

SIGNS

Contracts (pp.27-37)

Updated May 14, 2009

INTRODUCTION

Editing or updating Sign Contract Drawings, for Freeways, Divided Highways, and Boulevards, is expedited when the following standards are maintained.

The MicroStation V8 configuration for Signs uses the `mdot_traffic` workspace. In the MicroStation Manager, select `mdot_traffic` for the User.

If the `mdot_traffic` workspace is not available, it must be installed

Double-click on `M:\bin\v8usersetup.exe`

Hit "Uncheck All", check "Copy Traffic Workspace", then hit "Run Setup". Restart V8 and select the `mdot_traffic` User.

A. SEED FILES & FILE NAMING

(`M:\mst\seed\traffic\seedtr_fwy_sign_*.dgn`)

“Seed Files” are used to create new drawing files, they can be copied, or, selected when creating a “new” file from within MicroStation. The parameters in each Seed File are pre-configured for each scale.

This includes such parameters as: text size; active scale (AS=), level, weight, line code/style, color; file working units, dimension style, etc.

seedtr_fwy_sign_50.dgn is the 1” = 50’ scale seed file. (AS=0.5)

seedtr_fwy_sign_100.dgn is the 1” = 100’ scale seed file. (AS=0.5)

seedtr_fwy_sign_200.dgn is the 1” = 200’ scale seed file. (AS=1.0)

(NOTE: These are the “standard” Sign Contract Scales)

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Use the following guidelines for naming Freeway Signing files:

Roadway Base/Alignment

Control Section Number(s) (CS) plus "_tsb" plus File Extension,
41131_tsb.dgn

Signing Files

Interchanges - Control Section Number (CS) plus beginning station on that sheet followed by the cardinal direction (N,S,E, or W when interchange is broken into 2 sheets). Use a letter (A,B,C, or D) of the quadrant when the interchange is broken into 4 sheets.

41131_385_A_tss.dgn - CS, 41131; Station, 385; Quadrant, A; Traffic Safety Signing, tss ; file extension, dgn.

Between Interchanges - Control Section plus the beginning station on that sheet.

41131_5505_tss.dgn - CS, 41131; Station, 5505; Traffic Safety Signing, tss; file extension, dgn.

B. CELL LIBRARIES

(M:\mst\cell\traffic*.cel)

The following Cell Libraries are used for Freeway Signing:

SIGN_CONSTR.CEL - contains cells for various Construction Signs.

(this library has not been completed, it will contain cells referenced from the other sign libraries)

SIGN_D.CEL - contains cells for Distance & Direction guide signs.

SIGN_EIS_CD.CEL - contains cells for Expressway and Information guide signs, School signs, and Civil Defense signs.

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SIGN_M.CEL - contains cells for Route marker guide signs.

SIGN_R.CEL - contains cells for Regulatory signs.

SIGN_W.CEL - contains cells for Warning Signs.

SIGN_MISC.CEL - contains cells for blank "D" series signs, blank data-fields, 'sign "Removal Text", cantilever and truss blanks, border sheets, and miscellaneous cells for constructing base alignment.

C. TEXT SIZES & ACTIVE SCALE

Text sizes are best selected from menus in one of two ways (also can be changed by "keyins": TH=, TW=, LS=, but not recommended). Either select from the blue Sidebar Menu under "Signs" (**TS_V8MODE_MDOT.SBM**, F9 to load/update this menu), or from the "mdot_traffic" pull-down menu (not available in the consultant configuration).

Descriptions of the text sizes as located on the menu are:

Txt In - Use for Text on Sign Face.

Txt Out - Use for all text that Describes a Sign (located outside of sign).

TxtNote - Use for any special notes on the Contract Sheet.

Txt Rd - For Road Name text.

The "Active Scale" (AS=) must be set correctly in the file for above menu selections to work. Use Active Scales as shown here:

Drawing Scale/Active Scale

1" = 40'/AS=0.20 - Alternate Drawing Scale

(Text sizes for this scale not yet available in consultant configuration)

1" = 50'/AS=0.25 - Alternate Drawing Scale

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1" = 100'/AS=0.5 - Alternate Drawing Scale

1" = 200'/AS=1.0 - Preferred Drawing Scale for Freeway Contracts, especially for interchanges.

D. FONT RESOURCE FILES

M:\mst\mdotstyle*.rsc

Font 8 from the **FONTDES.RSC** resource file shall be used as the standard for all MDOT MicroStation files. Font 16 is included and may be used for text on a sign face.

Font 8 has several special symbols on the following keys:

Key on keyboard - symbol that will be displayed in file.

< - "plus or minus"

> - Plate Line

\ - Center Line

} - Delta

! - Diameter (Phi)

^ - Degree

F. LEVELS & COLORS, & LINE STYLES

When the Active Level is selected from the Sidebar Menu (**TS_V8MODE_MDOT.SBM**, F9 to load/update this menu), the level, color, line style, and weight is automatically set. Use Line Style 0 (LC=0) Solid, unless otherwise noted below.

MicroStation J level numbers are listed at the end of each level description (for

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cross reference only).

Use the following Levels (LV=), Colors (CO=), and Line Styles (LC=)

For Base Alignment:

ALI_LEGAL_EX, co=0, Centerlines (J=21)

PAVT_EDGE_EX, co=33 Roadway Base including, but not limited to, Lane Widths, Curb-Lines, Crosswalks, Lane Usage, Land Use, North Arrow. (J=11)

ALI_CURVE_PTS_EX, co=9, PCs & PTs, (not plotted) (J=9)

SCRATCH_LEVEL_A, co=10, Construction Lines (not plotted) (J=10)

SCRATCH_LEVEL_B, co=7, Bearings (not plotted) (J=12)

For Sign Related Items:

QUANT_SYMBOLS_PR, co=41, Quantity Box for Pay Items (J=44)

TRAFFIC_SIGNS_PR, co=41, Proposed Signing (J=47)

TRAFFIC_SIGNS_RM, co=162, lc=2, Removal Signing (J=48)

TRAFFIC_SIGNS_EX, co=1, lc=2, Existing Signing (J=none)

Miscellaneous Items:

BORDER_SIGN_CONT, co=0, Border - 36"x24" and 17"x11" Sign Contract Sheet (J=49)

PRINT_SHAPES, co=1, Laser print shapes, off in view 1 (J=62)

PLOT_SHAPES, co=63, IPlot Organizer Shapes, contract (J=63)

The levels to be used are also listed in an information box in each of the seed files.

Use the following "Color Tables" to help display Element Colors:

For normal display while constructing file:

Shift-F3 - M:\mst\ct\rd_v8color.ctb

For black and white display.

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Shift-F1 - M:\mst\ct\ts_V8ColorBW.ctb

Shift-F2 - M:\mst\ct\ts_V8ColorBWR.ctb

For color on white display.

Shift-F4 - M:\mst\ct\ts_V8ColorCW.ctb

G. LINE WEIGHTS

Use the following Line Weights (WT=):

Roadway Alignment Base

Weight 0 - All

Signing Items

Weight 0 - All Existing items

Weight 1 - All Proposed items (if directed by Project Manager)

Borders

Weights as predefined in Seed Files

H. LINE STYLES

Use the following Line Styles (LC=):

Style 0 - Everything except as noted below

Style 2 - All “Existing” signs, which includes Retains & Removals

I. MENUS

SideBar Menu (M:\mst\standards\traffic\MDOTTS_V8MODE.SBM, F9 to load/
update this menu)

The menu is used to select various Levels, Text Sizes, Cell Libraries & Cells, User Commands and other Macros, Scales, Plotting, and, Placing Batch-Plot Shapes. Signing, Signals, and Typical/Maintaining-Traffic have their own respective menus. Use “Signs” for all Sign Contracts.

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Many menu selections from this Menu, and some Tutorials, access User Commands (UCM) by the way of a UCM Index number located in the User Command Index File (M:\mst\traffic\ucm\mastert.ndx). Each time MicroStation is restarted, the User Command Index must be reattached, and, can be automatically reattached by the "Startup" UCM. The Startup UCM is defined with the Configuration Variable "MS_INIT".

Function Key Menu (M:\mst\standards\traffic\MDOTTS_V8FUNC.MNU)

The Function Key Menu has these, and other shortcuts, to help with Signals. Go to "Workspace, Function Keys..." to view what each function key does.

F1	Help about the active MicroStation command.
Shift-F1	Loads Reverse B/W color-table
F2	Displays View Attributes dialog box.
Shift-F2	Loads B/W color-table
F3	Use to backup file to backup-folder. (Shft-Alt-F3)
Shift-F3	Loads standard color table
F4	Load IPLOT ("Plot" for consultant configuration)
Ctrl-Alt-F4	Load MicroStation plotting for the default Windows Printer
F5	Toggles "Parse All" on or off
F6	Utility to quickly edit Signal text and other text (not available for consultants)
F7	Move Element
F8	Copy Element
F9	Reloads blue sidebar menu
F10	Loads UIC Date for entering File-Name and Date into Datafields. (not available for consultants)
F11	Loads SignCAD (if installed & configured for V8)

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F12 Modify Text
0)

J. CELL WEB-BROWSER

(NOTE: the cell tutorials, that were used for J, no longer work in V8)
(html Cell Library pages have not been created for signing yet)

Using the html cell library pages:

These are web pages that list cells in a cell library. Clicking on a cell in the web page will activate the cell allowing it to be placed on a drawing.

- From the blue menu, select “E-link” or, from the V8 menu, select Utilities, Connect Web Browser.

- In the Internet Explorer (IE) that just opened, select File, Open.

-Browse to: M:\mst\cell\traffic\html\signals.htm
(or any other available cell library .html file listed here)
(for consultants, C:\mdotts_v8\mst\cell\traffic\html\signals.htm)

- Hit Open, then OK

- The cell library list opens in the IE web browser that is linked to V8. Select a cell from the web page to place in your file.

Use the IE “links” bar to create short cuts to each cell library .htm file.

Note that in IE 7, only the first browser tab is linked to V8, any new tabs that are opened will not function correctly to place cells.

It appears the web browser will not work in IE 8.

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K. CONTRACT SHEET

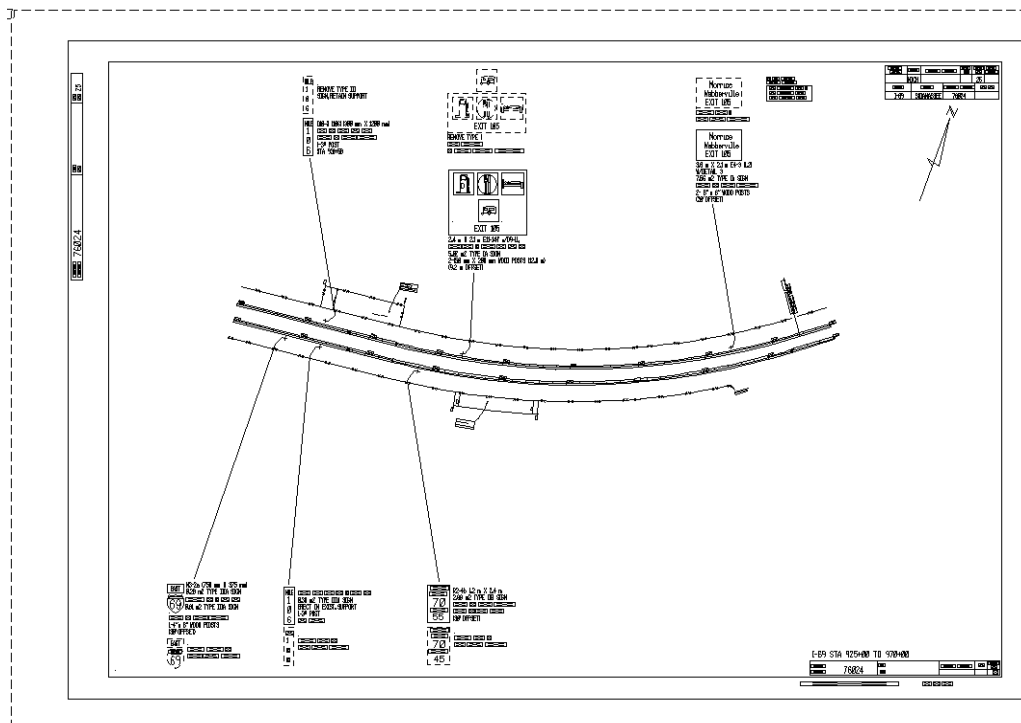
The standard Contract Border Sheet is 36" x 24". The standard size for printing to PDF is 17" x 11".

L. SAMPLE SIGN-CONTRACT LAYOUT FILES

(K:\mdot_v8\dgn\Signing, not yet available)

Use the following Sample Files as a guide to help layout Signing Contracts:

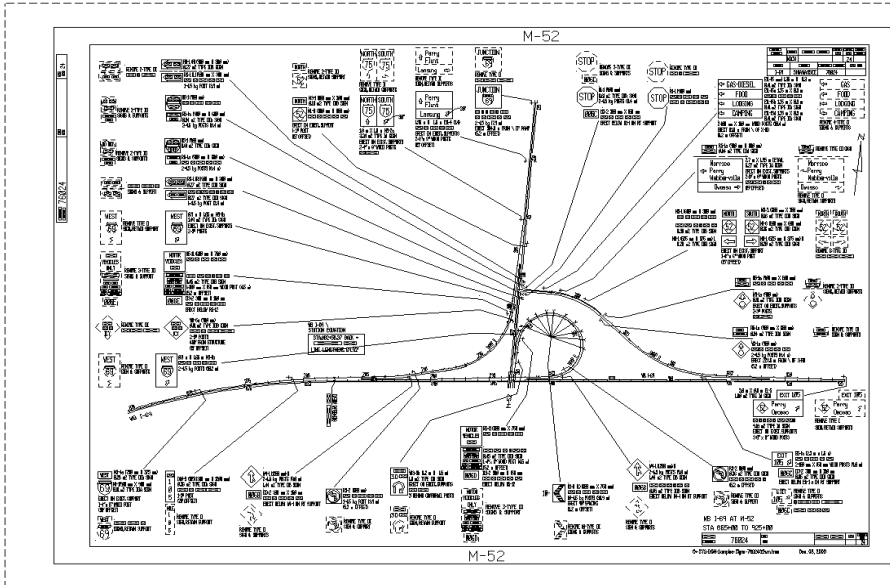
..... [updated V8 file not available] - Contract, between interchanges sample.



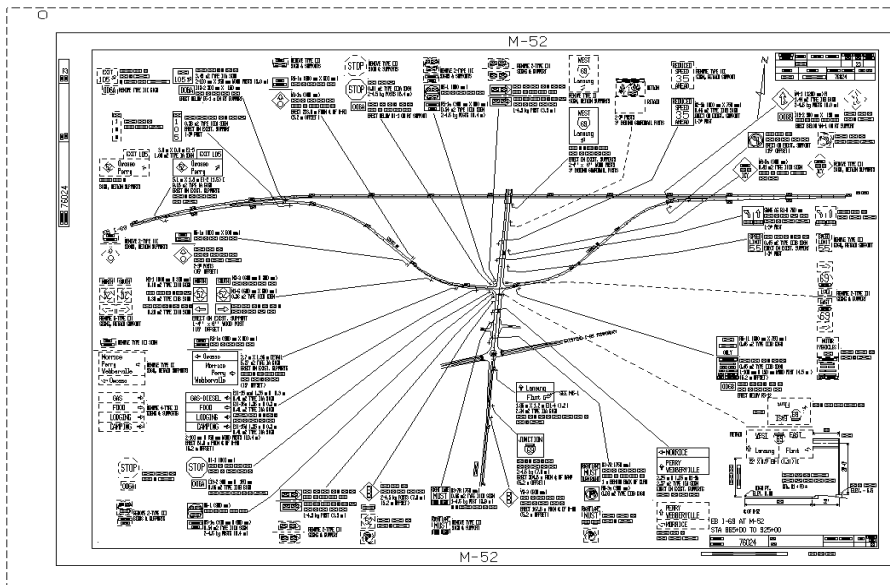
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..... [updated V8 file not available]- Contract, Interchange Sample



..... [updated V8 file not available]- Contract, Interchange Sample



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Inventory

A. INVENTORY SHEETS

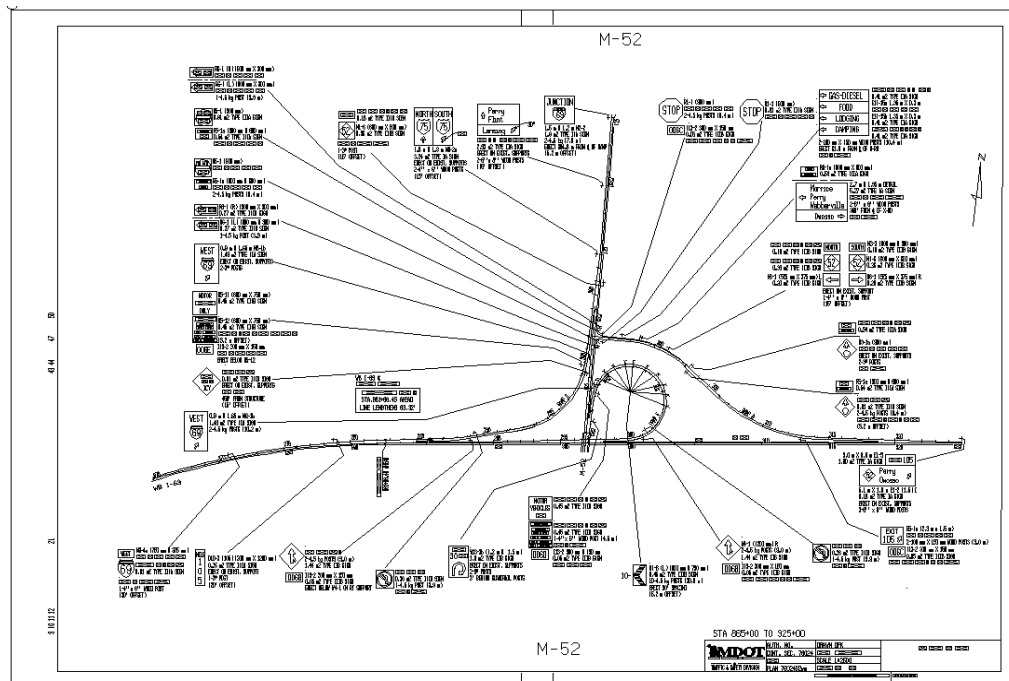
Inventory (as built) Sheets are to be created after Contract Sheets have been completed.

Levels TRAFFIC_SIGNS_RM (removals) and QUANT_SYMBOLS_PR (Quantities) are turned off.

Inventory sheets will display ONLY signs that remain after construction has been completed.

Sample Sign Inventory sheet

..... [updated V8 file not available]- Inventory Sample



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Consultant Guidelines (pp. 38-43)

**ADDITIONAL GUIDELINES
FOR
“SIGNING” CONSULTANTS**

Updated May 14, 2009

The following guidelines must be used in conjunction with the general Sign Contract procedures previously outlined in the “SIGNS”, “Contracts” & “Inventory” sections of this document.

I. TRAFFIC AND SAFETY REQUIREMENTS

A. MICROSTATION V8 REQUIRED

- Create Computer Aided Drafting and Design (CADD) Plans.

The CADD program used shall be MicroStation V8 from Bentley Systems, or, one that processes data exactly as MicroStation V8 with no file translations or system revisions being necessary by the Department.

B. ELECTRONIC FILES & FILENAMES

- Signing Contract files must be named using Control Section, stationing, and the correct file extension.

It is Imperative that Signing filenames use this scheme. **Filenames cannot be longer than the 8.3 DOS format**, this ensures that the quantity takeoff program “dump” will be able to read these filenames. Please refer to “A. SEED FILES & FILE NAMING” under the “SIGNS”, “Contracts” section of this document for further instruc-

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tions.

- **Submit electronic, MicroStation file(s) of each final plan sheet.**

An electronic MicroStation V8 file(s) of each final plan sheet(s) shall be submitted to Traffic & Safety, at the end of the contract, as soon as they are available. Separate files for Contract sheets and Inventory sheets are required.

1. ROADWAY BASE FILES

- **Submit line-roll file of the roadway alignment-base.**

The alignment-base file may be referenced to the individual Contract and Inventory sheet files.

2. SIGN UPGRADING PLAN-SHEET FILES (Contracts)

- **Submit test files at beginning of contract.**

Submit **one complete interchange and two between-interchange sheets** for preliminary review before completing the remainder of the contract sheets. This will allow Traffic & Safety personnel to inform consultant of any items that do not meet our standards.

- **Place each Sign Contract sheet in its own design file.**

In the future, quantities may be automated by sheet. One sheet per file should help this process.

- **Do Not rotate plan sheets views.**

Rotate base roadway reference file, if necessary. If a view (window) in the design file is rotated, text on point cells will not be orientated correctly.

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- Do Not drop sign cells.

Drop cells only if necessary to modify, text can be entered in data fields without the cell being dropped.

3. SIGN INVENTORY SHEET FILES (as built)

- Display only signs that remain after construction completed.

Levels TRAFFIC_SIGNS_RM (removals) and QUANT_SYMBOLS_PR (Quantities) are turned off.

- Change all sign leaders to solid (LC=0).

II. MICROSTATION SETUP

A. DOWNLOAD REQUIRED FILES

- Download the following files from MDOT's Traffic & Safety Web site at: <http://mdotwas1.mdot.state.mi.us/public/tands/plans.cfm>. Select "CADD User Files" from the "Microstation/CADD Files" category and hit the Search button or "Enter" key.

1. **MicroStation Configuration Files**

- Download **MDOTTS_V8.ZIP** from "0_V8_Workspace"
- Unzip this file, including folder structure, to C:\ to utilize the default file locations.
- Double-click c:\mdotts\README.BAT for further instructions.
- Includes only English Project Configuration Files.
- Includes Cell Libraries

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3. Updated Files

The following files can be downloaded separately to procure future updates.

- Cell Libraries from “0_V8_Sign_Cells”.
- Sample Sign DGN and Seed files from “0_V8_Seed”.
- Sign & Consultant Procedures from “0_V8_Signs_Readme CAD” (in "CADD Procedures" sub-category).

B. MICROSTATION CONFIGURATION NOTES

1. English MicroStation V8 Project Files

- “**MDOTTS_V8.PCF**” is the English Project Configuration File.
(A text editor can be used to view or edit this file)

- Double-click c:\mdotts_v8\ReadMe_v8.bat to view instructions about where to place the Project Files, this opens “**MDOTTS_V8.PCF**” in Windows Notepad.

2. User Commands (UCM's)

- UCM's are macros that facilitate switching between the various text sizes, backing up, and other repetitive tasks. “MicroStation Basic” is the updated Macro language and all UCM's may be replaced with Basic macros sometime in the future. A text editor can be used to view or edit them.

- A UCM backs-up the design file to c:\mdotts_v8\backup\ each time MicroStation is started, new file opened (note this doesn't back up the file just closed), or exited. **Use "File Close" to bypass the backup when exiting a Design file.**

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3. Font Resources

- **DESIGN.RSC** is the Font Resource file for fonts “8” & “16”, font 8 has replaced font 0 and is the standard font that the Design Division uses. Font 16 is used for legend on some Standard Highway Sign Details.

4. File Working Units

- The File Working Units shall be set to 1000 sub units per foot
- The correct Working Units are preset in each of the included Seed Files and Sample Files (when they become available).

III. MISCELLANEOUS

A. CONTACT INFORMATION

1. **CAD and Web Support for Traffic & Safety Division.**

- Dave Korman, Supervisor, Technical Services Unit
Phone: (517) 335-5993
Fax: (517) 373-2330
E-mail: kormand@michigan.gov

- John Trayler, Technical Services Unit
Phone: (517) 335-2997
Fax: (517) 373-2330
E-mail: traylerj@michigan.gov

2. **For details about signing installations.**

- Alonso Uzcategui, Manager, Traffic Signing Unit
Phone: (517) 335-2624.
E-mail: uzcateguia@michigan.gov

MDOT



Division of Operations, Traffic & Safety

1 - Unit Procedures, English

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3. Prepared by:

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