtained by a licensed professional engineer (development or consultant engineer) per Task 3522.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 3 of 9
DATE: March 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

TASK DESCRIPTION: (Continued)

C. For new bridges or bridge repair at regulated streams or drains:

1. Plan view of the bridge and road.
2. Elevation and profile view of the bridge and road to include bridge abutments, piers, riprap and stream.
3. The MDOT BRIDGE AND CULVERT DATA FORM must be completed. Information to be provided includes elevations of the low steel, high water, and road grades at the structure and the low point of approach. See Task 3520 and the Design Engineer – Hydraulics.
4. Earth excavation and embankment in cubic yards needed to complete the crossing structure. Volumes should be specific for dredge and fill within stream, dredge and fill within wetland, dredge and fill within floodplain.
5. Volume of riprap in cubic yards needed to complete the crossing structure job. Separate volumes and dimensions must be given for riprap above the ordinary high water mark and below the ordinary high water mark.
6. A copy of the hydraulics certification and DEQ approval memo from the Design Engineer – Hydraulics (task 3520).

D. For fill in wetlands:

1. A plan view of the road and wetland area for each take.
2. A cross-section of the wetland take area (either one typical or as many as needed).
3. Wetland fill calculations to include wetland fill or excavation limits by station, the square footage and acreage, and cubic yards of fill into wetlands for each take. The wetland take quantities should be calculated from the existing toe of slope to the proposed toe of slope.
4. **If wetland mitigation is needed, a wetland mitigation inventory report should be included with application (to be provided by the Compliance and Mitigation Unit).**

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 4 of 9
DATE: March 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

TASK DESCRIPTION: (Continued)

E. For storm water outlets into regulated wetlands or waterways:

1. Plan view of the outlet.
2. Cross-section and profile view of the outlet including riprap placement.
3. Earth excavation volume, structure backfill volume and volume of riprap in cubic yards needed at the outlet. Volumes and dimensions should be specific, such as: amount and dimension of rip rap above and below ordinary high water mark, cut and fill within wetland, cut and fill within waterway, cut and fill within floodplain.
4. Description of any treatment of the storm water to be outletted (catch basins, detention basins, vegetated spillways, etc.) from the MDOT Aquatic Resource Manager and MDOT Drainage Specialist (see Task 3522).

F. For stream or county drain relocation:

1. A plan view of the old and new channels with length and width noted.
2. A cross-section of the new channel.
3. Earth excavation and embankment quantities needed to complete relocation. This is the specific amount and dimension of excavation and fill within waterbody, within wetland, and within floodplain.
4. Placement of soil erosion controls during construction.
5. Method of maintaining flow and stabilizing the new channel before it is opened to flow.
6. Quality and quantity of riprap to be used.
7. Construction sequencing of steps involved in relocation including constructing new channel in the dry, soil erosion controls, and stabilization of the new channel.
8. Copy of the coordination letter from the County Drain Commissioner Office which approves the plan must be sent to and meets approval of the MDOT Drainage Coordinator.

Additional work including, but not limited to, pre-application conferences, verification of wetland boundaries, and notification of property owners may be needed prior to submission of the application.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 5 of 9
DATE: March 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS:

1. Determine if permit(s) needed (May be determined by Region Environmental Permit Coordinator).
2. Input actual start date into appropriate data system.
3. Determine if job revisions can eliminate the need for permit(s)
4. Negotiate with permitting agencies as necessary.
5. Obtain mitigation and monitoring plan if necessary from Wetland Mitigation Specialist, who will work with the Aquatic Resource Manager and the Design Engineer – Hydraulics.
6. Collect required information from design staff and the Design Engineer - Hydraulics by requesting a completed Permit Information Request form and MDOT Bridge and Culvert Data Form from the Project Manager.
7. *Consultant:* Anticipate field meeting with MDOT staff. Prepare for the meeting and attend it. It is the Consultant's responsibility to be fully cognizant and prepared to defend the planned measures.
8. *Consultant:* Receive comments from MDOT Project Manager on base plans.
9. *Consultant:* Resolve and respond to review comments.
[The review cycle may be repeated until the mitigation measures are approved.]
10. Prepare required permit applications and/or coordination letters.
11. *Consultant:* It is the Consultant's responsibility to check the drawings against agreed comment resolution.
12. *Consultant:* Submit revised plans as part of the preliminary plan submittal for Grade Inspection.
13. Input actual finish date into appropriate data system.
14. Submit completed application(s) to permitting agency(s).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 6 of 9
DATE: April 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

Attachment A – Additional Information for Consultants

Consultants:

Between the base plans submittal and the submittal of preliminary plans, the Consultant has developed the mitigation measures under P/PMS task 3710 and refined them based on review comments. The revised mitigation plans form the basis for permit applications, most of which will be prepared and submitted by MDOT's Project Planning Division using input from the design Consultant. The Consultant prepares the NPDES (National Pollution Discharge Elimination System) application - the "Notice of Coverage for NPDES Storm Water Construction Permit". The Consultant is reminded to use the most current forms. This procedure covers the preparation of the NPDES application and input to other permits.

This task involves the following types of permits:

- Develop the permit application information to the level and format required by MDOT, based on the scope of design services and review comments. The following permits may be required for M•DOT construction jobs (See also Table of Permits Required for MDOT Construction Jobs following):
 1. Water Mains
 - Act 399 (Safe Drinking Water Act) permit required. Now Part 31, Water Resource Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), aka The Michigan Natural Resources and Environmental Protection Act (MNREPA)
 - Refer to and utilize P/PMS Task 3670 – Develop Municipal Utility Plans. Coordinate work and/or permit with Design Engineer – Municipal Utilities.
 - Permit application (with plans) to be sent to the Michigan Drinking Water and Radiological Protection Division, Department of Environmental Quality in Lansing.
 - Apply during preliminary planning stage. Changes at final plan stage must be approved by MDEQ.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 7 of 9
DATE: April 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

Attachment A – Additional Information for Consultants (continued)

2. Water Wells

- See previous comment. Part 127 (Groundwater Quality Control Act) permits required.
- Permit applications must be sent to both MDEQ and to the County Health Department having jurisdiction in the county where the well is located
- Apply during the preliminary planning stage. Changes in location or construction specifications must be approved by both agencies prior to implementation.
- Type I wells specifications submitted to MDEQ by M•DOT design staff. Type II wells specifications assigned by MDEQ staff.

3. Removal of Contaminated Soil from Site/Hazardous Waste

- Manifest required. (Obtain form from Materials & Technology Division.
- Depending upon contaminant involved, up to twelve environmental acts may be involved. Construction & Technology has details on how to proceed.

4. Dredge/Fill in Navigable Waters and Associated Wetlands

- U.S. Section 404 (Clean Water Act), permits required.
- Permit application to be submitted to U.S. Army Corps of Engineers and MDEQ through the M•DOT Environmental Section
- Plans to be prepared by M•DOT design staff.
- Due to public notice requirements, submit data to support the application during the preliminary planning phase.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 8 of 9
DATE: April 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

Attachment A – Additional Information for Consultants (continued)

- Justification why the resource cannot be avoided, measures taken to minimize impacts, brief description of the job purpose and need.

5. Soil Erosion and Sedimentation

- Part 91 of MNREPA (Soil Erosion and Sedimentation Control Act), no permit required if work is within MDOT R.O.W. or easements. MDOT is designated by MDEQ as an "authorized public agency" with a soil erosion/sedimentation plan on file at MDEQ. MDOT is certified to conduct its own SESC program.
- Direct specific questions to Construction and Technology Division.

6. Work in the Floodplain

- Part 31 of MNREPA (Water Resources Protection) permit. Required.
- Act 303 of MNREPA (Wetlands Protection Act).
- See also PPMS Tasks 3520 and 3522.

NOTE: This listing is intended to be a series of examples of various work types and the various environmental laws that apply to them. There could be numerous other examples, requiring many combinations of permits. See also the Table of Permits Required for MDOT Construction Jobs that follows.

- Submit these materials to the MDOT Project Manager, who will forward them to the Project Planning Division/Environmental Section.
- Receive a blank form for the NPDES Notice of Coverage with instructions from the MDOT Project Manager. (See Exhibit 1.)
- Perform and check calculations.
- Complete the form and return it with a set of reproducible plans and the checked, original calculations. (Keep copies in the job file with a record of the transmittal.)
- Await approval.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3720

Sheet 9 of 9
DATE: April 2004

TASK TITLE: Assemble Environmental Permit Application Information

REPORTING MANAGEMENT UNIT: Project Manager

Attachment A – Additional Information for Consultants (continued)

PERMITS REQUIRED FOR M•DOT CONSTRUCTION JOBS

PERMIT NAME	LAW (ACT)	REGULATING AGENCY	ACTIVITIES REGULATED
Wetland	Part 303 of 451, Section 404	MDEQ, Army Corps of Engineers	Filling wetlands
Stream Crossing	301 of 451, 305 of 451	MDEQ	Inland lakes/streams, Nat. Rivers (work in)
Coast Guard	Section 9	U.S. Coast Guard	All crossings of navigable waters
Floodplain	Part 31 of 451	MDEQ, local government	Filling or construction below 100-year floodplain
Endangered Species	16 U.S.C. 1538	MDEQ, USFWS, EPA	Habitat destruction
Soil Erosion	Part 91 of 451	MDOT, county drain commissions	Disturbance of soil
Real Estate– Hazardous Waste	Variable	MDEQ, USEPA (contact C&T)	Generation, transport, and disposal of hazardous materials/waste
Mining (soil)	No state or federal statute	Local building/zoning commissions	Excavating soil from a property
Tree Removal ROW	RRR, AASHTO, FHWA-IP-86-17 4F, 24 CFR 800	MDOT, local building/zoning commissions	Removing trees in/out for safety reasons, for historical site impacts
Well	Part 54 of 451	MDEQ, local H.D.	Installing T-I and II public water wells
Water Mains	399	MDEQ	Installing Type I water main piping
County Drain	40 (Drain Code)	MDEQ, county drain commissions	Altering/filling inland lakes, streams or "blue line" designated drains
Piers, Pilings	U.S. Section 404, Part 301 of 451, Section 10	MDEQ, Army Corps of Engineers	Filling or placement of a structure in a navigable river
Bridge/Crossing	U.S. Section 10	MDEQ, Army Corps of Engineers	Construction of any structure crossing a navigable river
Dam Repair	Part 315 of 451	MDEQ	Construction/repair of any portion of an impoundment or dam
Great Lakes Seawall	Part 31 of 451, Part 87, Section 404	MDEQ, Army Corps of Engineers	Installation of sheet piling and backfill in bottomland of Great Lakes

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3730

Sheet 1 of 1
DATE: March 2004

TASK TITLE: Obtain Environmental Permits

REPORTING MANAGEMENT UNIT: Region Environmental Permit Coordinator

TASK START: Minimum of 120 days prior to OEC.

TASK FINISH: Issuance of Permits.

TASK DESCRIPTION:

This task begins with the submittal of a complete application package to the appropriate permitting agencies (MDEQ, MDNR, U.S. Army Corps of Engineers, U.S. Coast Guard, etc.) a minimum of 120 before the OEC is held. This task consists of monitoring its progress through the agency review process, negotiating any changes required by the agencies, and providing supplemental information as necessary. This time frame allows for the processing time required by the issuing agencies. The issued permit will be included in the letting package.

After issuance the permit is distributed to all appropriate parties (include Design Engineer – Hydraulics on distribution). The Project Manager/Project Engineer is responsible for ensuring that the permits remain valid through advertising and construction. This may entail requesting permit revisions for time extensions, permit resubmittals, or other job changes.

WORK STEPS:

1. Submit complete application package to appropriate agency(s) (completion of Task 3720).
2. Input actual start date into appropriate data system.
3. Monitor permit progress through the review process.
4. Obtain and submit supplemental information as necessary.
5. Negotiate changes requested by the issuing agencies; this may require an on-site review with the applicable resource agency(s).
6. Check issued permit for accuracy & correctness. Obtain changes/corrections if necessary
7. Input actual finish date into appropriate data system.
8. Distribute permit and DEQ Project Completion Card to Project Manager/Project Engineer. Submit copies of permit to Design Engineer - Hydraulics, Region Resource Specialist, and all other appropriate parties.

P/PMS TASK DESCRIPTIONS

Final Plan Preparation – (3800 Series)

TASK NUMBER: 3810

Sheet 1 of 1
DATE: Aug., 1999

TASK TITLE: Conduct Final Geometrics and Roadside Safety Reviews

REPORTING MANAGEMENT UNIT: Traffic and Safety - Geometrics

TASK START: Receipt of THE Plan Review Meeting comments, or final plans for OEC.

TASK FINISH: Submission of Certification sheet.

TASK DESCRIPTION:

This task encompasses the review and evaluation of changes made in the proposed job geometrics and roadside safety features during the development of final plans. This is an ongoing effort throughout the development and evaluation of the preliminary and final plans. It is important that periodic communication be made so that the final plans can be completed and the job geometrics and safety features accepted.

The evaluation made by the Department's Geometrics Unit addresses areas such as:

- sight distances,
 - design speeds,
 - curve and interchange placement,
 - turning radii,
 - exit and entrance ramps,
 - driveways,
 - turn lanes,
 - capacity,
 - roadside safety, and
 - Intersection design.
-

WORK STEPS:

1. Evaluate proposed job geometrics and roadside safety features.
2. Input actual start date into appropriate data system
3. Prepare comments.
4. Attend OEC, if necessary
5. Meet with designer to review comments, if necessary.
6. Input actual finish date into appropriate data system.
7. Approve job geometrics and roadside safety features by submitting the certification sheet, or return to step 5.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3821

Sheet 1 of 3
DATE: Jan. 2004

TASK TITLE: Prepare/Review Traffic Signal Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Design Subunit

TASK START: Receipt of preliminary plans from Project Manager with Final Geometrics determined.

TASK FINISH: Distribution of final plans and proposal for the Traffic Signal Devices Plan to the Project Manager.

TASK DESCRIPTION:

This task includes preparing or reviewing plans and proposal for traffic signals work to be included with road and/or bridge design plans for the new installation or modernization of existing electronic traffic signal control devices. Design works for other electronic traffic control devices are included in this task as well. Examples of other devices include flashers on signs and electronic speed limit signs.

The location(s) and type of work for each traffic signal is stated in the Scope of Design Services.

NOTE: If the traffic signal falls under the jurisdiction of a local agency, the design and preparation details will be defined in the Scope of Design Services.

WORK STEPS:

1. Receipt of preliminary plans, comments, and/or correspondence from the Plan Review Meeting from the Project Manager with Final Geometrics determined.
2. Input actual start date into appropriate data system.
3. Discuss/review Traffic Signal Operations with Region or TSC Traffic and Safety Engineer, including Construction Staging as appropriate.
4. Prepare or review final Traffic Signal Plan, engineering documents and related work necessary for new installation or modernization of electronic traffic signal control devices, including Construction Staging as appropriate
5. Check right-of-way restrictions, overhead utilities and/or underground utilities to determine if the placement of a supporting structure creates a conflict. If conflicts are found, contact the MDOT Project Manager.
6. Prepare or review any special provisions for the proposal package.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3821

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Prepare/Review Traffic Signal Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Design Subunit

WORK STEPS: (Continued)

7. Submit four sets final traffic signal plans, special provisions and estimates for review and approval by the MDOT Project Manager prior to preparing the Omission/Error Check Plan submittal package. Final plans include, but are not limited to the following:
 - a. construction details
 - b. condition diagram to nearest half meter (Scale: 1:400)
 - c. possible underground and/or overhead utility conflicts
 - d. all pertinent operational features; i.e., lane lines, lane usage, street width, etc.
 - e. signal phasing diagram(s) if required
 - f. traffic signal removal and installation plan sheets
 - g. traffic signal removal and proposed wiring diagrams
 - h. list of Materials and Quantities.
 - i. span calculation diagrams
 - j. Appropriate note blocks for contact persons, etc.
 - k. soil boring information including depths, soil description, water level, and foundation depths
 - l. final special provisions and specifications
8. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
9. Make necessary changes and resubmit the entire package including a written response to all comments. *Consultant:* Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
10. *Consultants:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one not received within two weeks of the final traffic signal submittal.
11. Check final traffic signal items in accordance with QA/QC plan.
12. *Consultants:* Incorporate the final traffic signal plans, special provisions and estimates into the Final Plan submittal package.
13. *Consultants:* After the final traffic signal plans are accepted, submit 3 1/2" diskette(s) or CD of the plans to the MDOT Project Manager.
14. Input actual finish date into appropriate data system.
15. In-House: Submit the final traffic signal plans and proposal package to the Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3821

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Prepare/Review Traffic Signal Plan

REPORTING MANAGEMENT UNIT: Traffic Signals Design Subunit

SUPPLEMENTAL INFORMATION

For more information regarding preparation of signal plans, estimates and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. National Manual of Uniform Traffic Control Devices
3. 1996 Standard Specifications for Construction
4. Michigan Vehicle Code
5. Local and National Electrical Codes

Items available through the MDOT Bulletin Board System:

1. MDOT - Pay Item Code Book
2. MDOT Typical Signal Construction Detail Sheets
3. MDOT Typical Signal Information Note Sheet
4. MDOT Typical Signal Legend Sheet
5. Cell library
6. Blank standard plan sheet with borders and title block
7. MDOT Supplemental Specifications

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3822

Sheet 1 of 2

DATE: Jan. 2004

TASK TITLE: Complete Permanent Pavement Marking Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

TASK START: Receipt of Preliminary Plans Review Comments (GI) and preliminary plans.

TASK FINISH: Distribution of final plans and quantities for the Pavement Marking Plan.

TASK DESCRIPTION:

This includes developing plans, quantities and specifications, or the review thereof, for pavement markings. Most jobs will typically only require pay items and quantities to be included on the note sheet. Detailed drawings will be required for non-typical areas, such as interchanges, complex intersections and individual locations where the pavement marking layout needs to be detailed.

WORK STEPS:

1. Receive comments and/or correspondence from the Plan Review Meeting from the MDOT Project Manager.
2. Input actual start date into appropriate data system.
3. Prepare final design for the Pavement Marking Plan and estimate, incorporating comments from the Preliminary Plan Review.
4. Determine final quantities for the Pavement Marking Plan.
5. Prepare any special provisions.
6. *Consultant:* Incorporate the final pavement marking plans and estimates into the Omission/ Error Check Plan submittal package.
7. *In-House:* Submit the plans, quantities and special provisions to the Project Manager for review and comments at the OEC meeting.
8. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3822

Sheet 2 of 2
DATE: Jan. 2004

TASK TITLE: Complete Permanent Pavement Marking Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

SUPPLEMENTAL INFORMATION

For more information regarding preparation of pavement marking traffic plans refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)

Items available through the MDOT Bulletin Board System:

1. Pavement Marking Typical Plans
2. MDOT Pavement Marking Policy

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

DATE: Jan. 2004

TASK NUMBER: 3823

TASK TITLE: Complete Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

TASK START: Receipt of Preliminary Plans Review Comments (GI) and preliminary plans.

TASK FINISH: Distribution of final plans and quantities for the Non-Freeway Signing Plan.

TASK DESCRIPTION:

This task entails developing final quantities, plans and special provisions for non-freeway signing on MDOT design jobs.

WORK STEPS:

1. Receive comments and/or correspondence from the Plan Review Meeting from the MDOT Project Manager.
2. Input actual start date into appropriate data system.
3. Request a meeting with the Region Materials/Testing Engineer or Soils Engineer through the MDOT Project Manager to discuss the geotechnical requirements for this job. All proposed cantilever and truss locations will require soil borings.
 - a. *Consultant:* If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is a Consultant task, then obtain the required soil borings, complete the related analysis, identify any suspected contamination of the boring site, and prepare foundation design, if required. Depending on the type of soil the Consultant will recommend the type of foundation for each structure. If the nature of the soil is such that standard foundation design cannot be recommended, the Consultant shall be responsible for either relocating the proposed overhead structure or revising the standard foundation design to meet the specific soil needs. The Consultant shall submit the geotechnical investigation to the Region Materials/Testing Engineer or Soils Engineer for review, approval, and recommendations.
 - b. *Consultant:* If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is **NOT** a Consultant task, then send a request for the geotechnical investigation to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3823

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Complete Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

WORK STEPS: (Continued)

4. Produce final signing plans.
 - a. Incorporate comments from the Preliminary Plan Review.
 - b. The final non-freeway signing plans shall show the existing signs, proposed signs, all supporting structures, and signs to be removed. Existing signs shall be shown either as removed, retained, or replaced.
 - c. Include fabrication details for unique signs. Sign designs for non-standard signs will be shown on separate detail sheets. Standard signs may be referred to by the standard sign numbering system (for example, R5-6).
 - d. The selection of signs, location, letter size, color, etc. shall be according to the 1994 MMUTCD.
 - e. Incorporate the MDOT structure analysis.
 - f. Prepare special provisions.
 - g. Determine quantities.
5. Submit the final non-freeway signing plans, special provisions and estimates for review and comments/approval to the MDOT Project Manager prior to preparing the Omission/Errors Check Plan submittal package.
6. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
7. *Consultant:* Make necessary changes and resubmit the entire package including a written response to all comments. Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
8. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the final non-freeway signing plan submittal.
9. Check final signing items in accordance with QA/QC plan.
10. *Consultant:* Incorporate the final non-freeway signing plans, special provisions and estimates into the Final Plan submittal package.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3823

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Complete Non-Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Region/TSC Traffic and Safety

WORK STEPS: (Continued)

11. After the final non-freeway signing plans are accepted, create the final non-freeway signing inventory and base alignment line roll.*
 - a. The final non-freeway signing inventory shall show only the proposed and retained signs using MDOT's inventory sheet background. *Consultant:* This information shall be provided on a 3 1/2" high density diskette(s) and 16" x 11" paper plots.
 - b. The base alignment line roll shall show the roadways, edge of metal, ramps, interchanges, structures, centerline, stationing and intersections. *Consultant:* This information shall be provided on a 3 1/2" high density diskette(s) or CD.

12. Submit to the MDOT Project Manager the final non-freeway signing inventory and the base alignment line roll.

* Jobs that are longer than 1-1.5 miles may be required to be entered into the department's "Computerized Inventory and Contract Preparation" software, rather than on plan sheets. Check with Region Traffic and Safety to see which type of plans is preferred.

13. Input actual finish date into appropriate data system.

SUPPLEMENTAL INFORMATION

For more information regarding preparation of signing plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. MDOT Standard Highway Signs Manual
5. Average Unit Prices for Traffic Control Items
6. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)
7. AASHTO Roadside Design Guide
8. MDOT Traffic and Safety Division Sign Support Typical Plans

Items available through the MDOT Bulletin Board System:

1. Signing plan note sheets
2. Cell library
3. Blank standard plan sheet with borders and title block
4. MDOT Supplemental Specification
5. MDOT Special Provisions

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 3824

DATE: Jan. 2004

TASK TITLE: Complete Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation -Reflective Systems Design

TASK START: Receipt of Preliminary Plans Review Comments (GI) and preliminary plans.

TASK FINISH: Distribution of final plans and quantities for the Non-Freeway Signing Plan.

TASK DESCRIPTION:

This task entails developing final quantities, plans and special provisions for non-freeway signing on MDOT design jobs.

WORK STEPS:

1. Receive comments and/or correspondence from the Plan Review Meeting from the MDOT Project Manager.
2. Input actual start date into appropriate data system.
3. Request a meeting with the Region Materials/Testing Engineer or Soils Engineer through the MDOT Project Manager to discuss the geotechnical requirements for this job. All proposed cantilever and truss locations will require soil borings.
 - a. *Consultant:* If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is a Consultant task, then obtain the required soil borings, complete the related analysis, identify any suspected contamination of the boring site, and prepare foundation design, if required. Depending on the type of soil the Consultant will recommend the type of foundation for each structure. If the nature of the soil is such that standard foundation design cannot be recommended, the Consultant shall be responsible for either relocating the proposed overhead structure or revising the standard foundation design to meet the specific soil needs. The Consultant shall submit the geotechnical investigation to the Region Materials/Testing Engineer or Soils Engineer for review, approval, and recommendations.
 - b. *Consultant:* If P/PMS TASK 3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION is **NOT** a Consultant task, then send a request for the geotechnical investigation to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3824

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Complete Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation -Reflective Systems Design

WORK STEPS: (Continued)

4. Produce final signing plans.
 - a. Incorporate comments from the Preliminary Plan Review.
 - b. The final non-freeway signing plans shall show the existing signs, proposed signs, all supporting structures, and signs to be removed. Existing signs shall be shown either as removed, retained, or replaced.
 - c. Include fabrication details for unique signs. Sign designs for non-standard signs will be shown on separate detail sheets. Standard signs may be referred to by the standard sign numbering system (for example, R5-6).
 - d. The selection of signs, location, letter size, color, etc. shall be according to the 1994 MMUTCD.
 - e. Incorporate the MDOT structure analysis.
 - f. Prepare special provisions.
 - g. Determine quantities.
5. Submit the final non-freeway signing plans, special provisions and estimates for review and comments/approval to the MDOT Project Manager prior to preparing the Omission/Errors Check Plan submittal package.
6. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
7. *Consultant:* Make necessary changes and resubmit the entire package including a written response to all comments. Keep copies of the MDOT comments, the marked-up prints (if they were included), and the revised materials for the job record.
8. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the final non-freeway signing plan submittal.
9. Check final signing items in accordance with QA/QC plan.
10. *Consultant:* Incorporate the final non-freeway signing plans, special provisions and estimates into the Final Plan submittal package.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3824

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Complete Freeway Signing Plan

REPORTING MANAGEMENT UNIT: Traffic Signs & Delineation -Reflective Systems

WORK STEPS: (Continued)

11. After the final non-freeway signing plans are accepted, create the final non-freeway signing inventory and base alignment line roll.*
 - a. The final non-freeway signing inventory shall show only the proposed and retained signs using MDOT's inventory sheet background. *Consultant:* This information shall be provided on a 3 1/2" high density diskette(s) and 16" x 11" paper plots.
 - b. The base alignment line roll shall show the roadways, edge of metal, ramps, interchanges, structures, centerline, stationing and intersections. *Consultant:* This information shall be provided on a 3 1/2" high density diskette(s) or CD.

12. Submit to the MDOT Project Manager the final non-freeway signing inventory and the base alignment line roll.

* Jobs that are longer than 1-1.5 miles may be required to be entered into the department's "Computerized Inventory and Contract Preparation" software, rather than on plan sheets. Check with Region Traffic and Safety to see which type of plans is preferred.

13. Input actual finish date into appropriate data system.

SUPPLEMENTAL INFORMATION

For more information regarding preparation of signing plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. MDOT Standard Highway Signs Manual
5. Average Unit Prices for Traffic Control Items
6. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 7)
7. AASHTO Roadside Design Guide
8. MDOT Traffic and Safety Division Sign Support Typical Plans

Items available through the MDOT Bulletin Board System:

1. Signing plan note sheets
2. Cell library
3. Blank standard plan sheet with borders and title block
4. MDOT Supplemental Specification
5. MDOT Special Provisions

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3830

Seet 1 of 3
DATE: Jan. 2004

TASK TITLE: Complete the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

TASK START: Receipt of THE Plan Review Meeting comments.

TASK FINISH: Submission of final Construction Zone Traffic Control Plan package.

TASK DESCRIPTION:

Based on the proposed preliminary construction plans and THE Plan Review Meeting comments, the final Maintaining Traffic Plan is further refined and completed. During this task the plan is detailed to include:

- signals,
- signing treatments,
- pavement markings,
- barriers and channelizing devices,
- lane closures,
- quantities,
- traffic restrictions,
- construction influence area, and
- special provisions.

Plans showing the placement of traffic control devices are prepared as required.

WORK STEPS:

1. Receive THE Plan Review Meeting comments.
2. Input actual start date into appropriate data system.
3. Evaluate The Plan Review Meeting comments, i.e. resolve and prepare written responses to the comments.
4. If Scope of Design Services includes traffic signal modifications, then follow the procedures and requirements (including Consultant prequalification) detailed in P/PMS TASK 3820 - COMPLETE TRAFFIC OPERATIONS PLAN.
5. Finalize the appropriate traffic control device method(s).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3830

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Complete the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

WORK STEPS: (Continued)

6. Prepare the final Construction Zone Traffic Control Plan package, including:
 - a. Special Provision for Maintaining Traffic, adding any special paragraphs or signing sequences for unique situations
 - b. Maintaining traffic quantities
 - c. Maintaining traffic diagrams and typical plans
 - d. Signing details, temporary pavement markings, traffic signal modifications, etc.
 - e. Staging plans as required
 - f. Special sign fabrication details
 - g. CPM network (arrow diagram) for the construction of this job
7. Submit final Construction Zone Traffic Control Plan package to MDOT Project Manager. Include a cover letter stating readiness for the second maintaining traffic coordination meeting. The cover letter shall state that the submittal was prepared and checked by the procedures described in the QA/QC plan.
8. Receive confirmation of the date, time and location of the meeting.
9. Attend the second maintaining traffic coordination meeting, record the meeting minutes, and send a copy of the meeting minutes to all attendees.
10. Finalize the Construction Zone Traffic Control Plan package to reflect the recommendations made at the second maintaining traffic coordination meeting.
11. *Consultant:* The Consultant shall provide, via dated memorandum, copies of the Special Provisions for Maintaining Traffic, including all details and quantity calculations, to the Project Manager and the District Traffic and Safety Engineer for review. Any subsequent revisions shall also be transmitted to all of the above parties. The Consultant shall incorporate requested revisions and corrections resulting from Departmental review prior to Final Plan submittal.
12. The final approved Construction Zone Traffic Control Plan package shall be submitted as directed in P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS.
13. Input actual finish date into appropriate data system.
14. Submit final Maintaining Traffic Plan package to the Project Manager for inclusion in the OEC review.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3830

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Complete the Maintaining Traffic Plan

REPORTING MANAGEMENT UNIT: Region/TSC- Traffic and Safety

SUPPLEMENTAL INFORMATION

For more information regarding preparation of maintaining traffic plans and special provisions, refer to the following:

Items to be purchased:

1. 1994 Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
2. MDOT 1996 Standard Specifications for Construction
3. MDOT Road and Bridge Standard Plans (MDOT Metric)
4. Standard Highway Signs Manual
5. A Policy on Geometric Design of Highways and Streets 1994 (AASHTO)
6. Michigan Design Manual, Road Design (SI), Volume 3 (Chapter 8)

Items available through the MDOT Bulletin Board System:

1. Maintaining Traffic Typical Diagrams
2. Typical Maintaining Traffic Special Provision
3. Blank forms for developing special sign fabrication details

P/PMS TASK DESCRIPTIONS

Sheet 1 of 5

TASK NUMBER: 3840

DATE: Jan. 2004

TASK TITLE: Develop Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Design - Consultant
Coordination

TASK START: Receipt of the comments from THE Plan Review Meeting.
(For Road CPM Jobs – Approval of job’s scope, cost, and schedule)

TASK FINISH: Submission of the final plan/proposal package to the Project Manager for the OEC review. *(For Road CPM Jobs – Submission of final plan/proposal package to Quality Assurance for Final Review)*

TASK DESCRIPTION:

The work of this task includes the effort to bring the final plan/proposal package to 100% completion. The final package consists of a complete set of plans, final quantities and all proposal material. The package is submitted to the Project Manager for consolidation with other related set(s) of plans (bridge, electrical, signal, etc.).

This task includes numerous discussions and/or meetings with other divisions in order to complete a final set of plans and specifications acceptable to all the disciplines involved.

WORK STEPS:

1. Receive marked up prints with comments and/or correspondence from Preliminary Plan Review (GI) via the MDOT Project Manager. Remain aware that additional comments may arrive at a later date. *(Does not apply to Road CPM jobs)*
2. Input actual start date into appropriate data system.
3. Prepare and submit to the MDOT Project Manager an updated job quantity and construction cost estimate reflecting Preliminary Plan Review comments. The estimate is due two weeks after receiving of the Preliminary Plan Review meeting minutes and marked up plans. The estimate should have quantities and unit prices for all items of work. The estimate shall also include participation breakdowns (local agencies, PA 51 participations, storm sewer participation, etc.).
4. Incorporate Preliminary Plan Review comments and develop the final plans, specifications and estimates. Resolve any outstanding issues and/or conflicting comments with the MDOT Project Manager. *Consultants:* Upon resolution of a conflict, the Consultant must document, in a letter to the MDOT Project Manager, the solution to the conflict and the engineering judgement used by the Consultant in reaching this decision. *(Does not apply to Road CPM jobs)*

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3840

Sheet 2 of 5
DATE: Jan. 2004

TASK TITLE: Develop Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Design - Consultant
Coordination

WORK STEPS: (Continued)

5. Within **two weeks** after receiving of the Preliminary Plan Review meeting minutes, submit to the MDOT Project Manager the job specific Special Provisions. *Consultants:* All Special Provisions shall be submitted on a 3 1/2" high density diskette(s) in Microsoft Word format and shall include a hard (printed) copy. Each Special Provision shall have its own Word file. The MDOT Project Manager will forward the special provisions to the Construction and Technology Division for approval.
6. *Consultant:* If P/PMS TASK 3830 - COMPLETE CONSTRUCTION TRAFFIC CONTROL PLAN is **NOT** a Design Consultant task, then coordinate construction staging plans and Special Provisions for Maintaining Traffic through the MDOT Project Manager.
7. Review the Preliminary Plan Review meeting minutes and verify that comments have been addressed.
8. Submit final plans for geometric concurrence.
9. Calculate final construction quantities.
10. *Consultant:* Prepare OEC submittal package. Check the submittal package in accordance with Consultant's QA/QC plan. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating readiness for the Omissions/Errors Check (OEC) Meeting. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. Reproducible plan sheets including all areas of work; eg., bridge plans, traffic signal plans, etc. Mylar plan sheets are not required at this time. Part Three of this task includes a partial listing of detailed requirements for the items that may be required on the final plans.
 - c. Approved job specific Special Provisions for items not covered by MDOT Standard Specifications.
 - d. A marked-up list of frequently-used Special Provisions and Supplemental Specifications. The Consultant shall request an unmarked list from the MDOT Project Manager just prior to submittal.
 - e. Approved Special Provisions for Maintaining Traffic and final staging plans.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3840

Sheet 3 of 5
DATE: Jan. 2004

TASK TITLE: Develop Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Design - Consultant
Coordination

WORK STEPS: (Continued)

- f. A CPM network for the construction of this job. The CPM network shall be submitted on a 3 1/2" high density diskette (include submittal date on the label) and shall include a hard (printed) copy. See the "Scope of Design Services" for details.
 - g. Additional proposal items (coordination clauses, notice to bidders, etc.). All proposal items shall be submitted on a 3 1/2" high density diskette(s) (include submittal date on the label) in Microsoft Word format and shall include a hard (printed) copy.
 - h. MDOT Stand Alone Project Estimator's System Worksheet (SAPW) output for the entire job, including any plansheets not developed by the CONSULTANT.
 - i. File generated in SAPW in ".txt" format. This file may be transferred on an approved computer diskette (include submittal date on the label) or attached to an E-mail message to the MDOT Project Manager. This computer file will be used for data entry into Trns•port/PES.
 - ii. Provide verification that all the work item descriptions, units and quantities on the SAPW output, plans and specifications match. The verification shall be done by comparing a half-sized set of prints and the job report generated from SAPW. Mark off each work item description and quantity that has been checked. Any errors shall be corrected before submitting the OEC package. The submittal for verification shall include a half-sized set of prints with marks, the job report generated by SAPW with marks and a signed verification that the check has been completed.
 - iii. MDOT will prepare the quantity summary sheets.
 - i. NPDES Permit Application
 - j. Final version of Design Exceptions
 - k. Written responses to Preliminary Plan Review comments.
11. *Consultant:* Send the OEC submittal package to the MDOT Project Manager.
12. In-House: Gather final proposal material, including special provisions.
13. Prepare final TRNS-PORT estimate.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3840

Sheet 4 of 5
DATE: Jan. 2004

TASK TITLE: Develop Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Design - Consultant
Coordination

WORK STEPS: (Continued)

14. In-House: Assemble and submit final plan/proposal package material to the Project Manager for consolidation with other plans and OEC review. *(CPM jobs go to Quality Assurance)*
15. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. *Consultant:* Keep copies of the MDOT's comments, the marked up prints (if included), and the revised materials for the job record.
16. Input actual finish date into appropriate data system.
17. *Consultant:* Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the Final Plan package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3840

Sheet 5 of 5
DATE: Jan. 2004

TASK TITLE: Develop Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Designer/Design - Road/Design - Consultant
Coordination

SUPPLEMENTAL INFORMATION

The following items should be included on plans submitted for the Omissions/Errors Check (OEC) Meeting. This list is not intended to be all inclusive. Some sheets may be supplied by MDOT.

A. OMISSIONS/ERRORS CHECK (OEC) MEETING

1. Plans 100% Complete (MDOT in insert applicable Special Details). All quantities have been checked.
2. Proposal-Including:
 - i. Index for Supplemental Specifications *
 - ii. Index for Frequently Used Special Provisions *
 - iii. Unique Special Provisions (Approved)
 - iv. Coordination Clauses
 - v. Notices to Bidder
 - vi. Maintaining Traffic
 - vii. Critical Path Network
 - viii. Trns•port/PES - Quantity Sheets and Estimate *
 - ix. Advertising Data (Blue Sheet) *
 - x. Permits *
 - xi. Certification Acceptance*
 - xii. Quantity Sheets*
 - xiii. Cost Estimate*
 - xiv. R.O.W. Certification*
 - xv. Utility Status/ Clearance*
3. Additional items that should have been addressed/resolved
 - i. Design Exceptions
 - ii. Agreements
 - iii. Utility Issues/Conflicts
4. Critical Path Network

* MDOT will insert these items into the proposal

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

DATE: Jan. 2004

TASK NUMBER: 3850

TASK TITLE: Develop Structure Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

TASK START: Receipt of comments from Preliminary Plan review (GI).
(For Bridge CPM Jobs – Scope Verification (Task 3130))

TASK FINISH: Submission of the final structure plans and specifications to Project Manager.

TASK DESCRIPTION:

This task is usually included in bridge jobs and is coordinated with other structure related tasks. The P/PMS Task 3570 - PREPARE PRELIMINARY STRUCTURE PLANS must be approved before starting this task. The final structural plans provide a detailed description of the structural design and geometric layout of the structures. The final design documents should include all items listed in the appropriate section of the Bridge Design Manual.

Once the final structural drawings and documents are reviewed and revised, the designer submits the final structure plans package for final review.

WORK STEPS:

1. Receive and review job data, including the Preliminary Structure Plans and Preliminary Plan Inspection (GI) Review comments. *(Does not apply to Bridge CPM jobs)*
2. Input actual start date into appropriate data system.
3. Incorporate THE Plan Review Meeting comments into the structure plans, as appropriate. *(Does not apply to Bridge CPM jobs)*
4. Prepare Final Structure Plans and Estimate of Probable Cost as defined in the Michigan Design Manual, Bridge Design, Section 3.03. The MDOT Project Manager is to be contacted any time the cost estimate varies significantly from the programmed construction cost estimate.
5. Document decisions made while developing Final Structure Plans.
6. Submit final structure plans for geometric concurrence.
7. Calculate final construction quantities.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3850

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Develop Structure Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

WORK STEPS: (Continued)

8. *Consultant:* Prepare the completed Final Structure Submittal Package. The Submittal Package shall include the following:
 - a. Final Structure Plans, one half size and one full size paper copy, plus a Mylar of the title sheet for the OEC meeting. Final Mylar's are to be submitted after any changes requested at the OEC meeting are made.
 - b. Design Calculations (Checked and Initialed)
 - c. Job Specific Special Provisions. All Special Provisions shall be submitted on a 3 ½" high-density diskette(s) in Microsoft Word format and shall include a hard (printed) copy. Each Special Provision shall have its own Microsoft Word file.
 - d. Additional Proposal Items (coordination clauses, notice to bidders, etc.). All proposal items shall be submitted on a 3 ½" high-density diskette(s) in Microsoft Word format and shall include a hard (printed) copy.
 - e. A marked-up list of frequently used Special Provisions and Supplemental Specifications. The CONSULTANT shall request an unmarked list from the MDOT Project Manager just prior to submittal.
 - f. Stand-Alone Project Estimator's Sytem Worksheet (SAPW) output for entire job, including sheets not developed by the CONSULTANT.
 - i. File generated in SAPW in Comma Separated Value (CSV) American Standard Code for Information Interchange (ASCII) format. This file may be transferred on an approved computer diskette or attached to an e-mail message to the Project Manager on the MDOT Bulletin Board (MDOT Online). This computer file will be used for data entry into the Client/Server Bid Analysis Management System (BAMS) production module Proposal and Estimates System (PES). BAMS is the American Association of State Highway and Transportation Officials (AASHTO) information system for managing transportation programs.
 - ii. Provide verification that all the work item descriptions, units and quantities on the SAPW output, plans and specifications match. The verification shall be done by comparing a half-sized set of prints and the job report generated from SAPW. Mark off each work item description and quantity that has been checked. Any errors shall be corrected before submitting the final plan package. The submittal for verification shall include a half-sized set of prints with marks, the job report generated by SAPW with marks and a signed verification that the check has been completed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3850

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Develop Structure Final Plans and Specifications

REPORTING MANAGEMENT UNIT: Design - Bridge/Consultant Coordination

WORK STEPS: (Continued)

- g. MDOT will prepare the quantity summary sheets.
9. *Consultant:* Prepare a cover letter stating that this is the Final Structure Plan Submittal. The cover letter shall also state that the submittal was prepared and checked by the procedures specified in the Consultant's QA/QC Plan. Include the names of those who did the QA/QC check.
10. In-House: Gather final structure proposal material, including special provisions.
11. In-House: Prepare final TRNS-PORT estimate.
12. *Consultant:* Submit the Final Structure Plan Submittal to the MDOT Project Manager.
13. In-House: Assemble and submit final structure plan/proposal package material to the Project Manager for consolidation with other plans and OEC review. (*Bridge CPM jobs may go to Quality Assurance*)
14. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. *Consultant:* Keep copies of MDOT's comments, the marked up prints (if included), and the revised materials for the job record.
15. Input actual finish date into appropriate data system.
16. *Consultant:* Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of the Final Structure Plan Submittal

SUPPLEMENTAL INFORMATION

For more information refer to the following:

Items to be purchased:

1. Michigan Design Manual, Bridge Design

P/PMS TASK DESCRIPTIONS

Sheet 1 of 1

TASK NUMBER: 3860

DATE: Sept, 1997

TASK TITLE: Final Constructability Review

REPORTING MANAGEMENT UNIT: Region/TSC Resident Engineer

TASK START: Receipt of comments from THE Plan Review Meeting.

TASK FINISH: Submittal of the Progress Schedule, and signing the Title Sheet and Certification Acceptance Form at the OEC Meeting.

TASK DESCRIPTION:

This task consists of reviewing and evaluating proposed constructability items in the plan/proposal package during the development of final plans. This includes assessing changes made to the package at THE Plan Review Meeting. Periodic reviews and consultations occur with the Project Manager prior to OEC Meeting to insure all constructability issues have been addressed. Reviewing the Critical Path Network (if applicable) and completion of the progress schedule prior to the OEC Meeting are also included in this task. Items include:

- Staging
 - Maintaining traffic
 - Erosion control
 - Scheduling(Critical Path)
 - Pay items
 - Progress schedule
-

WORK STEPS:

1. Receipt of comments from THE Plan Review Meeting.
2. Input actual start date into appropriate data system.
3. Review plan/proposal package and Critical Path Network(if applicable).
4. Prepare comments.
5. Meet with to discuss, or return comments to Project Manager.
6. Prepare progress schedule.
7. Input actual finish date into appropriate data system.
8. Attend OEC Meeting, submit the Progress Schedule, and sign the Title Sheet and the
9. Certification Acceptance Form.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 7

DATE: Jan. 2004

TASK NUMBER: 3870

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

TASK START: Assembly of Final Plan/Proposal Package.
Consultants: Receipt of OEC Meeting Notice from Project Manager.

TASK FINISH: Incorporation of Recommendations into Final Plan/Proposal Package.

TASK DESCRIPTION:

The Omissions/Errors Check (OEC) Meeting is the last opportunity for the various disciplines to review the plan/proposal package for completeness. The participants insure all the necessary items are included in the package, with special attention being given to compatibility of any staging plans and the Special Provision for Maintaining Traffic. Any revisions, additions, and/or deletions discovered during the meeting are marked on the plans or proposal in red by the Project Manager. It is the responsibility of the participants to make sure their recommendations are marked on the plans. The Project Manager is responsible for incorporating into the plan/proposal package all the revisions marked in red. Any comments need to be incorporated into the design package as quickly as possible so that the construction letting is not delayed. At the end of the meeting, the appropriate participants sign the Certification Acceptance Form. The Project Manager and Resident Engineer sign the title sheet. The marked up set of plans and proposal should remain in the job files until the construction job is finalized out.

Note: Design Consultants shall refer all contractors inquires to the MDOT Contact Person listed in the proposal.

As part of this task, the **Design/Construction Package Evaluation** (MDOT Form 285-2) should be filled out by all Designated Evaluators (as identified on form) for the process step of 100% plan completion.

Changes or additions to the job scope or limits will not be considered at this meeting.

The Project Manager arranges the meeting and distributes copies of the plan/proposal package. The following people should be invited to the OEC Meeting:

- Project Manager/Unit Leader
- Resident Engineer (Region Construction)
- *Author of the Maintaining Traffic Special Provision
- Quality Assurance
- Geometrics (Lansing Traffic & Safety)

*If the Maintaining Traffic Special Provision was written by a Consultant, a Region Traffic & Safety representative must be invited.

P/PMS TASK DESCRIPTIONS

Sheet 2 of 7

TASK NUMBER: 3870

DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

TASK DESCRIPTION: (Continued)

A copy of the plan/proposal package should also be distributed to the Specifications and Estimates Unit to initiate federal programming (obligating federal funds).

The following representatives should be invited only if involved with a portion of the plan/proposal package:

Consultant Coordinator/Consultant	FHWA (non-exempt projects)
Electrical Unit	Municipal Utilities Unit
Hydraulics/Hydrology Unit	Roadside Development Unit
Signals (Lansing Traffic & Safety)	Signs and Pavement Markings (Lansing T&S)
Region Real Estate	Region Utilities/Permits
Lansing Construction	

NOTE: The Project Manager will obtain all of the required signatures on the Certification Acceptance form from those units that are not represented at the OEC Meeting.

The following material must (if applicable) be included in the distribution:

Plans - 100% complete	Proposal - 100% complete
All special details	Final maintaining traffic special provision
Final quantities	All notices to bidder
	All coordination clauses
Others - TRNS-PORT estimate	All permits
Critical path network (if required)	Quantity sheets
ROW Certification	All Frequently Used Special Provisions
Utility Status/Clearance	All Frequently Used Supplemental Specs
	All unique special provisions (approved by Construction)

The Resident Engineer is responsible for developing and supplying a progress schedule at this meeting.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3870

Sheet 3 of 7
DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS:

1. The Project Manager will incorporate the plans and specifications of all involved disciplines into the final plan/proposal package, including: road, structures, traffic staging, traffic control, utilities, and railroads. Other design considerations may also be incorporated into the final plan/proposal package.
2. Input actual start date into appropriate data system.
3. In-House: The Project Manager reviews the plan/proposal package to ensure 100% completeness.
4. In-House: Identify people to be included at the OEC meeting.
5. Schedule OEC Meeting.
6. *Consultants:* Receive notice from the MDOT Project Manager stating the location, date and time of the OEC Meeting.
7. Distribute plan/proposal package (minimum 10 work days for review by disciplines)
8. *Consultants:* Receive the OEC plan/proposal distribution. Included is the Transport/PES, Project Level, Project Verification Report from the MDOT Project Manager. Retain this report for future editing after the OEC Meeting.
9. Participants review material prior to meeting. Appropriate Designated Evaluators should complete the pertinent portions of the **Design/Construction Package Evaluation Form**.
10. In-House: Hold OEC Meeting.
 - a. Mark recommendations on plans and proposal in red.
 - b. The appropriate attendees sign the Certification Acceptance form.
 - c. Project Manger and Resident Engineer sign the Title Sheet.
11. *Consultants:* Attend the OEC meeting. The signed and sealed Mylar title sheet shall be brought to the OEC meeting by the Consultant (see the Guidelines for Plan Preparation for seal location). Try to hold the number of Consultant participants to essential (two or three) personnel. Although MDOT will take the official meeting minutes, the Consultant must take notes to have an independent record.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3870

Sheet 4 of 7
DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS: (Continued)

12. Work Steps to be completed immediately (**within two weeks**) following the OEC Meeting:
- a. Receive and review comments from the OEC Meeting.
 - b. Revise plans and/or specifications to address comments.
 - c. Prepare the final plan submittal package. Check the submittal package in accordance with the Consultant's QA/QC plan. The submittal package shall include the following:
 - i. A cover letter stating that all OEC meeting comments have been incorporated into the plans and the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - ii. Mylar plan sheets including all areas of work; eg., bridge plans, traffic signal plans, etc.
 - iii. Approved job specific special provisions for items not covered by MDOT standard specifications.
 - iv. MDOT Stand Alone Project Estimator's System Worksheet (SAPW) for the entire job, including any plan sheets not developed by the Consultant.
 - 1) File generated in SAPW in ".csv" format. This file may be transferred on an approved computer diskette (include submittal date on label) or attached to an e-mail message to the MDOT Project Manager.
 - 2) Provide verification that all the work items descriptions, units and quantities on the SAPW output, plans and specifications match. Submittal for verification shall include a half-sized set of prints with marks the job report generated by SAPW with marks and a signed verification that the check has been completed.
 - v. Marked up Index of Frequently Used Special Provisions.
 - vi. Marked up Index of Supplemental Specifications.
 - vii. Maintaining Traffic special provision.
 - viii. Additional proposal items (coordination clauses, notice to bidders, etc.). All proposal items shall be submitted on a 3 1/2" high density diskette(s) (include submittal date on the label) in Microsoft Word format and shall include a hard (printed) copy.
 - ix. Marked up OEC plans (if provided by the MDOT Project Manager). **The final plan submittal will be considered incomplete if the marked up OEC plans are not included.**
 - x. Written responses to the OEC meeting comments.
 - d. Send the final plan submittal package to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3870

Sheet 5 of 7
DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS: (Continued)

- e. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. Keep copies of the MDOT's comments, the marked up prints (if included), and the revised materials for the job record.
 - f. Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of this submittal.
13. In-House: Project Manager ensures recommendations are incorporated into plan/proposal package.
14. In-House: The marked up plan/proposal package is placed in job files until the construction is finalized out.
15. Input actual finish date into appropriate data system. This also coincides with Plan Completion.
16. *Consultant:* Work Steps to be completed within one month of turning in Mylar plan sheets:
- a. Submit a set of grade books. The grade books shall include the station, offset and elevation at the following points:
 - i. Finished section
 - 1) profile grade point
 - 2) pavement break point
 - 3) grading points
 - 4) slope stakes
 - ii. Grading section
 - 1) subgrade break points
 - 2) slope stakes
 - iii. The above data shall be furnished at the following cross-section locations:
 - iv. From the POB to the POE, at the spacing called for in the Consultant Responsibilities section of the Scope of Design Services.
 - v. Where the cross-section changes. For example; at the beginning/ending of a lane taper, a superelevation transition or a full superelevated section, at embankment widenings for guardrail, at culverts with specific grading requirements, etc.
 - vi. At any location where any special grading is required.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3870

Sheet 6 of 7
DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS: (Continued)

- b. Submit a complete set of original and proposed plotted cross-sections at the locations specified above for the grade book. Additional cross-sections shall be provided at smaller intervals in critical areas, such as tapers or superelevation transitions. The interval required for critical areas is stated in the Consultant Responsibilities section of the Scope of Design Services. The Consultant shall submit the proposed cross-section ratio (scale) to the MDOT Project Manager for approval before plotting the cross-sections. Cross-sections shall be plotted on full size (36" x 24") reproducible material.
- c. Submit the quantity calculation report (original and one copy). This report shall include quantity calculations, sketches, typicals, etc. This work shall be completed according to the following format:
 - i. The report shall be bound in a 8 1/2" x 11" side report binder labeled with the Control Section, Job Number and job description.
 - ii. The quantity computations shall be in a neat and orderly fashion. The computations and totals in the report shall be easily referenced to and from the plan sheets.
 - iii. Every individual quantity on the plan sheets shall have computations documented and checked.
 - iv. All quantity calculations for agency participation and job number splits shall be documented.
 - v. All guardrail and concrete barrier locations require a guardrail and concrete barrier worksheet which shall be included.
 - vi. The report shall be sealed and signed by a professional engineer.
- d. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. Keep copies of the MDOT's comments, the marked up prints (if included), and the revised materials for the job record.
- e. Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of this submittal.

P/PMS TASK DESCRIPTIONS

Sheet 7 of 7

TASK NUMBER: 3870

DATE: Jan. 2004

TASK TITLE: Hold Omissions/Errors Check (OEC) Meeting

REPORTING MANAGEMENT UNIT: Project Manager

WORK STEPS: (Continued)

17. *Consultant:* Work Steps to be completed within two months of turning in Mylar plan sheets
- a. Submit original job file (survey notes, correspondence, estimate work sheets, etc.)
 - b. Submit 3 1/2" high density diskette(s) or a CD containing the CADD files of the final design plans for use by MDOT, local agencies, or any utility associated with the job. The files shall be developed utilizing the Intergraph MicroStation system format. Refer to M•DOT Guidelines For English Plan Preparation, May 1996.
 - c. Submit all original notes utilized in the preparation of the design, special provisions, and cost estimates.
 - d. Submit a completed "Design Division Consultant Performance Evaluation Report" (MDOT Form 329, available from the Project Manager) for each Sub-consultant utilized for this job.
 - e. Receive any items returned by the MDOT Project Manager as incomplete or deficient. Make necessary changes and resubmit the revised materials with written responses to the comments. Keep copies of the MDOT's comments, the marked up prints (if included), and the revised materials for the job record.
 - f. Receive the MDOT Submittal Evaluation Form. Contact the MDOT Project Manager if one is not received within two weeks of this submittal.
18. *In-House:* The Project Manager retains the completed Plan/Proposal Package until submittal to the Specs and Estimates Unit is appropriate. This may be as long as 4 months (6 months before letting) for jobs funded in the Big 3 of the 5 Major Programs (Road, Bridge, & IE). *See Road Design Manual Sections 14.59 ("Shelf Jobs") and 14.60 (Submission of Completed Plans), esp. 14.60.01, for details.*
19. *Consultants:* Receive the MDOT Final Evaluation and Notice of Acceptance. Contact the MDOT Project Manager if one is not received within one month of completing Work Step 17. Refer to the Project Closeout Section.
20. *In-House:* The Project Manager acknowledges the plan/proposal package is complete and ready for submittal, and submits the final plan/proposal package to the Specifications and Estimates Unit.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3880

Sheet 1 of 1
DATE: Spring 2003

TASK TITLE: CPM Quality Assurance Review

REPORTING MANAGEMENT UNIT: Quality Assurance and Lettings

TASK START: Receipt of Final CPM Plan/Proposal Package

TASK FINISH: Submission of the Final CPM Plan/Proposal Package to the Technical Unit in Quality Assurance and Lettings.

TASK DESCRIPTION:

This task includes a final review of the CPM plan/proposal package prior to submittal to the Technical Unit in Quality Assurance and Lettings. The review insures the required components such as the job submittal form, certification acceptance, Transport, special provisions, supplemental specifications, quantities, pay items, etc. are included. The reviewer notifies the Project Manager of any missing or erroneous material in the package. Once concurrence is reached on the revisions that are needed to be made, small corrections are made by the reviewer while substantial revisions are the responsibility of the Project Manager. After the package is corrected and updated, the job is forwarded to the Technical Unit in Quality Assurance and Lettings for advertising and letting.

WORK STEPS:

1. The Project Manager submits the job package to Quality Assurance and Lettings for review.
2. Input actual start date into appropriate data system.
3. The job package is reviewed and missing or erroneous material is identified and forwarded to the Project Manager.
4. The reviewer and the Project Manager reach agreement on the corrections that are required.
5. Minor corrections are performed by the reviewer and the remaining corrections are performed by the Project Manager.
6. Input actual finish date into appropriate data system.
7. The reviewer forwards the job package to the Technical Unit in Quality Assurance and Lettings for advertising and letting.

P/PMS TASK DESCRIPTIONS

Letting – (3900 Series)

TASK NUMBER: 3910

Sheet 1 of 1
DATE: April, 2004

TASK TITLE: Prepare Final Project Package and Obtain Authorization

REPORTING MANAGEMENT UNIT: Design – Quality Assurance and Lettings

TASK START: Receipt of the final plans, specifications and estimates from Project Manager.

TASK FINISH: Approval of Design Support Area to advertise.

TASK DESCRIPTION:

As part of this task, the job plan specifications and estimates are compiled and the necessary approvals obtained.

WORK STEPS:

1. Quality Assurance and Lettings receives final plans, specs, and estimates from Project Manager.
2. Input actual start date into appropriate data system.
3. Check that Certification Checklist is complete and that all sign-offs are done.
4. Prepare draft job proposal.
5. Finalize the construction cost estimate.
6. Obtain necessary signatures on title sheet.
7. Prepare advertisement for bid announcement.
8. Receive FHWA authorization.
9. Distribute Final Plans and Proposal to appropriate MDOT staff.
10. Review and approve Certification Acceptance Checklist.
11. Input actual finish date into appropriate data system.
12. Release for Advertisement by Design Support Area.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 2

TASK NUMBER: 3920

DATE: Feb, 1993

TASK TITLE: Advertise and Let Job

REPORTING MANAGEMENT UNIT: Financial Services - Bid Letting

TASK START: Receipt of Letting Folder.

TASK FINISH: Announcement of low bidder.

TASK DESCRIPTION:

This task includes the work effort to advertise the job, receive bids, evaluate bids and determine the low bidder. This is often referred to as the letting process.

Upon receipt of the Letting Folder an advertisement is developed. The advertisement is placed in trade publications to inform contractors of the proposed letting and availability of the proposal. The advertisement provides general job information such as:

- description of job,
- bid items,
- job completion date, and
- category and level of prequalification.

The final proposal is assembled. Two types of proposals are made available: the courtesy proposal which is not for bidding purposes and the bidding proposal which is provided to qualified bidders. If appropriate, a pre-bid meeting is held to answer questions of the potential bidders which are conducted by the originating group.

The bidders prepare and submit their sealed bids. At a predetermined time the sealed bids are opened for the pre-qualified bidders. The bid opening is open to all bidders and the general public. The total bid amount is read out loud for each bid received.

The bid amounts read at the bid opening is unofficial. The bids are examined in detail to verify, screen and check the bidding document which includes evaluating for authorized signatures, proper completion of bid item pages and special requirements. The totals are also computer verified using the pay items and quantities. An internal review committee reviews all bidding irregularities and bids recommended for rejection. A determination is then made of the low bidder. The as-checked results are then distributed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3920

Sheet 2 of 2
DATE: Feb, 1993

TASK TITLE: Advertise and Let Job

REPORTING MANAGEMENT UNIT: Financial Services - Bid Letting

TASK DESCRIPTION: (Continued)

Arrangements are made to resolve letting related problems. Problems that arise may be the justification of bids when all bids are 10% over the engineer's estimate or when the low bidder withdraws from the job.

An appeal can be made by a rejected low bidder within 5 calendar days of the official determination of the low bidder. Appeals are handled through a pre-established appeals process.

WORK STEPS:

1. Prepare and distribute bid announcement advertisement.
2. Input actual start date into appropriate data system.
3. Assemble and duplicate the final job proposal.
4. Distribute plans and proposals.
5. Assemble and process addendum, if required.
6. Receive sealed bids.
7. Hold bid letting.
8. Verify, screen and check bids.
9. Resolve any letting-related problems.
10. Determine low bidder.
11. Input actual finish date into appropriate data system.
12. Distribute official as-checked bid results.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 3930

Sheet 1 of 1
DATE: Dec, 1992

TASK TITLE: Award Job Construction Contract

REPORTING MANAGEMENT UNIT: Financial Services - Contract Awards

TASK START: Announcement of the low bidder.

TASK FINISH: Signature by MDOT Director.

TASK DESCRIPTION:

Once the official low bidder has been announced and all appeals resolved, the low bidder is sent a contract and bond forms. The contractor signs and returns the contract and provides proof of insurance and bonding.

If the job carries a local funding agreement, the contract is placed on hold until local funds are in hand.

Depending on the size of the contract award (greater than \$500,000) or the number of bidders (less than three), the contract may have to go to the Michigan Transportation Commission for approval. The contract is then submitted to the Michigan State Administrative Board for approval. After the Administrative Board approves the contract, the MDOT Director signs and awards the contract.

WORK STEPS:

1. Send contract and bond forms to the official low bidder.
2. Input actual start date into appropriate data system.
3. Receive signed contract and proof of insurance and bonding.
4. Assure that local agency funding is in place, if required.
5. If appropriate, submit contract to Michigan Transportation Commission for approval and obtain all other necessary Department approval.
6. Submit contract to Michigan State Administrative Board for approval.
7. Input actual finish date into appropriate data system.
8. Obtain signature of MDOT Director and award contract.

P/PMS TASK DESCRIPTIONS

3.2.4 Right of Way

Early Right of Way Work – (4100 Series)

TASK NUMBER: 4110

Sheet 1 of 2
DATE: Aug, 1999

TASK TITLE: Obtain Right of Way Authorization

REPORTING MANAGEMENT UNIT: Real Estate - Program Management

TASK START: Receipt of request for Right of Way Acquisition.

TASK FINISH: Issuance of ROW notification letter.

TASK DESCRIPTION:

Obtaining authorization for right of way tasks requires obtaining the necessary approvals and coding to enable charges to be made to the right of way (ROW) work phase. This task includes the authorization process required for the job. It may also include additional tasks that are required to obligate Federal funds.

Upon receipt of Design's notification requesting ROW and the job plans, Program Management Unit begins the authorization process. This would include the funding initiation for the 'B' phase on MFOS. Verification of the job's environmental status occurs at this time. Upon electronic notification of the funding request, Financial Operations obtains the necessary funding approvals. When the necessary approvals have been received an automated MFOS message is sent to the funding initiator that the phase job number is chargeable. The B phase coding (job number, federal job number, item number and account code) is available in MFOS in the Phase Information screen. The right of way authorization letter to acquire the right of way is then sent to the appropriate work units. This letter also includes the required coding and constitutes authorization to charge to the right of way phase of the job.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4110

Sheet 2 of 2
DATE: Aug, 1999

TASK TITLE: Obtain Right of Way Authorization

REPORTING MANAGEMENT UNIT: Real Estate - Program Management

WORK STEPS: (continued)

1. Real Estate Division receives Form 271 - Submittal of plans and Authorization to Acquire with plan sheets on job.
2. Input actual start date into appropriate data system.
3. Program Management Unit initiates funding thru MFOS, verifies environmental clearance, inputs job information into REMIS, determines starting parcel number, if necessary, and prepares notification letter to appropriate work unit.
4. Input actual finish date into appropriate data system.
5. Program Management Unit sends notification letter to Region Real Estate Agent, Project Supervisor and other appropriate work units.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4115

Sheet 1 of 1
DATE: Aug, 1999

TASK TITLE: Obtain Right Of Way - Turnkey Consultant

REPORTING MANAGEMENT UNIT: Real Estate - Administration

TASK START: Assignment of B phase for ROW.

TASK FINISH: Date of an executed contract agreement signed by all parties.

TASK DESCRIPTION:

This task deals with all the tasks necessary to obtain consultant services for Real Estate activities.

The turnkey contract includes right of way technical, appraisal, relocation assistance, acquisition and property management activities. The individual contract is specific to the job. The contract describes scope, cost & schedule as agreed to by both the turnkey consultant and the Department.

This task is considered complete when there is an actual executed agreement signed by all parties.

WORK STEPS:

1. Prepare scope of work in sufficient detail to determine in-house and consultant costs.
2. Input actual start date into appropriate data system.
3. Establish selection committee.
4. Prepare and distribute Request for Proposals (RFP).
5. Conduct pre-bid meeting.
6. Receive and review proposals and interview consultants, if appropriate.
7. Recommend consultant as top candidate(s).
8. Select lowest bid based on price proposal.
9. Negotiate proposal with top candidate.
10. Submit request for contract to Finance to proceed with contracting effort/process.
11. Verify availability of funding with Program Administration.
12. Prepare final contract document
13. Obtain necessary approvals.
14. Circulate document for signature.
15. Input actual finish date into appropriate data system.
16. Hold briefing meeting and give notice to proceed.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 3

TASK NUMBER: 4120

DATE: Jan. 2004

TASK TITLE: Obtain Preliminary Title Commitments

REPORTING MANAGEMENT UNIT: Real Estate - Region

TASK START: Letter from Design Control along with preliminary ROW plans (buy order) and ROW authorization.

TASK FINISH: Final assembly/receipt of Preliminary Title Commitment Package.

TASK DESCRIPTION:

The purpose of the preliminary title search is to determine ownership and boundaries of ownership for the right of way impacted by the job. The title search also tries to identify if there are any encumbrances on the property. A legal description of property is the primary deliverable of this task.

Upon receiving the preliminary ROW plans, the Real Estate - Project Development Section, or Consultant, identifies the right of way properties to be investigated. The Department/Consultant contracts with private title companies to conduct the preliminary title search. The Consultant shall use a title company that has an existing contract with MDOT to provide services. Contact the MDOT Real Estate Division to acquire a list of firms.

Depending upon the type of proposed Right Of Way to be acquired the following general requirements can be followed:

For Parcels containing only Grading Permits and/or Drive Permits the tax information in Work Step C: Tax Rolls

For Fee Right of way: Tax Rolls and Title

The number of parcels estimated for this job is stated in the Scope of Design Services. The Consultant shall use this number in the proposal and provide a unit cost for each parcel.

The title company is sent a set of plans, a work authorization, and a due date. The title company provides:

- a legal property description;
- owner of record which is a verified deed;
- address of owner;
- other contiguous properties;
- zoning or deed restrictions; and
- copies of all encumbrances (land contracts, mortgages and private easements).

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4120

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Obtain Preliminary Title Commitments

REPORTING MANAGEMENT UNIT: Real Estate - Region

WORK STEPS:

1. Receive right of way authorization from Finance and preliminary right of way plans from the Design Division, or (*Consultant*) prepare PROW plans if P/PMS TASK 3361 - SUBMITTAL OF PRELIMINARY RIGHT-OF-WAY PLANS is part of the contract.
2. Input actual start date into appropriate data system.
3. Review the PROW plans. If errors, discrepancies or omissions are discovered in the PROW plans during the title commitment preparation process, the Region/Consultant shall immediately contact the MDOT Project Manager. Title commitment activities on the affected parcel or parcels will cease until corrected information or further instruction is provided by the MDOT Project Manager.
4. Distribute plans and authorizations.
5. Obtain tax descriptions and tax maps covering lands affected by the job.
6. For fee or easement properties, order and receive preliminary title commitments from a title company. The following is a list of information required to be included either on, or with, each title commitment ordered:
 - a. Legal description of the tract of land of which the parcel to be acquired is a part.
 - b. Name and last known address of owner disclosed by the public records.
 - c. Indicate the title vesting deed with grantor, date of conveyance, recording date, and the Liber and page. (Include a copy of the deed.)
 - d. Note any mortgages, land contracts, liens, easements, or other encumbrances and furnish copies.
 - e. Name and address to whom taxes are assessed, and status of tax payment (include computer tax code).
 - f. Description of contiguous property of same ownership, or reference to the deed that does describe contiguous property (include a copy), if any, or a written statement that your search disclosed none.
 - g. Copies of any plat restrictions which might affect the parcel.
 - h. Control Section number and Job number on the first page of the title commitment and on the invoice.
 - i. A copy of boundary survey if one is found.
 - j. A copy of any land contracts, leases, or easements if any are found.
7. Review building and plat restrictions to determine if the construction of the job will violate these restrictions.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4120

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Obtain Preliminary Title Commitments

REPORTING MANAGEMENT UNIT: Real Estate - Region

WORK STEPS: (Continued)

8. Prepare the Preliminary Title Commitment submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include the following:
 - a. A cover letter stating this is the Preliminary Title Commitment submittal package. When prepared by consultant, the cover letter shall state that the submittal was prepared and checked by the procedures described in the consultant's QA/QC plan.
 - b. Tax descriptions, tax maps, and sub-division plats.
 - c. Preliminary title commitments.
 - d. Building and plat restrictions and a list of the restrictions that may be violated by the proposed construction.
 - e. List of outstanding questions and/or considerations with feasible solutions and alternatives for each.
9. *Consultant:* Check the submittal package in accordance with the consultant's QA/QC plan.
10. *Consultant:* Submit the original Preliminary Title Commitment package to the MDOT Region Real Estate Agent and send a copy of the transmittal letter to the MDOT Project Manager.
11. Receive any items returned by MDOT Project Manager as incomplete or deficient.
12. Make necessary changes. Resubmit the entire package including a written response to all comments.
13. *Consultant:* Receive the MDOT Submittal Evaluation form from MDOT Region Real Estate Agent. They may contact the MDOT Project Manager if one is not received within two weeks of the package submittal.
14. Input actual finish date into appropriate data system.
15. If necessary, obtain updated title information as needed.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 1 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

TASK START: Receipt of final ROW plans, or consultant begins FROW plans.

TASK FINISH: Distribution of the marked final ROW plans.

TASK DESCRIPTION:

The marked final ROW plans provide information regarding right of way properties impacted by the proposed job. In developing the marked final ROW plans the Project Development Section/Consultant uses the final ROW plans to plot and calculate:

- the total ownership of each parcel with ROW (fee/easement),
- the area to be acquired,
- the area of the existing right of way, and
- the area of all remainders.

The marked final ROW plans are then distributed by MDOT to the appropriate groups. The plans serve as the basis for appraising and acquiring the ROW parcels, for obtaining a master demolition contract and preparing relocation assistance plan.

This task also includes the necessary steps involved to make revisions to the marked FROW plans as may be necessary after THE Plan Review.

WORK STEPS (In House):

1. Receive final right of way plans from Design Division.
2. Input actual start date into appropriate data system.
3. Receive and review preliminary title commitment package. If errors, discrepancies or omissions are discovered in the preliminary title commitment package during the MFROW plan preparation process, immediately contact the MDOT Project Manager. MFROW plan development activities on the affected parcel or parcels will cease until corrected information or further instruction is provided by the MDOT Project Manager.
4. Determine and plot the boundaries of each parcel affected and assign the necessary parcel numbers. Contact the Region Real Estate Agent to obtain the initial parcel number for this job. Make sure the parcel information is placed on all affected sheets.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 2 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

WORK STEPS (In House - continued):

5. Compute total ownership area of each parcel from which land is to be taken in fee or easement. **Areas shall be computed using the property descriptions.** Include owner names and areas on the Ownership Sheet which can be found in the Cell Library.
6. Compute and check all areas (takes and remainders) of each parcel from which land is to be taken. **Areas shall be computed using the property descriptions.**
7. If a post decision meeting is necessary, prepare a list of names and addresses of all owners of property affected by the job.
8. Perform ROW revisions, as necessary.
 - a. Prepare ROW Revision submittal package. Consultants: Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - i. (Consultants)A cover letter stating that this is a ROW Revision submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - ii. (Consultants)Either 3 ½" high density diskette or CDs of all affected drawings utilizing the Intergraph Micro Station system format.
 - iii. Reproducible, standard-size (cut size 36" x 24" (914.4 mm x 609.6 mm)) plan sheets created from construction plan tracings of affected sheets.
 - iv. Marked up prints of the affected sheets highlighting the ROW revisions.
 - v. Written description of each individual ROW revision.
 - b. When performed by consultant, check the submittal package in accordance with the Consultant's QA/QC plan.
 - c. Submit the ROW Revision package to the MDOT Project Manager.
 - d. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
 - e. Make necessary changes. Resubmit the entire ROW Revision package including a written response to all comments.

P/PMS TASK DESCRIPTIONS

Sheet 3 of 7

TASK NUMBER: 4130

DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

WORK STEPS (In House - continued):

- f. Receive a half-size print of the ROW Revision plan sheets from the MDOT Project Manager. These prints are for the Consultant's files. These plans will have the signed MDOT ROW approval block in the upper right-hand corner.
 - g. If necessary, acquire additional title information. When performed by consultant, if P/PMS Task 4120- Obtain Preliminary Title Commitments is a Consultant task, they obtain required title information. If that task is not, the consultant contacts the MDOT Project Manager.
 - h. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the ROW Revision package submittal.
9. Submit marked final ROW plans to the Project Manager.
 10. Project Manager submits marked final ROW plans to the FHWA.
 11. Receive FHWA approval.
 12. Input actual finish date into appropriate data system.
 13. Distribute marked final ROW plans and associated documentation to the appropriate groups.
-

WORK STEPS (Consultant):

1. Receive and review preliminary title commitment package or prepare the package if P/PMS TASK 4120 - OBTAIN PRELIMINARY TITLE COMMITMENTS is part of this contract. If errors, discrepancies or omissions are discovered in the preliminary title commitment package during the MFROW plan preparation process, the Consultant shall immediately contact the MDOT Project Manager. MFROW plan development activities on the affected parcel or parcels will cease until corrected information or further instruction is provided to the Consultant by the MDOT Project Manager.
2. Send actual start date to PPMS for entry into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 4 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

WORK STEPS: Consultant (Continued)

3. Prepare the MFROW plans; which consist of FROW plans with parcel lines, parcel numbers and ownership arrows shown on plan sheets; ownership sheet(s); and vicinity map sheet(s).
4. Determine and plot the boundaries of each parcel affected and assign the necessary parcel numbers. Contact the Region Real Estate Agent to obtain the initial parcel number for this job. Make sure the parcel information is placed on all affected sheets.
5. Compute total ownership area of each parcel from which land is to be taken in fee or easement. **Areas shall be computed using the property descriptions.** Include owner names and areas on the Ownership Sheet which can be found in the Metric pcell Library.
6. Compute and check all areas (takes and remainders) of each parcel from which land is to be taken. **Areas shall be computed using the property descriptions.**
7. Prepare a list of names and addresses of all owners of property affected by the job.
8. Prepare MFROW submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is the MFROW submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. Either 3 ½" high density diskette(s) or CD of all drawings utilizing the Intergraph Micro Station system format.
 - c. Reproducible, standard-size (cut size 36" x 24" (914.4 mm x 609.6 mm)) plan sheets created from construction plan tracings.
 - d. Either 3 ½" high density diskette(s) or CDs and a hard copy of list of names and addresses utilizing Microsoft Word version 8.0 or better.
9. Check the submittal package in accordance with the Consultant's QA/QC plan.
10. Submit the MFROW package to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 5 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

WORK STEPS: Consultant (Continued)

11. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
12. Make necessary changes. Resubmit the entire MFROW package including a written response to all comments.
13. Receive a half-size set of the MFROW plans from the MDOT Project Manager. These prints are for the Consultant's files. These plans will have the signed MDOT ROW approval block in the upper right-hand corner.
14. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the MFROW package submittal.
15. Send actual finish date to PPMS for entry into appropriate data system.
16. Perform ROW revisions, as necessary. See additional items following.

RIGHT OF WAY REVISIONS

1. Prepare ROW Revision submittal package. Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is a ROW Revision submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. Either 3 ½" high density diskette(s), or CDs of all affected drawings utilizing the Intergraph MicroStation system format.
 - c. Reproducible, standard-size (cut size 914.4 mm x 609.6 mm (36" x 24")) plan sheets created from construction plan tracings of affected sheets.
 - d. Marked up prints of the affected sheets highlighting the ROW revisions.
 - e. Written description of each individual ROW revision.
2. Check the submittal package in accordance with the Consultant's QA/QC plan.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 6 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

WORK STEPS: Consultant – Right of Way Revisions (Continued)

3. Submit the ROW Revision package to the MDOT Project Manager.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes. Resubmit the entire ROW Revision package including a written response to all comments.
6. Receive a half-size print of the ROW Revision plan sheets from the MDOT Project Manager. These prints are for the Consultant's files. These plans will have the signed MDOT ROW approval block in the upper right-hand corner.
7. If necessary acquire additional title information.
 - a. If P/PMS Task 4120- Obtain Preliminary Title Commitments is a Consultant task, then obtain required title information.
 - b. If P/PMS Task 4120- Obtain Preliminary Title Commitments is not a Consultant task then contact the MDOT Project Manager.
8. Receive the MDOT Submittal Evaluation form. Contact the MDOT Project Manager if one is not received within two weeks of the ROW Revision package submittal.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4130

Sheet 7 of 7
DATE: Jan. 2004

TASK TITLE: Prepare Marked Final R.O.W. Plans

REPORTING MANAGEMENT UNIT: Real Estate - Technical Unit

SUPPLEMENTAL INFORMATION

For more details regarding the preparation of ROW plans refer to the following:

1. Michigan Design Manual, Road Design (SI), Volume 3, Chapter 5.
2. Michigan Design Manual, Road Design (SI), Volume 3, Chapter 1, Appendix A - Guidelines for Plan Preparation (Metric Version), May 1996.
3. The following is additional information relating to CADD levels and ROW information:
 - 50 Parcel lines, parcel numbers, ownership arrows.
 - 51 Lot lines and numbers.
 - 52 Property Corner Information.
 - 53 Parcel Boxes in the Vicinity Map
 - 54 English units in parentheses.
 - 55 Special ROW notes and Dimensions.

Level 54 shall contain the equivalent English units to all metric ROW references to aid the MDOT Real Estate Division in their communication with the public.

The above-mentioned levels shall not contain unrelated items such as curve data, drainage, utilities, design notes or other text unrelated to ROW plan sheet preparation. Any changes required by MDOT to ensure the final product is within requirements shall be the responsibility of the Consultant.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4140

Sheet 1 of 3
DATE: Jan. 2004

TASK TITLE: Prepare Property Legal Instruments

REPORTING MANAGEMENT UNIT: Region - Real Estate

TASK START: Receipt of marked final ROW plans.

TASK FINISH: Posting of last legal instrument.

TASK DESCRIPTION:

The purpose of this task is to develop legal and recordable instruments which describe rights to be acquired for each parcel required by the job. The types include:

- warranty deeds,
- total or partial takes,
- easements, and
- permits (grading, relocation).

With receipt of the marked final ROW plans, Region Real Estate reviews the plans and title commitments. From this review, a determination is made as to the rights to be acquired for each parcel. A legal description is then prepared. The legal description is posted when it is transmitted to the Region Real Estate Agent.

For Consultants: **This task must be completed by a consultant on Real Estate Division's approved consultant list.**

WORK STEPS:

1. Receive and evaluate preliminary title commitment package or (*Consultants*) prepare the package if P/PMS TASK 4120 - OBTAIN PRELIMINARY TITLE COMMITMENTS is part of the contract.
2. Input actual start date into appropriate data system.
3. Receive and review MFROW package or (*Consultants*) prepare the package if P/PMS TASK 4130 - PREPARE MARKED FINAL R.O.W. PLANS is part of the contract.
4. Evaluate preliminary title commitments. *Consultants:* If errors, discrepancies or omissions are discovered in the preliminary title commitment or MFROW package during the preparation of the Property Legal Instruments, the Consultant shall immediately contact the MDOT Project Manager. Legal description activities on the affected parcel or parcels will cease until corrected information or further instruction is provided to the Consultant by the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4140

Sheet 2 of 3
DATE: Jan. 2004

TASK TITLE: Prepare Property Legal Instruments

REPORTING MANAGEMENT UNIT: Region - Real Estate

WORK STEPS: (Continued)

5. Determine the rights to be acquired for each parcel.
6. Prepare legal instruments. Legal descriptions shall be described according to MFROW plans. All line descriptions shall be tied to a legal government survey corner or monument within one mile of the described property. *Consultants:* The descriptions shall follow the MDOT examples. They can be found on the MDOT Bulletin Board System under D_Manual Library. All descriptions shall be submitted on a 3 ½" high density diskette(s) or CDs in Microsoft Word format and shall include a hard (printed) copy. Each description shall have its own Word file. The disks or CDs, along with records as to their content, shall become the property of MDOT.
7. Prepare Property Legal Instruments submittal package. *Consultants:* Contact the MDOT Project Manager if you have questions regarding submittal requirements. The submittal package shall include:
 - a. A cover letter stating that this is the Property Legal Instruments submittal. The cover letter shall state that the submittal was prepared and checked by the procedures described in the Consultant's QA/QC plan.
 - b. Either 3 ½" high density diskette(s) or CD(s) of all documents utilizing Microsoft Word format.
 - c. Hard copies of each Legal Description.
8. *Consultants:* Check the submittal package in accordance with the Consultant's QA/QC plan.
9. *Consultants:* Submit the Property Legal Instruments package to the MDOT Regional Real Estate Agent and send a copy of the transmittal letter to the MDOT Project Manager.
10. *Consultants:* Receive any items returned by the MDOT Project Manager as incomplete or deficient.
11. *Consultants:* Make necessary changes. Resubmit the entire Property Legal Instruments package including a written response to all comments to the MDOT Regional Real Estate Agent and send a copy of the transmittal letter to the MDOT Project Manager.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4140

Sheet 3 of 3
DATE: Jan. 2004

TASK TITLE: Prepare Property Legal Instruments

REPORTING MANAGEMENT UNIT: Region - Real Estate

WORK STEPS: (Continued)

12. *Consultants:* Receive the MDOT Submittal Evaluation form from MDOT Regional Real Estate Agent. Contact the MDOT Project Manager if one is not received within two weeks of the Property Legal Instruments package submittal.
13. ROW plan revisions typically occur when a design change or negotiation alters ROW requirements on any part of the job. When requested by the MDOT Project Manager, the Consultant will be required to submit a Property Legal Instruments package for the ROW revision.
14. Input actual finish date into appropriate data system.
15. Post legal instruments

P/PMS TASK DESCRIPTIONS

ROW Acquisition – (4400 Series)

TASK NUMBER: 4411

Sheet 1 of 1
DATE: Aug., 1999

TASK TITLE: Preliminary Interviews

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of marked final right of way plans.

TASK FINISH: Date last Preliminary Interview is completed.

TASK DESCRIPTION:

After receipt of marked final right of way plans and authorization to begin right of way activities, the Region Real Estate Agent/Project Supervisor coordinates the interview of property owners impacted by the job.

All property owners will be interviewed who are affected by the job except those property owners who agree to waive their rights to appraisal.

The purpose of the preliminary interview is twofold. One purpose is to inform the property owner on how the public job impacts their property, and give them a general time frame for the right of way acquisition and construction schedules for the job. The second purpose is to obtain information from the property owner that will aid in the acquisition of their property. Information typically obtained includes names, phone numbers, and addresses of interested parties (property owners and tenants), verification of title evidence, verification of improvements, environmental data, and information needed for relocation plans.

WORK STEPS:

1. Review marked final right of way plans.
2. Input actual start date into appropriate data system.
3. Contact the property owner.
4. Conduct a preliminary interview obtaining all relevant information required.
5. Show the property owner marked final right of way plans, explaining how the job affects their property and answer any questions the property owner has.
6. Input actual finish date into appropriate data system.
7. Transmit completed Preliminary Interview to Region Agent/Project Supervisor.

P/PMS TASK DESCRIPTIONS

Sheet 1 of 1

TASK NUMBER: 4412

DATE: Aug., 1999

TASK TITLE: Real Estate Services Assignment Proposal and Fee Estimate (Form 633s) for Appraisal Work Authorization

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of completed Preliminary Interview.

TASK FINISH: Date last 633s is completed.

TASK DESCRIPTION:

After receipt of the preliminary interview and work authorization, the Region RE/Project Team coordinates the preparation of Real Estate Services Assignment Proposal and Fee Estimate for Appraisal Work Authorization (Form 633s) for each parcel requiring a fee appraisal on the job. Preparation of the 633s requires a complete review of the right of way plans, title commitment(s), preliminary interview(s), and inspection of the subject property. The 633s is prepared by describing the characteristics of the subject parcel and the taking, the type of appraisal needed, the time frame for completing the appraisal, any special instructions or studies that will be needed or supplied to resolve the appraisal problem, and any guidelines or standards that must be followed in the preparation of the appraisal.

The purpose of the 633s is to describe the scope of the appraisal assignment. The fee appraisers will use this description as a basis for the fee they will charge to complete the appraisal assignment.

WORK STEPS:

1. Assignment of the 633s to staff or consultant.
2. Input actual start date into appropriate data system.
3. The individual reviews and becomes completely familiar with the marked final right of way plans, title commitment(s), preliminary interview(s), and inspects the subject parcel.
4. A "Real Estate Services Assignment Proposal and Fee Estimate for Appraisal Work Authorization" (Form 633s) is prepared.
5. A Request for Real Estate Service Work Authorization is prepared and sent to the contract administrator for response. Each bid proposal is sent to a minimum of three appraisal consultants for their fee estimate, to be returned to the contract administrator for processing.
6. Input actual finish date into appropriate data system.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4413

Sheet 1 of 1
DATE: Aug., 1999

TASK TITLE: Appraisal Reports

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Date first 633s completed.

TASK FINISH: Last completed Appraisal Reports are received from the staff or fee appraiser.

TASK DESCRIPTION:

After receipt of the approved Work Authorization to Appraise, the Region RE/Project Team either prepares in-house appraisals or contracts the appraisal work for parcels impacted by the job. The appraiser completes an appraisal of the property in accordance with MDOT's guidelines and accepted appraisal standards, indicating fair market value for the subject property.

The purpose of the appraisal is to estimate just compensation to the property owner for the property rights acquired and any loss in value to the remaining property.

WORK STEPS:

1. Assign a staff appraiser to perform the appraisal or receive contract authorization documents for a fee appraiser to commence work.
2. Input actual start date into appropriate data system.
3. Staff or a fee appraiser performs appraisal process and prepares an appraisal report.
4. Input actual finish date into appropriate data system.
5. The finished appraisal product is transmitted to the Region Appraiser/Project Supervisor for review.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4420

Sheet 1 of 1
DATE: Aug, 1999

TASK TITLE: Appraisal Review Reports

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of the first completed appraisal for review.

TASK FINISH: Date the last approved compensation is posted for the last parcel.

TASK DESCRIPTION:

Upon completion of an appraisal, the Region RE/Project Team or an authorized representative prepares a written narrative appraisal review report for each appraisal. The appraisal review ensures that:

- the appraisal report is in accordance with the appraisal problem and the MDOT “Requirements for Appraisal Reports”;
- the appraisal contains no mathematical errors;
- there were no additional sales or other factors which were overlooked;
- the appraisal was prepared using the most accurate information and follows all state and Federal regulations;
- the value is fair, reasonable and well documented; and
- that there are no non-compensable items included.

The review establishes the just compensation to be offered to the property owner.

WORK STEPS:

1. Perform office and field review of the appraisal to ensure completeness, accuracy and compliance with all state and Federal regulations and the appraisal problem.
2. Input actual start date into appropriate data system.
3. Request supplemental information from appraiser, if necessary.
4. Prepare reviewer's statement of approved compensation.
5. Register the approved compensation.
6. Input actual finish date into appropriate data system.
7. Transmit the approved and reviewed compensation to Region Real Estate Agent.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4430

Sheet 1 of 1
DATE: Aug, 1999

TASK TITLE: Acquire R.O.W. Parcels

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of the first reviewed appraisal.

TASK FINISH: Submission of the last parcel for condemnation or closing.

TASK DESCRIPTION:

In acquiring the property, the negotiator makes an offer to the property owner based on the reviewed fair market value and, as appropriate, offers an owner's housing supplement. If the owner accepts the offer, an option is obtained. If a settlement cannot be achieved condemnation proceedings are initiated.

WORK STEPS:

1. Prepare and present written good faith offer to the property owner and other parties of interest.
2. Input actual start date into appropriate data system.
3. Negotiate with property owner to understand the offer and to reach a mutually acceptable agreement. If the offer is not accepted by the parties of interest, recommend condemnation of the unsecured parcel.
4. Prepare a closing package or an unsecured package.
5. Submit the closing package to the title escrow company.
6. If unsecured, send unsecured package to Lansing Real Estate for processing.
7. Input actual finish date into appropriate data system.
8. Lansing Real Estate forwards any unsecured packages with statement of necessity and declaration of taking to the Attorney General's Office for filing in Circuit Court.

P/PMS TASK DESCRIPTIONS

ROW Survey/Staking – (4510)

TASK NUMBER: 4510

Sheet 1 of 1
DATE: Dec, 1996

TASK TITLE: Conduct Right of Way Survey & Staking

REPORTING MANAGEMENT UNIT: Region-Survey/Design-Survey

TASK START: Receipt of request for Right of Way Staking.

TASK FINISH: Transmittal of survey data and/or notification of completion.

TASK DESCRIPTION:

This task is used to provide appraisers and/or buyers with the area of properties to be purchased as part of a job or to stake an area to determine new right of way lines. The survey provides the right of way lines for both the main line and side streets. this information is used to make comparisons between new and existing right of ways.

This task can also include:

- location of building or other structures, and
 - determination of encroachments on existing right of way.
-

WORK STEPS:

1. Receive staking request.
2. Input actual finish date into appropriate data system.
3. Develop survey order and assign to appropriate group.
4. Gather existing plans, control points, old survey notes, right of way information and other available information.
5. Stake area requested.
6. Prepare field notes and/or job report.
7. Notify appropriate unit of completion.
8. Input actual finish date into appropriate data system.
9. Transmit results to the appropriate unit, if needed.

P/PMS TASK DESCRIPTIONS

ROW Relocation – (4700 Series)

Sheet 1 of 2

TASK NUMBER: 4710

DATE: Aug, 1999

TASK TITLE: Relocation Assistance

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of preliminary interviews.

TASK FINISH: Verification that the last unit is vacated.

TASK DESCRIPTION:

The purpose of MDOT's Relocation Assistance Program is to implement the Transportation Commission's authorization of benefits on all jobs of MDOT, and to allow for full compliance with state and Federal policies, regulations and guidelines.

The objective of the program is to provide decent, safe and sanitary replacement housing to individuals and families displaced by the job. Relocation assistance is also provided to businesses, farms and non-profit organizations being displaced.

WORK STEPS:

1. Review completed preliminary interview forms.
2. Input actual start date into appropriate data system.
3. Prepare relocation plan. Do additional studies as necessary, and enter data in REMIS.
4. Prepare replacement housing or rental determinations.
5. Identify and conduct field evaluation of available housing or rental units.
6. Identify available, comparable, decent, safe, and sanitary housing or rental units for each relocatee.
7. Document and verify income of tenants.
8. Revise replacement housing or replacement rental determinations; if necessary, after receipt of appraisals and income verification.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4710

Sheet 2 of 2
DATE: Aug, 1999

TASK TITLE: Relocation Assistance

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

WORK STEPS: (Continued)

9. Prepare relocation determination.
10. Review relocation determination.
11. Present the relocation determination to displacee and explain benefits and entitlements.
12. Assist displacee in locating replacement properties and with other related needs.
13. Assist displacee in preparing relocation claims.
14. Verify occupancy at replacement property.
15. Process claims, make payments via MAIN, and enter data in REMIS.
16. Input actual finish date into appropriate data system.
17. Close relocation file.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4720

Sheet 1 of 2
DATE: Aug, 1999

TASK TITLE: Prepare Improvement Removal Plan

REPORTING MANAGEMENT UNIT: Region Real Estate/Project Team

TASK START: Receipt of marked final ROW plans.

TASK FINISH: Issuance of building certification.

TASK DESCRIPTION:

This task involves the removal of improvements within the right of way required for a job. Improvements can include:

- buildings;
- site improvements such as lights, signs, underground tanks, parking surfaces, wells and septic systems; and
- fixtures and machines such as office equipment, inventory, and any tools or animals used in the business.

A variety of methods are available for removal of the right of way improvements, which may include:

- auction,
- removal by owner (such as house moving),
- sealed bid for acquiring fixtures or structure, and/or
- demolition or master demolition contract.

Upon receipt of the marked final ROW plans, the staff begins coordination for a master demolition. This involves the letting of a contract to perform the necessary work. After closing of property sale, the staff issues a "notice to quit" for the occupants to vacate the property by a specified date. After the vacation, any fixtures are contracted for disposal. Authorization is then given for the removal of structures or fixtures.

Asbestos inspections are contracted for all buildings. Inspections are completed upon vacation. The demolition contract typically includes removal of asbestos when identified.

P/PMS TASK DESCRIPTIONS

TASK NUMBER: 4720

Sheet 2 of 2
DATE: Aug, 1999

TASK TITLE: Prepare Improvement Removal Plan

REPORTING MANAGEMENT UNIT: Real Estate - Property Management/Region

WORK STEPS:

1. Receive marked final ROW plans.
2. Input actual start date into appropriate data system.
3. Prepare Property Disposition Report (PDR). Enter data in REMIS.
4. Identify parcels that need clearance. Arrange an asbestos inspection contract.
5. After receipt of appraisal, prepare salvage value determination for parcels with improvements.
6. After completion of negotiations, review parcel package in regards to occupancy, improvements, excess property fixtures, and prepare water letters. Prepare a contract to have the possession, inventory, sale and disposal of the fixtures handled by a consultant.
7. If unsecured, work with the Attorney General regarding possession. Send notices to quit where appropriate. If optioned, receive copy of deed and send notices to quit.
 - Arrange for extended occupancy of property where necessary (rental determination and agreement).
 - Meet with occupants with fixtures and arrange for inventory, sale, and disposal, if contract for same has not been arranged.
 - Arrange for asbestos inspection and boarding for vacated structures. Arrange for mowing, snow removal, etc. on all parcels.
8. Prepare a "Notice to Public" and advertise the "sale". Hold and coordinate the "sale". Prepare bonds and contracts for the successful bidder.
9. Sell individual improvements as possession is gained, if not "sold" in "Master Demolition" sale.
10. Input actual finish date into appropriate data system.
11. Prepare certification prior to advertising. Submit copy of ROW Certification to the Project Supervisor, Project Engineer, and appropriate individuals.

4 APPENDICES

4.1 APPENDIX A – INDEX TO TASKS BY RESPONSIBLE UNIT

Each task in the P/PMS Global Network is associated with a reporting unit. This is the organizational unit charged with the responsibility of reporting actual start and finish dates for the task. The table below provides a list of possible tasks arranged by the reporting unit(s).

Task

Number Task Description

DESIGN - BRIDGE

- 3360 - Prepare Base Plans
- 3361 - Review and Submit Preliminary ROW Plans
- 3370 - Prepare Structure Study
- 3380 - Review Base Plans
- 3522 - Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3570 - Prepare Preliminary Structure Plans
- 3580 - Develop Preliminary Plans
- 3581 - Review and Submit Final ROW Plans
- 3610 - Compile Utility Information
- 3840 - Develop Road Final Plans and Specifications
- 3850 - Develop Structure Final Plans and Specifications

DESIGN - CONSULTANT ADMINISTRATION

- 2130 - Prepare Job Justification
- 3140 - Obtain Design Consultant

DESIGN - CONSULTANT COORDINATION

- 3360 - Prepare Base Plans
- 3361 - Review and Submit Preliminary ROW Plans
- 3370 - Prepare Structure Study
- 3380 - Review Base Plans
- 3522 - Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3570 - Prepare Preliminary Structure Plans
- 3580 - Develop Preliminary Plans
- 3581 - Review and Submit Final ROW Plans
- 3610 - Compile Utility Information
- 3840 - Develop Road Final Plans and Specifications
- 3850 - Develop Structure Final Plans and Specifications

DESIGN - ELECTRICAL

- 3675 - Develop Electrical Plans

DESIGN - HYDRAULICS

- 3520 - Conduct Hydraulic/Hydrology and Scour Analysis
- 3522 - Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance

DESIGN - MANAGEMENT/EXECUTIVE

- 3375 - Conduct Value Engineering Study

DESIGN - MUNICIPAL UTILITIES

- 3670 - Develop Municipal Utility Plan
- 3672 - Develop Special Drainage Structures Plans

DESIGN - PHOTOGRAMMETRY

- 2320 - Conduct EPE Aerial Photography
- 3310 - Prepare Aerial Topographic Mapping

DESIGN - PROJECT DEVELOPMENT

- 1220 - Scope Verification and Initiation of EPE Activities
- 2110 - Obtain Early Preliminary Engineering Consultant
- 2140 - Develop and Review Illustrative Alternatives
- 2340 - Develop and Review Practical Alternatives
- 2510 - Determine and Review Recommended Alternative
- 2525 - Prepare and Review Engineering Report

DESIGN - PROJECT MANAGER (may be one of many units)

- 2140 - Develop and Review Illustrative Alternatives
- 2340 - Develop and Review Practical Alternatives
- 2510 - Determine and Review Recommended Alternative
- 3130 - Verify Design Scope of Work and Cost
- 3360 - Prepare Base Plans
- 3370 - Prepare Structure Study
- 3375 - Conduct Value Engineering Study
- 3380 - Review Base Plans
- 3530 - Conduct Structure Foundation Investigation
- 3570 - Prepare Preliminary Structure Plans
- 3580 - Develop Preliminary Plans
- 3610 - Compile Utility Information
- 3840 - Develop Road Final Plans and Specifications
- 3850 - Develop Structure Final Plans and Specifications
- 3870 - Hold Omissions/Errors Check (OEC) Meeting

DESIGN – ROADSIDE DEVELOPMENT

- 3535 – Conduct Structure Architectural and Aesthetic Review

DESIGN - QUALITY ASSURANCE – STDS/CERT/VE (ESTIMATING AND LETTING)

- 3880 - CPM Quality Assurance Review
- 3910 - Prepare Final Job Package and Obtain Authorization

DESIGN - QUALITY ASSURANCE – PLAN AND FIELD REVIEW

- 3361 - Review and Submit Preliminary ROW Plans
- 3581 - Review and Submit Final ROW Plans
- 3590 - Review Preliminary Plans (Hold THE Plan Review Meeting)

DESIGN - ROAD

- 3360 - Prepare Base Plans
- 3361 - Review and Submit Preliminary ROW Plans
- 3522 - Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3580 - Develop Preliminary Plans
- 3581 - Review and Submit Final ROW Plans
- 3840 - Develop Road Final Plans and Specifications

DESIGN - ROADSIDE DEVELOPMENT

- 3535 - Conduct Structural Review for Architectural and Aesthetic Improvements

DESIGN - SURVEY

- 3160 - Obtain Design Survey Consultant
- 3320 - Conduct Photogrammetric Control Survey
- 3330 - Conduct Design Survey
- 3340 - Conduct Structure Survey
- 3350 - Conduct Hydraulics Survey
- 4510 - Conduct Right Of Way Survey and Staking

ENGINEERING SERVICES - GOVERNMENTAL & RAILROAD COORDINATION

- 3630 - Prepare and Process Participation/Special Operational Agreements

ENGINEERING SERVICES - RAILROAD ENGINEERING

- 3650 - Coordinate Railroad Involvement for Grade Separations
- 3655 - Coordinate Railroad Involvement for At-Grade Crossings

FINANCIAL SERVICES - BID LETTING/CONTRACT AWARDS

- 3920 - Advertise and Let Job
- 3930 - Award Job Construction Contract

MATERIALS AND TECHNOLOGY – GRADING/DRAINAGE & CONSULTANT CONTRACTING (formerly Geoenvironmental Services)

- 2820 - Conduct Preliminary Site Investigation (PSI) for Contamination

MATERIALS AND TECHNOLOGY - GEOTECHNICAL SERVICES

- 3530 - Conduct Structure Foundation Investigation

PLANNING - ENVIRONMENTAL COMPLIANCE AND MITIGATION

- 3710 - Develop Required Mitigation
- 3720 - Submit Environmental Permit Applications
- 3730 - Obtain Environmental Permits

PLANNING - ENVIRONMENTAL ANALYSIS

- 2160 - Prepare and Review EIS Scoping Document
- 2310 - Conduct Technical SEE Studies
- 2330 - Collect EPE Geotechnical Data
- 2360 - Prepare and Review EA or DEIS
- 2380 - Circulate EA or DEIS
- 2530 - Prepare and Review Request for FONSI or FEIS
- 2550 - Obtain FONSI or ROD

PLANNING - ENVIRONMENTAL PROJECT COORDINATION (formerly Evaluation & Classification)

- 3150 - Categorical Exclusion Environmental Clearance

PLANNING - PROGRAM MANAGEMENT

- 2560 - Obtain Preliminary Engineering Authorization

PLANNING - PROJECT PLANNING

- 2120 - Prepare Traffic Analysis Report
- 2130 - Prepare Project Justification

REAL ESTATE - ENVIRONMENTAL ASSESSMENT/UTILITIES AND PERMITS

- 2810 - Conduct Initial Site Assessment for Contamination

REAL ESTATE - PROGRAM MANAGEMENT

- 4110 - Obtain Right of Way Authorization
- 4115 - Obtain Right of Way Turnkey Consultant

REAL ESTATE - TECHNICAL UNIT

- 4130 - Prepare Marked Final Right of Way Plans

REGION/TSC - CONSTRUCTION (tasks pending review)

- 3565 Preliminary Constructability Review
- 3860 Final Constructability Review

REGION/TSC - CONSTRUCTION AND TECHNOLOGY

- 2330 - Collect EPE Geotechnical Data
- 3505 - Preliminary Pavement Design and Selection
- 3510 - Perform Roadway Geotechnical Investigation

REGION - REAL ESTATE

- 4120 - Obtain Preliminary Title Commitments
- 4140 - Prepare Property Legal Instruments
- 4411 - Preliminary Interviews
- 4412 - Appraisal Assignment Proposal and Fee Estimate
- 4413 - Appraisals
- 4420 - Review Right of Way Parcel Appraisals
- 4430 - Acquire Right Of Way Parcels
- 4710 - Prepare Relocation Assistance
- 4720 - Prepare Improvement Removal Plan

REGION - SURVEY

- 3160 - Obtain Design Survey Consultant
- 3320 - Conduct Photogrammetric Control Survey
- 3330 - Conduct Design Survey
- 3340 - Conduct Structure Survey
- 3350 - Conduct Hydraulics Survey
- 4510 - Conduct Right Of Way Survey and Staking

REGION/TSC - TRAFFIC AND SAFETY

- 2155 - Request/Perform Safety Analysis
- 3390 - Develop the Maintaining Traffic Concepts
- 3540 - Develop the Maintaining Traffic Plan
- 3552 - Develop Preliminary Permanent Pavement Marking Plan
- 3553 - Develop Preliminary Non-Freeway Signing Plan
- 3822 - Complete Permanent Pavement Marking Plan
- 3823 - Complete Non-Freeway Signing Plan
- 3830 - Complete the Maintaining Traffic Plan

TRAFFIC AND SAFETY - GEOMETRICS

- 3560 - Conduct Preliminary Geometrics and Roadside Safety Reviews
- 3810 - Conduct Final Geometrics and Roadside Safety Reviews

4.2 APPENDIX B – INDEX TO TASKS BY ORGANIZATIONAL UNIT

Although there are approximately 80 tasks in the P/PMS Global Network, most employees will typically report their time using a small number of these tasks. This appendix is arranged in organizational code sequence and provides a list of tasks that each unit is likely/able to report to. Tasks which units may spend less than 5 percent of that task's labor hours on are typically not reported to, and thus not listed.

BUREAU OF FINANCE AND ADMINISTRATION

22700 Financial Services - Bid Letting/Contract Awards

- 3920 Advertise and Let Project
- 3930 Award Project Construction Contract

BUREAU OF HIGHWAYS

30500 Engineering Services - Railroad Engineering - Structures

- 3655 Coordinate Railroad Involvement for Grade Separations

30700 Engineering Services - Railroad Engineering - Grade Crossings and Governmental & Railroad Coordination

- 2110 Obtain Early Preliminary Engineering Consultant
- 2340 Develop and Review Practical Alternatives
- 2525 Prepare and Review Engineering Report
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3650 Coordinate Railroad Involvement for At-Grade Crossings
- 3840 Develop Road Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

311xx-9xx Region Utilities and Permits

- 3610 Compile Utility Information
- 3660 Resolve Utility Issues
- 3670 Develop Municipal Utility Plan
- 3720 Submit Environmental Permit Applications
- 3730 Obtain Environmental Permit
- 3870 Hold Omissions/Errors Check (OEC) Meeting

331xx-9xx Region Development/Design

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2160 Prepare and Review EIS Scoping Document
- 2340 Develop and Review Practical Alternatives
- 2360 Prepare and Review EA or DEIS
- 2510 Determine and Review Recommended Alternative
- 2525 Prepare and Review Engineering Report
- 2530 Prepare and Review Request for FONSI or FEIS
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3375 Conduct Value Engineering Study
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3840 Develop Road Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

34900 Design Services - Quality Assurance – OEC Review

- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3870 Hold Omissions/Errors Check (OEC) Meeting

35300 Design Services - Photogrammetry

- 2320 Conduct EPE Aerial Photography
- 3310 Prepare Aerial Topographic Mapping

35800 Design Services - Survey - Administration

- 3140 Obtain Design Consultant
- 3160 Obtain Design Survey Consultant
- 3320 Conduct Photogrammetric Control Survey
- 3330 Conduct Design Survey
- 3340 Conduct Structure Survey
- 3350 Conduct Hydraulics Survey
- 4510 Conduct Right Of Way Survey and Staking

36000 Design Services - Survey - Statewide

- 3320 Conduct Photogrammetric Control Survey
- 3330 Conduct Design Survey
- 3340 Conduct Structure Survey
- 3350 Conduct Hydraulics Survey
- 4510 Conduct Right Of Way Survey and Staking

361xx-9xx Design Services - Region Survey

- 3320 Conduct Photogrammetric Control Survey
- 3330 Conduct Design Survey
- 3340 Conduct Structure Survey
- 3350 Conduct Hydraulics Survey
- 4510 Conduct Right Of Way Survey and Staking

37300 Design - Project Development

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2160 Prepare and Review EIS Scoping Document
- 2340 Develop and Review Practical Alternatives
- 2360 Prepare and Review EA or DEIS
- 2510 Determine and Review Recommended Alternative
- 2525 Prepare and Review Engineering Report
- 2530 Prepare and Review Request for FONSI or FEIS
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3375 Conduct Value Engineering Study
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3672 Develop Special Drainage Structures Plans
- 3710 Develop Required Mitigation
- 3840 Develop Road Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

37700 Design - Roadside Development

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2160 Prepare and Review EIS Scoping Document

37700**Design - Roadside Development (cont'd)**

- 2340 Develop and Review Practical Alternatives
- 2360 Prepare and Review EA or DEIS
- 2510 Determine and Review Recommended Alternative
- 2525 Prepare and Review Engineering Report
- 2530 Prepare and Review Request for FONSI or FEIS
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3672 Develop Special Drainage Structures Plans
- 3710 Develop Required Mitigation
- 3840 Develop Road Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

37900 Design - Quality Assurance – Specs, Estimates, Certification, and Standards

- 3880 CPM Quality Assurance Review
- 3910 Prepare Final Project Package and Obtain Authorization

38000 Design - Quality Assurance – Plans and Field Review

- 3130 Verify Design Scope of Work and Cost
- 3361 Review and Submit Preliminary ROW Plans
- 3380 Review Base Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3870 Hold Omissions/Errors Check (OEC) Meeting

38100 Design - Consultant Administration

- 2130 Prepare Project Justification
- 3140 Obtain Design Consultant
- 3160 Obtain Design Survey Consultant

38500 Design - Consultant Coordination – Bridge

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2340 Develop and Review Practical Alternatives
- 2510 Determine and Review Recommended Alternative
- 3130 Verify Design Scope of Work and Cost

38500 Design - Consultant Coordination – Bridge (cont'd)

- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3370 Prepare Structure Study
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3570 Prepare Preliminary Structure Plans
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3672 Develop Special Drainage Structures Plans
- 3710 Develop Required Mitigation
- 3840 Develop Road Final Plans and Specifications
- 3850 Develop Structure Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

38700 Design - Special Assignment-Structures

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2340 Develop and Review Practical Alternatives
- 2510 Determine and Review Recommended Alternative
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3370 Prepare Structure Study
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3570 Prepare Preliminary Structure Plans
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3672 Develop Special Drainage Structures Plans
- 3710 Develop Required Mitigation
- 3840 Develop Road Final Plans and Specifications
- 3850 Develop Structure Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

38900-9400 Design - Bridge

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2340 Develop and Review Practical Alternatives
- 2510 Determine and Review Recommended Alternative
- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3360 Prepare Base Plans
- 3361 Review and Submit Preliminary ROW Plans
- 3370 Prepare Structure Study
- 3375 Conduct Value Engineering Study
- 3380 Review Base Plans
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3570 Prepare Preliminary Structure Plans
- 3580 Develop Preliminary Plans
- 3581 Review and Submit Final ROW Plans
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3610 Compile Utility Information
- 3672 Develop Special Drainage Structures Plans
- 3710 Develop Required Mitigation
- 3840 Develop Road Final Plans and Specifications
- 3850 Develop Structure Final Plans and Specifications
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

39500 Design - Electrical

- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3675 Develop Electrical Plans
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

39600 Design - Municipal Utilities

- 3130 Verify Design Scope of Work and Cost
- 3140 Obtain Design Consultant
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3670 Develop Municipal Utility Plan
- 3672 Develop Special Drainage Structures Plans
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

39700 Design - Hydraulics/Hydrology

- 3520 Conduct Hydraulic/Hydrologic and Scour Analysis
- 3522 Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)

401xx-13xx Region M & T

- 2330 Collect EPE Geotechnical Data
- 3505 Preliminary Pavement Design and Selection
- 3510 Perform Roadway Geotechnical Investigation

41800 C & T - Geotechnical

- 2820 Conduct Preliminary Site Investigation (PSI) for Contamination
- 3530 Conduct Structure Foundation Investigation

43100-900 Region Real Estate

- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 4115 Obtain Right Of Way Turnkey Consultant
- 4120 Obtain Preliminary Title Commitments
- 4130 Prepare Marked Final Right Of Way Plans
- 4140 Prepare Property Legal Instruments
- 4411 Preliminary Interviews
- 4412 Appraisal Assignment Proposal and Fee Estimate (Form 633s)
- 4413 Appraisals
- 4420 Review Right Of Way Parcel Appraisals
- 4430 Acquire Right Of Way Parcels
- 4710 Provide Relocation Assistance

44000 Real Estate - Utility Coord. & Permits - Env. Assessment + Utilities and Permits
(Environmental Assessment)

- 2310 Conduct Technical SEE Studies
- 2380 Circulate EA or DEIS
- 2530 Prepare and Review Request for FONSI or FEIS
- 2810 Conduct Initial Site Assessment (ISA) for Contamination
- 2820 Conduct Preliminary Site Investigation (PSI) for Contamination

(Utilities and Permits)

- 3610 Compile Utility Information
- 3660 Resolve Utility Issues
- 3870 Hold Omissions/Errors Check (OEC) Meeting

44400 Real Estate - Project Development - Program Management

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2140 Develop and Review Illustrative Alternatives
- 2340 Develop and Review Practical Alternatives
- 2510 Determine and Review Recommended Alternative
- 3130 Verify Design Scope of Work and Cost
- 3580 Develop Preliminary Plans
- 4110 Obtain Right of Way Authorization
- 4115 Obtain Right Of Way Turnkey Consultant
- 4430 Acquire Right Of Way Parcels
- 4510 Conduct ROW Survey and Staking

4710 Provide Relocation Assistance

44500 Real Estate - Proj. Dev. - Resource Pool

(Appraisal - Appraisal Services)

4115 Obtain Right Of Way Turnkey Consultant

4411 Preliminary Interviews

4412 Appraisal Assignment Proposal and Fee Estimate (Form 633s)

4413 Appraisals

4420 Review Right Of Way Parcel Appraisals

(Appraisal - Specialty Appraisals)

2140 Develop and Review Illustrative Alternatives

2340 Develop and Review Practical Alternatives

3580 Develop Preliminary Plans

3840 Develop Final Plans and Specs

4411 Preliminary Interviews

4412 Appraisal Assignment Proposal and Fee Estimate (Form 633s)

4413 Appraisals

4420 Review Right Of Way Parcel Appraisals

(Acquisition and Relocation)

4115 Obtain Right Of Way Turnkey Consultant

4430 Acquire Right Of Way Parcels

4710 Provide Relocation Assistance

(Property Management - ROW Clearance)

4115 Obtain Right Of Way Turnkey Consultant

4720 Prepare Improvement Removal Plan

44700 Real Estate - Project Development - Technical Unit

4120 Obtain Preliminary Title Commitments

4130 Prepare Marked Final Right Of Way Plans

4140 Prepare Property Legal Instruments

44800 Real Estate - Acquisition/Appraisal Support (Parcel & LPA Review)

4430 Acquire Right Of Way Parcels

47000 Traffic and Safety - Program Development and Systems - Safety – Standards & Guides and Safety Programs/Analysis

3140 Obtain Design Consultant

3560 Conduct Preliminary Geometrics and Roadside Safety Reviews

3580 Develop Preliminary Plans

3810 Conduct Final Geometrics and Roadside Safety Reviews

3840 Develop Road Final Plans and Specifications

47300 Traffic and Safety - Signal Analysis

3551 Perform/Review Traffic Signal Operations Plan

47400 Traffic and Safety - Signal Design

- 3130 Verify Design Scope of Work and Cost
- 3540 Develop Maintaining Traffic Plan
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3821 Prepare/Review Traffic Signal Plan
- 3830 Complete the Maintaining Traffic Plan
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

47500 Traffic and Safety - Operations - Reflective Systems

- 3130 Verify Design Scope of Work and Cost
- 3554 Develop Preliminary Freeway Signing Plan
- 3824 Complete Freeway Signing Plan
- 3910 Prepare Final Project Package and Obtain Authorization

47700 Traffic & Safety - Operations - Geometrics

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2130 Prepare Project Justification
- 2140 Develop and Review Illustrative Alternatives
- 2340 Develop and Review Practical Alternatives
- 2510 Determine and Review Recommended Alternative
- 3130 Verify Design Scope of Work and Cost
- 3560 Conduct Preliminary Geometrics and Roadside Safety Reviews
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3810 Conduct Final Geometrics and Roadside Safety Reviews
- 3870 Hold Omissions/Errors Check (OEC) Meeting
- 3910 Prepare Final Project Package and Obtain Authorization

481xx-9xx Region Traffic & Safety

- 3130 Verify Design Scope of Work and Cost
- 3390 Develop Maintaining Traffic Concepts
- 3540 Develop Maintaining Traffic Plan
- 3552 Develop Preliminary Permanent Pavement Marking Plan
- 3553 Develop Preliminary Non-Freeway Signing Plan
- 3560 Conduct Preliminary Geometrics and Roadside Safety Reviews
- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
- 3810 Conduct Final Geometrics and Roadside Safety Reviews
- 3822 Complete Permanent Pavement Marking Plan
- 3823 Complete Non-Freeway Signing Plan
- 3830 Complete Maintaining Traffic Plan
- 3870 Hold Omissions/Errors Check (OEC) Meeting

505xx-550xx Region Maintenance

- 3590 Review Preliminary Plans (Hold THE Plan Review Meeting)

- 611xx-9xx Region Construction**
3130 Verify Design Scope of Work and Cost
3330 Conduct Design Survey
3565 Preliminary Constructability Review
3580 Develop Preliminary Plans
3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
3860 Final Constructability Review
3870 Hold Omissions/Errors Check (OEC) Meeting
3910 Prepare Final Project Package and Obtain Authorization

- 621xx-9xx Region Administration + Resource Analysts**
2820 Conduct Preliminary Site Investigation (PSI) for Contamination
3590 Review Preliminary Plans (Hold THE Plan Review Meeting)
3710 Develop Required Mitigation
3720 Submit Environmental Permit Applications
3730 Obtain Environmental Permits
3870 Hold Omissions/Errors Check (OEC) Meeting

BUREAU OF TRANSPORTATION PLANNING

65800 Planning - Program Management

- 2560 Obtain Preliminary Engineering Authorization

67100 Planning - Environmental Analysis

- 1220 Scope Verification and Initiation of EPE Activities
2110 Obtain Early Preliminary Engineering Consultant
2160 Prepare and Review EIS Scoping Document
2310 Conduct Technical SEE Studies
2330 Collect EPE Geotechnical Data
2360 Prepare and Review EA or DEIS
2380 Circulate EA or DEIS
2510 Determine and Review Recommended Alternative
2530 Prepare and Review Request for FONSI or FEIS
2550 Obtain FONSI or ROD
3130 Verify Design Scope of Work and Cost
3140 Obtain Design Consultant
3150 Categorical Exclusion Environmental Clearance Coordination

67300 Planning - Project Coordination

- 2160 Prepare and Review EIS Scoping Document
2310 Conduct Technical SEE Studies
2360 Prepare and Review EA or DEIS
3150 Categorical Exclusion Environmental Clearance Coordination
3710 Develop Required Mitigation
3720 Submit Environmental Permit Applications
3730 Obtain Environmental Permit

67400 Planning - Compliance and Mitigation

- 2110 Obtain Early Preliminary Engineering Consultant
- 2310 Conduct Technical SEE Studies
- 2360 Prepare and Review EA or DEIS
- 3150 Categorical Exclusion Environmental Clearance Coordination
- 3710 Develop Required Mitigation
- 3720 Submit Environmental Permit Applications
- 3730 Obtain Environmental Permit

67500-7800 Planning - Project Planning

- 1220 Scope Verification and Initiation of EPE Activities
- 2110 Obtain Early Preliminary Engineering Consultant
- 2120 Prepare Traffic Analysis Report
- 2130 Prepare Project Justification
- 2310 Conduct Technical SEE Studies
- 2380 Circulate EA or DEIS
- 2510 Determine and Review Recommended Alternative
- 2530 Prepare and Review Request for FONSI or FEIS

4.3 APPENDIX C – P/PMS NETWORK MILESTONES

Along with network tasks, the P/PMS Global Network also contains milestone events which serve to offer a quick snapshot of the progress of a project. Each such milestone represents a commonly recognized event in the life of a project. The reporting unit will record the date on which the event occurs. Users will then be able to request reports listing the milestones and associated dates.

121M Highway Steering Committee Concurrence

Reporting Unit: Planning - Program Management

This event occurs as part of the process of obtaining Early Preliminary Engineering authorization in Task 1220.

211M Public Information Meeting

Reporting Unit: Planning - Environmental Analysis

A public information meeting is held to inform the general public of the proposed project at the time the EIS scoping document is prepared in Task 2160.

213M Concurrence by Regulatory Agencies with the Purpose of and Need for the Proposed Project

Reporting Unit: Planning - Environmental Compliance and Mitigation

When it is anticipated that the wetlands impacts of a proposed project will be great enough that a Clean Water Act Section 404 permit will be needed, the Concurrent NEPA/404 Process requires that the Michigan Department of Environmental Quality, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service must concur with the purpose of and need for the proposed project. This occurs as part of Task 2130 (Prepare Written Description of the Purpose of and Need for the Proposed Project).

231M Draft Submission to FHWA

Reporting Unit: Planning - Environmental Analysis

When the EA or DEIS document has been reviewed and found to be complete, it is submitted to FHWA for approval as part of Task 2360.

232M

Public Hearing

Reporting Unit: Planning - Public Involvement

A hearing is held during the circulation period for the EA or DEIS among concerned members of the public, and to offer the opportunity for the public to provide input and express any concerns. This occurs as part of Task 2380.

234M

Concurrence by Regulatory Agencies with the Alternatives to be Carried Forward for Detailed Study

Reporting Unit: Planning - Environmental Compliance and Mitigation

When it is anticipated that the wetlands impacts of a proposed project will be great enough that a Clean Water Act Section 404 permit will be needed, the Concurrent NEPA/404 Process requires that the Michigan Department of Environmental Quality, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service must concur with the alternatives to be carried forward for detailed study. This occurs as part of Task 2340 (Develop and Review Practical Alternatives).

250M

Concurrence by Regulatory Agencies with the Recommended Alternative

Reporting Unit: Planning - Environmental Compliance and Mitigation

When it is anticipated that the wetlands impacts of a proposed project will be great enough that a Clean Water Act Section 404 permit will be needed, the Concurrent NEPA/404 Process requires that the Michigan Department of Environmental Quality, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service must concur with the recommended alternative. This occurs as part of Task 2510 (Determine and Review Recommended Alternative).

251M

Department Approval of Recommended Alternative

Reporting Unit: Design - Project Development

The task finish point for Task 2510, in which the recommended alternative is reviewed, is the approval of the recommended alternative by the Highway Steering Committee.

- 252M **Final Submission to FHWA**
- Reporting Unit: Planning - Environmental Analysis
- At the end of the environmental study process, the final document (FEIS or request for FONSI) is submitted to FHWA for approval as part of Task 2530.
- 311M **Utility Notification**
- Reporting Unit: Project Manager
- Upon completion of Base Plans/Structure Study, the Project Manager notifies utilities of the proposed project.
- 312M **Department Concurrence of Design Scope**
- Reporting Unit: Design - Project Manager
- The Project Manager prepares the scoping document and submits it to the appropriate agencies within the Department for approval as part of Task 3130.
- 331M **Preliminary ROW Plans Distributed**
- Reporting Unit: Design Unit/Consultant Coordination & Design ROW Engineer
- As part of the preparation of the base plans, in Task 3361, preliminary right of way plans are assembled and distributed to the Real Estate Division for further development.
- 332M **Base Plan Review (Pre-GI Inspection)**
- Reporting Unit: Design - Project Manager
- A team is selected to participate in a Review Base Plans (Pre-GI) exercise as part of Task 3380. The approved recommendations that result from this are forwarded to the Design Unit by the Project Manager.
- 351M **Final ROW Plans Distributed**
- Reporting Unit: Design Unit/Consultant Coordination & Design ROW Engineer
- Final ROW plans, reflecting the anticipated right of way requirements of the project, are developed and distributed in the process of developing the preliminary plans, as part of Task 3581.

- 352M **THE Plan Review (Grade Inspection)**
- Reporting Unit: Design - Quality Assurance
- A major step in the review of the preliminary plans in Task 3590 is the field inspection. The comments and recommendations that result from this inspection are coordinated, documented and distributed by Quality Assurance.
- 360M **Utility Conflict Resolution Plan Distribution**
- Reporting Unit: Project Manager
- This milestone occurs as part of Task 3660, and coincides with the start of that task. The Project Manager should submit a copy of the marked up Base or Preliminary plans to the Region Utilities & Permits Engineer and/or the Utilities and Permits Section of the Real Estate Division for use in Task 3660.
- 361M **Utility Meeting**
- Reporting Unit: Engineering Services - Utilities and Permits
- A meeting is held with affected utility companies and Department personnel to resolve utility issues arising from the project. This step is a part of Task 3660.
- 380M **Plan Completion**
- Reporting Unit: Project Manager
- The incorporation of recommendations from the OEC Meeting into the Final Plans and Specifications. This milestone comes at the end of Task 3870.
- 387M **Omissions/Errors Checks Meeting**
- Reporting Unit: Project Manager
- A meeting is held to review the Final Plan & Proposal Package and ensure its completeness. This meeting is associated with Task 3870.
- 389M **Plan Turn-In**
- Reporting Unit: Design – Quality Assurance
- After Plan Completion, the Project Manager turns in the completed Plans & Proposal Package to Quality Assurance.

- 391M **Certification Acceptance**
- Reporting Unit: Design - Project Estimating and Letting
- This completes Task 3910 with approval and sign-off on the Certification Acceptance Checklist. This indicates that all letting and Federal requirements have been met, and that Design has cleared the project for advertising.
- 392M **Project Let**
- Reporting Unit: Financial Services - Bid Letting
- The project is let when it has been advertised, bids have been received and evaluated, and the low bidder selected. This occurs as part of Task 3920.
- 393M **Project Awarded**
- Reporting Unit: Financial Services - Contract Awards
- After selection of the low bidder, a contract is drawn up, bonding and funding are arranged, and various levels of approval are obtained. Signing by the Director of the Department signifies that the project has been awarded. The steps all occur as part of Task 3930.
- 413M **Approved Marked Final ROW**
- Reporting Unit: Project Manager
- A team consisting of the Project Manager, Quality Assurances ROW Engineer, Region Real Estate Agent, and Lansing Real Estate Manager, all agrees that the plans are acceptable, meet MDOT's guidelines, and are ready to move to the next step. This milestone signifies the end task 4130.
- 441M **Post-Decision Meeting**
- Reporting Unit: Region Real Estate
- As part of Task 4411, a meeting is held to inform the public of the impact of the project and to meet with property owners.
- 442M **ROW Certification**
- Reporting Unit: Real Estate - Program Management
- This finishes Task 4720 and certifies that the project's ROW portion is complete. A copy of the ROW Certification should be submitted to the Project Manager.

4.4 APPENDIX D – P/PMS ACRONYMS

AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
CE	Categorical Exclusion
CRF	Contract Request Form
CPM	Critical Path Method
DEIS	Draft Environmental Impact Statement
DHV	Design Hour Volumes
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPE	Early Preliminary Engineering
FEIS	Final Environment Impact Statement
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
ISA	Initial Site Assessment
LOS	Level of Service
C&T	Construction and Technology
MAP	Michigan Architectural Project
MDNR	Michigan Department of Natural Resources
MPINS	MAP Project Information System
MPO	Metropolitan Planning Organization
MDOT	Michigan Department of Transportation
OBS	Organizational Breakdown Structure
OEC	Omissions/Errors Check Meeting
P/PMS	Program/Project Management System
PDR	Property Disposition Report
PE	Preliminary Engineering
PPS	Preliminary Project Statement
PS&E	Plans, Specifications, and Estimates
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
RED	Real Estate Division
RFP	Request for Proposal
RI	Remedial Investigation
ROD	Record of Decision
ROW	Right of Way
SEE	Social, Economic, and Environmental
TAR	Traffic Analysis Report
WBS	Work Breakdown Structure

4.5 APPENDIX E - GLOSSARY

2604 FORM - A change request form in MPINS used to obtain authorization for such changes to a job such as adding or deleting phases, splitting a job, job costs, major work type, location, financial cost divisions, and major milestone dates. This form is usually submitted before creating a version of a job.

ABANDONED JOB – A job which has been discontinued and removed from the MDOT Master Program and is not expected to be restarted.

ACTIVE JOB – A job which is currently in the MDOT Master Program and is actively being worked on.

ACTUAL FINISH DATE (AF) - The actual point in time that work is finished on a task. (Note: in some cases, the task is considered “finished” when work is “substantially complete”).

ACTUAL START DATE (AS) - The actual point in time that work started on a task.

ANNUAL CALL-FOR-PROJECTS – The annual call-for-projects is the mechanism by which Project Concept Statements are forwarded annually to the Screening Committee for job selection and assignment to construction years. The Screening Committee reviews each Region's jobs and priorities and how they relate to the statewide strategy with the respective Region Engineer. This is done before the selected jobs are placed in the MDOT Master Program.

APPROVED FINISH DATE – The planned point in time that work should finish on a task in order for the job to meet its targeted plan completion date.

APPROVED START DATE - The planned point in time that work should start on a task in order for the job to meet its targeted plan completion date.

ARCHIVED JOB – A job that has been completed, suspended, or abandoned and is removed from the P/PMS Statewide Master Program.

APPROVED JOB – A job officially included in the MDOT Master Program, but no work has been performed yet.

APPROVED DATES – The planned start and finish dates for the tasks within a job.

AWARDED JOB – A job that has been awarded in MPINS and will be removed from the P/PMS Statewide Master Program and archived.

CHARACTERISTICS - Items in the scope of a job that make it unique, including work type, region, road class, FHWA involvement, subgrade work or work outside existing shoulders, and many more. Specifically, these items of scope determine what tasks are in P/PMS job networks, their durations, and resources.

CONCEPT JOB – A job being considered for inclusion into the MDOT Master Program.

CONSTRAINTS – Defines the sequence of tasks and determines how they relate to each other in a network. Four possible types of constraints exist in a Precedence Diagram; start-to-start, start-to-finish, finish-to-start, and finish-to-finish.

CONSTRUCTION COST – The obligated A-phase amount retrieved from the MAP database and shown on the MPINS Job Info Screen.

COMPLETED JOB – A job in the MDOT Master Program that has one or more phases designated as completed in MPINS. All work on the job is physically completed.

CRITICAL PATH - The series of tasks determining the earliest completion of the job. The critical path will generally change from time to time as tasks are completed ahead of or behind schedule. The critical path is usually defined as those activities with float less than or equal to a specified value, often zero.

CRITICAL PATH METHOD (CPM) – A method of analyzing networks to determine early and late start and finish dates, durations, float and critical path.

DURATION - Number of work days (not including holidays/other non-working days) required to complete a task.

FLOAT - The amount of time, in days, that a task may be delayed from its approved dates without delaying the job finish date. Float is a mathematical calculation and can change as the project progresses and changes are made to the job. Also called slack time, total float, and path float.

GENERIC JOB - A job containing all of the tasks, milestones, and constraints necessary to constitute a network, but missing the necessary Management Units to finish assigning all resources to tasks.

IMPROVE/EXPAND JOB – "Improve" jobs increase the capacity of a road or facility and may require additional right of way. The threshold for an "Improve" job is a road widening of one lane's width or longer than a half mile, or greater than \$500,000. An "Expand" job builds a new facility where none currently exists, relocates a current facility, or adds a road currently under local jurisdiction to the trunk line system.

JOB – A series of tasks grouped into phases that lead to the accomplishment of an objective(s).

JOB STATUS – Current standing of a job within the Master Program. Possible values are:

- ABANDONED
- ACTIVE
- APPROVED
- COMPLETED
- CONCEPT
- RESEARCH
- SUSPENDED

See the entry for each individual status code in this appendix for further explanation.

LABOR HOURS - The amount of actual “hands-on” time a resource spends performing a task or group of tasks.

LETTING DATE - The date that a job is put up for bid by contractors.

MANAGEMENT UNIT – An established group of employees responsible for completing a unique set of job tasks.

MAP - Michigan Architectural Project. The MDOT corporate database.

MILESTONE - A significant event in the job, usually the completion of a major deliverable.

MPINS - Michigan Project Information System. The user interface to the MAP database.

NETWORK – A work flow plan consisting of all tasks and constraints that must be completed to reach job objectives showing their planned sequence of accomplishment and logical relationships.

NETWORK ANALYSIS - The process of identifying early and late start and finish dates for the uncompleted portions of job tasks.

NETWORK GENERATOR – The computerized subsystem within P/PMS that generates job schedules. As input, it uses certain information from the scoping checklist, as well as a standard template of task’s and constraints. By applying a precisely designed algorithm, it is able to compute durations and resource requirements for all tasks within a network.

NEW JOB - A valid job whose basic data has been loaded from MAP and needs a P/PMS network created. Valid jobs include:

- Concepts with job numbers not beginning with 9, with valid P/PMS work types, region codes greater than 0, and which will be let by MDOT during or after the current fiscal year.
- Approved or active trunk line jobs, with job numbers not beginning with 9, valid P/PMS work types, region codes greater than 0, and which will be let by MDOT during or after the current fiscal year (or Study jobs).

ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS) – A hierarchical organizational matrix, which defines the relationships of all MDOT resources involved in a P/PMS job. This data is used primarily for summarizing labor data and producing customized reports.

PLAN COMPLETION DATE - The date at which all plans are complete, and the job is turned in to Specifications and Estimates for packaging to be advertised and let.

P/PMS - The Program/Project Management System. The MDOT Project Management software.

PRESERVE JOB – A job that is geared toward correcting deficiencies along an existing road and usually does not require right of way acquisition. Resurfacing, recycling, and safety jobs are examples of preservation work types. Replacement "in-kind" is considered preservation. The addition of passing lanes is also considered preservation because they improve traffic flow and safety, but do not increase the overall capacity of the road.

PROGRAM – A group of jobs oriented toward a common objective, usually to be carried out in a specified time frame.

PROGRAMMED JOB - A job that has been approved and added to the P/PMS Statewide Master Program. These jobs require updating and monitoring for progress.

PROJECT – Two or more jobs to be designed, let, and constructed together.

PROJECT MANAGEMENT - The application of knowledge, skills, tools, and techniques to job tasks in order to meet or exceed stakeholder needs and expectations from a job.

PROJECT MANAGER – The Project Manager plays a leadership role in project development and is responsible for coordinating the tasks of participants on the project team and for keeping the job on schedule and within budget. The Project Manager works cooperatively with team members to set priorities with each person contributing to project development by obtaining an estimate of the time and dollars needed for each major project development function (design, right of way, traffic control plans, traffic estimation and environmental clearance). Project Managers coordinate job tasks to assure that the job remains consistent with the job concept statement and is within the estimated cost reflected in the long-range program. It is also the Project Manager's responsibility to make sure that all team members are informed of changes that will influence their participation in the job.

REFINED JOB - A job that has a version waiting to be included in the P/PMS Statewide Master Program. The version must have satisfactory dates and/or coincide with an approved 2604 before it can be “programmed” in P/PMS.

RESEARCH JOB – A Job currently under study only.

RESOURCE – A unit that performs at least some of the work on the task or tasks they’re involved with.

RESOURCE LEVELING – The adjustment of job schedules to balance the job workload based on the available labor hours for each resource assigned.

ROLL -UP – The summarizing or "rolling-up" of job-related data along OBS or WBS lines.

SCENARIO – An alternative to the P/PMS Statewide Master Program which demonstrates the affect on the schedule of running a different mix of jobs (Program "what-if").

SCHEDULE DATES – The current start and finish dates for the tasks within a job.

SCHEDULED FINISH DATE – The current point in time that work will be finished on a task.

SCHEDULED START DATE - The current point in time that work will be started on a task.

SCHEDULER – The computerized subsystem within P/PMS which generates the Master Program Schedule. It takes in the schedule's output from the Network Generator, other data from the Payroll and Real Estate sub-systems and balances resource load requirements against resource availability and desired priorities to produce the Master Schedule.

SCHEDULING SPECIALIST - The “right-hand” of a project manager, whose duty with regards to P/PMS is to perform the ground work necessary to create and update the P/PMS network for a job.

STATEWIDE MASTER PROGRAM – The proposed plan of the Michigan Department of Transportation for developing and constructing highway improvement jobs for a specific multi-year period of time (e.g., five-year program).

SUSPENDED JOB – A job which was at one time included in the MDOT Master Program, but has been temporarily removed. It is anticipated that the job will be returned to "Approved" or “Active” status sometime in the future.

TARGET DATE - An imposed date which constrains or otherwise modifies the network analysis. Target dates are set approved dates from which the network approved dates are calculated. These include the Target Start (Task 0000), Target Plan Completion (380M), Target Letting (392M) and Target Finish (Task 9999).

TASK – A specific work responsibility performed by one or more resources. Tasks include both resource labor hour and duration commitments. A task is usually composed of several work steps.

UNGENERATED JOB - A job that has been opened in P/PMS, but does not yet have a network generated.

UNREFINED JOB - A job containing all of the tasks, milestones, constraints, and resources necessary to constitute a network, but that needs to be checked, updated, and verified to ensure the network correctly reflects all work to be done.

VERSION - A copy of a job network which is used to make changes to the tasks, constraints or resources.

WORK BREAKDOWN STRUCTURE – A hierarchical job matrix which defines relationships of Tasks, Phases, etc., within a P/PMS job. This data is used primarily for summarizing task data and producing customized reports.

WORK STEPS – One or more specific actions which are performed to complete a task.

4.6 APPENDIX F – TASK ADDITION/CHANGE/REVIEW PROCESS

1. Idea or perceived need discovered.
 - Often in response to previous existing process change.
 - If new, should involve appropriate management personnel for initiative.
2. Requestor contacts P/PMS personnel.
3. P/PMS personnel evaluate frequency of need/usefulness of task with requestor.
 - **Units requiring involvement in the task may be identified here at the earliest.**
4. Requestor, with the assistance of P/PMS personnel, identifies the responsible reporting unit.
 - The requesting unit is often the responsible reporting unit.
 - If the requesting unit is not the responsible reporting unit, then the responsible reporting unit should be identified.
 - **Units requiring task involvement may also be identified here.**
5. The responsible reporting unit writes up the task description for the task, which may be based on information from existing tasks, and should follow the format of existing task descriptions.
 - **If possible, include any other involved units and their task interaction in the task description and/or work steps.**
6. P/PMS personnel review the submitted task description to ensure it fits within the P/PMS framework.
7. P/PMS personnel **contact all involved units and hold the Task Review Meeting to obtain and verify** standards data:
 - Duration
 - Labor Hours
 - Matrix application (Types of jobs, Construction Length multipliers, Structure multipliers, others)
 - Involved units and their % of work/labor hours involved
 - Additives
 - Switches
 - Location/application in Global Network and Templates
8. P/PMS personnel input new task and data into the Development Area for testing and scheduling impacts
9. **P/PMS personnel report any adverse affect on schedules to the responsible reporting unit and all involved units for: a) acceptance of impact, b) revisal of task standards, or c) placement in Global Network/templates.**
10. **If revisions are made, repeat step 9 until all parties finds the results acceptable.**
11. Upon acceptance, task and data are added into the Production Area.
12. **P/PMS notifies users, responsible & involved units of new task via GroupWise, Issues Team, or Newsletter.**
13. P/PMS notifies appropriate personnel to add tasks to DCDS menus and MPINS.