

2007 DES/BRG CONFERENCE

Large and Small Sign Summaries

In Microsoft Excel



Brent Hillebrenner, P.E.
Design Division
Plan Development

Overview – Large Sign Summary Spreadsheet

- Work in a text friendly environment
- Ease of Revision
- Calculates Steel Quantities
- Calculates Substrate Area
- Imports into Microstation

Where to Find the Spreadsheet...



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Director: Mark A. Marek

Plan Development

Section Head: Elizabeth Hilton
(512) 416-2689

We appreciate any feedback.

- [Organizational Chart](#)
- [Interactive Design Training](#) (Updated 01/05/07)

GOALS of the SECTION:

- Prepare preliminary designs and final PS&E in support of department letting schedule
- Recommend, test and implement state-of-the-art design tools within the department
- Train employees in design principles and practices

MICROSTATION 2004

- Comprehensive Set of [Cell Libraries](#) (Updated 07/06/07)
- Helpful Design [Tools Related to Using Cell Libraries](#) (Updated 07/27/07)
- [Truck Turning Templates](#)
- [Using Raster Images](#) in Microstation
- [Using Pen Tables and/or Batch Printing to Print Plan Sets](#) (Updated 07/27/07) **NEW**
- [Sign Summary Tools](#) (Updated 07/27/07) **NEW**
- [Quantity Summaries](#) (includes Landscape, Bridge and Force Account items) (Updated 07/27/07) **NEW**
- Automated [Index of Sheets and Plan Set Numbering](#) (Updated 07/27/07) **NEW**



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Director: Mark A. Marek

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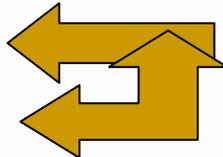
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(512) 416-2689

LARGE SIGN STRUCTURAL STEEL CALCULATIONS

- The following Excel spreadsheet (Sign_posts.xls) will calculate the Structural Steel quantities and background substrate needed for the Summary of Large Signs and allow the information to be placed directly into the SUML02.dgn file using Axiom.
- Download the Suml02.ini file and save it under "D:\Engapps\Axiom\Office". This file is used by Axiom to properly import the information into the Microstation file (SUML02.dgn). The instructions are on the first page of the Excel workbook.

▶ Download [Sign_posts.xls](#)

▶ Download [Suml02.ini](#)



SMALL SIGN SUMMARY

- The following Excel spreadsheet will allow the user to create the list of signs in the Excel Workbook and then copy and paste the information directly into Microstation using Axiom. (Small_Sign.ini and instructions are included in the spreadsheet)
- ▶ Download [Small Sign Summary.xls](#)

Instructions Tab

This Worksheet and Wind Zone Listings are Only Applicable for the Large Roadside Signs Section of the Traffic Standards

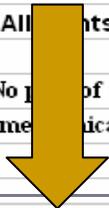
Instructions:

1. Download the "SUMML02.INI" file for use with Axiom.
Save the file under "D:\ENGAPPS\AXIOM\OFFICE".
2. Use the "Counties by Wind Zones" , worksheet to look up the Wind Zone for the specific county.
3. Fill in the information in "Worksheet". The user enters information into the highlighted areas.
The darker colored cells are to be used for information concerning exit number panels only.
4. Go to the "Microstation" worksheet and press "Ctrl+A".
5. Open SUMML02.dgn (the Microstation File that contains the Traffic Standard, SUMMARY OF LARGE SIGNS) then open Axiom.
6. In Axiom, choose "settings", File>> load settings and select the "SUMML02.INI". (File saved in Step 1)
7. Click on paste from within the Axiom Menu and snap to the lower left corner of the block labeled PLAN SHEET NO. to paste the information.

For assistance with this program please email: DES_PD_WEBHELP@dot.state.tx.us

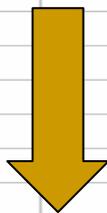
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Counties by Wind Zone Tab

	A	B	C	D	E
1	COUNTIES BY WIND ZONE FOR LARGE ROADSIDE GUIDE SIGNS				
2	ZONE 1		ZONE 2		ZONE 3
3	Brazoria		Andrews		Anderson
4	Chambers		Aransas		Angelina
5	Dallam		Archer		Atascosa
6	Galveston		Armstrong		Austin
7	Hansford		Bailey		Bandera
8	Hartley		Baylor		Bastrop
9	Hutchison		Borden		Bee
10	Jefferson		Briscoe		Bell
11	Lipscomb		Brown		Bexar
12	Matagorda		Calhoun		Blanco
13	Moore		Callahan		Bosque
14	Ochiltree		Cameron		Bowie
15	Orange		Carson		Brazos
16	Roberts		Castro		Brewster
17	Sherman		Childress		Brooks
18			Clay		Burleson
19			Cochran		Burnet
20			Coke		Caldwell
21			Coleman		Camp
22			Collinsworth		Cass
23			Comanche		Cherokee
24			Concho		Collin
25			Cottle		Colorado
26			Crane		Comal
27			Crockett		Cooke
28			Crosby		Coryell
29			Culberson		Dallas
30			Dawson		De Witt
31			Deaf Smith		Delta



INSTRUCTIONS / **Counties BY Wind Zones** / WORKSHEET / MICROSTATION /

Draw | AutoShapes | Line | Arrow | Rectangle | Circle | Text | Image | Table | Font Color | Background Color | Align | Zoom

Worksheet Input



Columns "A" – "H" : Sign Text & Size

	A	B	C	D	E	F	G	H	I	
1										
2				SIGN TEXT	SIGN DIMENSIONS		ROUTE SHEILDS, EXIT ONLY PANELS & OTHER ATTACHMENTS	BACKGROUND		
3										
4	PLAN SHEET NO.	SIGN NUMBER	SIGN BACK GROUND COLOR					WIDTH (FT)	HEIGHT (FT)	ALUMINUM (TYPE A)
5										
6										
7				EXIT 339	7.50	X	2.00		15.00	
8				SH 36				9.00		
9	14	5	GREEN	BRENHAM						
10				1/2 MILE	12.00	X	9.00		108.00	
11										
12										
13										
14										
15	14	6	BL							

SUMMARY OF LARGE SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN BACK-GROUND COLOR	SIGN TEXT	SIGN DIMENSIONS	BACKGROUND \$		
					ROUTE SHEILDS, EXIT ONLY PANELS & OTHER ATTACHMENTS	GROUND MOL	ALL (T
					ALUMINUM (TYPE A)	PLYWOOD (TYPE A)	ALL (T
14	5	GREEN	EXIT 339	7.5 X 2	15.00		
			SH 36			9.00	
			BRENHAM				
			1/2 MILE				108
14	6	BLUE	HOSPITAL				
			EXIT 339				

Microsoft Office

Place Block

Method: Orthogonal

Area: Solid

Fill Type: None

Fill Color: 3

Worksheet Input

Columns "L" – "O" : Sign Type

I	J	K	L	M	N	O
BACKGROUND SUBSTRATE (SQ FT)			ENTER "X"		TYPE OF MOUNT	
GROUND MOUNT		OVERHEAD	IF	WIND	NO.	PLYWOOD (0
PLYWOOD (TYPE A)	ALUMINUM (TYPE G)	ALUMINUM (TYPE O)	OVERHEAD SIGN	ZONE NO.	OF POSTS	OR ALUMINUM (1
15.00						
108.00				3	2	0

BACKGROUND SUBSTRATE (SQ FT)			TYPE OF MOUNT	"
GROUND MOUNT		OVERHEAD		
PLYWOOD (TYPE A)	ALUMINUM (TYPE G)	ALUMINUM (TYPE O)		
15.00				
108			3 2 0	1

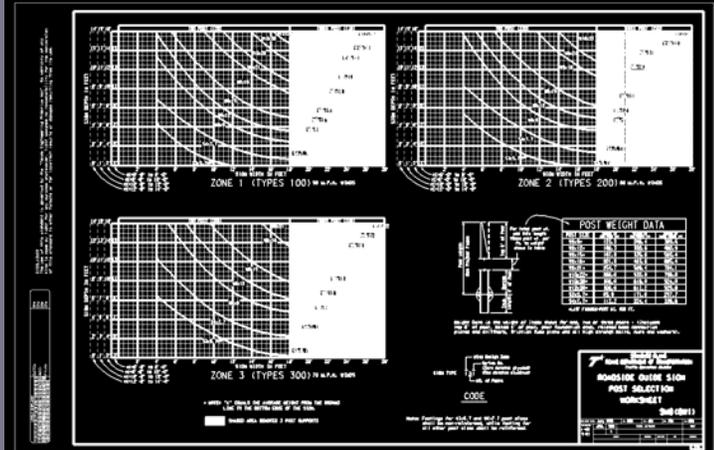
Worksheet Input

Columns "P" – "S": Weight of posts above ground

OF NT	"X" DIMENSION ϕ			GALVANIZED STRUCTURAL STEEL				DRILLED SHAFT				
	post ①	post ②	post ③	SIZE	LINEAR FEET			TOTAL WEIGHT LBS.	NON- REINF	LINEAR FEET REINFORCED		
	1.5	2.0			12" ϕ	24" ϕ	30" ϕ		36" ϕ			
2	1.5	2.0		W6X12	17.5	18.0		506.6	12.0			



The "X" dimension is the elevation difference at the post between the ground and the edge of pavement or top of curb.
Sign supports shall be located as shown on the plans, except that the

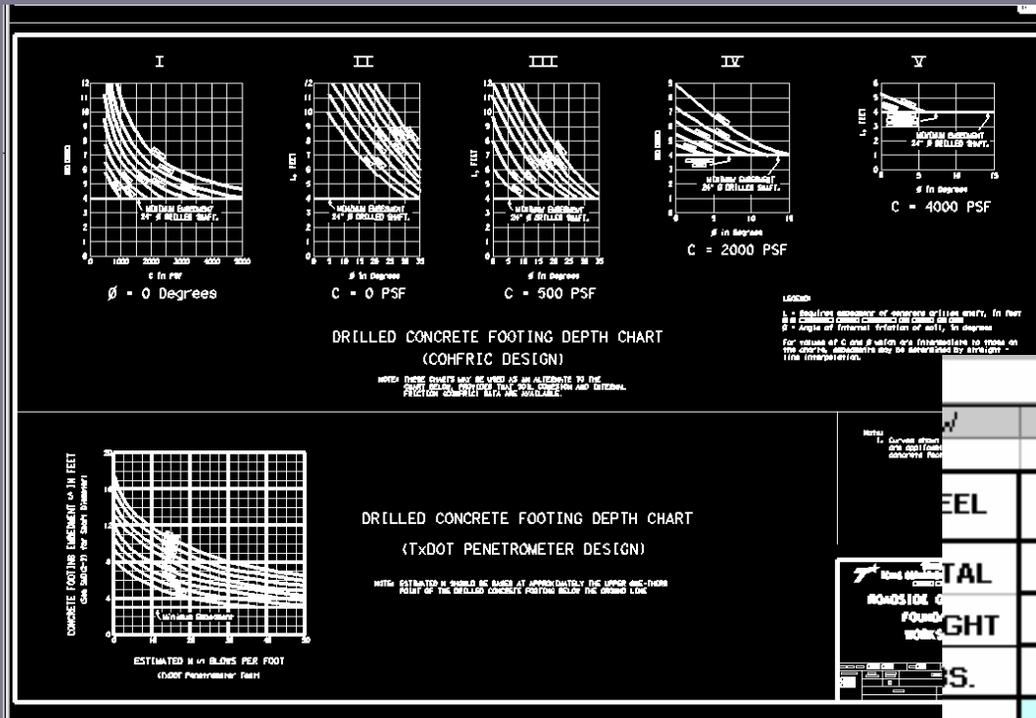


POST SIZE (SMD8.dgn)

P	Q	R	S	T	U	V	W		
				GALVANIZED STRUCTURAL STEEL					
			"X" DIMENSION	LINEAR FEET			TOTAL		
			POST	POST	POST		WEIGHT		
			1	2	3		LBS.		
			SIZE	1	2	3			
			1.5	2		W6X12	17.5	18	506.6

Worksheet Input

Columns "X" – "AA": Drill Shafts



	X	Y	Z	AA
FEEL	DRILLED SHAFT			
TOTAL	LINEAR FEET			
HEIGHT	NON-REINF	REINFORCED		
6.6	12"	24"	30"	36"
		12		

FOOTING DEPTH (SMD8.dgn)

Microstation Tab

	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	R	S	T	U	V	W	X
1					7.5	X	Z		15.00														
2				EXIT 339				9.00															
3	14	5	GREEN	SH 36																			
4				BRENHAM																			
5				1/2 MILE	12	X	9		108				3	2	0	1.5	2.0	W6X12	17.5	18.0		506.6	
6																							
7																							
8				HOSPITAL																			
9	14	6	BLUE	EXIT 339	10.5	X	4.5		47.25				3	2	0	2.0	2.0	S4X7.7	13.5	13.5		278.3	10.0
10																							
11																							
12																							
13				EXIT 339	7.5	X	2		15.00														
14	14	7	GREEN	SH 36				9.00															
15				BRENHAM	12	X	10		120				3	2	0	3.5	4.5	W6X12	20.5	21.5		584.6	
16																							
17																							
18																							
19																							
20				339	5	X	2		10.00														
21	14	8	GREEN	EXIT																			
22					6	X	5		30				3	2	0	1.5	1.5	S3X5.7	13.5	13.5		211.7	7.0
23																							
24																							
25																							
26				EXIT 344	7.5	X	2		15.00														
27	15	9	BROWN	SAN FELIPE																			
28				STATE PARK	15	X	8		120				3	2	0	1.8	0.8	W6X12	16.8	15.8		471.8	
29				2 MILES																			
30																							
31																							
32																							
33	29	13	GREEN	EAST IH 10	16.5	X	13.5	16.56					3	2	1	0.5	0.5	W8X18	21.0	21.0		799.6	
34				SAN ANTONIO						222.75													
35				WACO																			
36				EXIT 1 1/4 MILES																			
37								9.00															
38								9.41															
39	113	22	GREEN	IH 10 EAST	13	X	9.5						123.5	3	1								
40				EL PASO																			
41				VAN HORN																			
42																							
43																							
44				EXIT 15	8.5	X	2	9.00															
45	113	23	GREEN	LP 266				16.50															
46				ORCHARD BLVD	17	X	9.5																
47				1 1/2 MILE																			
48																							
49																							
50				EXIT 16	8.5	X	2	18.00															
51	113	24	GREEN	FM 1993				19.50															
52				MILITARY DR	15	X	10.75	36.25															
				EXIT ONLY																			



Press Ctrl-A

Importing into Microstation

U:\My Documents\Sign Posts\SUML02.DGN (2D - V8 DGN) - MicroStation V8 2004 Edition (1)

File Edit Element Settings Tools Utilities Workspace Applications Window Help Design TxBridge TxDOT Axiom

View 1

Microsoft Office Importer Settings - ...\Axiom\office\SumI02.ini

Font Formatting Size

Use same fonts as source document

Set default font: 1 LEROY

Use active font.

Advanced font mapping:

Roman (Times) Normal: 1 LEROY

Swiss (Arial) Bold: 1 LEROY

Modern (Courier) Italic: 1 LEROY

Script Bold-Italic: 1 LEROY

Symbol

Wingdings

Load Settings from

Files:

SumI02.ini

AccidentData.ini

office.ini

SumI02.ini

Directories:

D:\Engapps\Axiom\office\

D:\

Engapps

Axiom

office

Drives:

D:

Microsoft Office

RTF SETTINGS

AccuDraw

X: 357:0.6348

Y: 271:9.5519

SUMMARY OF LARGE SIGNS

NOTE: See sample data by turning on level 5.

Set Microsoft Office Importer parameters

Type=Text (GG), Level=Level 2

Level 1

Importing to Microstation

SUMMARY OF LARGE SIGNS

PLAN NUMBER	SIGN NO.	SIGN BACK-COLOR	SIGN TEXT	SIGN DIMENSIONS	SIGN TYPE	BACKGROUND SUBSTRATE (SQ FT)			TYPE OF SIGN	"T" DIMENSIONS			CALCULATED STRUCTURAL WEIGHT					
						GROUND MOUNT	ALUMINUM MOUNT	ALUMINUM TOWER MOUNT		POST	POST	POST	SIZE	POST	POST	POST		
14	6	GREEN	EXIT 354 RM 36 BRENNHAM 1/2 MILE	7.6 x 2 12 x 9	9.00	16.00	104		3.2	1.5	2.0	60x12	17.5	18.0	504.8	12.0		
14	6	BLUE	HOSPITAL EXIT 359	10.5 x 4.5		47.25			3.2	2.0	2.0	64x7.7	13.5	13.8	279.3	10.0		
14	7	GREEN	EXIT 354 RM 36 BRENNHAM	7.6 x 2 12 x 10	9.00	16.00	120		3.2	3.5	4.5	60x12	20.5	21.5	564.8	12.0		
14	4	GREEN	EXIT	8 x 2 8 x 6		16.00	30		3.2	1.5	1.5	63x5.7	13.5	13.8	211.7	7.0		
18	6	BROWN	EXIT 344 SAM FOLPE STATE PARK 2 MILES	7.6 x 2 15 x 6		16.00	120		3.2	1.8	0.8	60x12	16.8	15.8	471.8	12.0		
29	13	GREEN	EAST NORTH IN 10 US 47 SAN ANTONIO MICO EXIT 1 1/2 MILES	16.5 x 13.5		16.50	222.75		3.2	0.5	0.5	60x18	21.0	21.0	799.8	24.0		
113	22	GREEN	IN 10 EAST EL PASO WAM HOON	13 x 9.5	9.00 9.41			123.5	3	1								
113	23	GREEN	EXIT 10 LP 204 ORCHARD BLVD 1 1/2 MILE	8.5 x 2 17 x 9.5	9.00 16.00			17.00										
113	24	GREEN	EXIT 16 RM 1995 MILITARY DR EXIT ONLY	8.5 x 2 15 x 10.7	13.00 19.50 36.25			17.00										
PAGE TOTALS						122.25	485.25	222.75	480.25	PAGE TOTALS						2822.8	17.0	60.0

Microsoft Office...

X: 355:9.4200
Y: 270:11.9373

Fit View
Files: All

The "T" dimension for the structural difference on the sign should be checked and the effect of placement of the sign.

Sign heights shall be limited as shown on the plans. Signs shall be designed by using the sign quantity listed on the drawings. Where necessary to show a sign with a height greater than the quantity listed on the plans, the Designer shall advise the contractor in writing at least 14 days before fabrication.

The contractor shall verify the sign height before fabrication.

SUMMARY OF LARGE SIGNS

PLAN NO.	11-23	1-95
SIGN NO.	22	
DATE	4-24	
BY		
CHECKED		
APPROVED		

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SMALL SIGN SUMMARY

- The following Excel spreadsheet will allow the user to create the list of signs in the Excel Workbook and then copy and paste the information directly into Microstation using Axiom. (Small_Sign.ini and instructions are included in the spreadsheet)

▶ Download [Small Sign Summary.xls](#)



Open the Workbook – Instructions Tab

INSTRUCTIONS:

Fill in the information for the small signs in the "Summary 1" worksheet. If more than one Summary sheet is needed, then use Summary 2, Summary 3 etc. as needed.

In order to paste into Microstation, click the **"Copy Sheet"** button located at the top of each summary sheet

Pasting into the "Summary of Small Signs" Standard:

The "Summary of Small Signs" Standard may be downloaded by clicking the link below:

<ftp://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/standard/traffic/sums07.exe>

Click the "Create INI" button below to save the Axiom INI file to the *axiom\office* directory.

TxDOT users can find the directory under *d:\engapps\axiom\office*

Create INI

In the "Summary of Small Signs" DGN in Microstation, open Axiom to load the INI file saved in the previous step. Rotate the view so the sheet is in a portrait orientation and click the *Copy* button. Snap to the upper left hand corner of the text box in the upper left corner of the sheet. The text is placed on level 1.

Sample Data:

To see sample data in the "Summary 1" sheet click the button below.

Load Sample Data

For help with this program Please Email: DES_PD_WEBHELP@dot.state.tx.us

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Save the Axiom ini file

INSTRUCTIONS:

Fill in the information for the small signs in the "Summary 1" worksheet. If more than one Summary sheet is needed, then use Summary 2, Summary 3 etc. as needed.

In order to

Copying i

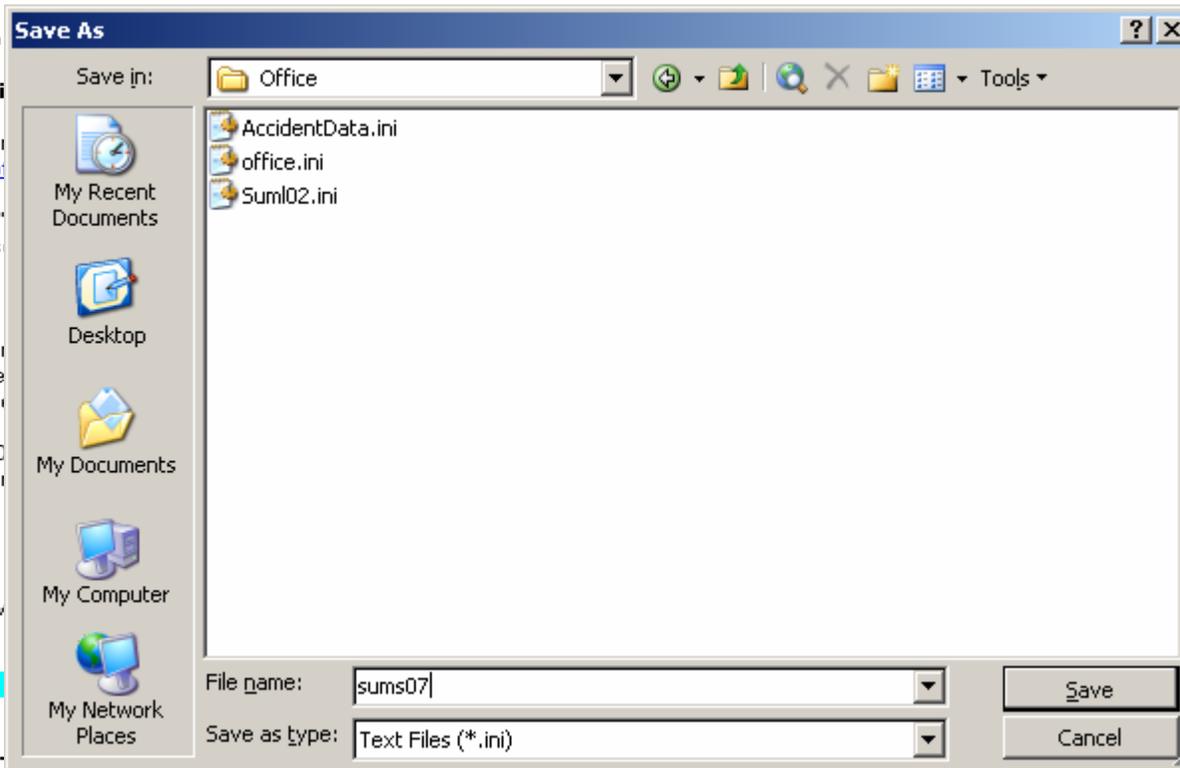
The "Sum
<ftp://ftp.do>

Click the "TxDOT us

In the "Sum
Rotate the
hand corn

Sample D
To see sa

For help w



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Instructions Tab – Load Sample Data

INSTRUCTIONS:

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In order to paste into Microstation, click the **"Copy Sheet"** button located at the top of each summary sheet

Copying into the "Summary of Small Signs" Standard:

The "Summary of Small Signs" Standard may be downloaded from here:

<ftp://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/standard/traffic/sums07.exe>

Click the "Create INI" button below to save the Axiom INI file to the ... \axiom\office directory.
TxDOT users can find the directory in d:\engapps\axiom\office

Create INI

In the "Summary of Small Signs" DGN in Microstation, open Axiom and load the INI file saved in the previous step. Rotate the view so the sheet is in a portrait orientation and click the Axiom paste button. Digitize the upper left hand corner of the text boundary of the sheet. The text is placed into level 1.

Sample Data:

To see sample data in the "Summary 1" sheet click the button below.

Load Sample Data

For help with this page, please Email: DES_PD_WEBHELP@dot.state.tx.us

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Sample Data

E7

SUMMARY OF SMALL SIGNS

Clear Sheet
 Complete

SMA RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

Post Type: FRP = FIBERGLASS, TWT = THIN-WALL, 10BWG = 10 BWG, S80 = Sch 88

Anchor Type: UA = Univer-Conc, UB = Univer-Bolt, WA = Wedge-Conc, SA = Slip-Conc, SB = Slip-Bolt

Mounting Designation: P = Prefab. "Plain", T = Prefab. "T", U = Prefab. "U", 1EXT or 2EXT = # of Ext. BM = Extruded Wind Beam, W/C = 1.12 #/ft Wing Chan., EXAL = Extruded Alum. Signs

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	SIGN DIMEN	SHEETING	LEGEND	BACKGROUND SHEETING	ALUMINUM TYPE A	ALUMINUM TYPE G	Post Type	Posts (1 or 2)	Anchor Type	Mounting Designation
101				120 X 12			C			TWT	1	WA	P
				24 X 12			C			10BWG	1	SA	T
				24 X 24			C			10BWG	1	SA	U
	M6-1B		LEFT ARROW SIGN	21 X 15			C						
	M1-6F		FARM ROAD 777	24 X 24			C						
	M6-3		STRAIGHT ARROW SIGN	21 X 15			C						
4	R1-1		STOP	30 X 30			C			TWT	1	WA	P
5	M3-1B		NORTH	24 X 12			C			580	1	SA	U
	M1-1A2		IH 89	24 X 24			C						1EXT
	M6-1B		RIGHT ARROW SIGN	21 X 15			C						
	M3-3B		SOUTH	24 X 12			C						
	M1-1A2		IH 89	24 X 24			C						
	MS-1BL		LEFT ARROW SIGH	21 X 15			C						
	M1-6F		FARM ROAD 777	24 X 24			C						
	M6-3		STRAIGHT ARROW SIGN	21 X 15			C						
	M2-1B		JCT	21 X 15			C			10BWG	1	SA	P
9	M1-1B2		IH 89	36 X 36			C						
102	1	W13-1A	STOP AHEAD	36 X 36			C			FRP	1	US	P
	2	W2-6B	HWY INT 1000 FT	48 X 48			E			10BWG	1	SA	T
	3	R2-1	SPEED LIMIT 55	24 X 30			C			TWT	1	UA	P
103	1	P5-1T	REST AREA 1 MILE	36 X 36	D		C			TWT	1	WA	P

INSTRUCTIONS

Summary 1

Summary 2

Summary 3

Summary 4

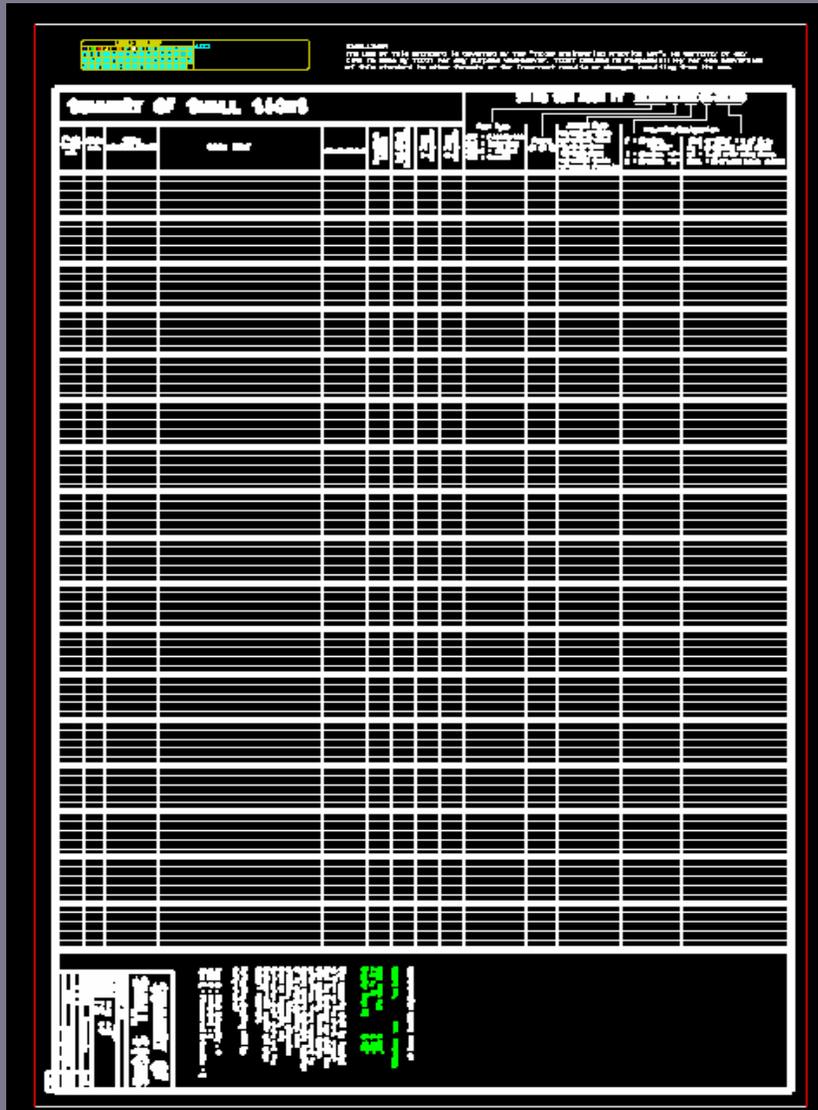
Summary 5

Draw | AutoShapes | [Drawing Tools: Line, Arrow, Rectangle, Circle, Text, Eraser, Undo, Redo, Copy, Paste, Fill, Stroke, Bullets, Numbering, Indentation, Orientation, Zoom]

Ready

Novell GroupWise - Mailbox

Importing into Microstation



sums07.dgn – Portrait Orientation

Importing into Microstation

U:\My Documents\Small Sign Summary\SUMS07.DGN (2D - V8 DGN) - MicroStation V8 2004 Edition (1)

File Edit Element Settings Tools Utilities Workspace Applications Window Help Design TxBridge TxDOT Axiom

View 1

Microsoft Office Importer Settings - ...\Axiom\office\SumI02.ini

Font Formatting Size

Use same fonts as source document

Set default font: 1 LEROY

Use active font.

Advanced font mapping:

Roman (Times) Normal: 1 LEROY

Swiss (Arial) Bold: 1 LEROY

Modern (Courier) Italic: 1 LEROY

Script Bold-Italic: 1 LEROY

Symbol

Wingdings

Set all to normal

Set all to default

Load Settings from

Files:

sums07.ini

AccidentData.ini

office.ini

SumI02.ini

sums07.ini

Directories:

D:\Engapps\Axiom\office\

D:\

Engapps

Axiom

office

OK

Cancel

Help

Microsoft Office

AccuDraw

RTF SETTINGS

343:6.4485

2:11.3051

To View Sample Data
Turn On Level 1

Set Microsoft Office Importer parameters

343:1.0949, 266:9.9563 KeyPt

Level 1

Importing into Microstation

LEVELS DISPLAYED												
1	2	3	4	5	6	7	8	9	10	11	12	13
1718192021	222324252627	2829303132	3334353637	38394041	42434445	464748	495051525354	555657585960	616263	ACC*		

DISCLAIMER

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SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSIONS	LEGEND SHEETING	BACKGROUND SHEETING	ALUMINUM TYPE A	ALUMINUM TYPE C	SM RD SGN ASSM TY XXXX(X)XX(X-XXX)				
									Post Type	Post	Anchor Type	Mounting Designation	
									FRP = Fiberglass TWT = Thin-Wall 108WC = 1/8 WC 980 = Sch 80	Post D or H	UA-Univer-Conc UB-Univer-Bolt 2A-31p-Conc 2B-31p-Bolt WS-Wedge Steel WP-Wedge Plastic	P = Prefab. "Plain" T = Prefab. "T" U = Prefab. "U"	1EXT or 2EXT Bx = Extruded WC = 1/2 W/P EVAL = Extruded
101						C			TWT	I	WA	P	
				120 x 12		C			108WC	I	SA	T	2EXT
				24 x 12		C			108WC	I	SA	U	
		M6-1B	LEFT ARROW SIGN	24 x 24		C							
		M1-6F	FARM ROAD T77	21 x 15		C							
	M6-3	STRAIGHT ARROW SIGN	24 x 24		C								
4	R1-1	STOP	21 x 15		C				TWT	I	WA	P	
5	M3-1B	NORTH	30 x 30		C				980	I	SA	U	1EXT
	M1-1A2	IN 89	24 x 12		C								
	M6-1B	RIGHT ARROW SIGN	24 x 24		C								
	M3-3B	SOUTH	21 x 15		C								
	M1-1A2	IN 89	24 x 12		C								
	M5-1BL	LEFT ARROW SIGN	24 x 24		C								
	M1-6F	FARM ROAD T77	21 x 15		C								
	M6-3	STRAIGHT ARROW SIGN	24 x 24		C								
9	M2-1B	JCT	21 x 15		C				108WC	I	SA	P	
	M1-1B2	IN 89	36 x 36		C								
102	1	W13-1A	STOP AHEAD	36 x 36		C			FRP	I	US	P	
	2	W2-8B	HWY INT 1000 FT	46 x 46		E			108WC	I	SA	T	
	3	R2-1	SPEED LIMIT 55	24 x 30		C			TWT	I	WA	P	

Summary – Large Sign Summary Spreadsheet

- Automatically Calculates
 1. SF of substrate
 2. Total length of each post
 3. Weight of steel
- Automatically sums columns
- Quick Microstation Input
- Easily updated

Summary – Small Sign Summary Spreadsheet

- Text friendly environment
- Quick Microstation Input
- Easily updated

Questions????

Design Division

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