INTRODUCTION

Maintenance management consists of planning, scheduling, and controlling maintenance work to obtain a desired level of maintenance service. Effective maintenance management must be supported by:

* Developing Maintenance Programs,
* Budgeting and Allocating Resources,
* Authorizing and Scheduling Work, and
* Reporting and Evaluating Performance.

A maintenance management system is merely the application of the above elements for the effective management of maintenance operations.

This Field Operations Manual has been developed to guide and assist field maintenance personnel in scheduling, directing, reporting, and controlling maintenance operations more uniformly and effectively.

POLICY STATEMENT

The overall objective of Alabama's Maintenance Management System is to provide a more effective and efficient highway maintenance program. Specific objectives are to:

1. Establish desired levels of maintenance service and assure that they are applied uniformly throughout the State,
2. Provide an objective basis upon which the maintenance program can be planned and performed,
3. Utilize labor, equipment, material, and financial resources in a more efficient and economical manner, and
4. Provide the means by which management can measure actual performance against planned performance and take corrective action if required.

These maintenance program objectiveshave been formalized by the Alabama Department of Transportation in the following Policy Statement and approved by the Transportation Director.

POLICY STATEMENT
STATE OF ALABAMA
DEPARTMENT OF TRANSPORTATION - BUREAU OF MAINTENANCE

SUBJECT: MAINTENANCE PROGRAM OBJECTIVES AND POLICIES

PURPOSE:

The Purpose of this Policy Statement is to define the responsibilities, objectives, and policies of the Alabama Department of Transportation (ALDOT) with regard to maintenance of highways and bridges.

DEPARTMENT RESPONSIBILITIES:

The ALDOT is responsible for maintaining all highways and bridges on state highway system and on any state agricultural experiment station. The ALDOT may maintain the roads, streets, drives and parking areas at state institutions of higher learning, state hospitals, the Partlow School and Hospital, the Alabama Agricultural Center in the City of Montgomery, state parks, and other roads so designated by the State Legislature.

The Bureau of Maintenance of the ALDOT is responsible for developing, directing, and controlling maintenance programs in ways consistent with this Policy Statement.

MAINTENANCE OBJECTIVES:

The basic maintenance considerations and objectives of the Department are:

1. To preserve the investment made in existing highway facilities.
2. To provide continuing adequate levels of safety and convenience to the highway users.
3. To upgrade and improve existing facilities as may be economically practical through minor maintenance betterment work.
4. To conserve and protect the aesthetic and ecological features of the environment.
5. To ensure effective and economical utilization of resources in the accomplishment of maintenance programs.

These objectives will be accomplished through the effective management of maintenance operations and resources.

MAINTENANCE POLICIES:

The following basic maintenance policies are necessary for effective maintenance management:

NUMBER 1 - MAINTENANCE STANDARDS

Maintenance standards are established to serve as guides for the planning, scheduling, and performance of maintenance operations. The standards accomplish the following:

1. Define levels of maintenance service to be provided and criteria for the scheduling of specific work;
2. Estimate work requirements in terms of practical and significant quantitative measurements;
3. Define staffing and equipment complements, materials, work methods, and procedures generally used for performing specific work in the most effective and economical manner.

NUMBER 2 - ANNUAL MAINTENANCE PROGRAMS

Annual maintenance programs shall be developed by the Maintenance Engineer clearly setting forth the types and amounts of maintenance work anticipated for the following fiscal year. Separate programs will be prepared for each division and district based on established maintenance standards and current roadway inventory data.

Annual programs shall identify the labor, equipment, and materials required to accomplish the proposed maintenance work. To the extent that labor and other resources are available, programs of specific minor betterment work shall be prepared.

Annual maintenance programs shall be reviewed and approved by the Transportation Director.

NUMBER 3 - BUDGETING AND RESOURCE ALLOCATION

Annual maintenance budgets shall be prepared on the basis of approved annual maintenance work programs. Budgeted funds shall be allocated accordingly to each division in terms of the program requirements for labor, equipment, materials, and contractual service.

Budgetary allotments shall define specific funds for:

1. Routine maintenance (including emergency work),
2. Maintenance resurfacing,
3. Minor maintenance betterments.

NUMBER 4 - WORK AUTHORIZATION, SCHEDULING, AND CONTROL

Systems have been established for formal authorization and scheduling of work to be performed by field operations units, and for formal reporting and control measures to assure accomplishment of the work program objectives.

NUMBER 5 - OPERATING PROCEDURES

The Maintenance Engineer shall prepare and implement operating procedures as may be needed to effect a maintenance management system consistent with the criteria set forth in this Policy Statement.

The Department Auditor shall also prepare and implement operating procedures required to effect maintenance performance budgeting practices for budgeting and accounting purposes.

APPROVED BY:_____ _____

Transportation Director Date

MANAGEMENT RESPONSIBILITIES

Effective maintenance management involves the identification and definition of responsibilities at all levels of management. In order for a maintenance management system to operate efficiently and economically, these responsibilities must be clearly understood and properly executed.

Responsibilities for operation of Alabama's Maintenance Management System are allocated to four levels of management within the organizational structure of the Transportation Department. These levels of management are:

* Top Management,
* Bureau of Maintenance Management,
* Division Maintenance Management, and
* District Maintenance Management.

Within each management level specific assignments of management responsibilities are made to the applicable organization positions.

Top Management

The motivating forces behind Department programs or systems are those at the top levels of management. The individuals directly involved include the Transportation Director, Assistant Transportation Director, Chief Engineer, and designated Assistant Chief Engineer(s.)

The actions required of these top level managers are:

* ESTABLISHMENT OF OVERALL POLICY FOR THE MAINTENANCE FUNCTION
* Statements of the Transportation Department's objectives regarding desired levels of maintenance service, economy, safety, and aesthetics are basic to the development of standards of maintenance quality.
* REVIEW AND EVALUATION OF ACTUAL MAINTENANCE PERFORMANCE IN RELATION TO APPROVED MAINTENANCE PROGRAMS

- As top managers, these individuals must be in a position of knowledge as to the performance of the programs for which they have given authorization and provided resources.

Top management is most effectively involved when they assist with the review of the effectiveness of the Maintenance Bureau's planning and operations functions and also the performance of the divisions' maintenance programs.

Bureau Maintenance Management

The Maintenance Bureau, as it relates to the Maintenance Management System, is principally concerned with the development of standards and planning values, the allocation of resources, and the provision of operating guidance and assistance to the field organization. Because the system related work of the Maintenance Bureau logically splits into two functions, planning and operations, a discussion of the system responsibilities will be grouped accordingly.

Maintenance Bureau Planning Responsibilities

The Maintenance Bureau's responsibilities for the planning function of the Maintenance Management System include:

- Develop, publish, and distribute (after proper review and approval) maintenance standards which define the expected quality, quantity, and production for all major maintenance activities.
- Revise and update the Performance Standards in order to reflect the impact of new technological developments, advanced techniques, or revised levels of service.
- Conduct an annual review of maintenance workload planning values in order to reflect changes in standards of quality, quantity, or production.
- Maintain the official highway maintenance feature inventory to provide a basis for workload development and allocation of labor, equipment, and materials.
- Develop the annual maintenance program and budget using updated inventory quantities and planning values.
- Evaluate the maintenance workload and determine division and district labor, equipment, and material allocation.
- Maintain the maintenance management information system to include necessary revision or additions of:

1. Management reporting system procedures and instructions,
2. Activity designations and descriptions,
3. Labor, equipment, and material designations,
4. Electronic data processing information,
5. Report format design, and
6. Report distribution.

* Develop and recommend policy and procedures affecting the maintenance planning function.
* Research, investigate, and adopt improved management and technological developments and methods applicable to solving highway maintenance problems.
* Provide overall maintenance management system surveillance to identify and implement necessary system adjustments.
* Coordinate the maintenance function requirements with those of the other Department functions.

Maintenance Bureau Operations Responsibilities

The Maintenance Bureau's responsibilities for the operating function of the Maintenance Management System include:

* Provide guidance and assistance to the field organization regarding solution to field operating problems and shortcomings in maintenance standard attainment.
* Conduct field investigations to determine a basis for continuous deviations from quality, quantity, and production standards.
* Coordinate the implementation of approved maintenance management research findings and programs.
* Assist in developing and conducting maintenance training programs designed to train personnel in new areas or meet specific shortcomings in activity performance.
* Develop and recommend policy and procedures affecting the maintenance operations function.
* Review completed activity summaries and completed crew day cards.

Division Maintenance Management

Division maintenance management responsibilities are principally concerned with the system elements that define the planning, scheduling, performing, reporting, and evaluating of maintenance work. Responsibilities concerning the management of the System are assigned to the Division Engineer and Maintenance Engineer. These responsibilities are:

Conduct annual road inspections with each District Engineer for purposes of:

1. Identifying Maintenance Improvement and Special Authority projects for the coming year,
2. Identifying roads and bridges to be in the Special Maintenance Program of resurfacing and structure improvements, and
3. Evaluating the accomplishments of the preceding year and the quality of the routine maintenance work.

* Review the monthly and quarterly work performance reports to evaluate conformance by the division and district maintenance organizations with the maintenance standards.
* Review completed crew day cards for district and division and submit to the district or division Maintenance terminal operator for processing.
* Conduct periodic meetings with all District Engineers to schedule division maintenance activities and to review district schedules and accomplishments.
* Assist in the formal and informal training of the division and district maintenance personnel.
* Investigate requests for Maintenance Improvement and Special Authority projects to determine feasibility and need. Subsequently, perform quality control inspection of authorized projects in progress.
* Provide engineering advice and assistance to the district maintenance forces.
* Ensure conformance with authorized maintenance resource allocations and the division maintenance budget.

District Maintenance Management

Maintenance management responsibilities of the District Engineer are:

* Conduct a formal annual inspection of the district road system with the Division Maintenance Engineer in order to:
  1. Evaluate accomplishments of the preceding year,
  2. Identify Minor Maintenance Improvement items to be performed during the coming year,
  3. Identify roads and bridges to be requested for inclusion in the resurfacing and structure improvement programs, and
  4. Identify and request Special Authority request project.

* Make informal inspections of maintenance operations in progress to evaluate quality and conformance with Performance Standards and to provide needed guidance for improvement.
* Make arrangement, when necessary, for the utilization of men and equipment between division crews and district crews.
* Review monthly the Maintenance Activity Summaries to determine whether or not performance is adequate.
* Review performance with the Superintendent frequently and assist in developing solutions where performance is inadequate.
* Periodically review crew day cards.
* Update highway maintenance feature inventory.
* Distribute updated standards and other system material to district maintenance personnel as directed.
* Assist in the formal and informal training of maintenance personnel.

The Superintendent is responsible for effective utilization of the labor, equipment, materials provided to perform the maintenance workload. These responsibilities include:

* Conduct routine inspections of the road systems for the purpose of identifying specific maintenance required to provide the desired levels of maintenance service.
* Coordinate scheduling and performing of maintenance work with the District Engineer.
* Assign labor, equipment, and materials to perform maintenance work in general compliance with Performance Standards, Work Calendar, and authorized Crew Day

Cards. Assign labor to alternate activities in situations which require deviating from the original plans.

* Planned maintenance work is to be performed insofar as possible as scheduled and as specified in the Performance Standards. Make adjustments where necessary to handle unforeseen situations.
* Submit the completed crew day cards to the District Clerk, on a daily basis, after a review to be sure all cards are correct.
* Take necessary steps to improve future performance through training, more specific instructions to personnel, or closer supervision.
* Update highway maintenance feature inventory and advise the District Engineer of changes.
* Submit recommendations for Performance Standard revisions to the District Engineer for consideration and evaluation.

The District Clerk is responsible for:

* Checking crew day cards for accuracy and summarizing accomplishment and crew day card usage onto the Maintenance Activity Summary Worksheet , if required.
* Submitting the Maintenance Activity Summary Worksheets and completed crew day cards to District, Division, or Maintenance Bureau offices as directed.

The preceding sections of this chapter have identified the Maintenance Management System responsibilities that should be assigned to, and performed by specific individuals in order to operate the System effectively. A number of guides and procedures have been developed to assign and communicate these responsibilities and processes. The balance of the Field Operations Manual contains data for operation of Alabama's Maintenance Management System.

WORK ACTIVITIES

All major maintenance work items that require different crew sizes, types of equipment, and work procedures have been identified as separate maintenance "work activities." The definition of each significant work activity identifies the maintenance work to be performed and the purpose of the work.

Maintenance personnel who plan, schedule, perform, report, or evaluate maintenance work must know what each work activity means. Work activities will be used for the following purposes:

* Planned maintenance work will be identified in the annual maintenance program by activity name and activity number.
* Activity names and numbers will be used on the crew day cards used for authorizing, assigning, and reporting work.
* Activity names and numbers will be used on work scheduling guides and work performance summaries.

Work measurement units have been established for the major maintenance activities. For example, "hectares" is the work measurement unit for Mowing and "tons of premix" is the work measurement unit for Spot Premix Patching. These measurement units are used to describe how much work is planned and to report how much work is accomplished for each activity.

Some activities define groups of minor or miscellaneous work activities, and it is not practical to establish a work measurement unit for each of these work activities. Instead, the normal reporting of employee hours will be used to describe how much work was accomplished for each of these activities.

Exhibit No. 4-1 is a complete list of the maintenance work activities including the work definition, activity number, the work measurement unit for each activity.

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST

Roadway and Shoulder Maintenance

601 Spot Premix Patching
602 Major Premix Patching
603 Sking Patching
604 Strip Patching
605 Crack Sealing Concrete Pavement
606 Crack Sealing Asphalt Pavement
607 Pavement Planing
608 Blading Unpaved
609 Spot Patching Unpaved Shoulders
610 Clipping Unpaved Shoulders
611 Cleaning Concrete Joints
612 Joint Sealing
613 Concrete Pavement Repair
614 Other Roadway & Shoulder Maintenance

Drainage Maintenance

615 Patrol Ditching
616 Shovel Ditching
617 Cleaning Minor Drainage Structures
618 Repairing Minor Drainage Structures
624 Other Drainage Maintenance

Roadside Maintenance

625 Mowing
626 Herbicide Treatment
627 Brush and Tree Cutting
628 Erosion Control
629 Spot Litter Pickup
630 Full Litter Pickup
631 Spot Herbicide Treatment
634 Other Roadside Maintenance

Traffic Operations Maintenance

635 Sign Maintenance
636 Centerline and Edgeline Painting
637 Pavment Message Painting
638 Guardrail Maintenance
639 Traffic Signal Maintenance
640 Raised Pavement Marker Maintenance
644 Other Traffic Operations

Structure Maintenance

645 Bridge Cleaning
646 Bridge Painting
648 Major Repairs of Bridges
649 Movable Span Operation & Maintenance
650 Tunnel Operation & Maintenance
654 Other Structure Maintenance

Minor Maintenance Improvements

656 Other Roadway/Shoulder Improvements
657 Roadside Improvements
658 Drainage Improvements
659 Traffic Operations Improvements

Winter and Emergency Maintenance

666 Emergency Maintenance
664 Other Improvements
665 Snow and Ice Control
667 Road Patrol (Deleted)

Service Activities

670 Installing Driveway Pipes
671 Work for other S.H.D. Units
672 State Institution Work
673 Truck Weighing Operations
674 Rest Area Maintenance
675 Bridge Inspection
676 Structure Attendant (Deleted)
677 Structure Operations (Deleted)
679 Other Service Activities

Overhead and Support Activities

680 Materials Handling and Storage
681 Equipment Transfer
682 Equipment Service and Repair
683 Standby Time
684 Training
685 Materials Handling and Storage DW
686 Equipment Transfer DW
687 Equipment Service and Repair
688 Other Overhead/Support Activities DW
689 Other Overhead/Support Activities

Special Maintenance

694 Sign Upgrading
695 Traffic Signal Upgrading
696 Resurfacing
697 Structure Improvements
698 Other Maintenance Bureau Projects
699 Pavement Surface Planing

Exhibit No. 4-1
ABIMS
Alabama Bridge Information Management System
Proposed Activities For
Identifying, Describing, and Reporting
Bridge Maintenance

ABIMS Activity	MMS Referenced Activity
B01 - Deck/Drain/Joint Cleaning	645 - Bridge Cleaning
B02 - Curb/Rail/Fence Repair	647 - Minor Repair of Bridges
B03 - Joint Repair - Open	648 - Major Repair of Bridges
B04 - Joint Repair - Sealed	648 - Major Repair of Bridges
B05 - Minor Deck Repair - Steel	647 - Minor Repair of Bridges
B06 - Minor Deck Repair - Concrete	647 - Minor Repair of Bridges
B07 - Minor Deck Repair - Timber	647 - Minor Repair of Bridges
B08 - Major Deck Repair - Steel	648 - Major Repair of Bridges
B09 - Major Deck Repair - Concrete	648 - Major Repair of Bridges
B10 - Major Deck Repair - Timber	648 - Major Repair of Bridges
B11 - Minor Superstructure Member Repair - Steel	647 - Minor Repair of Briges
B12 - Minor Superstructure Member Repair - Concrete	647 - Minor Repair of Bridges
B13 - Minor Superstructure Member Repair - Timber	647 - Minor Repair of Briges
B14 - Major Superstructure Member Repair - Steel	648 - Major Repair of Bridges
B15 - Major Superstructure Member Repair - Concrete	648 - Major Repair of Bridges
B16 - Major Superstrucutre Member Repair - Timber	648 - Major Repair of Bridges
B17 - Minor Substructure Member Repair - Steel	647 - Minor Repair of Bridges
B18 - Minor Substructure Member Repair - Concrete	647 - Minor Repair of Bridges
B19 - Minor Substructure Member Repair - Timber	647 - Minor Repair of Bridges
B20 - Major Substructure Member Repair - Steel	648 - Major Repair of Bridges
B21 - Major Substructure Member Repair - Concrete	648 - Major Repair of Bridges
B22 - Major Substructure Member Repair - Timber	648 - Major Repair of Bridges
B23 - Bridge Painting - Spot	646 - Bridge Painting Bridges
B24 - Bridge Painting - Partial	646 - Bridge Painting
B25 - Bridge Painting - Complete	646 - Bridge Painting
B26 - Bridge Culvert Cleaning	645 - Bridge Cleaning
B27 - Bridge Culvert Repair	647 - Minor Repair of Bridges
B28 Light/Navigation Light Repair	654 - Other Structure Maintenance
B29 - Drift Removal	645 - Bridge Cleaning
B30 - Slope and Shore Protection Repair	648 - Major Repair of Bridges
B31 - Accident Repair	647 - Minor Repair of Bridges
B32 - Vandalism Repair	645 - Bridge Cleaning
B33 - Moveable Span Operation and Maintenance	649 - Moveable Span Operation & Maint.
B34 - Moveable Span Operation and Maintenance	649 - Moveable Span Operation & Maint.
B35 - Tunnel Maintenance	650 - Tunnel Operation and Maint
B36 - Tunnel Operations	650 - Tunnel Operation and Maint
B37 - Bridge Inspection	675 - Bridge Inspection
B38 - Other Structure Maintenance	654 - Other Structure Maintenance
B39 - Construction Engineering and Inspection	(Not Maintenance)
B40 - Construction Materials Testing	(Not Maintenance)
B99 - Bridge Maintenance Overhead	(Not Maintenance)

Exhibit No.4-1
MAINTENANCE WORK ACTIVITY LIST
ROADWAY AND SHOULDER MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORKMEASUREMENT UNIT
601 - SPOT PREMIX PATCHING (HAND OPERATION)	tons of premix
Minor patching small areas of roadway or paved shoulder surface with hot or cold premix bituminous material and hand tools to minimize depressions, potholes, edge failures, upheavals and other potential surface deficiencies.	
602 - MAJOR PREMIX PATCHING (MACHINE OPERATION)	tons of premix
Major patching of distortions, rutting, and surface irregularities with premixed bituminous material to minimize rutting, grade depressions (including depressions at bridge ends), settlements and other surface irregularities and to restore a reasonable smooth surface for riding comfort. Includes replacing concrerete surface with bituminous material.	
603 - SKIN PATCHING	liters
Patching small sections or isolated areas of bituminous roadway or paved shoulder surface using hand tools and hot pot to apply hot liquid asphalt and aggregate. This application minimizes extensive cracking, raveling, spalling, and shallow surface failures and delays further deterioration of the surface.	
604 - STRIP PATCHING	liters
Patching continuous sections of bituminous roadway or paved shoulder surface using tailgate spreaders and distributor to apply hot liquid asphalt and stone aggregate. This application minimizes cracking, raveling, spalling and shallow surface failures and delays further deterioration of the surface.	
605 - CRACK SEALING CONCRETE PAVEMENT	liters
Cleaning and sealing random cracks in concrete pavement, including the edge crack between concrete pavement and asphalt pavement or shoulder. Also included are any nonfunctioning joints or cracks. (See activities 611 and 612 for sealing contraction and expansion joints.)	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
ROADWAY AND SHOULDER MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORKMEASUREMENT UNIT
606 - CRACK SEALING ASPHALT PAVEMENT	road kilometers
Sealing random cracks in asphalt pavement.	
607 - PAVEMENT PLANING	square meters
Major and minor planing of asphalt surfaces with any size pavement planer. Surface irregularities include rutting, shoving, bumps, upheavals, and other potential surface deficiencies. These irregularities may occur on open sections of the roadway, at intersections, at bridge ends, at rail crossings, or on bituminous over PCC pavement. This activity does not include any surfacing materials or work.	
608 - BLADING UNPAVED SHOULDERS	shoulder kilometers
Blading and reshaping unpaved shoulders on paved roads without adding material or widening, to minimize edge ruts, ridges, corrugations and high shoulders.	
609 - SPOT PATCHING SHOULDERS	cubic meters
Patching small areas of unpaved shoulders by adding material, reshaping and compacting to minimize edge ruts, potholes, corrugations and to replace lost materials at washouts, and around mailboxes and driveways.	
610 - CLIPPING UNPAVED SHOULDERS	shoulder kilometers
Major clipping, grading and restoration of unpaved shoulders to minimize high, overgrown shoulders and to restore proper shoulder slope for adequate drainage.	
611 - CLEANING CONCRETE JOINTS	meters
Cleaning designed joints in concrete pavement. Includes re-sawing and cleaning expansion and contraction appropriate equipment. NOTE: This work to be done before activity 612.	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
ROADWAY AND SHOULDER MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORKMEASUREMENT UNIT
612 - JOINT SEALER	meters
Sealing designed joints (expansion and contraction) in concrete pavement. Includes longitudinal and transverse joints. Does not include sealing cracks between concrete pavement and asphalt pavement or asphalt shoulder. (See activity 605 for sealing edge crack.) NOTE: This work to be performed after activity 611.	
613 - CONCRETE PAVEMENT REPAIR	hours
Correcting and repairing broken slabs, edge failures, spalls, corner breaks, and severe cracking in concrete pavement. Includes all major work such as removing part or all of a slab or section, pressure grouting, pressure jacking, joint repair, and repair or replacement of base and sub-base. This activity includes all concrete pavement repair not covered in activities 605, 611, and 612.	
614 - OTHER ROADWAY AND SHOULDER MAINTENANCE	hours
Other work activities performed on the roadway or shoulder but not specifically listed as a separate work activity. Includes activities such as: * Dust control * Dusting bleeding bituminous surface * Mudjacking * Base repair * Spot patching unpaved roads * Bituminous edge patching of unpaved shoulders * Cleaning of curbs * Hand patching unpaved shoulders * Trimming sod build-up back from edge of paved shoulder	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
DRAINAGE MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORKMEASUREMENT UNIT
615 - PATROL DITCHING	ditch kilometers
Machine cleaning of roadside ditches with a motor patrol to restore original grade and maintain adequate drainage. Includes loading, hauling and disposal of excess material, if necessary, and shoulder restoration as related to ditching.	
616 - SHOVEL DITCHING	meters
Machine cleaning and reshaping of roadside ditches, with a gradall or similar equipment, to restore grade and maintain adequate drainage. Includes loading, hauling and disposal of excess material and shoulder restoration as related to ditching.	
617 - REPAIRING MINOR DRAINAGE STRUCTURES	structures cleaned/inspected
Periodic inspection, cleaning and removal of debris as required from box culverts, pipe culverts, catch basins and inlets to maintain adequate drainage.	
618 - REPAIRING MINOR DRAINAGE STRUCTURES	hours
Repair of box culverts and repair or replacement of pipe culverts, catch basins, inlets, flumes, curb and gutter and other minor drainage structures due to damage or deterioration. This activity does not include installations at new locations or enlargements of existing facilities.	
624 - OTHER DRAINAGE MAINTENANCE	hours
Other drainage maintenance activities that are not specifically identified as separate activities. Includes activities such as: * Paved ditch maintenance * Relocation of ditches * Hand ditching * Scour/Washout repair * Inlet and outfall ditch maintenance * Placing rip-rap	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
ROADSIDE MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
625 - MOWING	hectares
Mowing of roadside vegetation with the designated mowing limits of the right-of-way, using tractor mowers and hand mowing, if required, to maintain an attractive roadside and to control erosion and drainage. This activity includes slope mowing but does not include the mowing at rest areas and welcome centers or the hand mowing at roadside parks and picnic areas.	
626 - HERBICIDE TREATMENT	hectares
Broadcast spraying of roadside vegetation within the designated mowing limits of the right-of-way using tractor or truck sprayer to control undesirable vegetation.	
627 - BRUSH AND TREE CUTTING	hours
Cutting and trimming brush and trees within the right-of-way using power or hand tools to improve sight distances and remove offensive encroaching vegetation. Includes hand trimming (sling blading) under guardrail, around bridge ends and other places where machine mowing is not possible. This activity also includes chemical control of brush and trees.	
628 - EROSION CONTROL	hours
Seeding, reseeding, sodding, fertilizing and mulching of shoulders, back slopes, medians, and other areas to restore vegetation for erosion control and beautification.	
629 - SPOT LITTER PICKUP	hours
Cleaning isolated spots within the right-of-way, including pickup, hauling, loading and disposing of litter, debris or dead animals. This activity also includes emptying, hauling, and disposing of refuse from litter barrels along the roadway, in roadside parks, rest areas, and scenic overlooks, as well as periodic cleanup, repair and hand mowing or trimming at state-maintained roadside parks, picnic tables and scenic overlooks.	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
ROADSIDE MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
630 - FULL WIDTH LITTER PICKUP	pass kilometers

Full width cleaning of continuous sections of the right-of-way area including pickup, loading, hauling and disposing of accumulated litter.

631 - SPOT HERBICIDE TREATMENT	liters

Application of herbicide around guardrail, sign posts, delineators, mailboxes, bridge ends, etc. for vegetation control and application of herbicides for brush and weed control in ditches, under bridges and on cut and fill sections.

634 - OTHER ROADSIDE MAINTENANCE	hours

Other roadside maintenance activities that are not specifically identified as separate activities Includes activities such as:

* Removal of slides and other major obstructions
* Rock cut maintenance
* Spot slope repairs
* Removal of unauthorized/illegal signs within right-of-way
* Hay baling
* Fence repair
* Mowing slopes with boom-type or extension-arm mower only
* Spot mowing behind curb

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
TRAFFIC OPERATIONS MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
635 - SIGN MAINTENANCE	hours
Routine repair, resetting, replacement of traffic signs, directional markers, kilometer posts, delineators, guide posts, or hazard markers due to accident damage, vandalism or deterioration to restore and maintain adequate control and guidance of traffic. This activity does not installation of signs at new locations. Does not include electric utility costs.	
636 - CENTERLINE AND EDGELINE PAINTING	liters
Painting centerlines, edgelines, barrier lines and lane markings to restore adequate traffic control.	
637 - PAVEMENT MESSAGE PAINTING	hours
Painting pavement messages, direction markers, stop bars, gore areas, cross walks, curbs and traffic islands to provide markings for vehicular and pedestrian control.	
638 - GUARDRAIL MAINTENANCE	meters
Repair or replacement of guardrail sections, posts and hardware due to accident damage or normal deterioration. (Replace to latest standard if practical.) Straightening of guardrail sections and posts as stockpiled.	
639 - TRAFFIC SIGNAL MAINTENANCE	hours
Repair and replacement of state-maintained traffic signals, controllers, flashing signals and beacons. Includes the replacement of lamps, wiring, electric time clocks, standards, bases and the cleaning of lenses and control mechanism.	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
TRAFFIC OPERATIONS MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
644 - OTHER TRAFFIC OPERATIONS	hours

Other traffic operations activities that are not specifically identified as separate activities. Includes activities such as: Erecting barrier line markers

* Dotting centerlines and edgelines
* Erecting barrier line markers
* Removal of pavement markings
* Reflective painting on bridges
* Cleaning and painting traffic signals, guardrail, and overhead sign supports
* Maintenance of detour markings and warning devices
* Maintenance of crash control barriers
* Maintenance of channelization curbs
* Rumble strip placement and maintenance
* Nighttime reflectivity inspections
* Replace raised pavement markers
* Maintenance of street lights
* Utility costs for all lighted devices

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
STRUCTURE MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME — WORK MEASUREMENT UNIT

IMPORTANT: It should be noted that the following STRUCTURE MAINTENANCE 6xx codes are not to be used for reporting work accomplishment. The Bxx codes are to be used to report STRUCTURE MAINTENANCE work. The 6xx codes will be utilized on some reports only as a convenience to indicate a summary of work completed.

645 - BRIDGE CLEANING — hours

Regular cleaning of major and minor bridges including hand sweeping, cleaning drain holes and bridge seats, debris removal from expansion joints and waterway openings, vegetation control, fireproofing of timber structures, and removal of writing or painting on the structure.

646 - BRIDGE PAINTING — liters of paint

Sandblasting, cleaning, priming, and painting of structure including handrails or guardrails, to minimize deterioration. Minor painting of handrails only should be charged to Activity 654 - Other Structure Maintenance.

647 - MINOR REPAIRS OF BRIDGES — hours

Minor repairs including repair or replacement of handrails, curb, sidewalk, timber planks, minor joint and deck repair and other minor repairs.

648 - MAJOR REPAIRS OF BRIDGES — hours

Major repairs to bridge structural elements such as piling, piers or abutments. Also includes underwater repair work.

649 - MOVABLE SPAN OPERATION AND MAINTENANCE — hours

Operation and maintenance of movable span bridges and the the mechanical, electrical or structural maintenance on movable span bridges and mechanism.

650 - TUNNEL OPERATION AND MAINTENANCE — days

Mechanical, electrical or structural operaation and maintenance of tunnels and related systems.

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
STRUCTURE MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
654 - OTHER STRUCTURE MAINTENANCE	hours

Other structure maintenance activities that are not specifically identified as separate activities. Includes activities such as:

- Navigation light maintenance*
- Replacing rip rap
- Repair of slope paving
- Expansion joint maintenance
- Minor handrail painting
- Mechanical bridge deck sweeping

* Utility costs on navigation lights are to be charged to Activity 644.

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
MINOR MAINTENANCE IMPROVEMENTS

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
656 - OTHER ROADWAY/SHOULDER IMPROVEMENTS	hours
All minor improvements to the roadway or shoulder on the State Highway System to increase capacity and safety. Includes minor reconstruction, widening by adding turn lanes, climbing lanes, speed change lanes or crossovers and minor shoulder improvements.	
657 - ROADSIDE IMPROVEMENTS	hours
All minor improvements to the roadside of the State Highway System to improve erosion control, appearance, drainage, and service for the motorists. Includes flattening backslopes and fills, tree and shrubbery planting, construction of roadside parks and picnic areas.	
658 - DRAINAGE IMPROVEMENTS	hours
Construction of new drainage facilities on State Highway System to increase drainage capacity and protect the roadbed. Including culverts, ditches, catch basins, berms, tile drains, inlets, paved ditches and flumes, ditch checks and drainage curbs, but not including new driveway pipes.	
659 - TRAFFIC OPERATIONS IMPROVEMENTS	hours
All minor improvements of traffic operations on the State Highway System including the installation, at new locations, of new traffic signs, signals, street lights, traffic islands, medians, delineators, channelization curb, guardrail, fence, raised pavement markers, and new detour signs and new temporary signing not covered by a specific project.	
664 - OTHER IMPROVEMENTS	hours
Any other minor improvement to the State Highway System.	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
WINTER AND EMERGENCY MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
665 - SNOW AND ICE CONTROL	hours
Plowing of snow and ice from the roadway, application of sand and chemicals, ice control on structures, and other snow and ice control activities to improve driving conditions.	
666 - EMERGENCY MAINTENANCE	hours
Emergency or extraordinary repairs and cleanup of roadway, roadside, and structures on the State Highway System due to storms, floods, traffic accidents, civil disorders or other disasters.	

Exhibit No. 4-1
MAINTENANCE ACTIVITY WORK LIST
SERVICE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
670 - INSTALLING DRIVEWAY PIPES	hours
Installation of driveway or crossover pipes and covering as necessary in accordance with Department guidelines to provide access to the State Highway System.	
671 - WORK FOR OTHER ALDOT UNITS	hours
All work performed on a non-reimbursable basis for other Units or Bureaus of the Alabama Department of Transportation.	
672 - STATE INSTITUTION WORK	hours
All routine maintenance operations for state institutions of higher learning, state hospitals, Partlow State School, and other roads designated as part of the State Highway System.	
673 - TRUCK WEIGHING OPERATIONS	hours
Time spent by maintenance personnel for performing truck weighing operations. Does not include time spent by personnel from the Department of Public Safety.	
674 - REST AREA MAINTENANCE	days
Tending and maintaining rest areas and welcome stations on a continuous basis. Includes attendants' salaries/wages, mowing and litter pickup, care and cleaning of buildings and other duties necessary to maintain neat, clean facilities for public use.	
675 - BRIDGE INSPECTION (See B37)	hours
Inspection of bridges by State or Division Bridge inspection crew to rate the bridge in accordance with AASHTO and FHWA inspection specifications.	

Exhibit No. 4-1
MAINTENANCE ACTIVITY WORK LIST
SERVICE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
679 - OTHER SERVICE ACTIVITIES	hours

Other service activities that are not specifically identified as separate activities.
Includes activities such as:

- Summer Youth Program (SYP) supervision

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
OVERHEAD AND SUPPORT ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
680 - MATERIALS HANDLING AND STORAGE	hours
Handling and storage of materials used for routine maintenance, winter and emergency maintenance, service activities and minor maintenance improvements. Includes the loading, hauling, unloading, mixing, stockpiling, and protection of material. This activity should not be used for any special Maintenance activities.	
681 - EQUIPMENT TRANSFER	hours
Moving equipment and tools between storage yard and work locations. Includes only those moves made by Department Maintenance and Equipment Bureau personnel for routine maintenance activities. This activity does not include the movement of equipment to and from the shop for repairs. These repair moves should be charged to equipment maintenance.	
682 - EQUIPMENT SERVICE AND REPAIR	hours
Includes the operation of the service truck and service and minor repairs of SG-type equipment used for mowing, ditching, patching and other maintenance activities.	
683 - STANDBY TIME	days
Standby time of 2 hours or more of maintenance personnel due to weather conditions, equipment breakdown or other situations prohibiting productive work.	
684 - TRAINING	days
Time spent by maintenance personnel participating in training sessions.	
685 - MATERIALS HANDLING AND STORAGE - DW	hours
Handling and storage of materials used by division-wide crews, maintenance, winter and emergency maintenance, service activities	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST

OVERHEAD AND SUPPORT ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME — WORK MEASUREMENT UNIT

and minor maintenance improvements. Includes the loading, hauling, unloading, mixing, stockpiling, and protection of material. This activity should not be used for any special Maintenance activities.

686 - EQUIPMENT TRANSFER - DIVISIONWIDE — hours

Moving equipment and tools, used by division-wide crews between storage yard and work locations. Includes only those moves made by Department Maintenance and Equipment Bureau personnel for routine maintenance activities. This activity does not include the movement of equipment to and from the shop for repairs. These repair moves should be charged to equipment maintenance.

687 - EQUIPMENT SERVICE AND REPAIR - DW — hours

Includes the operation of the service truck and service and minor repairs of SG-type equipment used for mowing, ditching, patching and other maintenance activities.

688 - OTHER OVERHEAD/SUPPORT ACTIVITIES - DW — hours

Other overhead or support activities that are not specifically identified as separate activities. Includes work such as Division-wide maintenance personnel used for traffic counts or studies made by Division-wide crews.

689 - OTHER OVERHEAD/SUPPORT ACTIVITIES — hours

Other overhead or support activities that are not specifically identified as separate activities. Includes work such as maintenance personnel used for traffic counts or studies.

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
SPECIAL MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
694 - SIGN UPGRADING	each project
Proper installation and maintenance procedures required to bring all signs on the State Highway System into conformance with the Manual on Uniform Traffic Control Devices. Work includes the installation of new signs and/or assemblies and the upgrading project will be identified by a separate project number.	
695 - TRAFFIC SIGNAL UPGRADING	each project
Proper installation and maintenance procedures required to bring all traffic signals on the State Highway System into conformance with the Manual on Uniform Traffic Control Devices. Work includes new signal installations and the upgrading of existing signal installations. Each traffic signal upgrading project will be identified by a separate project number.	
696 - RESURFACING	each project
Liquid seal resurfacing and plant mix resurfacing of continuous sections of roadway on the State Highway System. Shoulder rebuilding, new pavement markings, and other associated work required as a result of resurfacing may be included in the resurfacing project. Each resurfacing project will be identified by a separate project number.	
697 - STRUCTURE IMPROVEMENTS	each project
All improvements to existing bridges on State Highway System, above and beyond routine repairs, which increase load capacity or clearance or improve safety and convenience, beyond original design, such as strengthening of deck or other elements, widening, increasing vertical clearance or adding railings, sidewalks or lights. Each structure improvement project will be identified by a separate project number.	

Exhibit No. 4-1
MAINTENANCE WORK ACTIVITY LIST
SPECIAL MAINTENANCE

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
698 - OTHER MAINTENANCE BUREAU PROJECTS	each project
Other special maintenance projects identified by the Maintenance Bureau. Each project will be identified by a separate project number.	
699 - PAVEMENT SURFACE PLANING	each project
Planing of pavement surfaces to minimize upheavals, surface irregularities, rutting, and distortions. Includes planing at bridge ends, railroad crossings, intersections, and for additional clearances.	

Exhibit No. 4-1
ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM
BRIDGE MAINTENANCE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
B01 - DECK/DRAIN/JOINT CLEANING	employee hour
Regular cleaning of bridge deck, drain holes, drains, expansion joints, and bridge seats. Cleaning of expansion joints is specifically included in this activity.	
B02 - CURB/RAIL/FENCE REPAIR	meter
Maintenance, repair or replacement of all types of bridge rails, handrails, posts, post blocks, post brackets, curbs, wheelguards, sidewalks, and other elements specifically related to the curbs, walks, and rails, including fencing on top of rails.	
B03 - JOINT REPAIR - OPEN	meter
Maintenance and repair of open bridge joints, such as grouting anchors, welding additional anchors, replacing or removing angles, plates and bolts.	
B04 - JOINT REPAIR - SEALED	meter
Maintenance and repair of sealed bridge joints including removal and/or replacement of sealed joint material, plates, angles, anchors, and bolts.	
B05 - MINOR DECK REPAIR - STEEL	square meter
Maintenance, repair or replacement of a small portion of the deck. Includes the placement/removal or repair of approved overlays. This includes the clean-up, capture, containment, and disposal of any residue.	
B06 - MINOR DECK REPAIR - CONCRETE	square meter
Maintenance, repair or replacement of a small portion of the deck. Includes the placement/removal or repair of approved overlays. This includes the clean-up, capture, containment, and disposal of any residue.	
B07 - MINOR DECK REPAIR - TIMBER	square meter
Maintenance, repair or replacement of a small portion of the deck. Includes the placement/removal or repair of approved overlays. This includes the clean-up, capture, containment, and disposal of any residue.	

Exhibit No. 4-1

ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM
BRIDGE MAINTENANCE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
B08 - MAJOR DECK REPAIR - STEEL	square meter
Major repair or replacement of a significant portion of the deck or components such as grid deck (filled or open) and plates Includes the clean-up, capture, containment, and disposal of any residue. Also includes placement or removal of overlay.	
B09 - MAJOR DECK REPAIR - CONCRETE	square meter
Major repair or replacement of a significant portion of the deck. Includes the clean-up, capture, containment, and disposal of any residue. Also includes placement or removal of overlay.	
B10 - MAJOR DECK REPAIR - TIMBER	square meter
Major repair or replacement of a significant portion of the deck or deck components such as runners, and transverse or diagonal flooring or sub-flooring. Includes clean-up, capture, containment, and disposal of any residue. Also includes placement or removal of overlays.	
B11 - MINOR SUPERSTRUCTURE REPAIR - STEEL	employee hour
Minor repair of steel superstructure members such as welding, rivet, or bolt replacement to diaphragms, bracing, trusses, and minor repair or servicing of bearing assemblies.	
B12 - MINOR SUPERSTRUCTURE REPAIR - CONCRETE	employee hour
Minor repair of concrete superstructure members such as spall repair, crack repair (epoxy injection), and minor repair or servicing of bearing assemblies.	
B13 - MINOR SUPERSTRUCTURE REPAIR - TIMBER	employee hour
Minor repair of timber superstructure members such as stringers and bracing.	
B14 - MAJOR SUPERSTRUCTURE REPAIR - STEEL	employee hour
Major repair or replacement of steel beams, girders, diaphragms, bracing, trusses, cables, and complete replacement of bearing assemblies.	

Exhibit No. 4-1
ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM
BRIDGE MAINTENANCE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
B15 - MAJOR SUPERSTRUCTURE REPAIR - CONCRETE	employee hour
Major repair or replacement of concrete girders, diaphragms, girder ends, complete bearing assemblies replacement, and backwalls.	
B16 - MAJOR SUPERSTRUCTURE REPAIR - TIMBER	employee hour
Major repair or replacement of timber stringers and bracing. Includes installation of additional stringers or beams to enhance load carrying ability.	
B17 - MINOR SUBSTRUCTURE REPAIR - STEEL	employee hour
Minor repair of steel piling, bracing, supports, caps, footings, abutments, and bents. Includes underwater repairs.	
B18 - MINOR SUBSTRUCTURE REPAIR - CONCRETE	employee hour
Minor repair of concrete piling, bracing, supports, caps, footings, abutments, and bents. Includes underwater repairs.	
B19 - MINOR SUBSTRUCTURE REPAIR - TIMBER	employee hour
Minor repair of timber piling, bracing, supports, caps, footings, abutments, and bents. Includes underwater repairs.	
B20 - MAJOR SUBSTRUCTURE REPAIR - STEEL	employee hour
Major repair, replacement or addition to substructure members such as footings, caps, piers, bents, piling, and abutments. Includes underwater repairs.	
B21 - MAJOR SUBSTRUCTURE REPAIR - CONCRETE	employee hour
Major repair, replacement or addition to substructure members such as footings, caps, piers, bents, piling and abutments. Includes underwater repairs.	
B22 - MAJOR SUBSTRUCTURE MEMBER REPAIR - TIMBER	employee hour
Major repair, replacement or addition to substructure members such as footings, caps, piers, pilings, bents, and abutments. Includes underwater repairs.	

Exhibit No. 4-1
ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM
BRIDGE MAINTENANCE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME	WORK MEASUREMENT UNIT
B23 - BRIDGE PAINTING - SPOT	square meter
Cleaning and painting of a small portion of the paintable portions of the structure. This includes cleaning by chemical or mechanical means, capture and containment of residue as required, the application of the paint system, and any related clean-up and disposal of residue.	
B24 - BRIDGE PAINTING - PARTIAL	square meter
Cleaning and painting of a significant part of the paintable portions of the structure. This includes cleaning by chemical or mechanical means, capture, and containment of residue as required, the application of the paint system and any related clean-up and disposal of residue.	
B25 - BRIDGE PAINTING - COMPLETE	square meter
Cleaning and painting of all or the majority of the paintable portions of the structure. This includes cleaning by chemical or mechanical means, capture and containment of residue as required, the application of the paint system and any related clean-up and disposal of residues.	
B26 - BRIDGE CULVERT CLEANING	employee hour
Cleaning of bridge culverts (structures exceeding 6.1 meters measured along centerline of roadway) including drainage ditches to and from the structure, removing debris and deposits from the barrels, repairing and replacing rip-rap and any related clean-up and disposal of materials.	
B27 - BRIDGE CULVERT REPAIR	employee hour
Repair of bridge culverts (structures exceeding 6.1 meters measured along centerline of roadway) including components such as top and bottom slab, cutoff walls, wing walls, aprons, and filling or grouting voids. Cleaning and repair of drainage ditches to and from the structure are not included in this activity.	
B28 - LIGHT/NAVIGATION LIGHT REPAIR	employee hour
Maintenance or repair of illumination lights, navigation lights, electrical system and electrical appurtenances.	

Exhibit No. 4-1
ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM

BRIDGE MAINTENANCE ACTIVITIES

ACTIVITY NUMBER - ACTIVITY NAME — WORK MEASUREMENT UNIT

B29 - DRIFT REMOVAL — employee hour

Maintenance or repair required to remove all debris obstructing normal channel flow from all bridge structures.

B30 - SLOPE AND SHORE PROTECTION REPAIR — employee hour

Maintenance or repair to slope and shore protection devices, dolphins and pier protection systems including concrete and stone rip-rap, timber, steel and concrete sheeting. Includes placing additional shore protection devices such as sheeting at abutments for scour protection.

B31 - ACCIDENT REPAIR — employee hour

Repair of any bridge elements damaged as a result of accidents. Includes damage from automobiles and trucks or from waterway traffic such as boats and barges.

B32 - VANDALISM REPAIR — employee hour

Repair of any bridge elements damaged as a result of vandalism. Includes the removal of graffiti, political signs attached to the structure, unauthorized painting, lettering or markings.

B33 - MOVEABLE SPAN MAINTENANCE — employee hour

Repair, replace, and/or service equipment, components, and facilities of the moveable span structure. Repairs to the deck, superstructure, substructure, and painting are not included in this activity.

B34 - MOVEABLE SPAN OPERATIONS — employee hour

Overhead costs necessary to the daily and continuing normal operation of the moveable span. Maintenance, repair, and service are not included in this activity. See activity "Moveable Span Maintenance".

B35 - TUNNEL MAINTENANCE — employee hour

Repair, replace, and/or service equipment, components, and facilities of the tunnel.

Exhibit No. 4-1
ALABAMA BRIDGE INFORMATION MANAGEMENT SYSTEM

BRIDGE MAINTENANCE ACTIVITIES

B36 - TUNNEL OPERATIONS — employee hour

Overhead costs necessary to the daily and continuing normal operation. Maintenance, repair, and service are not included in this activity.
See activity "Tunnel Maintenance".

B37 - BRIDGE INSPECTION — employee hour

Inspection of bridges by State or Division bridge inspection crew to evaluate the bridge in accordance with NBIS, AASHTO and FHWA inspection specifications. Also includes above water and underwater inspection done by contract or consultant.

B38 - OTHER STRUCTURE MAINTENANCE — employee hour

Other structure maintenance activities that are not specifically identified as separate activities.

B39 - CONSTRUCTION ENGINEERING AND INSPECTION — employee hour

Engineering and inspection on maintenance construction projects by project personnel, Maintenance Bureau personnel, or other appropriate personnel.

B40 - CONSTRUCTION MATERIALS TESTING — employee hour

Testing of materials on maintenance construction projects by project personnel, Bureau of Materials & Tests personnel, or other laboratory/testing personnel.

B99 - BRIDGE MAINTENANCE OVERHEAD — employee hour

Bridge maintenance costs which are not readily identifiable to any other bridge maintenance function.

PERFORMANCE STANDARDS

For each of the major maintenance work activities, performance standards have been established which set forth:

* crew size,
* the kinds and numbers of equipment required,
* suggested procedures for performing the activity,
* an estimate of expected average daily accomplishment with standard crew size, equipment, and procedures, and
* authorization and scheduling criteria.

These standards are the result of much study. They represent the best judgment of experienced maintenance personnel. As new and improved methods are tested and proven, the standards may be changed.

The daily production ranges are averages which are known to be attainable over a period of time. The accomplishment for every day of work may not be within the expected range. However, most of the days' accomplishments should be achieved over the year if the planned maintenance program is to be accomplished.

The Performance Standards should be used when making work assignments and performing work. Maintenance supervisory personnel at the field level should become thoroughly familiar with the Performance Standards in the following sections of this manual labeled ROADWAY AND SHOULDER, DRAINAGE, ROADSIDE, TRAFFIC OPERATIONS, STRUCTURE, WINTER AND EMERGENCY, SERVICE OVERHEAD AND SUPPORT, and OTHER PERFORMANCE STANDARDS.

WORK AUTHORIZATION

The Maintenance Management System provides for the development of an annual maintenance program and budget. The program and budget define and document the kinds and amounts of work which have been planned to provide the desired level of maintenance service with consistency and uniformity. The development of the maintenance program and budget is the basic management responsibility of the Maintenance Bureau.

After the annual maintenance program and budget have been developed and approved, the Maintenance Bureau issues the work program to the maintenance personnel who will schedule, supervise, perform, and control the work. The approved maintenance program authorizes each division and district to perform specific kinds and amounts of work. The Division Maintenance Engineer, District Engineer, and Superintendent schedules and performs the authorized work according to uniform procedures so that maintenance program objectives can be achieved effectively and economically.

Authorization for Routine Maintenance Work

Crew Day Cards

The annual work program identifies and authorizes the number of crew days required to perform the planned maintenance work. One Crew Day Card for each crew day of planned maintenance work represents one 8-hour day of activity using a standard crew size, standard equipment complement, standard materials, and standard work methods.

The general format of the crew day card is the same for all activities except for certain overhead activities and special maintenance activities. Daily Overhead and Summary Cards are used to record work on certain overhead activities, to record leave, and to verify that all men assigned to each management unit are accounted for. Special Project Crew Day Cards are used to record work on all maintenance improvements and maintenance projects including Resurfacing and Betterments. Detailed instructions for the daily overhead and summary card and special project crew day card are included in the WORK REPORTING section of this manual.

A considerable amount of information is preprinted on the crew day card for each individual activity (See Exhibit No. 6-1), such as:

+ Activity Number	(601)
+ Activity Name	(SPOT PREMIX PATCHING)
+ Road Class	(OSH)
+ Standard Crew Size	(5)
+ Management Unit Number	(0103)
+ Management Unit Name	(Dutton)
+ Number of Planned Crew Days	(30)
+ Number of Crew Days Remaining	(6)
+ Month in which work Normally Should be Scheduled	(JUL)
+ Fiscal Year Date	(96-7)
+ Standard Equipment	(FLAT TRUCK, DUMP TRUCK, HOT POT, PORTABLE ROLLER)
+ Equipment Code	(000012, 000017, 000019, 100000)
+ Material	(LIQUID ASPHALT, BITUMIN PREMIX)
+ Material Code	(000365, 000366)
+ Material Measurement Unit	(LIT, TON)
+ Work Accomplishment Unit	(T0N MIX)

Since one crew day card represents the authorization for the performance of one crew day of the designated work activity, thirty crew day cards represent thirty days of work on that activity within the designated district and on the appropriate road system.

Immediately prior to the beginning of each fiscal year, the Maintenance Bureau will provide each Division Maintenance Engineer with the annual maintenance work program for the division, and for each district in the division, showing the required number of crew day cards for each maintenance activity. The Division Maintenance Engineer will also be provided with the division's annual supply of preprinted crew day cards. The Division Maintenance Engineer will issue the annual maintenance work program and the annual supply of preprinted crew day cards to the districts as authorization to perform the planned routine maintenance work for each district.

Maintenance Work Control Categories

Some maintenance activities are extremely important and as much work as is needed must be performed even if this requires performing more than the planned amount of work. For some activities only the planned amount of work should be completed and for others, a certain degree of flexibility exists.

In order to help the maintenance manager to identify these differences, maintenance work is grouped by categories and the crew day cards are a different color for each category as shown below:

1. ROUTINE UNLIMITED ACTIVITIES - Green
2. ROUTINE LIMITED ACTIVITIES - Red
3. SPECIAL AUTHORITY ACTIVITIES - Yellow
4. OVERHEAD ACTIVITIES - Orange

Each category is defined as follows:

1. ROUTINE UNLIMITED ACTIVITIES - Green

These activities represent essential work of a high priority and should be performed when needed, and in the amounts required to minimize the deficiency. There are no quantity limitations for these activities since they are to be performed as required to maintain the highways in a satisfactory condition. The planned work quantity is an estimate of average conditions. In any particular year the number of crew day cards needed may be somewhat more or less than indicated. The Maintenance Management System recognizes this condition and provides for crew day card overruns or underruns by adjustments to other activities. Some activities included in the ROUTINE UNLIMITED category are Spot Premix Patching, Snow and Ice Control, and Emergency Maintenance.

2. ROUTINE LIMITED ACTIVITIES - Red

This category includes activities for which quantities of work can be established and firmly adhered to. For example, Mowing can be set at three times yearly, Bridge Inspection once every two years, and so on. For these activities, control of work quantities normally will be exercised on the basis of planned work units and the number of crew day cards issued.

3. SPECIAL AUTHORITY ACTIVITIES - Yellow

These work activities are not urgently needed. The planned work is desirable, but it is not critical that all of the planned work be completed during any one year. The planned quantity represents an average value designed to provide the desired level of maintenance service. Activities such as Erosion Control, Shovel Ditching, and Brush and Tree Cutting are in this category. Also included in this category are special maintenance activities that require approval from the Division Maintenance Engineer. Some activities included are major repairs of bridges and Minor

Maintenance Improvements. These types of activities need to be coordinated with the total highway improvement program.

This group of activities provides flexibility -- the amount of work may be expanded or reduced during the year to meet the variations experienced by other routine activities, particularly the ROUTINE UNLIMITED activities. The crew day cards for these special maintenance activities are controlled at the division level and issued to the District Engineers at the discretion of the Division Maintenance Engineer.

4. OVERHEAD ACTIVITIES - Orange

Included in this category are those service and overhead activities such as Structure Attendant, Weighing Operations, Standby Time, Training, and Materials Handling. This work is required but is not related to the maintenance of specific roadway or structure elements. Crew day cards are used principally to record work rather than control the work quantities.

By assigning each maintenance work activity to a work control category general group priority is given to all routine maintenance activities. Color coding the cards is only a means of identifying the different work control categories. Maintenance supervisory personnel will find these groupings important when scheduling and controlling routine maintenance operations at the field level. The work control category for each work activity is shown in Exhibit No. 6-2.

Authorization for Overruns

Theoretically, at the end of each fiscal year all preprinted crew day cards will have been used and all planned maintenance work will have been accomplished. However, it is recognized that things do not always work out as planned, and provision is made for authorizing additional work under certain conditions. Overrun Cards will be issued for additional and unplanned work that is necessary.

Overrun cards are identical in format to the standard crew day card but the word OVERRUN is preprinted on the border of the card for easier identification (See Exhibit No. 6-3.) It will be necessary to manually write in the activity name and number, crew size, etc. - the information that was preprinted on the original crew day cards.

Authorization for Other Maintenance Work

In addition to the routine maintenance work activities authorized by the annual work program and crew day cards, resurfacing, betterment, and special maintenance project work will be authorized by the Maintenance Bureau. This work will primarily be performed by special division crews or by contract, although additional employees may be required on some projects from district crews.

Special Maintenance Program

An annual special maintenance program identifying specific resurfacing and betterment projects should be developed by each Division Maintenance Engineer. These projects are not to include routine maintenance work identified by the routine maintenance work activities. Each project submission is to indicate whether the project is to be performed with maintenance personnel or should be let to contract. Program submissions are to include estimated resource requirements for labor, equipment, materials, and the scheduled time for performing the work.

The division special maintenance programs will be reviewed and approved by the Maintenance Engineer and the Transportation Director. Special maintenance projects can only be performed if funds are available after all routine maintenance requirements have been funded.

Work authorized under the resurfacing, betterment, and other designated programs will have a specific project number assigned prior to work authorization. Work performed by field maintenance personnel under specific project numbers will be recorded and reported on the special project crew day card as explained in the WORK REPORTING section of this manual.

Minor Maintenance Improvements

In order to utilize available labor that may not be required for routine maintenance work or special maintenance projects, minor maintenance improvement work will be authorized during the year as labor and other resources become available. The amount of minor maintenance improvement work will be expanded or reduced from year to year to meet variations experienced in routine maintenance activities.

The annual maintenance workload is designed to utilize all required labor. When overrun cards are issued, a corresponding amount of planned maintenance work must be eliminated from the workload.

The following rules apply for authorization of overrun cards:

1. ROUTINE UNLIMITED ACTIVITIES

If more work is needed to minimize deficiencies, additional cards will be provided without question.

2. ROUTINE LIMITED ACTIVITIES

Ordinarily, additional crew day cards will not be given for this work. If unusual conditions prevented accomplishment of the planned work with the scheduled crew days, extra cards may be issued after the District Engineer consults with the Division Maintenance Engineer, and if it is determined that the additional work is necessary.

3. SPECIAL AUTHORITY ACTIVITIES

This work is flexible. If there is an overrun of other kinds of work, all of the cards for this work cannot be used. If the planned amount of ROUTINE UNLIMITED work is not required, authorization may be given by the Division Maintenance Engineer for additional SPECIAL AUTHORITY work.

4. OVERHEAD ACTIVITIES

Additional cards will be issued as required to record these activities.

EXHIBIT NO. 6-1
CREW DAY CARD

Exhibit No. 6-2
MAINTENANCE WORK CONTROL CATEGORIES

ACT. NO.	DESCRIPTION	WORK CONTROL CATEGORY	SCHED. RESP.	TYPE OF CREW
	ROADWAY AND SHOULDER MAINTENANCE			
601	Spot Premix Patching	Unlimited	Supt.	Dist.
602	Major Premix Patching	Limited	Dist.	Dist.
603	Skin Patching	Unlimited	Supt.	Dist.
604	Strip Patching	Limited	Dist.	Dist.
605	Crack Sealing Concrete Pavement	Unlimited	Supt.	Div.
606	Crack Sealing Asphalt Pavement	Unlimited	Supt.	Dist.
607	Pavement Planing	Limited	Div.	Div.
608	Blading Unpaved Shoulders	Limited	Supt.	Dist.
609	Spot Patching Unpaved Shoulders	Limited	Supt.	Dist.
610	Clipping Unpaved Shoulders	Spec. Auth.	Dist.	Dist.
611	Cleaning Concrete Joints	Unlimited	Div.	Div.
612	Joint Sealing	Unlimited	Div.	Div.
613	Concrete Pavement Repair	Unlimited	Div.	Div.
614	Other Roadway and Shoulder Maintenance	Limited	Dist.	Dist.
	DRAINAGE MAINTENANCE			
615	Patrol Ditching	Limited	Supt.	Dist.
616	Shovel Ditching Spec.	Auth.	Dist.	Dist.
617	Cleaning Minor Drainage Structures	Limited	Supt.	Dist.
618	Repairing Minor Drainage Structures	Limited	Dist.	Dist.
624	Other Drainage Maintenance	Limited	Dist.	Dist.
	ROADSIDE MAINTENANCE			
625	Mowing	Limited	Supt.	Dist.
626	Herbicide Treatment	Limited	Dist.	Dist
627	Brush and Tree Cutting	Spec. Auth.	Dist.	Dist.
628	Erosion Control	Spec. Auth.	Dist.	Dist.
629	Spot Litter Pickup	Unlimited	Supt.	Dist.
630	Full Width Litter Pickup	Limited	Supt.	Dist.

Exhibit No. 6-2
MAINTENANCE WORK CONTROL CATEGORIES

ACT. NO.	DESCRIPTION	WORK CONTROL CATEGORY	SCHED. RESP.	TYPE OF CREW
	ROADSIDE MAINTENANCE (Cont'd.)			
631	Spot Herbicide Treatment	Limited	Dist.	Dist.
634	Other Roadside	Limited	Dist.	Dist.
	TRAFFIC OPERATIONS MAINTENANCE			
635	Sign Maintenance	Unlimited	Dist.	Dist.
636	Centerline and Edgeline Painting	Limited	Div.	Div.
637	Pavement Message Painting	Limited	Div.	Div.
638	Guardrail Maintenance	Unlimited	Dist.	Dist.
639	Traffic Signal Maintenance	Unlimited	Div.	Div.
644	Other Traffic Operations	Limited	Dist.	Dist.
	STRUCTURE MAINTENANCE			
645	Bridge Cleaning	Limited	Dist.	Dist.
646	Bridge Painting	Limited	Div.	Div.
647	Minor Repairs of Bridges	Unlimited	Dist.	Dist.
648	Major Repairs of Bridges	Spec. Auth.	Dist.	Dist.
649	Movable Span Operation & Maintenance	Unlimited	Div.	Div.
650	Tunnel Operation and Maintenance	Unlimited	Div.	Div.
654	Other Structure Maintenance	Limited	Dist.	Dist.
	MINOR MAINTENANCE IMPROVEMENTS			
656	Other Roadway/Shoulder Improvements	Spec. Auth.	Div.	Div.
657	Roadside Improvements	Spec. Auth.	Div.	Div.
658	Drainage Improvements	Spec. Auth.	Div.	Div.
659	Traffic Operations Improvements	Spec. Auth.	Div.	Div.
664	Other Improvements	Spec. Auth.	Div.	Div.

Exhibit No. 6-2

MAINTENANCE WORK CONTROL CATEGORIES

ACT. NO.	DESCRIPTION	WORK CONTROL CATEGORY	SCHED. RESP.	TYPE OF CREW
	WINTER AND EMERGENCY MAINTENANCE			
665	Snow and Ice Control	Unlimited	Supt.	Dist.
666	Emergency Maintenance	Unlimited	Supt.	Dist.
	SERVICE ACTIVITIES			
670	Installing Driveway Pipes	Overhead	Dist.	Dist.
671	Work for Other SHD Units	Overhead	Div.	Dist.
672	State Institution Work	Overhead	Dist.	Dist.
673	Truck Weighing Operations	Overhead	Div.	Div.
674	Rest Area Maintenance	Overhead	Dist.	Dist.
675	Bridge Inspection	Overhead	Div.	Div. & State
679	Other Service Activities	Overhead	Dist.	Dist.

Exhibit No. 6-2
MAINTENANCE WORK CONTROL CATEGORIES

ACT. NO.	DESCRIPTION	WORK CONTROL CATEGORY	SCHED. RESP.	TYPE OF CREW
	OVERHEAD AND SUPPORT ACTIVITIES			
680	Materials Handling and Storage	Overhead	Dist.	Dist.
681	Equipment Transfer	Overhead	Dist.	Dist.
682	Equipment Service and Repair	Overhead	Dist.	Dist.
683	Standby Time	Overhead	Div. & Dist.	Both
684	Training	Overhead	Div. & Dist.	Both
685	Materials Handling and Storage-DW	Overhead	Div.	Div.
686	Equipment Transfer	Overhead	Div.	Div.
687	Equipment Service and Repair-DW	Overhead	Div.	Div.
688	Other Overhead/Support Activities	Overhead	Div.	Div.
689	Other Overhead/Support Activities	Overhead	Dist.	Dist.
690	Sign and Signaling Projects - CADD	Overhead	Div.	Div.
691	Resurfacing and Special Maint. Projects - CADD	Overhead	Div.	Div
692	Paved Shoulder Repair Projects	Overhead	Div.	Div.
693	Resurfacing and Special Maint. Projects - Preliminary	Overhead	Div.	Div.
	SPECIAL MAINTENANCE			
694	Sign Upgrading	Overhead	Div.	Div.
695	Traffic Signal Upgrading	Overhead	Div.	Div.
696	Resurfacing	Overhead	Div.	Div.
697	Structure Improvements	Overhead	Div.	Div.
698	Other Maintenance Projects	Overhead	Div.	Div.
699	Pavement Surface Planing	Overhead	Div.	Div.

Exhibit No. 6-3
OVERRUN CREW DAY CARD

WORK SCHEDULING

The annual work program identifies the estimated amount of work, by maintenance activity, that has been planned for each division and district. It is the responsibility of the District Engineer and Superintendent to make work assignments according to established scheduling criteria in order to balance the workload and accomplish the maintenance program objectives effectively and economically.

Crew Day Cards

After the District Engineer and the Superintendent have received supplies of crew day cards, they are authorized to proceed with scheduling the kinds and amounts of work indicated. The crew day cards represent the planned number of crew days of work to be scheduled, since each card represents one crew day. But scheduling also requires answers to these three questions:

* When shall the work be performed?
* Where shall the work be performed?
* Who shall be assigned to do the work?

Guides for effective scheduling, which help to answer these questions, are presented in the following sections.

Maintenance Work Calendar (When)

Some kinds of work must be performed only during certain time periods. Some work can best be performed during certain periods but can be shifted slightly one way or the other. Some work can be done almost any time during the year.

These seasonal variations in work, and the different choices of work at certain times, can make a big difference in uniformly distributing the workload throughout the year to obtain the best use of labor resources.

A Maintenance Work Calendar has been developed for each management unit to help answer the question. "When shall the work be performed?" (See your copy of the MM-603 Maintenance Work Calendar.)

The Maintenance Work Calendar lists, by activity and month, the number of crew days of work that normally should be scheduled. If, for example, 5 days of Activity 603, Skin Patching, are listed on the Work Calendar for October, 5 days of this activity are planned for the month of October - and there will be 5 crew day cards with the month "October" preprinted in the upper right hand corner. These five crew day cards should be used during the month of October.

Emergency activities and overhead and service activities must be performed throughout the year as the need arises; therefore, the number of crew day cards planned for these activities are distributed to the month or months that the work could be performed.

The number of planned crew days of work for each district represents a balanced employee workload for the district. The workload has been balanced throughout the year so that the same number of employees are required each month to perform routine maintenance work. Therefore, the Maintenance Work Calendar should be followed as closely as possible when scheduling, since departure from the calendar can cause a variation in workload throughout the year and may result in inefficient use of available employees.

If additional maintenance work is authorized and overrun cards are issued, a corresponding amount of planned maintenance work must be eliminated from the Work Calendar.

Daily Maintenance Needs (Where)

Decisions as to where day-to-day routine maintenance will be performed usually will be made by the Superintendent. To make effective decisions, the Superintendent should be aware at all times of the current condition of roads within the District. This means frequent inspection is necessary.

Periodic inspection by the Superintendent and District Engineer will reveal additional locations where maintenance work is needed. The need for work also may be observed by others and called to the attention of the Superintendent and District Engineer.

Maintenance Needed and Condition Report

Maintenance Needed and Condition Reports are provided to record some maintenance deficiencies as they are observed or called to the attention of maintenance personnel. These reports serve as reminders to the District Engineer and the Superintendent of where maintenance work may need to be performed. Exhibit No. 7-1 illustrates the Maintenance Needed and Condition Report and how it is used to record needed maintenance work.

Other Maintenance Work

Decisions as to where to perform betterments, special authority work, and certain other routine activities usually will be made in connection with an annual inspection of the road system by the Division Maintenance Engineer or District Engineer. In some cases, the expertise of other Department Bureaus, such as Design or Bridge, may be necessary to determine the necessity of betterments. Based on these decisions, the District Engineer will provide guidance to the Superintendent for scheduling and performing the work.

Scheduling Responsibility

Responsibilities for scheduling and performing specific maintenance activities are assigned to division and district personnel. General guides are:

* Division Responsibility: division-wide specialized tasks - work by division-wide crews performing such activities as Centerline Painting, Major Bridge Repairs, and Minor Maintenance Improvements.
* District Responsibility: certain special authority work and specialized work such as Major Premix Patching and Sign Maintenance.
* Superintendent Responsibility: day-to-day general maintenance performed by the district level crews.

Scheduling responsibility and type of crew for performing each activity are summarized in Exhibit No. 6.2.

Scheduling with Performance Standards

When assigning employees to a particular activity, the crew size shown in the Performance Standard and on the crew day card should not be exceeded. Only under unusual conditions should a different size crew be used. Reasons for varying crew sizes might be length of haul, traffic conditions, and safety.

Scheduling with Crew Day Cards

The month in which work normally should be scheduled, as shown on the Maintenance Work Calendar, is preprinted in the upper right hand corner of the crew day card. By scheduling all crew day cards in the month indicated, the supervisor will be balancing his workload and will not be concerned with periods of extremely heavy workloads or periods with very little work for the employees to do. If there is an underrun of ROUTINE UNLIMITED activities, needed SPECIAL AUTHORITY work or approved maintenance improvement work may be scheduled. The District Engineer will aid the Superintendent in selecting the proper work activities.

IInclement Weather Scheduling

Some types of work cannot be performed under bad weather conditions. Superintendents should expect this to happen occasionally and should have prepared a list of kinds of work and work locations that can be substituted for the scheduled work, using appropriate crew day cards. If it is raining in the morning or there is reasonable certainty that it will rain, there should be no time wasted wondering "What can I do today?"

Daily Work Assignments on Crew Day Card (Who)

The Superintendent should use the following guidelines when making daily work assignments on the crew day cards:

1. DAILY OVERHEAD SUMMARY. Prepare an overhead card by recording the following data:
   a) Division number, district number, and district name,
   b) Date,
   c) County name and number,

d) Names of employees assigned to Equipment Transfer, Equipment Service/Repair, Standby, Training, Leave or Compensatory Time,

e) Record the equipment number, description, and code for any equipment required for these overhead activities.

2. EMERGENCY WORK. Assign labor and equipment to emergency activities according to Performance Standards, or as indicated by the District Engineer or the Division Maintenance Engineer. On the appropriate crew day card for each emergency activity, fill in the name of person assigned to direct the work, the date, the employees' names. Record the equipment number for each piece of equipment assigned.

3. SCHEDULED WORK. When there are no emergencies or when manpower remains after satisfying emergencies, assign the remaining manpower and equipment to activities scheduled. Assignments for activities scheduled for specific days should be made first. Continue to make work assignments until all available personnel have an assigned task for the day.

   On the appropriate crew day card for each scheduled work activity, fill in the name of the person assigned to direct the work, the date, the employees' names. Record the equipment number for each piece of equipment assigned.

The Superintendent will have to make a careful selection of scheduled work activities in order to balance crew assignments with the number of men available on that day. Rather than overstaff a crew, the Superintendent should choose alternate activities which will utilize the personnel more effectively.

Detailed instructions for the preparation and use of the crew day cards and the daily overhead and summary card may be found in the WORK REPORTING section of this manual.

Scheduling Responsibilities Summarized

To summarize, the scheduling procedures and responsibilities of the persons responsible for scheduling are:

1. BUREAU OF MAINTENANCE

a) Prepares Maintenance Work Calendar.
b) Issues annual supply of crew day cards to each division based on the Maintenance Work Calendar. Crew day cards should be issued to each division prior to October 1st (target date.)
c) Issues annual supply of maintenance overhead cards, special project crew day cards, and other forms to each division.

2. DIVISION MAINTENANCE ENGINEER
   a) Issues annual supply of crew day cards and other forms to each district by October 1st for authorized work activities based on the Maintenance Work Calendar.
   b) Assists District Engineers in deciding on needed maintenance improvements within their districts. Approves and authorizes work on specific improvements, subject to available funding.
   c) Issues approved special authority and special project crew day cards to the District Engineer.

3. SUPERINTENDENT FOR DIVISIONWIDE CREWS
   a) Issues crew day cards to division crew for performing routine maintenance activities, approved special authority, betterment, or special project work which has been authorized by the Division Maintenance Engineer.
   b) Arranges for additional employees or equipment from district crews when necessary.

4. DISTRICT ENGINEER
   a) Inspects roads periodically and prepares a listing of maintenance needed and road condition.
   b) Reviews the scheduling of personnel and equipment with District Superintendent.
   c) Arranges personnel or equipment transfers to or from division and other district crews when necessary.
   d) Issues cards as necessary to crews with additional capacity for minor maintenance improvements and special authority work.
   e) Periodically reviews district schedules, accomplishments, and requirements with Division Maintenance Engineer.

5. DISTRICT SUPERINTENDENT

a) Inspects roads periodically and prepares a listing of maintenance needed and road condition.

Exhibit No. 7-1
MAINTENANCE NEEDED AND CONDITION REPORT

WORK REPORTING

Reporting of maintenance work effort-labor, equipment, materials, and accomplishment - is required for financial control and management control of the maintenance work program.

This section of the manual describes procedures for reporting the types and amounts of work performed. This reporting will provide significant maintenance management data for the Maintenance Bureau, Division Maintenance Engineers, and District Engineers. Specific objectives of the work reporting system are:

* Measuring and controlling amounts and kinds of work accomplished,
* Comparing work performed with program objectives,
* Evaluating the utilization of labor and other resources,
* Improving performance standards, and
* Modifying planning values for future maintenance work programs and budgets.

Management reporting also will permit supervisors who are responsible for scheduling and supervising the maintenance activities to be aware of how well they are doing in relation to the planned work program.

Crew Day Card

The basic work report is the Crew Day Card used by the District Engineer and Superintendent to assign the work activity.

When assigning the day's work, the Superintendent will fill in the following:

1. Name of person assigned to direct the work (crew leader),
2. Date,
3. Location and special instructions,
4. Names of employees assigned to do the work, and
5. ALDOT number of each piece of equipment used.

The crew leader then takes the crew day card and the crew, equipment and materials assigned, and performs the assigned work.

After the work has been completed, or at the end of the day, the crew leader is to fill in the hours for each employee, the hours, kilometers, or liters of fuel for each piece of equipment; the type and amounts of materials used; and the amount of work accomplished. After the crew leader fills in the required information, the crew leader should sign the card signifying that the work has been completed.

The reason for deviation from standard crew sizes should be explained on the back of the card. This will permit the Superintendent and District Engineer to review the reasons for non-standard usage and to take corrective action as required.

The crew leader then returns the completed crew day card to the Superintendent who checks it for completeness and accuracy. The Superintendent submits the completed crew day cards daily to the District Clerk for review and summarization. Completed crew day cards for division crews are to be submitted to the Division Maintenance Engineer's office on a daily basis, if possible.

Exhibit No. 8-1 is an example of the crew day card with instructions for recording the required data.

Special Project Crew Day Card - Project Work

Work performed by maintenance personnel on Minor Maintenance Improvements, special maintenance activities, or other work identified by a special project number (such as Special Work Authorization or F-7A Budget Allotments), will be assigned and reported by use of the Special Project Crew Day Card. When this work is authorized, the Division Maintenance Engineer will issue the required number of special project crew day cards with the work identification and description filled in. Submission of these cards through the Maintenance Management System will be limited to activities that only involve routine maintenance work.

As work is done on the project, the appropriate labor, equipment, and material information is recorded daily on the cards. These cards are then submitted to the division or district, as appropriate, at the same time as the regular crew day cards. Submission of these cards through the Maintenance Management System will be limited to activities that only involve routine maintenance work.

Exhibit No. 8-2 is an example of the special project crew day card with instructions for recording the required data.

Daily Overhead and Summary Card

The Daily Overhead and Summary Card is completed daily by the Superintendent to report hours used on overhead activities, leave, and compensatory time taken. This card is also used to verify that all employees assigned to the management unit are accounted for.

Exhibit No. 8-3 is an example of a daily overhead and summary card with instructions for recording the required data.

All completed crew day cards, special project crew day cards, and overhead cards should be verified and reviewed by the District Engineer or Superintendent on a daily basis.

After the completed cards have been reviewed, they will be used by the District Clerk to prepare the accounting reports and maintenance activity summary reports. Summary reports are prepared manually so that performance data is available shortly after the end of each monthly period for review and evaluation.

Maintenance Activity Summary and Worksheet (optional)

The Maintenance Activity Summary Worksheet (optional) is used to summarize work performance data daily from the crew day card. The total amount of work accomplished as well as the usage of "standard" and "non-standard" crew sizes is summarized on this worksheet. Exhibit No. 8-4 is an example of the Maintenance Activity Summary Worksheet (optional) with instructions for recording the data.

Exhibit No. 8-1
CREW DAY CARD

INSTRUCTIONS
SUPERINTENDENT

1 Check that the card (Work Activity) corresponds to the actual work to be performed. (Description of work activity can be found in the Performance Standards.)

2 Enter the name of the crew leader - person in charge of crew.

3 Enter the county name and number.

4 Enter the date work is to be performed.

5 Location of work and any special instructions for the crew leader.

6 Names of employees assigned to do the work, including the crew leader. (Also, a number of convicts, if any.) If a non-standard crew size is used, mark out preprinted crew size and write in the actual crew size used.

7 ALDOT No. of each piece of equipment to be used.

14 After the card is turned in at the end of the day, total the employee hours spent on the work activity and verify all entries made by the crew leader.

Exhibit No. 8-1
CREW DAY CARD

FOREMAN/CREW LEADER

6 Verify employees that worked on the job, including convicts.

7 Verify equipment actually used.

8 Record hours worked by each employee to the nearest whole hour. Enter total convict hours (number of convicts times hours worked.) Record overtime hours separately - in O.T. column.

9 Record equipment usage - kilometers, hours, or liters - to the nearest whole unit.

10 Record quantity of materials used to the nearest tenth.

11 Enter accomplishment for that day to the nearest tenth.

12 Record additional information on back of card (very important):

a) The reason for any deviation from standard crew size, equipment, or materials.
b) Specify type of work performed (on cards for activity 614, 624, 634, 644, 654, 679, or 689.)

13 Sign the crew day card.

Exhibit No. 8-1
Crew Day Card

Exhibit No. 8-2
SPECIAL PROJECT CREW DAY CARD

INSTRUCTIONS

DIVISION MAINTENANCE ENGINEER

1 Record official project number for Minor Maintenance Improvements, Special Maintenance, Betterments, etc.

2 Record division and district number, county name and number, and road system (Interstate, State, etc.)

3 Record description of work to be performed.

4 Identify location of work and any special instructions.

DISTRICT ENGINEER/SUPERINTENDENT

5 Name of crew leader assigned to perform the work.

6 Date work is performed.

7 Names of employees assigned to the crew (Also, number of convicts, if any.)

8 ALDOT (SG or HD identification) number of each piece of equipment assigned.

9 Description of each piece of equipment (Number, description, and code.)

10 Description of materials used (Code and description.)

15 After the card is turned in at the end of the day, total the hours spent on the work activity and verify all entries made by the crew leader.

Exhibit No. 8-2
SPECIAL PROJECT CREW DAY CARD

FOREMAN/CREW LEADER

11 Record hours worked by each employee to the nearest whole hour. Enter total convict hours (number of convicts times hours worked.) Record overtime separately - in O.T. column.

12 Record equipment usage - kilometers, hours, or gallons - to the nearest whole unit.

13 Record quantity of materials used to the nearest tenth.

14 Sign the crew day card.

Exhibit No. 8-2
SPECIAL PROJECT CREW DAY CARD

Exhibit No. 8-3
DAILY OVERHEAD AND SUMMARY CARD

INSTRUCTIONS

SUPERINTENDENT

1 Enter division and district number.

2 Management unit name.

3 Date.

4 County name and number.

5 Enter names of employees on overhead activities, leave, or compensatory time.

6 Enter the number of hours for each employee.

7 Mark appropriate road system. (Interstate, State, or County.)

8 Total hours for each overhead activity.

9 Enter equipment usage, if any, for overhead activities including ALDOT equipment number, equipment description, equipment code, hours, miles, or gallons. Also, indicate the overhead activity number--681, 682, 683, or 684.

10 Total hours of all overhead activities.

11 Enter hours from all other crew day cards for the day.

12 Total hours reported for the day (Item 10 plus Item 11.) Compare this total with the total hours available (Side 2 of Overhead and Summary Card.) If all personnel are accounted for, the total hours reported should equal the total hours available.

19 Sign the crew day card.

Exhibit No. 8-3
Side 2 of Daily Overhead and Summary Card

13 Enter number of permanent maintenance personnel assigned to the management unit (includes foremen and camp guards.)

14 Enter number of temporary maintenance personnel including convicts, summer hires, or other temporary help.

15 Enter number of maintenance personnel borrowed from the division or another district for the day.

16 Enter number of maintenance personnel loaned to the division or another district for the day (includes personnel loaned to work on division surfacing crew.)

17 Total number of personnel available for work this day (Item 13 plus Item 14 plus Item 15 minus Item 16.)

18 Total hours available for the day (multiply total number of personnel by 8.) Compare this total with total hours reported (side 1.) If all personnel are accounted for, the total hours reported should equal the total hours available.

Exhibit No. 8-3
DAILY OVERHEAD AND SUMMARY CARD
Side 1

Exhibit No. 8-3
DAILY OVERHEAD AND SUMMARY CARD
Side 2

Exhibit No. 8-4
MAINTENANCE ACTIVITY SUMMARY WORKSHEET

The Maintenance Activity Summary Worksheet is optional. However, if it is used, it is to be completed from information on the crew day cards for the current month. Before summarizing, arrange the crew day cards for each day's work by management unit, activity, road class, and by standard crew size, greater than standard crew size, and less than standard crew size. (Standard crew size is preprinted on each crew day card.) After arranging the crew day cards, proceed in the following manner.

1 Record division and district number and name.
2 Record the activity name and number.
3 Record the work measurement unit for the activity.
4 Record the road class name and number.
5 Indicate the applicable six month period by placing a line through the six months that are not to be summarized on this form.
6 Record the total work accomplishment in the block corresponding to the day shown on the crew day card.
7 Record the number of standard crew size crew day cards used.
8 Record the number of greater than standard crew size crew day cards used.
9 Record the number of less than standard crew size crew day cards used.
10 Total accomplishment for month and record to the nearest tenth.
11 Total number of standard crew size crew days for month.
12 Total number of greater than standard crew size crew days for month.
13 Total number of less than standard crew size crew days for month.
14 Record year to-date totals for accomplishment and number of crew days for standard, greater than standard, or less than standard crew size.
15 Repeat the procedure (steps 5-14) for each month.

Exhibit No. 8-4
MAINTENANCE ACTIVITY SUMMARY WORKSHEET
(Optional)

WORK EVALUATION

Division and district maintenance supervisors should continually evaluate their work progress and performance in relation to the planned workload. This may be accomplished easily by proper use of:

1. Crew Day Cards,
2. Card Numbering and Preprinted Month,
3. Maintenance Activity Summary Worksheets (optional),
4. Quarterly and Annual Performance Reports, and
5. Field Inspections.

Crew Day Cards

All completed crew day cards should be reviewed to determine if standard crew sizes and equipment complements have been used. Deviations from the standards should be thoroughly justified. Also, the "planned month" preprinted on the card should correspond to the month that thecard is used. This is particularly critical if a balanced workload is to be obtained during the year.

Card Numbering and Preprinted Month

The District Engineer and Superintendent will have very little control over division level special authority work and overhead work activities. The Division Maintenance Engineer will authorize the division special authority work and the crew day cards for overhead activities are used primarily to record work that must be performed daily on a regular basis. Therefore, the major concern at the district review of the card numbering and preprinted months will be with the ROUTINE UNLIMITED, ROUTINE LIMITED, and SPECIAL AUTHORITY maintenance activities.

All cards for ROUTINE UNLIMITED, ROUTINE LIMITED, and district SPECIAL AUTHORITY work activities have been prenumbered. For example, if a district were authorized to perform 80 crew days of mowing, the crew day cards would be numbered from

PLANNED	REMAIN	MONTH
80	80	APR

to

PLANNED	REMAIN	MONTH
80	1	SEPT

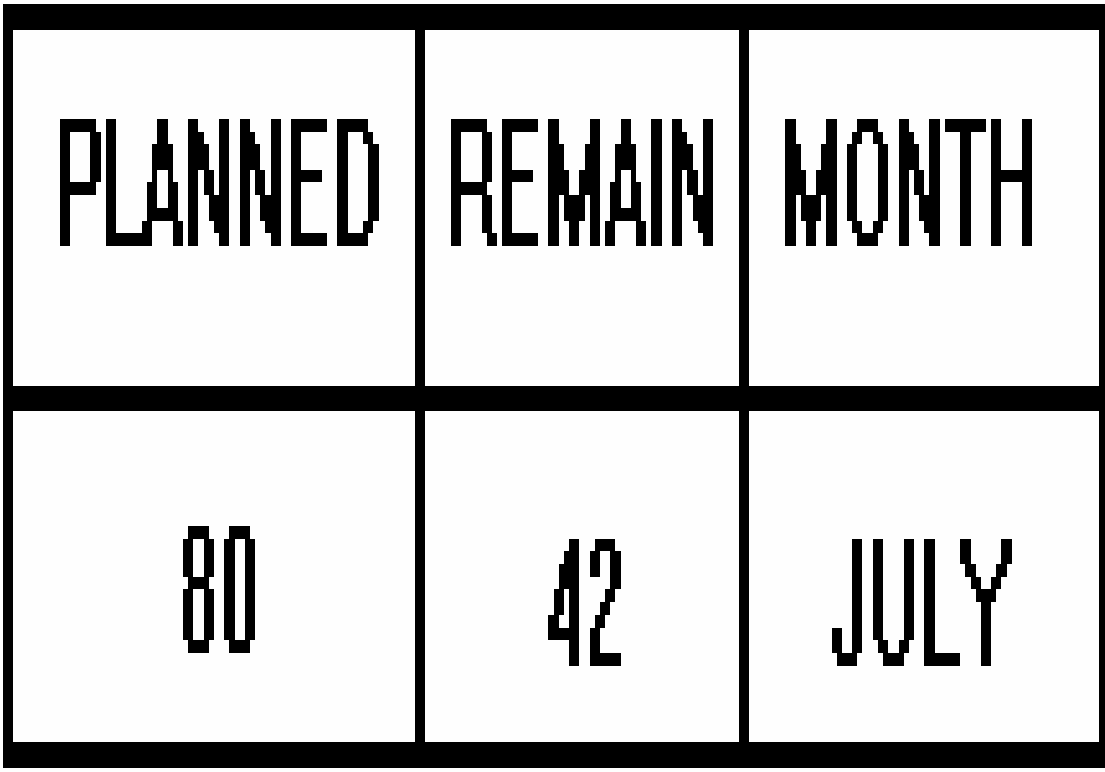
.

In filing the cards in the racks, the cards are arranged so that the highest number (80 - 80 in the mowing example) is first.

To judge progress, then, the District Engineer and Superintendent:

1. Scan the ROUTINE UNLIMITED, ROUTINE LIMITED, and SPECIAL AUTHORITY cards in their racks. The outside visible card will indicate for each activity,
   a) Total crew days planned for the year,
   b) How many crew days remain to be done, and
   c) The month that the activity should normally be scheduled.

   A mowing card numbered



   , for instance, indicates that,

   * 80 crew days are planned for the year,
   * 42 crew days of work remain; therefore, 38 days have been completed (80 minus 42), and
   * This crew day of work should be scheduled for the month of July.

2. Check the month indicated on each outside card. If, in mid-July, the outside crew day card for all activities showed a "July" in the "Month" area, then the number of crew days completed would be "on schedule." However, If a card for an activity shows "Sep," then work on that activity has been performed sooner thanplanned. Likewise, a "May" showing on an activity indicates work has not been performed as planned in the work program.

3. Review the Maintenance Work Calendar to get an idea of future work and where adjustments can be made, if needed, to accomplish the work program.

4. Apply the following reasoning process to ROUTINE UNLIMITED activities:
   * These important activities are difficult to predict in exact quantities but must be performed whenever deficiencies are observed regardless of initial crew day estimates. If there is any danger of running out of cards in the next period, overrun cards should be requested from the Division Maintenance Engineer.
   * However, if any activity seems unreasonably ahead or behind schedule, it is best to check if:

     1. service levels are being correctly followed, and
     2. standard work methods are being used.

   Completing 26 of 40 cards for "Spot Premix Patching" by the end of December might lead one to suspect over-maintenance or under-production since the bulk of this kind of work is normally done in the spring. Completing only 26 of 40 cards by the end of August, on the other hand, may be an indication of insufficient maintenance.

5. Apply the following reasoning process to ROUTINE LIMITED activities:

   * Are enough crew day cards left for each of the LIMITED activities to provide the desired level of maintenance service? For example, if one complete mowing remains to be done and usually requires 20 crew day cards, but there are only 14 cards left, overrun cards should be requested from the Division Maintenance Engineer.

- If the LIMITED activities are being performed with less than the planned number of crew days and the desired level of maintenance service has been achieved, discuss the situation with the Division Maintenance Engineer. Additional SPECIAL AUTHORITY or special project work may be authorized to fill-in the workload.

6. Review the SPECIAL AUTHORITY cards that have been issued and apply the following reasoning process:

   - Will additional SPECIAL AUTHORITY cards be required to provide an adequate level of maintenance service?

   - Are there enough SPECIAL AUTHORITY activity cards to provide flexibility in scheduling and crew assignments?

7. The crew day cards issued to each district represent the balanced annual workload and labor requirements. If the workload is to remain in balance, deviations of any activity in the planned workload will require adjustments to other activities. For example, an overrun in one activity means an equal amount of labor must be subtracted from other activities. Likewise, an underrun in one activity means labor is available for additional work. Any adjustments made to the maintenance workload should be justified and well documented for use when evaluating work progress and performance in relation to the planned workload.

Maintenance Activity Summary (optional)

The Maintenance Activity Summary worksheet is optional. However, if it is used, it may be an effective tool to assist in the review and evaluation of the work pprogress and performance.

Quarterly and Annual Performance Reports

Because of the large volume of maintenance work and performance data accumulated throughout the year, electronic data processing is utilized for quarterly and annual performance reports.

The reports may be particularly significant to the Division Maintenance Engineers and District Engineers. These reports are tools which are also used by the central office and division maintenance managers and planners.

These reports provide information required by the Maintenance Bureau for the preparation of future maintenance work programs and budgets.

Field Inspections

Field inspections must be performed on a regular basis by the Division Maintenance Engineer, District Engineer, and Superintendent to assure that the desired level of maintenance service is being achieved.

The frequency of inspections may vary from time to time, but a guideline for complete inspection is as follows:

* Division Maintenance Engineer - Annual
* District Engineer - Monthly
* Superintendent - Weekly/Daily.

Maintenance needed or corrective action identified as a result of these field inspections should be scheduled and performed within the framework of the Maintenance Management System.

Evaluation Procedures

Copies of the quarterly and annual performance reports will be made available to the central office and division maintenance managers and planners for use in evaluation of maintenance performance. The following procedures should be used:

1. DEFINE THOSE ACTIVITIES TO WHICH SPECIAL ATTENTION SHOULD BE GIVEN.

List the work activities according to percent of total employee hours required on a district, division, or statewide basis for all highways. The cost magnitude should also be shown for each activity. The top ten activities for the State system account for approximately 60 percent of the total number of employee hours. The top twenty

activities account for approximatel 80 percent. Emphasis should be placed on evaluation of these activities.

2. IDENTIFY THE WORK CONTROL CATEGORY OF EACH ACTIVITY.
   Also list the work control category for each activity. OVERHEAD categories are fixed and whatever amounts are required must be performed. Likewise, the ROUTINE UNLIMITED category contains activities which are primarily emergency type and represent work that must be done - however, production should be controlled. ROUTINE LIMITED category work activities should be limited to the amounts planned.

3. CONDUCT PERIODIC EVALUATION MEETINGS.
   The Division Maintenance Engineer and the District Engineers for the division should meet periodically to review the appropriate monthly and quarterly reports and to evaluate the progress of the maintenance work program.

The Crew Day Cards, Maintenance Activity Summary Worksheets, and other evaluation reports provide information concerning areas where problems may be occurring. However, it is difficult to positively identify causes or define solutions solely on the basis of reported data. On the basis of the potential problems noted for attention, the Division Maintenance Engineer and the District Engineer should conduct field inspections and observe maintenance operations in progress.

Regular meetings by the Division Maintenance Engineers and the District Engineers are an important means of controlling the maintenance program. Frequent review and evaluation of maintenance operations permits corrective action and re-direction of maintenance effort to be made in time to be effective.

Annual Evaluation and Review by the Maintenance Bureau

Maintenance management is a continuous process.

Maintenance managers and supervisors at all organizational levels can provide valuable input to maintenance management by suggesting ways to improve performance standards through the elimination of time and resource consuming practices and by the adoption of more economical ways of doing work. In looking for better ways to do a particular maintenance activity, managers should consider these basic objectives:

* improve the processes and procedures
* standardize methods
* make improvements in the use of resources.

The information and procedures in this chapter WORK EVALUATION should assist the division and district maintenance supervisors by providing the basics for a continuing general evaluation of the on-going maintenance work of the division and district maintenance crews. Periodic evaluations and reviews should be scheduled so that the maintenance supervisors may examine the Maintenance Management System information in more detail. If properly planned and scheduled, these evaluations and reviews will offer all levels of supervision the opportunity to suggest changes and improvements to the maintenance program.

Annually, the Maintenance Bureau organizes and coordinates a meeting of the Technical Advisory Committee, usually referred to as the Maintenance Management Meeting. The following are voting members of the Technical Advisory Committee:

- the State Maintenance Engineer,
- all Division Engineers, and
- designated Bureau Chiefs

As special circumstances aarise or if specific information is needed, additional ad hoc members may serve briefly at the pleasure of the Technical Advisory Committe or they may be invited to attend the Maintenance Management Meeting. Attendance at the Maintenance Management Meeting usually includes:

- the Transportation Director
- the Assistant Transportation Director
- the Chief Engineer
- designated Assistant Chief Engineers
- the State Maintenance Engineer
- the Management and Training Section Engineer
- designated Maintenance Bureau personnel
- the division engineers
- the division maintenance engineers
- the assistant(s) to the division maintenance engineer
- the division traffic engineer
- the division equipment superintendent
- the divison chief bridge inspector
- the division maintenance management specialist
- the district engineers
- other allied and supportive representatives such as, but not limited to:
  - the FHWA Division Administrator
  - the President of the Alabama County Engineers Association
  - designated representatives of highway and bridge related industries.

The Technical Advisory Committee may be called into session as deemed appropriate by the State Maintenance Engineer and while in session may consider, vote on, and offer for consideration, such items as:

- performance standards
- quantity standards (levels of service)
- crew sizes

- equipment to be used by maintenance crews
- defining new maintenance activities
- eliminating non-essential maintenaence activities
- staffing needs
- equipment needs.

The work of the Technical Advisory Committee is usually conducted in conjunction with the annual Maintenance Management Meeting which is held sometime from late-July to early-August. Traditionally, the Meeting has been held during the first full week of August. The selection of the dates for the Meeting is dependent of two major events:

1. The availability of Maintenance Management System reports for the period ending June 30.
2. The beginning of the annual budgeting process, usually on or about September 1.

The host division for the Meeting is determined by rotating the Meeting in order as follows:

- Second Division (1990 meeting in sheffield at the Ramada Inn)
- Fifth Division (1991 meeting in Tuscaloosa at the Holiday Inn)
- First Division (1992 meeting in Decatur at the Guntersville State Park)
- Ninth Division (1993 meeting in Gulf Shores at the Gulf Shores State Park)
- Third Division (1994 meeting in Birmingham at the Crowne Sterling Suites Hotel)
- Seventh Division (1995 meeting in Eufaula at Lakepoint State Park)
- Fourth Division (1996 meeting in Auburn at the Auburn Hotel and Conference Center)
- (Note that the Sixth Division and the Eighth Division are not normally included in the rotation).

Possible meeting facilities are visited by representatives of the Maintenance Bureau and the host division. When selecting the hotel or other facility for the Meeting, consideration is given to the anticipated number of attendees, room rates, meeting room costs, food service, the quality and availability of the public address system, and the hotel''s policy on audio-visual equipment rental. The Maintenance Bureau is usually represented in this process by the Management and Training Section Engineer. After visiting all appropriate hotels and meeting facilities, the Maintenance Bureau representative and the host division representative attempt to reach a consensus and to choose a

meeting facility. The Maintenance Engineer reserves the right to make the final selection of both the host division and the meeting facility site.

The Management and Training Engineer is responsible for coordinating and organizing the essential elements of the entire Meeting. These would include, but not be limited to, length and number of presentations, special topics to be addressed, special functions, special guests and meals. The Maintenance Engineer reserves the right to approve the final schedule and the program.

By including the annual Maintenance Management Meeting and the Technical Advisory Committee work as part of the overall continuous system operation, the policies and the objectives of the entire maintenance program can be modified to retain the most effective system for the management of the maintenance operations. The Maintenance Management system consists of the following essential responsibilities:

* Developing the annual maintenance program
* Budgeting and allocating resources
* Authorizing and scheduling work
* Reporting work accomplished
* Evaluating performance.

Maintenance management is a continuous process.

NUMERICAL FORM LISTING

TITLE	NUMBER
MAINTENANCE WORK CALENDAR (computer generated) *1	MM-603
MAINTENANCE CREW DAY CARD (computer generated)	MM-701
MAINTENANCE CREW DAY CARD OVERRUN	MM-701OR
SPECIAL PROJECT CREW DAY CARD	MM-702
DAILY OVERHEAD AND SUMMARY CARD	MM-703
MAINTENANCE ACTIVITY SUMMARY WORKSHEET(optional)	MM-900
MAINTENANCE ACTIVITY SUMMARY(no longer required)	MM-901

*1 See your copy of the MM-603 Maintenance Work Calendar.

MAINTENANCE CREW DAY CARD
MM-701

MAINTENANCE CREW DAY CARD
OVERRUN
MM-701OR

SPECIAL PROJECT CREW DAY CARD
MM-702

DAILY OVERHEAD AND SUMMARY CARD
MM-703
Side 1

CONTENTS OF APPENDIXES

LIST OF EQUIPMENT CODES

MMS CODE	EQUIPMENT DESCRIPTION	MEASURE OF USAGE
1	Automobile	kilometer (km)
2	Carryall/Ranchero	kilometer (km)
3	Panel/Van	kilometer (km)
4	Pickup/Crew Cab	kilometer (km)
6	Station Wagon	kilometer (km)
12	Flat Truck/Flat Dump Truck/1-Ton Pickup	kilometer (km)
1012	Sign Truck/Platform Truck	kilometer (km)
13	Sand Spreader	kilometer (km)
14	Welding Truck	kilometer (km)
15	Service Truck	kilometer (km)
17	Dump Truck - Single Axle	kilometer (km)
1017	Water Truck	kilometer (km)
18	Dump Truck - Tandem Axle	kilometer (km)
21	Truck Tractor	kilometer (km)
25	Spray Truck - HI Vol	kilometer (km)
26	Wrecker - 0-5 Tons/Knuckle Truck	kilometer (km)
27	Wrecker - 5-10 Tons	liters (L)
28	Winch Truck	liters (L)
30	Distributor - Asphalt	kilometer (km)
40	Bucket Truck	liters (L)
1040	Bucket Truck	day (day)
41	Air Compressor	liters (L)
51	Centerline Machine	liters (L)
56	Conveyor - Belt	liters (L)
59	Core Drill	liters (L)
60	Crane	liters (L)
61	Crusher	liters (L)
69	Drilling Unit	liters (L)
70	Drill Wagon	hours (hr)
73	Disc Harrow	hours (hr)
74	Asphalt Heater - All Types	liters (L)
75	Hoist	liters (L)
76	Loader - Backhoe	liters (L)
77	Loader - Force Feed	liters (L)
79	Loader - Small Front End	liters (L)
86	Loader - Large Front End	liters (L)
96	Mixer - Bituminous	liters (L)
97	Mixer - Concrete	liters (L)
99	Motor Patrol	liters (L)
1099	Asphalt Planer	liters (L)
102	Tractor Mower - (Complete Unit - All types and sizes)	liters (L)
104	Paver - Crawler	liters (L)
106	Post Driver	liters (L)
109	Roller - Steel Wheel (Self Propelled)	liters (L)
111	Roller - Rubber Tire	liters (L)
112	Roller - Sheep Ft. (Self Propelled)	liters (L)
113	Roller - Rubber Tire	hours (hr)

LIST OF EQUIPMENT CODES

MMS MEASURE

CODE	EQUIPMENT DESCRIPTION	OF USAGE
113	Roller - Sheep Ft. (Pull Type)	hours (hr)
113	Roller - Grid (Pull Type)	hours (hr)
118	Scraper - Full Type	hours (hr)
119	Scraper - Self Propelled	liters (L)
120	Shovel- Crawler	liters (L)
121	Excavator - Gradall Type	liters (L)
122	Bridge Snooper - Complete Unit	liters (L)
123	Chip Spreader	liters (L)
125	Sweeper - Pull Type	hours (hr)
126	Sweeper - Self Propelled	liters (L)
127	Tractor - Dozer	liters (L)
128	Tractor - Crawler	liters (L)
129	Tractor - Wheel Type	liters (L)
1129	Spray Tractor - Lo Vol	liters (L)
130	Trailer - Low Bed	kilometer (km)
131	Car Unloader	liters (L)
132	Widener/Maintainer	liters (L)
137	Dump Trailer	kilometer (km)
139	Trencher	liters (L)
140	Riding Lawnmower - 0-20 H.P.	liters (L)
141	Guardrail Straightener	hours (hr)
142	Auger Truck	liters (L)
143	Lime/Sand/Salt/Spreader	kilometer (km)
100000	Hot Pot	hours (hr)
200000	Drag Box	hours (hr)
300000	Water Tank	hours (hr)
400000	Pump	hours (hr)
500000	Spray Unit (High Pressure)	hours (hr)
600000	Chain Saw	hours (hr)
700000	Hand Paint Machine	hours (hr)
800000	Sandblaster	hours (hr)
900000	Sand Dryer	hours (hr)
110000	Welder	hours (hr)
120000	Rental Motor Patrol	hours (hr)
130000	Concrete Vibrator	hours (hr)
140000	Paint Sprayer/Small Paint Machine SG	hours (hr)
150000	Curb Machine	hours (hr)
160000	Trash Compactor	hours (hr)
170000	Weed Eater	hours (hr)
180000	Early Warner	hours (hr)
190000	Fertilizer Spreader	hours (hr)
210000	Spray Unit - HI Vol	hours (hr)
222222	Equipment Dollar	dollars ($)
220000	Router	hours (hr)
230000	Brush/Blower	hours (hr)
240000	Concrete Saw-Self Propelled	hours (hr)
250000	Silicone Pump	hours (hr)
260000	Limb Chipper	hours (hr)
270000	Patch Roller SG	hours (hr)

LIST OF EQUIPMENT CODES

MMS MEASURE

CODE	EQUIPMENT DESCRIPTION	OF USAGE
280000	Air Compressor (SG)	hours (hr)
290000	Traffic Line Remover	hours (hr)
310000	Mudjack	hours (hr)
320000	Thermoplastic Machine	hours (hr)
330000	Traffic Line Remover (Grinder)	hours (hr)

LIST OF MATERIAL CODES

MMS CODE	DESCRIPTION	UNIT OF MEASURE

355	55 Gal. Drum (Painted)	each
360	Dynamite	kilogram
361	Cement	bag
1361	Block - Cement	each
362	Sand	metric ton
1362	Gravel - Local Material	cubic meter
2362	Gravel - Graded	metric ton
3362	Reef Shells	metric ton
363	Aggregate - Graded	metric ton
1363	Aggregate - Ungraded	metric ton
364	Rip Rap	metric ton
365	Liquid Asphalt	liter
1365	Rubberized Asphalt/Joint Filler	kilogram
2365	Silicone Sealer	liter
3365	Backer Rod	meter
366	Premix - Bituminous	metric ton
1366	Premix - Recycled	metric ton
367	Pipe - Culvert	meter
1367	Pipe Band	each
369	Lumber/Timber	cubic meter
370	Paint - Sign	liter
1370	Paint - Primer	liter
2370	Paint - Bridge	liter
3370	Paste Aluminum	kilogram
4370	Solvent (Fuel Type)	liter
371	Sign (Square Meter)	square meter
1371	Delineator	each
2371	Marker - RSD PVT	each
375	Post - Sign (Linear)	meter
377	Guardrail Spacer	each
378	Guardrail Beam - Roadway	meter
1378	Guardrail End Shoe	each
2378	Guardrail Post - Roadway	each
3378	Salt/Calcium Chloride	metric ton
4378	Epoxy	liter
5378	Guardrail End Anchor	each
380	Paint - Traffic	liter
381	Paint - Traffic FD	liter
1381	Solvent - (FD Paint)	liter
382	Paint - Guardrail (Galv)	liter
383	Thermoplastic Powder	kilogram
1383	Thermoplastic	meter
384	Liquid Petroleum Gas	kilogram
385	Controller Unit/Traffic	each
1385	Lamps - Signal	each
2385	Lense - Signal	each
3385	Fuse	each

LIST OF MATERIAL CODES

MMS CODE	DESCRIPTION	UNIT OF MEASURE
386	Light Bulb	each
390	Herbicide - Powder	kilogram
391	Herbicide - Liquid	liter

1391	Seed - Grass	kilogram
2391	Mulch	metric ton
3391	Fertilizer	metric ton
4391	Lime - Agricultural	metric ton
392	Surfactant	liter
393	Drift Control - Liquid	liter
394	Drift Control - Powder	kilogram
399	Concrete - Ready Mix	cubic Meter
1399	Glass Beads	kilogram
2399	Thermoplastic	square meter
3399	Expansion Joint Material	meter
4399	Water	liter
400	Plywood - Sheet	each
401	Guardrail Post - Bridge	each
1401	Guardrail Beam - Bridge	meter
402	Piling - Steel	meter
403	Steel - Reinforcing	kilogram
404	Chain Link Fence	meter
1404	Woven Wire - Fence	meter
2404	Barbed Wire	meter
405	Fitch Inertia Barrel	each
406	Battery Flasher	each
407	Fence Post - Steel	each
408	Top Rail - Fence	meter
409	Traffic Detector	each
410	Flasher - Warning	each
411	Pine Tree	each
412	Oil - Lubricant	liter
413	Timber Piling	square meter
414	Fence Post - Treated Wood	each
415	Road Patch	liter
416	Polymer Concrete	kilogram
417	Polymer Liquid	liter
418	Polymer Primer	liter
419	Set-45 Concrete	kilogram
333333	Equipment Dollar	dollar

LIST OF MANAGEMENT UNIT

NAMES AND NUMBERS

MMS NUMBER	DIVISION	DISTRICT	NAME
0101	1	1	Decatur
0102	1	2	Madison
0103	1	3	Dutton
0104	1	4	Joppa
0188	1		Division-wide crew
0201	2	1	Tuscumbia
0202	2	2	Moulton
0203	2	3	Hamilton
0288	2		Division-wide Crew
0301	3	1	Jefferson
0302	3	2	Oneonta
0303	3	3	Gadsden
0304	3	4	Walker
0305	3	5	Shelby
0388	3		Division-wide Crew
0401	4	1	Alexander City
0402	4	2	Calhoun
0403	4	3	Auburn
0404	4	4	Hollis
0405	4	5	Talladega
0406	4	6	Seale
0488	4		Division-wide Crew
0501	5	1	Fayette
0502	5	2	Tuscaloosa
0503	5	3	Carrollton
0504	5	4	Maplesville
0505	5	5	Greensboro
0588	5		Division-wide Crew
0601	6	1	Speigner
0602	6	2	Union Springs
0603	6	3	Montgomery
0604	6	4	Greenville
0605	6	5	Selma
0688	6		Division-wide Crew

LIST OF MANAGEMENT UNIT NAMES AND NUMBERS

MMS NUMBER	DIVISION	DISTRICT	NAME
0701	7	1	Dothan
0702	7	2	Enterprise
0703	7	3	Andalusia
0704	7	4	Ozark
0705	7	5	Troy
0706	7	6	Eufaula
0788	7		Division-wide Crew
0801	8	1	Livingston
0802	8	2	Thomaston
0803	8	3	Camden
0804	8	4	Grove Hill
0888	8		Division-wide Crew
0901	9	1	Mobile
0902	9	2	Baldwin
0903	9	3	Evergreen
0988	9		Division-wide Crew

6xx ACTIVITIES

The following pages include Maintenance Performance Standards for activities 601 thorough 699. Some 6xx numbers are not assigned and are not included in this section. Examples are 619 through 623.

Bxx ACTIVITIES

The following pages include Maintenance Performance Standards for activities B01 through B99. Some Bxx numbers are not assigned and are not included in this section. Examples are B41 through B98.