Traffic Manual

M 51-02

Washington State Department of Transportation
Operations and Maintenance Office

Traffic Manual

M 51-02

Washington State Department of Transportation
Environmental and Engineering Service Center
Traffic Office

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Foreword

The *Traffic Manual* is provided as a guide for department personnel in traffic operations and design. This manual does not establish absolute standards but, with the application of traffic engineering analyses, helps establish uniform guidelines and procedures for the use of traffic control devices.

This manual should be used in conjunction with the *Manual on Uniform Traffic Control Devices* (MUTCD) to assure uniform statewide application of traffic control devices. This document provides interpretive guidance but does not change the requirements of the MUTCD.

The *Traffic Manual* contains references to the *Design Manual*, *Standard Plans*, *Plans Preparation Manual*, *Construction Manual*, and the *Maintenance Manual*. Copies of these documents are available from the Washington State Department of Transportation (WSDOT) Engineering Publications Branch.

E. R. BURCH
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10:P3:TM1

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1.1 WSDOT Traffic Functions

Traffic functions within the Washington State Department of Transportation (WSDOT) are administered by:

- Headquarters Traffic Operations Office (State Traffic Engineer) and Highway Maintenance Office (State Maintenance Engineer)
- The six Regional Traffic Offices (Regional Traffic Engineers)
- The six Regional Maintenance Offices (Regional Maintenance Engineers)
- Planning and Policy group of the Northwest Washington Division
- The Office of Highways and Local Programs
- The Transportation Data Office (TDO)

A WSDOT organization chart showing the relationship between the six regions and the various Headquarters offices is available by contacting the WSDOT Administrative Services Office at 360-705-7732.

The following sections explain how each of these work groups accomplish the goals of the department's traffic program.

1.2 Traffic Operations Administration

The Offices of the State Traffic Engineer and the State Maintenance Engineer are part of the Headquarters Maintenance and Operations group.

Under the direction of the State Maintenance Engineer, the Headquarters Highway Maintenance Office is responsible for maintaining traffic control devices, and issuing vehicle permits and road approach permits.

- ***Statewide Resource Development and Deployment*** — The resources required to fund existing and new traffic control devices, such as lane markings, signs, safety hardware, electronic traveler information systems, traffic signals, and illumination equipment are pursued through decision packages. When funded by the legislature, these resources are allocated to the regions for implementation. Such traffic maintenance functions are components of Program M.

Under the direction of the State Traffic Engineer, the Headquarters Traffic Operations Office is responsible for traffic engineering and related safety functions in three fundamental areas:

- ***Statewide Policy Development*** — To ensure statewide consistency and uniformity, the Headquarters Traffic Office responds to issues and questions on traffic engineering. Topics range from technical design and specifications to traffic flow control operations, maintenance functions and traveler information systems. These tasks often require efforts to research, coordinate, and summarize issues for executive level decision making.
- ***Statewide Resource Development and Deployment*** — The resources required to fund new and existing statewide traffic and "spot" safety investments are pursued through decision packages that require legislative approval. When approved by the legislature, these funds are allocated to the regions for implementation. Such traffic and "spot" safety functions are components of Program Q.
- ***Statewide Traffic Expertise*** — The Headquarters Traffic Office provides expertise to the regions and other agencies in areas of general traffic operations, traffic analysis, and design activities. The Traffic Office provides technical training, and coordinates statewide traffic activities including: consultation with Attorney General's Office on legal matters, offering advice or guidance upon request from the regions and other WSDOT offices, and facilitating statewide meetings of the region's traffic personnel.

Headquarters Traffic Office provides expertise in the following areas:

- Traffic Signals, Illumination, and Delineation

- Safety and Traffic Operations
- Signing and Traffic Control Devices
- Work Zone Traffic Control
- Advanced Technology Traffic Applications
- Traffic Regulations
- Local Agency Engineering Assistance
- Traffic Engineering Training
- Special Advanced Technology Projects (e.g., CVISN, rWeather, traveler information systems, and US/Canada Border Crossing Improvements)
- Traffic Program Planning
- Outdoor Advertising Control

The following sections describe the functions and services provided by work groups within the Headquarters Traffic Operations Office.

A. Signals, Illumination, and Delineation Systems

1. Provide statewide contract plan review for traffic signal, illumination, and delineation projects.
2. Prepare signal system PS&E plans for WSDOT regions.
3. Maintain operational standards, standard specifications, and standard plans for signals, illumination, and delineation.
4. Provide guidance and support for the Attorney General's Office on traffic related tort claim cases.
5. Assist the Materials Laboratory in the approval process for electrical and delineation items.
6. Provide technical information to General Administration and WSDOT purchasing personnel involved in the development of procurement contracts for:
    - Materials and equipment for traffic signal systems
    - Materials and equipment for illumination systems
    - Materials and equipment for delineation
7. Conduct or coordinate statewide training on:
    - Signal and Illumination Design
    - ITS
    - Electrical design portions of contract plan preparation
    - Signal operations, including optimization of timing and coordination
8. Share information with the Materials Laboratory and manufacturers about current trends in materials and equipment used to construct signals, illumination systems, and delineation.
9. Develop and maintain Operations and Maintenance Time Standards used for budget planning, and for planning preventative maintenance activities for electrical systems and delineation.

B. Safety and Traffic Operations

1. Research and evaluate operational traffic improvements along existing state highways.
2. Act as technical consultants to the regions on the design and construction of traffic operations and safety improvement projects.
3. Develop and implement the Corridor Safety Program. This multi-jurisdictional statewide safety program identifies low cost enhancements that increase safety on project corridors.
4. Assist in implementation of the department's Safety Management System. Support the Office of Program Management and the regions by giving expert review and training in the benefit cost analysis methodologies used to analyze I-2 Safety Improvement Program issues.
5. Review and research advanced traffic simulation and optimization software models. Distribute this software and pertinent information throughout the department.
6. Administer the WSDOT DUI Victim Memorial Sign Program and Highway Fatality Memorial Program.

7. Develop and initiate programs as required by the legislature; for example, service patrols, statewide speed limit changes, work zone safety programs.

C. Signing and Traffic Control Devices

1. Operate statewide traffic sign management system, including the statewide sign inventory database, Traffic Sign Management System (TSMS). Maintain the *Sign Fabrication Manual* (M 55-05).
2. Serve as technical consultants to the regions regarding sign fabrication. Conduct periodic inspections of sign fabrication shops and develop inspection criteria for sign fabrication inspectors. Evaluate new sign fabrication shops for approval as WSDOT contract fabricators.
3. Review deviation requests, contract plans, and other WSDOT documents, for the proper application of traffic control devices. Ensure conformance to the MUTCD and other state standards for permanent signing and temporary traffic control.
4. Serve as technical consultant to the regions on permanent signing issues, challenges, and special applications.
5. Develop specifications for new or revised signing items to be included in the *Standard Specifications*, *General Special Provisions*, and *Standard Plans.*
6. Communicate with manufacturers to analyze current trends in materials and equipment used to construct signs and appurtenances.
7. Provide final approval for byway logo signing on eligible inter-regional scenic and recreational highways.

D. Work Zone Traffic Control

1. Provide statewide guidance and assistance for all work zone traffic control issues including:
   - Design/PS&E
   - Work Zone Safety
   - Construction, Maintenance
   - Public Information
2. Develop and conduct training in the following areas:
   - Design Strategies
   - Work Zone Reviews
3. Research and develop new devices, equipment, and methods by working with industry and participating on:
   - New Products Committee
   - Safety Products Team
4. Develop departmental policy, specifications, and procedures by working with Headquarters, the regions, and by partnering with:
   - Work Zone Safety Task Force
   - Washington State Patrol
   - Traffic Safety Commission
   - FHWA
   - Target Zero Program
   - Highway Contracting Industry
5. Upon request, provide expertise to the regions in the following areas:
   - Field Reviews of Work Zones
   - Design and PS&E Reviews
   - Specifications Review and Comment
   - Applications of WSDOT and Federal (MUTCD) Standards

E. Technology Traffic Applications

1. Provide expertise throughout the department and to other agencies on urban traffic management strategies and systems, including HOV operations.
2. Manage the department's Intelligent Transportation Systems (ITS) effort by providing ITS and traffic management system technologies throughout the department and to other agencies.
3. Serve as the department's technical contact on Transportation Research Center (TRAC)

research projects. Evaluate and implement results of TRAC research when appropriate.

F. Traffic Regulations

1. Develop statewide policies for the implementation of MUTCD principles and guidelines. Maintain operational policies in the *Traffic Manual* and departmental directives. Provide standards for all traffic control devices used on public roadways.
2. Evaluate traffic regulations submitted by the regions to ensure that statutory requirements are met, and that engineering support data is complete and accurate. Recommend approval or denial of traffic regulations for:
   - Permanent speed limits
   - High occupancy vehicle (HOV) designations
   - Bicycle prohibitions
   - Truck restrictions
   - Angle parking
   - Parking facilities, including park and ride lots operated by WSDOT
3. Administer the department's statewide Outdoor Advertising Control Program under purview of the Scenic Vistas Act (RCW 47.42) and WAC 468-66.
   - Administer permitting process
   - Provide guidance to regions
   - Serve as liaison with Attorney General's office regarding legal questions and for illegal sign abatement activities
   - Carry out rule making
   - Coordinate with FHWA
4. Sanction inter-regional events on state highways such as running or bicycling events, parades, caravans, or other special events. Provide information to event sponsors about how to safely conduct events on state highways, including all applicable traffic regulations. Provide the regions with support and direction regarding events on state highways in their areas.
5. Analyze traffic operations or safety-oriented legislation and respond to legislative inquiries on traffic matters. Provide executive management with information necessary to determine appropriate departmental positions.
6. Conduct quadrennial reviews of traffic related WACs and make related changes to brochures and other items for outdoor advertising control, motorist information signs, and the MUTCD. Respond to AASHTO Ballots, Federal Register notices, and inquiries from the public.

G. Local Agency Traffic Services

Working closely with the Highways and Local Programs Service Center, the department's Traffic Services Engineer provides on-call traffic engineering and microcomputer services to local agencies throughout the state, particularly smaller agencies lacking in professional staff.

H. Traffic Engineering Training

Determine traffic related training needs of the regions and establish training sessions to meet those needs. This involves designing and instructing new courses to meet specific needs, and facilitating courses that are conducted by consultants.

I. Special Advanced Technology Projects

Commercial Vehicle Information Systems and Network (CVISN) — This program is developing and implementing an Intelligent Transportation System for Commercial Vehicle Operations on Washington state highways. Through automation of regulatory procedures, the CVISN program improves the overall efficiency and safety of traffic operations by allowing commercial trucks with proper credentials and good safety rating to bypass weigh stations. Members of this demonstration project partnership include WSDOT, WSP, Department of Licensing, Washington Truckers Association, State of Oregon, and the Federal Highway Administration (FHWA).

Other projects include:

- Federally Funded Safety Demonstration Projects
- Traveler Information Projects
- Freight Mobility Projects
- Wrong Way Traffic Deterrent Projects

J. Traffic Program Planning

Facilitate development and implementation of the Statewide Highway Safety Strategic Plan. Support the Headquarters Traffic Office and region's traffic engineers in the following areas:

- Development of Intelligent Transportation Systems regional plans
- Identifying and managing Q program performance measures
- Planning processes regarding Traffic Operations Service Objectives and Action Strategies

1.3 Regional Traffic Administration

Approval authority for various traffic considerations has been delegated to Regional Administrators through Departmental Directives and other policies. This approval authority may be further delegated to senior regional managers. All regions appoint a Regional Traffic Engineer who is responsible for traffic related services. Depending on regional organization, the Traffic Engineer reports to one of the region's senior managers, for example the Regional Operations Engineer, or the Regional Project Development Engineer.

The responsibilities for regionally administered traffic engineering and safety services can be summarized into six components:

A. Coordinate Traffic Studies, Data Collection, and Analysis

1. Provide traffic data for upcoming projects or planning functions.
2. Conduct accident analyses and provide information to other department work groups, including Planning and Programming, Design, Maintenance, and Project Engineers.
3. Determine the need for appropriate traffic regulations that ensure safe and efficient operation of the transportation system within the region.
4. Maintain inventories of traffic control devices in the region.

B. Maintain Compliance With Rules and Regulations

Ensure that all traffic control devices are installed in accordance with appropriate portions of the MUTCD, WAC rules, and WSDOT policies. In addition, ensure that outdoor advertising is in compliance with applicable regulations.

1. Through departmental directives and policies, the Regional Administrators have been delegated the authority to approve:
   - Permits for installation of traffic signals on state highways
   - Stop control on state highways
   - Turn prohibitions
   - Pedestrian prohibitions on partial access controlled highways
   - Roadside parking restrictions (except angle parking and park and ride restrictions)
   - Prohibitions on fishing from bridges
   - Reduced regulatory speeds in construction or maintenance areas
   - Regulatory speeds in rest areas
   - Transit vehicle stop zone locations
   - Vehicle weight restrictions
2. In addition, the Regional Administrator is charged with the following duties that impact traffic operations:
   - Conduct the Outdoor Advertising Control and Motorist Information Signing programs
   - Review access permits required under State Access Management legislation

- Review development proposals for potential impacts to safety, capacity, and maintenance of the state highway system
- Implement and maintain Safety and Congestion Management Systems in the region

C. Provide Traffic Expertise

1. Ensure that traffic signals and signal systems operate efficiently to meet traffic operation goals.
2. Provide expertise on traffic related items included in design projects (signals, illumination, signing, delineation).
3. Review traffic design elements provided by consultants.
4. Approve or deny requests to conduct special events or filming operations on state highways within the region.
5. Conduct design and operational reviews for work zone traffic control plans.
6. Perform periodic operational and safety reviews to verify that posted advisory speeds, intersection sight distances, and other roadside features are in compliance with acceptable standards.

D. Manage Freeway and Arterial Operations

Ensure safe and efficient highway operations in the following areas:

1. Surveillance, Control, and Driver Information (SC&DI) systems including data stations, ramp meters, television cameras, signal systems, changeable message signs (CMS), Intelligent Transportation Systems (ITS), and highway advisory radio (HAR) systems.
2. HOV system.
3. Incident response.
4. Coordination with local agencies regarding traffic flow management, serving as technical advisor when appropriate.
5. Signing and Channelization Systems.

E. Coordinate Traffic Information

Respond to local agency and citizen concerns, and the news media about traffic related issues. Represent WSDOT at city, county, and other public forums regarding traffic issues.

F. Administer Program Q

Administer region allocations of Program Q funds. This includes identifying safety and efficiency investment priorities and programming low cost enhancement funds.

1.4 Office of Planning and Policy, NW Washington Division

Planning and Policy group (P&P) is a planning body that coordinates WSDOT activities within the geographic area covered by the Puget Sound Regional Council (PSRC). PSRC is the Metropolitan Planning Organization (MPO) for King, Kitsap, Pierce, and Snohomish Counties. P&P recognizes the need to integrate all transportation modes and coordinate long-range regional growth management plans to create a balanced transportation system. P&P works with the Olympic and Northwest Regions, Washington State Ferries, and local officials to accomplish this goal. The director of P&P reports to the Assistant Secretary for Northwest/Olympic Operations and Project Delivery. P&P responsibilities include:

- ***Transit Planning/HOV*** — Represent the department in establishing a Regional Transit Plan and promote transportation alternatives through transportation demand management methods. Provide lead responsibility for planning and prioritizing HOV facilities.
- ***Regional Coordination***— Work with the PSRC, sub-regional groups, and local jurisdictions in the regions to develop regional transportation plans that maintain accessibility, manage congestion, and are modally balanced and coordinated with land use objectives. Represent the department's interests in regional forums, especially in programming and prioritization efforts under TEA-21.

- ***Technical Analysis of Corridor Challenges*** Provide assistance and expertise during the evaluation of alternative proposals for transportation facilities. Activities include travel forecasting, providing modeling expertise to support EIS documentation, and providing guidance on system management and demand management project alternatives.
- ***Advocate a Balanced, Multi-modal Transportation System*** — Support Washington's Transportation Plan by evaluating and identifying feasible strategies for transportation modes that are state owned, and in which the state is a stakeholder.

1.5 Transportation Data Office (TDO)

The Transportation Data Office (TDO) is part of the Planning and Programming Service Center. TDO is responsible for:

- ***TRIPS Support*** — Development and operation of the department's traffic data standards, under FHWA guidelines, which are incorporated into the TRIPS traffic database.
- ***TMS Support*** — Development and operation of the Traffic Monitoring System/Highways (TMS/H).
- ***TMG Support*** — Provide Traffic Monitoring Guide (TMG) quality data for all management systems as required.
- ***Statewide Database Development and Support*** — Provide database support for:
    - Traffic, roadway, and accident data included in all state and federal systems and submittals (HPMS, TEA-21, NHS, PAS, PMS, CPMS, PAPS, SWIBS)
    - Managment of statewide accident data including: coding, coordination with WSP and the Traffic Safety Commission, analysis, safety programs including the High Accident Location (HAL), High Accident Corridor (HAC) and Pedestrian Accident Location (PAL) lists. Provide support for regional database uses
    - Traffic counting, summarization, and reporting in support of statewide systems, projects, and planning studies
    - Traffic forecasting expertise for planning and design projects statewide
- ***Technical Support for Planning Functions*** Provide statewide review of all traffic data and analysis in Environmental Impact Statements, developer submittals, design projects, and prioritization projects.
- ***Technical Support for Work Zone Functions*** — Provide technical support and review expertise for work zone working hours, penalties (liquidated damages), and incentives costing analysis.
- ***Video and Digital Imaging of State Highways*** — Providing video and digital images (video logs and SRView) of the state highway system.
- ***Maintain State Highway Milepost System*** Establish milepost locations for all existing and proposed state highways and distribution of the annual State Highway Log.

1.6 Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
CADD	Computer Aided Drafting and Design
CMS	Changeable Message Sign
FHWA	Federal Highway Administration
HAR	Highway Advisory Radio
HAC	High Accident Corridor
HAL	High Accident Location
HOV	High Occupancy Vehicle
HPMS	Highway Pavement Management System

ITE	Institute of Traffic Engineers
ITS	Intelligent Transportation Systems
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways
NHS	National Highway System
PAL	Pedestrian Accident Location
PPSC	Planning and Programming Service Center
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
SC&DI	Surveillance, Control and Driver Information
SMS	Safety Management System
TEA-21	Transportation Equity Act for the 21st Century
TDO	Transportation Data Office
TMG	Traffic Monitoring Guide
TRAC	Transportation Research Center (University of Washington)
TRIPS	Transportation Information and Planning Support
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WSP	Washington State Patrol
WTSC	Washington Traffic Safety Commission

1.7 References

The following reference materials may be useful to regional personnel involved in traffic operations and traffic design duties.

Manual on Uniform Traffic Control Devices for Streets *and* ***Highways*** **(MUTCD) and** ***Washington State Modifications to the MUTCD*** **(M 24-01)** — RCW 47.36.030 directs WSDOT to adopt a uniform standard for the application and location of traffic control devices installed along public roadways in the state of Washington. The MUTCD, published by FHWA, has been adopted into Chapter 468-95 of the Washington Administrative Code (WAC).

To comply with state laws, certain modifications to the MUTCD have also been adopted into the WAC. A booklet of these modifications, *Washington State Modifications to the MUTCD* (M 24-01), is available from WSDOT Engineering Publications.

Amendments to the MUTCD are developed by the FHWA through the Federal Register process. These FHWA amendments become effective when the department receives notification of the approved changes from the FHWA.

WSDOT *Design Manual* (M 22-01) — The *Design Manual* provides guidance for the development of traffic features included in design reports and contract plans. Numerous sections contain information on traffic design features. Many of these features may also apply to traffic operations. The *Traffic Manual*, to the extent possible, avoids duplication of *Design Manual* materials, but provides cross-references where appropriate.

WSDOT *Sign Fabrication Manual* (M 55-05) The *Sign Fabrication Manual* provides sign fabricators and designers with the detailed layout information for official traffic signs used in Washington State.

WSDOT *Standard Plans for Road, Bridge, and Municipal Construction* (M 21-01) — The *Standard Plans for Road and Bridge and Municipal Construction* provides standard plans for the following traffic items:

- Sign Bridges
- Signing
- Cantilever Sign Structures
- Striping (typical layouts)
- Guide Posts
- Lane Markers

- Illumination
- Signals
- Concrete Barrier
- Guardrail
- Earthberms

WSDOT *Standard Specifications for Road, Bridge, and Municipal Construction* (M 41-10) — The *Standard Specifications* provides detailed requirements and techniques for construction and installation of the following traffic related items:

- Guide Posts
- Plastic Traffic Buttons
- Lane Markers
- Signing (Materials and Fabrication)
- Illumination
- Signals (Electrical)
- Pavement Markings (temporary and permanent)
- Work zone traffic control items (flagging, signs, delineation devices, etc.)

Other Documents

The following reference documents may also be helpful in conducting traffic related designs and analyses:

WSDOT Manuals

- *Plans Preparation Manual* (M 22-31)
- *Construction Manual* (M 41-01)
- *Maintenance Manual* (M 51-01)
- *Traffic Control Guidelines for Survey Operations* (M 55-02)
- *Motorist Information Signs* (M 55-94)
- *Scenic Vistas Act of 1971* (M 55-95)
- *Traffic Forecasting Guide*
- *Training Manual*, "Traffic Operations in WSDOT" (class available through Traffic Operations Office)

Many WSDOT publications are available on the internet. Contact the department's Engineering Publications website at:
http://ww.wsdot.wa.gov/fasc/EngineeringPublications

FHWA (Publications)

- *T21 Regulations*
- *Traffic Control Devices Handbook* (TCDH)
- *Traffic Control Systems Handbook*
- *Traffic Monitoring Guide*

AASHTO (Publications)

- *A Policy on Geometric Design of Highways and Streets*
- *Guide for Selecting, Locating, and Designing Traffic Barriers*
- *Guidelines for Traffic Data Programs*

TRB (Publications)

- *Highway Capacity Manual*

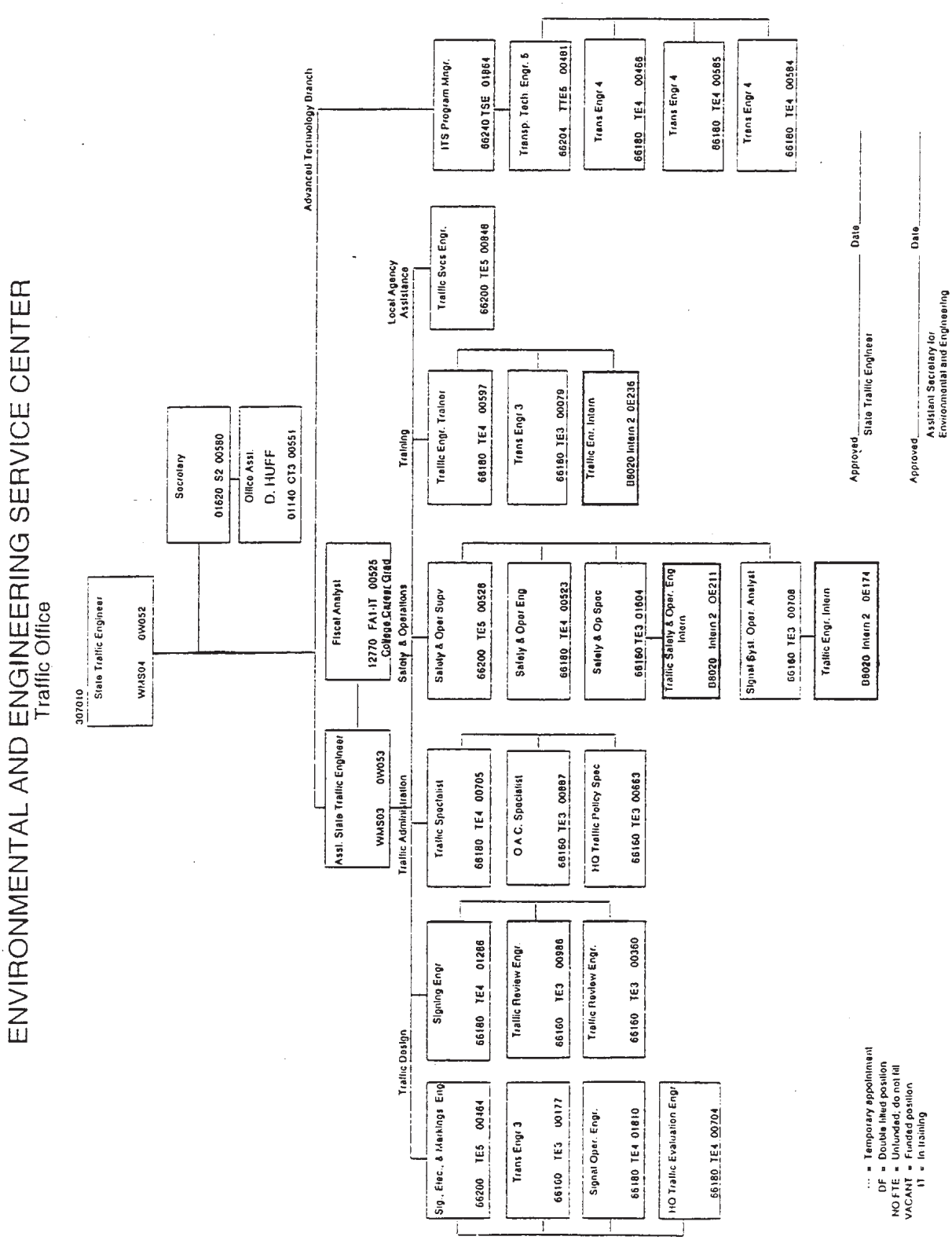
ITE (Publications)

- *Transportation and Traffic Engineering Handbook*
- *Manual of Traffic Engineering Studies*
- *Traffic Detector Handbook*

Other Reference Sources

The following reference sources may also be helpful in conducting traffic engineering investigations and analyses:

- Srview
- Washington State Highway Video log
- TRIPS — WSDOT Corporate Mainframe Database for transportation data
- Internet information — The WSDOT homepage url is: www.wsdot.wa.gov


ENVIRONMENTAL AND ENGINEERING SERVICE CENTER
Traffic Office
307010
State Traffic Engineer
WMS04 0W052
Secretary
01620 S2 00580
Office Asst.
D. HUFF
01140 CT3 00551
Advanced Technology Branch
Fiscal Analyst
12770 FA1-IT 00525
College Career Grad
Asst. State Traffic Engineer
WMS03 0W053
Traffic Administration
Traffic Design
Signing Engr
66180 TE4 01288
Sig., Elec., & Markings Eng
66200 TE5 00464
Traffic Review Engr.
66160 TE3 00986
Trans Engr 3
66160 TE3 00177
Traffic Review Engr.
66160 TE3 00360
Signal Oper. Engr.
66180 TE4 01810
HQ Traffic Evaluation Engr
66180 TE4 00704
Traffic Spectalist
66180 TE4 00705
O A C. Spectalist
66160 TE3 00887
HQ Traffic Policy Spec
66160 TE3 00663
Safety & Operations
Safety & Oper Supv
66200 TE5 00528
Safety & Oper Eng
66180 TE4 00523
Safety & Op Spec
66160 TE3 01604
Traffic Safety & Oper. Eng Intern
08020 Intern 2 OE211
Signal Syst. Oper. Analyst
66160 TE3 00708
Traffic Engr. Intern
08020 Intern 2 OE174
Training
Traffic Engr. Trainer
66180 TE4 00597
Trans Engr 3
66180 TE3 00079
Traffic Eng. Intern
08020 Intern 2 OE236
Local Agency Assistance
Traffic Svcs Engr.
66200 TE5 00848
ITS Program Mngr.
66240 TSE 01864
Transp. Tech Engr. 5
66204 TTE5 00481
Trans Engr 4
66180 TE4 00468
Trans Engr 4
66180 TE4 00585
Trans Engr 4
66180 TE4 00584
Approved_____ Date_____
State Traffic Engineer
Approved_____ Date_____
Assistant Secretary for Environmental and Engineering
... = Temporary appointment
DF = Double lifted position
NO FTE = Unfunded, do not fill
VACANT = Funded position
IT = In training

2.1 General

Effective signing provides clear information and instruction to motor vehicle operators, pedestrians, and bicyclists. Properly installed signing facilitates legal, safe, and orderly progress on public roadways.

State law requires the department to adopt uniform standards for traffic control devices, including signs that are placed along state highways. WAC Chapter 468-95 recognizes the standards of the *Manual on Uniform Traffic Control Devices* (MUTCD). Among the types of signs described in the MUTCD are: (1) ***Regulatory,*** (2) ***Warning,*** (3) ***Guide,*** and (4) ***Motorist Information***. The MUTCD provides guidance on the intended use and placement of signs, as well as specific information on the size of standard regulatory and warning signs. Information in this chapter supplements material covered in the MUTCD with specific interpretations and unique applications for signs on the state highway system.

Foreign language signs are not allowed on the state highway system.

Guidelines for the various classifications of official traffic control signs are discussed in the following MUTCD sections:

Sign Type	MUTCD Section
Regulatory Signs	Section 2-B
Warning Signs	Section 2-C
Guide Signs	Sections 2-D, 2-E, and 2-F
Work Zone Signs	Sections 6-B, 6-F*
School Area Signs	Section 7-B

*Refers to MUTCD Part VI, a stand-alone publication.

Table 2-1

A. Sign Fabrication Manual (M 55-05)

Geometric layout details for most signs used by the department are available in the WSDOT *Sign Fabrication Manual*. The manual can be viewed on the Engineering Publications CD, or in the Online Library at:

www.wsdot.wa.gov/fasc/EngineeringPublications

The sign number codes indicated in the *Sign Fabrication Manual* and other departmental publications are exclusive to WSDOT and may not, in all cases correspond to MUTCD number codes for similar signs.

B. Sign Legend Design

For layout and fabrication of signs that are not covered in the *Sign Fabrication Manual*, use the following information:

Letter Sizing — The letter height used to display messages must be large enough to provide the motorist with an adequate opportunity to read and comprehend the information, and decide whether or not a driving task is required.

Studies indicate the average driver comprehends three words per second after a perception time of up to two seconds. Unique messages require more recognition time than messages that are commonly displayed. The following formula combines this comprehension rate with a given operational speed to determine the desirable letter height for a particular sign:

LETTER HEIGHT = $(N/3 + 2)\ f$

where: N = Number of words

f = Legibility Factor. Found by dividing vehicle speed in feet per second by 40 (the legibility distance per inch of letter height)

The following example applies the formula and calculates desirable letter height:

Example 1. "SNOQUALMIE PASS RADIO TRAFFIC INFO 1 MILE"

Speed = 65 mph
N = 7
f = 2.4
Height = $(7/3 + 2)\ 2.4 = 10.4''$
use 10 inch letters

'f' Values by Speed		
***MPH**	(fps)	f
25	37	0.9
30	44	1.1
35	51	1.3
40	59	1.5
45	66	1.7
50	73	1.8
55	81	2.0
60	88	2.2
65	95	2.4
70	103	2.6

*Speed (Legal or 85th Percentile).

Table 2-2

Message Layout and Spacing — Sign message layout and spacing requirements are specified in Appendix A of the *Sign Fabrication Manual*.

Abbreviations — Abbreviations used should be immediately recognizable by the motorist. Abbreviate only to avoid excessively long sign messages. Do not use abbreviations if the controlling message line is long enough to allow using the complete word.

Periods are not necessary in sign abbreviations except for British Columbia (B.C.) and United States (U.S. Customs).

Do not abbreviate names of places.

The OSC Traffic Office must approve abbreviations other than those listed below. Submit a request for consideration as a written or electronic document.

AFB	Air Force Base
Alt	Alternate
Ave	Avenue
B.C.	British Columbia
Bch	Beach
Blvd	Boulevard
Ctr	Center
Coll	College
Comm	Community
Cr	Creek
Co	County
Ct	Court
DNR	Department of Natural Resources (Campground, etc)
Dr	Drive
E	East
Elev	Elevation
Ft	Fort
Fwy	Freeway
Fy	Ferry
Hist	Historic, as in “Nat’l Historic Districts”
HOV	High Occupancy Vehicles
Hts	Heights
Hwy	Highway
Info	Information
Int’l	International
Jct	Junction
km	Kilometers
Lab	Laboratory
Ln	Lane
Lp	Loop
Lt	Left
M	Meters
Max	Maximum
Mi	Mile(s)
Min	Minimum
MPH	Miles Per Hour
Mt	Mount (Rainier)
N	North
NE	North East
NW	North West
NAS	Naval Air Station
Nat’l	National
Ore	Oregon
ORV	Off Road Vehicle
Ped	Pedestrian
Pkwy	Parkway
Pl	Place
Pop	Population
Pt	Port or point
Rd	Road
Rec Area	Recreational Area
RR	Railroad
Rt	Right
RV	Recreational Vehicle
S	South
SE	South East

SW	South West
Sea-Tac Airport	Seattle Tacoma Airport
St	Street
Temp	Temporary
Thru	Through
Univ	University
USA	United States of America
USFS	U.S. Forest Service
U.S.	U.S. (Customs, etc.)
W	West
WSDOT	Washington State Department of Transportation
State Patrol	Washington State Patrol
Xing	Crossing

C. Reflective Sign Sheeting Material Requirements

Several types of reflective sheeting material are used to fabricate traffic control signs. The sheeting types have different reflective properties and different practical applications. The following sheeting types are designated in ASTM Specification D 4956:

- **Type I** — Medium-intensity retroreflective sheeting, referred to as "Engineer Grade." Service life of seven years
- **Type II** — Medium-high-intensity retroreflective sheeting, referred to as "Super Engineer Grade." Service life of ten years
- **Type III** — High-intensity retroreflective sheeting, referred to as "High Intensity." Service life of ten years
- **Type IV** — High-intensity retroreflective sheeting, referred to as "High Performance." Service life of ten years
- **Type VII** — Super-high-intensity retroreflective sheeting, referred to as "Diamond Grade." Service life of ten years

Use appropriate sheeting on sign types shown for the general areas, see table 2-3.

D. RCW, WAC Purview

Criteria for appropriate signing applications on state highways are also described in state rules and regulations. Many *Rules of the Road* (RCW 46.61) are not enforceable unless appropriate signs are posted.

WAC 468-95 contains rules pertaining to signing which are amendments to the MUTCD. These rules are published in WSDOT *Washington State Modifications to the MUTCD* (M 24-01). See Table 2-4.

E. Wood Post Drilling

To provide necessary breakaway characteristics, drill and notch timber sign posts in accordance with details shown in WSDOT *Standard Plan* G4-a.

F. Temporary Attention Devices

Attention devices such as flags are used only to draw the motorist's attention to newly installed warning or regulatory signs. Display these supplemental devices for a minimum of two weeks, and a maximum of one month.

G. Sign Storage

To prevent damage to sign face, store signs properly. Do not expose sign faces to dirt and water during storage.

Never store signs laying flat. Water accumulation between signs will cause sheeting failure. Store packaged signs indoors on edge. If packaged signs become wet, unpack immediately and separate the signs to allow drying. Provide ample space between signs to allow free air circulation and moisture evaporation from the face of each sign. Clothespins work well to provide a separation between the sign faces.

If outdoor storage is required for short periods, remove all packing materials so nothing is against the sign face. Store signs upright on edge in a clean area above the ground.

Sign Type	General Area	Sheeting Type
All red background signs (Stop, Wrong Way, etc.)	All	III or IV
Freeway/Highway Entrance Sign	All	III or IV
Regulatory Signs	Rural Urban	II III or IV
Warning Signs	Rural Urban	II III or IV
School Signs - FYG* (S1-1, S2-1, S4-3, and the "School" portion of S5-1, and S5-101)	All	VII
Route Markers (M Series Signs)	All	II
General Information (I Series)	All	II
Milepost Markers	All	II
Guide Signs (Backgrounds) • Ground Mounted • Overhead (Lighted) • Overhead (Not Lighted) • Letters, Border, Symbols	 All All All All	 II I III or IV III or IV
Blue and Brown Background Signs	All	II
Orange (Construction Signs)	All	I or II
Fluorescent Orange (Construction Signs)	All	IV or VII

*Fluorescent Yellow Green.

Table 2-3

Sign Message	Sign Number	RCW Number
BICYCLES MUST EXIT	R5-601	46.61.160
HITCHIKING PERMITTED	I7-901	46.61.255
HOV FACILITIES	R3-10, 11, 12, 13	46.61.165
LIMITED ACCESS	I2-601 and I2- 701	47.52.110
MINIMUM SPEED LIMIT	R2-4	46.61.425
NO STOPPING RESTRICTIONS	R8- SERIES	46.61.570
PARKING RESTRICTIONS	R7- SERIES	46.61.575
RANGE AREA	I2-401 and I2-501	16.24.060
RESERVED PARKING FOR DISABLED PERSONS	R7-801	46.61.581
SCHOOL SPEED LIMIT	S5-1	46.61.440
SLOW VEHICLES MAY USE SHOULDER	I8-501	46.61.428
SPEED LIMIT	R2-1	46.61.405
SPEED LIMIT, TRUCKS_____	R2-2	46.61.410
STOP & YIELD	R1-1 and R1-2	47. 36.110
WEIGHT RESTRICTIONS, ETC	R12 SERIES	46.61.450

Table 2-4

H. Sign Maintenance Responsibility — City Streets as State Highways

Responsibility for installing and maintaining signs on city streets that are part of the state highway system can be assigned to the department or to a local agency. This responsibility is based on the population of the city or town, as determined by the Office of Financial Management. On Fully Controlled Limited Access highways, the department is responsible for all traffic control devices, including signs, unless superseded by an agreement with a local jurisdiction. (See RCW 47.42, WAC 468-18-050, and *City Streets As Part of State Highways*, an agreement between the department and the Association of Washington Cities for further direction.)

Sign Maintenance Responsibility — Non-Limited Access Highways

Sign Type	Population Over 22,500	Population Under 22,500
Regulatory	City	State
Parking	City	City
Warning	City	State
Route Markers	State	State
Guide Directional (Prime)	State	State
Street Name	City	City
School	City	State
MIS Logo	City*	City*
Informational	City	City
DWI Victim Memorial	City	City

*The department may install these signs, based on a specific agreement with a city or town.

Table 2-5

I. Responsibility for Stop and Stop Ahead Signs

Stop Signs

In accordance with RCW 47.36.100, the state shall install and maintain all stop signs at the intersections of county roads with state highways. In accordance with RCW 47.24.020(13), the state shall install and maintain all stop signs at the intersections of city streets with state highways within the corporate limits of cities having populations less than 22,500.

Stop Ahead Signs

Where appropriate, local agencies install and maintain any required STOP AHEAD (W3-1, W3-1a) signs on the local road legs that intersect with state highways (RCW 47.24.020(12&13).

J. Controlling Vegetation Around Signs

Provide effective sign visibility by clearing away vegetation that grows in front of signs, obscuring full view. The department's maintenance crews do this work. Clear to the following dimensions:

Area Description	Distance	Width
Low Speed Urban	200 feet	Varies
Rural	500 feet	Varies
Freeways and All Guide Signs	800 feet	Varies

Table 2-6

- Distance is measured along the edge of traveled way, back, from the location of the sign
- Width varies. Clear from the edge of pavement to the edge of the sign that is farthest from the roadway, plus 5 feet; or to right of way

K. Sign Placement

MUTCD Section 2A provides basic information about sign location. Refer to *Design Manual* Chapter 820 guidelines for information on the selection of post dimensions, longitudinal placement, mounting height, and lateral placement of signs on state highways. Design guidelines also provide details for overhead sign installations, including vertical clearance, horizontal location, and service walkways. Installation layout details are contained in WSDOT *Standard Plans*.

2.2 Regulatory Signs

Regulatory signs alert motorists to applicable traffic laws or regulations, and provide information and instructions required for compliance. Place these signs where areas of mandate or prohibition begin and end.

A. Bicycle Prohibition Signing

Bicycle traffic is generally permitted on state highways except where restricted by regulation (see RCW 46.61.160). On highways that transition from permissive to restrictive, identify restricted sections in advance by installing signs that inform bicyclists of the upcoming prohibition, and give exit directions:

- On the mainline, install a BICYCLES MUST EXIT 1/4 MILE (R5-601) sign in advance of the prohibited area
- Install a BICYCLE MUST EXIT (R5-601with arrow) sign at the off-ramp
- Install PEDESTRIANS, HITCHHIKERS, BICYCLES PROHIBITED (R5-1002) sign at on-ramp entrances to prohibited areas

Design Manual Chapter 1020 discusses signing for bikeway facilities.

B. Signing for Auxiliary Climbing and Passing Lanes

For sections of state highway that feature ***auxiliary climbing*** lanes:

- Install a TRUCK LANE XXX FEET (R4-6) sign in advance of the climbing lane
- Install a SLOWER TRAFFIC KEEP RIGHT (R4-3) sign near the beginning of the climbing lane
- Where spacing allows, install a RIGHT LANE ENDS (W9-1R) in advance of the climbing lane terminus
- Install a PAVEMENT WIDTH TRANSITION (W4-2L) sign in advance of the climbing lane terminus
- (See Appendix 2-1)

For sections of state highway that feature ***auxiliary passing*** lanes:

- Install a PASSING LANE XXX MILES (R4-601) sign 1/4 to 1/2 mile in advance of the passing lane. This sign shows the approximate distance to the passing lane, measured to the nearest 1/4 mile
- Install a KEEP RIGHT EXCEPT TO PASS (R4-301) sign at the beginning of the passing lane
- Where spacing allows, install a RIGHT LANE ENDS (W9-1R) sign in advance of the passing lane terminus
- Install a PAVEMENT WIDTH TRANSITION (W4-2L) sign in advance of the passing lane terminus
- An optional NEXT PASSING LANE XXX MILES (R4-602) sign may be installed up to 500 feet beyond the passing lane terminus. This sign displays the approximate distance to the next passing lane
- (See Appendix 2-2)

Guidelines for the design of auxiliary climbing lanes and passing lanes are contained in *Design Manual* Chapter 1010.

C. Signing for Shoulder Driving

Shoulder driving is permitted on selected portions of ***two lane highways*** in accordance with RCW 46.61.428. Section 7.9 of this manual defines the highway characteristics required to designate a shoulder driving area. For sections of state highways where ***shoulder driving*** is permitted:

- Install a SLOW VEHICLES MAY USE SHOULDER (I8-501) sign at the beginning of the shoulder driving zone
- Supplement with a NEXT XXX MILES (I7-702) advisory distance plaque
- Supplement with a DAYLIGHT HOURS ONLY (I8-701) sign
- Repeat this signing at a maximum interval of 8 km (5 miles)
- Install an END SHOULDER DRIVING (I8-601) sign at the end of the designated shoulder driving zone
- (See Appendix 2-3)

D. Signing for Slow Vehicle Turnouts

For sections of state highways that feature ***slow vehicle turnouts*** as passing opportunities:

- Install a SLOW VEHICLES USE TURNOUTS NEXT XXX MILES (I8-101) sign in advance of the initial turnout
- Install the DELAY OF 5 VEHICLES ILLEGAL (I8-201) sign in advance of each turnout
- Install the SLOW VEHICLE TURNOUT XXX FT/MILE (I8-401) sign in advance of each turnout
- Install a SLOW VEHICLE TURNOUT "arrow" (I8-301) sign at the beginning of each turnout
- NO PARKING (R8-3) or NO PARKING SYMBOL (R8-3a) signs may be installed within the turnout area when required
- (See Appendix 2-4)

Guidelines for the design of slow vehicle turnouts are contained in *Design Manual* Chapter 1010.

E. Speed Limit Signs

Install SPEED LIMIT (R2-1) signs to display the maximum allowable speed as established by law or regulation. Where the speed limit is greater than 60 mph, or where a special speed limit is mandated for vehicles over 10,000 pounds gross weight, or vehicles in combination, install TRUCKS XX (R2-2) sign. Mount this sign below the standard speed limit sign. Speed limits signs shall be in multiples of 5 mph. On two-lane highways, locate speed limit signs:

- At urban area entry/exit points
- At intersections of state highways
- At major interchanges or intersections
- At locations having a change in speed limit
- At entrances to Washington State

In rural areas, locate speed limit signs at 10 to 20 mile intervals.

In addition to these criteria, where possible on multi-lane highways, locate speed limit signs on the far side of major intersections and 1,500 feet beyond acceleration lanes, in accordance with MUTCD Section 2E-32. Install signs on both sides of the traveled way on multi-lane divided highways. In areas where interchange ramps are closely spaced, conduct a traffic engineering analysis to determine the most effective intervals for posting speed limit signs.

Do not place speed limit signs between curve/turn warning signs and the curve or turn.

F. Speed Zone Signing

Install SPEED ZONE AHEAD (R2-5C) or REDUCED SPEED AHEAD (R2-5A) signs with supplemental speed plaques (R2-501) in advance of speed zone boundaries. This advance sign provides the motorist with an effective opportunity to decelerate to the lower speed with minimal braking. Conduct a traffic engineering analysis to determine the advance placement distance. Consider factors such as roadway geometrics, gravity deceleration, and the mph value of the speed reduction when making this determination.

Install a SPEED LIMIT (R2-1) sign at the speed zone boundary.

For all highways, locate signs for both directions of travel opposite one another at speed zone boundaries. Install signs on both sides of the traveled way on multi-lane divided highways. If existing highway features prohibit opposite installations, the signs may be installed a maximum distance of 300 feet apart, or offset up to 150 feet in either direction from the speed zone boundary. If these distance parameters cannot be met, the speed zone boundary may be changed by authorization of the State Traffic Engineer to allow for sign installation.

Where the speed limit is raised, install SPEED LIMIT (R2-1) sign and when appropriate, TRUCKS XX (R2-2) sign at the speed zone boundary. See Appendix 2-5.

G. Two-Way Left Turn Lane Signs

TWO-WAY LEFT TURN ONLY signs may be installed where a lane in the center of a highway is reserved for the use of left-turning vehicles in either direction and is not to be used for passing

or overtaking. The post-mounted (R3-9b) or the overhead mounted (R3-9) sign may be used to supplement pavement markings for the two-way left turn lanes. A plaque indicating BEGIN or END may be mounted above either sign to identify the limits of the two-way left turn area.

Additional WSDOT criteria apply to the use of two-way left turn lane signs:

- Install the initial sign near the beginning of the two-way left turn lane and repeat installation as necessary, based on an analysis of operating conditions
- BEGIN or END plaques should not be installed where a two-way left turn lane is temporarily interrupted by left turn channelization on either one or both approaches to an intersection

H. Yield Signs on Ramps

YIELD (R1-2) signs may be installed along on-ramps to freeways or expressways where adequate acceleration lanes are not provided.

Tables in *Design Manual* Chapter 940 are used to determine the appropriate length for the acceleration lane portion of an on ramp connection. This minimum length is based on the design speeds of the mainline and the ramp. Where the acceleration lane meets or exceeds the *Design Manual* minimum length requirements, a yield sign is normally not required.

Conduct a traffic engineering analysis to determine the appropriate application of yield signs for on-ramp connections:

- If the acceleration lane does not meet the *Design Manual* minimum length
- If ramp conditions, such as sight distance, gradient, etc., inhibit the effective acceleration speed of merging vehicles

Install the yield sign so that it is not visible to mainline traffic.

I. Range Area Signs

Install the RANGE AREA sign in accordance with RCW 16.24.060, wherever a state highway enters an open range area. Repeat signing at points designated by the governing county commissioners. Install the LEAVING RANGE AREA sign where a state highway leaves an open range area.

J. No Pedestrian Crossing Sign

Install a NO PEDESTRAIN CROSSING sign (R9-3a) at a signalized intersection where pedestrian crossing is prohibited. Locate the sign so that it is visible to all pedestrians who may consider crossing, normally on the opposite side of the roadway in line with the travel path of the pedestrian. If supplemental signing is called for, install USE CROSSWALK, R or L sign (R9-3B) below this sign.

K. Lane Use Control Sign

Install appropriate LANE-USE CONTROL sign (R3-8, R3-801, R3-802, R3-5A) between the applicable traffic signal heads to indicate allowable through/turning movements.

L. Unmuffled Compression Brakes Signs

Under purview of RCW 46.37.390, it is against the law to use unmuffled compression brakes. The department posts signs (R4-605) accordingly, just inside state boundaries at border crossings used by trucks, and along the ramps to or from weigh stations as sign spacing allows. Do not post these signs at other locations.

M. Compression Brake Prohibition Signing

The department does not regulate compression brake use. Compression brake regulations are enacted by local agencies. Local agency compression brake prohibitions are typically noise regulations rather than traffic regulations, intended for environmental purposes rather than traffic safety purposes. Thus, signs prohibiting compression brake use are a local agency issue in which the department becomes a partner through a local regulation that includes state highways.

There is no clear mandate in state law or Department of Ecology (DOE) regulations that assist the regions in responding to local agency requests for compression brake prohibition signs. Further, the DOE noise program was terminated in 1982. Consequently, it is necessary to interpret

the limited guidance in a manner that assures highway safety is not compromised, that signs are installed with a reasonable degree of uniformity statewide, and that the desires of local agencies are respectfully considered.

RCW 70.107.060(3) provides that a local government may, upon finding that *special conditions* necessitate such requirements, control noise sources, or impose noise limits that are different from those adopted or controlled by DOE. Such locally imposed noise limits are invalid unless first approved by DOE. If DOE does not approve or disapprove noise limit standards submitted by local jurisdictions within 90 days, such standards are deemed to be approved. Accordingly, since DOE has no noise program, any local agency noise regulation submitted to DOE is approved by default 90 days past the date of submittal.

Key to the subject is the interpretation of "special conditions," as required by RCW 70.107.060(3). The department considers highways, residential areas, and commercial areas to be common conditions rather than special conditions. Therefore, the "special conditions" cited in a local agency noise ordinance are evaluated by the regions, in consultation with the Headquarters Traffic Office, prior to the installation of compression brake prohibition signs.

Where special conditions are deemed to exist, and where sign spacing is available, the department will install signs (R4-604) to reflect the nature of the prohibition cited in the local ordinance as follows:

- Along access controlled routes approaching restricted areas, install such signs beyond the junction of major interchanges accessed by trucks. Locate these post-interchange signs between the route marker assembly and the speed limit signs. For locations approaching corporate limits, where these installations would create sign crowding, the signs may be installed below the city entrance maker, on each approach to the corporate limits
- Along non-access controlled routes outside corporate limits, install such signs upon leaving corporate limits, and beyond the junction of major intersections accessed by trucks, not to exceed one sign every 5 miles

In addition, the local agency shall agree to partner with the department in the following manner:

- For each situation, the local agency must have a valid noise ordinance (submitted to DOE at least 90 days prior to contacting the department), and must agree to pay the fabrication and installation costs for the original installation and subsequent maintenance installations
- Along non-access controlled state routes within corporate limits (city streets that are also state highways, RCW 47.24), cities or towns may install the signs at their discretion

2.3 Warning Signs

Warning signs alert motorists to unexpected conditions on or adjacent to state highways that require extraordinary attention. Install these signs in advance of conditions that require special attention of the motorist. The table for advanced placement of warning signs, located in MUTCD Section 2C, offers guidance by providing minimum advance placement distances, based on vehicle speeds and location specific conditions. Determine appropriate installation of these signs on the basis of MUTCD Section 2C guidelines, traffic engineering analysis, and reasonable judgment.

Minimum ***Warning*** sign sizes:

Highway Type	Minimum Warning Sign Size
Freeways and Expressways	48″
Multilane Streets	36″
Conventional Roadways	30″

Table 2-7

A. Added Lane Sign

An ADDED LANE (W4-3) sign may be used in advance of a point where two roadways converge and merging movements are not required. The sign should be used at all added lane conditions to eliminate unnecessary mainline lane changes. If the mainline sign is not visible from both roadways, a sign may be installed on the converging side of each roadway.

B. Chevron Alignment Signs

CHEVRON ALIGNMENT (W1-8) signs may be installed on non-illuminated circular interchange ramps, or on other sharply curving alignments where run off the road crashes have demonstrated an operational deficiency. Install signs in series and configure arrays to include a minimum of three signs, with at least two signs visible to the motorist throughout the curve.

C. Deer Crossing Sign

Install DEER CROSSING (W11-3) signs to alert motorists when approaching an area where deer or elk may unexpectedly enter the roadway at random or numerous locations.

Install this sign only in areas where motorist warning is required. Consider information from the following sources when determining appropriate installation:

- The Headquarters Environmental Affairs Office records and compiles deer kill data reported by WSDOT personnel
- Records of accidents with wildlife which are maintained by the Transportation Data Office, Accident Data Section of the Planning and Programming Service Center
- The Department of Fish and Wildlife's regional biologists who have additional information on concentrations and migratory routes of deer

Existing DEER CROSSING sign locations should be reviewed every five years to determine if the location still warrants a sign.

D. Exit Advisory Speed Sign

Install the EXIT ADVISORY SPEED (W13-2) sign at freeway/expressway exit ramps to inform motorists of the recommended speed, based on traffic engineering analysis, for negotiating the alignment. Locate the sign along the right shoulder of the deceleration lane prior to the exit gore or ramp entrance, at a point which allows the motorist time to make a safe slowing and exiting maneuver.

If an advisory speed condition is located on the ramp, well beyond the exit gore, install a standard warning sign with an advisory speed plaque, in accordance with Section 2C-3 of the MUTCD.

E. Ramp Advisory Speed Sign

Install the RAMP ADVISORY SPEED (W13-3) sign to inform motorists of the recommended speed, based on traffic engineering analysis, for negotiating a ramp alignment with curvature or other unexpected conditions. Use this sign on freeway/expressway entrance ramps, and freeway/expressway to freeway/expressway connection ramps. Locate this advance sign at a point which allows the motorist time to make a safe slowing maneuver before entering a turn or curve.

If an advisory speed condition is located well beyond the gore or ramp entrance from surface streets, install a standard turn or curve sign with an advisory speed plaque (W13-1) in accordance with Section 2C-3 of the MUTCD.

F. Fire Station Signs

FIRE STATION (W11-8) signs may be installed at locations where there is limited sight distance to the fire station road approach or where the approach is in an area where a motorist would not normally expect to see a fire truck enter the roadway.

Conduct a traffic engineering analysis at each location to determine appropriate applications for this sign.

Fire station warning signs are not generally used at intersections.

G. Grated Bridge Deck Sign

Install the GRATED BRIDGE DECK sign (W8-2101) in advance of bridges with grated decks. Deck grates may affect the handling

characteristics of some vehicles, particularly motorcycles and bicycles.

H. Grooved Pavement Sign

Install the GROOVED PAVEMENT sign (W8-2001) in advance of highway sections where the finish of the roadway surface features closely spaced longitudinal grooves. The grooves may affect the handling characteristics of some vehicles, particularly motorcycles and bicycles. Do not use this sign in areas of rutted pavement.

I. Hairpin Curve Sign

WSDOT criteria recommend installing the hairpin curve sign (W1-901L,R) at locations where a horizontal curve alignment contains a central angle of 135 degrees or greater, and:

- A traffic engineering analysis of roadway, geometric, and operating conditions shows the recommended curve speed to be 30 mph or less; or
- The recommended curve speed is equal to or less than the speed limit established by law or regulation for that section of highway

To provide additional guidance, the hairpin curve sign may be supplemented with:

- Advisory speed plaque (W13-1)
- Large arrow sign (W1-6)
- Chevron alignment signs (W1-8)

J. Truck Tipping Signs

The special TRUCK TIPPING sign may be installed where there is a history of truck tipping accidents. Install this sign in addition to, not in lieu of, standard curve or turn, large arrow, and chevron warning signs. Conduct a traffic engineering analysis to determine the recommended speed at which trucks can negotiate an alignment. Display this recommended speed on an advisory speed plaque (W 13-1) below the TRUCK TIPPING sign.

K. Intersection Warning Signs

Install the INTERSECTION WARNING (W2 Series) sign on through highways to indicate the presence of an obscured intersection. Consider installing this sign at locations where traffic entering from the side approach is not continuously visible to traffic on the through highway for the minimum advance distance suggested in the table for advanced placement of warning signs located in MUTCD Section 2C. These signs may be modified to show offset geometrics of intersection or approach curves when necessary. Width of lines used to show roadways may vary to demonstrate the predominate highway. Intersection warning signs are not normally used at signalized or channelized/illuminated intersections.

- Supplement the INTERSECTION WARNING sign with the black on yellow ROAD NAME (D3-201) sign
- Install white on green ROAD NAME (D3-302) signs 200 feet or more in advance of intersections where the INTERSECTION WARNING sign is not used (see Section 2.4.F.1 of this manual)

Refer to the MUTCD installation criteria for railroad/intersection signs W10-2, W10-3, and W10-4.

L. Low Clearance Signing

The maximum legal vehicle height permitted on state highways is 14′ (RCW 46.44.020). At the direction of the MUTCD, and through operational experience, a 15″ buffer (including 3″ for frost heave) has been added to the 14′, creating a minimum threshold of 15′3″ for low clearance warning signs.

- For locations where the clearance is 14′ or greater, but less than 15′3″, install the LOW CLEARANCE (W12-301), or LOW CLEARANCE W/ARROW (W12-302) sign on overhead structure, or install the advance LOW CLEARANCE (W12-2) sign on the right shoulder. Refer to the table for advanced placement of warning signs, located in MUTCD Section 2C for advanced placement distance
- Where the clearance is less than 14′, install the LOW CLEARANCE (W12-301) or LOW CLEARANCE W/ARROW (W12-302) sign on the structure. In addition, install LOW CLEARANCE (W12-2) sign in advance of

the closest intersecting road that provides a detour around the low clearance impediment. Supplement this sign with an ADVISORY DISTANCE (W13-501) sign, showing the distance to the impediment. Install an additional advance LOW CLEARANCE (W12-2) sign in accordance with the table for advanced placement of warning signs, located in MUTCD Section 2C

- In situations where clearance may vary greatly, such as arched structures or tunnels, make a specific determination regarding the number of signs required on the structure to provide effective clearance information. If any portion of the roadway, for example at the edge stripe, does not provide minimum legal clearance, the advance signing should include this information

Display the low clearance to the nearest inch not exceeding the actual clearance. If surface overlays decrease the overhead clearance, measure the clearance and if necessary, revise sign message accordingly.

Vertical clearance for all overhead signs shall be in accordance with the *Design Manual* Section 820.

M. Merge Sign

Install the MERGE (W4-1) sign to warn motorists of upcoming merging movements, in advance of a point where two roads converge and no turning conflicts occur. Consider installing this sign if the minimum visibility distance for an alignment convergence is less than the *Condition A* value, suggested for the given operating speed in the table for advanced placement of warning signs located in MUTCD Section 2C. Place the sign on the major alignment, in advance of the point where two roads converge. An additional sign may be placed on the entering roadway as a reminder. Do not use this sign where roads converge with added lanes.

N. Stop Ahead/Signal Ahead Signs

STOP AHEAD (W3-1a) and SIGNAL AHEAD (W3-3) signs are generally required only if the stop sign or the traffic signal is not visible in advance of the minimum distances provided in the table for advanced placement of warning signs located in MUTCD Section 2C. Refer to Section 2.1.F of this manual to determine responsibility for installation and maintenance of these signs.

O. Turn and Curve Signs and Advisory Speed Plaques

Install the TURN (W1-1) sign where traffic engineering analysis of roadway, geometric, and operating conditions indicates an advisory speed for a horizontal turn to be 30 mph or less, and:

- This advisory speed is 5 mph or more below the legal speed limit
- Install supplemental advisory speed plaque (W13-1) if this advisory speed is 10 mph or more below the legal speed limit, or where traffic engineering analysis indicates the need to advise drivers of the recommended speed

Install the CURVE (W1-2) sign where traffic engineering analysis of roadway, geometric, and operating conditions indicates an advisory speed for a horizontal curve that ranges from 35 mph to 65 mph, and:

- The advisory speed is 5 mph or more below the legal speed limit
- Install supplemental advisory speed plaque (W13-1) if the recommended speed is 10 mph or more below the legal speed limit, or where traffic engineering analysis indicates the need to advise drivers of a recommended speed

Advisory speeds on curves are indicated by ball-banking instrument readings as follows:

Advisory Speed (mph)	Maximum Ball Bank Reading
20 mph or less	14
25 and 30 mph	12
35 mph and greater	10

Table 2-8

P. Pavement Ruts Sign

Install PAVEMENT RUTS signs (W8-2201) in advance of highway sections where longitudinal wheel track ruts may cause unexpected move-

ments when vehicles change lanes or exit the roadway. The Regional Traffic Office should determine appropriate placement of these signs, based on traffic engineering analysis. On multi-lane divided roadways, post signs on both sides of the roadway.

Q. Transit Stop Ahead Sign

Install the TRANSIT STOP AHEAD (W14-1101) symbol sign on state highways in advance of transit vehicle stop zones. In accordance with WAC 468-46, this sign shall be installed when:

- The transit stop has been approved by the Regional Traffic Office
- The transit stop is located in an area that is not incorporated
- The transit vehicle stops *upon the roadway* to receive and discharge passengers
- There is limited sight distance condition

Install the sign at locations where the transit vehicle, when stopped upon the roadway, is not visible from a minimum advance distance of 500 feet. To locate the sign, use advance distances from the table for advanced placement of warning signs located in MUTCD Section 2C.

R. Snowmobile Signs

Install SNOWMOBILE Warning signs where motorists may encounter snowmobiles in accordance with RCW 46.10.110.

S. Bikes on Road Signs

Install BIKES ON ROAD (W11-101) signs in areas where motorists may encounter bicyclists on the roadway. These signs help mitigate road use conflicts on state routes with narrow paved shoulders. Consider using these signs on sections of state highway where the paved shoulder width is less than 4 feet and one or more of the following conditions are met:

- Average Daily Traffic volume is greater than 1,700 vehicles, based on the most current WSDOT *Annual Traffic Report*
- The state highway is part of a recreational or commuter bicycle route that is officially recognized by the department, or a county or regional transportation organization, such as an RTPO, or MPO
- There is a documented history of complaints and conflicts between bicyclists and motorists

Use these signs in conjunction with the BICYCLISTS signs (W11-1). Do not install these signs on state highways that have designated bicycle lanes.

T. Left Turns Ahead Signs

The MUTCD does not provide guidance for the use of the LEFT TURNS AHEAD (W2-601) sign. This sign may be used to mitigate conflicts at intersections where traffic engineering analysis indicates that a left turn movement is contributing to operational deficiencies. Install this sign at locations where:

- The intersection is not channelized
- Left-turning vehicles may queue in the traveled lane
- Approach to intersection does not provide adequate stopping sight distance

U. Object Markers/Lateral Clearance Markers

Install object markers to identify hazardous objects and conditions located within or adjacent to the roadway. Objects located close enough to the edge of the traveled way to present a hazard require a lateral clearance marker (W12-401 L/R). These hazards may include, but are not limited to underpass bridge piers and abutments, barriers, handrails, and culvert headwalls. Object markers may be installed at some locations where the hazard is not presented by a physical object, but where conditions such as narrow shoulder drop-offs, small traffic islands and abrupt changes make it undesirable for the motorist to leave the roadway. The MUTCD states, “the inside edge of marker (W12-401 R/L) shall be in line with the inner edge of the obstruction.” The mounting height to the bottom of the lateral clearance marker is 4 feet above the lane edge.

Impact Attenuator Markers (W12-501 and W12-502) are used to identify the nose section of an impact attenuator. Install a W12-501 when traffic approaching an attenuator passes only one

side of the attenuator; install a W12-502 when approaching traffic passes on both sides of the attenuator.

V. Watch for Ice Signs

The use of WATCH FOR ICE signs to alert motorists to roadway surface conditions caused by weather shall be discontinued, except where there are "intelligent" signs linked to pavement sensors.

"Intelligent" WATCH FOR ICE SIGNS may also be posted where some natural or manmade feature causes the highway to be consistently wet without reference to immediate weather conditions and there is substantial likelihood that cold temperatures will often occur and cause ice on the highway in that specific and limited location. Examples of this limited kind of condition may include, but are not limited to:

- A waterfall or some industrial plant proximate to a highway that consistently causes spray
- Moisture from vapor on the highway
- Wetness from drainage problems for which there has been no feasible short or long-term design or maintenance solution

Any decision to post an Ice sign for these reasons must be reviewed and approved by the State Traffic Engineer, based on traffic engineering analysis, and in consultation with the appropriate Regional Traffic Engineer.

2.4 Guide Signs

Overview — These signs serve as primary navigational tools for the unfamiliar motorist on state highways. Guide signs provide information about route designations, distances and directions to destinations, motorist services, and other geographical, recreational, or cultural points of interest.

Limit the number and spacing of these signs; this allows the driver adequate time to read and respond to the messages. When new signs are being added to highways that serve urban and suburban built up areas, use reasonable judgment to avoid sign proliferation. This may require the removal or relocation of existing signs.

Pursuant to MUTCD Sections 1A-1 and 1A-3.1, sign messages that provide advertising or commercial information are not allowed.

Types of Guide Signs — The guide sign group consists of several types of signs. ***Route Markers*** clearly display the official highway number and direction of travel. ***Primary Guide Signs*** (advance guide signs, exit directional signs and destination signs) direct motorists along state highways to exit points for principal destinations served by intersections or interchanges; and to control cities that are located on intersecting state routes. ***Distance Signs*** display distances to destinations and junctions along state routes. ***Supplemental Guide Signs*** provide direction to major traffic generators or other points of interest. ***Follow-Through*** signs provide continued direction, beginning at the point of exit from the state highway, following through to the destination displayed on the guide sign. ***General Motorist Information Signs*** provide information for the unfamiliar motorist about services available at upcoming intersections and interchanges.

Guide Signs on Conventional Roads — Install guide signs on conventional roadways in accordance with guidelines in MUTCD Section 2D. Advance destination and destination signs should be used on through routes at junctions of state highways and at junctions of county roads or city streets that lead to significant destinations. Include numbered state route markers (D1-501) on the destination signs where appropriate.

Guide Signs on Expressways and Freeways — Install guide signs on expressways and freeways in accordance with guidelines in MUTCD Sections 2E and 2F. Generally, this consists of one or two advance guide signs, an exit directional sign, one supplemental guide sign, and other signs as shown. The minimum spacing is 800 feet between guide signs. Install only one supplemental guide sign, approximately halfway between the advance destination sign and the destination sign.

A. Route Marker Signs

General — The MUTCD requires the use of route markers to identify and mark all numbered

highway systems. Each highway system type (e.g., interstate, state route, US) has a uniquely designed route marker. Use the specific route marker only on the appropriate route and approaches to the route. The following criteria are applied when using route markers:

- Install route marker signs at:
  - Entrances to Washington State
  - Beyond interchanges or on the far side of intersections with other numbered routes, or major local roads
  - Beyond city limits
- Install the cardinal direction sign (M3 series) above route marker sign
- Install junction signs where appropriate

In urban and residential areas, install route markers at intervals that will keep an unfamiliar motorist informed of the route.

B. Primary Guide Signs

General — Advance guide, exit directional, and destination signs provide guidance to destinations served by upcoming exits or intersections. Provide the unfamiliar motorist with the most effective message, and ensure consistency by displaying the same message on all signs installed in series.

MUTCD guidelines define the required and allowable numbers of advance guide signs for various roadway types and interchange classifications. One exit directional or destination sign is located immediately prior to the exit or intersection. The MUTCD guidelines also provide installation location, and letter/legend criteria for these signs.

Display a maximum of two destinations on a single primary guide sign. A sign support having two or more signs may display a maximum of three destinations.

Destination Selection — Display the primary destination(s) served by the upcoming exit or intersection. This could include the name of a city, street, junction with another numbered highway or control city along the intersecting route, or other traffic generator. Use the same destination selection criteria for guide signs on conventional roads, freeways, and expressways.

Control City/Terminal Destination Signing — As provided in the MUTCD guidelines, use a control city or terminal destination on guide signs at junctions with other highways. Choose the primary destination (control city or terminal destination) for selected state routes from those given below:

SR 2
EB from Everett ..... Wenatchee
EB from Wenatchee ..... Spokane
EB from Spokane ..... Newport
WB from Idaho State Line ..... Spokane
WB from Spokane ..... Davenport
WB from Davenport ..... Wenatchee
WB from Wenatchee ..... Everett

SR 5
NB from Vancouver, WA ..... Seattle
NB from Seattle ..... Vancouver, B.C.
SB from Vancouver, B.C. ..... Seattle
SB from Seattle ..... Portland

SR 12
EB from Aberdeen ..... Olympia
EB from Elma ..... Centralia
EB from Interstate 5 ..... Yakima
EB from Yakima ..... Richland
EB from Pasco ..... Walla Walla
EB from Walla Walla ..... Lewiston
WB from Idaho State Line ..... Walla Walla
WB from Walla Walla ..... Pasco
WB from Richland ..... Yakima
WB from Yakima ..... Interstate 5
WB from Interstate 5 ..... Aberdeen

SR 14
EB from Vancouver I-82/Kennewick
WB from I-82 ..... Vancouver

SR 20
EB from Keystone ..... Anacortes
EB from Anacortes ..... Burlington
EB from Burlington ..... Okanogan
EB from Okanogan ..... Colville
EB from Colville ..... Newport
WB from Idaho State Line ..... Colville
WB from Colville ..... Okanogan
WB from Okanogan ..... Burlington

WB from Burlington ..... Anacortes
WB from Anacortes ..... Coupeville

SR 82
EB from Ellensburg ..... Yakima
EB from Yakima ..... Richland
EB from Richland ..... Pendleton
WB from Oregon State Line ..... Kennewick
WB from Kennewick ..... Yakima
WB from Yakima ..... Ellensburg

SR 90
EB from Seattle ..... Ellensburg
EB from Ellensburg ..... Spokane
EB from Spokane ..... Coeur d'Alene
WB from Idaho State Line ..... Spokane
WB from Spokane ..... Ellensburg
WB from Ellensburg ..... Seattle

SR 97
NB from Oregon State Line ..... Yakima
NB from Ellensburg ..... Wenatchee
NB from Wenatchee ..... Okanogan
NB from Okanogan ..... Penticton, B.C.
SB from Canadian Border ..... Wenatchee
SB from Wenatchee ..... Ellensburg
SB from Yakima ..... Goldendale

SR 101
NB from Oregon State Line ..... Aberdeen
NB from Aberdeen ..... Port Angeles
NB from Olympia ..... Port Angeles
SB from Port Angeles (East Leg) ..... Olympia
SB from Port Angeles (West Leg) ..... Aberdeen
SB from Aberdeen ..... Astoria

SR 182
EB from SR 82 ..... Richland
EB from Richland ..... Pasco
WB from Pasco ..... Richland
WB from Richland ..... SR 82/Yakima/Pendleton

SR 195
NB from Idaho State Line ..... Spokane
SB from Spokane ..... Lewiston

SR 205
NB from Oregon State Line ..... Seattle
SB from Jct. I-5 ..... Salem

SR 395
NB from Oregon State Line ..... Kennewick
NB from Pasco ..... Spokane
NB from Spokane ..... Colville
NB from Colville ..... Grand Forks, B.C.
SB from Canadian Border ..... Spokane
SB from Ritzville ..... Pasco

SR 405
NB from Jct. I-5 (Southcenter) ..... Renton
NB from Renton ..... Bellevue
NB from Bellevue ..... Everett
SB from Jct I-5 (Lynwood) ..... Bellevue
SB from Bellevue ..... Renton

If a terminal destination is not required or if space is available for a second destination, display the destination that will benefit the greatest number of motorists. Consider the following destinations when making this determination:

- A city or town situated at or near a major highway junction; or the major highway junction route marker if junction is located prior to a city or town
- The name of the cross-road or street
- A second major city or town on the route
- Other major destinations such as: Mountain passes on primary highways, National parks, and the Seattle-Tacoma or Spokane International Airports

C. Distance Signs

General — MUTCD guidelines permit distance signs to display up to three destinations. In addition, the following criteria should be observed:

- Locate signs in rural areas at 10 to 15-mile intervals
- Locate signs beyond city limits or urban boundaries
- Locate signs beyond intersections and interchanges of numbered routes
- Locate signs at entrances to Washington State

Where two or more of these location conditions occur within 10 miles, sign the most effective location.

Destination Selection — Use the top line to identify the next city with services available, or the next intersected route number. The second line can be used to identify communities of general interest and may be varied on successive signs to provide maximum information for the motorist. Display the next control city or terminal destination on the third line. Use the same destination selection criteria for guide signs on conventional roads, freeways, and expressways.

Determining Mileage Display on Distance Signs — For Freeways and Expressways, display the distance in miles from the sign to the first interchange/intersection that provides motorist services within the destination city corporate limits, or the distance in miles from the sign to the interchange/intersection that provides destination signing to the City Center. For conventional highways, display the distance in miles from the sign to the boundary of the destination city corporate limits. For destinations such as Mt. Rainier National Park, display the distance to the park boundary.

D. Supplemental Guide Sign

General — Supplemental guide signs direct the unfamiliar motorist to destinations that are significant traffic generators, or other points of interest that cannot be displayed on primary guide signs. A supplemental guide sign may display a maximum of two destinations. It may be necessary to replace existing destinations with more important ones as development occurs. MUTCD guidelines define appropriate application and installation location for these signs on expressways and freeways. No more than one supplemental guide sign should installed on each interchange approach.

Destination Selection — In some cases, essential messages cannot be included on primary guide signs due to space limitations. Place these messages on supplemental guide signs with priority over other supplemental sign messages.

State law requires the department to install and maintain signing to State Parks located within 15 miles of interstate highways (RCW 47.36.290). These destinations have first priority on supplemental guide signs located on interstate highways. State law also requires signing from state highways to regional shopping centers that meet specific criteria (RCW 47.36.270).

The largest category of destinations to consider for supplemental guide signing is traffic generators. Although the department receives numerous requests for these signs, it is not possible to sign for all traffic generators that warrant signing. The following information offers prioritized selection criteria to aid in determining the most appropriate destinations for supplemental guide signs.

Selection Criteria Factors for Supplemental Destinations — Priority Order

1. **Primary Guide Sign Over-Flow Messages** In some cases, appropriate messages cannot be included on primary guide signs due to space limitations. Place these messages on supplemental guide signs with priority over other supplemental sign messages.

2. **Statutory Selection** — Signing to State Parks from interstate highways and signing to regional shopping centers from state highways has priority over other traffic generators.

3. **Traffic Generator Volume** — This signing should serve an essential traffic control function; traffic generators with the greatest traffic volume should be given priority.

4. **Local Consensus** — Local agency partnership is an important consideration. Routing traffic onto local roadways may impact local traffic patterns. Determine if signing to a traffic generator will impact local roadway traffic operations. Seek local agency concurrence with proposed signing location.

5. **Nearest Interchange/Intersection** — Determine if the sign will be located at the interchange or intersecting road that provides the most direct route to the traffic generator. In general, avoid signing to destinations that require complex navigation on multiple highways, unless the activity is of national significance. Determine if the local agency concurs with proposed signing.

6. **Distance From Route to Destination** — Determine if the traffic generator lies within the prescribed distance criteria for the type of destination being signed (see categories below).

7. **Follow-Through Signing** — Determine if follow-through signing is required to direct the unfamiliar motorist to the traffic generator. The local agency must concur with proposed signing and be willing to assume responsibility for installation and maintenance of follow-through signs. Refer to Section 2.4.E for further information regarding follow-through signing.

8. **AASHTO Guidelines for Selecting Traffic Generators Adjacent to Freeways** — Determine if the traffic generator meets or exceeds criteria contained in this AASHTO publication.

9. **National/Regional/Local** — Establish priority based on scope of recognition. Prioritize traffic generators that are nationally recognized over traffic generators that have state or regional recognition, and regional destinations over local points of interest.

Supplemental Guide Sign Destination Types (Non-Priority)

This non-priority list of traffic generator types may aid in determining the most appropriate destinations for supplemental guide signs. These are general categories, a traffic generator may cross over into several groups.

Multi-Modal

Airports
Amtrak/Other Railroad
Ferries
Park and Ride Lots

Heritage

Indian Reservations
Military Installations
Natural/Cultural/Historic Attractions
Scenic Byways

Recreational

Fairgrounds
National Parks
Recreational Areas
Stadiums (Sports Facilities)
Colleges/Universities
USFS (HQ's Facilities/Campground)

Industrial/Commercial

Business Routes
Ports/Port Districts
Industrial Parks

Section 2.4D.11 lists traffic generators that normally **do not** warrant signing. Evaluate the given interchange and select the destinations that provide the most benefit to the motorist.

Destination Selection Criteria and Installation Details for Specific Types of Traffic Generators

To warrant sign messages on supplemental guide signs, traffic generators must meet these criteria. Appendix 2-6 contains these criteria in a table format. Supplemental guide signing for these traffic generators shall be installed according to the following details.

1. **State Parks**

Overview — The department provides signing along state highways for routes leading to state parks under purview of RCW 47.36.290. The State Parks and Recreation Commission is responsible for any State Park signing route not located on a state highway. Parks within 15 miles of an interstate highway will be signed from the interstate, including follow through signing on any state route that connects the interstate to the park. Do not install mainline signing until all follow through signing is in place.

All signs shall have white letters, symbols, and border on a brown background. The Headquarters Traffic Office maintains an inventory of the recreational symbols to be used at each state park.

Freeways

Mainline — Install supplemental guide signs displaying the name of the state park and a directional message, such as NEXT RIGHT, in advance of the interchange off-ramp. If a park has restricted hours or days of operation, add signs displaying the operating schedule to the supplemental sign assembly.

Ramp — Install directional signs with the message "STATE PARK" and a maximum of four symbol plaques for each sign assembly. Display the mileage to the park from the ramp terminal, using 1/4 mile increments if the distance

is less than one mile. If the park does not have camping facilities, display the message "NO CAMPING" in place of one of the symbol plaques.

Conventional Roadways

To provide guidance to state parks from conventional roadways, install signs displaying the name of the park, the NEXT RIGHT/LEFT directional message and a maximum of four recreational symbol plaques. If the park does not have camping facilities, display the message "NO CAMPING" in place of one of the symbol plaques. If a park has restricted hours or days of operation, add signs displaying the operating schedule to the directional assembly.

At the intersection of a state route, and a roadway leading to a state park, install a white on brown D1-101 with the message "STATE PARK" and a directional arrow. Display the mileage to the park from the intersection, using 1/4 mile increments if the park is less than one mile from the intersection.

2. **Regional Shopping Centers**

WAC 468-95-025 requires signing to regional shopping centers when all of the following criteria are met:

- Shopping center has greater than 500,000 square feet of retail space for lease
- Shopping center contains at least three major department stores that are owned by a national or regional chain organization
- Shopping center is located within 1 mile of a state highway
- Shopping center must generate a minimum of 9,000 daily one-way trips
- Sign space is available for installation as specified in the MUTCD
- Supplemental follow-through directional signing is required if the shopping center is not clearly visible at the point of exit from the main traveled way

All follow-through signing must be in place prior to installing supplemental guide signs. All costs associated with installing and maintaining signs shall be the responsibility of the shopping center.

3. **Airports**

Airports are eligible for signing if they are included in the National Plan of Integrated Airport Systems and classified as air carrier, commuter or reliever, or general aviation airport and meet the following criteria:

- The airport is associated with an area population of 10,000 or more
- The airport is located within 5 miles of interchange or intersection
- The airport runway shall be paved, lighted, and 2,500 feet, or more, in length
- The airport is municipally owned, or privately owned, and substantially used for commercial enterprise with the following minimum number of regularly scheduled commercial flights per day:
    - 35 flights per day in major metropolitan area (greater than 50,000)
    - 20 flights per day in an urban area (5,000-49,999)
    - 15 flights per day in urban areas
- Airports at remote locations serving a smaller population may be signed when their location is not obvious

Contact WSDOT's Aeronautics Division to determine if a specific airport meets these criteria. Airports that have scheduled flights can be signed with the airport name. All other municipal airports will be signed with the airport symbol or with the word message "Airport."

Existing signs not meeting these criteria may remain in place.

4. **Rail Passenger Stations**

Install signing to Amtrak and other rail passenger stations as described below. In some cases, Public Transit Authorities may choose to enter into a partnership with the department regarding signing issues. This may include the use of logo signs that have been approved by the Public Transit Authority and the department, as the standard guide sign. Use these guidelines to install signing that directs traffic from state highways to Amtrak and other passenger rail stations:

- Conventional Roadways — Use Amtrak symbols or approved logo signs in the trailblazer format with the appropriate directional arrows
- Multilane Highways:
  - If there is enough space to install an individual feature sign, the Amtrak symbol plaque or approved logo sign may be placed alone on a green background sign panel with either of these messages: "NEXT RIGHT" or "EXIT XXX" (see Appendix 2-7a)
  - When there is not enough space to install an individual feature sign, the Amtrak symbol plaque or approved logo sign may be installed below the advance exit or the exit directional sign on the post closest to the traveled way (see Appendix 2-7b)
  - If the sign cannot be installed in accordance with the details above, the Amtrak symbol plaque or approved logo sign may be installed below the supplemental guide sign, on the post closest to the traveled way (see Appendix 2-7c)
  - Install Amtrak trailblazer signs or approved logo signs along freeway ramps or at ramp terminals. All trailblazer signs must be in place before any mainline signs are installed
  - The Amtrak symbol plaque or approved logo sign may be installed as part of a multi-modal transportation logo board, along with approved symbols for other modes of transportation

If none of the above is possible, the sign shall not be installed.

5. **Colleges and Universities**

Provide signing along interstate and state highways to colleges, universities, and public technical schools in accordance with the following criteria:

Interstate Highways

- Install signing if the main campuses of state colleges and universities are located within 5 miles of an interstate highway. Where two interstate highways are within the 5 miles limit, sign from the nearest one
- Signing to state college and university satellite campuses, other public or private colleges and universities, and technical schools is the same as above. Where two or more colleges or universities share a common campus, enrollments may be combined to meet enrollment criteria. If this and all other criteria are met, multiple facilities may be displayed on guide signs. In addition, the institution:
  - Must be a regional institution
  - Must have total enrollment (including part time and full time) of:
    - 4,500 students in a major metropolitan area (50,000 or greater)
    - 2,500 students in an urban area (5,000-49,999)
    - 1,000 students in a rural area
  - Must have accreditation — To determine if a Washington state institution of higher education is duly accredited, contact the Council on Colleges of the Northwest Association of Schools and Colleges. A list of Washington's accredited schools is available on line at the agency website: www.cocnasc.org. This agency also has accurate enrollment data. The agency can be contacted by phone at (425) 827-2005 for information about a school accredited outside the northwest region which operates a satellite campus in Washington.

Other State Highways

- Install signing if the main campuses of state colleges and universities are located within 5 miles of a state highway. Where two state highways are within the 5 miles limit, sign from the nearest one

All other criteria are the same as those for interstate highways.

6. **Event Venues — Arenas, Auditoriums, Convention Halls, Fairgrounds, Stadiums**

Event venues may be signed with white on green supplemental guide signs if the following requirements are met and sign space is available.

- Major Metropolitan Area (population 50,000 or greater) — The venue must be within 2 miles of the state highway, and the annual attendance at the facility must be at least 300,000
- Urban Area (population 5,000-49,999) — The venue must be within 2 miles of the state highway, and the annual attendance at the facility must be at least 250,000
- Rural Area — The venue must be within 5 miles of the state highway, and the annual attendance at the facility must be at least 200,000

7. **Industrial Parks**

Signing to industrial parks may be installed if:

- The area has at least 500,000 square feet of space available for lease (may include a mix of manufacturing, service, warehouse facilities)
- The area is within 5 miles of the state highway

8. **Ports/Port Districts**

Signing to activities located on properties owned and operated by Ports or Port Districts may be installed if the facility is served by two or more modes of transportation (Water, Highway, Rail, of Air).

9. **Major Recreation Areas**

Signing to major recreation areas may be installed if the facility is open to the public and has annual attendance of at least:

- Major Metropolitan Area — 300,000
- Urban Area — 250,000
- Rural Area — 100,000

10. **United States Forest Service Facilities**

Signing to facilities of the USFS, including campgrounds and Headquarters buildings may be installed if the facility is located within 1 mile of an interchange in major metropolitan or urban areas, and within 10 miles in a rural area.

11. **Unwarranted Traffic Generators**

Signing to ventures operated by private entities for profit, and other areas or ventures not of general interest to the traveling public are not permitted on state highways. Traffic generators that do not normally warrant guide signing include:

Businesses
TV/Radio Stations
Theaters

Cemeteries
Local or State
Private/Public
Military (*A National Cemetery, as designated by the U.S. Dept. of Veteran Affairs, that is located within 5 miles of the nearest intersection or interchange may be signed*)

Communities
Convention Centers
Civil Centers
Libraries
Churches
Subdivisions

Governmental
Research/Experimental
County Facilities
Courthouses
Vehicle Emissions Testing Facilities
Driver's and Vehicle License Centers
Highway Buildings
Jails/Prisons
Civil Defense Facilities
Maintenance Facilities
Power Plants

Schools
Grade/High
Seminaries

Medical
Mental Facilities
Research Facilities
Sanitariums

Infirmaries or Treatment Centers
County, Fraternal, or Nursing Homes
Retirement Facilities
Humane Facilities

Military Sites or Detachments
Armories
Arsenals
Recreational/Conservation
Tree Nurseries/Arboretums
Points of Interest
Camps: Scout, Church, 4-H, Youth, and YMCA/YWCA

E. Follow-Through Signing

Follow-through signing provides guidance along local roadways to locations off the state highway system. They are installed and maintained by the agency responsible for the local roadway.

Regional traffic personnel coordinate the signing plan with the appropriate local agency and ensure that all the follow-through signing is in place before any directional signs are installed on state highways. Periodic reviews will determine the effectiveness and ongoing need for follow-through signing.

Use 6-inch D series letters on follow-through signs in high traffic volume areas. Use 5-inch C series letters as a minimum on other follow-through signs. Directional information or arrows should be part of the legend.

Install these signs in advance of decision points where route changes are required. Do not install these signs in combination with regulatory or warning signs. Additional signs may be placed at mandatory stop locations. Placing these signs on the far-side of the intersection allows the motorist time to read the sign message while stopped, then continue driving in the proper direction.

F. Other Essential Guide Signs

1. Street Name Signs

Install street name signs and advance name street signs according MUTCD guidelines. The use of a chevron on the street sign, as in sign D3-302 is acceptable.

Use this table to determine appropriate letter size:

Lane Type	Single	Single/ Multi-lane	Single/ Multi-Lane
Speed Limit (mph)	25-30 mph	35-45 mph	50 + mph
Sign Street Sign Letter Size	4”	6”	6”
Advance Sign Letter Size	NA	6”	8”
Fabrication Number	D3-101* D3-102	D3-101* D3-102 D3-301 D3-302 (Advance Only)	D3-101 D3-102 D3-301 D3-302 (Advance Only) **

* The 8”, and 6” D letter size combination is for signs mounted on traffic signal mast arms or advance sign installations.

** Modify to use 8” D letters and increase sign heaight to 18” for one line, or to 30” for two lines.

Table 2-9

For street name signs installed above a stop sign; in cases where using 6″ letters would create a sign message that exceeds 60″, 5″ letters may be used.

White on green advance street name signs may be installed for critical and significant cross streets where the intersection is not obscured. A critical or significant cross street is classified as a minocollector or higher, or one which may serve a unique traffic generator or possess other comparable physical or traffic characteristics deemed to be critical or significant.

On city streets that are part of state highways, the local agency shall install and maintain street signs within their corporate limits.

Where county roads intersect state highways, the counties shall install street signs above state installed stop signs. By agreement, the department maintains these signs.

2. Canadian Customs

For Canadian Customs stations with limited hours of operation, display the hours of operation on an advance sign. Install these signs in advance of the last exit before the border, where overnight boarding is available.

Canadian Customs at 24-hour crossings need no signing in advance of the last exit before the border.

3. Highway and Freeway Entrance Signs

Install the HIGHWAY ENTRANCE sign (E12-1) on undivided two-lane two-way highways where interchanges are provided at intersecting crossroads. Install signs on both sides of the on-ramp, facing approaching traffic to clearly identify the entrance to the on-ramp.

Install the FREEWAY ENTRANCE sign (E12-2) on both sides of the freeway or expressway on-ramp, facing approaching traffic to clearly identify the entrance to the ramp.

4. Milepost Signs

Install MILEPOST signs on all state highways. The D10-1/2/3 are single faced signs used on multilane highways. They are placed on the right side of the traveled way. The D10-101/102/103 signs are double-faced signs that are placed on the right side of the roadway in the direction of increasing milepost. Refer to Directive D32-20 for detailed and complete rules regarding milepost sign installation.

5. Indian Reservations

Upon request, a Regional Administrator may provide signs identifying Indian Reservations under the following policy:

If sign space is available, ENTERING _____ INDIAN RESERVATION signs may be installed where a state highway crosses a reservation boundary. The boundary shall be the original treaty boundary. These signs shall have white letters on a green background.

Where there is an official tribal or community center, a directional sign may be installed to provide guidance from the nearest state highway intersection if the center is within 5 miles. These signs have white letters on a brown background.

6. General Motorist Services (Generic Signs)

Install motorist service signs where the services are not visible, or readily apparent to the motorist.

Periodic reviews by regional personnel ensure that these signs are provided only for services and facilities that meet eligibility criteria, and that signs are removed or covered when the service or facility is no longer in operation, or is closed for the season.

Do not combine motorist service (general service) signing and motorist information (logo) signing on one installation at an interchange or intersection. Services should be signed under the logo sign program wherever possible.

The following motorist service signs may be installed on interstate and non-interstate highways:

Sign Symbol	Sign Fabrication Number
Gas	D9-11
Food	D9-8
Lodging	D9-9
Phone	D9-1
Hospital	D9-2
Emergency Medical Care Facility	D9-13
Camping	D9-3
Recreational Vehicle Park (text)	D9-301

Table 2-10

In the vicinity of an interchange or intersection, install only one sign array per approach, with up to four signs per array. Use symbol signs in lieu of word messages where applicable.

Signs for motorist services are reflectorized and have white symbols or letters on a blue background. Do not intermix word messages, symbols, or logo signs on the same sign panel. The sign legend for the recreational vehicle park panel consists of the words; RV PARK, and for a visitor information sign; VISITOR INFO.

These motorist service signs may be installed in conjunction with other guide signs. On ground mount signs, install the panel below the guide sign on either post (Appendix 2-7 b, c). If more than two signs are required, they may be placed on a bracket below the guide sign, provided it does not interfere with the breakaway characteristics of the sign structure. On overhead signs, a service sign may be installed above the guide sign.

Where appropriate, install signs D9-101, D9-102, or D9-103. These signs combine the motorist service message with a directional message such as NEXT RIGHT, SECOND RIGHT, or the exit number. The NEXT SERVICES ____ MILES (D9-1601) sign may be placed below the motorist services sign if the services are 20 miles or more away.

When services are not readily visible from an interchange, install directional follow-through signs at ramp terminals. Install the same type of legend or symbol on the follow through and main line signs. If the services are located more than 1 mile from the interchange, display the distance to the services on the follow through signs.

The following criteria must be met prior to installing each type of sign. The State Traffic Engineer can approve minor deviations to these criteria on a case-by-case basis.

Gas, Diesel, and/or L-P Gas

- Vehicle services must including fuel, oil, and water
- Shall feature free public rest room facilities with appropriate locks for the security of the occupants. In addition, these facilities shall contain sink with running water for hand washing, a flush toilet, toilet tissue, and sanitary towels or other hand-drying devices
- Shall provide free potable water drinking fountain and free cups as necessary for public use
- The facility must operate for at least 16 uninterrupted hours per day, 7 days per week
- Telephone service must be available and visible from the facility
- The facility must be within 1 mile of an interstate highway interchange or within 5 miles, and not readily visible from a non-interstate highway

Food

- The facility must be licensed or approved by the appropriate county health agency
- The facility must operate for at least 12 uninterrupted hours per day, 6 days per week, and serve breakfast, lunch, and dinner
- Shall feature free public rest room facilities with appropriate locks for the security of the occupants. In addition, these facilities shall contain sink with running water for hand washing, a flush toilet, toilet tissue, and sanitary towels or other hand-drying devices
- Telephone service shall be available to the public
- Seating capacity for a minimum of 20 patrons or parking and drive-in service facilities for a minimum of ten vehicles must be provided
- The facility must be within 1 mile of an interstate highway interchange or within 5 miles, and not readily visible from a non-interstate highway

Lodging

- The facility must be licensed or approved by the Washington State Department of Social and Health Services (Bed and Breakfast facilities exempt from DSHS licensing requirements must have a letter of approval from the appropriate county health authority)
- Facilities signed from an interstate highway must have 12 units or more
- Facilities signed from non-interstate highways must have 6 units or more
- Telephone service must be available at the facility
- The facility must be within 1 mile of an interstate highway interchange or within 5 miles, and not readily visible from a non-interstate highway

Phone

- Phone service must be available 24 hours per day, 7 days per week
- The phone must be located within 1 mile of an interstate highway interchange
- Phone signing is not required if another service in the vicinity of the interchange has met the phone criteria as part of qualification

Hospital

- Continuous emergency care service must be provided with a doctor on duty, or on immediate call 24 hours per day, seven days per week
- Availability of emergency care service must be certified to WSDOT by the Washington State Department of Health
- The hospital must be located within a reasonable distance of the highway, but, when operating at legal speeds, not more than 20 minutes driving time away
- For an area with two or more qualifying hospitals, provide signs to the closest facility (by approach direction) located within a reasonable travel time

Emergency Medical Services Facility

- The facility must operate continuously 24 hours per day, 7 days per week
- Availability of emergency care services must be certified to WSDOT by the Washington State Department of Health
- The facility must at all times have:
  - a Physician on duty, or
  - a Registered Nurse on duty, or
  - a Paramedic on duty, or
  - an Emergency Medical Technician on duty, plus:
    - a Physician on call, or
    - a Registered Nurse on call, or
    - a Paramedic on call
- Emergency transportation capabilities must be available
- The emergency care facility must be located within a reasonable distance of the highway, but, when operating at legal speeds, not more than 20 minutes driving time away
- For an area with two or more qualifying hospitals, provide signs to the closest facility (by approach direction), located within a reasonable travel time
- Do not use this sign if a hospital sign is installed

Police (Local or State)

- The law enforcement agency must have an officer on the premises at all times, or a dispatcher on duty with an officer within radio or local telephone contact
- The law enforcement agency must be located within a reasonable distance from the state highway

Visitor Information Centers

- Must be a service facility whose sole function is to provide tourist information, and must operate a minimum of 8 hours per day, 7 days per week from Memorial Day through Labor Day, or during the months that visitors customarily visit the area. If the Visitor Center operators can document to the Regional Traffic Engineer that a variance to these hours is both reasonable and justified, the Regional Traffic Engineer may approve different operating hours
- The facility must be operated by a nonprofit organization; however, the center may be sponsored by a commercial enterprise. For example, the Visitor Information Center could be located within a commercial establishment such as a mall or shopping center provided the visitor center is visibly separate from the commercial activity
- Literature and information on visitor attractions must be free of charge to the public
- A full-time attendant, whose primary duty is to disseminate visitor information must be

on duty during the hours of operation unless there is electronic means available to answer visitor questions

- There must be adequate floor space to accommodate the anticipated number of visitors and provide necessary display space for material of local and statewide interest
- The operators must demonstrate to the Regional Traffic Engineer that the number of parking accommodations, for both cars and travel trailer units, will accommodate the expected number of visitors
- The availability of a telephone for public use is encouraged. If no public phone is on site, the nearest public phone must be within a reasonable distance
- The facility must be within 1 mile of an interstate highway interchange or within 5 miles, and not readily visible from a non-interstate highway. Follow-through signing is required if the visitor center is not directly adjacent to the roadway
- During hours of operation, shall feature free public rest room facilities with appropriate locks for the security of the occupants. In addition, these facilities shall contain sink with running water for hand washing, a flush toilet, toilet tissue, and sanitary towels or other hand-drying devices
- The facility must also be approved by the Department of Community, Trade and Economic Development's (CTED) Tourism Division
- If the Visitor Information Center is operated seasonally, the signs must be removed or covered with a "CLOSED" plaque during the off season

Camping

- Facilities must accommodate tent camping on half the available sites
- Facilities that are accessed from intestate routes must have at least 20 camping sites
- Shall feature free public rest room facilities with appropriate locks for the security of the occupants. In addition, these facilities shall contain sink with running water for hand washing, a flush toilet, toilet tissue, and sanitary towels or other hand-drying devices
- Shall provide free potable water drinking fountain and free cups as necessary for public use
- A full-time attendant must be on duty during operating hours
- Camp area facilities must be available 24 hours per day
- Campground facilities must be within 5 miles of an interstate highway interchange or within 8 miles of, and not readily visible from a non-interstate highway
- For seasonal operations, signs must be removed or covered with a "CLOSED" plaque during the off season

Recreational Vehicle Park

- Recreational vehicle parks must be licensed or approved by the appropriate county health office
- Adequate parking must be provided for not less than 10 recreational vehicles (camper truck, motor home, or recreational trailer)
- Shall feature free public rest room facilities with appropriate locks for the security of the occupants. In addition, these facilities shall contain sink with running water for hand washing, a flush toilet, toilet tissue, and sanitary towels or other hand-drying devices
- Shall provide free potable water drinking fountain and free cups as necessary for public use
- All park facilities and use areas, including telephone, must be available 24 hours per day
- The park must be within 5 miles of either an interstate highway interchange or a non-interstate highway
- For seasonal operations, signs must be removed or covered with a "CLOSED" plaque during the off season

7. Natural, Historic, and Cultural Attractions

Install signing to natural, historic, and cultural attractions if it does not interfere with normal interchange or intersection signing. The attraction must have a regional or national significance and be of interest to a majority of the traveling public. Do not sign attractions that are primarily of local interest. Attractions of this type that charge an admission or entrance fee are included as part of the Motorist Information Sign (TOD) program.

Conduct periodic reviews to ensure that signing is displayed only for facilities that meet eligibility criteria. These reviews may identify new attractions that meet eligibility criteria, or identify signing that leads to attractions that are no longer in operation, or no longer meet criteria.

Apply the following criteria to signing of natural, historic, and cultural attractions:

- Do not provide signing if the attraction is readily visible and has direct access to the state highway
- Signing may be provided along access-controlled highways in urban areas, or within city limits. On highways without access control and within incorporated cities or towns having populations over 22,500, such signing is under the jurisdiction of the local agency
- The attraction must be located within 10 miles of the interchange or intersection being signed. Any required follow-through signing shall be in place prior to installing signs on state highway
- For attractions located more than 1 mile from the interchange or intersection, display mileage information on the ramp terminal or direction signs. The hours of operation may also be shown on the ramp terminal or direction signs
- Provide signing only on the state highway nearest to the attraction. The signs shall be white letters on a brown background
- The attraction must be open without appointment to all segments of the motoring public
- The signs must be removed or covered with a "CLOSED" plaque during the off season
- Attractions must be served by at least a two-lane, all-weather road
- The attraction may be operated by a private or public organization. If the activity is privately operated, the private business/ organization must pay the fabrication, installation, and replacement costs for the signs. Execute a co-signed agreement to pay letter with private business, showing regional account charge number and estimated cost of sign prior to ordering signs. If the activity is operated by a governmental agency, the department will install the signs at no cost to that agency
- The attraction must be maintained in good repair and presented in a professional manner

The following additional criteria also apply:

Watchable Wildlife

Consider signing to Watchable Wildlife sites if they are accessible to the motoring public and located within 10 miles of the interchange or intersection being signed. Use the WILDLIFE VIEWING sign on the interstate highway exit nearest the viewing area. Post the WILDLIFE VIEWING AREA sign at the state highway intersection nearest the viewing site. Use the Binoculars logo sign for a trailblazer and for site identification if no other signing is posted. (The FHWA has adopted the binoculars logo as the international wildlife viewing symbol, and it will be added to the MUTCD.)

All lettering, arrows, borders, and figures shall be in white; and all sign backgrounds in brown.

Interpretive signing at the site may explain the features and management practices at the site. It can be simple or elaborate, and is generally provided by the landowner or manager of the site.

Natural Attractions

Consider signing to natural attractions if they are unique or few locations are accessible to the motoring public. Examples of natural attractions are the Palisades Rock Formation, Ice Caves west

of Trout Lake, Hurricane Ridge, and the Snake River Canyon.

Historic Attractions

Requests from the public for signing to historic attractions should be routed through the Regional Traffic Office (see form, Appendix 2-8). Consider signing to historic attractions if:

- They are included in the *Washington Heritage Register*, as designated and maintained by the State Historic Preservation Officer; and
- They have been approved by the Heritage Resource Center of the Washington State Historical Society; and
- The attraction also includes one or more of the following features at the site:
    - An interpretive center and/or a guided tour
    - Visible historic buildings, features, or ruins with an interpretive marker

Examples of historic attractions are the Whitman Mission, Steptoe Battlefield, Jackson House, Fort Simcoe, and the Monticello Convention Site.

To determine if the attraction is included on the Washington Heritage Register, contact the State Historic Preservation Officer at:

Washington State Office of Archaeology
and Historic Preservation (CTED)
State Historic Preservation Officer
420 Golf Club Road SE, Suite 201
Mail Stop 48343
Lacey, WA 98504-8343
(360) 407-0826

To check for approval by the Heritage Resource Center of the Washington State Historical Society, contact the director of the Heritage Resource Center at:

Director, Heritage Resource Center
211 West 21st Avenue
Mail Stop 40950
Olympia, WA, 98501
(360) 586-0219

Cultural Attractions

Consider signing to cultural attractions if they are similar to, or are defined by one of the following categories:

- Museums — Approved by the Heritage Resource Center of the Washington State Historical Society. For applications, see Appendix 2-8
- Religious — Sites, shrines, etc., that are of a unique religious nature and provide visitor facilities or tours
- Educational — Centers (other than public or private schools, vocational schools, or colleges and universities) that are of outstanding educational value and provide visitor facilities or tours
- Scientific — Places used for research or scientific advancement that provide visitor facilities or tours

Examples of cultural attractions are the Maryhill Museum, and St. Mary's Mission.

Heritage Marker Signs

Install HERITAGE MARKER (I5-103/104) signs to guide motorists to historical or heritage interpretive features located along state highways. These signs replace existing historic markers and roadside attraction signs. Do not use this sign to direct motorists to historical sites on a National or state registers. Examples of these interpretive sites include Willy Keil's Grave or the Bridge of the Gods.

8. Recreational Activities

Guide motorists to recreational activities by installing a RECREATION AREA NEXT RIGHT (D7-7701) sign. The components of the sign message: RECREATION AREA, and NEXT RIGHT or NEXT LEFT are displayed on two separate lines. For conventional highways, below the RECREATION AREA and direction message, the sign may display a maximum of four recreational activity symbol plaques, such as:

Activity	Sign Fab Number
Picnic Area	D7-2201
Fishing	D7-1301
Trailer Camping	D9-3a
Boat Launch	D7-1101
Swimming	D7-1401
Hiking*	D7-501
Skiing	D7-2001
Snowmobile Area	D7-2101
Public Golf Course	D7-701
Public Beach Area	D7-1402

Table 2-11

The signs shall be a white on brown trail symbol with the trail name (white on brown) below. Provide additional arrows and/or distance information as necessary.

For public recreation areas, the sign may identify the name of the area in lieu of the RECREATION AREA message.

Identify multiple agency recreation areas by naming the area and displaying each agency's logo. Do not include recreational activity symbols on these multi-agency signs. Requesting agencies shall coordinate installation of follow-through signing with local road jurisdictions. Do not install mainline signs until all follow-through signing is in place.

The following specific criteria also applies to signing of recreational activities:

- Provide signing if the activity is not readily visible from the highway, and has no direct access to the highway
- The activity may be operated by a public or private organization. If the facility is operated by another governmental agency, the department will install the signs at no cost to that agency
- Privately owned recreational activities should be signed under the Motorist Information Signing Program, described in section 2-6 of this manual.
- Recreational activity signing is not permitted along interstate highways or along access controlled highways in urban areas or within city limits. On highways without access control and within incorporated cities or towns having populations over 22,500, such signing is under the local agency's jurisdiction
- The activity must be located within 10 miles of the interchange or intersection being signed. Before signing is installed on a state highway, necessary follow-through signs on local roads and streets must be in place
- For activities located more than 1 mile from the interchange or intersection, distance information may be shown on the ramp terminal or direction signs
- Provide signing only on the state highway nearest to the activity
- The activity must be open to all segments of the motoring public, without appointment, at least eight hours a day, five days a week including a Saturday and/or a Sunday
- Signs must be removed or covered for seasonal closures
- Activities must be served by at least a two-lane all-weather road
- The destination facility must be maintained in good repair and presented in a professional manner

9. Signing to Other Agencies

Provide signing to facilities of other federal, state and local agencies in accordance with guidelines contained in the MUTCD, this manual, and any Memorandums of Understanding or agreements between the department and the agency. Install this signing in accordance with criteria for supplemental guide signing.

When space is available, install signing to:

- State parks (per Section 2.6.D.1, this manual)
- National parks
- U.S. Forest Service facilities
- Department of Natural Resources campgrounds

- State Patrol
- State public fishing areas
- State and national fish hatcheries
- Department of Corrections facilities

10. City and County Entrance Signs

CITY and COUNTY ENTRANCE signs (I2-201/301) may be placed at city/county limits in accordance with RCW 47.36.120. The department is responsible for installing all entrance signs on state highways. If the city or county elects to provide a sign with a political jurisdiction logo per the MUTCD, the standard sign will not be installed. The local agency is responsible for purchasing and supplying this sign.

11. Unincorporated Places

The department may install a "Community Entrance" sign (I2-301) on each state highway approach if an unincorporated place features:

- An office of the United States Postal Service
- At least two motorist services. May be gas, food, or lodging (e.g., two gas stations, a gas station and a motel, etc.)

12. Business Routes

Business route signing, using business route shields, can direct motorists to alternate routes passing through the business portion of a city or through districts of continuous business development. Approval by the Executive Committee of the American Association of State Highway Officials is required prior to adding or deleting a business route as part of the Interstate or US highway system. Proposals to add or delete such routes should be sent to OSC Planning and Program Service Center.

Provide business route signing in accordance with the following criteria:

- Install only after evaluating and approving a request submitted by a local agency
- Install only if the business route passes adequately and logically through a business district
- The local agency having jurisdiction over the business route must agree, in writing, to install and maintain BUSINESS LOOP (M1-2 or 3) trailblazers along the route

Business route signing is not permitted where motorist service signing is installed.

13. Signing to City Center

Historically, the department has provided "City Center" signs for the purpose of directing motorists to local government buildings (i.e., City Hall, Courthouse, etc.). Currently, Regional offices are receiving requests from local business communities for "City Center" signs that direct motorists to business areas within a city.

When such requests are received, recommend that the appropriate city take the lead and submit a letter of request to the department. This letter of request should include the following information:

- Description of where the city center exits within the corporate limits
- Proposed sign location – interchange or intersection name
- Verification that representatives of local government and area chamber of commerce mutually agree on the location of the city center

Upon verification of information contained in this letter of request, the department may give formal consideration to sign installation.

2.5 Miscellaneous Signing

A. School Areas

Reduced School Zone Speed Limit Signs — In accordance with RCW 46.61.440, install SCHOOL SPEED LIMIT signs (S4-1, S4-2, S4-3, S4-4) where a reduced school zone speed limit has been established at a crosswalk, on a state highway. Locate these signs 300 feet in advance of the school crosswalk. This sign consists of three sections. The top portion is a black on fluorescent yellow green SCHOOL legend. The middle portion is a black on white posted SPEED LIMIT. The bottom portion contains one of several black on white legends that define a window of enforcement. The school district determines which legend is used:

- S5-1 SCHOOL + SPEED LIMIT + WHEN FLASHING — This sign is used in conjunction with a speed limit sign beacon, as described in MUTCD Section 7D-24
- S5-101 SCHOOL + SPEED LIMIT + WHEN CHILDREN ARE PRESENT — This sign is used in conjunction with definitions provided in WAC 392-151-035 and WAC 468-95-060
- S5-102 SCHOOL + SPEED LIMIT + WHEN FLAGGED — This sign is used in conjunction with warning flags or plaques that are installed on the sign during the window of enforcement
- S5-103 SCHOOL + SPEED LIMIT + 8:30 A.M. TO 5:30 P.M — This sign displays the specific hours of the window of enforcement

Mark the end of the reduced school zone speed limit with a standard SPEED LIMIT sign (R2-1) displaying the posted speed limit for the section of highway that follows, or an END SCHOOL ZONE sign (S5-2). Provide signing as shown in Appendix 2-9.

School Crossing Signs — School zone cross walks may be established at locations that are not controlled by a stop sign or traffic signal. Install the SCHOOL CROSSING sign (S2-1) and a SCHOOL ADVANCE sign (S1-1) where appropriate.

Overhead School Crosswalk Sign — The OVERHEAD SCHOOL CROSSWALK SIGN is an extraordinary traffic control device, not mentioned in the MUTCD. Consider installing this sign on state highways where school authorities request supplemental traffic control for marked school crosswalks, and traffic engineering analysis has determined that conventional traffic control measures are not adequate. Do not use this sign in lieu of standard school crosswalk signs.

The signs should include flashing lights that are activated when school children are present. The school district should ensure that these lights are activated *only during times* when the crosswalk is occupied by school children. Generally, costs associated with installing and maintaining this extraordinary traffic control device are the responsibility of the school district. However, on a case-by-case basis, the department may choose to partner with the school district regarding installation costs. On state highways that are part of city streets, consider installing this sign only if the School District and Local Agency agree to assume responsibility for maintenance.

B. Closure Plaques for State Parks

During winter closures, install CLOSED plaques on guide signs that lead to state parks, in lieu of removing or turning existing signs. Mount the plaque diagonally on the face of the existing sign, selecting a panel size that is large enough to effectively cover the sign legend, from lower leftcorner to upper right corner. Provide letter size that is greater than or equal to the upper case letters in the sign message. See Appendix 2-10.

C. City/Community Entrance Markers

WSDOT allows cities or communities, either by permit or agreement, to construct and maintain city/community entrance beautification areas that are of mutual benefit and are in the public interest. A marker may be installed on state highway right of way under the following conditions:

	Incorporated Cities/Towns	Unincorporated Communities
Limited Access-Interstate	Yes	No
Limited Access-Non-Interstate	Yes	No
Non-Limited Access	Yes	Yes

Table 2-12

One entrance marker may be installed for each direction of travel on a major state highway as it passes through a city or community. For example, if Interstate 5 passes through a city, one marker may be installed for the northbound approach, and one marker may be installed for the southbound approach. Any landscaping associated with the marker shall be in compliance with the WSDOT *Roadside Classification Plan.*

An entrance marker for a neighborhood community that lies within the corporate limits of a city or town may be allowed if that city or town having jurisdiction over the neighborhood approves and recognizes the neighborhood's marker. This marker will count against the total number of entrance markers (two per city) allowed on a state route.

Entrance Markers on Limited Access Highways

All Markers installed on Interstate highway rights of way require FHWA approval.

Non-Profit Service Club Plaques (i.e., Kiwanis, Lions, Rotary, etc.) are not to be installed on City Entrance Markers along limited access highways. These plaques are considered to be Type (1)(b) signs under purview of the Scenic Vistas Act, RCW 47.42, and WAC 468-66.

Interstate — On behalf of the local agency, the State Traffic Engineer must submit all Interstate City Marker requests to the FHWA for approval. The marker must meet the following guidelines:

- Be simple, dignified, and devoid of any advertising
- Be placed in the terminal area of the interchange ramp with the connecting city street, between the ramp and the right of way line
- Be positioned so that the marker is not a roadside safety hazard, not likely to be struck by an errant vehicle, and is not a sight obstruction
- Be oriented so the marker can be read by the motorist leaving the ramp and entering the city street system and not by the motorist on the limited access highway mainline
- Shall not interfere with, nor distract from any existing or future traffic control or safety device. Any lighting associated with the marker shall be in compliance with RCW 47.36.180
- The total marker area shall not exceed 100 square feet, and the message area shall not exceed approximately 60 square feet
- It must be sponsored by the city in which the marker is located
- The State Traffic Engineer must review the design and placement of the marker before recommending the marker to FHWA
- The local authority is responsible for relocating and/or removing any markers displaced as a result of highway improvement projects, such as roadway widening. Markers not relocated by the local authority shall be removed by WSDOT, with removal costs billed to the local authority
- The city or community group is responsible for maintenance of the marker and any associated landscaping. Inadequate maintenance of marker and/or landscaping, as determined by WSDOT, will be grounds for marker removal

Non-Interstate (Limited Access) — The Regional Traffic Engineer shall approve the design and placement of the marker. If there are any deviations from these guidelines, the design must be submitted to the State Traffic Engineer for approval.

Non-Profit Service Club Plaques (i.e., Kiwanis, Lions, Rotary, etc.) are not to be installed on City Entrance Markers along limited access highways. These plaques are considered to be Type (1)(b) signs under purview of the Scenic Vistas Act, RCW 47.42, and WAC 468-66.

The marker must meet the following guidelines:

- Be simple, dignified, and devoid of any advertising
- For divided highways with interchanges, the marker is to be placed in the terminal area of the interchange ramp with the connecting city street or county road, between the ramp and the right of way line. For undivided highways, the marker may be placed just inside corporate limits, or at the far side of an intersection located inside corporate limits
- Be positioned so that the marker is not a roadside safety hazard, not likely to be struck by an errant vehicle, and is not a sight obstruction

- Be oriented so the marker can be read by the motorist leaving the ramp and entering the city street system and not by the motorist on the limited access highway mainline. This only applies for divided highways with interchanges
- Shall not interfere with, nor distract from any existing or future traffic control or safety device. Any lighting associated with the marker shall be in compliance with RCW 47.36.180
- The total marker area shall not exceed 100 square feet, and the message area shall not exceed approximately 60 square feet
- It must be sponsored by the city in which the marker is located
- The local authority is responsible for relocating and/or removing any markers displaced as a result of highway improvement projects, such as roadway widening. Markers not relocated by the local authority shall be removed by WSDOT, with removal costs billed to the local authority
- The city or community group is responsible for maintenance of the marker and any associated landscaping. Inadequate maintenance of marker and/or landscaping, as determined by WSDOT, will be grounds for marker removal

Entrance Markers on Non-Limited Access Highways

The Regional Traffic Engineer shall approve the design and placement of the marker. If there are any deviations from the guidelines, the design and placement must be submitted to the State Traffic Engineer for approval.

Non-Profit Service Club Plaques (i.e., Kiwanis, Lions, Rotary, etc.) may be installed on a City Entrance Marker along a state highway if the marker is located within corporate limits and is not within a limited access area. These plaques are considered to be Type (1)(b) signs under purview of the Scenic Vistas Act, RCW 47.42, and WAC 468-66. The marker must meet the following guidelines:

- Be simple, dignified and devoid of any advertising
- Be placed inside corporate city limits, beyond curb line or outside edge of highway purposes
- Be positioned so that the marker is not a roadside safety hazard, not likely to be struck by an errant vehicle, and is not a sight obstruction
- Shall not interfere with, nor distract from any existing or future traffic control or safety device. Any lighting associated with the marker shall be in compliance with RCW 47.36.180
- The total marker size shall not exceed 150 square feet, including the border and trim, and service club plaques. The service club plaque area of the sign shall not be disproportional to the marker message. The maximum size for each service club plaque is 24″ x 24″
- It must be sponsored and approved by the city in which the marker is located
- The local authority is responsible for relocating and/or removing any markers displaced as a result of highway improvement projects, such as roadway widening. Markers not relocated by the local authority shall be removed by WSDOT, with removal costs billed to the local authority
- The community group is responsible for maintenance of the marker and any associated landscaping. Inadequate maintenance of marker and/or landscaping, as determined by WSDOT, will be grounds for marker removal

Entrance Markers for Unincorporated Communities (Non-Limited Access Highways Only)

The department may receive requests from unincorporated communities to install community entrance markers on state highway right of way. The Regional Traffic Engineer shall approve the design and placement of the marker. If there are any deviations from these guidelines, the design and placement must be submitted to the State

Traffic Engineer for approval. The marker must meet the following guidelines:

- Be simple, dignified, and devoid of any advertising
- Be positioned so that the marker is not a roadside safety hazard, not likely to be struck by an errant vehicle, and is not a sight obstruction
- Shall not interfere with, nor distract from any existing or future traffic control or safety device. Any lighting associated with the marker shall be in compliance with RCW 47.36.180
- The total marker size shall not exceed 150 square feet, including the border and trim, and service club plaques. The service club plaques shall not be disproportional to the marker message. The maximum size for each service club plaque is 24″ x 24″
- It must be sponsored and approved by the county in which the marker is located
- The community group is responsible for relocating and/or removing any markers displaced as a result of highway improvement projects, such as roadway widening. Markers not relocated by the community group shall be removed by WSDOT, with removal costs billed to the community group
- The community group is responsible for maintenance of the marker and any associated landscaping. Inadequate maintenance of marker and/or landscaping, as determined by WSDOT, will be grounds for marker removal

D. Limited Access Signs

For state highways that operate with intermittent access control, in accordance with RCW 47.52.110, install ENTERING LIMITED ACCESS AREA (I2-601) and LEAVING LIMITED ACCESS AREA (I2-701) signs where appropriate. Facilities operating with fully controlled limited access need not be signed unless deemed necessary by the Regional Administrator.

E. Carpool Information Signs

CARPOOL INFORMATION signs (D12-201/202) may be installed along conventional roads and on-ramps to multilane highways where appropriate. These signs should not be placed on the mainline of multilane facilities. Transit logos may be included in the sign design in accordance with MUTCD Section 2D-41.

F. DNR Fire Danger Signs

DNR fire danger signs may be placed on non-Interstate right of way, outside the clear zone. When space does not allow, signs with appropriate breakaway features may be placed within the clear zone.

DNR shall be responsible for the installation, daily message changes, and maintenance of the signs.

G. Adopt-A-Highway Signs

Adopt-A-Highway (AHA) participant recognition signs are installed for volunteer groups and privately sponsored contractors that perform litter pick up and/or other roadside enhancement activities. Adoptions are assigned for a minimum two center line miles, but may extend up to a maximum of ten center line miles, and may occur on outside shoulders and medians. Typically, the signs are placed at or near the beginning of each adopted section for each effected direction of travel. If an adoption includes both shoulders of a two-lane highway or a median on a divided highway, signs should be placed for both directions of travel. No more than two signs shall be installed per adoption, with one sign for each direction of travel. Signs on the same shoulder or median shall be no closer than 2 miles apart in a given direction of travel. Where conditions dictate, the lateral placement of the AAH signs may be as much as 50 feet from the edge of traveled lane, if right-of-way is available and the signs are still visible from the traveled lanes.

These signs are secondary to existing highway signing and shall not be installed within 300 feet of any existing highway signs, excluding milepost markers. The signs should be installed as close as practicable to the beginning of the adoption section. If the AAH signs cannot be

installed within a reasonable distance of the beginning of the assigned section without conflicting with existing signing, the section limits should be adjusted to accommodate the sign locations. AAH signs should normally be installed in the median on divided highways.

There are two sizes of AAH recognition signs (see the *Sign Fabrication Manual*). Use the larger sign along divided highways, the smaller sign along conventional roadways (see Appendix 2-11). In some cases, recognition signs may also be installed for special enhancement projects such as landscaping at interchanges, or other special areas. In these cases, the smaller sign shall be used and the Regional Traffic Engineer shall determine sign placement on a case-by-case basis. It may not be possible to accommodate recognition signs for all such adoptions.

H. DUI Victim Memorial Signs

Install PLEASE DON'T DRINK AND DRIVE (I20-201) sign accompanied by the IN MEMORY OF (I20-203 or SPONSORED BY (I20-204) plaque at locations approved by Headquarters Traffic Office. Install signs in accordance with MUTCD Section 2A. Place signs for both directions of travel along state highways, or on interstate freeway on-ramps.

I. Private Road Signing

WSDOT does not furnish, install, or maintain stop signs or street name signs for private roadways that intersect with state highways. Pending approval of the department's area maintenance superintendent, citizens may install their own signs at such intersections, in accordance with the MUTCD.

Unless otherwise directed by a local jurisdiction, private road name signs (D3-104) shall be fabricated in accordance with the *Sign Fabrication Manual*. Maintenance for private road signs is the responsibility of the citizens installing the signs. If a stop sign is necessary for a private approach, the citizen requesting the sign must secure an access permit from the appropriate regional office. The permit holder must coordinate details of work alongside the state highway with the area maintenance superintendent prior to beginning any operations.

J. Fire District Boundary Signs

The ENTERING FIRE DISTRICT sign (I8-804) may be installed along state highways at Fire District boundaries. Apply these general guidelines for this sign:

- Under regional sanction, signs shall be installed and maintained by the jurisdiction requesting the sign
- Signs may be placed on state right of way as far away from the roadway as possible and shall not constitute a hazard by their physical location or by obstructing drivers vision
- Mounting posts shall be no larger than 4″ x 4″. Mounting height shall be 7 feet
- The sign color shall be white letters on blue background
- The word *LEAVING* may be substituted for *ENTERING*

K. Fire Hydrant Marker Signs

FIRE HYDRANT MARKER /SYMBOL (I7-401) signs may be installed on limited access highways to help local fire department personnel locate fire hydrants that are outside of the right of way. The sign shall be placed parallel to, and facing the roadway. The sign shall be visible from the shoulder, mounted either on the right of way fence or on a post, and shall state the distance from the edge of traveled way to the fire hydrant. An additional (24 inch) wide plaque may be added below the sign to indicate the nearest street or intersection if requested by the fire department.

The Regional Traffic Engineer shall contact local fire departments to determine signing needs for fire hydrants located near limited access highways. State forces will maintain the signs.

L. Litter Control Signs

Install litter control signs in areas where littering is a common problem.

M. Post Offices

Post offices may be signed from state highways in unincorporated areas if the post office is not visible from the state highway and there is a demonstrated need for the sign. The sign shall

be a D1-101. Cities or towns may sign for post offices inside incorporated areas.

N. Signing for Highway Advisory Radio and Traveler Information Station

Highway Advisory Radio (HAR) allows traffic operations organizations to communicate traffic and travel related information to the motoring public via AM radio. HAR installations shall comply with the Federal Communications Commission's (FCC) requirements and must be approved by and coordinated through the WSDOT State Radio Engineer.

The department uses HAR to broadcast messages in several general categories; *construction information*, which may include work zone locations, lane closures, route diversions, and lane or road restrictions, and *traffic control or roadway condition information*, which may include airport or special event parking control, and mountain pass inclement weather advisories.

Color combinations for HAR signs on state highways are as follows: *Traffic Alert/Traffic Advisory* or *Mountain Pass Information/Road Conditions* shall be black non-reflective legend on yellow reflective background; *Traffic Information/Motorist Service Information* shall be white reflective legend on blue reflective background.

For tourist information and recreational purposes, *Travelers Information Station* (TIS) signing may be installed on state highway right of way under the following criteria:

- The requesting agency (non-commercial) will submit a written request for TIS signing to the Regional Traffic Office. The request should include broadcast signal boundaries along the highway(s) to help establish sign locations. The Regional Traffic Engineer's approval is required before signs are fabricated. Permits will be issued on a "first come - first served" basis. There will be no radio signal overlap allowed.
- The FCC recognizes Highway Advisory Radio transmitters as "Travelers Information Stations." The broadcast messages for this type of TIS sign shall be noncommercial in nature and consistent with FCC Regulation, CFR 47, Section 90.242(a)(7) which specifies the content of HAR messages per the following paragraph.

  "Travelers Information Stations shall transmit only noncommercial voice information pertaining to traffic and road conditions, traffic hazards and travel advisories, directions, availability of lodging, rest stops and service stations, descriptions of local points of interest. It is not permissible to identify the commercial name of any business establishment whose service may be available within or outside the coverage area of a Travelers Information Station. However, to facilitate announcements concerning departures/arrivals and parking areas at air, train, and bus terminals, the trade name identification of carriers is permitted."
- The requesting agency is responsible for funding all TIS sign fabrication, installation, and future maintenance costs. Signs will be fabricated to WSDOT standards and will be installed by WSDOT workforce only. The TIS signs for tourist information purposes shall be white reflective legend on blue reflective background. TIS signs for recreational purposes (National Parks, National Forests, and National Historic Reserves **ONLY**) may be white reflective legend on brown reflective background. These federal agencies may also incorporate their official agency logo on the TIS sign.
- All TIS transmitters shall be accessible to federal, state, or local incident response agencies to broadcast public safety or traffic management messages in the event of natural or civil emergencies. The Regional Traffic Engineer, or his/her representative will monitor broadcasts occasionally to determine compliance with FCC regulations. If the broadcasts are not in compliance with paragraph 2 of this policy, the party responsible for TIS sign will be notified by certified letter and given 30 days to comply. If the broadcast is not in compliance after 30 days the signs will be removed and the agency

reported to the FCC by the Regional Traffic Engineer. Additionally, signs will be removed if the agency's FCC permit is terminated.

- When a preemptive message "EMERGENCY INFO WHEN FLASHING" is included with the TIS sign, this portion of sign shall be black non-reflective legend on yellow reflective background. This will provide the department and other public agencies with the ability to transmit emergency traffic information to motorists. TIS signs will be erected only when there is adequate space available along the highway, per MUTCD and WSDOT sign spacing requirements. HAR and TIS signing are secondary to official traffic control signs (i.e., regulatory and warning signs, primary guide signs, supplement guide signs, etc.).
- In the future, WSDOT will be developing an Intelligence Traffic System (ITS), and as part of the ITS, will include HAR signing elements. WSDOT may require exclusive rights to certain radio frequencies now available for tourist information format broadcasts, thereby eliminating their access to those frequencies. The requesting agency will be notified that their signs are being removed, if this situation does occur.
- The requesting agency must discontinue TIS broadcasting if there is interference with Highway Advisory Radio transmitters installed by the department for construction and maintenance purposes. The department will consider providing a portable TIS at an alternate site if requested, in exchange for use of the requesting agency's HAR during construction and maintenance operations. The department will relocate signing in these circumstances.

References for HAR include:

- Code of Federal Regulations, Title 47, Chapter 1
- FHWA Technical Report (FHWA/RD-82/059), "Highway Advisory Radio Message Development Guide," October 1982
- FHWA Technical Report (FHWA/RD-80/167), "Highway Advisory Radio Systems Design Guidelines," May 1981
- M 24-01, *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD)
- WAC 468-66, "Highway Advertising Control Act"

O. Changeable Message Signs on State Highways

Introduction — The Changable Message Sign (CMS) system is part of WSDOT's Traffic Management System and is operated by staff at the region's office or area traffic service management center. Depending on the specific location, a CMS system may provide information about: lane use control, regulatory information such as variable speed limits, or information about unusual traffic conditions. The system may also be used for other traffic-related purposes on a limited basis.

Operation of CMS System and Coordinating Organizations — The WSDOT Regional Traffic Offices are responsible for operation of the CMS system, however, this operational responsibility may vary from area to area. Each region should designate a CMS specialist(s) to schedule CMS messages and answer questions from the public and private sector about CMS operations. The CMS specialist may coordinate CMS operations with WSDOT entities, and other Coordinating Organizations. Coordinating Organizations may include, but are not limited to: WSP, WSDOT Incident Response, WSDOT maintenance or construction, cities and counties, Oregon Department of Transportation, or Oregon State Patrol.

Requests for Messages — Consider message requests in one of the categories below; direct message request to appropriate personnel:

- Requests from outside the Regional Traffic Office for messages in Emergency situations should be routed through the Regional Radio Operations office. In addition, route any requests made after normal business hours to Radio Operations

- Requests for messages relating to **Maintenance** or **Construction** activities should be routed through the Regional Traffic Office (work zone specialist, or construction traffic coordination officer) in advance of the requested service
- Requests for **Public Service Announcements** should be routed through the Regional Traffic Office, to the attention of the CMS specialist

Traffic office staff shall develop the message and display sequencing. No more than two displays should be used within any message cycle. Each display should convey a single thought. The entire message cycle should be readable at least twice by drivers traveling at the posted speed, the off peak 85th percentile speed, or the (anticipated) operating speed. Message request information should include:

- Justification for using the CMS
- Location/Geographical coverage required
- Description of the Activity
- Intended times and dates of the Activity

Documentation of CMS Usage — Documenting CMS operations provides important backup information that supports regulatory enforcement, possible tort defense, and safety operations. Maintain a log of CMS message operations for traffic restrictions, incidents, construction and maintenance activities, and Public Service Announcements.

CMS System Priorities — The first priority is safety. The department's primary goal in deploying CMS messages is to ensure and enhance safety in traffic operations.

Dedicated Traffic Control CMS Systems — CMS systems dedicated to specific traffic control functions must first display messages intended for the primary purpose, such as lane use designation or regulatory speed limit. In addition to the dedicated message, some signs can simultaneously display alternate messages. Use the following priority list to determine the most appropriate alternate message.

1. **Safety-related** — Messages that are directly related to safety are given first priority for display. Examples of this type of message may include traction requirements, mountain pass information, or flammable restrictions for tunnels.

2. **Roadway Closures** — The CMS system should display road or ramp closures, regardless of the reason for the closures (accident, construction, weather etc.). This can be important navigational information, even for the familiar motorist.

3. **Minor Traffic Impacts** — The CMS system should display information about minor traffic impacts. Minor traffic impacts include construction lane closures, blocking incidents, and delay information.

4. **Public Service Announcements** — The last priority for the CMS system is Public Service Announcements (PSAs). These messages do not directly impact drivers, and therefore are not critical to the safe and efficient operation of the transportation system.

5. **Test Messages** — Test messages may be used to perform sign operation/maintenance checks, and to ensure proper operation of new signs.

Traffic Conditions for CMS Usage — Demands on CMS system messages may change, depending on traffic conditions. Required traffic control, and various traffic conditions are described below, along with specific information on the appropriate use of the CMS system.

1. **Regulatory and Lane Control** — Some CMS systems are dedicated to long term traffic control, such as lane designation near the entrance to an express lane. Because these changeable signs are not reinforced with fixed signing, CMS message use is limited to display of dedicated purpose messages. Other CMS systems have been installed to display variable speed limits (VSL) in areas that have approved traffic regulations. Because roadside speed limit signs are not installed in these areas, these changeable signs serve as the only source of regulatory speed information for the motorist. Additional space on these changeable signs can be used for messages in accordance with the CMS system priorities.

2. **Traffic Restrictions** — For purposes of this section, traffic restrictions refer to the prohibition of vehicles from using any or all portions of a roadway. These restrictions may be planned or unplanned, short or long duration, and specific or general. Requests for traffic restriction messages generally come from WSDOT or local agency maintenance offices.

- **Road Closures** — CMS can provide advance warning of road closures for either emergencies or for scheduled maintenance operations. Message request initiated by a maintenance or construction office
- **Bridge Draw Span Openings** — Usually SR 520 Evergreen Pt., SR 104 Hood Canal, or I-5 Interstate Bridge openings for boat traffic or weather conditions
- **Flammable Restrictions** — Message displayed when SR 5 Convention Center, SR 90 Mt. Baker Tunnel, or SR 90 Mercer Island Lid fire control systems are inoperable
- **Weight, Height, Width Restrictions** — CMS use is only appropriate in emergency situations (e.g., earthquake damaged bridge), or short term use (e.g., construction-related height restriction)

Incidents — The use of the CMS system for incident information requires close monitoring by personnel operating the signs. Displaying inci-dent response information is the most dynamic uses of the CMS system. Accurate and timely CMS messages will increase both the credibility of the signs, and the public's confidence in using the signs as navigational tools.

Disabled Vehicles and Accidents — CMS is used only when incident is visually confirmed or when requested by Coordinating Organizations, in this case usually WSDOT Incident Response Team (IRT) or Washington State Patrol (WSP).

- Communication with Coordinating Organizations should take place by way of Radio Operations office
- Messages are to be removed once the incident is no longer blocking
- Messages shall describe the general nature of the situation (e.g., Accident At Mercer) and traffic impacts (e.g., Congestion from Northgate to Ship Canal Bridge)
- Specific alternate routes included only if alternate is a state route, or if approved by the appropriate jurisdiction
- Messages describing severe incident-related traffic conditions may be continued at the discretion of the operator (e.g., Congestion from Northgate to Ship Canal Bridge Due to Earlier Accident), however, CMS should not be used to describe recurrent congestion (e.g., normal day to day backups)

Road and Driving Conditions — CMS should not be used to display weather conditions or driving conditions (e.g., icy roadway under near-freezing temperatures).

The Travel Aid Project, across Snoqualmie Pass, is allowed an exemption to this guideline due to the experimental nature of the operation.

Special Events — CMS may be used to manage freeway traffic destined for high impact special events (e.g., Seahawks game at Husky stadium) when traffic conditions warrant.

Special event related CMS messages for freeway management should be coordinated prior to the event with the Regional CMA specialist. Message information is limited to description of event-related traffic impacts and their duration.

Construction and Maintenance Information — The CMS system can be an effective *supplement* to construction traffic control, but should not be used in lieu of adequate traffic control planning. Anticipated CMS use for construction and maintenance should be included in traffic control plans and scheduled in advance with the Regional CMS specialist. The CMS system should be used when construction activities require drivers to perform complex or unusual maneuvers, or in cases where traditional signing methods are impractical.

WSDOT

- CMS system may be used to display information on lane, ramp, or road closures; detours; and advanced notice for high impact closures
- Construction-related CMS use should be coordinated with Regional CMS specialist
- Message information should be limited to the nature of the construction impact and the effect on drivers (e.g., *Left Lane Closed Ahead; Exit 116 Closed; Use Caution; Use Alternate Route; Follow Detour* (only if detour signing is in place); *Expect Delays)*

Non-WSDOT

- CMS use should be coordinated with the Regional CMS specialist
- Establish a method of maintaining communication with Coordinating Agency
- Messages shall follow same guidelines as above

Public Service Announcements — Normally, the CMS system will only be used for Public Service Announcements (PSAs) that are directly related to transportation (e.g., carpool or transit information). These messages should be used sparingly so that the warning impact of the sign will not be degraded. Operational limitations of some CMS signs, such as overheating and degrada- tion, may be considered when scheduling PSAs.

Commuter Info Line

- CMS may be used to display the phone number(s) of the WSDOT Commuter Info Line. This message informs commuters of alternate resources that are available
- CMS may be used to display phone number for carpool matching or public transit information or phone numbers. CMS may also be used to display the phone number(s) of privately sponsored commuter information lines, provided the firm has a written agreement or contract with WSDOT. The PSA shall be generic and not include any private company names, trade-mark indications, etc.
- Display PSA's on a rotating schedule, with no beacons, in accordance with the CMS system priorities

Approved Rideshare Promotions

- The *Oil Smart Wednesdays* and *Rideshare Week* promotions are approved for statewide CMS usage. These messages, which encourage regional participation in rideshare/ transit usage, may be displayed on consecutive Wednesdays in March
- Messages of this type may be unique for the particular event, but should focus on long-term traveler behavior (e.g., *Upgrade Your Commute The Oil Smart Way - Call METRO Ridematch 625-4500*). While this message does not specify the name or date of the event, it displays the contact phone number for the alternate commute resource. These messages are intended to benefit the transportation system by encouraging drivers to use alternate modes of transportation
- Encourages travelers to utilize alternative modes of transportation; strong tie to usage of the freeway HOV system
- Messages displayed on selected signs, with no beacons, and in accordance with the CMS system priorities

Messages other than those related to traffic operations should be avoided.

Test Messages — It may be necessary to run test messages on a CMS sign in order to ensure correct operations or to "burn-in" a new sign. These messages shall not confuse or misdirect traffic. Use *non-message*, or appropriate public service announcements as test messages. Acceptable *non-message* test messages may contain the legend: "TEST MESSAGE", display a portion of the alphabet or a sequence of numbers, or non-message test patterns such as moving columns or rows, etc. The Regional Traffic Office should approve other test messages.

P. Commercial Dump Prohibition Signing

Some rest areas along state highways provide RV dump stations for use by noncommercial vehicles. Install the COMMERCIAL VEHICLE USE PROHIBITED (I8-704) sign at these RV dump sites. This is the only valid application for this sign on state highways.

Design Manual Chapter 1030 discusses RV Dump Stations.

2.6 Motorist Information Signs

Motorist information signs guide travelers, people of all ages, to activities essential to their journey. The resultant advertising medium for business is a program by-product. Motorist information sign assemblies consist of motorist information sign panels, on which individual business signs may be displayed (see Appendix 2-13).

RCW 47.36.310 authorizes the department to install motorist information sign panels, where space is available on Interstate highway rights of way, to display individual business signs for gas, food, lodging, camping, and tourist-oriented activities. RCW 47.36.320 authorizes the department to install motorist information sign panels where space is available on primary and scenic rights of way, to display individual business signs for gas, food, lodging, and recreation (includes camping), and tourist-oriented activities. These statutes also require that the department charge reasonable fees for installing and maintaining the individual business signs; and, authorize the department to charge reasonable fees for erecting and maintaining the motorist information sign panels.

To support and enhance state law, official regulations for motorist information signs are provided in Chapter 468-70 of the Washington Administrative Code (WAC). WAC 468-70 is divided into nine sections, which are:

- 468-70-010, General
- 468-70-020, Definitions
- 468-70-030, Location of panels and signs
- 468-70-040, Interchange and intersection selection for motorist information sign panels
- 468-70-050, Business eligibility
- 468-70-060, Signing details
- 468-70-070, Permits and procedure
- 468-70-080, Fee schedule
- 468-70-085, Maintenance replacement of pictorial business signs manufactured by the department prior to January 1, 1987

From the traffic engineering perspective, and for procedural efficiency, it is obvious that the regions need to apply the provisions of WAC 468-70 uniformly. It is only fair that travelers unfamiliar with any given area receive information about services, in the same manner, regardless of where they travel within the state. Likewise, applying the regulations uniformly results in equitable treatment for the business community.

The discussions in the following portion of the *Traffic Manual* clarify specific parts of the WAC to assure that the motorist information sign program is administered statewide as uniformly as possible.

A. WAC 468-70-030, Location of Panels and Signs

1. **Interchanges** — WAC 468-70-030(1)(a) provides that, “For freeways and expressways the motorist information sign panels shall be erected between the previous interchange and at least 800 feet in advance of the exit direction sign at the interchange from which the services are available.” The WAC is silent in providing regulation about where motorist information sign panels are placed “beyond the previous interchange,” or if placement between the crossing structure and the on-ramp merge point is permissible.

The Headquarters Traffic interprets the WAC to mean that motorist information sign panels are intended to be erected beyond the on-ramp merge point. Locate the panels far enough downstream so that mainline and on-ramp traffic, both approaching the merge area and within the merge

area, can focus on the driving task without distraction.

It is possible that locations exist where panels can be placed, for an upcoming interchange, between the crossing structure of the previous interchange and its on-ramp merge point. Installations at these locations are extraordinary. Conduct an on-site review to assure that a motorist information sign panel will not block the on-ramp traffic's view of upstream traffic approaching the merge area, and to assure that a panel installation will not overload the immediate area with signs. Before installation, the regions are requested to consult with the State Traffic Engineer's Office about candidate locations.

2. **Intersections** — WAC 468-70-030(1)(b) provides in part that "For conventional roads the panels shall be erected between the previous intersection and at least 300 feet in advance of the intersection from which the services are available." Neither the WAC nor the MUTCD recommends spacing guidelines to apply between panels where more than one type of motorist service activity is available from a particular intersection. However, the panels may be spaced, based on the speed limit of the roadway, in accordance with the following table.

MIS Signing Spacing (Feet)		
Posted Speed (MPH)	**Minimum**	**Desirable**
25	160	200
30	190	235
35	220	270
40	255	315
45	285	350
50	315	390
55	350	430
60	380	470
65	410	510

Table 2-13

B. WAC 468-70-040, Interchange and Intersection Selection for Motorist Information Sign Panels

1. **City Streets That are Part of State Highways** — WAC 468-70-040(2) provides general regulations about locating motorist information sign panels within the corporate limits of cities towns, with regard to limited access highways.

WAC 468-70 provides limited regulations about erecting and maintaining panels within corporate limits along city streets that are also state highways (non-access controlled routes). WAC 468-70-050(4) provides that "Within cities and towns having a population greater than 22,500, the department shall obtain concurrence from the municipality of locations for installing panels, and may request that the municipality install the panels." This regulation cannot be interpreted to mean that the department has blanket authority for motorist information signs in cities and town having a population of 22,500 or less.

In April, 1997, the department entered into a written agreement with the Association of Washington Cities which in part sets forth the maintenance responsibility for various roadway appurtenances including traffic control devices. The basis in law for this agreement is RCW Chapter 47.24, City Streets as Part of State Highways. Unfortunately, neither the agreement nor the law clearly establish the responsibility for motorist information signs along non-access controlled routes within corporate limits.

Some cities and towns have established ordinances to include motorist information signs, while some have not. Further, some cities and towns declare motorist information signs to be a form of billboard and prohibit them. The Headquarters suggests that the regions encourage cities and towns, regardless of population, to be lead agency in motorist information sign matters. However, the regions can install and maintain the signs at the request of a city or town, through a written agreement.

2. **Signing From State Highways** — WAC 468-70-040(3) provides in part that signing will be provided from the nearest interchange or

intersection from the nearest freeway/expressway or conventional highway to the activity. There may be situations where two exits are nearly equidistant to a business, and signing from either exit is convenient for the motorist. In these situations, it is appropriate to sign from either exit, or to "split" the signing directionally since the business is equally accessible by either exit.

WAC 468-70-040(3) also provides in part that signing will not be provided from a freeway or expressway to another freeway or expressway. The intent of this regulation is to assure that signs are not provided along a major route, where tourists typically travel, to direct motorists to another major route where tourists typically travel. However, the regulation does not preclude signing from a freeway or expressway to a conventional state highway in circumstances where the conventional highway is used primarily by local traffic. In these cases, the regions can consider the conventional highway to serve travelers more in the nature of a county road or a city street.

C. WAC 468-70-050, Business Eligibility

WAC 468-70-050 provides the minimum eligibility criteria that businesses must meet to qualify for the display of individual business signs on motorist information sign panels. The regions may use the following interpretative information to assist with eligibility analysis of the nuances that arise.

1. **Gas Activities** — WAC 468-70-050(1)(a) specifies the minimum eligibility requirements for the display of gas activity business signs on motorist information sign panels.

Within the WAC, restroom facilities available to patrons are an eligibility requirement. Some gas activities may utilize portable toilets, while others keep the doors locked and signed for customer use only. Travelers expect indoor restrooms, and a sink for clean-up, when they stop for fuel. Portable toilets are acceptable only for temporary use when the indoor facilities are temporarily out of order for repair or remodel. It's acceptable for a gas activity to keep the restroom doors locked, provided that patrons may use the services.

2. **Food Activities** — WAC 468-70-050(1)(b) requires that food activities be open at least 12 hours per day and serve breakfast, lunch, and dinner. With regard to specialty food services, such as pizza houses, questions often arise about what constitutes breakfast and what are reasonable morning hours for food activities to open.

Historically, the department has been unsuccessful in establishing a prescribed regulation to address these two questions. A popular dictionary defines breakfast as the first meal of the day, without reference to specific food arrangements. Thus, it is not appropriate to require that food activities serve traditional breakfast items. Also, the business signs depicting specialty houses provide travelers with a pretty good idea of what to expect.

The department normally does not receive complaints from traveling motorists provided that specialty houses are open by 11:00 a.m. and the menu offers items that are typically associated with lunch and dinner. Opening hours are not normally an issue for food activities that offer the full complement of menu items typically associated with breakfast, lunch, and dinner, because they usually open fairly early in the morning.

WAC 468-70-050(1)(b)(i) provides that food activities must be licensed or approved by the county health office. For casino restaurants on Indian lands, there is no county jurisdiction over health interests at casinos. The Federal Department of Health and Human Services has an Indian Health Service Office at its District Offices around the state. The regions can ask the casino restaurant for a copy of the Indian Health Service inspection report as a means to meet the health eligibility criteria.

WAC 468-70-050(1)(b)(iii) provides that food activities must have parking facilities for a minimum of 10 vehicles. This Rule was written prior to 1985, when legislature authorized motorist information signs within urban areas. In urban areas, notably downtown business districts, there are food activities having on-street parking only but that meet the other eligibility criteria. Rather than amend the WAC to address this

nuance, the Headquarters interprets on-street parking to meet the specified parking requirements for these food activities.

Bar and grill type food activities may qualify for business signs provided that minors are allowed in the food area. If patronage of the grill requires that visitors access through the bar, then minors would not be allowed and the business is not eligible.

3. **Lodging Activities** — WAC 468-70-050(c)(i) provides that lodging activities must be licensed and approved by the Washington Department of Health. Bed and Breakfast facilities having less than three rooms for rent are exempt from the Department of Health licensing requirements, thus an approval letter from the county health authority fulfills the eligibility requirement.

The regions are occasionally asked to approve youth hostels for business signs. Typically youth hostels fail to pass the lodging eligibility criteria because they have dormitory type sleeping arrangements. The Headquarters Traffic Office interprets the language in RCW 47.36.340(2) and WAC 468-70-050(1)(c)(ii), "provide adequate sleeping ... accommodations", to mean individual sleeping rooms must be available. As a signing alternative, there is an international youth hostel symbol that can be used, in the manner of the generic motorist service signs discussed in section 2.F.6 of this chapter.

4. **Tourist-oriented Activities** — The minimum eligibility requirements for the display of business signs on tourist-oriented directional signs (TODs) are provided in WAC 468-70-050(1)(f). WAC 468-70-020(11) defines a tourist-oriented business as a "lawful cultural, historical, recreational, educational, or entertaining activity or a unique or unusual commercial or nonprofit activity, the major portion of whose income or visitors are derived during its normal business season from motorists not residing in the immediate area of the activity."

These are businesses that could not exist without tourists, and other tourist-oriented businesses, such as wineries and factory outlet complexes, having tourists comprise a majority of their visitors. Other traditional historic and cultural attractions described earlier in this chapter may be eligible for TODs. Where possible, TODs are the recommended sign medium for these attractions.

The types of businesses not intended for display on TODs are those offering commonly available retail goods and services, and catering to local residents. Accordingly, the regions should review applying businesses on a case-by-case basis to determine their eligibility for the TODs program. For questionable businesses, the regions should contact the State Traffic Engineer's Office prior to final approval, to avoid the possibility of setting an undesirable precedent.

5. **Multiple Business Activities** — WAC 468-70-050(6) provides that for businesses which qualify for business sign placement on more than one type of motorist information sign panel, placement will be made on the type of panel, determined by the department, which best describes the main product or service.

This subsection further provides that business signs for such businesses may be placed on more than one type of motorist information sign panel, provided that sign space is available and that a qualifying single business activity that submits an application in the future will not be precluded from receiving business signs. Under these circumstances, the department will remove, without refund of any fees, the second set of business signs for a multiple business activity to accommodate business signs for a single business activity. Before approving the second set of business signs, obtain the business owner's written acknowledgment and concurrence with this stipulation.

A newly evolving motorist service industry joins together previously independent businesses, such as a food activity and a mini-mart, into one combined business activity. An example is a McDonald's combined with a Chevron mini-mart. Accordingly, the regions may be asked to approve logos for both the food activity and the gas activity and to display the activities on their respective back panels. Applicable to the question is the word "qualifying." If each activity qualifies for business signs under its own merit,

then each can be signed for under WAC 468-70-050(6). However, it is inappropriate to sign for both activities on one business sign if only one of the activities qualifies. An interesting nuance to this situation is where two food activities, such as Taco Bell and Pizza Hut, are combined either under one roof or together with a gas activity. In this situation, review the combined food activity as if it were one activity, and if it qualifies use one business sign that displays both food activities.

6. **Qualifying Business With the Same Name** — There are a few locations where more than one business with the same name, e.g., Union 76, will be accessible to travelers from a particular interchange or intersection. Because travelers do not need redundant information on mainline back panels at these locations, some level of interaction between the two businesses will most likely be required.

If both businesses are located on the same side of an interchange or intersection, an agreement between the competing businesses may be needed to direct the department as to which activity will be the permit holder for the signing. Where the two activities are located on opposite sides of the mainline, it may be possible to place both activities under permit, and sign each activity from one direction of travel using a right arrow on the off-ramp follow-through sign. As an option, provided both businesses agree both a right and left arrow may be used on each ramp sign.

D. WAC 468-70-070, Permits and Procedure

The regional offices are responsible for processing permits, and applications for permits (Appendixes 2-14 and 2-15), determining business eligibility, and assisting the Headquarters Accounting Office with the process for billing and collecting annual maintenance fees. WAC 468-70-070, Permits and Procedure, provides the general requirements and procedures for the information contents on permit applications, ineligible business grievance hearings, fabrication and installation of business signs, business sign maintenance and replacement fees, and revocation and expiration of permits.

1. **New Applications** — The MIS status worksheet (Appendix 2-16) may be used to assist the Regional Outdoor Advertising Representatives with pending applications. Applications for logo sign permits, together with the accompanying fees, are accepted at the regional offices. The steps below are followed to process the applications:

- The Regional Mail Receptionist opens the application envelope and, if a check is enclosed, records the date received and other information about the check onto the Mailroom Cash Receipt Log. An application not accompanied by a check is forwarded to the Regional Outdoor Advertising Representative, for return to the submitter together with a request for the application fee
- The application and check is sent to the Regional Accounting Office, where the TRAINS Cash Receipt document is completed
- The Regional Accounting Office sends the original application to the Regional Outdoor Advertising Representative for a permit number assignment
- The Regional Outdoor Advertising Representative assigns the permit number, documents the state route number and milepost, the type of highway, and the type of business. A copy of the original application is then sent from the Regional Outdoor Advertising Representative back to the Regional Accounting Office
- The Regional Accounting Office enters the required information into TRAINS and then sends a copy of the application to the Headquarters Accounting Office
- The Regional Outdoor Advertising Representative visits the business within 30 days to review compliance with the eligibility requirements and to verify that sign space is available
- Qualifying businesses receive an approval letter (see Appendix 2-17), whereas non-qualifying businesses receive a non-approved explanatory letter (see Appendix 2-18)

Note: New applicants have priority, over existing permit holders requesting business sign revisions, if a backlog develops in application processing.

A business may apply for a location having a full complement of business signs on a back panel. At the request of an applying business that otherwise qualifies for signs, a copy of the application may be retained on a waiting list maintained by the Regional Outdoor Advertising Representative. The original application and a refund check for the application fees are then returned to the submitter.

A business under construction may apply for a permit. Although the motorist information sign program is intended for operating businesses, the regions may consider holding an application in a pending status where there is less than a full complement of business signs on a back panel. The application fee is remitted after the business becomes operational and just prior to regional review for eligibility compliance. Should available space on a back panel be limited, an operating business that applies during the "pending" period, receives a higher priority for signs than the business under construction. Thus, before accepting an application from a business under construction, the Regional Outdoor Advertising Representative obtains written concurrence from the prospective permit holder acknowledging the signing priority.

2. **Business Sign Messages** — WAC 468-70-070(5) provides that business signs may not display messages advertising products or services incidental to the qualifying motorist service activity. The WAC also provides that the department has final approval authority of the designs.

WAC 468-70-050(1)(a)(vi) discusses eligibility criteria for card-lock gas activities. Business signs for and eligible card-lock gas activity are to incorporate the message CREDIT CARDS only if cash is not accepted at the activity.

Over time, businesses have proposed an array of incidental messages on business signs for the Regional Outdoor Advertising Representatives to consider. A few guidelines will help the regions with the assessment.

The business sign may duplicate the on-premise sign which is helpful in assessing business signs for food activities, such as having "Bar and Grill" as part of an on-premise sign. Otherwise, in this case, references to bar, lounge, spirits, etc., are not appropriate on business signs.

Another tool for use in evaluating incidental business sign messages is whether or not the messages provide useful information to travelers concerning service availability. For example, an "Open 24 Hours", "Food Mart" (if part of the business name), or a "Closed Sundays"(for food activities open 6 days per week) supplemental message on a business sign provides useful information for travelers. Whereas, incidental messages such as "ATM, Postage Stamps, Car Wash, Casino (not open to minors), and Drive-Thru Espresso" do not. (The message Casino Cafe may be displayed on food business signs to provide drivers with a clear picture about what they will find. However, food activities affiliated with casinos are only eligible for business signs if they serve minors.)

Corporate logos are allowed on business signs, reflecting the provisions of RCW 47.36.005(7). This statute in part provides that "Nationally, regionally, or locally known commercial symbols or trademarks for service stations, restaurants, and motels shall be used when applicable."

The primary message on a business sign needs to be more conspicuous than the supplemental message. Accordingly, it is recommended that supplemental messages be incorporated into the overall business sign message with a letter height no taller than 75 percent of the primary message. Refer to Section (C)(5) of this part for additional guidance to assist with business sign messaging for multiple business activities.

Directional information, except for arrows and mileage information on ramp or conventional highway business signs is not acceptable. Follow-through signs are the appropriate medium for route direction.

3. **Fabrication and Installation of Business Signs** — WAC 468-70-070(8)(a) provides in part that "Once an application is approved, the department will request the business to provide

the signs ...". It is preferable that the signs not be pre-drilled by the fabricator. WAC 468-70-070(8)(b) provides the circumstances under which the department will manufacture the business signs. In either case, the business signs are considered to be the property of the business.

4. **Business Sign Maintenance and Replacement** — WAC 468-70-070(9)(a) and (b) provide general regulations for maintaining and replacing business signs due to weather-wear. However, the WAC is silent on replacing business signs prematurely due to vandalism or vehicle impact. The department will replace signs irreparably vandalized, only once. Subsequent replacements will the business' responsibility. The department always replaces business signs that are irreparably damaged due to vehicle impact, although this is an infrequent occurrence. Costs for replacing business signs damaged by vandalism or vehicle impact are appropriately charged against Program M, although Program Q funds may be used at the region's discretion.

5. **Annual Maintenance Fees and Permit Expiration for Failure to Pay** — The Headquarters Accounting Office mails the annual maintenance fee billings about 30 days prior to the anniversary date of permit issue. About a month before that, the Headquarters Accounting Office provides the Regional Outdoor Advertising Representative with a Scheduled Billing Report of impending renewals (see Appendix 2-19) for the upcoming month, to review, update, and return. The regions use the Motorist Information Signing Customer Change Form (see Appendix 2-20) to notify the Service Center Accounting Office about changes needed on the billing report.

WAC 468-70-070 requires that annual maintenance fees be paid within 30 calendar days of the anniversary of the permit issue, and also specifies that failure to pay by that date causes the permit to expire and the business signs to be removed from the motorist information sign panel. The name of a business, delinquent in fee payment by the due date, is provided from the Headquarters Accounting Office to the Regional Outdoor Advertising Representative. The region then sends the business a certified letter (Appendix 2-21) requesting the payment.

If the annual fees remain unpaid 30 days after the business receives the certified letter, the permit is expired and the business signs removed. The Regional Outdoor Advertising Representative notifies the Headquarters Accounting Office, using the Motorist Information Signing Customer Change Form, when permits have expired for non-payment of the annual fees.

6. **Prorated Maintenance Fees** — WAC 468-70-070(9)(d) provides in part that annual maintenance fees will not be prorated for fractions of the year in the event of business sign removal or coverage. This regulation is intended to support WAC 468-70-050(8) regarding seasonal business operations, and maintenance activities, severe storms, vehicle impact, and changes of ownership or operation. The WAC is not intended to consider business sign removal due to construction activities.

Typically, when long-term projects are planned, temporary motorist information signing is developed as part of the sign plan. For some projects, however, temporary motorist information signs cannot be installed due to construction logistics. For these projects, during the design stage, the regions contact the businesses impacted by the project and also make arrangements through the Headquarters Accounting Office to suspend the annual maintenance fees until such time as the permanent motorist information signs are reinstalled. The time frame for fee suspension is rounded to the nearest year.

7. **Reassigning Valid Permits** — WAC 468-70-070-(10) provides that the department shall reassign valid permits, effective only after receiving notice from the permit holder, when an activity changes ownership or an activity changes operation, such as temporary closures for remodel or repair. In either case the eligibility requirements must still be met, and such reassignments have preference over applications on a regional waiting list. The Regional Outdoor Advertising Representative should also notify the Headquarters Accounting Office about the reassignment using the Motorist Information Signing Customer Change Form (see Appendix 2-20).

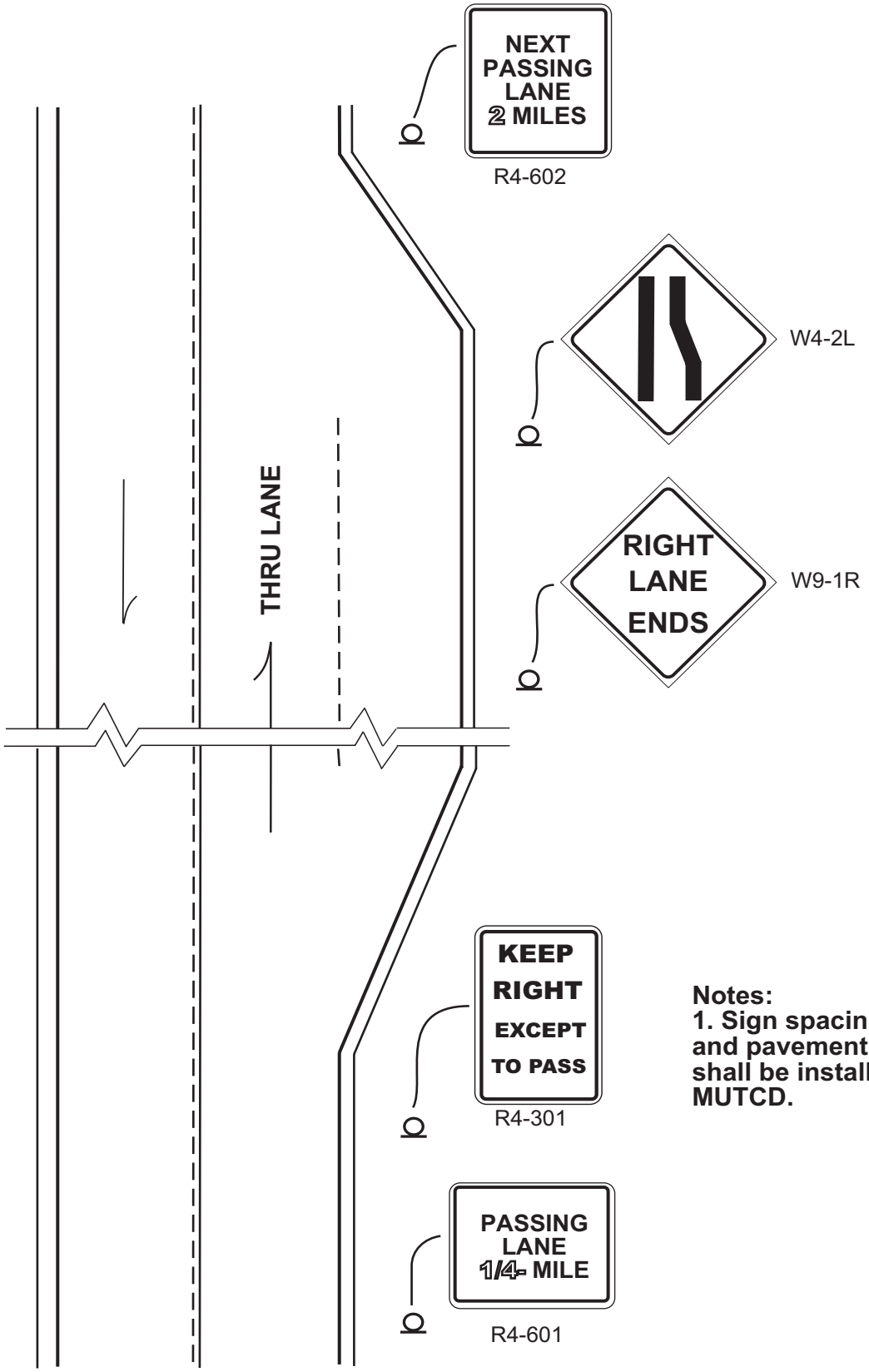
The WAC does not allow permit reassignment for businesses having simultaneous changes in both ownership and operation, or where businesses have closed for reasons other than change of ownership or operation. For either of these reasons, a new application and permit is necessary, giving preference to applications at the top of a regional waiting list.

8. **Surveillance and Permit Revocation for non-Compliance** — Occasionally, the regions will learn through field review or motorist complaints that participating businesses are not operating within the eligibility requirements. When this occurs, a certified letter is sent to the business (Appendix 2-22), followed up with a field review for compliance verification.

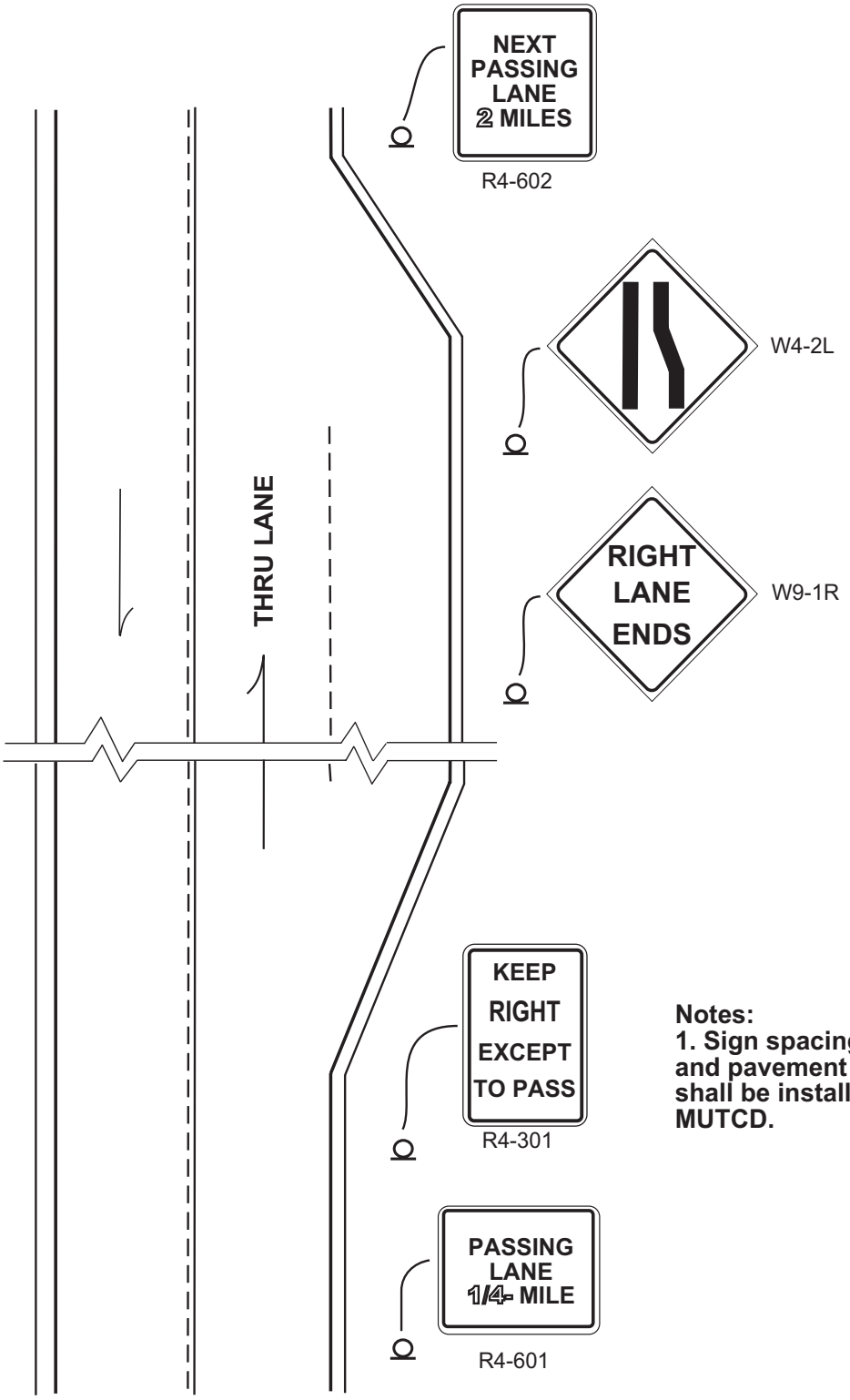
Business signs may be removed and permits revoked 30 days after the written notification for businesses not yet in compliance. However, before permit revocation and sign removal, a hearing in accordance with the Administrative Procedures Act is required by WAC 468-70-070(11).

9. **Program Documentation** — It is recommended that the regions document expenditures associated with motorist information signs, so that cost information is available to support requested levels of funding during upcoming budget cycles.

Labor for the program administration is paid for under Program Q, Operations, whereas labor and materials associated with sign installation are paid for under Program Q, Minor Enhancements. (***Note:*** See Section (D)(4) of this part for business signs replacements due to vandalism or vehicle impact.) Refer to the *Chart of Accounts*, M 13-02, for the correct work operation codes.



Notes:
1. Sign spacing and pavement markings shall be installed per MUTCD.



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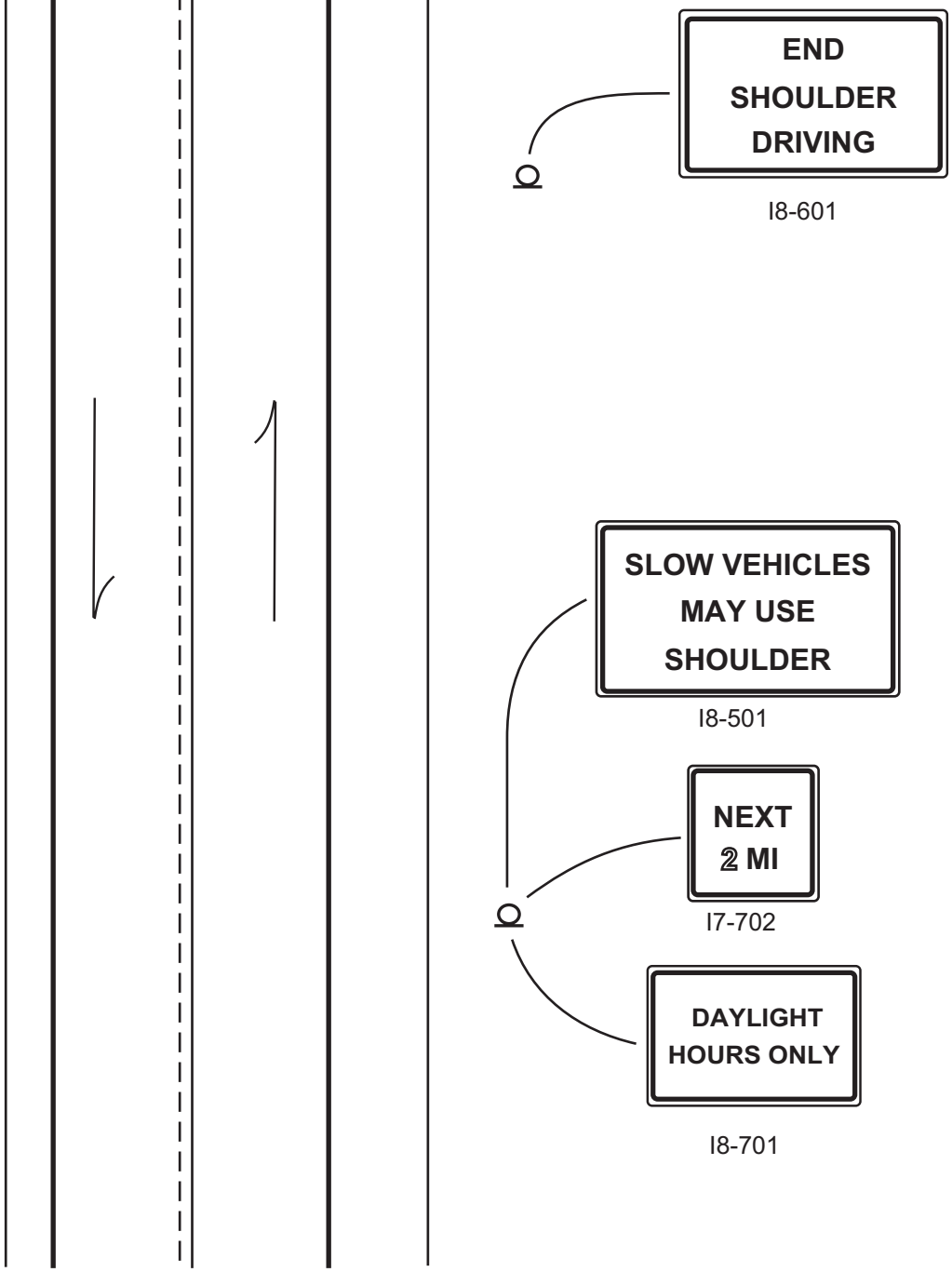
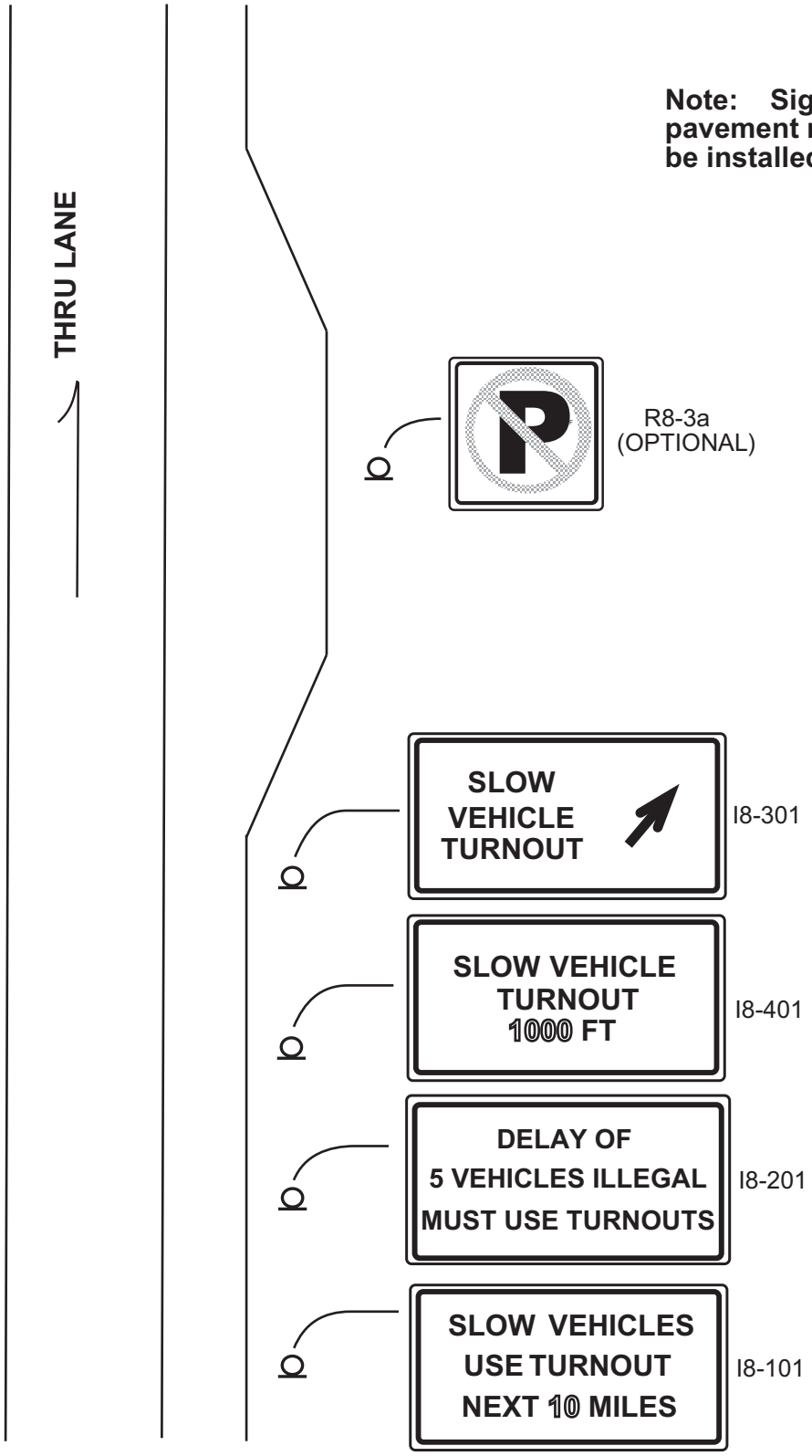
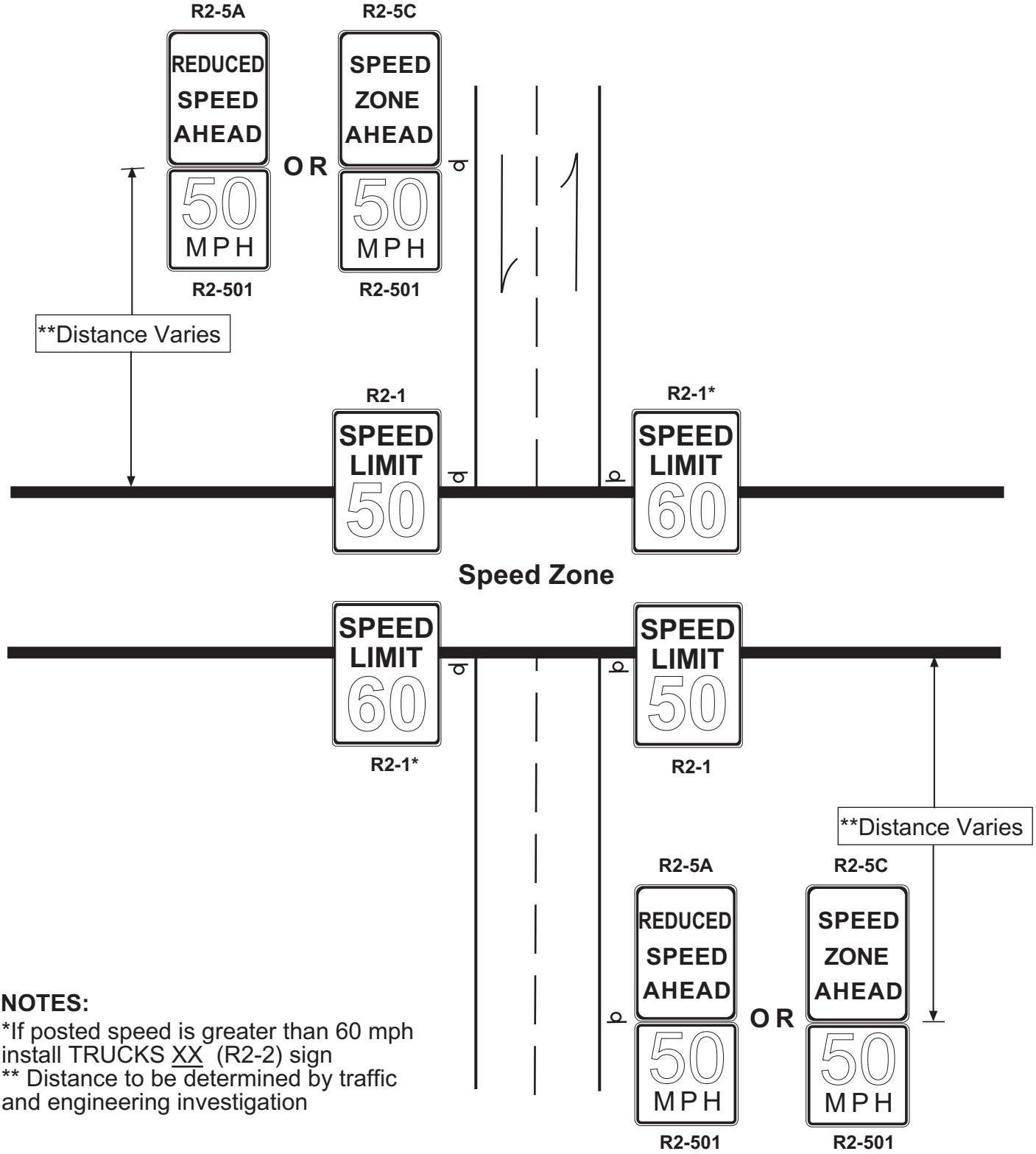



Note: Sign spacing and pavement markings shall be installed per MUTCD
THRU LANE
R8-3a
(OPTIONAL)
SLOW
VEHICLE
TURNOUT
I8-301
SLOW VEHICLE
TURNOUT
1000 FT
I8-401
DELAY OF
5 VEHICLES ILLEGAL
MUST USE TURNOUTS
I8-201
SLOW VEHICLES
USE TURNOUT
NEXT 10 MILES
I8-101



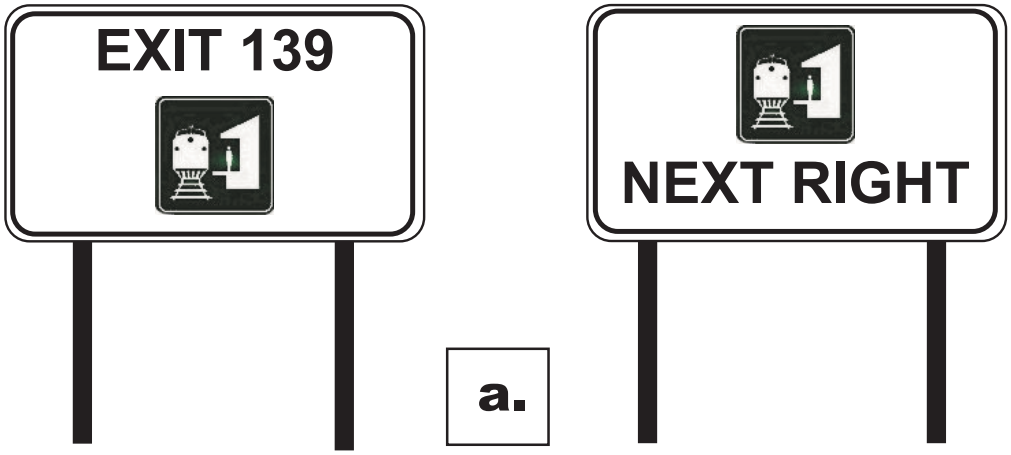
NOTES:
*If posted speed is greater than 60 mph install TRUCKS XX (R2-2) sign
** Distance to be determined by traffic and engineering investigation

Install signs on both sides of traveled way for each direction of multi-lane divided highways

Selection Criteria for Supplemental Guide Sign Destinations For Full Access Control Freeways

Type of Generator	Specific Criteria	Major Metro Area[1]	Urban Area[2]	Rural Area
Airports -(Destination name only, not symbol)	Regularly Scheduled Commercial Flights Per Day	35	20	15
	Distance from Interchange (miles)	5	5	5
	Paved &Lighted Runway ≥ 2,500 ft long[3]	-	-	-
Colleges, Universities, and Branch Campuses	Must Be Accredited. Total Enrollment , full & part time students:	4,500	2,500	1,000
	Distance from Interchange (miles)	5	5	5
Regional Shopping Centers	3 Major Department Stores; 500,000 sq ft of Leasable Space; Minimum 9,000 Daily One Way Trips[4]	-	-	-
	Distance from Interchange (miles)	1	1	1
Industrial Parks	500,000 sq ft of leasable space[5]	-	-	-
	Distance from Interchange	5	5	5
Ports/Port Districts	Served by two or more Transportation Modes (Water, Highway, Rail, Air)			
	Distance from Interchange	5	5	5
Event Venues	Annual Attendance	300,000	250,000	200,000
	Distance from Interchange (miles)	2	2	2
Major Recreation Areas	Annual Attendance (open to public)	300,000	250,000	100,000
National Parks	Sign from Major Junctions; Case by Case			
State Parks[6]	Distance from Interchange (miles)	15	15	15
USFS Facilities (Campgrounds, HQ's)	Distance from Interchange (miles)	1	1	10

[1] Population greater than 50,000
[2] Population 5,000 - 49,999
[3] See section 2.4.D.3 for additional criteria
[4] See WAC 468-95-025 for additional criteria
[5] Leasable space can be a mix of manufacturing, service, and warehouse facilities
[6] Per RCW 47.36.290



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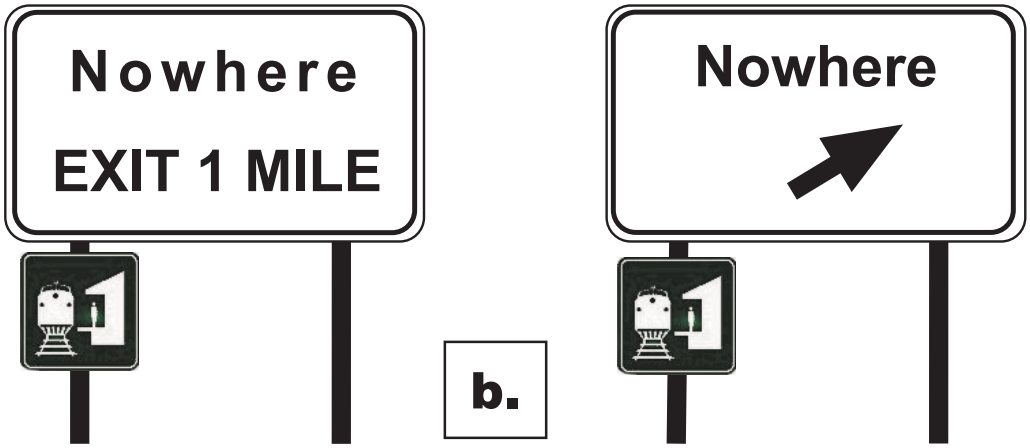


b.

c.

Notes:
1. The Amtrak symbol is used to show typical installation. Sign logo will vary with transit or rail agency.
2. These typical installations may also be used for motorist services signs (Police, Food, Gas, etc).
3. Install signs per MUTCD spacing requirements.

Appendix 2-8 Application for Historic/Cultural Sign

Organization Address

Mailing Address (if different)

Name of authorizing Official (Include title, e.g., Director, Trustee, etc.)

Address of Authorizing Official

Telephone #

email address

Has your organization been granted *non-profit* status (IRS 501 (c)(3)) Yes ☐ No ☐

Please provide the following information about your organization:

- What are your visitation hours and when are you open to the general public (note any seasonal variations to schedule of operation)?
- Is the facility easily accessible to all visitors, including ADA features? Yes ☐ No ☐
- Is the facility readily visible from the highway? Yes ☐ No ☐
- If not, how far is your facility from the state highway on which the sign is being requested
- Is the road serving your facility a two-lane, all-weather road? Yes ☐ No ☐
- Please indicate the name or number of the road, street or highway serving your facility
- Please describe where you would like the sign to be located. Be specific, include the state highway number and milepost, or distance to the nearest important intersection or junction

For Official Use Only

Historical Attractions

- OAHP – Is attraction included on the Heritage Register? Yes ☐ No ☐
- HRC – Does site include IC? Yes ☐ No ☐
- Are there historic buildings, features, or ruins w/ interpretive marker? Yes ☐ No ☐
- HRC approval? Yes ☐ No ☐ by_____

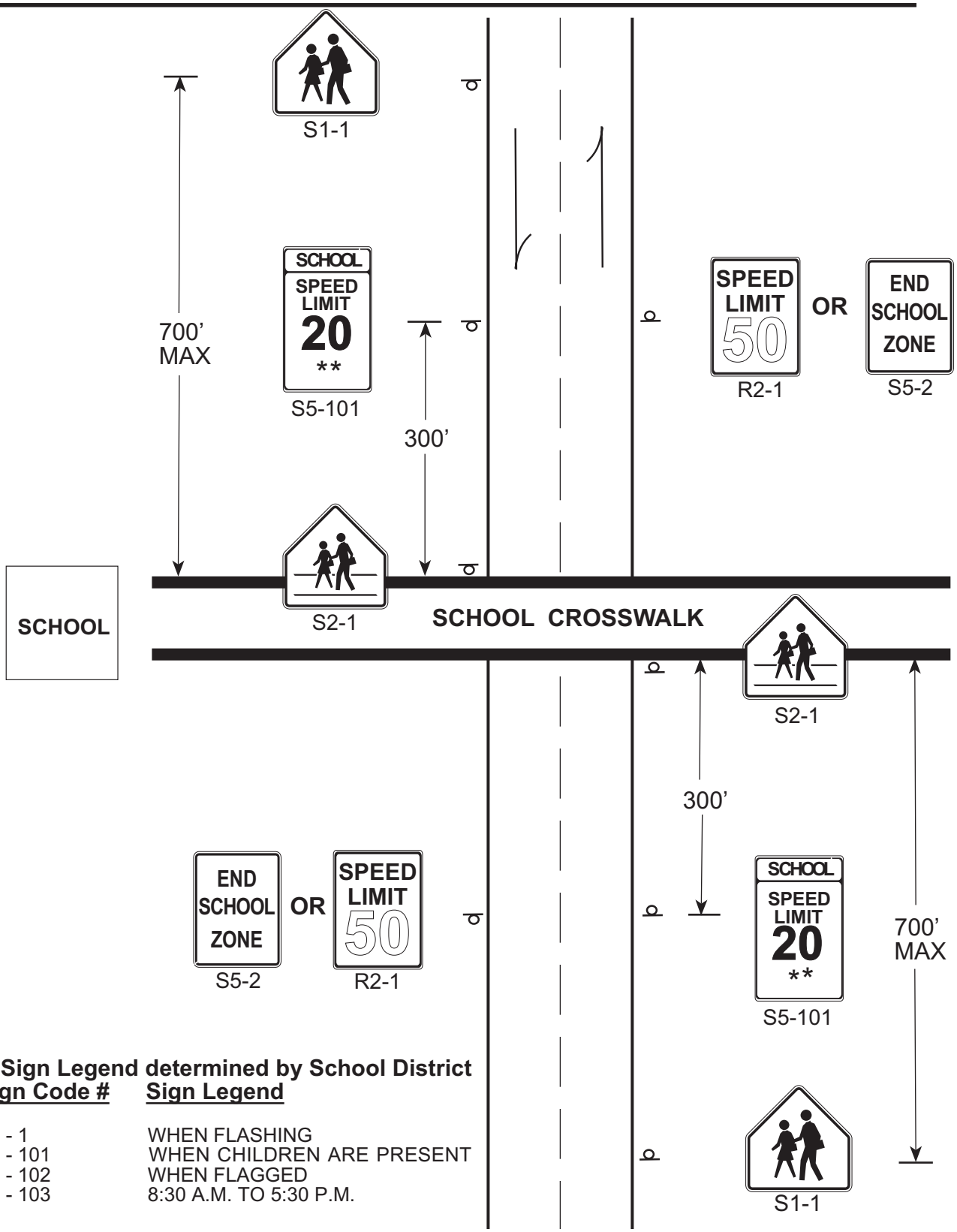
Cultural Attractions

- Museums –HRC approval? Yes ☐ No ☐ by_____
- Religious – Shrine, or unique religious nature w/ visitor facility or tour? Yes ☐ No ☐
- Educational – Outstanding educational value w/ visitor facility or tour? Yes ☐ No ☐
- Scientific – Used for scientific advancement w/ visitor facility or tour? Yes ☐ No ☐

Sign approved ☐ **Sign disapproved** ☐ **Reason for disapproval** _____

Regional Traffic Engineer

Date



**** Sign Legend determined by School District**

Sign Code #	Sign Legend
S5 - 1	WHEN FLASHING
S5 - 101	WHEN CHILDREN ARE PRESENT
S5 - 102	WHEN FLAGGED
S5 - 103	8:30 A.M. TO 5:30 P.M.

See MUTCD Section "Traffic Control for School Areas" for sign spacing

Tolmi
Stat ark
NEXT RIGHT
CLOSED

Two Lane Highway (All speeds)
Multi-lane Highway (50 mph or less)

I6-904*

I6-901

I6-902

Multi-lane Highway
(55 mph or greater)

I6-901A

I6-902A

Highway Median Sections

I6-905A

I6-901A

I6-902A

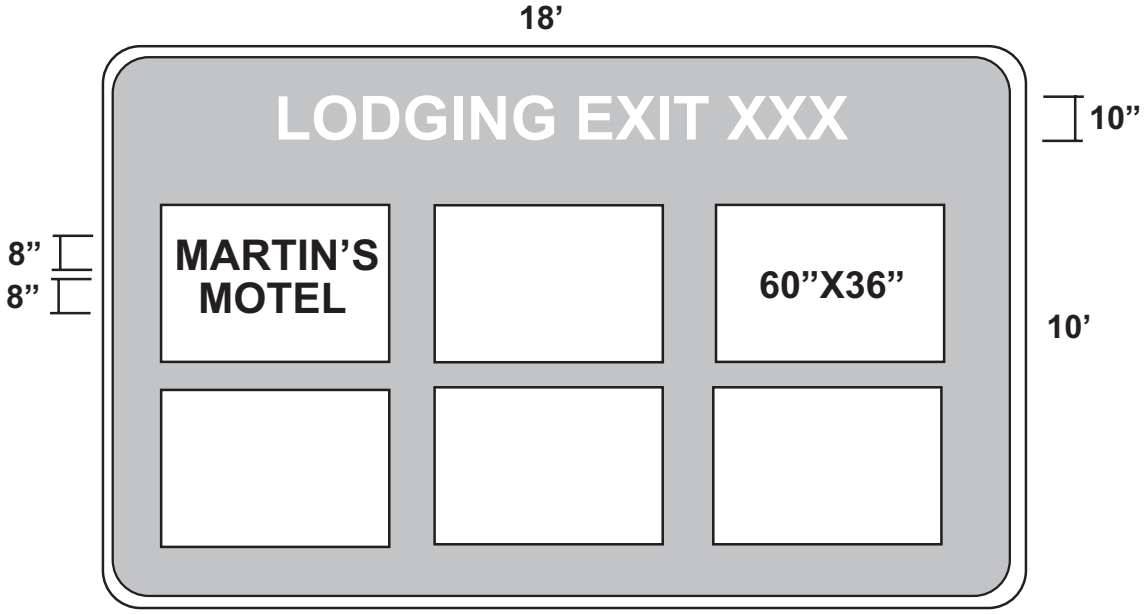
Ramp Sections

I6-904*

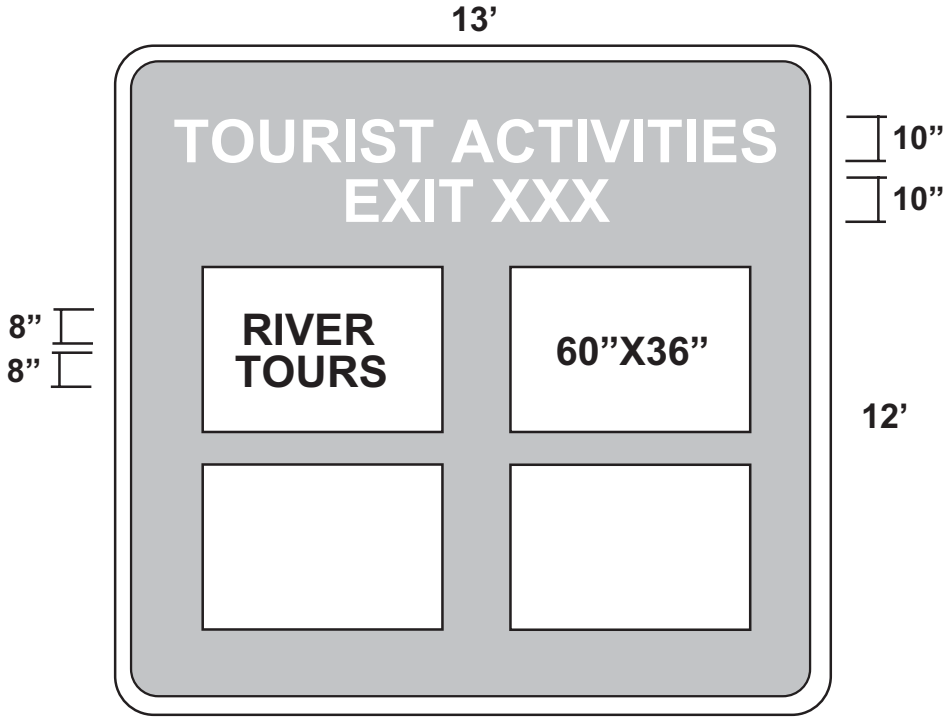
I6-901

I6-902

*Message may be modified to read:
WILDFLOWERS, TREE PLANTING,
or as specified.



LOGO SIGN PANEL



TOD SIGN PANEL

Washington State
Department of Transportation

Permit for Motorist Information Signing or Tourist-Oriented Directional Signing

Permit No.	Check One		Payee No.
	☐ MIS ☐ TODS	☐ New ☐ Update	

In accordance with RCW 47.42 and Washington Administrative Code 468.70, and subject to all terms, conditions, and provisions written below or on any part of this form, PERMISSION IS HEREBY GRANTED TO:

Business Name _____

Physical Address _____

for the privilege to have motorist information signing or tourist-oriented directional signing installed by the Department of Transportation. Such signing is to be installed on SR _____, at an intersection or interchange located at State Route Milepost _____.

Dated At _____ This _____ day of _____, _____

I, the undersigned, hereby accept this permit subject to the terms and conditions as herein set forth.

This _____ day of _____, _____

Company Representative Signature	WSDOT Representative

Billing Name	Billing Phone	
Billing Address	RE Location *(22-Character TRAINS Field)*	
	Federal Tax ID	Bill Code **8110**

General Provisions

This permit is expressly conditioned and subject to Permittees:

1. Agreement to limit the height of any on-premise signs to no greater than 15 feet higher than the roof of the main building of the business (applicable to businesses located within one mile of the interchange or intersection, and further applicable to on-premise signs visible from interstate highways, RCW 47.42.046 and RCW 47.42.047.
2. Agreement to provide for and maintain adequate follow-through signing.
3. Payment of a manufacturing and/or installation fee of _____ for:
   (Rev. Source 0299-29)
   _____ ☐ Mainline _____ ☐ Ramp _____ ☐ Conventional
4. Agreement to and payment of an annual maintenance fee within 30 calendar days after the anniversary date of the permit issue.
5. Acknowledgement that the annual maintenance fee is set at _____ subject to change by the Department of Transportation. *(Rev. Source 0299-30)*
6. Acknowledgement that assignment of this permit shall be effective only upon receipt of assignments by the Department of Transportation.
7. Acknowledgement that this permit may be revoked for failure to provide any of these general provisions or for failure to provide the services and/or facilities required by section 468.70.050 and 468.70.070 of the Washington Administrative Code.

DOT Form 224-042 EF
Revised 11/96

Washington State
Department of Transportation

Permit Application - One or More Business Signs

Permit Application - One or More Business Signs to be affixed to Information Panels.

Business Name	
Physical Address	
Federal Tax ID	
Interchange or Intersection Name or Number	
Brief Description	

For WSDOT Use Only

Permit Number _____

Region _____

Payee Number _____

SR Mile Post _____

Highway Type

☐ 1 - Interstate ☐ 3 - Scenic
☐ 2 - Non-Interstate

Type of Business

☐ 1 - Gas ☐ 3 - Lodging ☐ 5 - Recreation
☐ 2 - Food ☐ 4 - Camping ☐ 6 - TOD

Bill Code **8110**

Application Fee:

*** $150.00 Per Application - Nonrefundable**

Make checks or remittance payable to:

"Department of Transportation"

Mail with proper fee to the appropriate Region Traffic Engineer listed in the instructions.

Fees in the amount of **$150.00** are paid herewith to defray the basic administrative expense incident to the processing of this application according to Washington Administrative Code 468-70-070.

* Application fee may only be refunded if, after approval, the activity is not signed for reasons caused by the department.

This application is subject to RCW 47.42, Washington Administrative Code 468-70 and provisions contained on the back hereof.

Applicant indicates willingness to enter formal agreement to limit the height of any on-premise signs to no greater than 15 feet higher than the roof of the main building of the business. (Applicable to businesses located within one mile of the interchange or intersection, and further applicable to on-premise signs visible from interstate highways, RCW 47.42.046 and RCW 47.42.047). Applicant further agrees to provide for and maintain follow through signing if required by the department. Applicant expressly understands that failure to limit the height of the on-premise signs or to provide for or maintain follow through signing if required or to pay annual maintenance fees may result in the revocation of business signing.

Billing Name	Dated this _____ day of _____ , _____
Billing Address	_____ (Print Name)
	_____ (Signature)
Billing Phone	_____ (Title)

DOT Form 224-041 EF
Revised 6/00

MIS STATUS WORKSHEET

SR: _____
MP: _____
Permit #: _____

Business type and name: _____

Date and summary of initial contact: _____

Information package and application sent: _____

Completed application and application fees received: _____

Review business eligibility and highway location (order backboards if needed): _____

Approved (Backboard order date): _____

Denied (sent letter giving reasons and refund fees): _____

Issue sign specifications, information sheet: _____

Inspect logo signs, issue permit, collect installation fees: _____

Install signs: _____

Telephone contacts: _____

Washington State
Department of Transportation

Regional Address Information

DRAFT

_____
_____
_____
_____

Re: MIS Signing

Dear _____

Your application for Motorist Information Signing has been approved. Since you will be providing your own pictorial logo sign, your cost will be $___.00 per sign for the installation fee or a total cost of $___.00. Your annual renewal fee will be $___.00 per sign permit each year, beginning in 20__.

As soon as we receive your $____ fee, we will order your background signs. Installation should follow in approximately 90 days.

Enclosed are your sign specification sheets and a "Permit for Motorist Information Signs." Please review them. If everything is satisfactory, please sign the permit and return it to me along with two copies of your sign design (for approval). Send your sign specification sheets to the sign manufacturer of your choice.

If you have any questions, please call _____ of my staff at _____.

Sincerely,

Regional Traffic Engineer

Enclosures

Washington State
Department of Transportation

Regional Address Information

DRAFT

_____
_____
_____
_____

Re: MIS Signing Application

Dear _____

The Department of Transportation is not able to approve your application for a Motorist Information Sign on SR ___ at milepost ___.

(A new intersection is being constructed in this vicinity beginning next month. The new intersection will prohibit installation of any new motorist information signs due to sign spacing restrictions described in WAC 468-70-030).

Since this information was not provided to you at the time of your initial inquiry, your application fee of $_____ is being refunded in accordance with WAC 468-70-070(6).

Please contact _____of my staff at _____with any questions regarding this issue.

Sincerely,

Regional Traffic Engineer

```
DOT-RAM1118-AA                    WASHINGTON STATE DEPARTMENT OF TRANSPORTATION                    PAGE:
                        MOTORIST INFORMATION SIGN SCHEDULED BILLING REPORT FOR  02/C1          RUN DATE: 12/29/(

BILL CODE: 8110
REGION   : 1  NORTHWEST

PERMIT   LOCATION (DESC)        EFF DATE EXP DATE FUND AGY REVSRC RATE       UNITS UOM            AMOUNT STATUS MESSAGE
======== ====================== ======== ======== ==== === ====== ========== ===== ========== ========== ====== ===============

CUSTOMER ID: 230371610 W    ARCO - MIS PROGRAM                  STATUS: ACTIVE     *** OPEN RECEIVABLES EXIS~ FOR CUSTOMER ***
1018041  AUBURN #5784          02/04/99 99/99/99  108 405 029930 SIGN1           1 EACH            50.00
1167051  AUBURN  FAC#5926      02/04/94 99/99/99  108 405 029930 SIGN1           1 EACH            50.00
                                                                                                 ----------
                                                                                                   100.00 CUSTOMER TOTAL

CUSTOMER ID: 534320409      RIDGEWAY BED & BREAKFAST            STATUS: ACTIVE
1005635  MOUNT VERNON           02/27/95 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 760294760 4    TEXACO FOOD MART                    STATUS: ACTIVE     *** OPEN RECEIVABLES EXIST FOR CUSTOMER ***
1005146  BELLINGHAM #076-0056   02/01/94 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 910441095      TIME OIL CO                         STATUS: ACTIVE     *** OPEN RECEIVABLES EXIST FOR CUSTOMER ***
1005764  BELLINGHAM SUNSET JP   02/13/98 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 910504583      HAGGEN INC CORPORATE OFFICE         STATUS: ACTIVE
1005785  BELLINGHAM SR5/255     02/03/99 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 910834525 1    TACO TIME                           STATUS: ACTIVE
1405103  KIRKLAND               02/01/94 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911006746      COUPEVILLE INN                      STATUS: ACTIVE
1020009  COUPEVILLE             02/01/92 99/99/99  108 405 029930                                  100.00

CUSTOMER ID: 911069437      COUNTY DELI                         STATUS: ACTIVE
1020028  COUPVILLE SR20/21.8    02/01/93 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911117022      BURGER KING #3627                   STATUS: INACTIVE   *** OPEN RECEIVABLES EXIST FOR CUSTOMER ***
1005080  EVERETT                02/01/92 99/99/99  108 405 029930                   EACH            50.00

CUSTOMER ID: 911143532      MCDONALDS RESTAURANTS               STATUS: ACTIVE     *** OPEN RECEIVABLES EXIST FOR CUSTOMER ***
1005698  FERNDALE SR5/262       02/21/96 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911255186      CENTURY MOTEL                       STATUS: ACTIVE
1005077  KENT                   02/01/92 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911257518      COLLECTORS CHOICE RESTAURANT        STATUS: ACTIVE
1009003  SNOHOMISH              02/01/92 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911261458      CABBAGE PATCH RESTAURANT & INN      STATUS: ACTIVE
1002114  SNOHOMISH              02/01/92 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911261458 1    CABBAGE PATCH BED & BREAKFAST       STATUS: ACTIVE     *** OPEN RECEIVABLES EXIST FOR CUSTOMER ***
1002115  SNOHOMISH              02/01/92 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911324553      FAMILY PANCAKE HOUSE #6             STATUS: ACTIVE
1520031  REDMOND SR520/12.8     02/01/93 99/99/99  108 405 029930 SIGN1           1 EACH            50.00

CUSTOMER ID: 911337697      JENOS INC                           STATUS: ACTIVE
1522018  MONROE                 02/01/94 99/99/99  108 405 029930 SIGN1           1 EACH            50.00
```

Motorist Information Signing
Customer Change Form

Please indicate both old and new information for each change.

1. Delete customer from TRAINS:

Customer Name _____

Billing Name _____

Customer # _____ Permit # _____

Adjust the following RE/IN's for the above named customer/permit:

_____ _____

_____ _____

_____ _____

_____ _____

2. Billing Address Change:

Customer Name _____

Customer # _____ Permit # _____

Old Address _____

_____

New Address _____

_____

3. Business Name Change (Same Owner / Same Customer):

Customer # _____ Permit # _____

Old Business Name _____

CHANGE TO:

New Business Name _____

New Business Address _____

_____

4. Business Sold (New Owner / New Customer:

Permit # _____

Old Customer #_____

Old Business Name _____

New Customer # _____

New Business Name _____

New Business Address _____

_____

5. Permit Denials or Other Changes:

_____

_____

Authorized by _____ **Date** _____

Washington State
Department of Transportation

Regional Address Information

DRAFT

_____
_____
_____
_____

Re: Annual Maintenance Fees - Motorist Information Signs

CERTIFIED MAIL

Dear _____

The Department of Transportation has not received your annual maintenance fees which were due _____.

Should you not make this payment within 15 days, we will assume that you no longer wish to participate in the Motorist Information Signing program. Then, 30 days after your receipt of this certified letter, we will remove your business signs.

If you have mailed the annual maintenance fee, please disregard this letter.

Sincerely,

Regional Traffic Engineer

cc: State Traffic Engineer

Washington State
Department of Transportation

Regional Address Information

DRAFT

_____
_____
_____
_____

Re: MIS Signing

Dear _____

The Department of Transportation periodically makes a field review of motorist information signing and ensures that each business is providing services for (*the required number of hours per day*).

A recent review indicated that (*your business is not open for business twelve hours a day, seven days a week*).

Item 7 of the Motorist Information Signing permit, which you signed, acknowledges that your permit may be revoked for failure to provide the services required by Section 468-70-050 of the Washington Administrative Code. Accordingly, we will require written assurance within 15 days that your facility will (*be open the required number of hours and days*).

Should you choose not to respond, we will assume that you no longer wish to participate in the Motorist Information Signing program. Then, 30 days after receipt of this certified letter, we will revoke your permit and remove your business sign.

Your timely response to this matter is recommended. Should you have any questions, please contact _____ of my staff at _____.

Sincerely,

Regional Traffic Engineer

3.1 General

Delineation is the pavement markings, guideposts, and raised pavement markers used on and adjacent to the roadway to define vehicular travel paths. The MUTCD, *Design Manual*, and *Standard Plans* provide delineation placement guidelines.

The *Roadway Delineation Practices Handbook*, published by FHWA, discusses specialized materials and delineation treatments for unique applications and situations. This handbook does not establish policies or standards but is only a reference document.

3.2 Pavement Markings

Pavement markings are classified as either longitudinal or transverse. Materials typically used for each are paint for longitudinal markings and thermoplastics for transverse markings. Approved sources for thermoplastic materials are listed in the General Special Provisions. A purchase contract is available for the purchase of paint. Other durable materials are continually being evaluated.

A. Intersection Channelization

The MUTCD has a provision that allows pavement markings to be extended through an intersection where design or visibility conditions make it desirable to provide control through the intersection. These markings are only installed as the result of a traffic engineering analysis that considers horizontal curvature and other visibility conditions. For statewide uniformity, the dotted line used for this extension is applied as a 2-foot stripe with a 4-foot gap between stripes.

Multilane approaches may provide exclusive or shared lanes for turning and through vehicles. At most intersections through traffic must share a lane with one direction of turning traffic. To minimize delay, through traffic should normally be combined with right-turning traffic unless opposite approach geometrics are unfavorable. An offset centerline and minor widening may help accomplish the proper lane assignments.

Stopbars are to be included at all signalized intersections with or without crosswalks. At nonsignalized intersections stopbars are necessary on the stop sign control approaches when crosswalks are not included. Including the stopbar at stop sign control locations having marked crosswalks is optional.

B. Interchange Off Ramps

At either a parallel or a tapered deceleration lane, the MUTCD allows the application of an optional dotted extension of the main line right edge line through the ramp opening. The dotted line is a 2-foot stripe with a 4-foot gap.

For statewide uniformity, these optional dotted extensions should only be installed where the exit ramp is located on a horizontal curve, except for locations with continuous illumination, and at locations with prevalent foggy periods. They are generally not needed at ramps exiting from tangent sections. These markings are only to be installed as a result of a traffic engineering analysis.

C. Crosswalks

Marked crosswalks serve to guide pedestrians in the proper paths. Crosswalks should only be marked at locations that are signalized (and have significant pedestrian volumes), where crossing guards are provided, or where pedestrian volumes meet the criteria for signal Warrant 3 in Section 4C-5 of the MUTCD.

Crosswalk markings should not be used at remote locations or where the speed limit exceeds 35 miles per hour unless protection is provided by a traffic signal or stop sign. Studies show that marked crosswalks have higher accident rates than unmarked crossings, thus crosswalks should not be considered safety devices.

Illumination of marked crosswalks is normally provided when pedestrian volumes meet the criteria in MUTCD Section 4C-5. When markings are requested by others and volumes do not meet those requirements, funding and power for crosswalk lighting is normally provided by the requestor.

D. No Passing Zone Marking

No passing zones are to be established and marked on horizontal and vertical curves in accordance with the MUTCD.

State law, in the Rules of the Road RCW 46.61.100 - RCW 46.61.165, identifies several situations with a statutory no passing zone distance such as ". . . when approaching within 100 feet of or transversing any intersection or railroad crossing . . ." or ". . . the view is obstructed upon approaching within 100 feet of any bridge, viaduct, or tunnel . . . ." However, state law does not imply a need to mark no passing zones for such situations.

3.3 Guideposts

Guideposts, discussed in the MUTCD as delineators, are light retroreflecting devices mounted at the side of the roadway to indicate roadway alignment. They are effective aids for night, wet, or other reduced visibility driving conditions and are intended to guide rather than warn motorists.

Guidepost installation and spacing requirements are included in the *Standard Plans* and the *Design Manual*. The field spacing for guideposts shall be determined from Figure 3-1. Approved sources for guideposts as well as reflective materials are listed in the General Special Provisions.

3.4 Barrier Delineation

Barrier delineation is the extension of guideposts through an area of guardrail or concrete barrier. Spacing is the same as for guideposts.

Guardrail is delineated by mounting guideposts on guardrail posts as shown in the *Standard Plans*.

Concrete barrier is delineated by placing reflective devices on the face of the barrier about 6 inches down from the top. When concrete barrier is placed immediately adjacent to the traveled lane, such as in construction zones, delineator spacing should be a maximum of 40 feet on tangents and 20 feet through curves.

3.5 Chevron Alignment Signs

Although the Chevron Alignment Sign is intended to provide additional emphasis and guidance for drivers through horizontal curves in the roadway, this sign is not a delineator. See the MUTCD and the warning sign section of this manual for use.

3.6 Raised Pavement Markers

As described in the *Design Manual*, raised pavement markers are extensively used in western Washington to simulate lane lines and to supplement painted pavement markings.

Maintenance of raised pavement markers is discussed in the *Maintenance Manual*.

A. Right Edge Lines

The general use of raised reflective pavement markers to supplement, or in lieu of, right edge lines is strongly discouraged. At night, such markers can be easily mistaken for lane lines.

The State Traffic Engineer has approved the use of reflective markers to supplement right edge lines in these locations:

- On the taper in lane reduction sections, such as from four lane to two lane.
- Through sections with reduced lane width, such as narrow structures.
- At the gore of exit ramps.

B. Recessed Markers

Recessed reflective markers and recessed lane lines appear to be an effective way to provide additional centerline and lane line delineation in areas requiring extensive snow plowing.

The details for installation of the recessed marker are contained in the *Standard Plans*.

Recessed markers and recessed lane lines are expensive and data is still being collected to determine effectiveness and expected life. As a result, the criteria for application and installation are still subject to change and the State Traffic Engineer's office should be contacted when recessed markers or recessed lane lines are being considered.

With prior approval of the State Traffic Engineer, recessed markers may also be installed on bridges. Currently several alternative methods are being considered for this application to minimize the impact on bridge decks.

3.7 Impact Attenuator Marking

The end of impact attenuators adjacent to the roadway and facing traffic are to be marked with a modified type 3 object marker. The design and use of the marker shall be the same as the MUTCD type 3 marker except that the attenuator marker shall be square. Attenuators in gore areas or where traffic may pass on either side shall have the stripes in a chevron pattern sloping down from the center of the marker. These designs are provided in the *Sign Fabrication Manual*.

3:P3:TM1

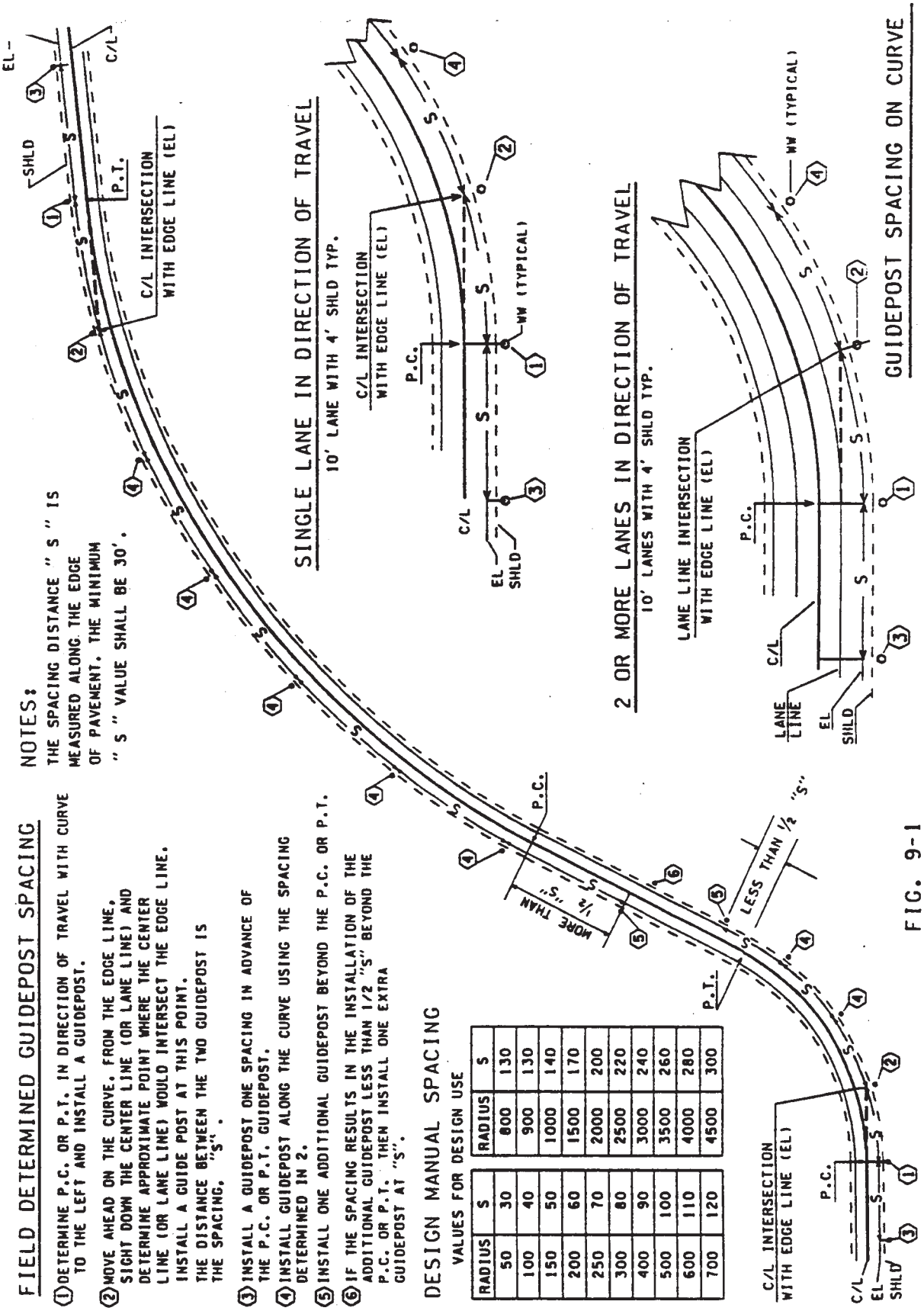


FIG. 9-1

Figure 3-1

4.1 MUTCD

The MUTCD, Section IV, discusses the types of signals and their application, and provides warrants and other guidelines used to justify signal installations.

4.2 *Design Manual*

Design Manual Section 335 provides the guidelines for signal installations with regard to state laws, department policies, permit approval procedures, design report requirements, preliminary signal plans, phase analysis (level of service/optimum cycle calculations), detection systems, pedestrian considerations, signal supports, and contract plan preparation.

Special attention should be given to signal permit applications submitted by local agencies or developers. The permit application should be submitted to the State Traffic Engineer at least two months prior to the time the approved permit is desired. The request can then be processed for approval in a timely manner.

See Chapter 6, Traffic Regulations, for the information required as support data which must accompany permit applications.

4.3 Flashing Operation

Occasionally traffic signals have been, or are, installed primarily to reduce intersection delay during the morning, noon, and evening peak hours. These signals may not be warranted during off-peak hours. At locations having fixed time signals, flashing operations may be considered for nonpeak hours where there is significantly larger traffic volumes on the major approaches than the minor approaches (i.e., intersections meeting primarily warrant No. 2).

If off-peak flashing operations are implemented, follow-up accident studies should be conducted.

4.4 Intersection Control Beacons

The MUTCD states that intersection control beacons are intended for use at intersections where traffic or physical conditions do not justify conventional traffic signals but where accident rates above the statewide average for like locations indicate a special hazard.

The most common application for these beacons is at intersections with minor approach stop control where some approaching vehicles on the controlled legs have failed to stop.

An intersection control beacon should be considered for a problem location only after other remedial measures have been tried and determined to be ineffective based on traffic engineering studies.

Twelve-inch lenses on the intersection control beacon may be desirable to enhance visibility at some locations.

4.5 Audio-Tone Signal Application

Pedestrian crosswalk signals with audio-tone application for the visually handicapped are available, although fairly new on the market. The audio-tone, if installed, should be activated from a push button control mounted on the signal post. This will provide audio-tone only when needed.

4.6 Illumination

A. General

Transportation facility illumination enhances visual perception of conditions or features that require additional driver or pedestrian alertness. This is accomplished through the use of materials and techniques that result in optimum energy efficient illumination designs.

B. References

Roadway Lighting Handbook, USDOT, Washington, D.C., December 1978.

AASHTO Pamphlet, *An Informational Guide for Roadway Lighting*.

WSDOT Directive D22-21 “Truck Weigh Stations and Vehicle Inspection Facilities on State Highways.”

National Electrical Code.

RCW 47.24.020.

Washington Administrative Code 468-18-040.

C. Definitions

Area Designations

Commercial Area. A district of continuous adjacent retail businesses at least 1,000 feet in length, with lighted store fronts, parking lots, etc.

Intermediate Area. A partially built-up area consisting of approximately 50 percent adjacent land use for retail businesses at least 600 feet in length, with lighted store fronts, parking lots, etc.

Residential Area. An area of continuous residences with occasional businesses where the local street grid has a continuous illumination system.

Rural Area. Areas not defined as commercial, intermediate, or residential.

Ballast. An electrical device which provides the necessary voltage, current, and wave form to start and operate an electrical discharge lamp.

Basic Illumination. The minimal amount of illumination to be provided at certain transportation facilities.

Basic Interchange Illumination. The minimum amount of illumination at interchanges which consists of two luminaires on each single or double-lane on ramp, two luminaires on each single-lane off ramp, three luminaires on each double-lane off ramp, and one luminaire at each ramp-crossroad intersection.

Candela. A unit of luminous intensity equal to one lumen per steridian.

Candlepower. Luminous intensity expressed in candelas.

Contrast Ratio (CR).

> **Brightness**. The ratio between the photometric brightness, measured in foot lamberts, of any two relatively large areas in the field of view.
>
> **Light**. The ratio between the maximum and minimum light levels of the design zone.

Coefficient of Utilization (CU). The percentage of the total light output that actually falls on the area to be illuminated.

Dirt Factor (DF). A factor used in illumination calculations to relate the initial illumination provided by a clean, new luminaire to the reduced illumination caused by dirt accumulation on the luminaire components. A dirt factor of 85 percent is normally used.

Footcandle (fc). The unit of illumination used when the foot is the unit of length; the illumination of a surface one square foot in area on which is uniformly distributed a flux of one lumen. A footcandle equals one lumen per square foot.

> **Design footcandles (Dfc)**. The average light level on the roadway at the end of rated life.
>
> **Initial footcandles (Ifc)**. The average light level on the roadway after the first 200 hours of operation.

Foot Lambert. A unit of luminance equal to 1/3.14 candela per square foot or to the uniform luminance of a perfectly diffusing surface emitting or reflecting light at the rate of one lumen per square foot.

Glare. The effect of brightness or brightness differences within the visual field sufficiently high to cause annoyance, discomfort, or loss of visual performance.

Hours of Darkness. The time from sunset to sunrise, inclusive of summer and winter conditions.

IES Distribution. Light patterns for luminaires consistent with the Illumination Engineering Society standards for various patterns and distributions.

Isolux Diagram. A graphical representation of points of equal illumination connected by a continuous line. These diagrams usually show footcandle values on a horizontal plane from a single unit having a definite mounting height.

Lamp Lumens (LL). The total light output from a lamp for the position in which the lamp is maintained. LL for a standard luminaire is 37,000 lumens.

Lamp Lumen Depreciation Factor (LF). The factor used in illumination calculations to relate initial rated output to the anticipated output at replacement time. This factor is 0.73 for high pressure sodium sources. Consult manufacturer's data for other sources.

Light. Radiant energy capable of producing a visual sensation.

Light Standard. A support provided with necessary attachments for wiring and luminaire mounting. See Standard Plan J-1.

Lumen. A unit of luminous flux; equal to the flux emitted through a unit solid angle (one steridian) from a uniform point light source of one candela.

Luminance. In roadway lighting luminance is the reflected light from the pavement surface that is visible to the motorist's eye.

Luminaire. The complete lighting unit inclusive of the lamp or light source; the optical system for the control of the light distribution; and the ballast for electrical regulation. The standard luminaire is a cobra head fixture with a Type III medium cutoff distribution, a 310 watt lamp and a flat glass refractor. Decorative cutoff fixtures may be considered for parking area applications.

Maintenance Factor (MF). The percentage of light degeneration through the life of the lamp equal to the product of the lamp lumen depreciation factor (LF) times the dirt factor (DF). The LF for high pressure sodium lamps is 62 percent.

Major Parking Lot. Major parking lots for park and ride, carpool, and ferry terminal facilities are those with nighttime usage exceeding 50 vehicles during the nighttime peak hour.

Mounting Height (MH). The vertical distance between the surface to be illuminated and the center of the light source of the luminaire. Standard mounting height is 40 feet. When nonstandard luminaires are approved, the mounting heights noted in Figure 4-5 are recommended.

Mounting Height Factor (MHF). A factor used in illumination uniformity calculations to correct light values when a different mounting height than the one on the isolux curve is used.

Nighttime. The period of time from one-half hour after sunset to one-half hour before sunrise and any other time when persons or objects may not be clearly discernible at a distance of 500 feet (RCW 46.04.200 Hours of Darkness).

Photometrics. The isolux diagram and coefficient of utilization plot for a particular luminaire and light source.

Spacing (S). The distance in feet measured on centerline between adjacent luminaires. Spacing (S) is equal to the lamp lumens (LL) times the coefficient of utilization (CU) times the maintenance factor (MF) divided by the width (W) and the design footcandle value (Dfc).

Security Lighting. The techniques of providing low level lighting for public safety or theft reduction. Security lighting is not subject to any lighting uniformity requirements.

Uniformity Ratio (UR). The ratio of the average light level on a section to the weak point light level of the same section for those applications when uniformity rates applies. The minimum uniformity rates are 4:1 approaching 1:1. Uniformity ratio requirements do not apply to security or single source applications.

Walkway. The connection between two areas over which the user is required to travel in order to utilize available services. Typical examples are as follows:

- Walkways between parking areas and rest room buildings at rest areas.
- Walkways between drop-off or pick-up points and bus loading areas at flyer stops.
- Walkways between parking areas and bus loading areas.

For the purpose of this section bicycle trails, walking trails, pet trails, etc., are not considered walkways.

Weak Point Light (WPL). The lowest light level within the area being illuminated. The minimum WPL is 0.2 footcandles for applications where uniformity criteria applies.

Width of the area to be illuminated. This measurement is from edge of traveled way to edge of traveled way for highway lighting applications.

D. Approval Requirements

1. **General**. WSDOT is responsible for illumination on state highways with access control regardless of location and for illumination of highways without access control located outside of the corporate limits of any city. Cities are responsible for illumination of state highways without access control located within their corporate limits. In cities with a population under 22,500 where the state is responsible for signalization, the state may assume responsibility for illumination installed on signal standards in the interest of reducing intersection clutter.

When the State Traffic Engineer's approval is required, it will be obtained through the design deviation approval process. See *Design Manual*, Chapter 330.

2. **Basic Illumination**. Basic illumination is required at the following facilities:

- Freeway ramp gore areas.
- Ramp terminals.
- Channelized intersections.
- Signalized intersections.
- Railroad crossings with gates or signals provided there is nighttime train traffic.
- Loading areas at flyer stops.
- Major parking lots.
- Rest areas.
- Scale platforms at weigh stations.

Any proposal that provides less than or more than basic illumination at these facilities requires approval of the State Traffic Engineer. Basic illumination applications are shown on Figures 4-1, 4-2, and 4-3.

3. **Illumination Beyond Basic Levels**. Illumination at the locations listed below is divided into two categories depending on whether approval by the State Traffic Engineer is required.

Approval by the State Traffic Engineer is required for illuminating the following facilities:

- All highways with or without access control.
- Unsignalized or unchannelized intersections.
- Tunnels, underpasses, and lids.
- Bridges.

Illumination of the following facilities will not require the State Traffic Engineer's approval.

- Construction zones.
- Detours.
- Railroad crossings without gates or signals.
- Walkways.
- Bicycle trails.
- Minor parking lots.
- Pavement transitions, including drop lanes.

4. **Nonstandard Features**. Approval by the State Traffic Engineer is required for any proposal that incorporates lighting equipment or features other than those identified as standard in the *Traffic Manual*.

E. Warrants

1. **General**. Proposals to install additional lighting at basic illumination locations and to illuminate other locations requires satisfying the warranting conditions listed below. When volumes are used to determine the level of service, the counts should be taken during the nighttime peak hour.

Peaking characteristics in urban areas are related to clock time. Traffic counts taken during daylight hours after 4:30 p.m. and before 7:30 a.m. may be used to satisfy nighttime volume warrants providing seasonal adjustment factors have been applied to demonstrate warrant satisfaction for the applicable portions of the months of November, December, and January.

When accidents are used to warrant illumination, the ratio of nighttime to daytime accidents should be at least 1.5 times higher than the

average for similar locations, and a study should indicate that illumination will result in a reduction in nighttime accidents. When comparing similar locations, volumes, speed, land use, and access control should be similar.

2. **Highways With Access Control**. All roadways within the limits of access control are covered in this category and include mainline, ramps, and crossroads.

a. **Mainline**. Illumination is warranted when the nighttime peak hour level of service is D or below and any two of the following conditions occur:

- Three or more successive interchanges are located within an average spacing of 1½ miles or less.
- The segment is in an urban area.
- The nighttime accident warrant is satisfied.

b. **Ramps.** Illumination is warranted when any of the following conditions occur:

- Nighttime peak hour level of service is D or worse.
- Complex ramp alignment and grade.
- There are routine queues of five or more vehicles per lane during darkness due to traffic control features at the ramp terminal.
- The exit advisory speed is more than 20 mph below the posted mainline speed.
- The nighttime accident warrant is satisfied.

c. **Crossroads**. Illumination is warranted if any of the following conditions occur:

- Nighttime peak hour level of service is D or below.
- The nighttime accident warrant is satisfied.

3. **Highways Without Access Control**. Illumination is warranted if the segment is classified as commercial and the nighttime level of service is D or the nighttime accident warrant is satisfied.

4. **Intersections**. Illumination of unsignalized and unchannelized intersections is warranted if channelization warrants are satisfied or the nighttime accident warrant is satisfied.

5. **Tunnels, Underpasses, and Lids**. Daytime illumination is warranted if portal conditions result in a condition where brightness reduction is greater than 15 times and the length to vertical clearance ratio is ten to one or greater.

6. **Construction Zones**. Illumination may be warranted if construction activities take place on the roadway at night.

7. **Detours**. Illumination is warranted if detour alignment and grade are unusual or result in unexpected maneuvers.

8. **Minor Parking Lots**. Security lighting is warranted if vandalism or security problems have developed or are anticipated.

9. **Bridges**. Warrants for illuminating bridges are the same as those for highways with or without access control, whichever is applicable.

10. **Railroad Crossing Without Gates or Signals**. Illumination of these facilities is warranted if there are potential nighttime accidents. The extent of nighttime train activity should be taken into consideration. Also, if there is the probability that railroad cars may be stopped on the crossing during the nighttime, lighting should be considered.

11. **Walkways and Trails**. Security lighting is warranted if security problems have developed or are anticipated.

F. Design Report

The design report shall note the following:

- The facilities where basic illumination is proposed.
- Justification for any proposal to install less than or more than the lighting required for basic illumination.
- Justification for any proposal to install illumination at other highway facilities.

• The status of existing illumination before, during, and after construction.

G. Design Criteria

1. **Roadway Light Levels**. Design light levels are indicated in Figure 4-4. These levels are the minimum average levels to be provided on the roadway at end of rated lamp life for applications requiring a spacing calculation. Light level requirements do not apply to single source or security level installations.

When illumination is proposed for a roadway with a radius of 450 feet or less, it may be necessary to reduce spacing, thereby increasing the average light level in order to achieve uniformity ratio requirements.

Light levels at railroad crossing shall be consistent with the area classification and highway functional classification.

2. **Nonhighway Light Levels**. Average, maintained end-of-rated-life light levels for various types of nonhighway facilities are indicated in Figure 4-4.

Security light levels are defined as follows:

• Park and ride lots, ferry terminal parking lots. Approximately one-fourth of the luminaires required for full illumination are left on.

• Rest area parking areas. Typically two luminaires per parking area.

• Walkways. Luminaires provided at angle points and shadow areas.

• Bus loading zone. One luminaire in the immediate vicinity of the loading zone.

• Weight stations. One luminaire at the public telephone, if any.

3. **Light Levels for Special Applications**.

a. Short tunnels and underpasses with length to vertical clearance ratios of 10:1 or less will normally not require daytime illumination. Short tunnels with length to vertical clearance ratios greater than 10:1 will be treated the same as an entrance zone on a long tunnel to establish daytime light levels. Nighttime light levels in short tunnels on continuously illuminated roadways should be approximately two times, but not exceeding three times, the light level required on the roadway outside the tunnel. Nighttime light levels in short tunnels on noncontinuously illuminated roadways should be consistent with Figure 4-4.

b. Long tunnels have a portal to portal length greater than the wet pavement stopping sight distance. Long tunnels are divided into zones for the determination of daytime light levels. Each zone is equal in length to the wet pavement stopping sight distance. The entrance zone beginning point is usually taken to be a point outside the portal where the motorist's view is confined to the predominance of the darkened tunnel structure.

The entrance zone light level is dependent upon the brightness of the features within the motorist's view on the portal approach. The brightness level is defined as the average brightness measured over a 20 degree cone at a point 500 feet in advance of the portal. The entrance zone light level produced within the tunnel must be sufficient to provide a brightness level of approximately 1/15 of the measured portal brightness, after adjustment for the reflectivity of the roadway, walls, and ceiling.

Successive zones should have a daytime light level of 1/15 of the previous zone light level until a minimum value of 5 foot candles is achieved.

Requirements for nighttime light levels for long tunnels are the same as those noted for short tunnels.

4. **Control Requirements**. The control requirements for various types of illumination systems will vary with the application as follows:

a. **Continuous Nighttime Operation**. Controls for continuous nighttime operation will normally consist of a photocell for sunset turn-on and sunrise turn-off. The following types of applications will have controls for continuous nighttime operations.

- All basic interchange illumination on access controlled highways.
- All illumination in excess of basic levels that was installed by special condition warrant on access controlled highways.
- Illumination at intersections.
- Illumination at railroad crossings.
- Security lighting at bus loading zones at park and ride lots, and at flyer stops.
- Security lighting in parking areas at park and ride lots, ferry terminals, and pool-it lots.
- Illumination for walkways at park and ride lots, flyer stops, ferry terminals, and rest areas.
- Illumination for parking areas and conflict points at rest areas.
- Detour illumination.
- Construction illumination.
- Illumination installed on nonaccess controlled highways by accident warrant.
- The single luminaire in the vicinity of the public telephone at truck weigh stations.

b. **Continuous Nighttime Operation With Reduction Capability**. Controls for these applications will normally consist of a photocell control for sunset turn-on and sunrise turn-off along with another mechanism capable of providing independent nighttime turn-off and turn-on. This mechanism will override photocell control only during periods of energy crisis. The following applications will require this type of control:

- Illumination in excess of basic levels on access controlled highways.
- Illumination in excess of basic levels installed on ramp segments because of nighttime backups that routinely occur due to ramp terminal intersection control.

c. **Noncontinuous Nighttime Operations**. Controls for these applications will normally consist of a photocell control for sunset turn-on and sunrise turn-off along with another mechanism capable of providing independent nighttime turn-on and turn-off. This mechanism will override photocell control on a regular basis, during periods of low use. If requested by the WSP, manual switching may be provided inside scale houses at truck weigh stations. The following applications will require this type of control:

- Illumination in excess of security levels in parking areas at park and ride lots, ferry terminals, and pool-it lots.
- Illumination in excess of security levels at bus loading areas at park and ride lots and flyer stops.
- Illumination in excess of security levels at truck weigh stations.

d. **Special Applications**. Some special applications, such as tunnels with daytime lighting, will require special controls. Circuits for fixtures providing nighttime light levels will be energized continuously throughout the day. Minimum daytime light levels, entrance zone light levels, and any subsequent zone light levels will be accomplished with fixtures in addition to continuously burning nighttime light level fixtures. In most cases, fixtures providing light levels in addition to minimum daytime light levels will be provided with controls so that reduced light levels can be achieved during periods when the portal brightness is less than the design value.

5. **Wiring Design**.

a. **Line Loss**. Line loss is the voltage drop between the electrical service and the electrical load. Line loss usually controls wire size determination rather than the allowable ampacities listed in Chapter 3 of the National Electric Code. For design purposes, allowable line loss is assumed to be a function of the stage of plan development and the ballast characteristics of the luminaire being utilized. See Figure 4-6 for allowable line loss and lamp load factor requirements.

Loads shall be determined by dividing the lamp wattage by the voltage and then multiplying by the appropriate lamp load factor.

Construction illumination circuits and other temporary circuits that are both installed and removed on the same contract may be designed for 10 percent line loss.

b. **Voltages**. Illumination systems should operate on 240 or 480 volts, single phase.

c. **Wire Size**. The minimum wire used by any illumination circuit is No. 8, except for the No. 10 pole and bracket cable included within the light standard. The ampacity of the wire, exclusive of pole and bracket cable which is protected by fusing, shall equal or exceed the branch breaker rating.

d. **Wire Type**. With the exception of temporary aerial installations where aluminum conductors are allowed, all wiring from the service on shall be copper.

6. **Conduit**. Conduits carrying illumination circuits are to be sized to provide 26 percent fill, maximum, with 1¼-inch minimum size under all roadways and 1 inch minimum size at other locations.

7. **Luminaire Support Locations**. Luminaire supports will normally be located 16 feet from the edge of the traveled lane pavement on the right of the roadway with respect to the driving direction.

8. **Base Types**. Luminaire supports are installed with either fixed base or slip base. The pole schedule in the plans should indicate the required base type. Fixed bases are installed at locations where it is either unwarranted or undesirable to install a slip base. Locations where fixed bases are normally installed are:

- Parking areas.
- Where the support location is outside the clear zone.
- Median lighting applications where the luminaire support is mounted on cast-in-place median barrier.
- Behind traffic barrier provided the traffic barrier is warranted for reasons other than the luminaire support installation.

Fixed based may be considered for roadways with speeds under 30 mph with considerable adjacent pedestrian activity.

9. **Overcurrent Devices**. Branch breakers are to be sized to carry 140 percent minimum of the computed illumination load. Loads should be computed in accordance with the lamp load factors noted in Figure 4-6.

Main breakers are to be sized to carry 140 percent minimum of the computed illumination load in addition to 125 percent minimum of all other loads on the service. The minimum size main breaker shall be 60 AMP.

Lighting contactors are used to switch the lighting circuits. Lighting contactors shall be rated to equal or exceed the branch breaker rating for the circuit it switches. Lighting contactors are available in 30, 60, and 100 AMP ratings.

H. Example Applications

1. **Spacing and Uniformity Ratio Calculation**. Determine the spacing and uniformity ratio for the intersection in Figure 4-7. Channelization is painted, highway class is other, and area classification is intermediate. Utilize standard luminaires, standard mounting height and standard base location.

Design values are:

- Approach Design Footcandles (Dfc) = 0.8 fc, Figures 4-3 and 4-4.
- Intersection Design Footcandles (Dfc) = 1.5 x 0.8 fc = 1.2 fc, Figure 4-4.
- Uniformity Ratio (UR) = 4:1.
- Weak Point Light (WPL) = 0.2 fc.
- Mounting Height (MH) = 40 feet.
- Luminaire = 310 watt high pressure sodium.
- Dirt Factor (DF) = 0.85.

- Lamp Lumen Depreciation Factor (LF) = 0.73.
- Maintenance Factor (MF) = DC x LF = 0.85 x 0.73 = 0.62.
- Roadway Width (W) = 39 feet, Figure 4-7.
- Initial Lamp Lumens (LL) = 37,000 lumen.

The formula for spacing is:

$$S = \frac{LL \times CU \times MF}{Dfc \times W}$$

S	=	Spacing
LL	=	Initial Lamp Lumens
CU	=	Coefficient of Utilization
MF	=	Maintenance Factor
Dfc	=	Design Footcandles
W	=	Roadway Width

The CU is determined from the utilization curve on Figure 4-8. The ratio of transverse width (TW) to mounting height (MH) is 39/40 or 0.97. From Figure 4-8 the CU is 0.26.

Spacing for the intersection can now be calculated.

$$S = \frac{37,000 \times 0.26 \times 0.62}{1.2 \times 39} = 127 \text{ feet}$$

Round odd spacing down to the nearest 10 foot increment, therefore, S = 120 feet. Reducing spacing increases Dfc. The adjusted Dfc is:

$$Dfc = 1.2 \times \frac{127}{120} = 1.27 \text{ fc}$$

Check uniformity at mid spacing in center of the roadway.

$$UR = \frac{Dfc}{WPL}$$

The weak point light is determined by entering the isocandle curves on Figure 4-8.

The ratio of transverse distance to mounting height at midpoint is 39/(2x40) = 0.48. The ratio of longitudinal distance to mounting height is 120/(2x40) = 1.5. From Figure 4-8 a value of 0.035 is determined. This value must be doubled since two luminaires are contributing light on the point. The value must also be adjusted for the lumen output of the lamp, the lamp maintenance (MF) and for mounting height correction (MHF).

$$WPL = \text{chart value} \times 2 \times \frac{37,000 \times MF \times MHF}{1,000}$$

The mounting height correction factor (MHF) is 0.56 from Figure 4-8.

$$WPL = 0.035 \times 2 \times 37 \times 0.62 \times 0.56 = 0.9 \text{ fc}$$

$$UR = \frac{Dfc}{WPL} = \frac{1.27}{0.9fc} = 1.4{:}1 \text{ OK}$$

Light standard A can now be located as indicated on Figure 4-7.

Check to see if 0.2 fc is provided at the left turn lane full width point.

135 ft/40 ft = 3.37 MH

Entering Figure 4-8 a chart value of 0.008fc is determined. WPL = 0.008 x 37 x 0.62 x 0.56 = 0.10 fc

Since 0.10 fc is less than 0.20 fc, additional light standards will be required to illuminate the approach. A new calculation is required since the design light level on the approach is 0.8 fc versus 1.2 fc for the intersection.

$$X = \frac{37,000 \times 0.26 \times 0.62}{39 \times 0.8} = 191 \text{ feet}$$

Round to 190 feet and adjust Dfc

$$Dfc = 0.8\frac{191}{190} = 0.80 \text{ fc}$$

Check WPL at half spacing in the center of the roadway.

Entering Figure 4-8 at 190 (2 x 40) or 2.37 longitudinal and 39 / (2 x 40) or 0.48 transverse yields a chart value of 0.017. WPL = 0.017 x 2 x 37 x 0.62 x 0.56 or 0.44 fc.

$$UR = \frac{0.80}{0.44} \text{ or } 1.8{:}1$$

Locate luminaires C & D at 190 feet spacing.

2. **Line Loss Calculation**. Determine the wiring requirements for the circuit in Figure 4-9. The wiring is installed in conduit and conductors are copper. Ultimate loads are known. Service voltage is 240. Luminaires are 310 watt high-pressure sodium vapor. From Figure 4-6 the lamp load factor is 1.2 and the maximum allowable line loss is 8 percent.

The load at each luminaire is:

$$\frac{310 \text{ watts}}{240 \text{ volts}} \times 1.2 = 1.55 \text{ amps}$$

The maximum voltage drop is:

240 volts x 0.08 = 19.2 volts

Line loss is computed in ampere-feet and is the current in the circuit times the distance to the load. Typically the circuit segments with the greatest length and load will control. On this basis the line loss table in Figure 4-11 can be computed. The circuit segment from Luminaire 1 to the service has the highest line loss.

First check No. 8 wiring. From Figure 4-12, the line loss is:

	10,000 amp-ft	=	15.0 volts	
	4,000 amp-ft	=	6.0 volts	
	800 amp-ft	=	1.2 volts	
Total	14,800 amp-ft	=	22.2 volts	> 19.2 volts. Not good.

Try changing the wiring from the service to Luminaire 5 to No. 6 wire with the remainder No. 8 wire.

Service to 5 (10,850 amp-ft) No. 6

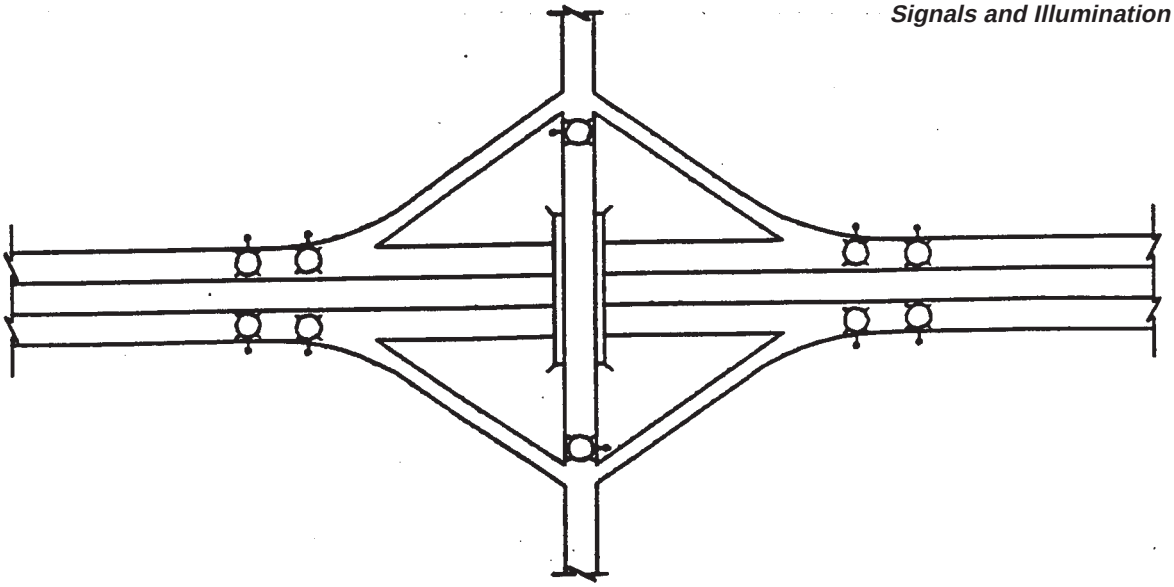
	10,000	amp-ft	=	9.7 volts
	900	amp-ft	=	0.9 volts
Total	10,900	amp-ft	=	10.6 volts
5 to 1	(14,800 - 10,900		=	3,900 amp-ft) No. 8
	3,000	amp-ft	=	4.5 volts
	900	amp-ft	=	1.4 volts
Total	3,900	amp-ft	=	5.9 volts

The line loss to Luminaire 1 is:

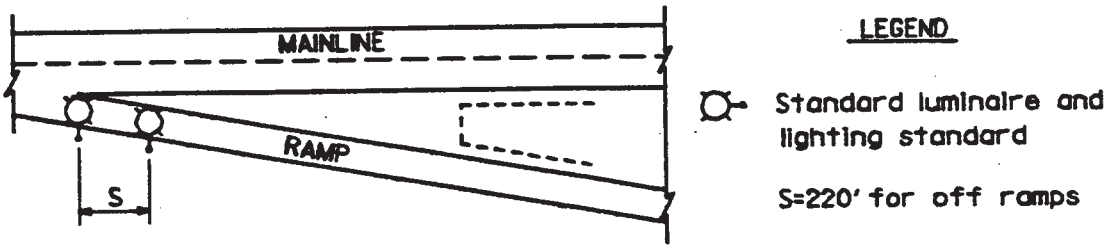
10.6 + 5.9 = 16.5 volts which is less than 19.2 volts maximum allowed.

Final wire sizes are shown in Figure 4-10.

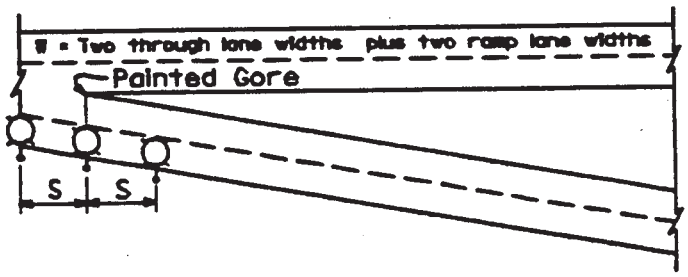
4:P3:TM1



TYPICAL DIAMOND INTERCHANGE PARTIAL ILLUMINATION
(Shown for single lane off connections and two lane crossroad without channelization)

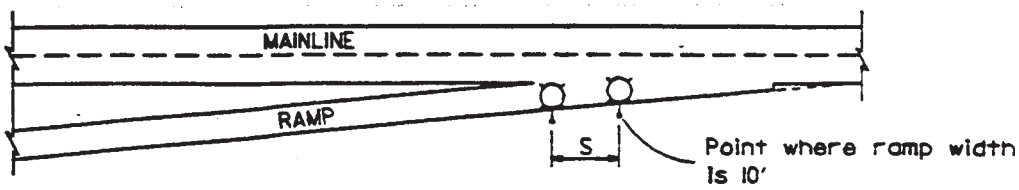


SINGLE LANE OFF CONNECTION
(Standards can be shifted up to 100' downstream from gore point)

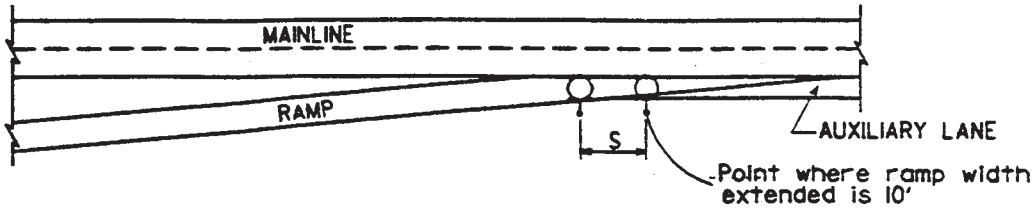


DOUBLE LANE OFF CONNECTION
(Basic applications)

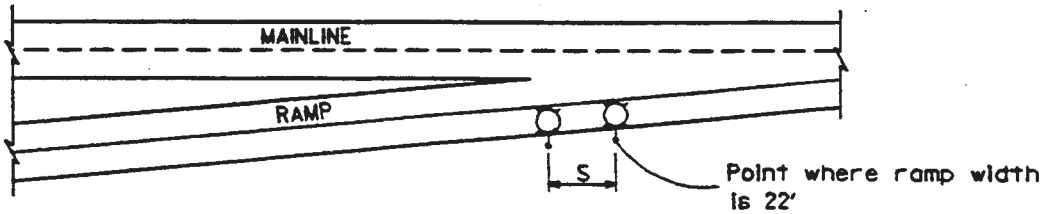
Figure 4-1



STANDARD ON CONNECTIONS



AUXILIARY LANE STARTING AT ON CONNECTION
(Required only if a significant weaving problem exists)

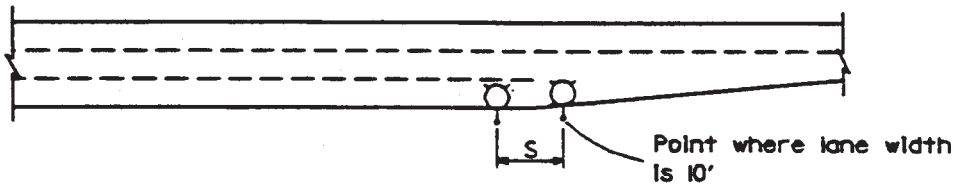


DOUBLE LANE ON CONNECTION

LEGEND

Standard luminaire and lighting standard

S-240' for on ramps



DROP LANE
(basic illumination applications)

Figure 4-2

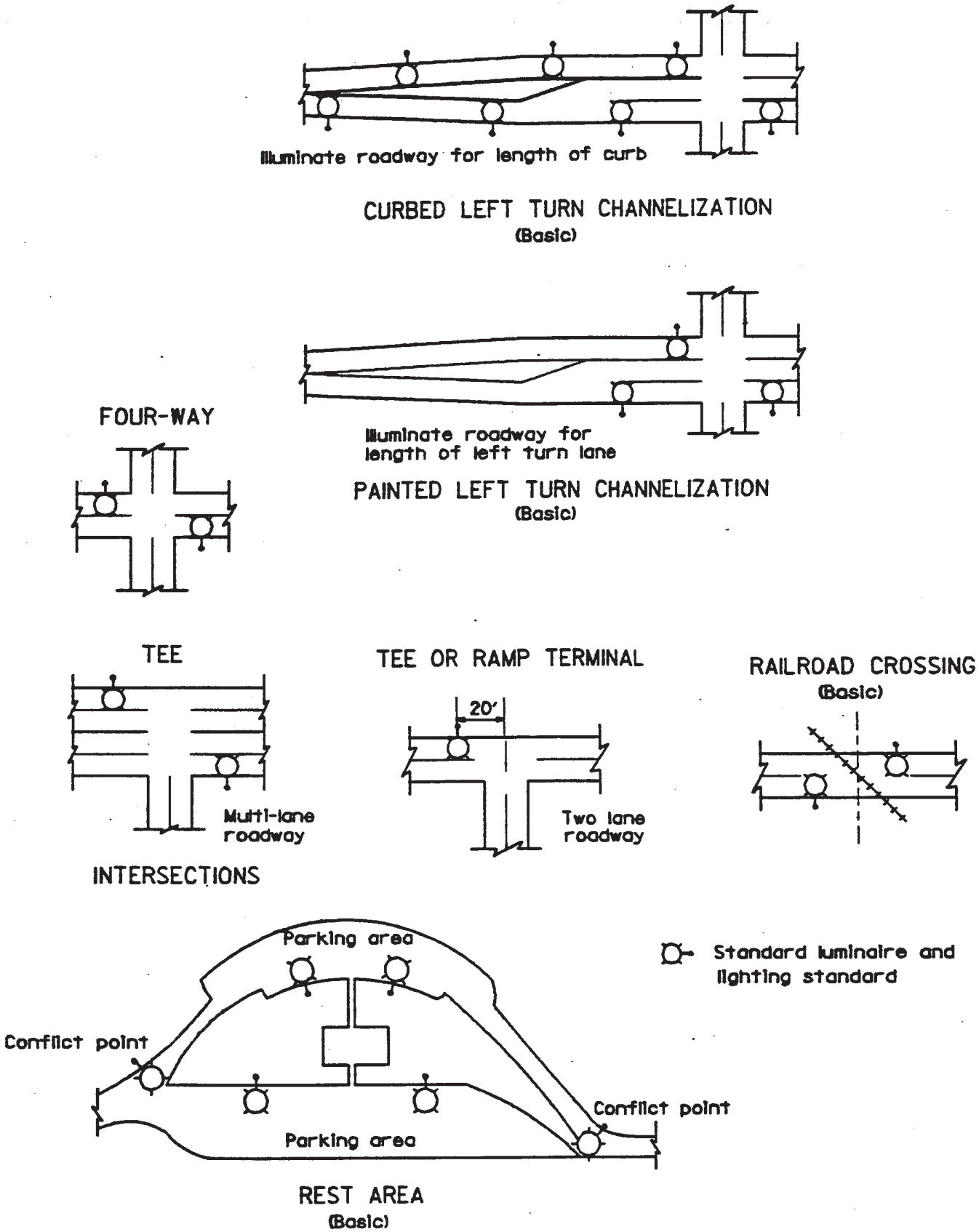

Illuminate roadway for length of curb
CURBED LEFT TURN CHANNELIZATION
(Basic)
Illuminate roadway for length of left turn lane
PAINTED LEFT TURN CHANNELIZATION
(Basic)
FOUR-WAY
TEE
Multi-lane roadway
INTERSECTIONS
TEE OR RAMP TERMINAL
20'
Two lane roadway
RAILROAD CROSSING
(Basic)
Parking area
Conflict point
Parking area
Conflict point
Standard luminaire and lighting standard
REST AREA
(Basic)

Figure 4-3

Average Maintained Horizontal Illumination Levels (Foot Candles)				
Highway Applications				
	Area Classification			
Highway Class	***Commercial***	***Intermediate***	***Residential***	***Rural***
Full Access Cont. - Divided	0.6*	0.6*	0.6*	0.6*
Arterials	1.6	1.2	0.8*	0.6*
Other	1.0	0.8*	0.6*	0.6*
Construction Lanes and Detours	1.0	1.0	1.0	1.0
Non-Highway Applications				
	Parking Areas	***Bus Loading Areas***	***Walkways***	***Weight Scales***
Park & Ride Lots	0.8	2.0	0.8	N.A.
Flyer Stops	N.A.	2.0	0.8	N.A.
Ferry Terminals	0.8	2.0	0.8	N.A.
Rest Areas	2 Luminaires	N.A.	Security Level	N.A.
Pool-It Lots	0.8	N.A.	N.A.	N.A.
Weigh Stations	None	N.A.	N.A.	2 Luminaires

*Increase light level by 50 percent at intersections where more than one light standard is installed.

Figure 4-4

Recommended Mounting Heights	
High Pressue Sodium	
Wattage	***Mounting Height (Ft)***
70	20
100	25
200	30
250	35
310	40
400	50
1000	100

Line Loss and Lamp Load Factor Requirements			
		Maximum Line Loss	
Lamp	Lamp Load Factor	Ultimate Loads Known	Ultimate Loads Unknown
High Pressure Sodium	1.2	8%	5%
Metal Halide	1.2	8%	5%
Mercury Vapor	1.1	10%	5%

Figures 4-5 and 4-6

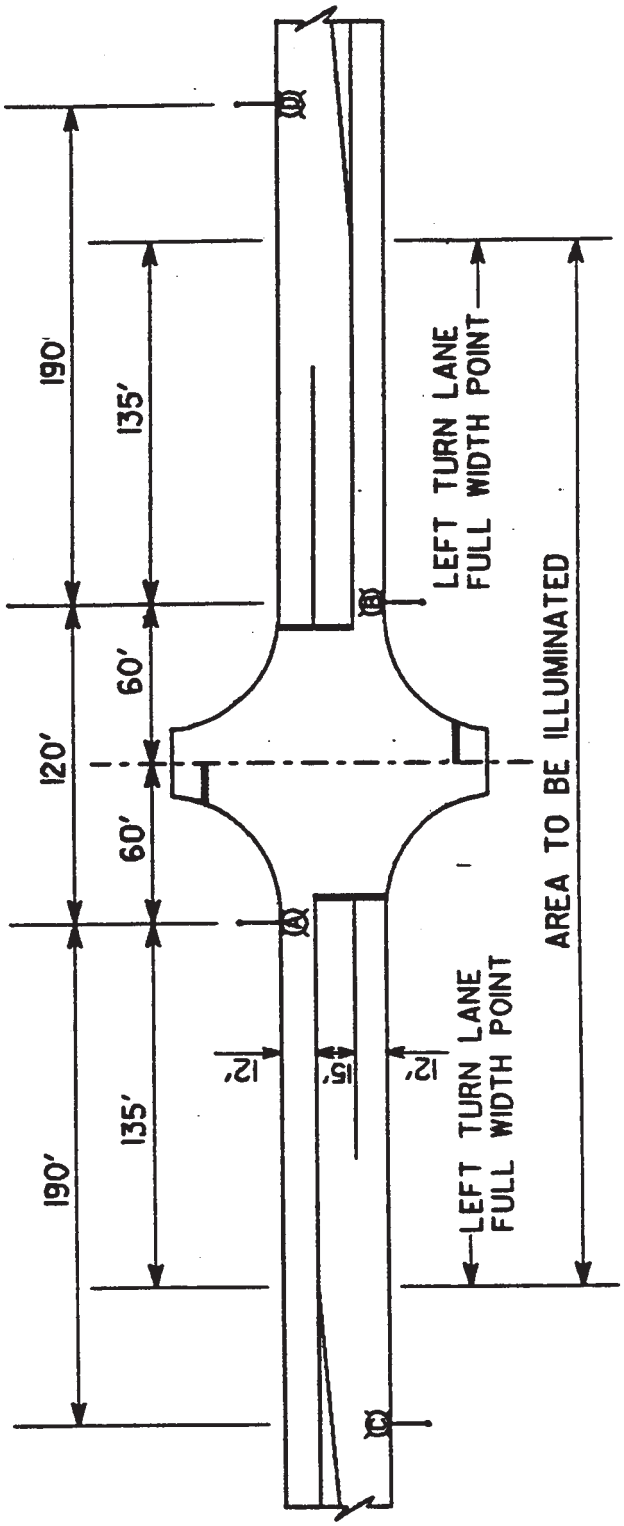
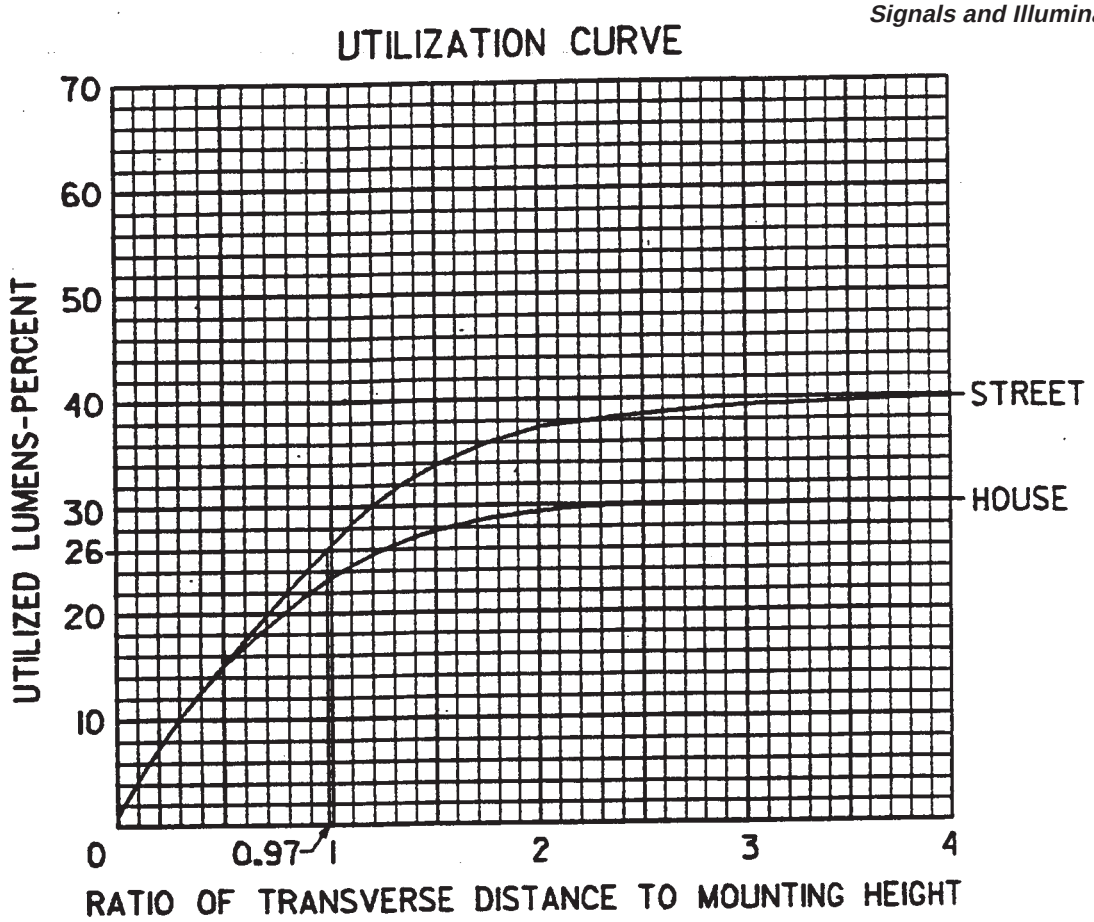
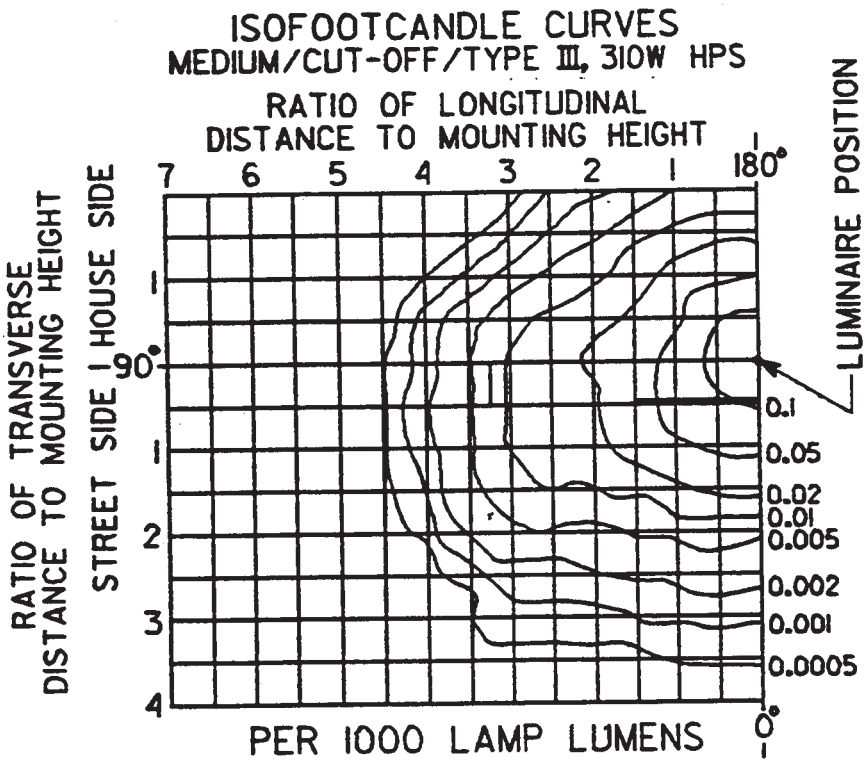

190'
135'
60'
120'
60'
135'
190'
12'
15'
12'
LEFT TURN LANE
FULL WIDTH POINT
LEFT TURN LANE
FULL WIDTH POINT
AREA TO BE ILLUMINATED
A
B
C
D

Figure 4-7





MOUNTING HEIGHT CORRECTION FACTORS (MHF)
30′ = 1.0
35′ = 0.73
40′ = 0.56
50′ = 0.36

Figure 4-8

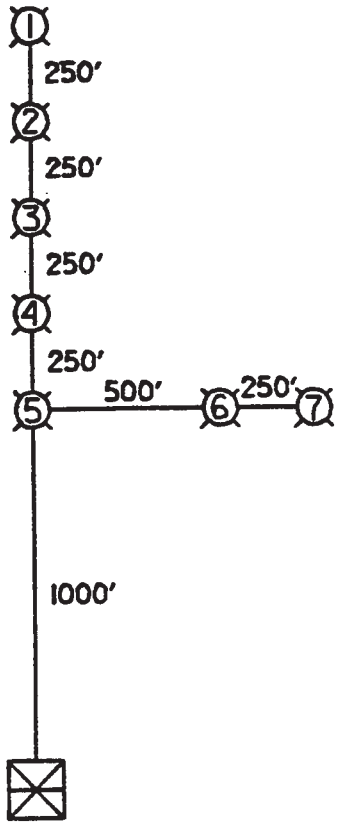


Figure 4-9

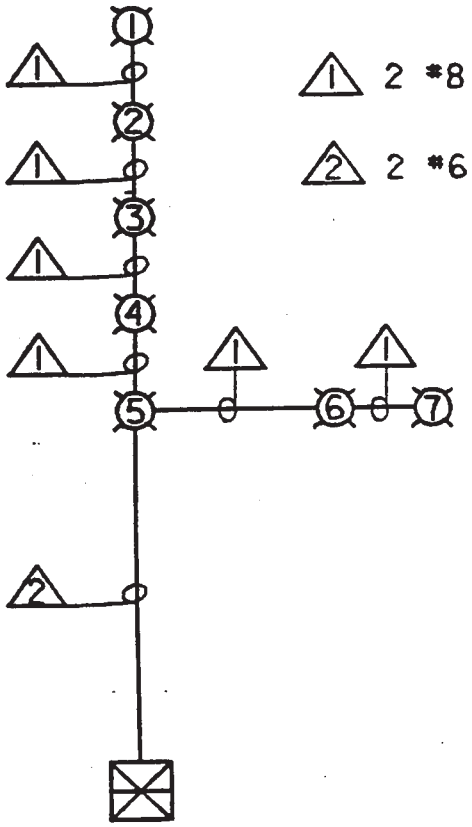


Figure 4-10

Figures 4-9 and 4-10

Line Loss Table					
Load No.	***Load (A) AMPS***	***∑ Loads (A) (AMPS)***	***Distance (D) (FT)***	***A x D (AMP-FT)***	***∑ AD (AMP-FT)***
1	1.55	1.55	250	390	390
2	1.55	3.10	250	780	1170
3	1.55	4.65	250	1,160	2,330
4	1.55	6.20	250	1,550	3,880
5-6-7	4.65	10.85	1,000	10,850	14,730
Service					Say 14, 800
7	1.55	1.55	250	390	390
6	1.55	3.10	500	1,550	1,940
5-4-3-2-1	7.75	10.85	1,000	10,850	12,790
Service					Say 12,800

Figure 4-11

Voltage Drop for Aluminum Conductors

(Aerial Installation only, underground installation prohibited)

Power Factor 100 Percent Single Phase ... 2 Wire

WIRE SIZE AWG	4 / 0	3 / 0	2 / 0	1 / 0	1	2	4	6	8
Amperes Feet	Volts Drop								
500,000	95.9	120.0	151.0	191.0	240.0	303.0	483.0	-	-
400,000	76.8	96.0	121.0	153.0	192.0	241.0	386.0	-	-
300,000	57.6	72.0	90.6	115.0	144.0	182.0	290.0	460.0	-
200,000	38.4	48.0	60.4	76.4	96.0	121.0	193.0	307.0	478.0
100,000	19.2	24.0	30.2	38.2	48.0	60.6	96.6	153.0	239.0
90,000	17.3	21.6	27.2	34.4	43.2	54.6	87.0	138.0	215.0
80,000	15.3	19.2	24.2	30.5	38.4	48.5	77.3	123.0	191.0
70,000	13.4	16.8	21.1	27.6	33.6	42.4	67.6	107.0	167.0
60,000	11.5	14.4	18.1	22.9	28.8	36.4	58.0	92.0	144.0
50,000	9.6	12.0	15.1	19.1	24.0	30.3	48.3	76.7	120.0
40,000	7.7	9.6	12.1	15.3	19.2	24.1	38.6	61.4	95.6
30,000	5.8	7.2	9.1	11.5	14.4	18.2	29.0	46.0	71.7
20,000	3.8	4.9	6.0	7.6	9.6	12.1	19.3	30.7	47.8
10,000	1.9	2.4	3.0	3.8	4.8	6.1	9.7	15.3	23.9
9,000	1.7	2.2	2.7	3.4	4.3	5.5	8.7	13.8	21.5
8,000	1.5	1.9	2.4	3.1	3.8	4.9	7.7	12.3	19.1
7,000	1.3	1.7	2.1	2.8	3.4	4.2	6.8	10.7	16.7
6,000	1.2	1.4	1.8	2.3	2.9	3.6	5.8	9.2	14.4
5,000	1.0	1.2	1.5	1.9	2.4	3.0	4.8	7.7	12.0
4,000	0.7	1.0	1.2	1.5	1.9	2.4	3.9	6.1	9.6
3,000	0.6	0.7	0.9	1.2	1.4	1.8	2.9	4.6	7.2
2,000	0.4	0.5	0.6	0.8	1.0	1.2	1.9	3.1	4.8
1,000	0.2	0.2	0.3	0.4	0.5	0.6	1.0	1.5	2.4
900	0.2	0.2	0.3	0.3	0.4	0.6	0.9	1.4	2.2
800	0.2	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.9
700	0.1	0.2	0.2	0.3	0.3	0.4	0.7	1.1	1.7
600	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.9	1.4
500	0.1	0.1	0.2	0.2	0.2	0.3	0.5	0.8	1.2
400	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.6	1.0
300	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.7
200	-	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5
100	-	-	-	-	0.1	0.1	0.1	0.2	0.2

Figure 4-12

Voltage Drop for Copper Conductors

(In Conduit or Aerial Installtion)

Power Factor 100 Percent Single Phase ... 2 Wire

WIRE SIZE AWG	4/0	3/0	2/0	1/0	1	2	4	6	8	10	12	14
Ampere Feet	Volts Drop											
500,000	62.4	78.6	98.5	123.0	153.0	194.0	306.0	483.0	-	-	-	-
400,000	50.0	62.9	78.8	98.4	122.0	155.0	244.0	386.0	-	-	-	-
300,000	37.4	47.2	59.1	73.9	91.8	116.0	184.0	290.0	450.0	-	-	-
200,000	25.0	31.4	39.4	49.2	61.2	77.6	122.0	193.0	300.0	480.0	-	-
100,000	12.5	15.7	19.7	24.6	30.6	38.8	61.2	96.6	150.0	240.0	384.0	-
90,000	11.2	14.2	17.7	22.2	27.5	34.9	55.1	87.0	135.0	216.0	345.0	-
80,000	10.0	12.6	15.8	19.7	24.5	31.0	49.0	77.3	120.0	192.0	307.0	487.0
70,000	8.7	11.0	13.8	17.2	21.4	27.2	42.8	67.6	105.0	168.0	269.0	426.0
60,000	7.5	9.4	11.8	14.8	18.4	23.3	36.7	58.0	90.0	144.0	230.0	365.0
50,000	6.2	7.9	9.9	12.3	15.3	19.4	30.6	48.3	74.9	120.0	192.0	304.4
40,000	5.0	6.3	7.9	9.8	12.2	15.5	24.4	38.6	60.0	96.0	154.0	243.0
30,000	3.7	4.7	5.9	7.4	9.2	11.6	18.4	29.0	45.0	72.0	115.0	182.0
20,000	2.5	3.1	3.9	4.9	6.1	7.8	12.2	19.3	30.0	48.0	76.8	122.0
10,000	1.3	1.6	1.9	2.5	3.1	3.9	6.1	9.7	15.0	24.0	38.4	60.8
9,000	1.1	1.4	1.8	2.2	2.8	3.5	5.5	8.7	13.5	21.6	34.5	54.7
8,000	1.0	1.3	1.6	1.9	2.5	3.1	4.9	7.7	12.0	19.2	30.7	48.7
7,000	0.9	1.1	1.4	1.7	2.1	2.7	4.3	6.8	10.5	16.8	26.9	42.6
6,000	0.8	0.9	1.2	1.5	1.8	2.3	3.7	5.8	9.0	14.4	23.0	36.5
5,000	0.6	0.8	1.0	1.2	1.5	1.9	3.1	4.8	7.5	12.0	19.2	30.4
4,000	0.5	0.6	0.8	1.0	1.2	1.5	2.4	3.8	6.0	9.6	15.4	24.3
3,000	0.4	0.5	0.6	0.7	0.9	1.2	1.8	2.9	4.5	7.2	11.5	18.2
2,000	0.3	0.3	0.4	0.5	0.6	0.8	1.2	1.9	3.0	4.8	7.7	12.2
1,000	0.1	0.2	0.2	0.3	0.3	0.4	0.6	1.0	1.5	2.4	3.8	6.1
900	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.9	1.4	2.2	3.5	5.5
800	0.1	0.1	0.2	0.2	0.3	0.3	0.5	0.8	1.2	1.9	3.1	4.9
700	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.7	1.1	1.7	2.7	4.3
600	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.6	0.9	1.4	2.3	3.7
500	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.8	1.2	1.9	3.0
400	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.6	1.0	1.5	2.4
300	-	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.2	1.8
200	-	-	-	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.2
100	-	-	-	-	-	-	0.1	0.1	0.2	0.2	0.4	0.6

Figure 4-13

5.1 General

Work zone traffic control is a major aspect of any roadway project. It must be designed from the motorists point of view to provide the motorists with the necessary information to proceed in a safe and orderly manner through a construction or maintenance work zone which may have unexpected roadway conditions, changes in alignment, and temporary roadside obstacles relating to the work activity. The sudden transition to tighter geometrics and the closer proximity of traffic control must be incorporated into the work area in a manner that will minimize driver uncertainty. Effective work zone traffic control is the result of strategy planning, plan development and preparation, and field applications. The goal of any work zone traffic control plan is to allow no reduction in the level of service for traffic.

TCP (Traffic Control Plans) must be included in the PS&E to provide for the orderly movement of vehicular and pedestrian traffic through construction and maintenance areas.

No single standard sequence of signs or other traffic control devices can be used as an inflexible arrangement for all situations due to the variety of roadway and traffic conditions that may be present in a roadway project. A TCP that adequately address the variables motorists will encounter on each specific project are generally preferred

5.2 Principles

Guidelines for TCPs are found in Section VI of the *Manual on Uniform Traffic Control Devices* (MUTCD). Section VI details the fundamental principles of temporary traffic control, including the design and erection of signing, traffic control layout, pavement markings, delineation, lighting, and flagging standards. This chapter sets forth specific principles for designing traffic control.

A. Traffic Control Features

1. **Lane Geometry**. The approach lane width should be equaled or exceeded throughout the connection. The minimum allowable lane width is 10 feet. Design the lane and the lane width reductions prior to any lane shifts within the transition area.

Every effort should be made to maintain an approach speed that matches the design speed of the facility. Where this is not possible, a 10 mph reduced speed advisory, posted with a warning sign which tells the driver of the hazard, is considered maximum per speed change. Design for the highest design speed allowed with respect to curve radii. Curve radii and lane width should not be reduced simultaneously.

The objective is to use lane geometrics that will be clear to the driver and keep the vehicle in the intended lane. Lane lines and construction joints must be treated to provide a smooth flow through the transition area. It may also be necessary to modify or remove other existing traffic control devices.

2. **Physical Barriers**. There are three types of barrier protection used in construction workzones: water-filled barriers, moveable barrier, and concrete barriers. Several items as summarized below must be considered when determining their use.

Water-filled Barriers:

- Short-term projects (zero to three days) for a minimum 100-foot length.
- Do not use in lane transitions until further testing has been done or unless the situation meets with manufacturer's specifications. In the case of an open construction work area, use in conjunction with TMAs.
- Evaluate risk and site conditions and if used, follow manufacturer's guidelines and specifications. Provide chart for Washington State Department of Transportation (WSDOT)

designers to use which shows deflection based on speed of vehicle.

Moveable Barriers:

- High volume traffic conditions with very short-term lane closures.
- Continuous operation over extended period of time, where there is a need to get the lane back in operation at some point in the day. (Could be used in lieu of reduced lane widths or lane reduction, i.e., HOV lane additions; wall next to roadway.)

Temporary Concrete Barriers:

- High speed roadways and areas where there is a high potential for injury to workers (i.e., internal lane work).
- Work zones in "no escape" areas such as tunnels, bridges, lane expansion work, etc.
- Long term, stationary jobs (work that occupies a location more than three days).
- Worker and traveling public exposure considerations such as high speed and volume of traffic, when workers are not protected by vehicle, and in proximity to traffic (concrete slab repair in freeways).

Temporary concrete barriers are normally installed for:

a. The operation of opposing traffic where two-way traffic must be maintained on one roadway of a normally divided highway for an extended period of time.

b. The separation of opposing traffic where a four-lane divided highway transitions to a two-lane, two-way roadway that is being upgraded to become a divided four-lane roadway.

c. Projects where existing safety features such as bridge rail or guardrail are removed.

A 2-foot minimum shy distance is normally provided between the lane edge and the near edge of the separation barrier.

It may be necessary to utilize a portion of the roadway shoulder to provide the roadway width needed for the barrier use.

In areas where temporary concrete barriers cannot be installed, drums, cones, barricades, or vertical panels can be used as an acceptable alternate. However, temporary concrete barriers must be used in the transition areas between multilane and two-lane, two-way roadways, and as described in (c) above.

Exposed ends of concrete barriers must be located outside the clear zone and adequately flared, or have a crashworthy end treatment.

Where drums, cones, etc., are used, consistent patterns of the devices are important to help alleviate driver confusion. Random mixing of these devices at any given location is undesirable.

Where positive barriers are not used throughout a two-way connection, warning lights may be used to mark opposing traffic separation devices.

3. **Illumination**. Full lighting is normally provided through traffic control areas where power is available. Illumination will be placed in accordance with Chapter 840 of the *Design Manual*.

4. **Delineation**. Removable temporary or painted lane lines and edge lines are normally used to delineate the roadway. These pavement markings are preferred for shifts in travelway alignment. Type 2 raised pavement markers and guideposts may be used to accentuate the lane and edge lines in illuminated areas.

In areas where power for illumination is not available, reflective devices must be used to delineate the traveled way for nighttime driving. Guideposts provide eye-level delineation, while Type 2 raised pavement markers provide lane line delineation. Reflective devices are also installed on temporary concrete barriers used in transition areas and/or to separate opposing traffic.

When concrete barrier is used, lateral clearance markers may be installed at the barrier's angle points and at other locations along the barrier where additional delineation may be needed.

Pavement marking arrows are placed in lanes to indicate direction of travel.

Delineation guidelines are shown in Chapter 830 of the *Design Manual*.

5. **Speed Limit or Speed Advisory Signing**. As part of the design process for construction and projects for maintenance, speed reductions are an option requiring a thorough traffic analysis conducted prior to making a change. For emergency and other necessary speed reductions, guidelines are outlined in RCW 47.38.020, WSDOT *Construction Manual*, and Directive D 55-20 "Reduced Speed in Maintenance and Construction Zones."

When a change of speed is necessary, a request for change of speed limit must be submitted to the regional Traffic Control Engineer. When regulatory speed limit reduction or advisory speed signing is necessary, use the letters "XX" to represent the speed limit on the TCP. The actual posted speed indicated on the signs is determined prior to opening the temporary connection.

Some items to consider when reducing speeds in work zones because of worker safety include:

- Post speed limit signs in the work zone. When speed limit is lowered and enforced (monitored by WSP/local law enforcement), ensure work zone is adequately signed.
- Post regulatory speed limit signs for work hours only (identify hours when the limit is in effect if condition for speed limit reduction is not present when work is not being conducted). Remove signs when reduced speed limit is not in affect.
- Use variable message signs more frequently (as a supplement to standard signs) to display either advisory speeds or regulatory speed limits and explain the activity requiring the reduction.

6. **Variable Message Signs**. Per the MUTCD, the primary purpose of VMS in temporary traffic control zones is to advise the driver of unexpected traffic and routing situations. Some typical situations can include the following:

- Where speed of traffic is expected to drop substantially.
- Where significant queuing and delays are expected.
- Where adverse environmental conditions are present.
- Where there are changes in alignment or surface conditions.
- To provide advance notice of ramp, lane, or roadway closures.
- For accident or incident management.

Operators must always be aware of what the arrow board is displaying. Keep displays appropriate and when not needed, turn them off. For instance, when the vehicle or arrow board is placed on the right shoulder, never display the "right arrow" because it would move people off the shoulder/road and be potentially hazardous to drivers/workers. This also applies to "left arrow" usage in the left lane/shoulder placement.

Make messages clear and brief. Keep messages to a maximum of two panels. If special messages are necessary, be consistent with conventional signs and standards normally used. Whenever possible, use the pre-programmed "canned" messages that the VMS is equipped with.

7. **Truck Mounted Attenuators (TMAs).** Items to consider for determining TMA use:

- Speed of Traffic: Higher operating speeds leave less time for response, and impacts at higher speeds generally result in more severe injuries and damage. Therefore, activities on facilities with high speed limits are likely to entail more frequent and more severe incidents than are activities on facilities with low speed limits.
- Type of activity: moving, intermittent, or stationary.
- Duration of project.
- Roadway environment: access controlled vs. non-access controlled, urban vs. rural; and geometrics of roadway. Access controlled facilities frequently give drivers a false sense of security resulting in a lower expectation of interruptions to free traffic flow. Therefore,

activities on freeways may be more likely to become involved in incidents than are activities on non-access controlled facilities where most drivers are operating at a higher state of alertness.

- Traffic volumes which relate directly to worker exposure.

- Exposure to special hazards: Operations involving personnel on foot or located in exposed positions on or within work vehicles (for example, on the platform of a cone pickup truck or in a lift-bucket performing overhead operations) are particularly susceptible to high severity incidents.

- Location of work area: Locations of primary concern are those within the traveled lanes and those within all-weather frequently used shoulders. Activities taking place within the traveled lanes are more likely to become involved in an incident than are shoulder activities.

Some suggested priorities for the application of truck-mounted attenuators are contained in Figure 5-2.

8. **Use of Flaggers.** Flaggers should be employed only when all other methods of traffic control are inadequate to warn and direct traffic. They should be used prudently when signing and other methods cannot work. The use of more innovative, restrictive, traffic control methods such as signs, signals, channelization, etc., should be considered.

Flaggers must be part of an approved Traffic Control Plan and included in the initial design.

On high speed locations, post speed advisory plaques with appropriate warning signs and other innovative traffic control methods, preceding flaggers, to slow the traffic down and to let drivers know there are people ahead.

Flaggers should not be used when there is no intention to control traffic.

Use of flaggers should be consistent between regions/offices/locations for like jobs. For instance, use flaggers for the following conditions:

- *Slow Traffic* – Do not rely solely on flaggers to slow the traffic; supplement with traffic control set up (i.e., simplify traffic flow, restrict traffic flow).

- *Direct Traffic* – The flagger is sometimes necessary to keep traffic from following work vehicles into the work zone. They are responsible for redirecting vehicles back into the flow of traffic safely.

- Stop Traffic.

9. **Use of Enhanced Enforcement.** For use of enforcement, the initial determination should be based on engineering judgment (between maintenance/construction office and district traffic office) considering the type of construction activity, complexity of the traffic control plan, possible speed reduction needs, traffic volumes, nighttime work activity, geometric conditions, associated cost for use of enforcement (cost benefit analysis), and actual traffic problems observed as the work progresses.

Enhanced enforcement in the work zone is recommended to:

- Provide single stationary patrol car for work zones where the work area is less than 1,000 feet in length. (This is the length of the actual work area and excludes the advance warning, taper, and buffer spaces before and after the actual work zone.)

- Provide two or more stationary patrol vehicles for work zones with a work area greater than 1,000 feet in length. (This is the length of the actual work area excluding the advance warning, taper, and buffer spaces before and after the actual work zone). The WSP stated that use of two troopers (one set up at the start of the project who would radio to the trooper at the end of the project) works best for enforcement. One trooper would be available to transport individuals as needed and one trooper would remain to cover the work zone.

B. Pedestrian and Bicycle Safety

Special consideration must be given to the safe accommodation of pedestrians when the work zone encroaches upon a sidewalk, crosswalk, or other areas used by the pedestrian.

Where walkways are closed by construction or maintenance, provide an alternate walkway when feasible. Where it is necessary to divert pedestrians into the parking lane of a street, provide barricades and delineation to separate the pedestrian walkway from the adjacent traffic lane. Pedestrians should not be diverted into a portion of the street used for vehicular traffic. At locations where adjacent alternate walkways cannot be provided, post appropriate signs at the limits of construction and in advance of the closure at the nearest crosswalk or intersection to divert pedestrians across the street.

When overhead work could endanger pedestrians, it may be necessary to install a fixed pedestrian walkway of the fence or canopy type to protect and control pedestrians. In such cases, wood and chain link fencing can be used with warning lights and illumination to warn and guide both pedestrians and motorists.

Fences around a construction area are often necessary. They are constructed in conjunction with a special pedestrian walkway around deep excavations, or when pedestrian access to the job site is not desirable. Installation of such fencing must consider relocation of existing control devices and facilities such as traffic signals, pedestrian signals, traffic signs, and parking meters. Open mesh or other suitable fencing may be needed at intersections to ensure adequate sight distance.

When the work zone encroaches upon a bicycle path, an alternate route should be considered and provided for cyclists where feasible. Bicycles should not normally be directed into the same path used by pedestrians. See Part IX of the MUTCD for details on bicycle traffic control.

Appropriate considerations should be made for traffic control operations that are conducted during the hours of darkness.

C. Types of Work Zones

Anticipated work zones are categorized as: (1) Short-Term Stationary, (2) Continuous Moving, and (3) Long-Term Stationary. Different criteria will apply to the design and planning of the necessary traffic control measures for each of these categories. The following is a generalized description of the characteristics for these three types of work zones.

1. **Short-Term Stationary**. In this type of work zone, situations exist where the work activity is of a very short time, such as, picking up obstacles or inspecting a culvert for debris. For these very short-time work periods, a flashing/rotating beacon in addition to the vehicle's four-way flashers may give drivers, approaching on sections of highway that have no restrictions to sight distance, adequate warning. When the driver's sight distance is obscured by roadside obstacles or the roadway geometry, appropriate advance warning signs, and/or other traffic control devices, are required.

Advance warning signs should be used if the short-term activity is repetitive after moving only a short distance. The signs selected should be appropriate for the operation and the signs should be moved ahead as required in order to maintain an appropriate spacing between the warning signs and the activity. The maximum advisable distance between the advance warning signs and the work activity is one mile.

2. **Continuous Moving**. Continuous moving work areas are activities where work is being done while the equipment is moving either beside or on the traveled lanes of the highway. Included in this category would be striping, roadside spraying, sweeping, and other similar tasks.

The advance warning signs used for moving operations can be mounted on the shoulder or on a shadow vehicle, or both. Shadow vehicles should carry a sign which describes the work ahead and warning lights. If the shadow vehicle must encroach on the traveled lane, a flashing arrow board should be used. Whether the advance warning signs are ground mounted on the roadside shoulder or mounted on shadow vehicles, the signs should be moved ahead as required in order to maintain an appropriate distance between the signs and the work activity. The maximum advisable distance between the advance warning signs and the continually moving work activity is one mile.

On Multi-Lane Highways

The requirements for traffic control during moving operations on multi-lane highways are similar to those for stationary operations. If work vehicles must encroach on the traveled way, a flashing arrow board should be used while working on multi-lane highways.

An advance warning sign which describes the operation should be mounted on a separate or shadow vehicle. The distance between the shadow vehicle and the work vehicle can vary but it should not be so great that traffic has the tendency to pull back into the lane behind the work vehicle where the work is being done.

On Two-Lane Highways

Moving operations on two-lane highways can basically be handled in the same manner as on multi-lane highways with the exception that a flashing arrow board should never be used in the arrow or directional mode. Advance warning signs should be placed on the roadway shoulder or on a shadow vehicle.

3. **Long-Term Stationary**. Traffic control plans developed for long-term stationary operations address each anticipated work situation that encroaches into the traveled lanes or shoulders. The considerations for those traffic control plans should include all traffic entering the work zone from driveways, intersections, ramps, and the main roadway. The plans should also consider how traffic will leave the work area and re-enter the main traffic stream or leave by the way of an intersection or off-ramp.

Detour routes should be given special consideration when directing traffic through urban areas. Local jurisdictions are to be consulted when detoured traffic must use local streets and roads. Also, advise local emergency services, transit and major traffic generators, such as airports and port facilities, about any detour routes.

If ramps, structures or intersections are to be temporarily closed, signs giving advance notice of the closure dates and times are necessary so commuting motorists have the option of selecting alternate routes. The advance notice should be placed a minimum of seven days in advance of the closure.

5.3 Strategy Planning

On construction projects, the design report establishes the parameters for the project's specific needs. At that time such items as lane restrictions and closures, working hours, ramp closures, detour options, and other possibilities should be considered. On low volume rural highways, traffic control procedures may be simple to develop; whereas, traffic control procedures on limited access, multi-lane, high volume routes can be complex and require extensive planning.

From this strategy the Work Zone Traffic Control Plan is developed to identify the type and location of devices (signs, pavement markings, delineation, and flaggers) required to adequately inform the motorists of the situation.

The keys to strategy planning for traffic control on any public roadway, whether rural roads, urban streets, or freeways are the traffic, with considerations for both volume and types of vehicles, and the roadway characteristics. Careful consideration should be given to the effect the traffic control will have on the traffic flow in the work area and on the adjacent roadways. Traffic volumes, along with the speed and classification of vehicles, express the character of the traffic to be encountered. Hourly volumes show the periods of heavy traffic which should be avoided or that will require special treatment. Any restrictions, such as lane closures, and the hours for those restrictions can then be established by the District Traffic Engineer. Special attention should be directed to bicycles and over-sized vehicles and the detouring of those vehicles which may be necessary. Figure 5-1 is a generalized checklist intended to assist in strategic planning and does not necessarily contain all the elements for consideration.

5.4 Plan Preparation

To aid in the preparation of traffic control plans, the Traffic Control Zone is divided into traffic control areas or elements. These individual traffic control areas or elements are used to develop the complete traffic control plan.

A. The Traffic Control Zone

The traffic control zone is the section of street or highway having traffic control devices warning motorists of upcoming conditions or to guide motorists through a construction or maintenance operation. Complex projects may have more than one traffic control zone, one for each operation which may be going on at any one time. The traffic control zone extends from the first advance warning sign to the last sign which indicates the end of the traffic control zone.

The traffic control zone typically consists of five areas (illustrated in Figure 5-2):

1. **Advance Warning Area**. The area of initial warning and communication with the driver.

2. **Transition Area**. The area where lane closure tapers and detours transition traffic to the paths required for travel through or around the work area.

3. **Buffer Area**. The area in advance of the work area which provides a margin of safety for both traffic and the workers.

4. **Work Area**. The area where the operation or activity is taking place.

5. **Termination Area**. The area which provides a short distance for traffic to clear the work area and to return to normal traffic lanes.

B. Plan Development

The work zone traffic control strategies are to be identified early in the design of a project in accordance with Section 8.10 of the *Design Manual*. Plan development begins with a review of the strategy contained in the design report. The supporting data should be checked and any changes in roadway or traffic characteristics should be taken into consideration while preparing the traffic control plan. Site specific traffic control is to be prepared for each work operation on the project unless the roadway and the work operation is repetitive and each location is similar in character.

There are a number of typical traffic control situations stored in a CADD file. These figures are not intended to be standard control plans for any given operation. They are shown only as examples for the situations depicted and are to be used as aids in the development of traffic control plans.

The traffic control devices shown in each area or element of the traffic control zone are available in a "CEL" library for CADD or PC Microstation and can be placed directly on the plan sheets drawn in either one of these systems.

Roadway plan sheets for the project should be used in preparing the traffic control plan. This provides the scale drawing of the roadway section needed to establish proper placement for the signs and devices. Signs and devices can then be placed on the plan sheet in their proper locations by using the CADD. An on-site review of the area is recommended, since many characteristics cannot be determined from a drawing. Give special attention to existing signs which are to be maintained during the work activity that could conflict with or obstruct the view of the traffic control signs. All features and characteristics which will have an effect on the movement of traffic within and adjacent to the traffic control zone should be included in the plan.

The drawings of sample situations included in the CADD file can be used as guidelines for the selection and placement of traffic control devices. The unique characteristics of the specific work area should be individually addressed. Those features may include side roads, driveways, ramps, commercial approaches, bus stops, bridges or areas which have no shoulders (which make temporary sign placement difficult), substandard roadway width, vertical or horizontal alignment which will affect the sight distance of approaching traffic, add-lanes, drop-lanes, railroad crossings, regulatory traffic controls, or any other characteristics which differ from the examples shown in the sample drawings or the standard plans.

The traffic control devices shown on traffic control plans should clearly and concisely give the motorists information needed to adjust their speed and travel direction through the work area. The prepared plans should include any special signs for situations in which standard signs do not give accurate information and should be supplied as an item in the contract. The use of special signs should be kept to a minimum and used only where necessary. The Headquarters Traffic Office should be consulted regarding the use of special signs. Signing should be as specific as possible and always relate to the immediate situation to be encountered.

1. **Work Area**. Although the work area is not the first area of a traffic control zone encountered by a motorist, it is the area that must be considered first when developing traffic control plans. Traffic control requirements for all the other traffic control zone areas are determined by the location of the work area and type of activity taking place within that area. The other areas of traffic control will then be designed to complement the activities and channelization requirements within the work area.

Identifying the work requirements in the work area, such as which lanes need to be closed, exposure to drop-offs, obstacles created, and equipment considerations will indicate what kind of traffic control or warning devices will be required in advance. With an understanding of the kind of work to be done, the designer then works back to the next element of traffic control which is the buffer area.

2. **Buffer Area**. The buffer area is a safety area but it can have other uses. Vehicles hauling material can be parked in the buffer area for short periods of time during the work day. This area should never be used as a material or equipment storage area unless the traffic is protected by a temporary barrier. The buffer area allows the driver to become accustomed to the channelization and to recognize the path of channelization they will follow through the work area.

After the desirable length of the buffer area is determined, by considering the number of vehicles which might be parked there and the channelization which the driver must follow, the next upstream element to be designed is the Transition Area.

3. **Transition Area**. This is the area where normal traffic flow is transitioned or shifted to the path it must follow around or through the work area. No parking of vehicles or storage should be permitted in the transition area. Lane closure and traffic shift taper lengths are established to recommended minimums depending on the speed limit of the highway and width of the traveled lane. Formulas for determining a taper length are found in Part VI of the MUTCD and a chart for determining taper lengths is available in the CADD file.

4. **Advance Warning Area**. Upstream from the transition area is the advance warning area that gives the oncoming driver information about the situation ahead. Messages used on the advance warning signs will depend on the type of transition ahead. Sign messages which give the driver clear and concise information are the most effective.

5. **Termination Area**. The final area of traffic control to be designed is the termination area. This is the area which gives the driver notification that the temporary traffic control situation is ended. Terminal notification is generally accomplished with a sign such as “END CONSTRUCTION” or may be indicated with channelizing devices which indicate the conclusion of the road work situation and a transition back to normal alignment.

6. **Other Considerations**. Planning temporary traffic control area by area has distinct advantages, especially for complex situations. For instance, if a flagger is needed in advance of the work area, the buffer space should be lengthened to provide space for a secondary warning area where warning signs for the flagging situation would be placed. Roadway features can affect the traffic control in many ways. For example, an on-ramp or side road which enters the highway within the proposed transition area will require special treatment. In such situations advance warning signs should be installed on the ramp or side road and the transition area might have to be

relocated to provide a well channelized path for all vehicles.

After locations for the work site traffic control have been established, project signing such as "Road Construction Ahead," "Road Construction Next XX Miles" (if required by the length of the project), and "End Construction" may be added to the plan.

The time of day when most drivers will encounter the traffic control should be considered while preparing the plans. If traffic control will be in effect during nighttime hours, the signs and devices might need to be supplemented with lights to increase perception and credibility. During a nighttime field review, give consideration to the area's background lighting from adjacent facilities and advertising signs which are competing for the driver's recognition.

Warning signs and channelization devices should be positioned in a sequence which can be recognized and respected by the driver. In order to assure proper application, conduct a visualization review of the signs and devices on the plans from a reasonable driver's point of view. Make sure that the messages and devices are appropriate for each situation the reasonable driver will face.

Temporary concrete barriers and barrier end protection are to be shown on the traffic control plans.

5.5 Work Zone Operations

After traffic control plans based on strategy from the design report are reviewed by the District Traffic Engineer, traffic control can be put into operation on the project.

A drive through inspection of the project to compare actual field conditions, prior to installing the traffic control, can identify characteristics which might require adjustments on the traffic control plan. Aspects of the plan that are not appropriate for the field conditions should be revised. Any modifications to the traffic control plan should be documented. Section 1 of the *Construction Manual* gives additional guidelines for effective traffic control.

Immediately after the traffic control is laid out on the roadway, a drive-through inspection should be conducted by the individual designated as the "responsible person" for the project's traffic control to check the installation and position of the signs and other devices; and, to determine if the overall configuration of the traffic control relays clear, concise information to the reasonable motorist. Special attention should be given to the traffic control for overlapping and potentially conflicting traffic control zones. If the traffic control plan is going to remain in effect during the hours of darkness, a drive-through inspection is to be made after sunset to ensure that all devices meet the requirements for reflectorization, proper position, and that the messages are clearly legible. The night review should also ensure work area flood lights and flashing arrow boards do not blind approaching motorists.

Periodic reviews (twice daily is recommended for long-term traffic control) of the traffic control devices should be made to verify the adequacy of the traffic control and to identify any needed revisions. Additional night reviews may be necessary to confirm that the devices are clean and that the reflectorized qualities of the signs and devices are being maintained. These reviews should be documented. Particular attention should be given to motorist's reaction through or around the work area and if there appears to be confusion, additional reviews should be initiated.

The documentation refers to both the location, appropriateness and condition of the signs or devices. Devices are to be replaced as necessary when their appearance and condition dictate. A form to document the traffic control reviews is useful and most districts or project offices have developed their own forms for this purpose. A photo or video inventory of the work zone traffic control may be used to supplement documentation. If photos or video are used, supplemental inventory information should be referenced in the project documentation.

Should an accident occur on the project or within the work area, a review of the traffic control plan and the devices should be made and documented as soon as possible. This review should be done not only to see if the devices are in place as shown on the plan, but also to determine if the

devices are adequate or if the plan should be revised in light of experience. Each field office should have a procedure for analyzing accidents which take place with the limits of the project. Formal communications with the Washington State Patrol must be established at the pre-construction stage and arrangements made to receive copies of accident reports in a timely manner. Occasional contact with WSP for their perception of the traffic flow through the construction area can be beneficial.

If any assistance is desired at any stage of traffic control plan development, consult the District Traffic Engineer's office. Each district traffic engineer's office should have a traffic control specialist to review and provide guidance in the preparation of the traffic control plans for the PS&E, to review traffic control in the field, and to have the authority to approve revisions to the traffic control plans.

Traffic Control Planning and Strategy Check List

Figure 5-1

The following is a list of things to consider when designing construction traffic control and writing traffic control specifications.

Effective traffic control is integrated into the project early in the design and planning process. Traffic control will often determine the staging of a project and will always effect the project cost.

Step 1 — To Close Or Not To Close

Closing the roadway or ramp is the most desirable option. This usually lowers construction costs, decreases contract time and increases worker safety.

Roadway closure can be considered if an alternate route is available. The alternate route must carry the additional traffic volumes and any weight or height restrictions must be considered.

For the traveling public, closing the road for a short time may be less inconvenient than having the road under construction for a long time.

Consider the following while determining if a road should be closed.

1. Is there an available detour route?

2. Can the proposed detour carry the additional traffic?

3. Will businesses or residences be isolated if the road is closed? If so, is there an alternate access point.

If a complete closure is possible, do the following:

- Get the approval of the governing agency to use the proposed detour route.

- Meet with the community and businesses to discuss the roadway closure. Find resolutions to the community's concerns. This may mean leaving the roadway open during construction.

- Determine the maximum number of allowable days of closure and incorporate this into the special provisions.

- Determine if liquidated damages or incentives for early completion should be included in the special provisions.

Step 2 — Strategy Or "How Can This Thing Be Built?"

If the roadway must remain open during construction, determine how to build the project with the least possible impact on traffic.

1. Read any District policy about lane closures or restrictions.

2. Determine the volumes of traffic on the facility and the hours of high volume.

3. Determine if long duration lane closures are needed. Some construction activities that require long closures are:

   Concrete panel replacement

   Bridge overlays

   Major excavations in the roadway

   Large continuous concrete pours

4. Determine the hours of restriction — the hours that lanes and shoulders must be open and clear for traffic.

For a quick analysis, assume the following volumes of vehicles per hour in urban construction areas:

1400 Veh/hr/lane on controlled access highways

600 Veh/hr/lane on undivided rural and suburban highways.

(any signals will lower the capacity)

When determining the hours of restriction, check the local noise ordinances and determine what construction work can be done at night. Loud construction work, such as pile driving, is prohibited at night in many areas. For work that is prohibited from being done at night, provisions

must be made for daytime work. Avoid engine powered generators for VMS or arrow panels in residential areas during night-work, if possible.

Be sure to consider holiday weekends, special events, and regular weekend traffic when determining the hours of restriction.

Also, consider the impact on private or commercial driveways or road access.

5. Determine if there should be liquidated damages in excess of the standard specification amount. Determine if there should be contract incentives for early completion of the project. Determine the amounts of each of these.

6. Study the project and determine how it could be built. Is it possible to build the project within the restrictions stated? Is staging necessary?

Staging a project can be as simple as deciding one lane must be paved at a time. Staging is a suggested way of building the project, not the only way to build a project. By staging the project we determine:

- If our traffic control special provisions are realistic.
- The approximate duration of lane closures.
- If temporary structures and detours are needed.
- If existing utility systems can remain operational during construction, or will they have to be relocated/replaced. (Examples: signals, electrical, drainage)
- If the work areas are adequate. (Examples: storage space for equipment and materials, space to load/unload trucks.)

7. Incorporate into the project design ways of lessening the traffic impact. Some examples are:

A. Use precast concrete or steel girders instead of cast-in-place concrete for structures over main traffic lanes.

B. Specify materials that have faster cure times than conventional materials.

C. Building detours and improving alternate routes in order to carry the increased traffic volumes.

8. Study the project and determine if traffic control or lane closures are needed on adjoining roads. Adjoining roads include frontage roads, intersections, overcrossings, and undercrossings. Some examples are:

- Low clearance because of bridge falsework.
- Long-term lane closures for bridge falsework and substructure excavation.
- Short- and long-term lane closures on frontage roads because of retaining wall construction.
- Placement of "Road Construction Ahead" signs and other warning signs.
- Short-term access closures for paving intersections.

If traffic control is needed on facilities that are not state highways, get permission to use the facility from the governing agency.

9. Determine if there are any areas that construction vehicles cannot safely leave or enter the highway because of limited sight distance. Label these areas on the traffic control plans.

10. Work zone sites exhibiting one or more of the following characteristics should be reviewed for possible enhanced enforcement needs:

- **Sites where "excessive speeding" is observed or could be anticipated within the construction zone.** Based on a study conducted by the California Department of Transportation (Caltrans), "speeding" and speed-related measures were identified as the primary factor affecting work zone safety. While sufficient warning of desirable travel speeds through the work zone may be placed in compliance with the MUTCD, driver acceptance and compliance with the advisory speeds is, in many cases, poor. The use of increased enforcement to "command" adherence to the speed limit has been shown to be effective in maintaining these speeds, as evidenced by the findings in the literature review and interviews with the Caltrans and California Highway Patrol (CHP) personnel.
- **Sites where a reduced speed limit is recommended.** The purpose of a reduced regulatory speed limit within a construction zone

is based on a perceived need, such as reducing travel speeds prior to diverting or detouring traffic, reducing speeds adjacent to unprotected construction workers. For a complete discussion, refer to D 55-20. Based on the findings from the study sources, adherence to reduced speed limits is, in many cases, poor. To ensure adherence to the speed limit, enhanced enforcement may be necessary.

- **Sites having a complex traffic plan or multiple phases to the plan.** Sites with traffic control plans having a number of traffic diversions, lane closures, or traffic restrictions requiring a number of decisions by motorists, particularly in a short distance, are highly susceptible to increased accident activity. Much of this activity may be attributed to motorist's indecision through the area, to differentials in travel speeds through the site, and to the lack of adherence to speed controls in the area. Past efforts have shown that enhanced enforcement, through manual control/flagging or a visible presence, have resulted in smoother, more efficient traffic flow through the work zone. Typically, a lower level of accident activity has resulted.

In addition, construction projects requiring multiple traffic control phases are shown to exhibit greater accident activity than those containing a single phase. Much of this may be attributed to the driver indecision associated with "learning" a new traffic pattern each time a new traffic control phase occurs. As the requirements for the motorists' decision-making increases between subsequent phases, accident activity is also likely to increase. The use of enhanced enforcement to supplement the existing traffic controls has an "alerting" effect, helping motorists recognize field changes and the need for increased safety through the area. Use of enhanced enforcement for a specific time period following traffic control phase changes has been found to be effective.

- **Sites currently exhibiting a "high" accident rate.** Based on research, accident rates during the construction activity typically increase over the pre-construction accident rate. As such, sites exhibiting a "high" accident rate prior to construction (under normal field conditions) may require supplemental traffic control in the form of enhanced enforcement in order to minimize accidents during construction. Oftentimes, site characteristics (horizontal and vertical curvature, geometrics, access) prior to construction are a major factor in the level of pre-construction accident activity. The presence of construction activity may worsen the impact of these characteristics.

- **Sites having high volume conditions and/or limited roadway capacity.** Construction activity resulting in significant reductions in the available roadway capacity can have a dramatic impact on travel speeds and congestion in an area. To aid in maintaining an acceptable level of traffic operations, selective enforcement through the work zone may be desirable. The enforcement may take the form of traffic control/flagging or the visible presence of police officers and vehicles.

- **Sites planned for nighttime construction.** Research has identified safety problems associated with nighttime work in construction areas. Increased distraction to motorists, unique construction lighting needs, reduced perception levels by motorists, sub-optimal traffic controls, as well as excessive travel speeds for the conditions through the work zone contribute to the increased accident activity. The use of enhanced enforcement to "alert" motorists to the need for increased caution and to enforce excessive speeding in the area can be extremely valuable in maintaining safety during nighttime construction activities.

The safety impact associated with nighttime travel through work zones with no construction activity presents a similar problem. Faced with similar field situations as identified above (e.g., reduced perception levels by motorist, sub-optimal traffic controls, excessive speeding), accident activity through the work zone during nighttime conditions has exhibited major increases over nighttime conditions prior to construction, particularly where traffic movement through the area drastically differs from

the "normal" condition. Enhanced enforcement measures have been shown to aid safety in these situations.

- **Sites involving short-term activities.** Past studies have shown that the most critical safety period for work zones is the initial implementation period. Motorists accustomed to driving through an area with no restrictions are forced to adhere to restrictions and "unfamiliar" situations that did not exist previously. Driver indecision is at its peak and driver compliance to regulations varies sharply. As a result, increased accident activity typically results. As drivers become more familiar with the field conditions, the level of accident activity typically is reduced. For short-term project activities (less than one day), little or no adjustment period exists. The accident activity can be quite high, particularly for field situations requiring traffic diversions, detours or lane reductions. Enhanced enforcement for these conditions may be warranted.

- **Sites with restricted geometrics.** Where steep grades, sharp curves, narrow lanes, or other abnormal field conditions exist, enhanced enforcement to supplement the traffic controls per the MUTCD may be necessary. Sites with restricted geometrics can exhibit accident rates higher than normal. The use of enhanced enforcement can reduce the anticipated accident levels.

- **Sites in areas during periods of poor weather conditions.** In areas where weather conditions such as snow, fog, ice, and heavy rain are anticipated to occur during periods of construction activity, enhanced enforcement services during these conditions would be beneficial. The visible presence of enforcement personnel would serve to '"alert" motorists to the potential hazards and need for driver caution through the area. Most construction projects shut down during adverse weather conditions.

- **Sites extending for long distances (>1/2 mile).** Past studies show that in long construction zones, a location within the zone exists in where motorists become "comfortable" with field conditions and are likely to become lax in maintaining safe driving practices. Examples of such practices can include speeding or unsafe lane changes. At this location, there is a need to reinforce safe driving techniques and motorists' caution within the work zone. Proper placement of enhanced enforcement personnel are included in a later portion of this section.

- **Sites requiring incident management.** Where immediate response to freeway incidents (accidents, breakdowns) is desirable in order to reduce traffic delays and additional traffic accidents, the use of enhanced enforcement techniques is beneficial. Numerous studies have documented the benefits associated with improved response times to freeway incidents. These benefits have often led to the implementation of freeway surveillance techniques. On-site availability of enhanced enforcement personnel at areas where quick response is critical (high volume corridors, peak period conditions, limited off-road space) is desirable.

- **Sites where workers are not protected by barrier.** Situations falling under this heading generally include only those work areas where personnel must work within 10 feet of the traveled way. Having an officer on the site can, as stated before, keep the drivers more "alert" and attentive, increasing the safety margin for both the workers and the drivers.

11. Determine traffic control concerns that should be addressed in the special provisions. Examples are:

- Abrupt lane edges
- Installation of sign bridges
- Rolling slow-down operations for short time complete closures of a highway.

5:P3:TM1

Closure/Exposure Condition	Priority*			
		Non-Freeway with Speed Limit		
	Freeway	≥50 mph	40–45 mph	≤35 mph
No Formal Lane Closure				
Shadow Vehicle for Operation Involving Exposed Personnel	1	2	3	4
Shadow Vehicle for Operation Not Involving Exposed Personnel	1	2	3	4
No Formal Shoulder Closure				
Shadow Vehicle for Operation Involving Exposed Personnel	2	3	3	3
Shadow Vehicle for Operation Not Involving Exposed Personnel	2	3	4	5
Formal Lane Closure				
Barrier Vehicle for Operation Involving Exposed Personnel	1	3	4	5
Barrier Vehicle for Condition Involving Significant Hazard	1	3	4	5
Formal Shoulder Closure				
Barrier Vehicle for Operation Involving Exposed Personnel	3	4	5	5
Barrier Vehicle for Condition Involving Significant Hazard	3	4	5	5

*The numerical rank indicates the level of priority assigned to the use of a TMA on an assigned shadow/barrier vehicle. The use of a TMA under the defined conditions is:

1. Very highly recommended.
2. Highly recommended.
3. Recommended
4. Desirable.
5. May be justified on the basis of special conditions encountered on an individual project.

Figure 5-2

Suggested Priorities for the Application of Truck-Mounted Attenuators

CHAPTER 6

TRAFFIC REGULATIONS

6.1 GENERAL

Traffic regulations place specific operating restrictions on the use of the road. RCW 46.61 regulates basic traffic movements on public roadways with regard to maximum speeds, lane use, and assignment of right-of-way, and further requires an official action by the jurisdictional authority where additional regulations are necessary to enhance safety or operating efficiency on state highways, county roads, or city streets. Where city streets are part of state highways without access control, RCW 47.24 requires a concurrent city or town ordinance for speed limits, parking restrictions, stop control, and turn prohibitions within the corporate limits.

For state highways, the State Operations and Maintenance Engineer is delegated authority for approving the following traffic regulations:

- Signal permits for new signal installations.
- Speed limits below the statutory maximums.
- Stop control on state highway approaches to intersections.
- Bicycle prohibitions on limited access highways.
- HOV lane operations.

For state highways, the district administrators are delegated authority for approving the following regulations:

- Work zone speed limits.
- Parking restrictions.
- Turn prohibitions.
- Fishing from bridges prohibitions.
- Pedestrian prohibitions on highways with partial and modified access control.

The guidelines in this chapter identify the data to be compiled and analyzed in preparing traffic regulation submittals. This data helps achieve uniform statewide consideration and interpretation in obtaining approval of proposed regulations.

6.2 SIGNALS

Permits are required for the following types of signals:

- Conventional Traffic Signals
- Emergency Vehicle Signals
- Intersection Control Beacons
- School Signals
- Reversible Lane Control Signals
- Movable Bridge Signals
- Ramp Meter Signals
- Hazard Identification Beacons installed overhead at an intersection.
- Temporary or Portable Signals

Emergency vehicle signals require an annual permit renewal. The renewal is extended by a letter to the permit holder from the district administrator with a copy to the State Traffic Engineer.

See "Traffic Signal Approval Requirements," Section 335 of the *Design Manual*; and, submit the following information with the signal permit application:

A. A vicinity map showing SR/MP location of the intersection. Include traffic volume and lane distribution on a detailed sketch, showing other data relative to the request. If possible, include photos of the intersection and surrounding area.

B. A complete warrant analysis based on actual traffic volumes per MUTCD Section 4C or traffic volume estimate per *Design Manual*, Section 335 if new alignment. Submit a capacity analysis and other justification if volume warrants are not met but a signal appears necessary to resolve operational problems.

C. An accident data summary listing for the last three years. State whether or not the location is scheduled for improvement in the latest priority array. Provide a statement of funding and maintenance responsibilities of local agencies if appropriate.

D. All city/county fire districts and citizen requests along with copies of other pertinent documents and correspondence.

E. The history of previously tried corrective countermeasures.

F. Other supporting data such as proximity to schools, shopping centers, pedestrians traffic, etc., as appropriate.

For locations where signal removal may be considered, refer to FHWA publication titled *FHWA-IP-80-12 "For Removal of Not Needed Traffic Signals*," available through headquarters or district traffic engineering offices.

6.3 SPEED LIMITS

The following information on the existing and proposed speed changes are to be submitted:

A. A strip map showing 85th percentile speed locations with SR/MP. Show locations of pedestrian walkways, schools, etc., on the strip map.

B. If applicable, a brief description on the alignment based on *Design Manual* data. Include geometrics, sight distances, lane widths, shoulders, and other data, such as three year accident data which may affect the request.

C. A copy of any required local agency ordinance. Also include copies of any citizen petitions or other letters regarding the proposed speed zone.

D. State Patrol and/or local police agency concurrences.

Work zone speed limits are approved by the district administrator as prescribed in policy Directive 55-20.

6.4 STOP CONTROL

Requests for stop control on state highway approaches to intersections are supported with the following information:

A. A vicinity map showing SR/MP location of the intersection, together with the total traffic volume and approach distributions.

B. A description of the operational problems, such as limited sight distances, which identify the need for stop control. Include a history of previously tried corrective measures.

C. An accident summary listing for the last three years. State whether or not the location is scheduled for improvement in the latest priority array.

D. A city or town ordinance is required for city streets which are part of state highways. Also includes copies of city, county, and/or citizen requests along with other pertinent documents and correspondence.

E. Copies of State Patrol and/or local police agency correspondence.

6.5 BICYCLE RESTRICTIONS, LIMITED ACCESS HIGHWAYS

Provide the following information to support requests for approval of bicycle regulations:

A. A vicinity map and strip map showing SR/MP to highlight the area involved.

B. Descriptions of operational problems (e.g., restricted shoulder width, interchange configurations) which identify the need for the regulation.

C. Information and descriptions of alternate routes.

D. Copies of documents, correspondence, and citizen requests. Include the recommendation, if any, of WSDOT's Bicycling Advisory Committee.

E. State Patrol concurrence.

6.6 HIGH OCCUPANCY VEHICLE LANES

To support requests for high occupancy vehicle (HOV) lane regulations, provide the following information:

A. A vicinity map identifying the SR/MP limits and showing the locations of ramps within the proposed lane.

B. The proposed minimum number of occupants per vehicle, and engineering documentation to support that minimum. Also show projected lane occupancy rates for both the HOV lane and the adjacent general purpose lanes.

C. Identify the types of vehicles to be allowed in the HOV lane.

D. Copies of design report data if the lane is part of an upcoming construction project.

E. If a shoulder HOV lane is proposed, concurrence from Project Development that the shoulder has adequate structural strength must be included.

6.7 PARKING RESTRICTIONS

The following information is to be provided in support of requests for parking regulations:

A. A detailed strip map of the area showing SR/MP, intersecting streets and driveways, and other on-street or off-street parking alternatives. Photos are helpful.

B. Identify the type of restriction required (e.g., time of day, mid-block location to corner).

C. An analysis of operational problems such as narrow shoulders or limited distances that identify the need for the regulation.

If the regulation is for approval of angle parking by the Secretary (see RCW 46.61.575), include a traffic engineering analysis regarding safety of operation.

D. When the request is in cooperation with another agency or includes a city street portion of a state highway, obtain copies of all related correspondence and required ordinances.

E. Correspondence or comments regarding adjacent property owners parking requirements and concurrence with the regulation.

F. Copies of State Patrol and/or local police agency concurrences.

Except for angle parking approval by the Secretary, parking restrictions are approved by the district administrator.

Within the Department's park and ride facilities, parking is limited to 48 hours maximum, when posted with signs. This restriction was established by official calendar action by the State Operations and Maintenance Engineer on January 8, 1982.

6.8 TURN PROHIBITIONS

Support requests for turn prohibitions with the following information:

A. A vicinity map and intersection sketch showing the SR/MP location. Also show the traffic volumes with approach lane distributions. Photos are helpful.

B. Descriptions of operational problems, such as lack of adequate gaps or pedestrian movements, that identify the need for the regulation.

C. An accident data summary for the last three years. Consider whether or not the location is scheduled for improvement in the latest priority array.

D. A copy of any required local agency ordinance. Also include copies of any citizen petitions or other correspondence regarding the request.

E. Copies of State Patrol and/or local police agency concurrences.

Turn prohibitions are approved by the district administrator.

6.9 FISHING FROM BRIDGES

The prohibition of fishing from bridges is needed for State Patrol enforcement. Support information is to include:

A. A vicinity map showing the SR/MP of the bridge.

B. Identification of the magnitude of the potentially hazardous condition requiring the prohibition.

C. Copies of State Patrol concurrence.

Prohibitions of fishing from bridges are approved by the district administrator. See WAC 468-30-030 for prohibitions adopted by the Highway Commission prior to transfer of traffic regulation authority to the department.

6.10 PEDESTRIAN PROHIBITIONS

Both RCW 46.61.160 and 47.52.025 authorize the Department to prohibit nonmotorized traffic (e.g., pedestrians) on limited access highways but do not differentiate between the levels of access control. WAC 468-58-050 prohibits pedestrians only on highways with full access control. Thus, traffic regulations are required on highways with partial and modified access control where it is desirable to prohibit pedestrian travel.

Prohibitions are appropriate for highways with partial and modified access control in areas having the appearance of full access control, areas where parallel pedestrian routes are available, and other areas where pedestrians on the shoulder create a potential hazard to themselves or motor vehicles. These types of considerations are documented to support requests for pedestrian prohibitions.

Pedestrian prohibitions on highways with partial and modified access control are approved by the district administrator.

6.11 DOCUMENTATION

Traffic regulation requests are submitted in writing from the district traffic engineer to the district administrator for regulations approved in the district or to the state traffic engineer for regulations requiring headquarters approval. To support the request, the submittal letter should provide a summary of the engineering data and other support data discussed in this chapter.

Traffic regulations, and their approval or denial, are recorded on a Calendar Agenda form (see Figures 6-1 and 6-2). Informational copies of completed agendas are exchanged between the headquarters and district traffic offices and are provided to the Secretary, Assistant Secretary for Highways, headquarters Location-Design Engineer, and State Patrol, and to appropriate local agencies for concurrent regulations required by RCW 47.24.020.

Traffic regulation records are to be permanently retained together with the supporting engineering data and analysis.

OPERATIONS & MAINTENANCE
CALENDAR AGENDA

_____
Date

TO: Operations & Maintenance Engineer

FROM: _____

ITEM: _____

_____

Attached herewith is (are) the above-referenced item(s) for inclusion on your Calendar for approval and/or execution at Calendar Meeting to be held _____
These have been checked by this office.

Figure 6-1

DISTRICT
CALENDAR AGENDA

_____
Date

TO: District Administrator

FROM: _____

ITEM: _____

_____

Attached herewith is (are) the above-referenced item(s) for inclusion on your Calendar for approval and/or execution at Calendar Meeting to be held _____
These have been checked by this office.

Figure 6-2

CHAPTER 7
SPECIAL HIGHWAY USE

7.1 BICYCLING, RUNNING, WALKING, FESTIVAL, AND PARADE EVENTS

RCW 46.61 prescribes the rights and duties for bicycle and pedestrian travel an highways, county roads, and city streets, With regard to bicycle or pedestrian events, traffic control considerations are essential to minimize potential traffic hazards.

Requests to use state highways for bicycle, running, and walking related events require written approval from the district to the event sponsor for events occurring within a district. Headquarters coordinates the required activities for multi-district events, responding to the involved districts and the State Patrol. Approvals may be granted after consideration and documentation of the following guidelines:

A. Event sponsors should be encouraged to use county roads or city streets if at all possible.

B. Where use of a highway without access control is necessary, there should be a detour route available. The detour should be satisfactory for through traffic and appropriately signed by the local jurisdiction(s). Request for state highway use within incorporated areas should receive concurrence from the affected city or town.

C. Sponsor developed traffic control plans must adequately and safely accommodate anticipated traffic conditions. Such plans must be approved by the district traffic engineer. All traffic control devices shall conform to the *Manual on Uniform Traffic Control Devices* (MUTCD).

D. The organizers, or sponsors, will prepay all extraordinary costs for labor and materials provided by the Department of Transportation.

E. The party requesting the state highway use shall notify, at least 48 hours (preferably seven days) in advance of the event, all local fire, ambulance, transit, law enforcement departments, and other service oriented activities that could be affected by the event.

F. The department must be included as an additional insured when highway authorities are not specifically named within event insurance policies.

Department regulations and policies do not allow bicycling, running, or walking related events on limited access highways except when prior approval is granted at locations where no alternate route exists. On an event basis, written approval by the State Operations and Maintenance Engineer is required.

Where a limited access highway has been approved for use, sufficient lane(s) are to be left open in each direction to allow expected volumes of traffic to operate without serious congestion. Appropriate traffic control plans and devices are to be used to enhance safety and to warn event participants and vehicle drivers of each others presence.

Public information efforts should be commensurate with the anticipated traffic impacts. The news media should be encouraged to publicize the event and possible congestion. This can be accomplished by imposing special requirements for public information on the sponsor, by news releases or media contacts by WSDOT personnel, or a combination.

Provide informational copies of correspondence related to such events to the State Traffic Engineer. When these events may affect ferry operations, contact the Marine Transportation Division.

7.2 BANNERS

In accordance with RCW 47.24, district administrators may grant written approval for suspending banners above state highways without access control provided that the organizers or sponsors comply with the following criteria:

A. A vertical clearance of 20 feet to the bottom of the banner must be maintained above the pavement surface.

B. The banner is located so as not to interfere with, or obstruct the view of, any traffic control device.

C. The banner must be removed within three days after the event is over.

D. Banner messages are limited to name, date, and event sponsor.

Failure to comply with these requirements may result in future request denials.

The content of the banner message must comply with the requirements of the Scenic Vistas Act, RCW 47.42. Banners to promote civic events are permitted only if the profits derived from the activity they promote go directly to the support of nonprofit organizations.

7.3 “MEMORIAL” HIGHWAYS/BRIDGES

The Transportation Commission names a highway or bridge by resolution. The Commission normally will only consider naming a facility upon receipt of a resolution by the Washington State Legislature. This practice assures the Commission that: (1) local and state officials jointly agree the facility should be named, (2) there is agreement on which name should be used, and (3) residents along the roadway agree.

Plaques or signs memorializing highways or bridges are typically installed in rest areas, scenic overlooks, recreational areas, or other

appropriate locations with parking, where the installations are not visible to mainline traffic.

For locations where there is no appropriate off-the-main-roadway site, the MUTCD provides that one memorial sign per direction may be erected along the mainline, independent of other guide and directional signing, if not adversely compromising the safety or efficiency of traffic flow.

7.4 ROUTES OF TRAVEL FOR SCHOOL BUSES LONGER THAN 36 FEET 6 INCHES

RCW 46.44.030 prescribes that the routes of school buses longer than 36 feet 6 inches upon or across state highways shall be limited as determined by the Department of Transportation.

Accordingly, all state highways are considered satisfactory as routes for such school buses except:

- Selected highways or segments determined as inappropriate for the operation of the buses, because of inadequate turning radius and/or related operational characteristics.
- Where crossing or left turns onto a multi-lane divided highway utilizes a median 50 feet wide or less and a reasonable alternative route exists.

Upon request by a school district, an exception to B. above may be granted by the district administrator for locations where no reasonable alternate route is available.

Restricted highway segments and intersections on multi-lane highways having a median width of 50 feet or less are shown in Figure 7-1.

7.5 OVERWIDE LOAD RESTRICTIONS

District administrators are authorized to require a pilot car for overwide loads on a location basis after the following criteria are met:

A. Notice of the restrictions are provided to the State Operations and Maintenance Engineer for dissemination to the permit offices.

B. Signs are installed giving notice of restriction, identification of corridor (milepost) limits and duration of restriction. The signs are to be installed at selected locations providing pilot car operators safe on/off access to the highway without conflicting with other traffic.

7.6 INTERPRETIVE SIGNS/MARKERS

Agreement GM 869 between WSDOT and the Washington State Parks and Recreation Commission provides the procedures and guidelines for developing and maintaining interpretive signs and markers which depict the states natural and manmade history.

RESTRICTED ROUTES FOR SCHOOL BUSES LONGER THAN 36 FEET 6 INCHES

DIST	COUNTY	SR	MP TO MP		DESCRIPTION	RESTR. CODE
1	Skagit	SR 20	47.89	54.51	Jct. SR 20 Spur east to Jct. SR 20 and Jct. SR 536	2
1	Skagit	SR 20 Spur	47.89	50.62	Jct. SR 20 Spur west to Jct. Commercial Avenue	2
2	Chelan	SR 97	185.02	199.83	Jct. SR 2 and SR 97 to Jct. SR 2 O'xing	2
3	Gr. Hrbr. Thurston	SR 8	0.00	20.63	Jct. SR 8 and SR 12 to Jct. SR 8 and SR 101	2
3	Gr. Hrbr.	SR 12	0.30	10.00	Jct. East Wishkah St. to Montesano	2
3	Gr. Hrbr. Thurston	SR 12	10.24	21.30	Jct. SR 8 and SR 12 to Jct. SR 8 and SR 101	2
3	Pierce	SR 16	7.28	28.28	East Pav't of Tacoma Narrows Bridge to Jct. SR 160	2
3	Clallam	SR 101	249.63	260.85	Jct. Golf Course Rd./Front St. to Joslin Rd. Vic.	2
3	Mason Thurston	SR 101	349.04	367.41	Jct. on-ramp SR 3 to Jct. SR 101 and SR 5	2
3	Clallam	SR 112	0.00	16.42	East Boundary Makah Indian Res. to Jct. Front St. and SR 112	2
4	Clark	SR 14	0.00	15.40	Jct. SR 5 and SR 14 to Jct. SR 14 and NW 6th Avenue Interchange	2
4	Klickitat	SR 142	13.64	23.61	ECL of Klickitat to Jct. SR 142 and Glenwood Rd.	1
4	Cowlitz	SR 432	3.32	5.15	Longview SCL to Jct. SR 5	2
5	Yakima	SR 12	197.52	199.54	Jct. Mitchell Rd. and SR 12 to Jct. SR 12 and on-ramp Fruitvale Interchange	2
5	Walla Walla	SR 12	335.30	342.38	Jct. SR 125 Spur (W Pine St) east to Weigh Station	2
5	Yakima	SR 97	61.44	74.22	Jct. SR 97 and SR 22 to S. Pav't of Wapato Canal Bridge	2
5	Garfield Columbia	SR 126	0.00	16.63	Jct. SR 12 and SR 126 to Jct. SR 126 and SR 12	1
5	Asotin	SR 129	0.00	17.35	SR 129 at Oregon State Line to SCL of Anatone	1
6	Spokane	SR 2	275.33	283.17	Jct. SR 2 at entrance to Fairchild AFB to Jct. SR 2 and SR 90	2
6	Lincoln	SR 21	68.57	82.27	Jct. SR 21 and SR 174 to Keller Ferry Landing	1
6	Spokane	SR 195	90.77	95.95	Jct. SR 195 and White Rd. to Jct. SR 195 and SR 90	2
6	Spokane	SR 206	7.58	15.39	Jct. SR 206 and Cooper Rd. to end of SR 206	1

CODE 1—TRAVEL PROHIBITED

CODE 2—PERMIT REQUIRED TO CROSS OR TURN LEFT ONTO HIGHWAY

Figure 7-1

7.7 ROAD CLOSURES/RESTRICTIONS

Within the provisions of RCW 47.48, WSDOT may close highways in part or in whole to any class of motor vehicles where such continued use will damage the roadway or would be dangerous to traffic.

Prior to closing or placing such restrictions, the districts must give notice of such action by:

A. Publishing a notice describing the restriction in at least one newspaper issue of general circulation in the county, city, or town where the restricted highway is located.

B. Posting notice describing the restriction in a conspicuous place at the ends of the highway.

The highway may be closed or restricted no sooner than three days after such notice and posting occurs.

The districts may implement emergency closures or restrictions immediately, without prior notice or posting, in accordance with the procedures in the *Maintenance Manual*, M 51-01, which also provides signing guidelines for both nonemergency and emergency closures and restrictions.

7.8 SPECIAL EVENT DIRECTION SIGNING

District administrators may execute agreements for special event directional signing. Special events are activities such as county fairs, conventions, major sports events, and other large scale spectator activities.

The department will fabricate, install, maintain, and remove signs to direct motorists to a special event only after:

A. The agency sponsoring the event submits a written request to the applicable district sufficiently in advance of the event to permit orderly sign fabrication and installation.

B. The event is determined by the district to generate sufficient traffic to create a hazard or congestion at one or more points along a state highway.

C. The agency sponsoring the event provides copies of agreements with local agencies for follow-through directional signing from the state highway to the event.

D. By written agreement, the cost for fabrication, installation, maintenance, and removal of the special event signs, is prepaid by the sponsoring agency.

When requests for special signing are denied, requestors will be provided with an explanatory letter from the district administrator. A copy is to be provided to the State Operations and Maintenance Engineer.

The installation and removal of special event signs on state highways, will be accomplished only by the department.

7.9 SHOULDER DRIVING FOR SLOW VEHICLES

As authorized by RCW 46.61, district administrators may designate segments of two-lane state highways on which drivers of slow-moving vehicles may safely drive onto improved shoulders for the purpose of allowing overtaking vehicles to pass.

The following highway characteristics are required for designating shoulder driving areas:

A. A minimum length of 600 feet of paved shoulder must be available.

B. The structural strength of the paved shoulder is adequate to support driving.

C. The shoulder width is 8 feet or more; except, shoulder widths of 6 to 8 feet may be utilized after review of the following considerations:

- Horizontal and vertical alignment.
- Shoulder slope from pavement edge.
- Absence of passing opportunities.
- Character of traffic (e.g., recreation, logging, or other significant volumes of slow-moving traffic).

Refer to Chapter 2, for signing requirements.

7.10 COMMERCIAL FILMING ON STATE HIGHWAYS

A memorandum of understanding between the department and the Washington State Patrol provides guidance for filming commercial advertisements on state highways. The department, the State Patrol, and the filming company enter into a written agreement (see Figure 7-2) that authorizes the filming and defines the terms and conditions applicable to the particular filming operation.

The agreement letter is to be adjusted considering the guidelines below for each specific filming project and must be completed 10 days prior to filming.

Notice of a proposed filming operation is provided to the department and the State Patrol by the Department of Trade and Economic Development (DTED) Motion Picture Bureau (MPB). The notice enables the department and the State Patrol to investigate operational requirements for the proposed filming.

SAMPLE LETTER AGREEMENT

(Place on DOT letterhead)

(Name and address of filming company)

RE: SR _____

_____
Filming Agreement

Dear:

We conditionally approve (brief description of type of filming operation, its locations and dates). These (type of filming operation) will be approved if you agree to the following terms and conditions:

1. You reimburse the Department of Transportation for all expenses incurred by the Department and by the State Patrol for this (commercial, movie, or other _____). These expenses include our direct labor and equipment charges necessary to provide traffic control and sign installation for your filming.

2. You obtain liability insurance in an amount no less than $1,000,000 and the state shall be specifically named as an insured in the policy with the same company which insures (fill in their name) or by an endorsement to an existing policy.

3. The state, the Department of Transportation, the State Patrol and all officers and employees of the state will not be responsible in any manner for any losses or damages in the performance of work or for inquiry to or death of any persons. You agree to indemnify and hold harmless the state, the Department of Transportation, the State Patrol and all other officers and employees of the state from any and all claims, suites, actions, costs, including reasonable attorney fees, resulting from or arising out of the filming operation.

4. In the event that any party deems it necessary to institute legal action or proceedings to enforce any right or obligation under this AGREEMENT, the parties hereto agree that any such action or proceeding shall be brought in a court of competent jurisdiction situated in Thurston County, Washington.

5. Representatives of your organization are to meet with us and the Washington State Patrol prior to the filming to work out details (time of day, traffic control procedures, and any other safety concerns) for the filming.

6. (Include other provisions as appropriate.)

Please indicate your agreement by countersigning and returning the enclosed copy of this letter agreement. If you have any questions or concerns, please contact (WSDOT contact) of my staff at (telephone number).

Sincerely,

(Name and title of WSDOT official)

(Name and title of WSP official)

_____
SIGNATURE DATE

_____
PRINTED NAME

_____
TITLE AS OFFICER WITH (NAME OF FILMING COMPANY)

cc: DTED/MPB
District or Headquarters
WSP Olympia

Figure 7-2

Initial contact may be by telephone or letter. However, a verbal request is to be followed with a letter identifying the type of filming operation to be undertaken, together with an indication of the state highway location, date, and time desired by the filming company for the filming operation.

Periods and/or locations of high traffic volume or peak traffic flow are to be excluded from any roadway filming because of the potential adverse impact to traffic.

Normally, interstate and other freeway mainline closures will not be permitted. Road or lane closures on other highways will be considered.

A rolling traffic break, which is the intentional slowing of traffic through a moving roadblock provided by the State Patrol, may not be slower than 35 mph on full-access controlled highways.

Operational decisions and/or emergency situations may require immediate reopening of closures or suspension of rolling traffic breaks.

In no event are any vehicles permitted to exceed the regulatory speed limit.

Traffic enforcement shall be provided by the State Patrol, in cooperation with local police agencies where appropriate.

Prior to any filming operation requiring a road or lane closure or the use of a rolling traffic break, an operational meeting scheduled by the DTED/MPB may be required with the department, the State Patrol, and the film company. When appropriate, local authorities and police agencies should attend this meeting.

The purpose of this meeting is to assure that all traffic control plans and related operational procedures are finalized, and that participants are aware of their individual responsibilities prior to filming. Minor filming operations, as determined by the department and the State Patrol, may not require this operational meeting.

Normally, the filming company’s base of operations is to be located outside state highway right of way. Authorization in the agreement is required for locations within the right of way.

Stunts, accidents, or pyrotechnics that may cause damage to state property or that potentially may disrupt or endanger traffic are not allowed. Use of pyrotechnics must meet all federal and state laws and regulations. No liquid or solid materials may be placed on the highway except as approved by the department and identified in the agreement.

All costs for labor, equipment, and supplies incurred by the department and the State Patrol for traffic control and related operational procedures must be prepaid by the filming company.

The filming company must obtain liability insurance of at least one million dollars to cover the state of Washington for any and all

liabilities, including all costs of defense, arising from state highway use for filming operations. A verification certificate must be provided to the department and the state patrol prior to filming.

The filming company must also agree to indemnify and hold the state of Washington harmless against any claims or actions by third parties for injuries or property damage, including all costs of defense, caused by or arising from the filming operation.

The department and the State Patrol may develop additional guidelines and operational procedures relative to individual filming operations on state highway rights of way. These are to be included in the agreement.

Detailed arrangements and development of letter agreements will be administered by each WSDOT district. The State Traffic Engineer's office participates only in requests for multi-district filming operations.

8.1 General

The Department is directed by law to regulate advertising signs that are visible to state highways. Advertising messages may be displayed by one of several methods:

- Billboards and other outdoor advertising signs may display business logos and advertising print along selected areas of state highways, outside state right of way
- Advertising venues exist at rest areas on Interstate highways, and at several Washington State Ferry system locations
- Motorist Information Signs display logos for specific types of motorist services along state highways on regulated signs within the right of way. See chapter 2, section 6 of this manual

8.2 Outdoor Advertising Signs

Signs located on private property that are visible to certain state highways are regulated by an array of Federal and state laws and regulations.

United States Code, Title 23, Section 131
Federal laws provide direction to the states through the Federal Highway Administration and the Code of Federal Regulations regarding outdoor advertising along Interstate and National Highway System (NHS) non-Interstate highways, and at safety rest areas. Washington state is required to comply with these regulations or be subject to penalty of Federal-aid highway funds forfeiture.

RCW 47.42 — This law, referred to as *The Scenic Vistas Act of 1971*, authorizes and directs the Department to regulate advertising sign installations visible to interstate, non-interstate NHS, and scenic highways in accordance with federal regulations. Advertising sign installations are not regulated adjacent to other state highways. The intent of the Scenic Vistas Act is to enhance the roadside's scenic beauty while assuring that information of specific interest to travelers is presented safely and effectively.

WAC 468-66 & M 55-95 — The Department sanctions advertising signs on state highways under purview of the Scenic Vistas Act and the companion regulations in WAC 468-66. Department manual *M55-95, Scenic Vistas Act of 1971*, contains the laws and regulations together with a map showing a breakdown of the statewide highway systems. *Because M55-95 contains only text of the law and regulations, this chapter provides operational guidelines and technical information to assist in application of these regulations.* From the traffic engineering perspective, and for procedural efficiency, all WSDOT Regions need to apply the provisions of these regulations as uniform procedures. This uniform application also results in equitable treatment for the business community in all corners of the state.

A. Definitions —WAC 468-66-010

This section provides definitions for terms and concepts used when applying these WAC rules. In addition to definitions provided in the WAC, use the following information to assist in interpretation and application of specific regulations.

1. ***Unzoned Commercial/Industrial Areas & Visible Development—*** Several sections of these regulations refer to the "three-business rule".

   The "rule" is used to determine the presence of unzoned commercial/industrial areas along Interstate and non-interstate NHS highways. Use the following requirements to establish an unzoned commercial/industrial area, as described in RCW 47.42.020(9) and WAC 468-66-010(4):

   - Requirements are met where three or more commercial or industrial activities are located within a space of five hundred feet. The five hundred foot establishment area is measured parallel to edge of the highway's main traveled way, and may include activities located on both sides of the highway.

- In addition, these commercial or industrial activities must be located within six hundred sixty feet of the nearest edge of the right of way.
- All measurements shall be made from the outer edges of regularly used buildings, parking lots, or storage or processing areas, not from property lines.
- On certain highways, where the above criteria are met, additional buffer zones may be established. See Appendix 8-1.

The "rule" is expanded in WAC468-66-010(27) by adding a definition for "Visible development". This subsection states that criteria defined in RCW 47.42.020(9) shall be met; and in addition, the businesses shall not be visibly obstructed by vegetation or other physical objects. The presence of "visible development" is used, along with local zoning requirements, as criteria to exempt portions of state highways from the scenic system for the purpose of allowing off-premise advertising signs. (See WAC 468-66-010(16)(c))

Interstate and non-interstate NHS systems
If the above requirements are met, the five hundred foot *establishment area* may be expanded by including buffer zones, extending 500 ft. before the beginning of the area, and 500 ft. after the end of the area. The buffer zones are measured parallel to the main traveled edge of the highway, and include both sides of the highway. Advertising signs may be permitted along both sides of this 1500 ft. section of highway, outside the right of way, subject to all other applicable regulations for the particular type of highway.

Scenic system — If the above requirements are met on sections of the scenic system that lie within areas zoned commercial/industrial by the governing county, and the commercial or industrial development is visible to the highway, the five hundred foot *establishment area* is excluded from the scenic system. Because the "visible development" criteria defined in WAC 468-66-010(27) refer only to the *requirements* of the three-business rule, the five hundred foot *establishment area* shall not be expanded to include the buffer zones. Advertising signs may be permitted along both sides of the highway within this five hundred foot section of highway, outside the right of way, subject to all other applicable regulations for the particular type of highway.

2. "**Maintain" — Rebuilding Damaged Non-conforming signs —** Non-conforming signs that are damaged or partially destroyed by weather related incidents, or other acts of God, may be re-erected, depending upon the extent of damage to the sign. A sign that remains at least 50% intact after being damaged by 'non-tortious' acts may be rebuilt in kind. WAC 468-66-010(12)

3. "**Primary system" —** Language in the WAC refers to several highway system types: *Interstate, Primary,* and *Scenic.* In Washington state, outdoor advertising control applies to highways that are included as part of the National Highway System. The NHS, created by the National Highway System Designation Act of 1995 includes; the Interstate system, the non-Interstate former primary system, and other routes added by congress to the National Highway System. Routes that were previously included as part of the primary system can now best be described as *NHS non-interstate*. WAC 468-66-010(15)

4. **"Visible" — Signs on Unregulated Roadways —** See WAC 468-66-010(21). In addition to the definition provided in this WAC section, consider the following information about signs located on unregulated roadways. Signs, located along unregulated roadways that intersect with interstate or other regulated state highways, shall be considered 'not visible' if they meet at least three of the following criteria.
   - The sign faces are *not* substantially larger or at a substantially higher elevation above the ground line than other signs along the same unregulated intersecting roadways
   - The angles of sign faces are generally oriented toward unregulated intersecting roadways rather than interstate or other regulated state highways

- The length of time that the informative contents of signs can be viewed is substantially greater for the travelers on unregulated intersecting roadways than from interstate or other regulated state highways
- The signs are visible to a motorist traveling at the posted speed on the interstate or other regulated state highway, for a period of time that is less than that required to read the entire sign message
- The signs are only incidentally visible from interstate or other regulated state highways
- The signs advertise activities accessible from unregulated intersecting roadways along which the signs are located

B. General Provisions — WAC 468-66-030

This section of the WAC describes features and characteristics that are regulated on all outdoor advertising signs installed adjacent to state highway rights of way.

Moving Parts — Signs visible from the main-traveled way of the interstate, NHS non-interstate, and the scenic system that move or have any animated or moving parts (except giving public service information as described in WAC 468-66-010(23)) are prohibited.

Sign Lighting — No signs are permitted which:

1. Contain, include, or are illuminated by any flashing, intermittent, or moving lights, except those signs giving public service information as described in WAC 468-66-010(23). *This prohibition does not apply to Type 3 signs visible from NHS non-interstate highways that are located within city limits or within areas zoned commercial/industrial. RCW 47.42.062.*
2. Use any lighting in any way; unless the lights are shielded to prevent beams or rays of light from being directed at any portion of the traveled way of the highway, or are of such low intensity or brilliance as not to cause glare or impair the vision of the driver of any motor vehicle, or otherwise interfere with any driver's operation of a motor vehicle.

Electronic Signs — Electronic signs may be used only to advertise activities conducted or goods and services available on the property on which the signs are located (Type 3 signs); or to present public service information in accordance with WAC 468-66-010(23).

For Interstate highways and NHS non-interstate highways outside corporate limits and commercial and industrial zones, the specific language in WAC 468-66-030(7) that prohibits " . . . any flashing, intermittent, or moving lights . . ." does not apply to electronic signs used as on-premise signs; provided the lights operate in accordance with WAC 468-66-030(12).

C. Classification of Signs — WAC 468-66-050

This section of the WAC describes and defines highway advertising sign classifications. The Scenic Vistas Act authorizes and regulates eight specific sign types. The following information will help identify each type.

Type 1 – Directional or other official signs or notices. This type is divided into two groups:

Type 1a – The following information provides specific criteria for both *Directional* and *Official* signs.

Directional Signs

1. <u>Publicly Owned Places</u> **—** May contain directional information about public places owned or operated by Federal, state or local government, or their agencies.
2. <u>Publicly or Privately Owned Places</u> May contain directional information about publicly or privately owned places that feature: natural phenomena; historical, cultural, scientific, educational; religious sites, areas of scenic beauty, or naturally suited for outdoor recreation.
3. <u>Privately Owned Places</u> **—** May contain directional information about privately owned places that feature scenic attractions.

These attractions must be nationally or regionally known or of outstanding interest to travelers.

Directional Sign Standards

1. Sign area shall not exceed 150 sq. ft. - The maximum height or length of the sign shall not exceed 20 ft.
2. The Department must approve sign installation location.
3. Along the Interstate system or other freeway type roadways, the sign shall not be located within 2000 ft. of an interchange, measured from the ramp physical gore, or within 2000 ft. of a rest area, parkland, or scenic area.
4. Directional signs shall not be placed closer than 1 mile apart.
5. On a state route approaching an activity, a maximum of three directional signs, per direction of travel, are allowed for that activity.
6. Signs located along the Interstate system shall be within 75 air miles of the activity.
7. Signs located along the non-Interstate, NHS system shall be within 50 air miles of the activity.

Directional Signs —Message Content Limitations

1. Message shall be limited to identification of, and guidance to the activity or attraction.
2. Signs may include directional information that helps the motorist locate the activity such as mileage, route numbers, or exit numbers.
3. Descriptive words, phrases, and photographic or pictorial representations of the activity or its environs are prohibited.

Official Signs

1. Official signs shall be erected and maintained by public officers, or public agencies, for example county, city, or county commissioners.
2. Official signs shall be located within the governing jurisdiction of the public officer or public agency.
3. Official signs shall be pursuant to and in accordance with direction or authorization contained in Federal, state, or local law for the purpose of carrying out an official duty or responsibility.

Official Signs — Authority to Install

1. The officer or agency authorizing the sign installation must exercise some form of governmental authority over the area upon which the sign is located – governmental authority means the authority to enact or administer the law.
2. The officer or agency authorizing the sign installation must be directed by statute or local law and/or must have the specific authority by statute or local law to erect and maintain signs.

Official Sign Standards

1. Official signs shall not exceed 150 sq. ft. The maximum height or length of the sign shall not exceed 20 ft.
2. There are no restrictions on the message content, provided the activity being described is in furtherance of an official duty or responsibility.

   Type 1b – Service club and religious notices, containing only group name and location and schedule of meetings. These organizations must be nonprofit.

Type 2 – For sale or for lease signs.

1. These signs shall only advertise the sale or lease of the parcel or real property upon which the sign is located.
2. The name and phone number of the owner or the owner's agent shall not be displayed more conspicuously than the message "FOR SALE" or "FOR LEASE". Discretion is suggested in enforcing this stipulation because of the real estate industry's trend toward national conglomerates in recent years. "State of the Art" real estate signs typically may not include the words "for sale" or "for lease," especially on signs provided to agencies and agents by national conglomerates. Accordingly, real estate signs

may require case-by-case evaluation to determine if they are located on property for sale or lease.

3. No other message may be displayed on this sign. This is an area where property owners have attempted to stretch the rules by displaying a business name, or other information in lieu of the name of the owner or his agent. *The WAC is specific, allowing only the names of the property owner, or the name of the owner's agent and phone number*.

Type 3 – On-premise signs. The on-premise signs are divided into 3 separate groups.

Type 3a – This sign advertises the activity conducted, or products available on the property on which the sign is located.

Type 3b – This temporary sign expresses the property owner's endorsement of a political candidate or ballot issue. Each year in June, OSC Traffic Office mails out a political information packet to all county auditors. This packet contains information for political candidates regarding type 3b signs.

- Temporary political campaign signs are limited to a maximum size of thirty-two square feet in area.
- Temporary political campaign signs must be removed within ten days after the election.

Type 3c – This sign is allowed on properties where a planned business will be operating within a year. Signs will typically display the message "future site of" or other similar wording.

Type 4 –This commercial advertising sign is regulated by permit. The business or activity being advertised shall be within twelve air miles of the sign.

Type 5 – This commercial advertising sign is regulated by permit. The information displayed must be of specific interest to the traveling public. See WAC 468-66-100(2). There is no geographic location limitation as with Type 4 signs.

Type 6 – Advertising sign lawfully in place prior to October 22, 1965. Signs are to be "landmark" signs, of historic or artistic significance. Currently there are no permitted Type 6 signs visible to Washington state highways.

Type 7 – Public service sign, located on school bus shelters. Currently there are no permitted

Type 8 – This seasonal sign provides direction to specific agricultural activities. This temporary sign is regulated through a permit issued by the Regions.

D. Rules and Regulations for On-premise Signs - WAC 468-66-070, and others

This section of the WAC discusses regulations applied to Type 3, on-premise signs. The following details discuss how this, and other WAC components apply to on premise signs.

Location of On-Premise Signs - Along the Interstate system, Type 3a signs that exceed twenty feet in length, width, or height, or one hundred fifty square feet in area may not be located more than fifty feet from the advertised activity. (See WAC 468-66-030).

Type 3 signs located less than fifty feet from the advertised activity, or within corporate limits or commercial or industrial zones adjacent to the primary system (WAC 468-66-110), do not have a size limitation. The fifty-foot distance is measured from that building, storage, or other structure or processing area, which is most regularly used and essential to the conduct of the activity (WAC 468-66-070).

Some business activities, such as auto dealerships and recreational vehicle sales, have locations contiguous to the main building structure for persons to view vehicles. These locations are essential to the business activity (i.e., a processing area). Thus, an on-premise sign located within fifty feet of a contiguous vehicle display area complies with WAC 468-66-070.

A single on-premise sign advertising a shopping center, mall, or other combined business facility, may be located within 50 feet of the nearest portion of any parking area that serves the business combination (WAC 468-66-070(3). See Appendix 8-2, figure 1. This single

on-premise sign does not have a size limitation (WAC 468-030(11)(c); however, on-premise signs advertising individual businesses within the complex that are displayed in array with the single on-premise sign are limited to maximum size of 150 sq. ft. (WAC 468-030-(11). See Appendix 8-2, figure 2.

On-Premise Signs Located Within Incorporated Areas and Commercial/Industrial Areas On the NHS Non-Interstate System — Certain RCW and WAC sections are written so that they do not apply to on-premise signs that lie within incorporated areas and commercial/industrial areas located along the NHS non-interstate system. On-premise signs located in these areas are administered under local ordinance and regulations. These portions of WAC 468-66 and the Scenic Vistas Act refer to this exception:

- WAC 468-66-070(1)
- WAC 468-66-010 – All sections
- RCW 47.42.045(2)
- RCW 47.42.062 – All sections, except that signs resembling official traffic control devices are prohibited under purview of RCW 47.36.180.

Crop Identification Signs — Crop identification signs are classified as on premise signs, and are used to identify specific agricultural crops being grown on property adjacent to state highway right of way. Regional OAC representatives review these signs for compliance with the Scenic Vistas Act. The sign message is limited to the display of the name of the crop, and the name of the sponsor. The letter size should be three times larger for the crop message than the sponsor message to maximize readability.

E. Rules and Regulations for Type 4 and 5 signs (Interstate) WAC 468-66-080

This section of the WAC discusses the number of allowable signs, and spacing requirements for type 4 and 5 signs visible to the Interstate system. Refer to Appendix 8-3.

WAC 468-66-080 (4) — The one thousand foot distance in which type 4 or 5 signs are prohibited shall be measured from terminus of the on-ramp taper.

F. Priority Criteria for Issuing Permits – Type 4, 5 and 8 Signs WAC 468-66-090

This section of the WAC provides priority criteria to be used when issuing permits. When the number of applications for Type 4, Type 5, and Type 8 signs exceeds the number of available sign sites, use the following preferential criteria to award sign permits.

1. Agencies of the state of Washington in order of their applications.
2. Counties or incorporated cities in order of their applications.
3. Federal agencies in order of their applications.
4. All other applicants in order of their application; giving preference to existing permit holders who are due for renewal.

G. Rules and Regulations for Type 4 and 5 signs (Non-Interstate) WAC 468-66-110

This section of the WAC discusses allowable numbers, and spacing requirements for type 4, and 5 signs located within commercial and industrial areas and visible to the NHS non-interstate system. Refer to Appendix 8-4, pages 1 and 2, for spacing requirements that apply to various levels of access control.

Section (1) (c) states that signs which exceed three hundred twenty-five square feet in area may not be double-faced (abutting and facing the same direction). The intent of the WAC is to limit the size of abutting double-faced signs to three hundred twenty-five square feet; per sign face. The total size allowable is six hundred fifty square feet for both sign faces combined.

H. Non-conforming (Grandfathered) Signs- Type 4 and 5 WAC 468-66-120

This section of the WAC discusses signs that were lawfully erected and maintained, and in place prior to enactment of the Scenic Vistas Act (June 1, 1971). These signs were permitted to remain and be maintained if they were visible from the primary system within commercial and industrial areas. Consider these signs when determining spacing requirements for additional sign installations. These signs are issued permits as Type 4 or 5 signs, and are categorized as

nonconforming (grandfathered) signs. Refer to section 1B, “Maintain”.

I. Removal of existing signs WAC 468-66-130

This section of the WAC discusses removal of existing signs that were lawfully in place prior to enactment of the Scenic Vistas Act, but became illegal under provisions of the Act and accompanying WAC regulations.

Nonconforming or Grandfathered Signs
Knowing the history of how OAC legislation was applied helps clarify this section of the WAC. Enactment of the Scenic Vistas Act created the June 1, 1971 deadline for removing signs that did not comply with the new laws. A three-year window was established to allow removal of existing signs that did not conform to the new regulations, creating the May 10, 1974 deadline. Removal of these signs required just compensation to the sign owner, with Federal funding contributing 75% of the buyout cost. Federal funding was not adequate to buyout all nonconforming signs on Washington’s highway systems within the three year window. Under purview of RCW 47.42.105, no sign can be required to be removed if the Federal share of just compensation to be paid upon removal of the sign is not available. As a result of this lack of federal funds, existing nonconforming signs that had not been bought out by May 10, 1974, were allowed to remain and be maintained on state highways. These types of signs are nonconforming or grandfathered signs. Refer to section 1B, “Maintain”.

Abatement Under RCW 47.42.080 any sign constructed or maintained contrary to the Scenic Vistas Act or companion regulation is illegal. The following steps are utilized to abate illegal signs installed on private property.

1. Contact the sign owner, and if necessary, the property owner personally. Explain the requirements in law, options available, and actions necessary to resolve the problem, and ask for voluntary compliance within thirty days. If requested by the sign owner, this initial contact may be immediately followed by a letter that documents the essence of the conversation (Appendix 8-5).
2. If the sign owner cannot be contacted, or there is no voluntary compliance after thirty days, notify the sign owner and the property owner about the sign by way of certified letter, return receipt requested. (See appendix 8-6, pages 1 and 2) Describe the illegal aspects of the sign and advise them of actions they must take within fifteen days to comply with the law and/or WAC rule. (Refer to RCW 47.42.080)
3. If the sign owner or property owner does not comply with the abatement notice within 15 days of receiving the Region’s certified letter, request assistance from the Attorney General’s Office by submitting a letter from the Regional Traffic Engineer to the State Traffic Engineer. The State Traffic Engineer then works with the Assistant Attorney General assigned to outdoor advertising to secure sign removal. Include the following information along with the letter of request to the State Traffic Engineer:
   - All correspondence to the sign owner from the region, including phone call logs and a brief discussion of any conversation.
   - All applicable WAC and RCW violations.
   - Submit quality descriptive 3” x 5” (or larger) color photos of sign features or components that contribute to violations; include any sketches, measurements or other pertinent data that provide supporting evidence of the violation.
4. The Assistant Attorney General (AAG) assigned to the Department will notify the sign owner and property owner, by way of certified letter, that the sign is illegal, considered to be a public nuisance, and must be removed. The Regional OAC representative conducts a review to determine if the sign owner has complied with the abatement notice. This review should take place 15 days after the sign and/or property owner’s receipt of the AAG’s certified letter. If, after this time period, the sign remains in place, the Regional OAC representative informs the State Traffic Engineer, preferably

by e-mail. The State Traffic Engineer may then request in writing that the AAG pursue a legal remedy.

5. When WSDOT outdoor advertising personnel are contacted by anyone, public or private, regarding matters that have been referred to the Attorney General's Office, advise the caller that the matter has been referred and that information is only available from the Assistant Attorney General. Obtain the caller's name and phone number and explain that you will ask the AAG to contact them. In the event the caller demands immediate attention, provide the AAG's phone number and address. Notify the Assistant Attorney General immediately after receiving such inquiries.

Maintain a current inventory of all illegal sign action activities. The File Maker program (IllegalSignInv.FP5) is available to all Regional OAC personnel as a standardized method of tracking all illegal sign activity within the Region.

Create a file for each illegal sign immediately following receipt of initial report or observation. All information, such as the sign owner, property owner and all contact with the owners, whether by phone or letter shall be included on the form. See Appendix 8-7.

The Scenic Vistas Act defines any illegal sign placed on state highway right-of-way as a public nuisance. (See RCW 47.42.080(5)) The Department is authorized to remove such signs immediately without notice. For uniformity, illegal signs on the right-of-way are to be removed as quickly as practical.

Signs removed from the right-of-way are to be stored for thirty days (seven days after election for illegal political campaign signs) or until such time as they interfere with operations at the storage site. When contacted by a sign owner about recovering a sign that has been removed, advise the caller where the sign is stored, and let them know that the sign may be recovered if it has not yet been destroyed. Dispose of usable materials obtained from these signs in accordance with M72-91, "Disposal of Personal Property".

J. OAC Permit Process WAC 468-66-140

This section of the WAC discusses outdoor advertising sign permits issued by the Department.

Sign Relocation — Signs with valid permits that are being relocated to a different property are considered to be a new sign, requiring appropriate application and permit fee submittal, and review for approval by the Region.

Existing permits shall be revoked upon approval of the relocation application, or upon the effective date of the existing lease termination, whichever comes first.

A sign being relocated to a new location on the same property does not require a new permit, providing the proposed location meets the size and spacing requirements, and all other provisions, of the Scenic Vistas Act and WAC 468-66. The sign owner shall submit a letter of notification along with a sketch showing the proposed location and approximate distance from the existing permitted sign to the new location.

Change of Ownership or Transfer
When signs with valid permits are sold or otherwise transferred, the new sign owner assumes control of the existing permit. Regions shall forward information identifying the new sign owner, and/or the new property owner to OSC Traffic to facilitate inventory update.

Signs Subject to Authorizing Permits
The WAC excludes sign types 1, 2, and 3 from permit requirement; therefore, permits are required for sign types 4 through 8. Type 4 and 5 signs account for the vast majority of permits issued. A small number of type 8 signs are issued permits throughout the state. The Department has no valid permits outstanding for type 6 and 7 signs; however, the WAC includes these as signs that shall be placed under permit. A permit, duly issued by the Department, does not negate the permit holder's responsibility to comply with local rules, regulations, and ordinances pertaining to signs and signing structures. Thus, a permit issued by the Department does not necessarily grant the permit holder the right to erect a sign.

Permit Processing Procedures — Type 4 & 5
The application and $300 permit fee for each Type 4 and 5 sign structure are received at Headquarters Traffic, or the regions (See Appendix 8-8). Applications received at the regions are submitted to Headquarters Traffic Office. Sign applications are assigned a sequential identification number and the permit fees are deposited through the department's Accounting Office. The effective application date is the day it is received in Olympia.

Headquarters Traffic forwards the application to the region with a letter of request for site investigation (Appendix 8-9) along with a checklist used for investigating proposed sign sites (Appendix 8-10). Within thirty days, the region investigates the proposed sign site for compliance with the zoning and spacing requirements of WAC 468-66. During review of the proposed sign locations on NHS non-Interstate highways, Regional personnel should focus special attention on meeting the spacing requirements for limited access controlled areas that have been established pursuant to RCW 47.52. These spacing requirements are called out in RCW 47.42.062 (3)(b) and WAC 468-66-110 (2)(b).

Limited access areas include sections of state highway that are classified and operate as full, partial, and modified. Sections that are planned or proposed for classification as limited access areas are not included.

Access classification information can be obtained from the Regional work group that focuses on limited access control determination and documentation, or the Headquarters Design Access Office.

For all locations meeting the requirements of WAC 468-66, the region assigns an inventory number to each sign face indicated on the application. This number is selected sequentially from a block of inventory numbers provided to the Regional traffic offices for a particular highway or highway section.

The application package is then returned to OSC Traffic with the region's recommendation for approval or denial noted on the application.

Permit Processing Procedures — Type 8
Applications for type 8 sign permit, along with the $50 permit fee are submitted to the appropriate regional office. This permit is valid for 5 years, and may be renewed upon expiration. See Appendix 8-11.

Annual Permit Renewal Certification — Prior to January 1 of each year, Headquarters Traffic will mail a permit renewal notice to each sign permit holder. If the permit holder intends to continue operation and maintenance of the sign, the permit holder certifies this intent by signing the notice and returning it to Headquarters Traffic. This signed renewal notice shall be returned to the Department no later than February 1. For any renewal notice not received by Headquarters Traffic by February 1, the Department may initiate legal proceedings for abatement as an illegal sign.

Inventory — An inventory for all type 4 and 5 signs is maintained in Headquarters Traffic. Copies of this inventory are sent to the regions periodically, or upon request.

Inventory updating is required whenever revisions are made to existing signs. Such revisions include any changes in sign size, sign owner, or sign removal. The inventory revision process is initiated when OSC Traffic receives notification from the permit holder, or when regional traffic personnel discover changes during field review.

Inventory of Signs on Local Jurisdiction NHS Roadways — The National Highway System Act of 1995 (NHS) extended outdoor advertising control to all NHS routes. This means that signs on private property visible to NHS routes, including NHS routes under local agency jurisdiction, are required by Federal law to be regulated under the purview of the Scenic Vistas Act.

Headquarters maintains an inventory of off-premise outdoor advertising signs on the NHS local roadways, however the actual control of such signs is the responsibility of the local jurisdiction or agency. Our department is committed to provide technical assistance when requested, or assume the control responsibility if

asked to do so. Periodically the regional outdoor advertising personnel include a review of local NHS routes to assure that the department's inventory is up to date

K. Penalties – Permitted Non-conforming Signs WAC 468-66-150

This section of the WAC discusses sanctions and penalties that may be applied to permit holders who maintain signs that do not comply with the provisions of the WAC. After a hearing conducted under the Administrative Procedure Act, RCW 34.05, the Department may revoke a sign permit, without refund, for any of the following reasons:

- Making false statements on a permit application
- Allowing any sign to remain in a state of disrepair for thirty days after receiving letter notifying permit holder about the condition of the sign.
- Maintaining any sign, for which permit has been issued, that is in violation of any provision of the Scenic Vistas Act or this WAC.
- Maintaining a discontinued sign, as defined by WAC 468-66-010(6)

The OSC Traffic Office will coordinate establishing the required hearing through the Attorney General's Office.

If convicted of violating the Scenic Vistas Act, sign permit holders may face revocation of permits for other signs that they maintain.

Discontinued Signs — A discontinued sign is defined as a sign absent of advertising content for a period of six months. Permits may be revoked for maintaining a discontinued sign. Signs vacant of advertising display should be noted and monitored. After three months of vacancy, the sign owner or permit holder is notified by certified letter (Appendix 8-12) about the failure to display advertising content on an existing billboard. If the sign remains vacant after an additional three-month period, a certified letter of permit revocation (Appendix 8-13) may be issued.

L. Miscellaneous

Billboards on Indian Trust Lands Background

The Department first learned about this subject through a March 7, 1986 Federal Highway Administration (FHWA) memorandum. This memorandum cited the United States Court ruling that left in place a California Supreme Court decision that held the following:

- The California Department of Transportation could not use the state's outdoor advertising act to regulate billboards erected on reservation land held in trust by the United States for the beneficial use of the Morongo Indian Band
- The Federal Highway Beautification Act (HBA) preempts the state's regulatory authority in the area of outdoor advertising on Indian reservations.
- The Federal Department of the Interior is the appropriate agency to enforce the HBA provisions.

These decisions set the precedent which remains today, that the states have no regulatory authority over billboards on Indian land. The Department has not included signs on Indian land in it's billboard inventory since 1986.

Advertising on Commercial Trailers

Advertising on commercial vehicles and trailers in normal business usage is not controlled by the Scenic Vistas Act. This includes times when they are intermittently parked at locations visible to state highways.

Should a commercial vehicle or trailer visible to the state highway remain stationary for an extended period of time, it must then be determined whether or not its intent is for off-premise advertising purposes. An expired vehicle registration is a primary indicator of its use for advertising purposes. Under these circumstances, commercial vehicles or trailers visible to state highways are abated in the same manner as illegal advertising signs.

Digital or Lighted Signs Used for Advertising on State Highways (Signs in Motion)
WAC 204-65, Vehicle Lighting and Equipment, prohibits displaying any digital or lighted advertising sign from motor vehicles on state highway rights of way. This includes any sign device towed behind a motor vehicle. This prohibition does not include messages displayed on traffic control vehicles, taxicabs, or destination placards on public transportation vehicles.

Laser Lights — On occasion, laser lights have been used to project images onto an area visible from the traveled way of state highways. Washington state has no specific laws that regulate laser lights. Informally however, RCW 47.36.180 (Forbidden Devices) provides some basic guidance that may be applied on a case-by-case basis. The Department has cited Subsection (4) of this law in the past to prohibit projection of laser lights onto an area that was visible from the Interstate system.

In the event that the laser light is being used to project advertising display, the moving lights components of the Scenic Vistas Act (RCW 47.42.062 (4)(a)) prohibits such use in all areas except those located on the non-Interstate NHS system inside commercial and industrial areas, and/or within corporate limits.

Documentation of Illegal Sign Abatement Activity-The Headquarters Traffic Office provides the Assistant Secretary for Maintenance and Operations with an annual summary of illegal sign abatement activities conducted during the previous year. A copy is provided to the Federal Highway Administration (FHWA) Division Right of Way Office.

The FHWA Division Right of Way Office is a valuable resource when responding to questions or investigating apparent ambiguities within the laws. Normally, the Headquarters Traffic conducts these inquiries or communications with the FHWA.

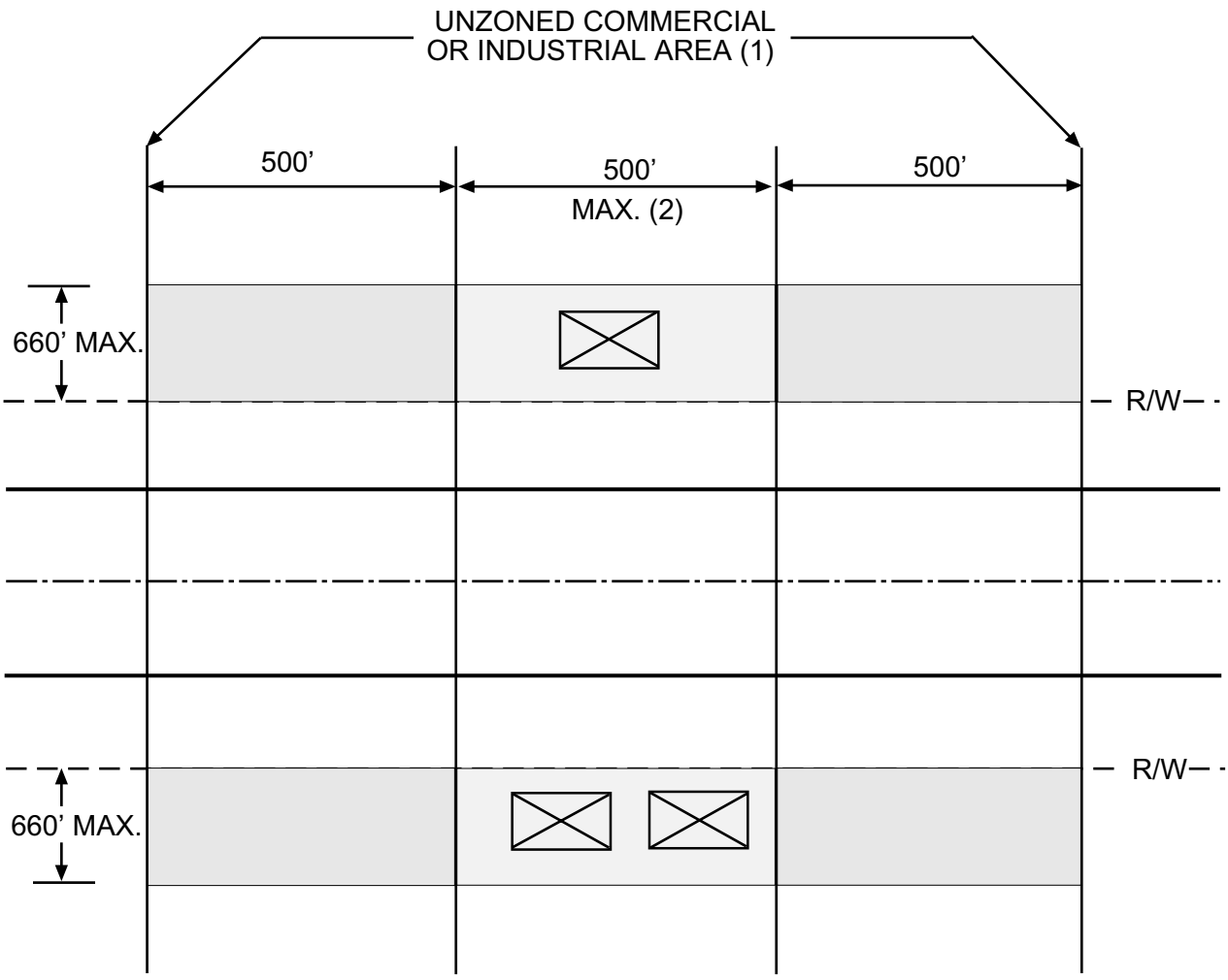
8.3 Advertising at Rest Areas and on Washington State Ferries

Advertising at Rest Areas on State Highways
Businesses may purchase advertising space on displays in 12 rest areas located along interstate 5 and interstate 90. This advertising program features lighted display boards. In rest areas, the only requirement is that services advertised be of interest to travelers. For more information about this program, contact WSDOT's sales contractor:

Storeyco, Inc.
234-D SW 43rd Street
Renton, WA 98055
1-800-558-7867 Fax (425) 251-9726
Ron Storey
E-Mail - storeyco@storeyco.com

Advertising on Washington State Ferries
Businesses also have the option to purchase advertising space on 6 Washington State Ferry runs and at 4 terminals. This advertising program features lighted display boards. For more information about this program, contact WSDOT's sales contractor:

Certified Folder Display
5808 S. 196th
Kent, WA 98032
1-800-799-7373
Website: **www.certifiedfolder.com** click on *FERRY BOAT ADVERTISING*
E-Mail - **weldonv@certifiedfolder.com**



UNZONED COMMERCIAL OR INDUSTRIAL AREA
WAC. REF. 468-66-010 (4)

− Commercial or Industrial Activity

− Qualifying Commerical/Industrial Area

– Additional Buffer Area - Where Applicable

1. Billboards may be permitted within this 1500' max. area, measured parallel to the highway.

2. Three or more separate and distinct commercial and/or industrial activities are required within 500'. Activities may be located on either or both sides of the highway and must be within 660' of the right of way line to qualify.

WAC 468-66-070 (3)

Single On-Premise Sign may be placed within 50 feet of combined parking area

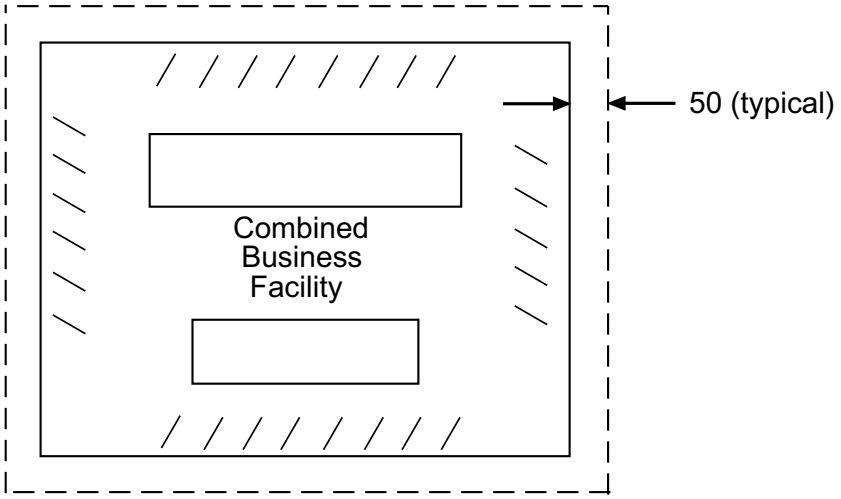


Figure 1
(Plan View)

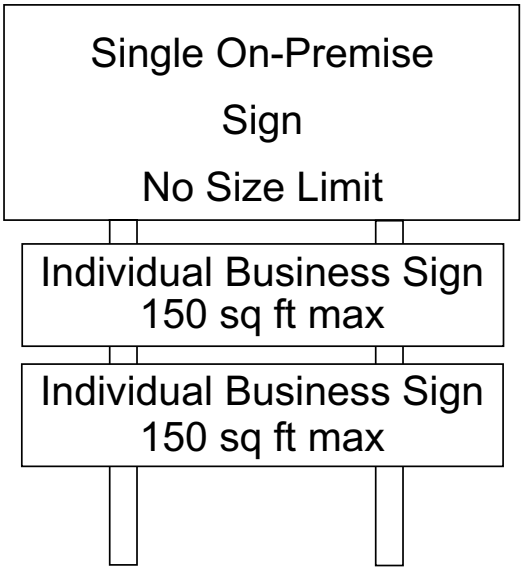
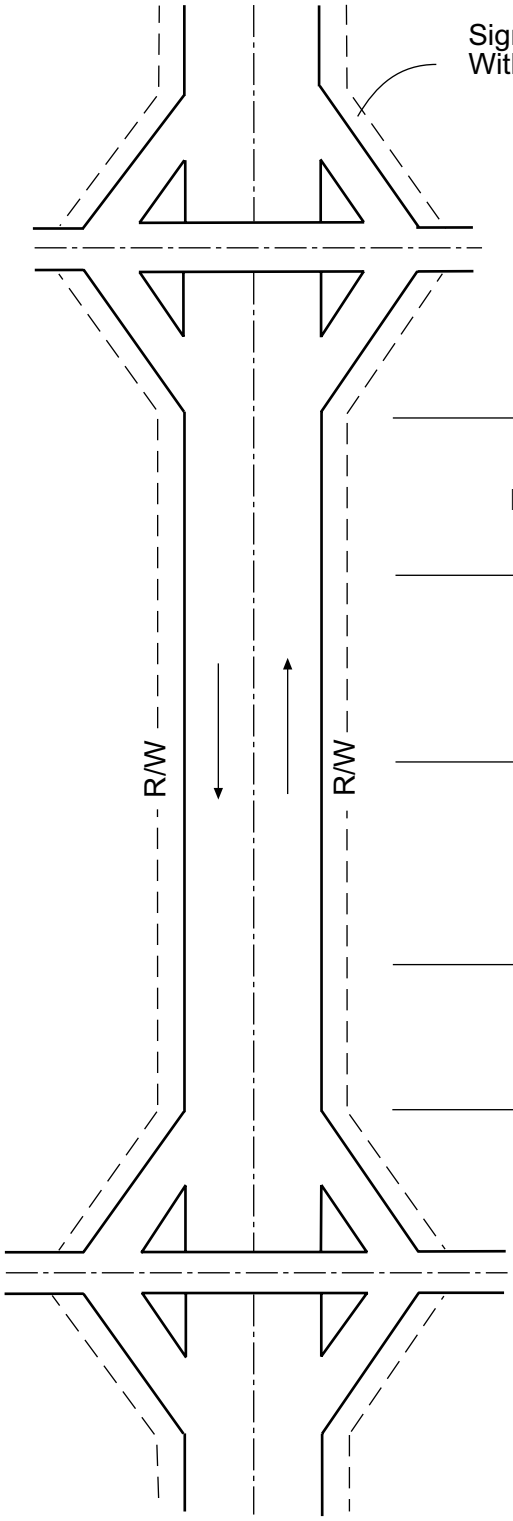


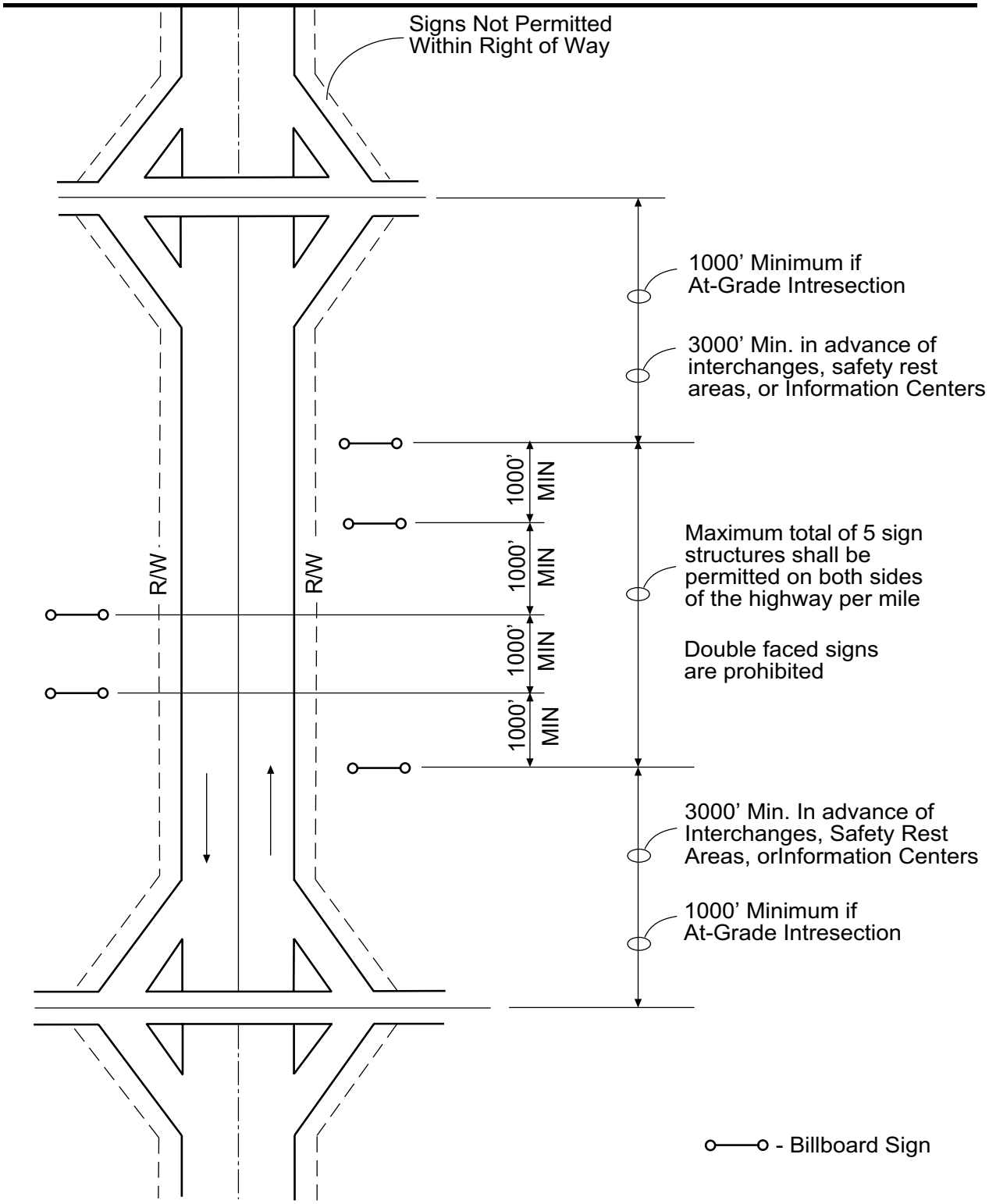
Figure 2
(Elevation View)



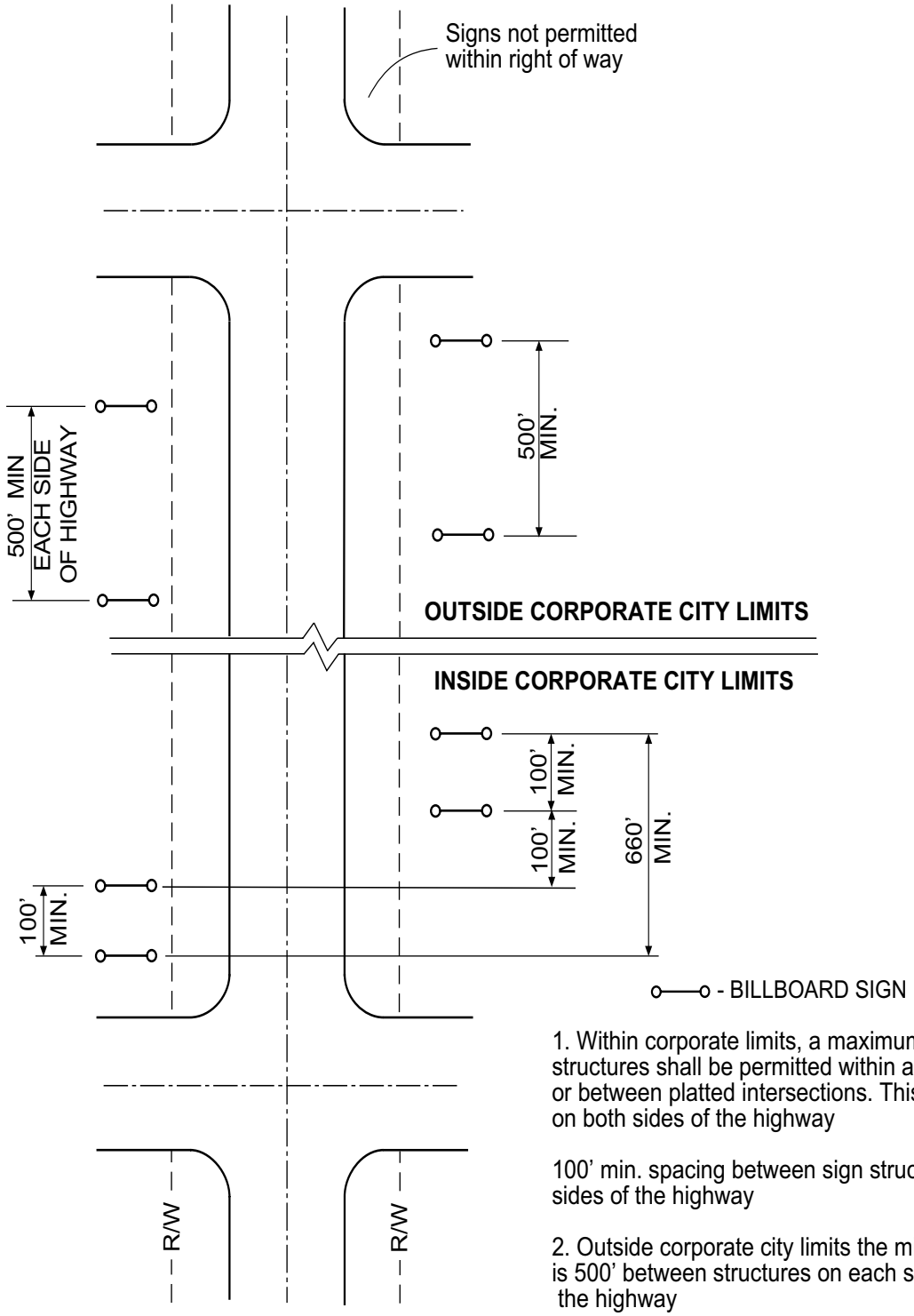
	Number and spacing of signs
0 - 2 Miles From Off-Ramp Taper	0 Signs
2 - 5 Miles	Maximum of 6 signs Not more than 2 signs within any one mile distance from any point 1000' Minimum spacing between signs
More than 5 Miles	Average - 1 sign per mile 1000' Minimum spacing between signs
1000' ft From On-Ramp Taper	0 Signs

INTERSTATE
(TYPE 4, 5, or 6)
WAC. REF. 468-66-080

Note:
Sign spacing includes all sign faces visible to traffic approaching from any one direction



NHS NON-INTERSTATE CONTROLLED ACCESS
(Type 4,5, or 6)
WAC Ref. 468-66-110(2)(b)



NHS Non-interstate Noncontrolled Access
(Type 4,5, or 6)
WAC. REF. 468-66-110 (2) (c)

1. Within corporate limits, a maximum of 4 sign structures shall be permitted within a space of 660', or between platted intersections. This includes signs on both sides of the highway

100' min. spacing between sign structures on both sides of the highway

2. Outside corporate city limits the minimum spacing is 500' between structures on each side of the highway

3. In areas where one side of a highway is within corporate limits and the other side of the highway is outside corporate limits, the appropriate sign spacing shown above applies

Appendix 8-5 Abatement - Initial Contact Follow-up Letter

Washington State
Department of Transportation

Date

DRAFT

Inside Address

Dear _____

This letter is to follow up our recent conversation about signs located on private property adjacent to the (*direction, e.g., east, west*) side of SR *WX* , near milepost *Y.Z*, and visible to (*lanes, e.g., both northbound and southbound, or, eastbound*) traffic.

The Washington State Department of Transportation is directed by law to regulate signs on private property and visible to certain state highways. The statutes and regulations governing allowable visible signs are provided in Chapter 47.42 of the Revised Code of Washington (RCW), the Scenic Vistas Act, and Chapter 468-66 of the Washington Administrative Code (WAC), respectively.

Accordingly, the department conducts periodic reviews of state highway corridors to fulfill its statutory obligation. A recent review of SR *WX* in the vicinity of milepost *Y.Z* revealed that you maintain an advertising sign, displaying the message *type the sign message here,* on property owned by *Mr./Ms. name of property owner.*

Please be advised that the sign is illegal because it can't meet the eligibility requirements for permittable off-premise advertising signs visible to *note highway type*, and is thus prohibited by RCW 47.42.030. [*Insert description of illegal aspects of the sign, e.g. spacing, sign type, sign size, zoning, etc. Cite applicable RCWs and WACs*] Further, under RCW 47.42.080, the sign is declared a public nuisance and we request that the sign be removed within 30 days.

The department desires to provide you with the opportunity to voluntarily remove the sign, without issuing a formal complaint or initiating enforcement action against you. Failure to remove the sign will cause the department to begin formal abatement procedures through the Attorney General's Office.

Please call Mr./Ms. *Name of Regional Outdoor Advertising Representative* of my staff, phone *(123) 456-7890*, should you have any questions or to notify the department that the sign has been removed.

Sincerely,

Regional Traffic Engineer

cc: (Name of) Sign Owner

Washington State Department of Transportation

DRAFT

Date

Inside Address

CERTIFIED

Dear Mr. and/or Mrs./Ms. :

The Department of Transportation is directed by state law to regulate signs on private property and visible to certain state highways. The statutes and regulations governing allowable visible signs are provided in Chapter 47.42 of the Revised Code of Washington (RCW), the Scenic Vistas Act, and Chapter 468-66 of the Washington Administrative Code (WAC), respectively.

Accordingly, the department conducts periodic reviews of state highway corridors to fulfill its statutory obligation. A recent review of SR *WX* in the vicinity of milepost *Y.Z* revealed that an advertising sign, displaying the message *type the sign message here*, is maintained on your property.

Please be advised that the sign is illegal because it can't meet the eligibility requirements for permittable off-premise advertising signs visible to *note highway type*, and is thus prohibited by RCW 47.42.030. [*Insert description of illegal aspects of the sign, e.g. spacing, sign type, sign size, zoning, etc. Cite applicable RCWs and WACs*] Further, under RCW 47.42.080, the sign is declared a public nuisance and must be removed within 15 days of the date you receive this letter.

The department desires to provide you with the opportunity to voluntarily remove the sign, without issuing a formal complaint or initiating enforcement action against you. Failure to remove the sign will cause the department to begin formal abatement procedures through the Attorney General's Office.

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Sincerely,

Regional Traffic Engineer

Washington State
Department of Transportation

Date

DRAFT

Inside Address

CERTIFIED

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Please call Mr./Ms. *Name of Regional Outdoor Advertising Representative* of my staff, phone *(123) 456-7890*, should you have any questions or to notify the department that the sign has been removed.

Sincerely,

Regional Traffic Engineer

cc: (Name of) Property Owner
(Name of) Assistant Attorney General
(Name of) Olympia Service Center Outdoor Advertising Specialist

Data Entry Panel

Region	SR MP ☐ R ☐ L	Month/Year Prepared
Sign Message	**Reported By:** ☐ Sign Co. ☐ DOT Employee ☐ Citizen ☐ Other (List Below)	

Sign Owner Information		Property Owner Information	
Name		Name	
Address		Address	
City/State/Zip	WA	City/State/Zip	WA
Phone		Phone	

Date of PhoneContact	Response or Action
	☐ No Response ☐ Sign Removal ☐ Refusal to Remove ☐ Other (Describe)
Date of 15 Day Letter	**Response or Action**
	☐ No Response ☐ Sign Removal ☐ Refusal to Remove ☐ Other (Describe)
Date AG Notified	**Final Action**
	☐ No Response ☐ Sign Removal ☐ Refusal to Remove ☐ Other (Describe)

Sign Status	Date Closed
○ Closed ○ Open ○ Referred to AG	

Washington State Department of Transportation

Application - Outdoor Advertising Sign Permit

Name		
Address		
City	State	Zip Code
Phone	Date	

For WSDOT Use Only

Log Number _____
Date Received _____
Region _____
Permit Number _____
Year _____
Date Permit Issued _____
Inventory Number _____
Control Section _____
CS Mile Post _____
SR Mile Post _____

Application Fee:
$300.00 Per Sign Structure
Make checks or remittance payable to:
"Department of Transportation"
Mail with proper fee to:
Washington State
Department of Transportation
Outdoor Advertising Control
PO Box 47300
Olympia, WA 98504-7300

Location of Sign

State Highway Number _____

Side of Highway ☐ N ☐ E ☐ S ☐ W

Sign Facing ☐ N ☐ E ☐ S ☐ W

Direction and Distance from Center of Nearest Cross Road or Street

Name _____

Direction ☐ N ☐ E ☐ S ☐ W Distance _____ ft.

Sign Description

Size _____ ft. X _____ ft. Total Area _____ sq. ft.

☐ TriVision

Shape ☐ Rectangular ☐ Octagonal ☐ Other
☐ Square ☐ Round

Other (Describe) _____

Product(s) Being Advertised _____

Name and Address of Advertised Activity _____

Name			
Address	City	State	Zip Code
Phone	Property Tax I.D. No.		

I, the undersigned, have consented to the erection and maintenance of the above described outdoor advertising sign on property which (I own) (I Lease) in conformance with the Washington Outdoor Advertising Control Act of 1961 as amended by the Scenic Vistas Act of 1971 (RCW 47.42) and the Department of Transportation rules and regulations for outdoor advertising control along interstate, primary, and scenic routes.

A Copy of Lease Accepted in Lieu of Signature

Signature _____
Property Owner

This permit shall not be considered to allow a sign to be erected or maintained that is otherwise prohibited by Statute or by the Resolution or Ordinance of any county, city or town of the State of Washington. By issuance of this permit the Department of Transportation does not warrant that this sign is not prohibited by such Statute, Resolution, or ordinance.

Signature of Department of Transportation representative validates this permit and acknowledges receipt of fee paid.

By _____
For Department of Transportation

DOT Form 224-018 EF
Revised 9/99

Washington State
Department of Transportation

DRAFT

DATE: Date

FROM: OSC Traffic Office
PHONE: Scan 705-7291 **SUBJECT:** OAC Sign Permit Application

TO: Regional OAC Representative **LOG #_____**

We are enclosing _____ sign permit applications from _____ that have been received by this office . Please return the completed application to this office no later than mmddyy.

Please investigate the legality of the signs with respect to size, spacing, property owner consent and highway right of way limits and furnish your recommendations for approval at your earliest opportunity, together with all necessary information for issuance or reply to the applicant.

If there are any discrepancies that arise concerning the permit application, please have them clarified by the sign owner.

Approved: Y N

Reason for disapproval:

Washington State
Department of Transportation

Checklist for Outdoor Advertising Permits
New Sign on Interstate System

SR ___ Milepost _____ Direction of Travel ____ Sign Type ____ Date _____

Proposed Location _____

Nature of Sign Site:
Scenic Area - Y ☐ N ☐ Commercial/Industrial Area - Y ☐ N ☐
Size:
Sign Length (20' max) ____ Sign Height (20' max) ____ Sign Area (150' max) _____

Spacing:

Distance Between Interchanges	Number/Spacing of Signs	Does site comply?
0-2 miles	No Signs Allowed	Y ☐ N ☐
2-5 miles	Max of 6 signs. Max of 2 within any 1 mile 1000'min between signs	Y ☐ N ☐ Y ☐ N ☐ Y ☐ N ☐
More than 5 miles	Average 1 sign per mile 1000' min between signs	Y ☐ N ☐ Y ☐ N ☐
Within 1000' of on-ramp terminal	No Signs Allowed	Y ☐ N ☐
Within 2 miles of off-ramp taper	No Signs Allowed	Y ☐ N ☐

Sign Owner/Operator: _____

Property Owner: _____

Comments: _____

_____

_____

Washington State
Department of Transportation

Checklist for Outdoor Advertising Permits
New Sign on NHS Non-Interstate System

SR ___ Milepost _____ Direction of Travel ____ Sign Type ____ Date _____

Proposed Location _____

Nature of Sign Site:
Scenic Area - Y☐ N☐ Commercial/Industrial Area - Y☐ N☐
Size:
Sign Length (50' max) ____ Sign Height (25' max) ____ Sign Area (672' max) _____
Spacing:
A. Inside Corporate Boundaries of City or Town – Not Controlled Access
Including this sign, and counting both sides of the roadway, how many signs are located within any platted intersection; or any 660 ft.* section? _____ (4 max)
Is the proposed sign location at least 100 ft.* from any existing sign? - Y☐ N☐
B. Outside Corporate Boundaries – Not Controlled Access
Is the proposed sign location at least 500 ft.* from an existing sign structure? - Y☐ N☐
C. Limited Access Highways
Is the proposed sign location at least 1000 ft.*from any existing sign, or any at grade intersection? Y☐ N☐
Is the proposed sign location at least 3000 ft.* from any interchange, safety rest area, or information center? Y☐ N☐
Is the sign double-faced? Y☐ N☐ (not allowed on limited access roadways)
Including this sign, and counting both sides of the roadway, how many signs are located within any 1 mile* section? _____ (5 max)
*All distances measured parallel to edge of the highway's main traveled way

Sign Owner/Operator: _____

Property Owner: _____

Comments: _____

_____

Washington State Department of Transportation

Permit Application - Temporary Agricultural Directional Sign

Name			
Address			
City		State	Zip Code
Phone	Date		Federal Tax I.D. Number

For WSDOT Use Only

Date Received _____

Region _____

Permit Number _____

Date Permit Issued _____

Expiration Date _____

CS Mile Post _____

SR Mile Post _____

Application Fee:
$50.00 Per Sign Face
Make checks or remittance payable to:
"Department of Transportation"
See Instructions for correct mailing address.

Location of Sign

State Highway No. _____ Side of Highway ☐ N ☐ E ☐ S ☐ W

Sign Facing ☐ N ☐ E ☐ S ☐ W

Direction and Distance from Center of Nearest Cross Road or Street

Name _____

Direction ☐ N ☐ E ☐ S ☐ W Distance _____ ft.

Sign Description

Size _____ ft. X _____ ft. Total Area _____ sq. ft.

Shape ☐ Rectangular ☐ Octagonal ☐ Other _____
☐ Square ☐ Round

Description of Sign Copy _____

Product(s) Being Advertised _____

Name and Address of Advertised Activity _____

The applicant agrees to remove the sign(s) at the expiration of this temporary permit or cover the sign(s) during the times when no sales occur, and further agrees to provide and maintain follow-through signing if required by the Department of Transportation. In addition, if the sign(s) remain up in non-compliance for longer than 10 days after notification to the applicant thereof, the applicant does hereby authorize the Washington State Department of Transportation and it's agents or employees to remove and dispose of such sign(s) and waives all claims for damages against the Washington State Department of Transportation and it's agents or employees for such removal and disposal of each sign(s).

This permission and waiver is granted in order to permit the removal of such sign(s) as required by the Washington Highway Advertising Control Act of 1961 as amended by the Scenic Vistas Act of 1971 (Chapter 47.42 RCW).

Signature _____
Sign Owner

Land Owner Name	Phone	Property Tax I.D. No.	
Address	City	State	Zip Code

I, the undersigned, have consented to the erection and maintenance of the above described outdoor advertising sign on property which (I own) (I Lease) in conformance with the Washington Outdoor Advertising Control Act of 1961 as amended by the Scenic Vistas Act of 1971 (RCW 47.42) and the Department of Transportation rules and regulations for outdoor advertising control along interstate, primary, and scenic routes.

A Copy of Lease Accepted in Lieu of Signature Signature _____
Property Owner

This permit shall not be considered to allow a sign to be erected or maintained that is otherwise prohibited by Statute or by the Resolution or Ordinance of any county, city or town of the State of Washington. By issuance of this permit the Department of Transportation does not warrant that this sign is not prohibited by such Statute, Resolution, or ordinance.

Signature of Department of Transportation representative validates this permit and acknowledges receipt of fee paid. By _____
For Department of Transportation

DOT Form 224-068 EF
Revised 12/99

Washington State
Department of Transportation

DRAFT

_____
_____
_____
_____

Re: Sign Permit #____

CERTIFIED MAIL

Dear _____

The Washington Administrative Code (WAC) Chapter 468-66-010 (6) considers an outdoor advertising sign to be "Discontinued" if, after receiving notice of absence of advertising content for three months, the permit holder fails to put advertising content on the sign within the next three months.

Through documented observation, it has been determined that the billboard structure for which you hold permit # ____, located along SR ___ at milepost ___, has been absent of advertising material since (*date*), a period of three months.

Please be advised that this billboard structure will be considered "Discontinued" if, after receiving this letter, you fail to affix advertising copy by (*date*). At such time, your permit for this sign will be subject to revocation without refund under purview of WAC 468-66-150(1)(e).

For your information, I have enclosed a copy of the applicable WAC regulations. If you have any questions, please contact (*Mr. or Ms.*) (*Region OAC Representative)* at _____.

Sincerely,

Regional Traffic Engineer

Washington State
Department of Transportation

DRAFT

_____
_____
_____
_____

Re: OAC Signing

CERTIFIED MAIL

Dear _____

The Washington Administrative Code (WAC), Chapter 468-66-010 (6) defines an outdoor advertising sign as "Discontinued" if, after receiving notice of absence of advertising content for three months, the permit holder fails to put advertising content on the sign within the next immediate three months.

Through documented observation, it has been determined that the sign for which you hold a permit, located along SR ___ at milepost ___, has been absent of advertising material for a period of three months.

If you fail to display advertising content on this sign within the next 3 months, the sign will be considered "Discontinued", and the sign permit will be revoked under purview of WAC 468-66-150(1)(e). For your information, I have enclosed a copy of the applicable WAC regulations. If you have any questions, please contact (*Mr. or Ms.*) (*Region OAC Representative)* at _____.

Sincerely,

Regional Traffic Engineer

9.1 General

The Safety Management System (SMS) is a systematic process designed to assist decision makers allocate limited transportation safety resources. Through SMS, the state defines, prioritizes, and measures the effectiveness of safety efforts.

SMS consists of two key processes. The *Collaboration Process* provides statewide organizations with a reference network for sharing various available safety resources. The *Decision-making Process* ensures that all needs and opportunities are given due consideration in all phases of our plans and programs, and compatibility with the other management systems (Pavement, Bridge, Congestion, Public Transportation, and Intermodal) is maintained. The five steps of the Decision-making Process are:

- Needs Identification
- Solution/Resource Development
- Investment Prioritization and Implementation
- Investment Tracking
- Investment Evaluation

As resources allow, within their own existing processes, all jurisdictions within the state are encouraged to (1) take part in the SMS Collaboration Process, and (2) implement the SMS Decision-making Process. This occurs through the appropriate existing partnership and assistance forums for each jurisdiction. Examples: a city might work with WSDOT TransAid; a county might work with the County Road Administration Board; or the Department of Health might work with the Traffic Safety Commission.

There are three main goals of SMS:

1. Prevent and reduce the number and severity of roadway collisions;

2. Ensure that traffic safety will be considered at all phases of roadway-related programs;

3. Provide for partnership among citizens, statewide agencies, regional organizations, and local jurisdictions on traffic safety efforts.

There are also two main coverage elements of the SMS:

1. All public roads within the state;

2. All roadway, traveler, and vehicle safety-related elements.

While the SMS covers all public roads, the extent of SMS requirements (such as data collection, analyses, and standards) vary depending on roadway functional classification. Also, because each jurisdiction within the state implements SMS within their own individual processes and programs, describing each of them within this manual is not feasible. As an example, the following subsections describe WSDOT's implementation of SMS.

9.2 SMS Collaboration Responsibilities Within WSDOT

The region offices may contact the following Olympia Service Center offices for information, resources, and assistance regarding safety-related decisions:

Office (Service Center) — SMS Responsibilities

Transportation Planning (P&P) — Develops/Maintains the Systems Plan: Service Objectives and Performance Indicators, needs identification, solutions/strategies, and financial responsibility.

Transportation Data (P&P) — Maintains traffic and highway crash statistics and technical assistance on safety data analysis.

Research (P&P) — Provides for research projects and reporting on highway safety issues.

Traffic (E&E) — Leads Development/Maintenance of the statewide SMS, leads standing committee for Workzone Safety, provides technical assistance/training on safety investment and benefit/cost analysis, and coordinates safety investment tracking and evaluation efforts.

Program Management (P&P) — Directs/Coordinates program activities, such as targeting region allocations and providing programming instructions to the regions.

Design (E&E) — Develops/Maintains design approach to effective safety design features/standards for transportation projects.

Maintenance (Operations) — Develops/Maintains effective approach to safety maintenance activities.

Construction (Operations) — Provides for implementation of transportation projects, and provides guidelines for workzone safety.

TransAid (TransAid) — Provides support and coordination with local transportation jurisdictions on highway safety issues.

Staff Development (Personnel) — Provides for training/staff development on highway safety for all program areas.

Communication and Public Involvement Office — Provides for public information and media coverage on traffic safety (i.e., "Give 'Em a Brake" campaign)

9.3 SMS Needs Identification Within WSDOT

Needs identification is the first step to ensure that safety is considered in all phases of traffic and roadway related efforts focused on the goal of preventing and reducing the number and severity of collisions. This basically means an identification of historically or potentially hazardous conditions, or identification of any cause/effect issues that contribute to collisions.

Measurable service objectives are established for all WSDOT programs and subprograms. These service objectives provide a baseline for needs identification in our long-range (20-year) system plan. Some examples of safety-related service objectives within WSDOT are:

Maintenance

- Ensure safe, reliable roadway surfaces.
- Maintain the visibility and operation of traffic control and safety devices.
- Provide safe travel through work zones.

Preservation

- Repave highways at regular intervals to minimize long-term costs.
- Restore existing safety features.

Improvements

- Improve highway sections that have a high accident history.
- Improve roadways where geometrics, traffic volumes, and speed limits indicate a high accident potential.
- Improve geometrics of the Interstate system per the FHWA/WSDOT Stewardship Agreement.

9.4 SMS Solution and Resource Development Within WSDOT

As safety needs are identified through the State Systems Plan for each biennium, solution and resource development is performed throughout the WSDOT program structure. This is generally carried out as scoping work by region project development staff (as determined by each region) for the Preservation and Improvements programs, and region/area maintenance staff for the Maintenance program.

Each region provides to Transportation Planning (P&P), resource estimates for safety related activities that address the identified needs. Supported by the other Olympia Service Centers, Transportation Planning then checks for financial feasibility. If the solution costs do not match expected revenues, the service objectives are reviewed and modified. Once the solution costs are in balance with revenues, the Systems Plan is updated. This occurs every two years.

9.5 SMS Investment Prioritization/ Implementation Within WSDOT

Prioritization is based on (1) the anticipated benefits of preventing and reducing collisions (focusing of identified needs) and (2) the cost and duration of implementing the solution. Many safety activities may overlap with solutions developed for other program/subprogram needs. Therefore, individual project prioritization should also be coordinated with those other efforts.

Prioritization of safety projects, funded from the Improvement Program, is based upon project benefit-cost ratios. First, the statewide System Plan needs are ranked from greatest to least, using societal costs of collisions per year as a common denominator. Then, starting at the top of the list, benefit-cost methods are applied to the solutions which adequately address the identified needs. To be considered for implementation, a safety solution must have a projected benefit value equal to or greater than the solution cost.

This analysis is repeated until the available safety improvement resources for a two year program have been allocated to the array of safety solutions which maximize the projected benefits.

Implementation includes the specific funding, scheduling, and management of the prioritized solution activities. Examples include: programming, design, construction or manufacturing, maintenance, operations, enforcement, and driver safety instruction.

9.6 SMS Investment Tracking Within WSDOT

As safety solutions are implemented under SMS they become safety investments. A variety of safety investment data will be tracked by location, funding source, projected benefit/cost, type of investment, and roadway safety feature to ensure that each investment can be easily identified for the purpose of monitoring and evaluation. The regions will uniformly track safety investments.

The basic elements of tracking are:

1. *Need Addressed* —For example: crash reduction, risk of leaving roadway, etc.

2. *Description* — A description of the identifiable safety related activity (e.g. straighten curve, install illumination, slope flattening, public ads on work zone traffic control, etc.), including location, region, roadway classification, etc.

3. *Date* — The date(s) the safety related activity is effectively implemented.

4. *Resources* — Funding (staff, equipment, time, etc.) requirements dedicated to each safety related activity.

5. *Projected Benefits* — Identification of expected benefits for identified needs from each safety related activity.

6. *Actual Benefits* — The actual benefits derived from the activity (e.g. societal costs of collisions, public education benefits, etc.)

7. *Investment Type* — The investment category of the activity. (General headings: System Management, Traffic control, Roadside, Roadway.)

8. *State Program Source* — The program/ subprogram (Maintenance, Preservation, Improvements) from which the investment was made.

The guidelines for safety investment tracking are currently being developed.

9.7 SMS Investment Evaluation Within WSDOT

Safety investments should be monitored and evaluated to determine whether appropriate and cost-effective investments were made. Monitoring and evaluating provides new insight for future problem identification, solution development, and solution prioritization and implementation. The districts will monitor and evaluate all safety investments.

All evaluations will be documented in a standardized format provided by the Olympia Service Center Traffic Office and should address each of the five items listed below:

1. Need addressed.

2. Total resource investment for all safety-related activities.

3. Projected benefits for each activity, based on the prevention and reduction in number and severity of collisions.

4. Actual benefits for each activity, based on the prevention and reduction in number and severity of collisions.

5. Associated collision rates and societal costs applicable to the "before/after" evaluation period.

As the evaluation data is compiled regionally and statewide, new trend data becomes available for future decision-making.

9.8 WSDOT Programming for Safety Preservation and Improvements

Programming safety dollars must be consistent with several plans, procedures and systems: SMS, Statewide Systems Plan, State Prioritization and Programming Law (RCW 47.05), and Federal Regulations for standards and the FHWA/WSDOT Stewardship Plan.

The programming instructions for the Roadway Preservation subprogram identifies typical safety "restoration" type items which are to be addressed on our Preservation projects. This is funded with a 12 percent program maximum allocation. The longer safety improvements which address System Plans safety needs in reduction or prevention of collisions are funded from the Improvements program. The Safety Improvement Projects Workbook guides the regions in the process of prioritizing safety improvements within the Safety Improvements subprogram.

9.9 References

Section 1034 (Public Law 102-240) of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) calls for each state to develop six inter-related transportation management systems and a traffic monitoring system. By October 1, 1994, the state shall develop a work plan for SMS which will be fully operational by October 1, 1996.

Washington State Law, C 406 L 93, directs that measurable, outcome based objectives shall be used to track the performance of agencies with traffic safety responsibilities.

RCW 47.05 requires WSDOT to develop a six year program and financial plan for highway improvements specifying program objectives. The program and plan shall be based upon the improvement needs for state highways as determined by WSDOT.

Under RCW 47.01.250 the State Patrol, Washington Traffic Safety Commission (WTSC), County Road Administration Board, and the Department of Licensing shall consult with the Transportation Commission and WSDOT to ensure that their transportation related responsibilities, goals, and activities are fully coordinated. Results of this interaction shall be reported to the Governor and the Legislature.

Among other duties listed in RCW 43.59, the WTSC shall plan and manage at both the state and local level, safety activities and programs for the prevention of accidents on roads, streets, and highways. WTSC shall confer with and advise the political subdivisions and all agencies of Washington State government whose programs and activities are within the scope of traffic safety.

9:P:TM1