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# 1. Introduction

The Louisiana Department of Transportation and Development's goal is for highway guide signs to provide information to the motorist in a logical sequence that is easy to understand. In order to accomplish this goal, sign placement, spacing and design need to be consistent across the state and with national standards. If these three aspects are not consistent, a sign will not receive the proper attention and will cause confusion to unfamiliar motorists. This design manual provides a reference to promote uniformity in sign placement and design.

This manual will create uniformity by providing guidance and establishes policies for guide sign development on interstates and controlled access highways in Louisiana. The policies provide additional guidance beyond what is stated in the Manual on Uniform Traffic Control Devices (MUTCD), The American Association of State Highway Transportation Officials (AASHTO) Green Book, and Louisiana Engineering Directives and Standards Manual (EDSM). Additionally, this manual states the standards and minimum requirements for creating highway guide sign plans.

# 2. Policies and Standards

The following chapter covers all policies and standards that are related to highway guide sign design and use. The policies may be established in this manual or other documentation as mentioned. These policies and standards shall be followed when highway guide signs are being designed or used.

### A. Policies

- EDSM VI.2.1.3 Supplemental Guide Signs on Interstate Highways
  - This EDSM provides additional guidance to supplement the MUTCD for sign placement and signing for traffic generators on interstate highways.
- Traffic Engineering Manual
  - The main reference for highway guide sign policies can be found in the LADOTD Traffic Engineering Manual. This manual is located on LADOTD's website under the Traffic Engineering Division in the Publication Area. The manual provides supplemental guidance to the MUTCD. The following is a list of the current signs for highway guide signs in the <u>Traffic Engineering Manual</u>:
- Truck Route Signs



• No Truck Signs



No Hazardous Material Signs 0



• Weight Limit Signs



• Keep Right Except to Pass Signs



• Tourist Information









• Slower Traffic Keep Right Signs

• Move Accidents from Travel Lane Signs

• Move Over Signs



• Low Clearance Signs



• Bridge Ices Before Road Sign



• Warning Signs for Animals



• Pharmacy Signs on Interstate Highways



• Hospital Specific Service Signs on Interstates/Non-

**Interstates for Emergency Services** 







• Waterway Signing



• Scenic River System Signing



• Jurisdictional Boundary Signs on Interstate and Non-

**Interstate Highways** 



#### • Welcome Center Signing

• See <u>Traffic Engineering Manual</u> for Examples

#### • Gateway Signing for Interstate and Non-Interstate Highways

• See <u>Traffic Engineering Manual</u> for Examples

#### • Supplemental Guide Signs on Non-Interstate Highways

• See <u>Traffic Engineering Manual</u> for Examples

### **B.** Standards

This section provides a description and the owners for each standard. The standards themselves are not provided within this manual. A designer should always request the most recent standards when starting a new project.

- Traffic Engineering Standards and Special Details
  - Traffic Engineering has created several standards that are to be used and provided when creating plans. Each set of standards is listed below, along with a description for each.
    - o Temporary Traffic Control Standards (TTCs) These standards provide the minimum requirements for Temporary Traffic Control during the construction of a project. The appropriate TTCs for the work being performed in a project shall be included in a plan set. The TTCs provide information for a wide variety of temporary traffic control circumstances but do not cover all aspects. It is up to the designer to ensure that proper temporary traffic control is provided with the plans.
    - o Signing Special Detail Plans These details provide the information required to install signs on LADOTD roadways. These standards include information such as the heights of letters printed on our signs and the location of where the signs are mounted. These details can be requested through Traffic Engineering by contacting the Traffic Control Engineer Manager.

#### Bridge and Structural Design Standards

- The following standards can be provided by Bridge Design
  - o Barriers
  - Guardrails
  - Overhead Traffic Signs
  - Roadside Traffic Signs includes details for structural mounting

### C. Definitions

The following section states the definition for terms that will be used throughout the LADOTD Highway Guide Sign Manual. These definitions will help create the base for how LADOTD approaches sign placement and design.

Geometric and Area Definitions

The definitions in this area relate to defining areas of a roadway or the type of roadway.

• Interchange – a system of interconnection roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels

(AASHTO, 2011, p. 10-1). LADOTD designates interchanges into the following categories

- <u>Minor Interchange</u> an interchange with less than 100 exiting vehicles per day.
- Intermediate Interchange an interchange with urban and rural route that is not a major or minor interchange as defined.
- Major interchange an interchange with another freeway or expressway, or an interchange with high-volume multi-lane highway, principal urban arterial, or major rural route where the interchanging traffic is 0 heavy or includes many road users unfamiliar with the area.
  - Group 1 Interchanges with other expressways or freeways
  - Group 2 All other interchanges that meet the volume requirement and includes many drivers that are unfamiliar with the area.
- Rural Area areas that ordinarily have greater distances (typically 2 miles or greater) between interchanges, which permits adequate spacing for the sequence of signs on the approach and departure from each interchange.

- Urban Area the conditions may be defined by Corporate City Limits, but may also be defined by one or more of the following features:
  - Mainline roadways with more than two lanes in each direction
  - High traffic volumes on the thru roadways (>50,000 ADT)
  - High volumes of traffic entering and leaving interchanges
  - Interchanges closely spaced (<1 mile)
  - Roadway and interchange lighting
  - A series of three or more interchanges serving the major city
  - A loop, circumferential, or spur serving a sizable portion of the urban population
  - Visual clutter from roadside development
- **Frontage Road** a road running parallel to the interstate connecting a minimum of two interchanges
- Entrance Ramp End in the point where the full ramp width entering a facility becomes less than the full lane width (see figure 2.1)
- Physical Gore the point as defined in the AASHTO green book, where the ramp intersects with the mainline facility and the pavement surface changes (see figure 2.1)
- <u>Theoretical Gore</u> the tip of the generally triangular-shaped neutral area where the channelizing line for the ramp separates from the channelizing line for the adjacent thru lane (see figure 2.1)



Figure 2.1: Physical and Theoretical Gore (Entrance Ramps)

### • Sign Definitions

The definitions in this area relate to parts or types of signs. For more detail on sign support limitations, such as support square foot limitations, see the corresponding standard plans for the support type.

- Breakaway Post sign mounting device designed to break upon impact with a vehicle; the device must be approved by the FHWA as meeting current MASH & NCHRP crash tests
- **<u>Rotation Signs</u>** signs or sign assemblies mounted on a rotating sign support. These sign supports shall be breakaway when not installed on a structure.
- **<u>Type A Signs</u>** sign mounted on a single post; may be square, rectangle, circle, triangle, diamond, octagon, or route markers
  - Examples of Type A Signs:









TIELD





BRIDGE ICES BEFORE

ROAD

- **<u>Type B Assembly</u>** sign assembly of multiple Type A signs mounted side by side on a single post
  - Examples of Type B Assemblies:







- <u>Type D Signs</u> large rectangular sign adjacent to traffic mounted on multiple posts
  - Examples of Type D Signs:



- **<u>Type E Signs</u>** secondary sign such as an exit number panel, attached to a large rectangular primary sign. Type E signs should not exceed Type D signs in width.
  - Examples of Type E Signs:



- **Overhead Signs** large rectangular sign mounted above traffic on a truss, cantilever, butterfly, or bridge fascia
  - Examples of Overhead Signs:



CANTILEVER



EXIT	S	118B-A
TYPE	D	SIGN



- Sign Assembly a group of signs, located on the same support(s) that supplement one another in conveying information to road users (MUTCD 2009 p. 20, definition 194); previously called a cluster assembly
  - Example of a Sign Assembly:



# 3. Guide Sign Placement and Design

This chapter provides additional minimum requirements (outside of those stated in the MUTCD) for LADOTD highway guide sign placements and design. All highway guide sign placements and designs shall follow the requirements stated in LADOTD's current adopted MUTCD. Information regarding the most recently adopted MUTCD can be found in LADOTD's Traffic Engineering Manual. It is understood that there will be occasions where, because of physical limitations, it may not be possible to provide the required sign sequence and spacing. The following sections provide additional guidance and requirements for each

designated sign or sign type. These instances shall be documented in the design reports, such as the Engineering Reasoning and Decision Document (See Chapter 4).

### A. Logo Signs and 511

All logo signs, Tourist Oriented Directional signs, and 511 signs are handled by LADOTD's contracted logo signing company (Interstate Logos). The company's representative, Johnny Durrett (jdurrett@interstatelogos.com), shall be contacted in

the circumstance that any work related to logo signs is required.

### B. Advanced Guide Signs and Supplemental Guide Signs

Advanced Guide Signs provide information to drivers in order to provide a reasonable amount of time to make decisions. Depending on the type of interchange, the requirements for advance guide signs changes. These requirements

#### are stated below:

- 1. Minor Interchanges
  - Shall be placed <sup>1</sup>/<sub>2</sub> mile in advance of the exit
- 2. Intermediate Interchanges
  - Shall be placed at 1 mile and ½ mile
  - An additional sign should be placed at 2 miles, if spacing allows
- 3. Major Interchanges
  - Shall be placed at 2 miles, 1 mile, and ½ mile
- 4. All Interchanges
  - Signs to be placed at nearest <sup>1</sup>/<sub>4</sub> mile (for spacing issues, minimum number of signs shall still be provided)

#### 5. All Advance Guide Signs

- Shall only show two destinations on primary guide signs
- In urban areas, destinations shall be street names
- In rural areas, destinations shall be the first communities that are accessible on either side of the interchange
- In rural areas, the only signs allowed in the exit sign sequence are political boundary signs, required regulatory signs, warning signs, and logo signs

#### 6. Supplemental Guide Signs

• Can be used to assist with providing additional information to drivers. LADOTD allows a maximum of 1 supplemental guide sign per interchange. These signs shall only contain a maximum of 2 destinations. Additional requirements are stated in EDSM VI.2.1.3 Supplemental Guide Signs on Interstate Highway.

## C. Interchange Signing

This section states the requirements and typical configurations that LADOTD has developed to supplement the MUTCD. The section will cover the individual signs prior to covering LADOTD's typical configurations.

### 1. Regulatory Signs

The following are typical regulatory signs installed at interchanges in Louisiana:

#### • Keep Right Sign (R4-7)

• See MUTCD 2B.32



• Stop Signs (R1-1) • See MUTCD 2B.04-2B.06



- Do Not Enter Signs (R5-1)
  - See MUTCD 2B.37 and 2B.41
  - Shall be mounted to the back of other signs at exit ramps



#### • Yield Sign (R1-2)

- See MUTCD 2B.08-2B.10
- For exit ramps wider than 2 lanes, additional yield signs should be placed in the splitter island





One Way Signs (R6-1) • • See MUTCD 2B.40 and 2B.41



#### • Wrong Way (R5-1A)

- See MUTCD 2B.38 and 2B.41
- Shall be placed 250 feet from the crossroad edge of pavement
- Exit ramp two signs shall be installed on either side of the 0 exit ramp and be parallel to the crossroad
- Shall be installed back to back with other signs such as directional assembly signs



#### • Turn Prohibition Signs (R3-1, R3-2, R3-4)

• See MUTCD 2B.18 • Should be used in conjunction with a Wrong Way Sign at exit ramps

• No Right Turn (R3-1) shall be mounted 20-50 feet from edge of exit ramp pavement



• No left Turn (R3-2) shall be mounted 20-50 feet from the center of the median end radius at exit ramps.



• No U-Turn (R3-4)



### 2. Warning Signs

The following are typical warning signs installed at interchanges in Louisiana:

- Divided Road Sign (W6-1) See MUTCD 2C.22

  - See MUTCD Table 2C-4 for placement



- Advanced Traffic Control Signs (W3-1,2,3,4)
  - See MUTCD 2C.36
  - See MUTCD Table 2C-4 for placement
    Stop Ahead Sign (W3-1)
  - - To be used in place of Be Prepared to Stop Sign (W3-4)



• Yield Ahead Sign (W3-2)











• Circular Intersection Ahead Sign (W2-6) and Advisory Speed Plaque (W13-1P)

#### 3. Guide Signs

The following are typical guide signs installed at non-interstate routes interchanges in Louisiana. See the corresponding MUTCD section listed for sizes and information.

- Interstate Route Signs (M1-1) and Junction Auxiliary Signs (M2-1)
  - See MUTCD 2D.10, 2D.13, and 2D.45
  - $\circ$  Shall be installed 400 feet from the distance or destination sign



- Route Sign Assembly for State Route Signs (M1-5) US Route Signs (M1-4) and Cardinal Auxiliary Signs (M3-1,2,3,4)
  - See MUTCD 2D.11, 2D.15, and 2D.29
  - $\circ$  Should be mounted 500 feet beyond exit ramp end of taper



- Route Sign Assembly and Directional Assembly for State Route Sign and Cardinal Auxiliary Sign
  - See MUTCD 2D.10, 2D.11, 2D.15, 2D.29, and 2D.45
  - Shall be installed 250 feet prior to the crossroad pavement edge
- Directional Assembly or Entrance Direction Ramp
  - See MUTCD 2D.10, 2D.15, 2D.28, and 2D.45
  - Shall be installed at point of curvature of radius or beginning of taper
- Frontage Road Sign
  - Sign is intended to designate that roadway will lead to another interchange
  - Should be mounted at point of curvature of the turning radius or at taper beginning when a turn lane is present
  - Shall be double faced

- Route Sign Assembly on Non-Interstate Routes (See Figure 3-1: Route Sign Assembly)
  - See MUTCD 2D.10, 2D.15, 2D.28, and 2D.45
  - Shall be installed in median at intersections entering expressway



Figure 3-1: Route Sign Assembly

• Fascia Mounted Entrance Direction Sign

- See MUTCD 2D.45
- A guide sign may be mounted on the bridge fascia indicating the destination and direction of the interstate exit ramp following the bridge structure.
- Signs cannot be placed in a way that obstructs the sight of a signal.
- The Bridge Design Manager in Bridge Design has to be contacted for approval to use facial mounts.
  - Diamond Interchange (See Figure 3-2: Diamond Interchange with Fascia Mounted Signs) the fascia mounted sign will indicate a left turn movement just past the bridge structure for the interstate on ramp



Figure 3-2: Diamond Interchange with Fascia Mounted Signs

• Cloverleaf Interchange (See Figure 3-3: Cloverleaf Interchange with Fascia Mounted Signs) – the bridge fascia guide sign will indicate a right turn movement for the interstate on ramp



Figure 3-3: Cloverleaf Interchange with Fascia Mounted Signs

## D.Interchange Signing Examples

To assist with sign placement, a typical diamond interchange configuration is shown in Figure 3-4: Sign Placement for a Typical Diamond Interchange. This configuration should be used as a starting point for all diamond configurations.



## E. Consecutive Interchange Sign Sequencing

For instances where interchanges are spaced closer than 800 feet, follow the sequencing shown in Figure 3-5: Interchange Sign Sequence for Closely-Spaced Interchanges. interchange Sequence Signs should be used in place of Advanced Guide Signs for all affected interchanges. When Consecutive Interchange Sequencing is used in an urban area, it shall not be used on a single interchange. The Consecutive Interchange Sequencing shall be used for the entire length of the route within the urban area.



Figure 3-5: Interchange Sign Sequence for Closely-Spaced Interchanges

## F. Post Interchange Signing Sequence on a Control of Access Roadway

LADOTD has a standard post interchange signing sequence. Any changes to sign placements shall require approval from the Traffic Engineering Management Administrator.

#### • Route Confirmation Signs

- $\circ$  Shall be provided
- $\circ$  Shall be placed 500 feet beyond the acceleration lane's end of taper on the right side.
- o Where the acceleration lane becomes a lane, the sign shall be placed 500 feet beyond the full width end of the entrance ramp

#### • Speed Limit Sign

- $\circ$  Shall always be provided
- $\circ$  Shall be placed 1000 feet beyond the Route Confirmation Sign
- Double for roadways with 3 or more lanes (See Figure 3-6: Signing for Urban Interstate Interchange Series)

#### • Destination and Distance Sign

- $\circ$  Shall be placed 1000 feet beyond Speed Limit Sign
- $\circ$  First line is dedicated to next destination
- $\circ$  Second line shall state next city
- Third line shall state a control city that has a national significance on route (see appendix for control cities list)
- $\circ$  May be omitted when spacing issues are present

#### • Move Accidents from Travel Lanes

- $\circ$  Shall only be installed where 10 foot shoulders are present
- Urban Areas shall be placed 500 feet beyond the Speed Limit Sign on the right side (See Figure 3.6)
- $\,\circ\,$  Urban Areas double for roadways with 3 or more lanes



Figure 3-6: Signing for Urban Interstate Interchange Series





#### • Keep Right Except to Pass

• Rural Areas – shall be placed 500 feet beyond Speed Limit Sign on the left side (See Figure 3-7: Signing for Rural Interstate Interchange Series)



Figure 3-7: Signing for Rural Interstate Interchange Series

### G.Special Sequences and Mainline Signs

The following are signs that may be present along the interstate

- 1. Louisiana State Line Sign Sequence
  - Shall be used at the following locations
    - Texas State Line
      - I-10
      - I-20
    - Mississippi State Line
      - I-10
      - I-20
      - I-55
      - I-59
    - Arkansas State Line
      - I-49
  - Sign Sequence (See Figure 3-8: Louisiana State Line Sequence)
    - Welcome to Louisiana (gateway sign)
    - Speed limit sign
    - $\circ \quad \text{State Police Dial} \\$
    - Traffic Information Dial (not installed by LA DOTD)
    - Move Over For Emergency Vehicles Sign
    - Buckle Up State Law Sign
    - Alternative Fuels Corridor (Installed based on Corridor having Alternative Fuels)
    - All signs are placed at 500 foot intervals



N.T.S. Figure 3-8: Louisiana State Line Sequence



### 2. Regional Gateway Sign Sequence

- Can be classified as gateway signs that announce arrival to the first rural entrance after an urban area or after a rural interstate-to-interstate exchange
- Shall be used at the following locations
  - I-10 Eastbound: East of Lake Charles, Lafayette, Baton Rouge
  - o I-10 Westbound: West of New Orleans, Baton Rouge, Lafayette
  - I-12 Eastbound: East of Denham Springs, I-55
  - I-12 Westbound: West of I-59, I-55
  - I-20 Eastbound: East of Bossier City, Monroe
  - I-20 Westbound: West of West Monroe
  - I-49 Northbound: North of Lafayette, Alexandria
  - o I-49 Southbound: South of Shreveport, Alexandria
  - I-55 Northbound, North of Hammond

#### • Sign Sequence (See Figure 3-9: Regional Gateway Sign Sequence)

- State Police Dial
- Traffic Information Dial (not installed by LA DOTD)
- Buckle Up State Law Sign
- All signs are spaced at 500 foot intervals



N.T.S. Figure 3-9: Regional Gateway Sign Sequence

### 3. Mainline Interstate Signs

#### • Speed Limit Sign (R2-1)

- See MUTCD 2B.13-2B.17
- Shall be installed at the beginning of speed zones
- Should be installed at 10-mile spacing 0
- Shall be installed on both roadway sides for roadways with 3 or more lanes 0
- Should be installed as part of post interstate signing sequence, as noted on p. 18 0
- Speeds should be based on the Chief Engineer's Order (CEO) or the statutory speed if no CEO has 0 been declared for the area



#### • Enhanced Mile Markers (D10-4)

- See MUTCD 2H.06
- Shall be installed at 1 mile intervals on interstate routes
- For 3 lanes or more, must be installed on both the left and right side of the roadway



#### • Reference Location Signs (D10-1a and D10-3a)

- See MUTCD 2H.05
- areas
- Shall be mounted on the right-hand side of the roadway



#### • Rest Area and Other Roadside Area Signs

- See MUTCD 2I.05
- Shall only be used where parking and restroom facilities are present



• Shall be installed at 0.5 mile intervals on all elevated interstates/structures longer than a mile in rural

• May be mounted on median where conditions limit or restrict right side placement



#### • Speed Zone Ahead Sign (W3-5)

- See MUTCD 2C.38
- Shall be installed on both roadway sides for all control of access roadways prior to a change in speed 0 limit
- Shall be followed by a Speed Limit Sign 0
- Should be placed according to Table 2C-4 on page 108 of the MUTCD 0



#### Hurricane Evacuation Signs ٠

• Shall only be installed along the designated routes shown on the LADOTD Hurricane Evacuation **Route Map** 



#### • General Service Signs

- See MUTCD 2I.01, 2I.02 and 2I.03
- Should only be used when the driver can exit and return to the roadway in the same direction of 0 travel







#### • Bridge Ices Before Road (W8-13)

- See MUTCD 2C.32
- Shall be installed prior to bridges on interstate routes
- Shall follow MUTCD Table 2C-4 0
- Shall be installed on both roadway sides for roadways with 3 or more lanes 0
- larger than 15 feet.



#### • Pull Thru Signs (E6-2 and E6-2a)

- See MUTCD 2E.12
- continue the route
- May be used where route guidance is desired
- Shall be used at all interstate to interstate interchanges
- Sign shall not have the name of the city it is in



• Shall be installed 15 feet from edge of travel lane or 2 feet from edge of shoulder when shoulder is

• Should be used when geometrics at an interchange are unclear to the driver to designate which lanes



## H.Overhead Signing

### 1. Overhead Signing Conditions

There are circumstances where overhead signing may either be required or beneficial. MUTCD Section 2A.17 provides information on overhead signing. LADOTD has developed conditions that shall be used to determine when overhead signing is used. Overhead signing shall be installed when:

- Average Daily Traffic exceeds 72,000 vehicles per lane for 2 lanes, overhead signing shall be installed, or
- If three or more lanes exist in each direction for a minimum of 5 miles, overhead signing shall be used on advance guide signs, or
- Shall be used when interchanges are spaced with less than 1-mile separation, or
- Multi-lane approach where lane usage violates driver expectations, or
- Multi-lane exits and proper lane use are synonymous at the junction of two or more interstates or expressways and for this reason also require overhead signing, or
- A left exit ramp requires an overhead sign, or
- Arrow-per-lane signing shall be used. The use of diagrammatic signs shall not be used in Louisiana, or
- Prior to installation the Traffic Engineering Administrator shall approve the installation of overhead signs to be installed based on justification written by the Design Engineer.

#### 2. Overhead Signing Support Design

Overhead signs can be installed on trusses, cantilevers, and bridge fascias. Bridge fascias on overpasses are the preferred support structures for overhead signs as they eliminate the need for additional sign supports along the roadside. For all sign support types the minimum vertical clearances shall meet MUTCD Section 2A.18. Any sign supports not following LADOTD Standards shall require Bridge Design approval. Specifications for the design and construction of the structural supports for highway signs have been standardized by the American Association of State Highway and Transportation Officials (AASHTO). Trusses, cantilevers, bridge fascia mounts, their foundations and supports are always checked by the Bridge Design Section (and if in house, projects may be designed by Bridge Design as well). Based on the current guardrail standards, all trusses and cantilevers typically require guardrail protection.

### I. Barrier Paddles

At any locations where barrier height is less than 54 inches shall be installed.

# 4. Construction Signing Plans

The following chapter covers all required documents and sheets for Signing Plans. Signing Plans shall be created with the intent to convey construction information to the contractor. This information shall include the following but is not limited to:

- Sign locations
- Sign types
- Sign sizes
- Sign mounting information
- General sign construction information
- Guardrail designs when applicable

All plan sheets shall include the following information in the designated locations per LADOTD policy:

- Project numbers state, federal aid, and city parish if applicable
- Parish name(s)
- Sheet number
- Schedule of revisions
- Professional engineer's stamp

## A. Engineering Reasoning and Decision Document (ERDD)

In order to document the reasoning and decisions made for signs along LADOTD roadways the Department requires an Engineering Reasoning and Decision Document (ERDD) for sign plans. All signs for a sign project shall be documented in the ERDD. The main focus of the ERDD is on non-standard signs that vary depending on the circumstances at each location. These circumstances may require special support designs, placements and/or sign designs. There may also be circumstance where standard signs require special support designs or placements. The ERDD shall document the reasoning and decisions for all these circumstances. The ERDD shall also include a review of the most recent sign structure reports the Department has available. During this review any sign structures (Truss and Cantilevers) with an overall rating of 5 or below shall be replaced. Any sign structure (Truss and Cantilevers) that does not meet the previous two requirements should be replaced based on engineering judgement. The ERDD shall include an investigation relating to the need for Barrier Paddles. The ERDD shall contain at a minimum the following items:

- Field Inventory Documentation (Provided as an Appendix)
  - o Sign Field Inventory Pictures (Front and Back of sign)
  - Field notes from Field Inventory
  - o Median Barrier Height Inventory (If applicable)
- Summary of existing sign conditions
- Proposed sign placement with reasoning
  - As-Builts (If applicable)
  - Median Barrier Height check (If applicable)
- Shop drawings (Non-Standard Signs only)
  - $\circ \quad \text{Reasoning for sign layout} \quad$
  - $\circ \quad \text{Reasoning for sign size} \quad$
- Support determinations
  - $\circ$   $\;$  Review of most recent Truss and Cantilever support inspection
- Design exceptions (If applicable)

## B. Sign Plan Sheets

This section describes each of the requirements for the different sign plan sheet types

### 1. Sign Summary Sheet

The Sign Summary sheet(s) shall provide a table that summarizes the information for each individual sign. Each Sign Summary sheet should only summarize one Sign Layout sheet. It may be required to use multiple Sign Summary sheets to summarize a single Sign Layout sheet. A legend for sign remarks shall be required on all Sign Summary sheets. The legend should include all possible sign remarks. Figure 5-1: Example of a Sign Summary Sheet shows an example Sign Summary sheet.

The Sign Summary table should include all of the following information:

- Plan sheet number
- Sign assembly number
- Remarks
- Sign catalog number (MUTCD number)
- Sign sizes
- Mounting location
  - Height
  - $\circ$   $\;$  Inside edge of sign referenced from the edge of travel way
- Sign area broken down by the individual sign types
  - Type A signs
  - Type B signs
  - Type D signs
  - Type E signs
  - Overhead signs
- Sign support type broken down by sign mounting pay items number. See current LADOTD construction items list for support types
- Special assembly types
  - Milepost assembly structure mounted
  - Milepost assembly ground mounted
  - o Secondary milepost assembly structure mounted
- Removal information broken down by removal pay item number. See current LADOTD construction items list for support types

### 2. Sign General Notes Sheet

The Sign General Notes Sheet shall state any additional information, details etc., that are specific to that project. An example General Notes Sheet is shown Part C of the Appendix as Figure 5-2: Example of a Sign General Notes Sheet Sheet Sheet Sheet is shown Part C of the Appendix as Figure 5-2: Example of a Sign General Notes Sheet Sheet

### 3. Sign Layout Sheet

The Sign Layout Sheets should provide a roadway diagram showing sign work along the route. Each sign included in the project shall be shown on the appropriate Sign Layout Sheet. Each sign shall be given a number. Going from left to right along the depicted roadway each sign will be given an incremental sign number. The Sign Layout Sheet number will be placed before each sign number followed by a dash, ex: 4-1, 4-2, 4-3, etc. A legend stating each sign remarks shall be provided on all Sign Layout Sheets. The location for the sign installation shall be provided for each sign. An example Sign Layout Sheet can be found in Part C of the Appendix as Figure 5-3: **Example of a Sign Layout Sheet**. Any existing signs to remain that are shown on the Sign Layout Sheets shall either be lightened or dashed. Sign remarks shall be used when designating what work is to be performed for each sign. Table 4-1: **Sign Remarks Used on Sign Layout Sheet** states the sign remarks that are to be used for all sign plans.

A	Required New Sign and Breakaway Support	L	Remount Existing Sign
В	Required Exit Number Panel	М	For Location of Sign, See Special Detail Sheet
C	Required New Sign and Mount as Indicated	N	Remove and Remount Existing Logos on Breakaway Support
D	Required New Sign and Structure Mounted Support	0	Required Structure Mounted Milepost
Е	Remove Existing Sign	Р	Required Type II Overhead Truss and Footing
F	Remove Existing Sign and Support	Q	Required Overhead Cantilever and Footing
G	Remove Existing Pad or Support	R	Required New Sign and Fascia Mount Support
Н	Remove Existing Sign and U-Channel Support	S	Remove Truss and Footings
Ι	Required New Sign and Square Tube Support	Т	Remove Cantilever and Footing
J	Required Milepost and 6" Incidental Concrete Paving	U	Remove Existing Sign and Fascia Mount Support
К	Remove and Remount Existing Sign on New Breakaway Support	V	Required Object Marker Assembly

Table 4-1: Sign Remarks Used on Sign Layout Sheet

#### 4. Sign Special Details

All sign plans shall include the required sign special details that are appropriate for the project. The Project Manager for a project is responsible for contacting LA DOTD's Traffic Control Engineering Manager to receive any sign special details. Any special details that are designed specifically for the project shall be included in this section.

#### 5. Sign Shop Drawings

All non-standard signs shall have a shop drawing created for them. The shop drawings are used to help estimate the sign area required for a project. These areas assist with truss and cantilever designs and cost estimates. To help create consistency, LADOTD has developed the Show Drawing Standards shown in Part B of the Appendix as Table 5-1: LADOTD Shop Drawing Standard (Interstate), Table 5-2: LADOTD Shop Drawing Standard (Expressway), and Table 5-3: LADOTD Shop Drawing Standard (Crossroad or Ramp). These Standards are to be followed when creating non-standard signs. There may be circumstances where the LADOTD Shop Drawing Standards may not be able to be followed. In those circumstances the ERDD shall provide the reasoning for the deviation from the standard.

#### 6. Sign Plan Packet Percentages and Reviews

The following section states the minimum percentage and review requirements for all signing plan packets. These requirements shall be used for all plans both developed by LADOTD and Consultants. Table 4-2: Percentage Requirements for Signing Plans states what is to be provided at each percentage milestone signing plans. A Signing Plan Development is considered to be at the percentage where all current and previous requirements as listed have been completed. Until all requirements are meet signing plans shall not proceed past the current percentage state.

All signing plans and the ERDD shall have a minimum of 3 reviews performed. All Control of Access full reviews shall include Traffic Engineering, Traffic Operations, District Traffic Operations Engineer and Project Engineer. Any plans that are Non-Control of Access shall have full reviews that include the District Traffic Operations Engineer and Project Engineer. All reviews shall be documented using QA/QC Forms. These reviews shall be performed at the following percentages.

- 90% Preliminary Plans (Full Review)
- 60% Final Plans (Full Review)
- 95% Final Plans (Full Review)

	Preliminary Plans
30%	Preliminary research complete (as-builts, related projects, etc.)
	Preliminary layout prior to field review complete
	Environmental clearance requested
	ERDD development started
60%	Field review complete
	Preliminary plan sheets in progress
90%	QA/QC Review
	PIH prints assembled
	PIH meeting scheduled
	Preliminary Plan and Draft ERDD sent to PIH participants and Designated Reviewer for review
95%	PIH meeting complete
	Address comments from PIH participants
	Address comments from ERDD review
100%	PIH comments addressed
	Draft ERDD updated based on comments
	<b>Final Plans</b>
30%	Shop drawings complete (Includes Draft ERDD update)
(0.0)	QA/QC Review
60%	Sign summaries complete
	Non-standard truss and cantilever designs request sent bridge design (If applicable)
000/	Final Plan and Draft ERDD Review by PIH participants and Designated Reviewer
80%	60% Final Plan Meeting (If needed)
	Address 60% Final Plan comments
	Truss and cantilever designs complete (If applicable)
000/	Summary of estimated quantities assembled
90%	Summary of estimated quantities assembled
	Final Plan Standard and Special Details requested and assembled
059/	Final rian and rinal EKDD Keview by rin participants and Designated Keviewer
93%0	Final Plans submitted to Plan Quality and Specification Unit
1000/	Final plans signed by Chief and delivered to general files
100 70	That plans signed by Chief and derivered to general files

Table 4-2: Percentage Requirements for Signing Plans

# 5. Appendix

## A. Control Cities

• Information on control cities and how to add a new city is included in a publication titled Part I: Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways; Part II: Guidelines for Airport Guide Signing; Part III: List of Control Cities for Use in Guide Signs on Interstate Highways by AASHTO. Any request related to Control Cities shall go to the Traffic Engineering Division Administrator. The following information is from the 2001 publication:

"From time-to-time, a state may recognize the need to add a city to the list of control cities located on an interstate route within its state boundaries. States may submit requests for the addition of cities to the list of control cities to the AASHTO Highway Subcommittee on Traffic Engineering for consideration. Requests for additions or changes to the list of control cities should include the following information:

1) A statement indicating what addition or change is proposed

2) Any illustration which would be helpful to understand the request

3) Any supporting data or information which would present justification for making the requested addition or change"

List of Louisiana Control Cities: ٠

o I-10

- Lake Charles
- Lafayette
- **Baton Rouge**
- New Orleans

o I-12

- Baton Rouge
- Hammond
- Slidell

o I-20

- Shreveport
- . Monroe

o I-49

- Lafayette
- Opelousas
- Alexandria
- Shreveport
- o I-55
  - New Orleans
  - Hammond .

o I-59

- New Orleans
- Slidell

# B. LADOTD Shop Drawing Standards (Not to be placed on Construction Plans)

SIGN	TEXT SIZE (INCH) (E MOD)	CARDINAL DIRECTION (E MOD)	SHIELD INTERSTATE	SHIELD STATE, US OR PARISH	DISTANCE TEXT (INCH) (E MOD)	ACTION MESSAGE (INCH) (E MOD)	EXIT WORD (INCH) (E MOD)	EXIT NUMBER (INCH) (E MOD)	BORDER (INCH)	RADIUS (INCH)	DISTANCE BETWEEN LINES (PERCENT OF CAP LETTER)	SPACE FROM WORD TO SIGN EDGE (PERCENT OF CAP LETTER)	HORIZONTAL DISTANCE BETWEEN WORD & ARROW (INCH)	ARROW	COLOR	SIGN MOUNTING HEIGHT (FEET)
INTERSTATE														TYPE A		
EXIT PANEL	10 Word (E) 15 Number (E	) -	-	-	-	-	-	-	2 (No bottom)	9	-	-	-	-	White on Green	-
GUIDE - MAJOR INTERSTATE - INTERSTATE	20	First Letter 18 Rest 15	48	48	18 Fraction 12 Mile	12	-	-	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	Down (22) 45° (160)	White on Green	7 Ground 18 Overhead
GUIDE - MINOR OR INTERMEDIATE	16	First Letter 15 Rest 12	36	36	15 Fraction 10 Mile	10	-	-	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	Down (22) 45° (160)	White on Green	7 Ground 18 Overhead
EXIT ONLY	12	-	-	-	-	-	-	-	2 (No top)	9	-	50% MIN. 100% DES.	-	Down (22) 45° (160)	Black on Yellow	-
NEXT EXIT 20 MILES	8 Word 1 Number	0 -	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	-
BOUNDRY NAME PARISH OR STATE	8 Name 6 (Caps)	-	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
SUPPLEMENTAL	13.33	-	-	-	-	8	10	15	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
STATE PARK OR AREA	13.33	-	-	-	-	8	10	15	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Brown	7
MEMORIAL	8	-	-	-	-	8	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Brown	7
DISTANCE	8	-	-	-	8	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
DESTINATION NEXT 3 EXITS	13.33 Name 10 Word 15 Number	-	-	-	-	-	-	-	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
WEIGH IN MOTION	10 (E)	-	-	-	12 (E) Fraction 8 (E) Mile	10 (E)	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	Black on White	7
RIVER OR BRIDGE	8 Name 6 (Caps)	-	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7

\*Not to be placed on Construction Plans

Table 5-1: LADOTD Shop Drawing Standard (Interstate)

SIGN	TEXT SIZE (INCH) (E MOD)	CARDINAL DIRECTION (E MOD)	SHIELD INTERSTATE	SHIELD STATE, US OR PARISH	DISTANCE TEXT (INCH) (E MOD)	ACTION MESSAGE (INCH) (E MOD)	EXIT WORD (INCH) (E MOD)	EXIT NUMBER (INCH) (E MOD)	BORDER (INCH)	RADIUS (INCH)	DISTANCE BETWEEN LINES (PERCENT OF CAP LETTER)	SPACE FROM WORD TO SIGN EDGE (PERCENT OF CAP LETTER)	HORIZONTAL DISTANCE BETWEEN WORD & ARROW (INCH)	ARROW	COLOR	SIGN MOUNTING HEIGHT (FEET)
EXPRESSWAY														TYPE A		
EXIT PANEL	10 Word 15 Number	-	-	-	-	-	-	-	2 (No bottom)	9	-	-	-	-	White on Green	-
GUIDE	16	First Letter 15 Rest 12	36	36	15 Fraction 10 Mile	10	-	-	2	9	50% MIN. 75% DES.	50% MIN. 100% DES.	-	Down (22) 45° (160)	White on Green	7 Ground 18 Overhead
EXIT ONLY	12	-	-	-	-	-	-	-	2 (No top)	9	-	50% MIN. 100% DES.	-	Down (22) 45° (160)	Black on Yellow	-
NEXT EXIT 0 MILES	8 Word 10 Number	-	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	-
BOUNDRY NAME PARISH OR STATE	8 Name 6 (Caps)	-	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
SUPPLEMENTAL	10.67	-	-	-	-	8	8	12	1.5	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7
STATE PARK OR AREA	10.67	-	-	-	-	-	8	12	1.5	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Brown	7
MEMORIAL	8	-	-	-	-	8	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Brown	7
DISTANCE	8	-	-	-	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	-	-	White on Green	7

\*Not to be placed on Construction Plans

#### Table 5-2: LADOTD Shop Drawing Standard (Expressway)

SIGN	TEXT SIZE (INCH) (E MOD)	CARDINAL DIRECTION (E MOD)	SHIELD INTERSTATE	SHIELD STATE, US OR PARISH	DISTANCE TEXT (INCH) (E MOD)	ACTION MESSAGE (INCH) (E MOD)	EXIT WORD (INCH) (E MOD)	EXIT NUMBER (INCH) (E MOD)	BORDER (INCH)	RADIUS (INCH)	DISTANCE BETWEEN LINES (PERCENT OF CAP LETTER)	SPACE FROM WORD TO SIGN EDGE (PERCENT OF CAP LETTER)	HORIZONTAL DISTANCE BETWEEN WORD & ARROW (INCH)	ARROW	COLOR	SIGN MOUNTING HEIGHT (FEET)
CROSSROAD OR RAMP														TYPE D		
GUIDE - GROUND	8	First Letter 8 Rest 6	24	24	-	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	8	Up (3.5) 13" long 45° or 180° (3.5)	White on Green	7
GUIDE - OVERHEAD	10	First Letter 10 Rest 8	24	24	-	-	-	-	1.5	6	50% MIN. 75% DES.	50% MIN. 100% DES.	8	4.5	White on Green	18
FRONTAGE ROAD (STACK)	6" CAPS (D)	-	-	-	-	-	-	-	1	6	-	-	-	-	White on Green	7
STATE PARK OR AREA	8 (D)	-	-	-	10 Number 8 Mile	-	-	-	1.25	6	50% MIN. 75% DES.	50% MIN. 100% DES.	8	3.5	White on Brown	7

\*Not to be placed on Construction Plans

#### Table 5-3: LADOTD Shop Drawing Standard (Crossroad or Ramp)

## C. Example Sign Plans

6				SIGN	ISIZE	MOU LOCA FT	NTING TIONS	SIGN	(SQUAR	E FOOT)		SU	IPPO	RTS		ITEM 729-16- 00300	ITEM 202-02- 38220	ITEM 202-02- 38300	ITEM 202-02- 38360	ITEM NS-729- 00031	
SHEET NO	SIGN ASSEMBLY NUMBER	REMARKS	SIGN CATALOG NUMBER	LENGTH FT - IN	HEIGHT FT - IN		INSIDE	ITEM 729-01- 00102	ITEM 729-04- 00102	ITEM 729-05- 00102	POS		UNTIN	NGS (E 19-08	ACH)		REMOVAL OF SIGN	REMOVAL OF SIGN AND	REMOVAL OF SIGN	SQUARE TUBING SUPPORT	
PLAN				HORIZ.	VERT.	MINIMUM	EDGE OF SIGN	TYPE "A" (F&I)	TYPE "D" (F&I)	TYPE "E" (F&I)	ω 00200	00300	00900 W 6	8 00700 ⊗	∞ 800	(TYPE III)	SUPPORTS	U-CHANNEL POST	FACES	ON HARD CONCRETE	
	_										1/2"	-	12	18	24	EACH	EACH	EACH	EACH	EACH	
5	5-10	AF	W8-13	4'-0"	4'-0"	7'	15'	16.0			1	$\square$					1		1		
Þ	5-11	BE	E1-5P	9'-6"	2'-0"	-	-		100 E	19.0	=	Ħ	-		-				1		
E		AF	-	10-6-	13-0	r	20		130.5						2		2		1		
	5-12	AF	W13-2	4'-0"	5'-0"	7'	30'	20.0				1	-	_			1		1		
	5-13	AFM	E5-1a	6'-0"	5'-0"	7'	-		30.0		$\square$	$\square$	2				2		1		
	5-14	A	W4-1R	4'-0"	4'-0"	7'	15'	16.0			1	Ħ			_						
E	5-15	AF	W4-1R W4-1R	4'-0" 4'-0"	4'-0" 4'-0"	7'	30'	16.0			1	$\vdash$					1	/	1		
F	5-17	CE	M3-2(l)	2'-6"	1'-3"	10'-1"	-	3.1			$\square$								1		
		AF	M1-1	3'-0"	3'-0"	7'	20'	9.0			1						1		1		
	5-18	VH	OM3-R	-		-	-			-		Ħ		$\mathbf{X}$		1		1	-		
E	5-19	VH	OM3-R	-	-	-	-					$\vdash$				1		1			
F	5-20	AF	W8-13	4'-0"	4'-0"	7	15'	16.0					-				1		1		
	5-21	A	W4-1R	4'-0"	4'-0"	7' 7'	15'	16.0			1		-								A Designed New First and
	5-23	AF	W4-1R	4'-0"	4'-0"	7	15'	16.0			1						1		1		B. Required Exil Number P
E	5-24	AFM	E5-1a	6'-0"	5'-0"	7	-		30.0				2				2		1		C. Required New Sign and E. Remove Existing Sign
	5-25	AF	W13-2	4'-0"	5'-0"	7'	15'	20.0			+	1	-				1		1		F. Remove Existing Sign on H. Remove Existing Sign of
6	6-1	AF	R2-1	4'-0"	5'-0"	7'	30'	20.0				1			/		1		1		I. Required New Sign and S
Ĕ	60		D4 46	4.05	510	71	20'	20.0						-							V. Required Object Morker
E	0-2	A	K4-10	4-0	5-0	1	30	20.0													
$\vdash$	6-3	AF		15'-0"	7'-0"	7'	30'		105.0			$\vdash$	$\rightarrow$	2			2		1		
F	6-4	AF	-	7'-0"	3'-0"	7'	30'		21.0	-	$\square$	$\square$	2				2		1		
Þ	6-5	BE	E1-5P	9'-6"	2'-0"	-	-		100.0	19.0	=	Ħ		-	_		2		1		
				10-0	12-0	1			120.0			$\square$		2			2				
	6-6	ТН	D10-4	1'-6"	4'-6"	5		6.8	<u> </u>		+	$\vdash$	+		_			1		1	
F	6-7	BE	E1-5P	9'-6" 10'-6"	2'-0" 12'-0"	Ť	- 30'		126.0	19.0	$\square$	$\square$		2			2		1		
Ē	6.9	VH	OM2 P								$\square$	$\square$	=	_		4		4			
E	0-0	VH	OM3-K OM3-L	-	-	-						Ħ				1		1			
	6-9	ІН	D10-4	1'-6"	4'-6"	5'	-	6.8			+	$\vdash$						1		1	
	6-10	BE	E1-5P	9'-6"	2'-0"	-				19.0	$\square$	$\square$	-						1		
		AF	-	9'-6"	12'-0"	7'	30'		114.0		${\sqsubset}$	Ħ	=	2			2		1		
E	6-11	TH	D10-4	1'-6"	4'-6"	5'		6.8				Ħ			_			1		1	
$\vdash$	6-12	IH	D10-4	1'-6"	4'-6"	5'	-	6.8			$\square$	$\vdash$						1		1	
F	6-13	AF	W8-13	4'-0"	4'-0"	7'	15'	16.0			1	$\square$					1		1		
						Subtotal		263.3	688.5	76.0	10	4	6	8	2	4	26	8	23	4	

A. Required New Sign and Breakaway Support B. Required Exit Number Panel C. Required New Sign and Maunt as Indicated E. Remove Existing Sign and Support H. Remove Existing Sign and Support I. Required New Sign and U-Channel Support I. Required New Sign and Square Tube Support M. For Location of Sign, See Special Detail Sheet V. Required Object Marker Assembly

Figure 5-1: Example of a Sign Summary Sheet

Ξ			j	20	Ĵ					
PENNI I E				H.012019						
1		PICE AL	MORCI	PLAN.						
ž	Contraction         Contraction <thcontraction< th=""> <thcontraction< th=""></thcontraction<></thcontraction<>									
	0000	131177.20		1.14						
Π				LEM						
				GENERAL REVISION	A STATUTE A STATUTE					
				05/19/06						
Ľ				e	5					
	A. 1.1 X	小								
		CIMMADY SHEFTS								
		E Chofe								



Figure 5-2: Example of a Sign General Notes Sheet

NI	INB	ER	_	_	_				
pypicn		FEDERAL	PROJECT	STATE	PROJECT				
B.A.V.	I.A.M.	I.A.M.	A.F.F.	B/2020					
DESIGNED	CHECKED	DETAILED	CHECKED	DATE	SHEET				
					BY				
					REVISION DESCREPTION				
					DATE				
				UN.					
AT IN			*						
GENERAL NOTES									



Figure 5-3: Example of a Sign Layout Sheet

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