

**Administrative Circular No. 1-90**

<b>SUBJECT</b>	Procedure for Initial Installation of Uniform Reference Markers		
<b>TO</b>	Deputy Directors, District Engineers and Division Heads		
<b>REFERENCE</b>	Administrative Order No. 30-88		
<b>RESPONSIBLE OFFICE</b>	Transportation Planning Division (D-10)	<b>DATE</b>	February 5, 1990

**Purpose**

This circular provides procedures for the initial installation of reference markers on the **state maintained highway system**. On the interstate highways, the existing mile posts will serve as the reference markers without modification.

Procedures for the continued maintenance and use of the reference marker system will be published at a later date. The new reference markers will identify a **specific physical location**. The new reference marker system will:

- ◆ provide continuous reference marker numbering across the state to precisely identify highway sections such as concurrent routes, points, structure locations, etc.
- ◆ allow highway routing changes and roadway additions without major changes to the marker numbers
- ◆ minimize future post renumbering in the field
- ◆ provide a consistent method for the department, the Department of Public Safety and other interested parties to report, store, and access information.

**Time Table for the Initial Installation of Reference Markers**

Date	District Action Required
January 31, 1990	Appoint District Reference Marker Coordinator and notify Transportation Planning Division
July 1, 1990	Complete verification of locations and updating files.
April 1, 1990 to August 31, 1990	Install new reference markers

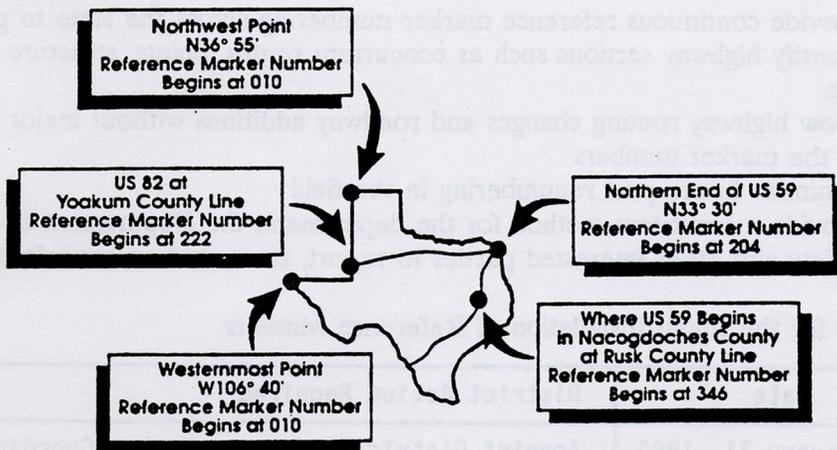
## District Coordination

Each District engineer will appoint a senior staff member as the District Reference Marker Coordinator to supervise the installation of the reference markers in the district and notify the Transportation Planning Division of the selection by January 31, 1990.

## Reference Marker Numbering System

Reference marker numbers are derived by imposing a grid on a map of Texas. Grid axes are set on extreme western and northern points, where numbering begins with ten. The first reference marker numbers match approximate grid locations. Subsequent marker numbers increase by two. Numbers increase north to south and west to east, depending on the highway's general direction (except north-south interstates, where numbers increase south to north). The numbers are continuous from beginning to end across the state and do not start over at county lines.

Example: US 82 begins at reference marker 222 on the western edge of Yoakum county and ends at reference marker 798 on the eastern edge of Bowie county.



## Identification

The initial installation of reference markers will use the existing milepost locations. The existing mile post locations **MUST NOT** be moved. Use the mile post/reference marker equivalency listing as a control document during the identification and installation process :

- ◆ **Identify** where the existing mile posts are located within a .01 mile accuracy to its equivalent control section milepoint.
- ◆ **Verify** the displacement as shown on the listing or enter the correct displacement. (Displacement is measured up to 3 decimal places.)
- ◆ **Add** posts to the mile post/reference marker equivalency listing that are in place but not shown on the listing by entering the equivalent control section milepoint.
- ◆ **Transmit** the location corrections to the mile post file for existing, missing and unlisted mile posts to the Transportation Planning Division by July 1, 1990. This should be done in accordance with established procedures for mile post updates as defined in the Roadway Information System User's Manual.

Use vehicles with calibrated distance measuring instruments (DMI's) or other more accurate distance measuring equipment. (DMI equipped vehicles are available at regional centers for pavement data collection located in Abilene, Austin, Dallas, Lufkin, Odessa and San Antonio.) **DO NOT USE** standard vehicle odometers or tripmeters as they will not achieve the desired accuracy.

Example: When using DMI equipped vehicles on a divided highway, take measurements while traveling on the inside lane in the direction of increasing mile posts. Reset the instrument to a known location at approximately every ten miles.

## Installation

Districts should replace missing posts that are shown on the milepost/reference marker equivalency listing but are not in place. Each district will install the new reference markers on the front and back of each post at all miles post locations. The installation should be completed between the dates of April 1, 1990 and August 31, 1990. Do not begin installing new reference markers until April 1, 1990 since this date has been established as the deadline for development of the automated conversion from mile posts to reference marker numbers. The old mile post markers should be either covered by the new reference markers or removed. (See the detailed drawings on pages 5 and 6)

Districts that want to install reference markers at additional locations, such as on each roadway or at closer intervals, need to contact the Transportation Planning Division, Administrative Operations Sections (TEXAN 241-7493 or (512) 465-7493).

### Reference Marker Information

The Roadway Information System (RIS) data files may be used to:

- ◆ identify the mile post and reference marker equivalency
- ◆ estimate the number of panels, numbers and letters needed in the district.

The RIS files may be accessed directly by using the procedures in the RIS User's Manual or by contacting the Transportation Planning Division, Administrative Operations Section directly for assistance.

### Reference Marker Specifications

The districts should use:

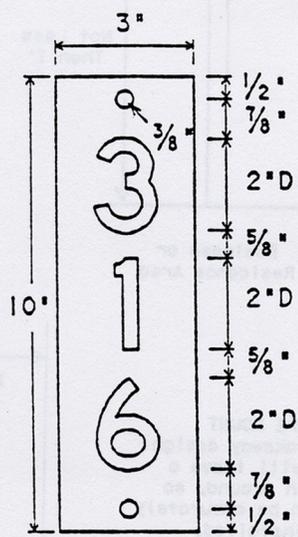
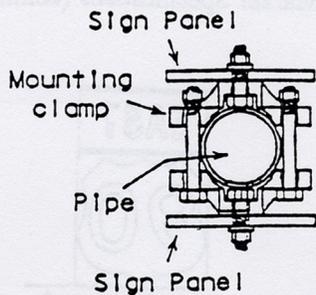
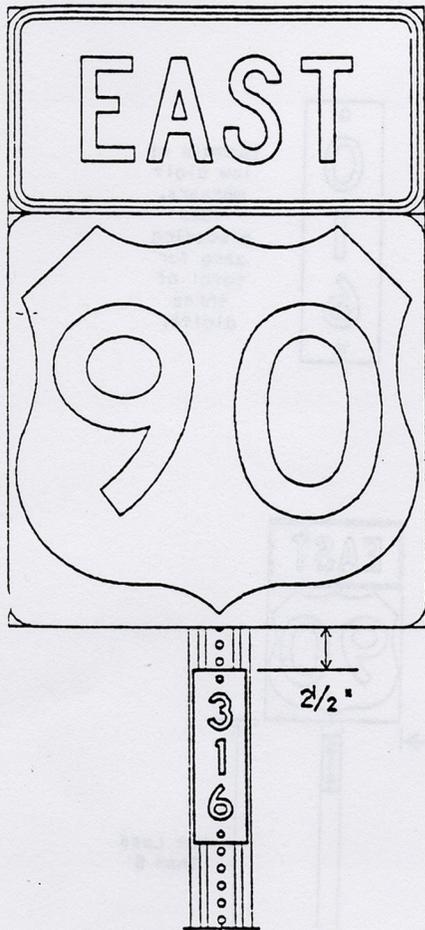
- ◆ 4' x 8' x 5/8" green reflective panels (use dropoffs/waste when available)  
(Districts may order sheeted plywood from the Texas Department of Corrections Sign Plant through the Equipment and Procurement Division.)
- ◆ 2" tall numbers and letters that are series D, white engineer-grade, pressure sensitive sheeting
- ◆ only capital letters.

Order the letters and numbers from the general warehouses by using the DHT numbers below:

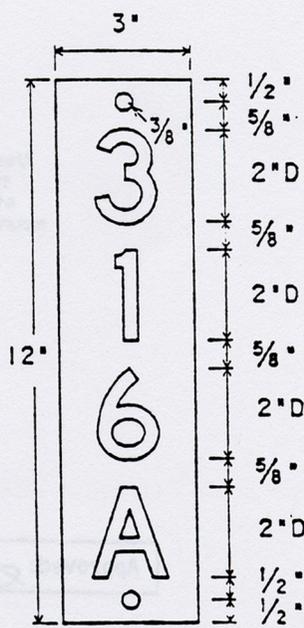
DHT No.	Number	DHT No.	Number	DHT No.	Letter
3721	0	3736	5	121032	A
3722	1	3727	6	121033	B
3723	2	3728	7	121034	C
3724	3	3729	8		
3725	4	3730	9		

Note: Letters D-Z are available but should not be needed at this time.

Reference Marker Specifications (continued)



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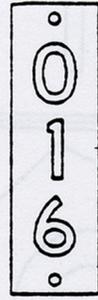
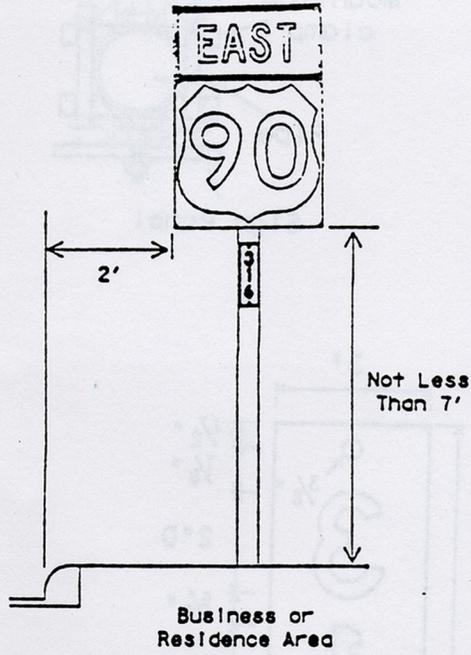


D10-7b

Plaque should cover existing number, or remove old number.  
Plaques to be mounted back to back.

Substrate-Plywood  
Background-Green Reflective  
Numbers/Letters-White Reflective

Reference Marker Specifications (continued)



Example of low digit markers.  
 (Use preceding zero for total of three digits)

**TYPE MOUNT**  
 Use breakaway design that will leave a stub in ground, so mount can be accurately reinstalled.

