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PRELIMINARY

COMPUTER AIDED DRAFTING STANDARDS

December 6, 1993

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MARICOPA COUNTY
ENVIRONMENTAL
MANAGEMENT AND
TRANSPORTATION
AGENCY

1001.001

EMTA CAD STANDARDS

CAD MANUAL MODIFICATION REQUEST FORM

DEPARTMENT: _____
DIVISION: _____
NAME: _____ SEC & PG: _____
PHONE: _____
DATE: _____

☐ CREATE & ADD NEW CELL*...CELL NAME: _____
☐ MODIFY EXISTING CELL.....CELL NAME: _____
☐ CHANGE CELL PARAMETERS...CELL NAME: _____
☐ EDIT CAD MANUAL TEXT

DESCRIPTION OF MODIFICATION: _____

_____

_____

_____

EXAMPLE

*Include MicroStation .dgn file of cell if applicable. All cells will be approved by committee before adding to /usr/udd/standards/cells/tada.cel

PARAMETERS				GRAPHIC TEXT			
LV=	WT=	AS=	CELL TYPE:	LV=	WT=	TJ=	FT=
LC=	CO=	PS=	RAPIDO PEN NO.=	CO=	LS=	TS=	TX=

December 6. 1993

EMTA CAD STANDARDS

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December 6. 1993

MARICOPA COUNTY

ENVIRONMENTAL MANAGEMENT AND TRANSPORTATION AGENCY

PRELIMINARY

COMPUTER AIDED DRAFTING STANDARDS

FOR

CONSTRUCTION PLANS

December 6, 1993

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1 - INTRODUCTION

1.1 Purpose: In March of 1992, a CAD standards committee was formed in the Maricopa County Department of Transportation (MCDOT). The purpose of this committee was to develop CAD (computer aided drafting) standards and integrate the use of CAD at MCDOT in the production of construction plans. This committee consisted of CAD technicians and engineers from the Engineering, Traffic Engineering, Real Estate, and Operations Divisions of MCDOT. Later a representative from the Flood Control District of Maricopa County (FCDMC) was added to the committee. MCDOT and FCDMC have computerized the production of the construction plans for many reasons, including the following:

a. Reduce time required to produce construction plans.
b. Reduce duplication of effort from project to project through standard details, symbols, borders, and standard methods of production.
c. Improve clarity and consistency of plans for contractors, inspectors, reviewers, and other agencies through the use of standard details, symbols, borders, and plan organization.
d. Improve the drafting flexibility by utilizing computer capabilities to move large blocks of graphics easily.
e. Enhance coordination between divisions via computer networking.
f. Enable graphics from previous CAD drawings to be reused for new projects.
g. Utilize computer graphics of construction plans for input into GIS applications.
i. Allow more than one draftsman (CAD Technician) to work on the same set of plans with no difference in style, appearance, or quality.
j. Utilize developing computer technology.
k. Free project managers, engineers, and technicians from most format and presentation decisions.

This manual will serve as reference documentation for the electronic standards used in drafting construction plans for all departments in the Environmental Management and Transportation Agency (EMTA) using Intergraph MicroStation computer aided drafting (CAD) software. It is hoped that this manual will assist in the efficient, consistent, and quality production of construction plans.

1.2 Scope and Limitation: This manual is intended to be used by MicroStation CAD operators in EMTA and at consultant engineering firms doing work for those departments that

require MicroStation. This manual is not a MicroStation reference manual. It is assumed that the users of this manual have been thoroughly trained in MicroStation and are proficient in its use.

Specialized portions of plans such as bridge structural plans are not addressed in this manual. Portions of this manual may apply only to in-house users, only to certain departments or divisions of EMTA, or only to consultants doing work for EMTA.

This manual is not complete and is preliminary in nature. Annual revisions to this manual are anticipated for the next 3-5 years as EMTA integrates the rapidly changing capabilities of computer drafting and design technology into its standards. This manual is intended to answer many questions and situations, but it will never address all possibilities or situations. The user will need to rely on his/her own experience, ingenuity, and common sense for many situations. This manual is not a design manual. For roadway design questions, please refer to the MCDOT Roadway Design Manual. Suggestions, corrections, and any concerns are welcome. Please use the form provided in the front pocket of this manual to communicate suggestions to the CAD Committee.

1.3 Using this Manual: This Manual consists of five main parts - computer diskettes, the written instructions, the symbol sheets in Appendix A, the standard border sheets in Appendix B, and the EMTA Descriptor Codes in Appendix C.

The 3 1/2" diskettes include the consultant versions of the following standard files for use in MicroStation software:

b.dgn	Standard border and title block
cbc.dgn	Standard concrete box culvert summary sheet
emta.cel	Transportation and Development Agency (TADA) standard cell library
emta.lvl	EMTA standard level table
emta.plt	EMTA standard CalComp plot configuration file
emta.tbl	EMTA standard color table
emtalib	EMTA standard font library
emta2d.dgn	EMTA standard 2D seed file
f.dgn	Standard face sheet reference file
font.rsc	EMTA standard font resource file for (version 4.4.0 and later)
fp.dgn	Standard full profile grid sheet
i.dgn	Standard signal interconnect sheet
n.dgn	Standard general notes sheet

p.dgn	Standard plan and profile sheet
ps.dgn	Standard pipe summary sheet
q.dgn	Standard quantity summary sheets (includes 3 versions)
s.dgn	Standard striping sheet
t.dgn	Standard signal sheet
00000f.dgn	Face sheet example file

For in-house InterPro users, the above files can be found on the InterPro server in Engineering as follows:

/usr/udd/standards/borders/f.dgn
/usr/udd/standards/borders/00000f.dgn
/usr/udd/standards/borders/b.dgn
/usr/udd/standards/borders/cbc.dgn
/usr/udd/standards/borders/fp.dgn
/usr/udd/standards/borders/n.dgn
/usr/udd/standards/borders/p.dgn
/usr/udd/standards/borders/ps.dgn
/usr/udd/standards/borders/q.dgn
/usr/udd/standards/cells/emta.cel
/usr/udd/standards/config/emta.plt
/usr/udd/standards/data/emta.lvl
/usr/udd/standards/data/emta.tbl
/usr/udd/standards/fonts/emtalib
/usr/udd/standards/fonts/font.rsc
/usr/udd/standards/seed/emta2d.dgn

B.dgn, cbc.dgn, fp.dgn, n.dgn, p.dgn, ps.dgn, and q.dgn files on the server contain both a consultant version of the border and an in-house version.

The written instructions portion of this manual is organized in the typical order the tasks of a typical set of construction plans are accomplished. Not all sections will apply for every department or every project.

Appendix A contains detailed information on the standard symbols. The symbols consist of MicroStation cells as well as symbols created without utilizing cells. The MicroStation parameters and application instructions (Notes) for each symbol are listed on the symbol sheets. Each sheet also contains a graphical representation of the symbol. General instructions for using the symbol sheets as well as an index are included in Appendix A.

Examples of the border sheets listed above as well as the consultant and in-house title blocks are shown in Appendix B. Application of the standards will be illustrated in a set of example plans to be included in a future release of this manual.

Appendix C contains standard EMTA survey data collector codes and instructions on their use.

2 - GENERAL STANDARDS

2.1 Software: In June of 1992, a decision was made by the Assistant County Manager for the Environmental Management and Transportation Agency (EMTA) that MicroStation would be the standard drafting tool for all construction plans produced by or for MCDOT or FCDMC. MCDOT is using Intergraph Corporation's MicroStation software for all of its engineering drafting. FCDMC is in the process of converting to MicroStation. Translated or raster files of construction drawings will not be accepted from consultants on contract with MCDOT. Some reasons for requiring MicroStation are as follows:

1. There have been many problems associated with the use of translated files submitted by consultants.
2. Completed plans can be archived electronically and used in future design projects adjacent to or within the limits of completed projects.
3. Archived projects can be used to develop a graphic database for GIS applications.
4. A majority of the state DOT's, including ADOT, use MicroStation.
5. Local utility companies and municipalities such as APS, SRP, Tempe, and Glendale use MicroStation.
6. The trend in roadway design seems to be towards the use of MicroStation to display graphics.
7. A majority of the engineering consulting firms are able to use MicroStation software.
8. MCDOT is using MicroStation for construction plans generated in-house. When both MCDOT personnel and consultant employees use the same software, communication will be enhanced as well as streamlining the plans production process.
9. Information sharing will be enhanced between MCDOT, consultants, and other agencies.

MCDOT uses Intergraph's InRoads software for civil design. MCDOT prefers that consultants doing work for them use InRoads. Other design software may be used as long as the format of the data files submitted to MCDOT are compatible with InRoads.

2.2 Standard Seed Files: The EMTA standard seed file is to be used for creating the master file and all sheet files. The seed file is named emta2d.dgn. This file is located on the disk included with this manual, and in the /usr/udd/standards/seed/ directory on the InterPro server at MCDOT. This file has the following parameters preset:

Working units (master units:subunits:positional units) =1:10:100

Auto Dimensioning (construction plan)
text node display (off)
enter data field display (off)
snap divisor equal to 2
cell library attachment (emta.cel)
reset abort fence operation (off)
level structure (emta.lvl)
color table (emta.tbl)
Coordinate readout (format=master units, accuracy=0.01)
Angle readout (format=DD MM SS, mode=bearing, accuracy=0.)
Global origin is set to (0,0) at the center of the design plane
Stack Fraction lock (on)
Snap (Keypoint), Graphic Group, and Association locks are on
Set hilite (white)

The above presets, except for the working units and global origin, are set for the convenience of the user. During the course of a project, these presets may need to be changed as the need arises. The working units must be as specified above except for structural detail sheets where feet and inches may be desired. All border sheets, text sizes, and cells are set up for these working units. For sheets where feet and inches are desired, use the MicroStation standard seed file sdarch2d.dgn located in the /usr/udd/standards/seed/ directory for in-house users. For InRoads .dgn files, use the standard MicroStation seed file sdmap3d.dgn (located in the same directory).

2.3 EMTA Font Library and Resource File: Beginning with version 4.4 of MicroStation, fonts are stored in a resource file (.rsc) instead of a font library file. The standard font library for EMTA is called emtalib and is included on the disk included with this manual and in the /usr/udd/standards/fonts/ directory at MCDOT. The standard font resource file is called font.rsc and is located on the disk and in the same directory. The TADA Font Library consists of the ADOT Font Library, with a few modifications, plus some additional symbol fonts for use in InRoads. The fonts included in the emtalib are shown in Table 2-1 (page 2-3). The EMTA font resource file contains all the fonts included in the emtalib file plus most of the standard MicroStation fonts and the SRP symbol fonts. These fonts are shown in Table 2-1a (page 2-4). The ADOT special characters in Fonts 1, 9, 23, and 24 have been modified as shown in the lower left portion of the table. Font 23 is the most widely used font. Other fonts are used as specified in the symbol sheets in Appendix A. In general, Fonts 1, 9, 23, and 24 are to be used in the production of plans. Fonts 91, 92 and 94 are Intergraph InRoads standard

EMTA FONT LIBRARY

/usr/udd/standards/fonts/emtalib

FT=	DESCRIPTION	EXAMPLE
1	ADOT Vertical Proportional (Modified)	ABC...abc...123
7	ADOT Old English (Appr. 2/3 TX=)	ABC...abc...123
9	ADOT Vertical Nonproportional (Modified)	ABC. . . abc. . . 123
23	ADOT Slanted Proportional (Modified)	*ABC...abc...123*
24	ADOT Slanted Nonproportional (Modified)	*ABC. . . abc. . . 123*
30	ADOT Swiss Bold	**ABC...abc...123**
42	ADOT Outline Proportional	ABC...abc...123
91	InRoads Symbols (Signs)	
92	InRoads Symbols (Surface)	
94	InRoads Symbols (Alignment)	
102	MicroStation Symbol (Terminators)	
126	ADOT Symbol Font	
127	ADOT Fast Font	ABC...abc...123

SPECIAL CHARACTERS

KEY	FT=1	FT=9	FT=23	FT=24
\	℄	℄	℄	℄
?	Δ	Δ	Δ	Δ
`	∢	μ	∢	∢
]	ℳ	ℳ	ℳ	ℳ
:	ø	ø	ø	Ø
~	ℒ	ℒ	ℒ	ℒ
[	±	±	±	±
>	f's	½	f's	f's
<	f'c	π	f'c	f'c
$	'/ft	$	'/ft	'/ft
(	1/3	1/3	ℱ	ℱ
!	ℙ	ℙ	ℙ	ℙ
)	2/3	2/3	2/3	2/3
^	°	°	°	°

NOTE:

With the "Stack Fractions" lock on, MicroStation is limited to reduced fractions that are commonly used in construction applications.

EMTA FONT RESOURCE FILE

/usr/udd/standards/fonts/font.rcs

FT=	DESCRIPTION	EXAMPLE
1	ADOT Vertical Proportional (Modified)	ABC...abc...123
2	FANCY	ABC . . . abc . . . 123
3	ENGINEERING	ABC. . . abc. . . 123
7	ADOT Old English (Appr. 2/3 TX=)	ABC...abc...123
9	ADOT Vertical Nonproportional (Modified)	ABC. . . abc. . . 123
23	ADOT Slanted Proportional (Modified)	*ABC. . . abc. . . 123*
24	ADOT Slanted Nonproportional (Modified)	*ABC. . . abc. . . 123*
26	GREEK	ΑΒΧ αβχ ΔΕΘ δεθ
30	ADOT Swiss Bold	**ABC...abc...123**
31	ISO_FONTRIGHT	*ABC...ABC...123*
32	font032	ABC...abc...123
41	ARCHITECTURAL	AØC. . . AØC. . . 123
42	ADOT Outline Proportional	ABC...abc...123
43	LOW_RES_FILLED	**ABC . . . abc . . . 123**
50	UPPERCASE	ABCDEFGH. . . 123
60	font60 symbol font	
91	InRoads Symbols (Signs)	
92	InRoads Symbols (Surface)	
94	InRoads Symbols (Alignment)	
100	ANSI_SYMBOLS	ABC. . . ∠—▱. . . 123
101	FEATURE_CONTROL_SYMB	ABC. . . ∠—▱. . . 123
102	Symbol (Terminators)	
108	SRP Symbol Font	
109	SRP Symbol Font (Pipes)	
110	SRP Symbol Font (Survey)	
111	SRP Symbol Font	
126	ADOT Symbol Font	
127	ADOT Fast Font	ABC...abc...123

symbol fonts. Font 102 is a MicroStation symbol font used for line terminators in auto dimensioning.

For all fonts except Font 7, the keyed-in text size is equal to the actual text size. In other words, if tx=10, then the actual size of the text is 10 feet. Font 7 reduces the size of the text keyed-in by a factor of 0.606. For example, if "tx=10" were keyed-in, the actual size of the text would be 6.06 feet. If a text height of 10' is desired in Font 7, then increase the keyed-in size by a factor of 1.65 resulting in tx=16.5 for this example.

Also included in the lower right corner of Table 2-1 is a note about fractions. When the fractions toggle is on (under element/text), MicroStation will stack the numerator over the denominator and reduce the size of the digits. This option is limited to reduced fractions that are commonly used in construction applications such as 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 3/4, 3/8, 5/8, 7/8, 3/16, 5/16, 7/16, 9/16, 11/16, 13/16, 15/16, ..., 63/64.

2.4 Text: The basis of TADA's text size and weight standards is the Leroy sizes and recommended Rapidograph pen numbers. Table 2-2 (page 2-6) lists the Leroy sizes and the associated pen numbers that would be used to match the computer text if done by hand. The pen numbers are slightly lighter than those recommended by Leroy. The table also shows the standard text sizes (in feet or master units) at various scales and their associated MicroStation weight. This table shall be the standard for text size and weight for all text appearing in EMTA MicroStation-generated drawings unless otherwise noted in the symbol sheets in Appendix A. This table does not apply to Font 7.

2.5 EMTA Color Table: The EMTA standard color table is entitled emta.tbl. This table is located in the /usr/udd/standards/data directory on the unix server at MCDOT. It is also contained on one of the disks included with this manual. This table does not allow the use of the "level number equals color number" system employed by some agencies using MicroStation. Color consistency problems from machine to machine have been encountered with this system. Also, it is sometimes hard to distinguish between the shades of 63 colors. Consistent colors are important for MicroStation users when sharing files between divisions, departments, and consultants. Emta.tbl consists of eleven basic colors that are consistent between the PCs and the InterPros at MCDOT. These colors were selected for ease of visibility on a standard monitor. The eleven colors and the typical uses of each are as follows:

TEXT PARAMETERS CHART

LEROY	PEN	WT	TEXT SIZES (ft) AT 1" = 20'	1" = 40'	1" = 50'	1" = 100	EXAMPLES
80	3x0	0	1.8	3.6	4.5	9	ABC abc 123
100	3x0	0	2	4	5	10	ABC abc 123
120	00	1	2.2	4.4	5.5	11	ABC abc 123
140	0	2	2.5	5	6.25	12.5	ABC abc 123
175	1	3	3	6	7.5	15	ABC abc 123
200	2	4	3.5	7	8.75	17.5	ABC abc 123
240	3	5	4.4	8.8	11	22	ABC abc 123
290	3	6	5.2	10.4	13	26	ABC abc 123
350	4	7	6.2	12.4	15.5	31	ABC abc 123
425	4	8	7.6	15.2	19	38	ABC abc 123
500	4	8	9	18	22.5	45	ABC abc 123

Color No.	Color Desc.	Typical Uses
0	White	Bar Scales, parameter tables
1	Blue	Drainage, irrigation, water facilities
2	Green	Construction centerline, sanitary sewer lines, sheet borders
3	Red	Breaklines, matchlines, north arrow, section lines & corners, traffic control items, electrical power facilities
4	Yellow	Property lines, right-of-way lines, easements, natural gas facilities
5	Purple	Survey centerline, survey benchmarks, road names, exist. roadway centerlines
6	Orange	Contour lines, dikes, dirt roads, CaTV facilities, telephone facilities
7	Light Blue	City limits, County lines, Federal boundaries, park boundaries, new edge of pavement, new curb and gutter, new sidewalks, new pavement, mailboxes,
8	Light Green	Traffic signs, vegetation,
9	Pink	Fences and walls,
10	Grey	Exist. curb and gutter, exist. guardrail, exist. sidewalks, exist. edge of pavement, exist. conc. items, railroad tracks, exist. misc. manmade features

The above typical uses for these colors are of a general nature. For specific uses and examples, refer to the symbol sheets in Appendix A.

The EMTA color table has the color parameters set for each color number listed above to give the described colors. If after emta.tbl has been loaded and attached to a file, the colors are significantly different than the color descriptions listed above, then adjust the colors in the color palette to match the color descriptions above.

2.6 EMTA Level Table: MicroStation levels are numbered, but they can also be named and placed with other levels under a group name. The level names and group names can be saved in a .lvl file. The level table can be attached to a file by selecting "Level Names" under Settings. The EMTA level table file is called emta.lvl. It is located on one of the disks included with this manual or in the /usr/udd/standards/data/ directory at MCDOT.

STANDARD LEVEL NUMBERS, NAMES AND DESCRIPTIONS

SURVEY GROUP

Number	Name	Description
1	sl	monument/section lines
2	seccor	sect cor, mon, BM syms, & text
3	survline	survey traverse and center lines
4	majcon	major contour lines and text
5	mincon	minor contour lines & spot elevs
6	cutfill	cut and fill lines
7	surbrk	survey symbols(break points)
8	surreg	survey symbols(regular points)

RIGHT-OF-WAY GROUP

Number	Name	Description
9	xrw	exist R/W & property lines
10	prw	prop or final R/W & TCE lines
11	esmt	utility easements
12	realtext	R/W text & dimensioning

EXISTING TOPO GROUP

Number	Name	Description
13	boundary	city, co, state, fed boundaries
14	xirrsd	exist dirt irr ditch & washes
15	xrdcl	exist road or street centerline
16	xveg	existing vegetation
17	fence	existing fences & block walls
18	xtopo	existing misc topo features
19	bridge	existing bridge topo features

UTILITIES GROUP

Number	Name	Description
20	xirr	existing irrigation facilities
21	xsd	existing storm drain facilities
22	tel	communication facilities
23	elec	electric power facilities
24	catv	cable TV facilities
25	gas	natural gas facilities
26	water	water facilities
27	sewer	sanitary sewer facilities
28	util1	add util type or company #1
29	util2	add util type or company #2
30	util3	add util type or company #3
31	-	unassigned
32	-	unassigned

STANDARD LEVEL NUMBERS, NAMES AND DESCRIPTIONS

NEW CONSTRUCTION GROUP

Number	Name	Description
33	cl	construction centerline
34	cltx	construction centerline text
35	consttan	const. centerline tangents
36	nrd	new roadway & misc features
37	nirr	new irrigation facilities
38	ndrain	new drainage facilities
39	nland	new landscaping features
40	nbridge	new bridge items
41	flood	new Flood Control Dist. struc
42	floodtx	Flood Control District text
43	future	future work by others
44	-	unassigned
45	-	unassigned

TRAFFIC GROUP

Striping Subgroup

Number	Name	Description
46	striping	traf pvmt markings & symbols
47	stripetx	striping text & dimensioning
48	sign	traffic signs and symbols
49	-	unassigned

Interconnect Subgroup

Number	Name	Description
50	inter	signal interconnect facility
51	-	unassigned

Signals Subgroup

Number	Name	Description
52	usignal	underground signal facilities
53	asignal	above ground signal facilities
54	-	unassigned

MISCELLANEOUS GROUP

Number	Name	Description
55	-	unassigned
56	-	unassigned
57	-	unassigned
58	bremat	break/match lines, north arrow
59	text	misc text & computer const lines
60	bordertx	sheet specific border text
61	border	sheet border and text
62	computer	computer parameter call outs
63	-	unassigned

When the level table is attached, the user can access different levels by either keying in the level number or level name (lv=level number or name). If the desired level is not known, then the user can search through the "Level Name" dialogue box for the proper level. The EMTA standard level structure is shown in Table 2-3 (pages 2-8 and 2-9).

It is important to follow this level structure so that all users involved can easily access common data for their particular use. For example, the Traffic Division of MCDOT uses only certain portions of the graphics generated by the consultant or the Engineering Division. They get eliminate graphics they don't need by turning off the appropriate levels. If the graphics are not consistently segregated by level, much time can be wasted "filtering out" the undesired graphics.

2.7 EMTA Cell Library: The standard TADA cell library is called emta.cel. It can be found on the disk included with this manual or in the /usr/udd/standards/cells/ directory on the InterPro server at MCDOT. Since there is no grouping capabilities within a cell library, the cells were named so that when the cells are sorted alphabetically, similar items are grouped together. For example, all the utility cells begin with the letter "U" for utility, all the tree and plant cells begin with the letter "V" for vegetation, etc. The symbol sheets in Appendix A give specific information on each cell and its application.

2.8 Borders: The standard sheet borders are dgn files and not cells. Because the borders are dgn files, they can serve as reference files which saves disk space and reduces the size of the cell library. The border files include the blank border with title block (b.dgn), MCDOT standard face sheet (f.dgn), FCDMC standard face sheet (f.dgn), MCDOT general notes sheet (n.dgn), the plan and profile sheet (p.dgn), the full profile sheet (fp.dgn), traffic signal sheet (t.dgn), the traffic signal interconnect sheet (i.dgn), the traffic striping/signing sheet (s.dgn), the quantity summary sheets (q.dgn), the pipe summary sheet (ps.dgn), and the concrete box culvert summary sheet (cbc.dgn). Examples of these blank sheets are in Appendix B. There are two versions of these files - one for in-house design and one for consultant use (see Appendix B). The difference between the two is in the title block. The consultant version allows for the placement of a company logo. The consultant version of the border files are included on the disks found in this manual and in the /usr/udd/standards/borders/consult/ directory on the InterPro server at MCDOT. The in-house borders are combined with the consultant borders in files located in the /usr/udd/standards/borders/ directory.

When the same borders are used more than once in a project (such as plan and profile sheets), project specific items such as the division name, the project title and work order number, and names of the designer, drafter, and checker, can be keyed-in once in the reference file and they will automatically appear in all the specific sheets. Copy the master border file into the project directory and rename using the 5-digit work order number and sheet number (see Table 2-5 on pages 2-13 and 2-14). Use the edit command to accomplish these changes. The small block just below the "checked" block and above the title block may be used for an additional item such as an approval block or project manager block. Sheet specific items such as the file name and plot date, stationing in the sheet title, and sheet numbers, can be changed by copying the text into the design file, editing the text and then turning off level 60 in the reference file. Delete the text "PRELIMINARY NOT FOR CONSTRUCTION" located in the engineer's stamp block just prior to making the final plot on mylar. All lines and text, except for sheet specific items, are on level 61.

The borders are designed to be used at any scale. The sheets are all drawn so that a 24" X 36" sheet is produced when plotted at 1"=100' scale. The border is 21" X 34" with 22" cut lines 1/2" above the top border line and 1/2" below the bottom border line. The final mylar sheets will be trimmed to the 22" cut lines for MCDOT federal aid projects only. If a scale other than 1"=100' is desired, then a scale factor must be applied. This will normally be the case for plan and profile sheets. The scale factor can be introduced in two ways. The first method, which may cause less problems, consists of referencing the border file into the design file by using a saved view and a master scale factor. If for example a 40-scale plan and profile sheet is desired, then from the "attach reference file" dialogue box, highlight the view name and key in a master scale of 0.40000. Then when a plot is desired, set the scale at 40. The second method consists of referencing the border file into the design file by using coincident attachment at 1:1. The reference file can then be scaled in the design file using the same master scale factor. If for example a 20-scale intersection sheet is desired, attach the reference file from the "attach reference file" dialogue box at 1:1. After the file is attached, use the "scale reference file" command and key a master scale of 0.20000. When a plot is desired, set the scale at 20.

<u>2.9 Master File</u>: The master file is a 2d design file containing all the survey data and all linear items for the entire project. The survey graphics, alignments and profiles may be converted from a 3d design file such as created using InRoads to 2d design file and referenced into the master

file. Utility, right-of-way, and property line locations will also be included into the master file. Most text and construction notes will not be included in the master file. This file may be used as a reference simultaneously by other divisions such as the Traffic and Real Estate Divisions at MCDOT, as well as used to develop specific plan sheets such as plan and profile, intersection detail, and storm drain sheets. The master file can be modified and those modifications will automatically appear in all files which have it referenced to them. For example, if the Engineering Division makes a change in the geometry of a roadway improvement, or a utility is relocated, these changes will appear in the Traffic Division plans that have the master file referenced to it. In this way, all divisions will have the latest graphical data. Also, the master file will make information sharing and future reuse of graphics easier because it is not broken up sheet by sheet and does not include borders and text. The continuous linear features in the master file (since they are not broken up sheet by sheet) will be easier to include in a graphical information system (GIS). Because of the reasons discussed above, all plans produced by or for MCDOT or FCDMC should be generated using a master file. When consultants prepare plans, the master file shall accompany each submission for each stage of the plans production process and shall not be copied into the plan sheets files.

2.10 Project File Organization: Each project plan set will consist of various computer files including a master file. Because these files may be shared by more than one division or department in EMTA, and they will be archived in one location, a standard file naming convention has been developed. The standard file names are shown in Table 2-5 (pages 2-13 and 2-14). The standard files listed in the table include the border files included on the disks in this manual and in the /usr/udd/standards/borders/ directory on the unix server at MCDOT. These files are to be copied into the project directory or referenced into a new file. For example, if a project note sheet was desired for a MCDOT project with a Work Order No. of 68269, the n.dgn file would be referenced into a previously created file named 68269n.dgn or be copied into a file named 68269n.dgn. If there is more than one file of a particular type of sheet, then the number of the sheet is added after the sheet type designation. For example, the third plan and profile sheet file for the project with a Work Order No. of 68269 would be called 68269p3.dgn. Files for single sheet types or the project specific reference files will not have sheet numbers in the file name. For instance, if there is only one typical section sheet for Project 68269, then the file would be named 68269ts.dgn. Also, a project specific plan and profile border sheet with the project name, designer name, etc.,

STANDARD EMTA CAD FILE NAMES

Standard Files

Standard border and title block.....b.dgn
Standard concrete box culvert summary sheet.....cbc.dgn
Standard face sheet reference file (Board of Supervisors block, County map, County seal, and department name).....f.dgn
Standard full profile grid and border sheet.....fp.dgn
Standard general notes sheet.....n.dgn
Standard pipe summary table and border sheet.....ps.dgn
Standard plan and profile grid and border sheet.....p.dgn
Standard quantity summary table and border sheet.....q.dgn
Standard signal sheet border and title block.....t.dgn
Standard interconnect sheet border and title block.....i.dgn
Standard striping/signing sheet border and title block..s.dgn

InRoads Design File

MicroStation 3d file for InRoads graphics.....00000inr.dgn

Master File

2d Project master file.....00000.dgn

Utility File

Project utility file for ref into master file.....00000u.dgn

Face Sheet

Project face sheet.....00000f.dgn

General Notes Sheet

Project general note sheet.....00000n.dgn

Typical Section Sheets

Only typical section sheet or ref file.....00000ts.dgn
First typical section sheet.....00000ts1.dgn
Ninth typical section sheet (max).....00000ts9.dgn
Combination typical section and quantity summary sheet.....00000tq.dgn

Quantity Summary Sheets

Only quantity summary sheet or ref file.....00000q.dgn
First quantity summary sheet.....00000q1.dgn
Tenth quantity summary sheet.....00000q10.dgn

Pipe Summary Sheets

Only pipe summary sheet or ref file.....00000ps.dgn
First pipe summary sheet.....00000ps1.dgn
Ninth pipe summary sheet (max).....00000ps9.dgn

Concrete Box Culvert Summary Sheets

Project concrete box culvert summary sheet.....00000cbc.dgn

Paving Plan and Profile Sheets

Only paving plan and profile sheet or ref file.....00000p.dgn
First paving plan and profile sheet.....00000p1.dgn
Ninety-ninth paving plan and profile sheet (max).....00000p99.dgn

Intersection Detail Sheets

Only intersection detail sheet or ref file.....00000in.dgn
First intersection detail sheet.....00000in1.dgn
Ninth intersection detail sheet.....00000in9.dgn

STANDARD EMTA CAD FILE NAMES

Storm Drain Plan and Profile Sheets

Only storm drain plan and profile sheet or ref file.....00000d.dgn
First storm drain plan and profile sheet.....00000d1.dgn
Ninety-ninth SD plan and profile sht (max).....00000d99.dgn

Irrigation plan and Profile Sheets

Only irrigation plan and profile or ref file.....00000w.dgn
First irrigation plan and profile sheet.....00000w1.dgn
Ninety-ninth irrigation plan and profile sheet(max).....00000w99.dgn

Detail Sheets

Only detail sheet or ref file.....00000de.dgn
First detail sheet.....00000de1.dgn
Ninth detail sheet (max).....00000de9.dgn

Pipe Profile Sheets

Only pipe profile sheet or ref file.....00000pp.dgn
First pipe profile sheet.....00000pp1.dgn
Ninth pipe profile sheet (max).....00000pp9.dgn

Mass Diagram Sheets

Only mass diagram sheet or ref file.....00000m.dgn
First mass diagram sheet.....00000m1.dgn
Tenth mass diagram sheet.....00000m10.dgn

Boring Log Sheets

Only boring log sheet or ref file.....00000b.dgn
First boring log sheet.....00000b1.dgn
Tenth boring log sheet.....00000b10.dgn

Landscaping Sheets

Only landscaping sheet or ref file.....00000l.dgn
First landscaping sheet 0000011.dgn
Ninety-ninth landscaping sheet (max).....00000l99.dgn

Traffic Signal Sheets

Traffic signal sheet ref file.....00000t.dgn
First traffic signal sheet.....00000t1.dgn
Tenth traffic signal sheet.....00000t10.dgn

Signal Interconnect Sheets

Signal interconnect sheet ref file.....00000i.dgn
First signal interconnect sheet.....00000i1.dgn
Ninety-ninth signal interconnect sheet (max)....00000i99.dgn

Striping Sheets

Only Striping sheet or ref file.....00000s.dgn
First striping sheet.....00000s1.dgn
Ninety-ninth striping sheet (max).....00000s99.dgn

Traffic Control (Detour) Sheets

Traffic Control sheet ref file.....00000tc.dgn
First traffic control (detour) sheet.....00000tc1.dgn
Ninth traffic control (detour) sheet (max).....00000tc9.dgn

Right-of-Way Sheets

Only Right-of-Way sheet or ref file.....00000r.dgn
First Right-of-Way sheet.....00000r1.dgn
Ninety-ninth Right-of-Way sheet (max).....00000r99.dgn

filled in, would be referenced to all the plan and profiles sheets, and this file would be called 68269p.dgn for this example. The "00000" designation in Table 2-5 represent a 5-digit Work Order Number for the specific project.

2.11 "Standard Road" Plans: An example set of roadway construction plans including traffic sheets will be developed for a future release of this manual. The example set is not included in this manual. When it is available, it will include example files of the more common sheet types on disk.

2.12 Plotting: Plots that are being distributed beyond a Department or being submitted to a department of EMTA shall be plotted on a plotter capable of producing 400X400 dots per inch (dpi). The plotting or print media shall be bond or a type that can be easily written on without discoloration. Final plots that are to be stamped shall be plotted on 24" wide mylar, or plotted on 24" mylar and trimmed to 22" for federal aid projects. Final plots may be plotted using a pen plotter. Each plot shall list the file name and date of the plot in the lower left corner of the sheet as shown in the standard border sheets in Appendix B.

The plotter pen table shall be set up so that the following Rapidograph sizes are met as closely as possible for the corresponding MicroStation weights:

Rapidograph Pen No.	Rapidograph Size (mm)	400X400dpi UOR	MicroStation Line Weight
6X0	0.13	2	0
000	0.25	4	1
0	0.35	6	2
1	0.50	8	3
2	0.60	10	4
2.5	0.70	11	5
3	0.80	12	6
3.5	1.00	16	7
4	1.20	19	8

The EMTA standard MicroStation plot configuration file for plans production is a CalComp file named emta.plt. It is located one of the disks included with this manual and in the /usr/udd/standards/config/ directory on the Unix server at MCDOT.

2.13 Basic Unix Commands: The operating system for the InterPros in MCDOT is Unix. Table 2-7 (page 2-16) lists some of the common Unix commands for the benefit of in-house users.

UNIX COMMANDS

Unix Command	Function
cd (subdirectory name)	changes the current directory to the subdirectory
cd ..	changes the current directory to the parent directory (1 level up)
cd ~	changes the current directory to the home directory
control c	cancels Unix command
cp (path1) (destination path)	copies a file
dtu (filename)(filename)	translates a Dos ASCII file to a Unix file and places it into the InterPro's current directory
dtu -p '*.*' .	translates all Dos files from the floppy drive to the InterPro's current directory
dtu -p (filename) (filename)	translates a Dos binary file to Unix into the InterPro's current directory
esc j	scrolls forward through Unix commands (after esc k is used)
esc k	scrolls back through previous Unix commands
ls -ls	lists all files (long)
ls	lists all files (short)
mkdir (directory name)	creates subdirectory in current directory
mv (path1) (destination path)	moves or renames a file
passwd	changes the password (must be at least 6 characters one of which must be numeric or special and two must be alpha)
pwd	lists the current directory
rm (filename)	deletes file
rm -i *.dgn	deletes all files in the directory that end in ".dgn" after keying in "y" after each file name prompt
rmdir (directory name)	deletes an empty directory
utd (filename) (filename)	translates a Unix ASCII file to Dos on the floppy drive
utd -p *.* a:	translates all Unix files in the current directory to Dos on the floppy drive
utd -p (filename) (filename)	translates a Unix binary file to Dos on the floppy drive
/	root directory
/usr/lib/lpd/	line printer daemon

3 - SURVEY STANDARDS

3.1 Field Survey Standards: Field Data shall be accumulated utilizing the EMTA Descriptor Codes listed in Appendix C and the command codes in Table 3-1 (page 3-3). The DESCRIPTION column in Appendix C describes when to use each code. The CODE/FEATURE NAME are used in the field and in InRoads to produce the proper graphic survey symbol. All output must be compatible with Intergraph Microstation and InRoads.

3.2 Field Methods: All location of data collected must comply with the location descriptions in Appendix C. At least two (2) known points must be observed and verified prior to collecting data. At least one (1) known point must be observed after the data collection is complete.

3.3 Descriptor Codes: Descriptor Codes are short code names for features that are entered into the Data Collector. These codes and descriptions are listed in Appendix C. These codes are to be entered into the data collector at the time of the observation.

3.4 Command Codes: Table 3-1 lists the command codes. The codes in Table 3-1 that are preceded by an asterisk are linear features that require command codes. The command codes are to be utilized by data collectors to generate automatic linework with the Tripod Data System's (TDS) Easy Survey software. These codes are entered prior to the feature they are referring to. Then each feature with the same code will be connected as the command code dictates.

Example: command code "BEG" - starts a line segment and lifts the pen at the previous point and lowers it at the next observed point. If the survey party wishes to locate a barbed wire fence on the left side of the section line and the fence runs for 660 feet approximately parallel to the section line they would input the following:

- Enter Note "BEG"
- Take side shot and enter descriptor code "LFBW" at the beginning of the fence
- Each time code "LFBW" is entered, Easy Survey will connect it to the line.

3.5 Tripod Data Systems (TDS) Software: MCDOT is currently using TDS Easy Survey Version 4.13. This software has many features which enable the user to:

1. Down load the Data Collector's raw data file.
2. Edit the raw data
3. Process the raw data and convert it to a coordinate file in a format acceptable to any current CAD

program.

4. Plot points and linework.
5. Perform COGO functions
6. Perform survey adjustments.
7. Compute and draw contours
8. Convert screen plot to Intergraph Microstation format.
9. Generate a ADF file that can be imported directly into InRoads and generate a 3D surface.
10. Generate an ICS file that can be imported directly into InRoads and generate figures.

3.6 File Transfer to InRoads: The raw data file must be converted to Intergraph ADF format for use by the Engineering Division on their Intergraph InRoads program. All Survey data submitted by a survey consultant shall be in ADF format.

COMMAND CODES

CODE	DESCRIPTION
BEG	STARTS A LINE SEGMENT. LIFTS THE PEN AT THE PREVIOUS POINT AND LOWERS IT AT THE NEXT OBSERVED POINT.
C2 C2###,###	THE NEXT TWO POINTS ARE THE BEGINNING AND END POINTS OF A CURVE. WHEN THE RADIUS [###,###] IS NOT SPECIFIED, THE TWO POINTS ARE ASSUMED TO BE TANGENTS (PC AND PT OF THE CURVE). C2 DOES NOT LIFT OR LOWER THE PEN (UNLESS BEG IS ALSO SPECIFIED).
C3	THE NEXT THREE POINTS ARE THE BEGINNING, MIDDLE, AND END POINTS OF A CURVE. C3 DOES NOT LIFT OR LOWER THE PEN (UNLESS BEG IS ALSO SPECIFIED).
END	ENDS THE LINE SEGMENT AND LIFTS THE PEN.
JFS	JOINS THE CURRENT POINT TO THE FIRST POINT IN THE SAME FEATURE CODE. JFS DOES NOT LIFT THE PEN.
JN	JOINS THE CURRENT POINT TO THE NEXT OBSERVED POINT, REGARDLESS OF THE CODE, WITHOUT LIFTING THE PEN.
JNS	JOINS THE CURRENT POINT TO THE NEAREST POINT OF SAME CODE, WITHOUT LIFTING THE PEN.
JP####	JOINS THE NEXT OBSERVED POINT TO THE SPECIFIED [####] POINT, REGARDLESS OF THE CODE. IT LIFTS THE PEN TO THE SPECIFIED POINT AND LOWERS THE PEN TO DRAW A LINE TO THE NEXT OBSERVED POINT.
JPS	JOINS THE NEXT OBSERVED POINT TO THE PREVIOUS POINT OF THE SAME CODE. IT LIFTS THE PEN TO THE PREVIOUS POINT AND LOWERS THE PEN TO DRAW A LINE TO THE NEXT OBSERVED POINT.
JT####	JOINS THE CURRENT POINT TO THE SPECIFIED [####] POINT, REGARDLESS OF THE CODE, AND DOES NOT LIFT THE PEN.
SS	INDICATES A SIDE SHOT TAKEN FROM THE LAST POINT.

6 - MASTER FILE

6.1 General: The master file is a 2D file created using the emta2d.dgn seed file. This file shall be named 00000.dgn, where "00000" refers to the County Work Order Number. For example, if the work order number is 68269, then the master file name would be 68269.dgn. It shall contain survey symbols, survey lines, section lines, contour lines, property and right-of-way lines, existing items, most linear proposed items, and utilities. Text and patterning will be kept to a minimum. When text is necessary, place it on level 59. All items placed in the master file shall follow the standard level system listed in Table 2-3 (pages 2-8 and 2-9) and be drawn 1 to 1. The symbols and patterns shall be placed at the appropriate scale for the anticipated plotting scale. For example, if the plans will be plotted at 40 scale, place cells at an active scale or pattern scale of 0.4 unless directed otherwise in the symbol sheets. The master file will be used as a reference to create many sheet files including: plan and profile sheets, intersection detail sheets, signal sheets, striping sheets, signal interconnect sheets, storm drainage sheets, landscape sheets, and irrigation sheets. These sheet files are often referred to as the "design file".

6.2 Survey Symbols: Survey symbols are generated in InRoads or other software that are used to graphically construct existing items. InRoads uses a 3D MicroStation file to store graphics. This 3D file may be converted into a 2D MicroStation file. This 2D file many then become the project master file. Many of these symbols define points along a linear feature such as the edge of pavement or fences that are not to be displayed on the final construction plans. They shall be on level 7 in the master file. Some non-linear survey symbols will be on level 8. These levels will be turned off in the sheets where the master file is referenced.

6.3 Survey Lines: Survey lines include survey centerlines, traverse lines, or other types of control lines. These lines will be on level 3 of the master file and will in most cases be turned off for the final plans.

6.4 Section Lines: Section lines and monument lines shall be included in the master file but shall not be patterned. When the file is referenced to the design file, these lines shall be copied in and patterned. Then reference level 1 will be turned off in the design file.

6.5 Contour Lines: Contour lines are generated in InRoads or other software and imported to the master file. A 3D to 2d conversion will be necessary. The contour lines normally

won't be shown on the plans so levels 4 and 5 in the reference file will need to be turned off in the design file.

6.6 Property and Right-of-Way Lines: These lines may be generated by the Real Estate Division of MCDOT or FCDMC, and then imported into the master file. These lines will not be patterned in the master file. When the file is referenced to the design file, these lines shall be copied in and patterned. Then reference Levels 9,10, and 11 if applicable, will need to be turned off in the design file. Assessor Numbers, owner names, and Real Estate Division's Item Numbers shall be on level 12 and imported into the design files.

6.7 Existing Items: City, County, State, and Federal boundaries shall be input into the master file. These lines will not be patterned in the master file. When the file is referenced into the design file, these lines shall be copied in and patterned. The reference Level 13 will need to be turned off in the design file. Existing fences may be patterned in the master file.

6.8 Linear Proposed Items: Proposed construction centerlines may be imported from InRoads or other software, or be patterned in the master file. No pattern scale is necessary. All linear features such as edge of pavement, curbs, ditches, and storm drains shall be placed in the master file. Notes, dimensions and text associated with the proposed features shall be placed in the design file. Future items to be constructed by others shall also be placed in the master file on Level 43.

6.9 Utilities: Existing utilities locations shall be placed in the master file from utility facility maps or location companies. These lines will not be labeled in the master file (except for level 59). Utility lines will be labeled in the design file. Place the appropriate label, as specified in Utility section of Appendix A, and then use the reference file masking command to hide the portion of the utility line under the text.

6.10 Saved Views: Determine the size of the area to be referenced into the plan view of the design files. This area represents the portion of the graphics to be placed in each plan sheet. The size of the area will depend on the sheet type and plotting scale desired. For a plan and profile sheet to be plotted at 40-scale, the size of the area will be 300' wide by 1000' long. Construct a rectangle or shape of the appropriate size on level 59 so that it can be turned off later. Copy and rotate (as necessary) this shape along the alignment to determine which areas will be

referenced into each plan sheet. Window in the area to be referenced into a view. Save this view for the plan sheet by using the "Saved Views Palette" accessed from the "View, Saved" menu. Name the saved views according to the plan sheet number and list the station range in the description. For example, if the sheet were the 3rd plan and profile sheet and went from station 15+00 to 25+00, the saved view name would be named "p3" and the description would be "Sta 15 to 25".

8 - PLAN AND PROFILE SHEET

8.1 General: The Plan and Profile Sheet Border should be used for any plan and profile application such as general roadway construction plans, storm drain plans, irrigation plans, and any other plans that need both plan view and profile. Create a new plan and profile sheet by using the emta2d.dgn seed file. This new file will be named 00000p3.dgn if it is the 3rd paving plan and profile sheet of a project with a County Work Order Number of 00000. Refer to the symbol sheets in Appendix A for details on the symbols and layout of plan and profile sheets.

8.2 Border: The standard plan and profile border consists of a 2D MicroStation file named p.dgn (see Appendix B page B-11). This file contains the border, the profile grid, the Federal Aid block, the title block, a revision block, and a note column complete with REMOVAL/RELOCATE and CONSTRUCTION sections. For in-house use, this file can be found in the /usr/udd/standards/borders/ directory . This file is also located on one of the disks included in this manual. Place a copy of p.dgn in the project directory. Rename it 00000p.dgn (00000 refers to the County Work Order Number). Make all project specific changes to this file such as project name, work order number, the sheet title and maybe the designed by, drafted by, and checked by boxes and dates. These changes can be made by editing the text in the file. This project specific file (00000p.dgn) will then be referenced into each design file. Changes that are sheet specific, such as sheet numbers and stations, will need to be changed after the referencing has taken place. This text is placed on level 60. This text will have to be copied in and edited in each plan and profile sheet. Level 60 would then be turned off in the reference file (00000p.dgn). P.dgn is drawn so that a 24" X 36" sheet is produced when plotted at 100 scale. If a different scale is desired, apply a scale factor when referencing 00000p.dgn to your plan and profile sheet file and plot at the desired scale. For example, if you want a 40 scale drawing, apply a scale factor of .4 when referencing 00000p.dgn and plot at 40 scale. The same result is achieved if the copied p.dgn is fenced and scaled with a .4 scale factor and plotted at 40 scale. The border shall not be copied into the design file.

8.3 Bar Scale: A 40-scale horizontal bar scale is included in the p.dgn border file. If the scale is to be something other than 40-scale, delete the 40-scale bar scale from the project specific border (00000p.dgn) and replace it with the appropriate bar scale. Other bar scale cells are available in the emta.cel cell library for 20-scale, 50-scale, and 100-scale applications. These cells are named bar20, bar50, and bar100 respectively. The active scale at which these

cells are placed depends on whether or not the sheet border has been reduced by the plotting scale divided by 100 scale factor. For example, if the plotting scale is 20 and the border has not been reduced by the factor of 0.2, then place the bar20 cell at an active scale of 5. If the border has already been reduced by the scale factor of 0.2, then place the bar20 cell at an active scale of 1.

8.4 North Arrow: The north arrow shall be placed using the "north" cell located in the emta.cel cell library. This symbol shall be placed in the upper right corner of the plan section of the plan and profile sheet. If north is close to 90 degrees (up), the north arrow shall be centered between the match line and the left note column line. If most of the sheets are oriented the same, it may be desirable to place the north arrow in the 00000p.dgn file. The 00000p.dgn file may be copied and the north arrow rotated 90 degrees for cross street plan and profile sheets.

8.5 Master File: Portions of the master file shall be referenced to each plan and profile sheet. Attach the appropriate saved view to the plan and profile sheet at 1:1. Rotate the reference file so that the main line alignment is horizontal. Move the reference file so that the construction centerline is centered in the plan section of the plan and profile sheet and the centerline "ticks" line up with the appropriate grid lines in the profile. Active points are included in the border reference file to assist in the placement of the master file saved view. Eliminate extraneous graphics by using the reference file clip command. Construct a fence using the additional active points in the border reference file. This will result in a rectangular shaped fence. For alignments with non-parallel match lines, the clip boundary will be a shape. The maximum size of the rectangular fence will depend on the plotting scale and will be as follows:

SCALE	LENGTH (FT)	WIDTH (FT)
100	2500	750
50	1250	375
40	1000	300
20	500	150

Use the "Define Reference File Clipping Boundary" command from the Reference file palette to clip the file.

The clipped portion of the master file shall not be copied into the plan and profile sheet file.

8.6 Profile: The profile grid consists of Microstation line code 1 lines that form a 1/2" grid. The lines are weight 0 except alternating vertical lines are weight 1. The lines

are on level 61. The parameters for the station and elevation callouts are as follows:

```
wt=3
co=3
tx=15(100),7.5(50), 6(40), 3(20)
lv=60
TJ=CC
ft=1
```

The "X"s in the lower left corner of the profile can be copied into the sheet file and edited. Then all stations and elevations can be placed by snapping to the appropriate active point and using the copy and increment text command in Microstation. Level 60 is then turned off in the reference file.

The existing and new profiles may be generated in InRoads or other software and converted to a 2D MicroStation file. This 2D file may then be imported to the appropriate plan and profile sheet.

<u>8.7 Notes</u>: A note column is provided in which removal, relocate, and construction notes are to be placed. Existing items that are to be removed or relocated are to be called out and listed under the heading "REMOVAL/RELOCATE" at the top of the note column. New construction items are to be called out and listed under the heading "CONSTRUCTION". The "CONSTRUCTION" heading is a cell called "const" that can be placed anywhere in the note column under the removal/relocate notes. Just snap to one of the note number active points for placement. Active points are provided for placement of both the note number and the note itself. Copy the symbol (square for removals and relocations, and a circle for construction) to the desired locations using left column of active points. Then place the note number in each symbol. The text parameters for the numbers are as follows:

```
wt=2
co=3(removals/relocations), 2(construction)
tx=12.5(100),6.25(50), 5(40), 2.5(20)
lv=60
TJ=CC
ft=1
```

Use the right column of active points to place the notes. The text parameters for the notes are as follows:

```
wt=2
co=3(removals), 2(construction)
tx=12.5(100),6.25(50), 5(40), 2.5(20)
lv=60
```

TJ=LT
ft=1
LS=6.25(100), 3.125(50), 2.5(40), 1.25(20)

The note callouts shall consist of the note symbol (square or circle) with a number placed inside that corresponds to the note in the note column with the same number and symbol. The note leader shall be arced and be terminated with "ah10" at the appropriate terminator scale. Un-numbered notes and callouts such as construction centerline and section line etc., shall be placed using the MicroStation "place note" command.

8.8 Dimensioning: All dimensions shall be placed in the design file and not the master file. The dimensioning parameters are set up in the emta2d.dgn seed file. They are summarized below.

1. The dimension text shall be above the line.
2. The location of the dimension shall be set for manual operation so that other items can be avoided.
3. The alignment of the dimensions shall be view oriented.
4. Witness lines are turned off.
5. The text margin ratios are all set to 0.3.
6. The stack offset is set to 11.
7. The terminator height ratio is 0.3
8. The custom terminator shall be "ah10" located in the emta.cel Cell Library.
9. The length format is set to AEC, master units (feet), and accuracy to the nearest foot.
10. The angle format is set to an accuracy of one second, display in degrees/minutes/seconds, and display leading and trailing zeros.
11. The suffix for the dimension radius option is set to "R" so that if a radius is 35 feet, it would be labeled 35'R.
12. The text parameters of the dimension shall be as follows: wt=1, ft=23, tx=4.4 (40-scale).
13. The element parameters are set as follows: wt=1, and lc=0.
14. The association lock is on so that when the graphics are changed, the dimension will automatically be adjusted to reflect the change.

The above parameters should generally be used but exceptions will be encountered. The dimensions shall be on the same level in the design file of the item being dimensioned in the master file. Also, the dimension color shall match the item being dimensioned.

All existing linear items shall be dimensioned from the section line or survey centerline. Utility lines shall be

dimensioned to the center of the conduit while existing curb or curb and gutter shall be dimensioned to the face or back of curb. Existing edge of pavement and right-of-way lines shall also be dimensioned. All existing or proposed items shall be dimensioned whenever there is a change in the dimension and at least 2 times per sheet, generally near the beginning and ending of a sheet. Utilities shall be dimensioned as close to where the line is labeled as possible.

Proposed items may require accuracy to the nearest 0.01 foot. They will be dimensioned from the construction centerline to the center of the item. New curb and curb and gutter shall be dimensioned to the face of curb. This dimension may need to be edited since the back of curb is the control and distance between the back of curb and the face of curb is exaggerated. The new edge of pavement (no curb) shall also be dimension as well as new right-of-way lines.

8.9 Patterning: Generally, linear patterning that generates spaces in the line will be patterned in the plan and profile sheet file. These lines will be copied from the master reference file into the design file. Then the corresponding level in the master file will be turned off (see symbol sheets in Appendix A for details). The lines that are to be patterned in the plan and profile sheet file include the following:

1. City limit lines
2. County lines
3. Federal boundaries
4. R/W lines
5. TCE lines
6. Utility easement lines
7. Wash, river and lake boundaries
8. Section lines

After the proposed right-of-way has been acquired, delete the obsolete R/W lines and change the symbology of the remaining R/W lines accordingly to indicate final R/W (see symbol sheets Appendix A)

Lines that may be patterned in the master file include the following:

1. Construction centerline
2. Survey centerlines
3. Guardrail
4. Dirt irrigation ditch
5. Park boundaries
6. New pipes

7. Railroad tracks
8. Tree lines and bush lines
9. Fences

All area patterning shall be done in the plan and profile sheet file.

12 - QUANTITY SUMMARY SHEET

12.1 General: The standard quantity summary sheet file (q.dgn) contains 3 versions of this sheet: full, double, and half (see Appendix B pages B-8, B-9, and B-10). The full summary sheet is designed to be used for projects with a large number of items and many sheets from which quantities are obtained. It is also designed to be used when more than one quantity summary sheet is needed. The double quantity summary sheet is designed to be used when there are a many items but not many sheets from which quantities are obtained. The half quantity summary sheet is to be used on small projects where there are not many items and not many sheets from which quantities are obtained. The quantity summary file also includes a listing of bid item numbers and descriptions which are still being developed. These are not to be used unless directed by the Project Manager.

Copy q.dgn into the project directory and rename it 00000q.dgn where "00000" refers to the County Work Order Number. Select the version of the quantity summary sheet to be used on the project. Delete the un-needed versions. Edit the border text as needed. If 2 or more of the same type of quantity summary sheet are required, it may be advantageous to use 00000q.dgn as a reference file. The file is setup so that it can be completed using 100-scale text sizes and plotted at 100-scale.

Each sheet contains active points that are placed so that left-center, right-center or center-center justified text fits into the table. The text shall have the following parameters: wt=2, lv=1 ft=9, tx=12.5 (100-scale), and co=3.

The quantity summary table shall include all items that are in the bidding schedule, summarize traffic quantities, and include other quantities that are necessary for the prospective bidders to accurately estimate a cost for the project.

12.2 ASCII Import file: Future.

13 - FACE SHEET

13.1 General: The standard face sheet consists of two files: f.dgn and 00000f.dgn. The f.dgn file contains the border, the County Seal, the department name, the County map, and the Signature/Supervisors block. MCDOT's f.dgn file is shown in Appendix B on page B-4, while FCDMC's version is shown on page B-5. 00000f.dgn is a sample MCDOT face sheet that contains an example project title, Key Map, and Vicinity Map (see Appendix B page B-6). These files may be found on one of the disks included with this manual or in the /usr/udd/standards/borders/ directory. Copy the 00000f.dgn to your project directory. When this file is copied, rename it by changing the 5 zeros to the County Work Order Number. For example, if your Work Order Number is 68663, then your file name for the face sheet would be 68663f.dgn. All items on the face sheet that could be unique to your specific project reside on levels 1 and 2. The file is drawn so that a 24"X36" sheet is produced when plotted at 100 scale. The face sheet should always be plotted at a scale of 100.

13.2 Reference File: A reference file named f.dgn is attached to all face sheet files. This reference file contains items that do not change or that change periodically but are not project specific. This file will be updated as necessary by County personnel. The Supervisors rotate the Chairmanship once per year and the Supervisors block will be changed accordingly. Do not copy this reference file into the face sheet 00000f.dgn file so that these changes can automatically appear in every face sheet in MCDOT's network or so the latest version can be referenced into the face sheet file when necessary. The consultant will not submit a mylar version of the face sheet at the time of final submission unless otherwise directed. The face sheet mylar will be produced by County from the consultants face sheet file and County's latest version of f.dgn.

13.3 Project Title and Number: This text is on level 2 and has the parameters listed under Item 1 in the Parameters Table in the 00000f.dgn file (see page B-6). Edit the project title and project number so that the specific project title and Work Order Number appear. Then extend or shorten the lines under the project title as necessary.

13.4 Key Map: The key map (see page B-6) is a reference tool for the plan and profile sheets, and if applicable, storm drainage sheets and other sheets for items parallel to the roadway and following the plan and profile sheet arrangement. An index on the note sheet or callouts on the plan and profile sheets can be used to locate details or

other sheets. The specific key map for the project can be completed by either editing the existing line work or by turning off levels 1 and 2 and drawing the map from scratch. Level 1 contains all the line work for the Key Map while Level 2 contains the text. Parameters 2 through 10 in the parameters table govern the Key Map.

The Key Map in the 00000f.dgn file is 2 miles long and is drawn at the approximate scale of 1:400. The street widths are not drawn to scale. Make the section line and mid-section line roads 50' wide (1/2") and local streets are 37.5' wide (3/8"). When projects are longer than 2 miles or extend transversely greater than one sheet, then adjustments will need to be made to the approximate scale and to the sheet box size. If the project is an "east-west" road, rotate the north arrow 90 degrees and place the north arrow to the right of the words "KEY MAP" and pointing up. Adjust the north arrow as necessary for roads with other orientations or with curves.

<u>13.5 Vicinity Map:</u> The Vicinity Map (see page B-6) shows the project's location relative to other topographical features nearby. This map, along with the adjacent County Map, help orient plan users. The Vicinity Map will always be oriented with the north arrow straight up. The Vicinity Map is located on the County Map with a circle of the approximate size of area covered by the Vicinity Map. Edit the project number between the County Map and the Vicinity Map, then adjust its location as necessary for clarity. The terminators for the lines are created with cell "ah10" per the instructions in the "ARROWHEAD TX 10" symbol sheet.

The text on the vicinity map is on level 2 and the line work is on level 1. The map can be created by either editing and modifying the existing map or by turning off Levels 1 and 2 and starting from scratch. Extend the Vicinity Map at least 1 mile beyond the ends of the project in each direction. Show the extent of the project with a weight 6 line centered in the road symbol including lengths of effected cross streets. The paved road symbol is formed by 2 parallel lines 5' apart (.05"). Refer to the parameter table for those items shown in the 00000f.dgn file Vicinity Map. Also, include the following items not shown in the 00000f.dgn file when applicable.

rivers
lakes
freeways
City, County, or State park boundaries
National forest or Federal land boundaries
dirt roads on section line alignments

The edges of rivers and lakes shall be patterned using the cell "wash" with a pattern scale of 0.2. The size of the text for the name of the river or lake shall be 10 feet. Freeways shall have the same parameters as the paved section line roads except that the distance between the parallel lines shall be 10' (.1") and ramps shall be shown as single lines. Where section line roads intersect the freeway, the freeway lines shall be continuous while the section line road lines shall break at the freeway lines. Park boundaries shall be symbolized using the cell "park" with a pattern scale of 0.2. National forests and reservation boundaries shall be symbolized using the pattern cell "fed" with a pattern scale of 0.2. Dirt section line roads shall be the same as paved roads except the line code shall be 3. Canal and river crossings shall be indicated with a standard cartographic bridge symbol.

13.6 "IN COOPERATION WITH" Block: This block is a cell called "iga" and is only used when an intergovernmental agreement (IGA) is part of the project. If no intergovernmental agreement is anticipated, delete the block. If an intergovernmental agreement is to be written, then drop status on the cell and edit the name of the agency.

14 - GENERAL NOTES SHEET

14.1 General: Each Department in EMTA will have their own general notes sheet. Other general notes sheets have not been developed as of the printing of this manual. The abbreviation table and symbol legend will be very similar from department to department. The MCDOT general notes sheet is shown in Appendix B (page B-7). This General Note Sheet contains some general notes, the index, design data, length of project information, National Pollutant Discharge Elimination System (NPDES) area information, an abbreviation table, and a symbol legend. A computer file called "n.dgn" that shows the standard layout, format, and attributes of the above listed items is located on one of the disks included with this manual and in the /usr/udd/standards /borders/ directory on the MCDOT Unix server. Copy the file "n.dgn" into the project directory and rename it 00000n.dgn (00000 is the County Work Order Number). Then edit the text as needed for the particular project. All the text is on level 1 in this file. The border, and the title block line work and text, are on levels 60 and 61. The size of the text of the titles on this sheet are tx=26 (Leroy 290) and the underlining is weight 6. The file is designed so that a 24"X36" sheet is generated when plotting at a scale of 100. The note sheet should always be plotted at a scale of 100.

14.2 Design Data: General roadway design classifications and parameters are specified in this section of the note sheet (see page B-7). This data should be available from the design concept report produced by the Planning Division of MCDOT. The design data refers to conditions in the design year. Edit the text to the desired values. The text size is tx=15 (Leroy 175), the font is 24, line spacing is 15, and the justification is Left Center.

14.3 Index: The "INDEX" (see page B-7) lists all groups of sheets and their associated sheet number ranges. It is not the function of the index to list every single sheet in the plan set. The sheets listed in n.dgn file are in the standard order of placement in a MCDOT roadway construction plan set. The title of the sheets or groups of sheets may be modified provided that the titles in the index match the title on each sheet. Most projects will not involve as many sheets as shown in n.dgn. Delete those sheets that do not apply to the project being worked on. Move and edit the remaining sheet titles and sheet numbers accordingly. The text size is tx=15 (Leroy 175), the font is 24, the lines are spaced 51.5' apart, and the justification is Left Center. Active points are placed 25.75' apart.

14.4 General Notes: Notes which apply to all sheets or are general in nature shall be included in this section of the

General Notes Sheet (see page B-7). The notes as shown in n.dgn are standard MCDOT notes. Additional notes may be added as necessary. The text size is tx=12.5 (Leroy 140), the font is 23, the line spacing is 6.25, and the justification is Left Center for both the note numbers and the notes themselves.

14.5 Length of Project: The "LENGTH OF PROJECT" section (see page B-7) is a worksheet type section designed to determine the longitudinal length of the project, including taper or flare sections. The length of project also includes intersecting streets and roadways. This value may be used in determining quantities for bid items such as subgrade preparation. The top line of the section shall be the main line roadway. Listed below the main line roadway will be any side streets or roads that will be reconstructed as part of the project. The road name, beginning station, ending station, and length will be edited for each road and street. Then the totals will be edited in. The text parameters are as follows: tx=15, ft=24, the lines are spaced 45' apart, and the justification is Right Center.

14.6 NPDES Area of Project: The "NPDES AREA OF PROJECT" section (see page B-7) is a worksheet type section designed to determine the site area as required in the EPA Storm Water Pollution Prevention Plan or the maximum area of disturbance. This area can be used for determining whether or not the project will be subject to the National Pollutant Discharge Elimination System (NPDES) stormwater requirements for construction sites under the EPA General Permit for Arizona. If a project disturbs more than 5 acres, then these requirements must be met. It is assumed for all MCDOT projects that this area is equivalent to the "Length of Project" as determined above times the right-of-way width. If this number is close to 5 acres, it may be desirable to calculate the actual area of disturbance. The top line of this section shall be the main line roadway with the intersecting roadways listed below. Delete or add lines as necessary for variable R/W widths and TCEs. R/W triangles may be added as a lump-sum item in this worksheet. The road name, beginning station, the ending station, the right-of-way width, and the area in square feet will be edited for each road or street. Then the totals will be edited. The text parameters are as follows: tx=15, ft=24, the lines are spaced 45' apart, and the justification is Right Center.

14.7 Abbreviations: The Abbreviations Section of the General Notes Sheet (see page B-7) contains standard abbreviations to be used in the plan set. It does not include abbreviations in general use by the public such as those that appear in the Abbreviation list in the Webster's

Ninth New Collegiate Dictionary. It is not intended that the abbreviation list on the note sheet be modified for each specific project and contain only those abbreviations actually used on the project. This list is to be standard on all projects.

The abbreviations in the list on the General Notes Sheet appear without periods. The abbreviations shall be used without periods except for lower case abbreviations used in the construction and removal/relocate notes.

14.8 Symbols: The symbol legend on the note sheet (see page B-7) contains symbols that are not otherwise labeled on the plan sheets. It does not include specialized symbols such as traffic signal and striping symbols. These special symbols are located on the sheets where they apply. Refer to Appendix A for details on the application of the symbols.

APPENDIX A

SYMBOL SHEET GENERAL INSTRUCTIONS: The symbol sheets list the parameters and application details for all the standard symbols, including MicroStation cells and symbols that are not cells. An attempt was made to minimize the number of cells, but still maintain the necessary cells that will automate plans production throughout EMTA. All cells and symbols are listed in the Cell Sheet Description Index (pages A-3 through A-6). The cells were named so that when sorted alphabetically by cell name or by description, similar items would be grouped together. For example, utility items start with 'U', survey items start with 'S' etc.

There are many ways to accomplish a desired graphic display using InterGraph MicroStation Software. These recommendations are intended to be used as a guideline for general applications. The user is still responsible for the final appearance of the plans. In general, existing items will be symbolized with wt=0, lc=5, and lv=18, and new items will be symbolized with wt=2, lc=0, and lv=36.

Each symbol sheet is divided into the following sections:

DESCRIPTION: The description of the cell as it appears in the cell library or the description of the symbol if it is not a cell.

CELL NAME: The name of the cell as it appears in the cell library. Some sheets will say "NOT A CELL". In this instance, the symbol does not consist of a cell and the sheet is included to show graphic and/or text parameters only.

CELL LIBRARY: The location and name of the cell library. This will be the primary cell library located in the /usr/udd/standards/cells/ directory which is read only. If any additions or corrections are required, fill out a CAD Modification Request Form found in the front of this manual. Users are encouraged to create personal cell libraries for their own use, but if you have a good idea, please share it with everybody.

ACTUAL SIZE: This display shows the actual size of the cell when plotted at any scale. Scaling will be discussed later in these General Instructions. Most cells have been designed for 40 scale applications and may not be graphically appropriate at 20 scale or 100 scale. The actual size will be twice as large as shown on the symbol sheet when 20-scale drawings are generated from a 40-scale master file such as a traffic signal sheet or an

intersection sheet.

The Actual Size section will be replaced with an Application section when the actual size varies with scale. The Actual Size section also shows labeling text and examples of the symbol being used.

CELL SPECIFICATIONS: Shows the cell enlarged for illustration purposes, the dimensions of the cell in decimal inches at any scale, unless noted otherwise, and the cell origin. When the symbol is not a cell, this section will be replaced with the Application section.

NOTES: This space allows room for specific instructions on how to apply the cell, create the symbol, or accomplish tasks related to the cell or pattern placement.

PARAMETERS: Shows the parameters of the cell (LV=level, WT=weight, LC=line code, and CO=color) together with the cell type (graphic or point). Point cells display the current active parameters and graphic cells retain the preset parameters present at the time they were created. Point cells are view dependent and should not be used when the views have been rotated.

Active Scale and Pattern Scale are also covered under Parameters. Most of the cells were drawn at 1"=100' so that a relative scale factor could be applied easily. This enables the same cell to be used no matter what scale is used. "AS" stands for active scale and applies to cell placement, and "PS" stands for pattern scale and applies when patterning lines or areas. The active scale or pattern scale is computed by dividing the desired plotting scale by 100. For example, if 1"=40' is the desired plotting scale, divide the 40 by 100 and use a scale factor of .4 (20/100=.2, 50/100=.5, etc.) when placing the cell. When N/A appears after "AS" then the cell is to be used as a pattern or the symbol is not a cell. When N/A appears after "PS", then the cell is to be used for single cell placement or the symbol is not a cell. Certain cells that represent actual ground distances, such as stationed centerlines, barscales, pipes, etc. will use a scale factor of 1. The size of these exceptions will increase as the scale decreases.

Rapidograph Pen number refers to the Rapidograph pen that would produce the same line thickness as the MicroStation weight (wt).

GRAPHIC TEXT: This area defines the parameters of the text applications and are shown for 1"=100' drawings. For other applications, refer to Table 2-2 on page 2-6.

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UTIL POLE STEEL	UPST	A-206
UTIL SANITARY SEWER LINE	-	A-207
UTIL STORM DRAIN EXIST	-	A-210
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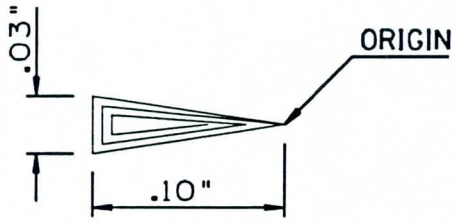
EMTA CAD STANDARDS

DESCRIPTION	ARROWHEAD TX 10
CELL NAME	AH10
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell is designed for use with text size of 10. When different sizes of text are used, apply a line terminator scale factor (ts=) of tx/10.

Examples: tx=10....ts=1
tx=15....ts=1.5
tx= 5....ts=.5

For auto dimensioning, go to Element, Dimensions, Custom Terminators, Arrow, Cell, and define AH10 in the name box. This is already done if the tada2d.dgn seed was used to create the drawing.

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

PARAMETERS

LV=* WT=*
LC=* CO=*
AS=N/A
TS=TX/10
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

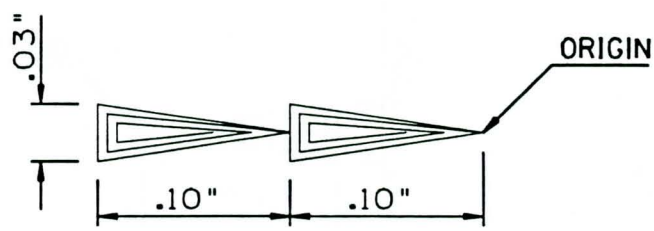
EMTA CAD STANDARDS

DESCRIPTION	ARROWHEAD TX 10 DOUBLE
CELL NAME	AH10X2
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent, do not use if views have been rotated.

This cell is designed for use with text size 10. When different sizes of text are used, apply a line terminator scale (ts=) factor of tx/10.

Examples: tx=10....ts=1
tx=15....ts=1.5
tx= 5....ts=.5

To be used when the cross slope callout continues to the next sheet.

PARAMETERS

LV=* WT=*
LC=* CO=*
AS=N/A
TS=TX/10
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

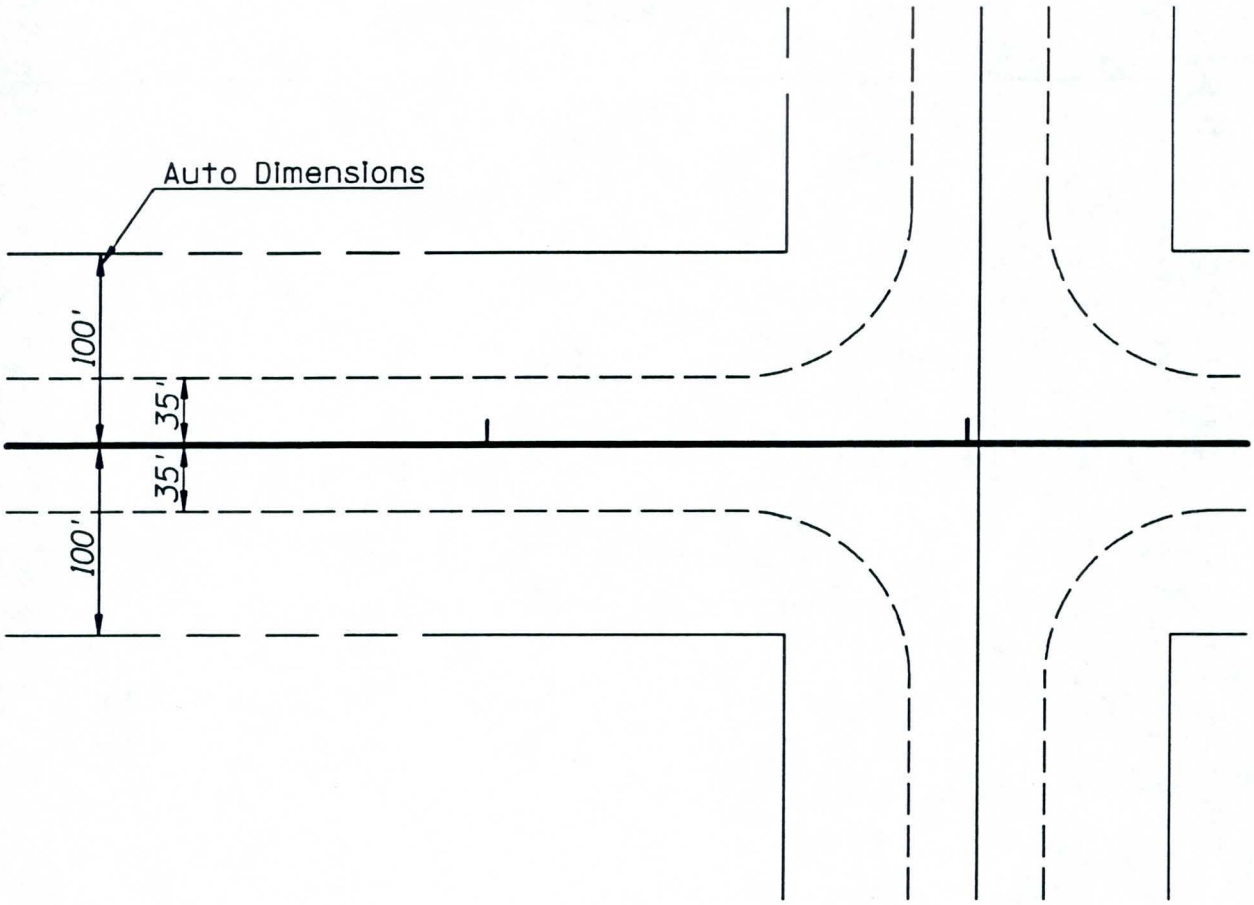
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	AUTO DIMENSIONING
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES	GRAPHIC TEXT
Use the "Dimension Size with Arrows" command, found in the Dimensioning Palette. Text parameters are set in auto dimensioning for 1"=40' drawings. For other applications, refer to Table 2-2, p 2-6 and change the auto dimensioning parameters accordinly. * Match the level & color of the line to be labeled.	LV=* FT=23 CO=* LS=2.2 WT=1 TJ=CB TX=4.4

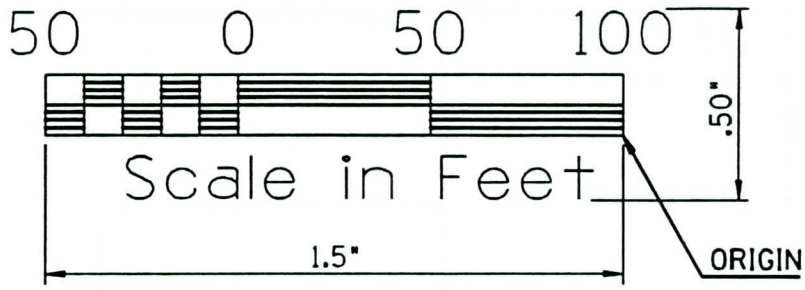
EMTA CAD STANDARDS

DESCRIPTION	BAR SCALE 100
CELL NAME	BAR100
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use this cell for 1"=100' drawings. It will replace the 1"=40' bar scale found on the standard p.dgn plan sheet border.

Delete the 1"=40' bar scale in the project specific border (00000p.dgn) that is referenced to all the plan & profile sheets, and replace it with this cell.

PARAMETERS

LV=61 WT=1
LC=0 CO=0,3
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

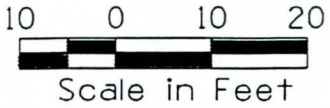
LV=61 FT=1
CO=3 LS=5.5
WT=1 TJ=CB TX=11

EMTA CAD STANDARDS

DESCRIPTION	BAR SCALE 20
CELL NAME	BAR20
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)

NOTES

Use this cell for 1"=20' drawings. It will replace the 1"=40' bar scale found on the standard p.dgn plan sheet border.

Delete the 1"=40' bar scale in the project specific border (00000p.dgn) that is referenced to all the plan & profile sheets, and replace it with this cell. Use a active scale of 5 if placed prior to the sheet border being reduce by the scale factor of 0.2.

* Text size is 20 scale.

PARAMETERS

LV=61 WT=1
LC=0 CO=0,3
AS=1 or 5
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

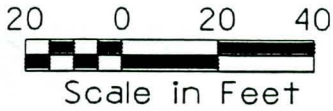
LV=61 FT=1
CO=3 LS=1.1*
WT=1 TJ=CB TX=2.2*

EMTA CAD STANDARDS

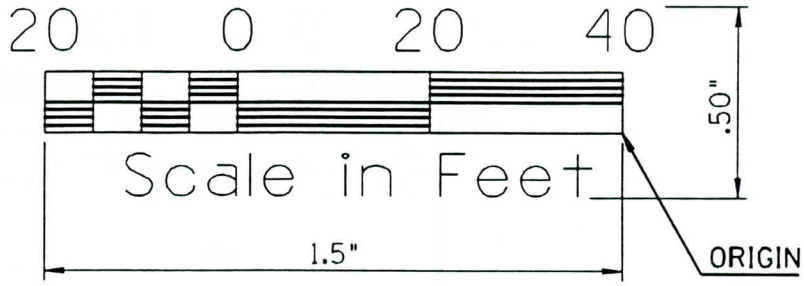
DESCRIPTION	BAR SCALE 40
CELL NAME	BAR40
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use this cell for 1"=40' drawings. It will be found on the standard p.dgn plan sheet border. If this bar scale needs to be replaced, use an active scale of 2.5 prior to the sheet border being reduced by a scale factor of 0.4.

* Text size is 40 scale.

PARAMETERS

LV=61 WT=1
LC=0 CO=0,3
AS=1 or 2.5
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

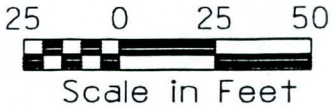
LV=61 FT=1
CO=3 LS=2.2*
WT=1 TJ=CB TX=4.4*

EMTA CAD STANDARDS

DESCRIPTION	BAR SCALE 50
CELL NAME	BAR50
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)

NOTES

Use this cell for 1"=50' drawings. It will replace the 1"=40' bar scale found on the standard p.dgn plan sheet border.

Delete the 1"=40' bar scale in the project specific border (00000p.dgn) that is referenced to all the plan & profile sheets, and replace it with this cell. Use an sctive scale factor of 2 if placed prior to the sheet border being reduced by a factor of 0.5.

* Text size is 50 scale.

PARAMETERS

LV=61 WT=1
LC=0 CO=0,3
AS=1 or 2
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=61 FT=1
CO=3 LS=2.75*
WT=1 TJ=CB TX=5.5*

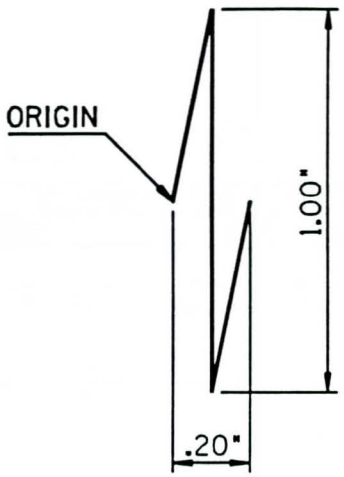
EMTA CAD STANDARDS

DESCRIPTION	BREAKLINE
CELL NAME	BRK
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell is to be used for breaks in single lines, i.e. section lines. For multiple line breaks, see BRK2.

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

PARAMETERS

LV=* WT=*
LC=* CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

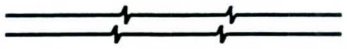
LV=	FT=	TH=
CO=	LS=	TW=
WT=	TJ=	TX=

EMTA CAD STANDARDS

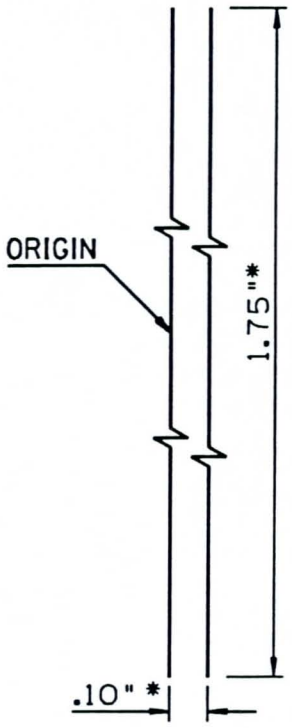
DESCRIPTION	BREAKLINE DOUBLE
CELL NAME	BRK2
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE (Rotated 90°)



CELL SPECIFICATIONS
(Scale: 1"=100')



NOTES

Normally, this cell will be placed using an active scale of 1.

This cell is to be used for breaks in multiple lines. For single line breaks, see BRK.

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=58 WT=2
LC=0 CO=3
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=	FT=	TH=
CO=	LS=	TW=
WT=	TJ=	TX=

EMTA CAD STANDARDS

DESCRIPTION	CATTLE GUARD EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

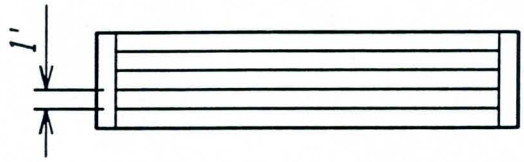
NOTES	PARAMETERS
Draw to scale except the end walls shall be spaced 1' apart. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.	LV=18 WT=0 LC=5 CO=10 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV=18 FT=23 CO=10 LS=5 WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

DESCRIPTION	CATTLE GUARD NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

Draw to scale except the end walls shall be spaced 1' apart.

* Perimeter of cattle guard shall be wt=2, and everything else shall be wt=1.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=36 WT=1,2
LC=0 CO=7
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0,1

GRAPHIC TEXT

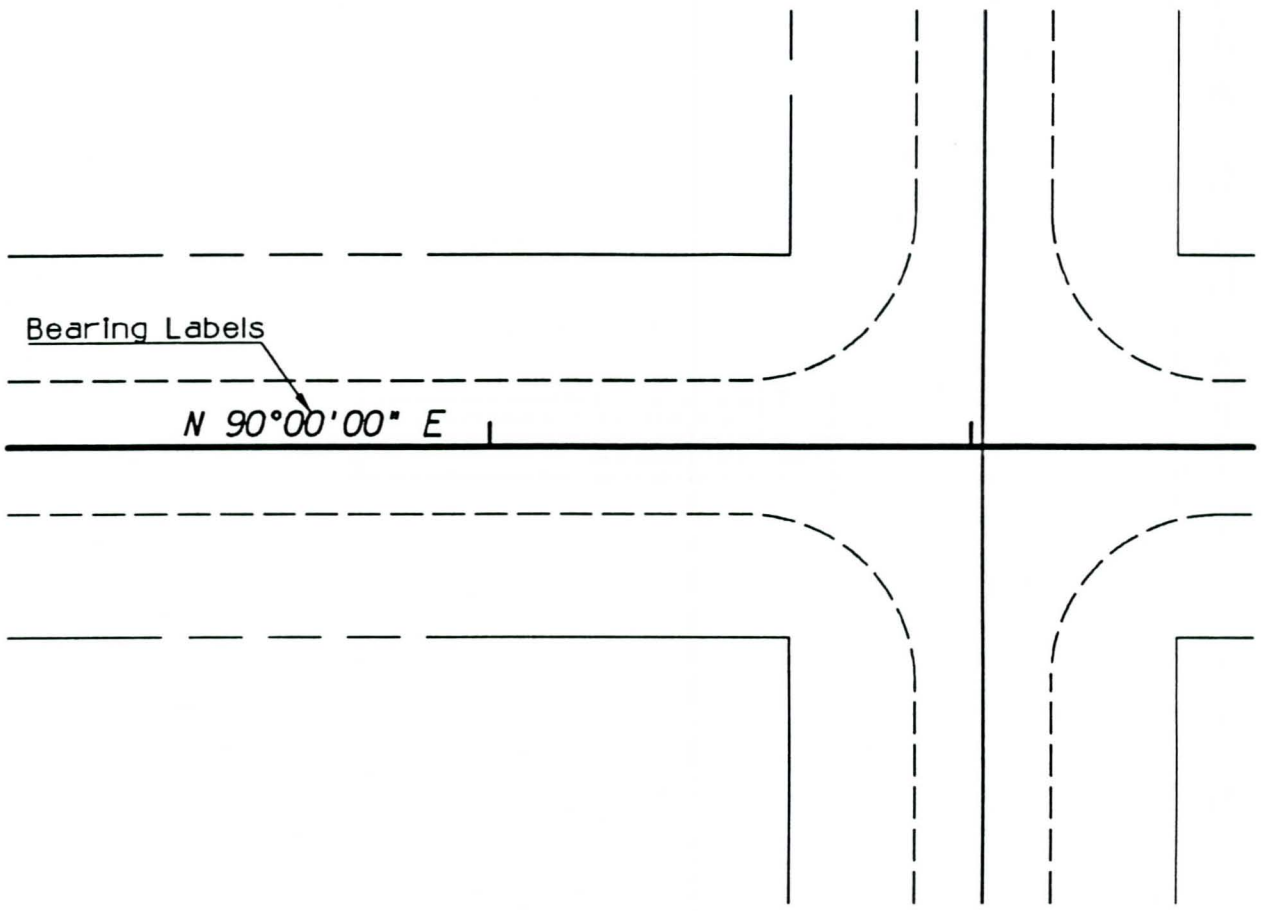
LV=36 FT=23
CO=7 LS=6.25
WT=2 TJ=CC TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE BEARING LABEL
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



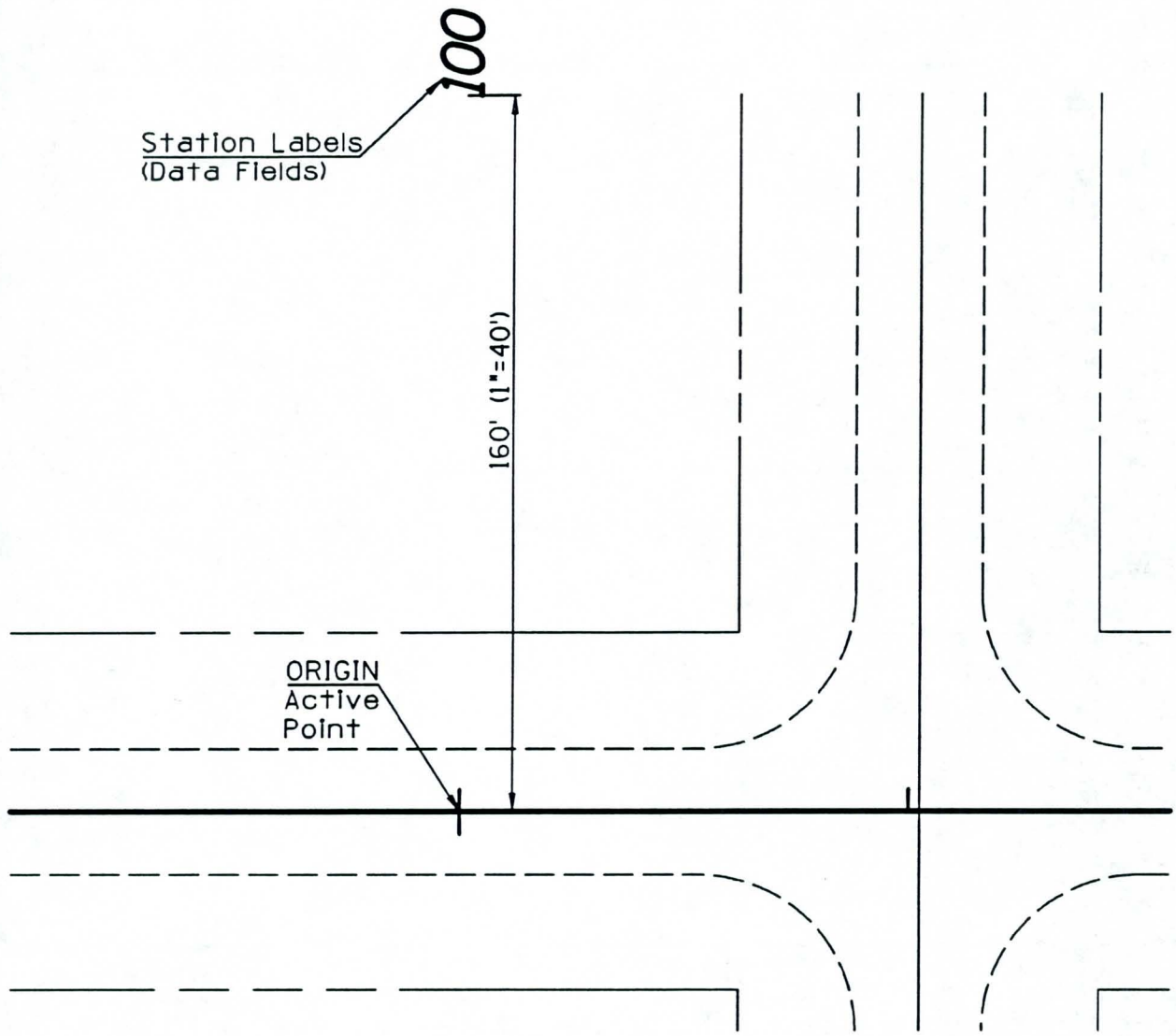
NOTES	GRAPHIC TEXT
Use the "Place Text Above Element" command, with the format shown above. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6. * Match the level and color of the line to be labeled.	LV=* FT=23 CO=* LS=6.25 WT=2 TJ=CB TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE CONST STA TEXT
CELL NAME	CLSTTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION



NOTES	GRAPHIC TEXT
Use the "SNAPPAT.UCM" user command included with MicroStation to make the centerline snappable. Then turn on the data field display & set the active angle so that it is perpendicular to the ℄. Use the "Fill in Enter_ Data Fields" command to fill in text (Turn the data field display off). Text parameters shown are for 1"=100' drawings. For other applications, adjust the active scale accordingly.	LV=33 FT=23 CO=2 LS=N/A WT=5 TJ=LC TX=22 AS=Plot Scale/100

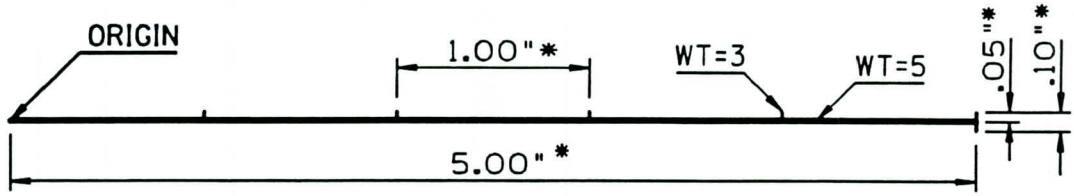
EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE CONSTRUCTION
CELL NAME	CLC
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS



NOTES

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

Label line per text parameters listed on this sheet. The "\" character on the keyboard will give you the ℄ symbol. In order to effectively pattern along curves, the active pattern tolerance should be set at .01 (act pat tol .01).

*Dimensions increase as the plotting scale decreases. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=33 WT=3,5
LC=0 CO=2
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

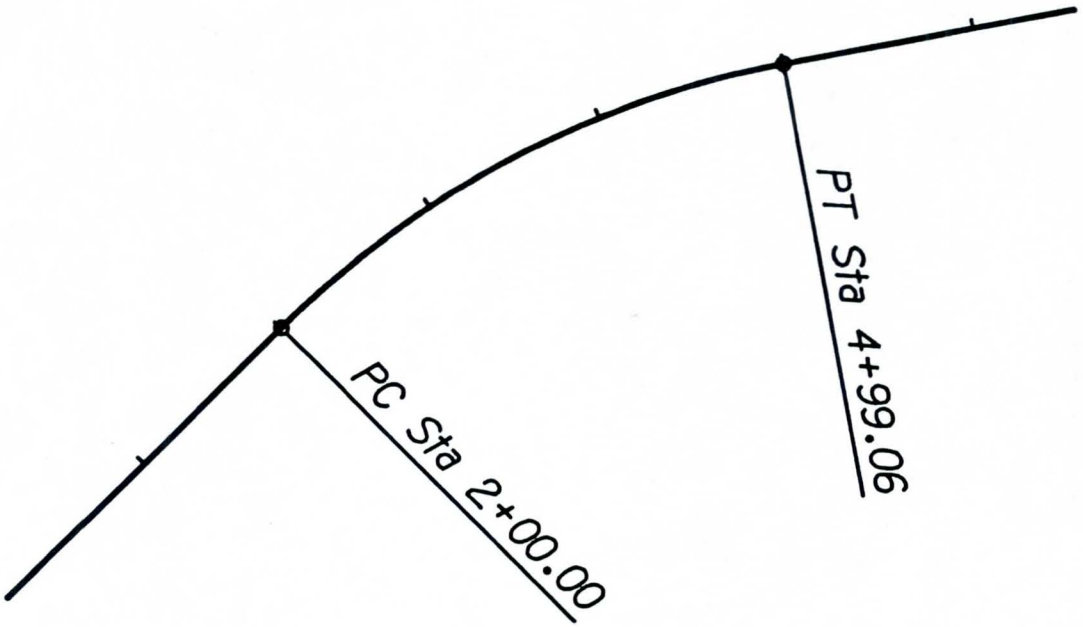
LV=33 FT=23 TS=1.5
CO=2 LS=7.5
WT=3 TJ= TX=15

EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE CURVE CALLOUTS
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

The PC and PT of horizontal curves shall be indicated on the centerline with the "PTCTRL" cell. The leaders shall be perpendicular to the centerline and be in the direction of the inside of the curve.
Text parrameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=34 WT=3
LC=0 CO=2
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=34 FT=23
CO=2 LS=7.5
WT=3 TJ=LT TX=15

EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE CURVE DATA
CELL NAME	CLCURV
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS

ORIGIN

Curve Data

PI Sta _____
*Δ=*_____
*D=*_____
*T=*_____
*L=*_____
*R=*_____

NOTES

The curve data shall be placed on the inside of the curve and oriented horizontally.
Text parrameters shown are for 1"=100' drawings. Adjust for other scales with the active scale.

PARAMETERS

LV=34 WT=3
LC=0 CO=2
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

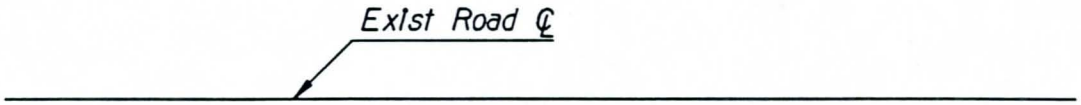
LV=34 FT=23
CO=2 LS=7.5
WT=3 TJ=LT TX=15

EMTA CAD STANDARDS

DESCRIPTION	CENTERLINE ROAD EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=15 WT=1
LC=0 CO=5
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=3 FT=23 TS=1.1
CO=5 LS=5.5
WT=1 TJ=LB TX=11

EMTA CAD STANDARDS

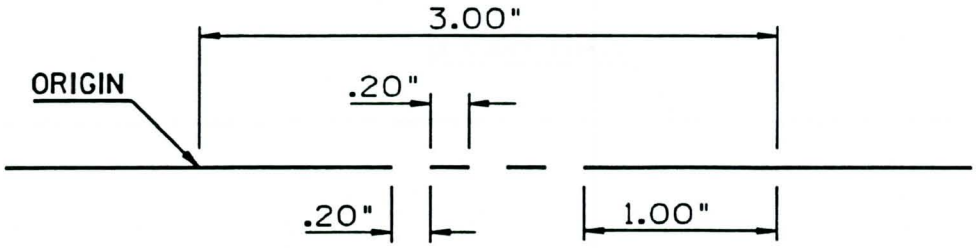
DESCRIPTION	CITY LIMIT LINE
CELL NAME	CITY
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Phoenix City Limits

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the long dashes double in length.

The text shall be placed on the City side of the boundary where possible. Text parameters are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.
When a R/W and a city limit line are coincident, use the R/W line symbol and label it both the R/W line and city limit line.

When a property line and a city limit line are coincident, use the city limit line symbol.

When a section line and/or a const ℄ and a city limit line are coincident, the section line or const ℄ symbol will be used and labeled as both ℄ or ⅊ and city limit.

A county line will be shown when coincident with a city limit.

PARAMETERS

LV=13 WT=2
LC=0 CO=7
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

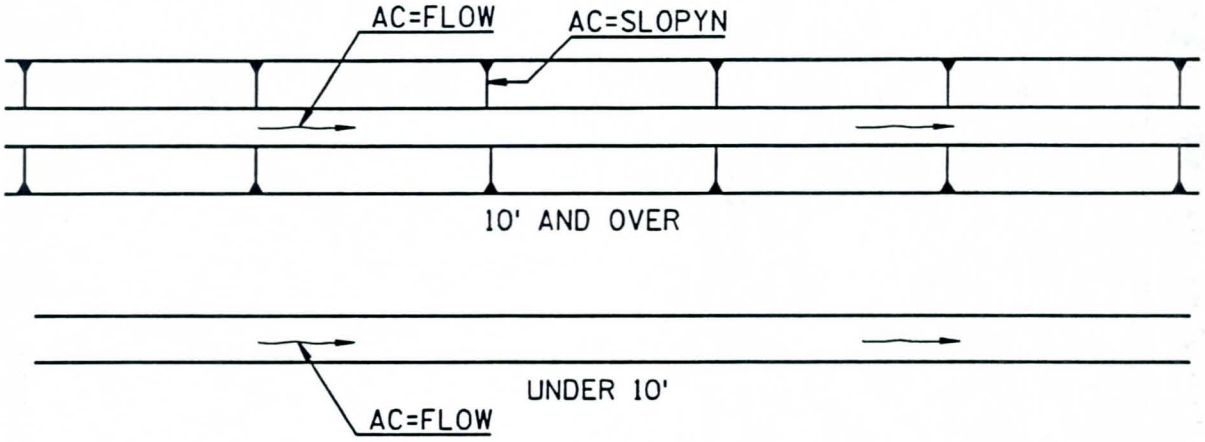
LV=13 FT=23
CO=7 LS=6.25
WT=2 TJ=CB TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	CONC LINED DITCH (NEW)
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

The 10' & over concrete lined ditch (CLD) is created using the cells "FLOW" & "SLOPYN" & with parellel lines drawn to scale representing the tops of lining & toe of slopes.

The slope symbol spacing shall not exceed 2" (80' at 40 scale).

The flow arrow shall be placed at least 3 times per sheet.

The 10' & under CLD is created with parallel lines drawn to scale representing the top of lining.

*New irrigation facilities are on level 37 while new drainage facilities are on level 38.

PARAMETERS

LV=38 WT=2
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

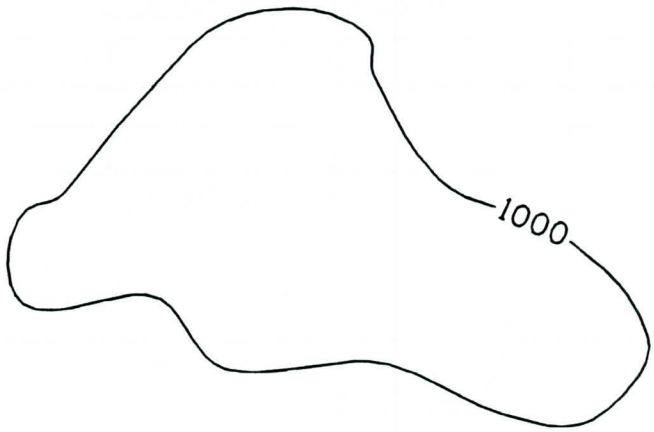
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	CONTOUR LINE MAJOR EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

Contour lines may be imported from InRoads. Modify the features table in InRoads to match these parameters.

Text parameters shown are for 1"=100" drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=4 WT=1
LC=0 CO=6
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

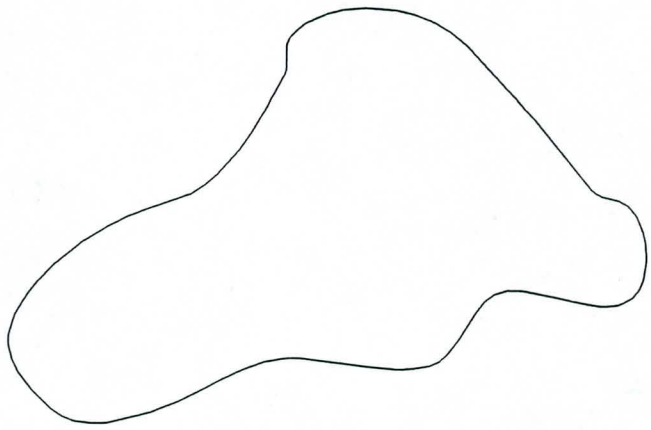
LV=4 FT=1
CO=6
WT=1 TJ=CC TX=11

EMTA CAD STANDARDS

DESCRIPTION	CONTOUR LINE MINOR EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES	PARAMETERS
Contour lines may be imported from InRoads. Modify the features table in InRoads to match these parameters.	LV=5 WT=0 LC=0 CO=6 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00

GRAPHIC TEXT		
LV=	FT=	TH=
CO=	LS=	TW=
WT=	TJ=	TX=

EMTA CAD STANDARDS

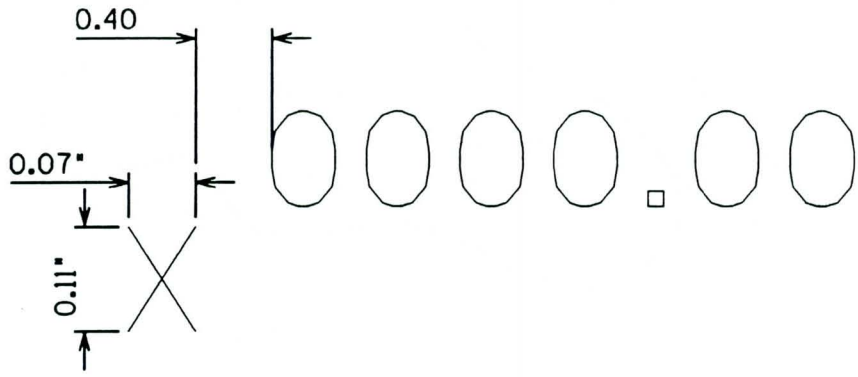
DESCRIPTION	CONTOUR SPOT ELEVATION
CELL NAME	SPOT
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

X 0000.00

CELL SPECIFICATIONS
(Not to Scale)



NOTES

If the spot elevatation is imported from a civil design software package such as InRoads, the graphic parameters for spot elevations shall be modifiied in the civil software to match the parameters of this symbol sheet if the spot elevations will appear on the final plans.

Text parameters shown are for 1"=100' drawings. For other applications, adjust active scale accordingly.

PARAMETERS

LV=5 WT=0
LC=0 CO=6
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=5 FT=1
CO=6
WT=0 TJ=LC TX=10

EMTA CAD STANDARDS

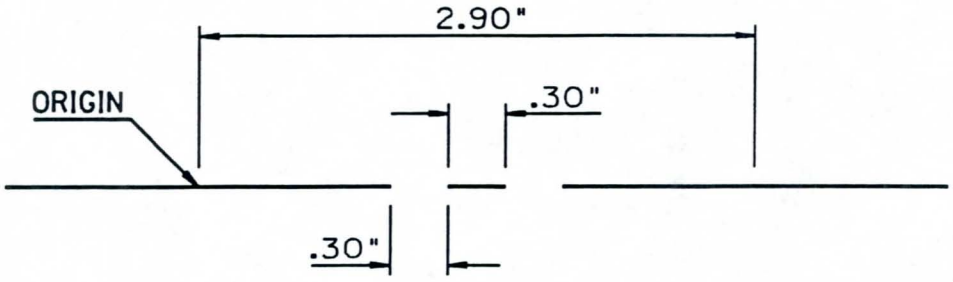
DESCRIPTION	COUNTY LINE
CELL NAME	CNTY
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Maricopa County Line

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only.When used as a line pattern, the long dashes double in length.

The text will be placed on the Maricopa County side if possible. Text parameters shown are for 1"=100' drawings. For other applications, rfer to Table 2-2, p2-6

When a city limit line and a county line are coincident, use the county limit symbol and label it both county line and city limit line.

When a section line and a county line are coincident, use the county line symbol and label it both the county line and the section line.

PARAMETERS

LV=13 WT=2
LC=0 CO=7
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV=13 FT=23
CO=7 LS=6.25
WT=2 TJ=CB TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	COUNTY SEAL
CELL NAME	COSEAL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

NOTES

Although this cell is found in the f.dgn face sheet design file, it can be used for any application.

PARAMETERS

LV=1 WT=VARY
LC=0 CO=VARY
AS=1
PS=N/A
CELL TYPE: GRAPHIC

GRAPHIC TEXT

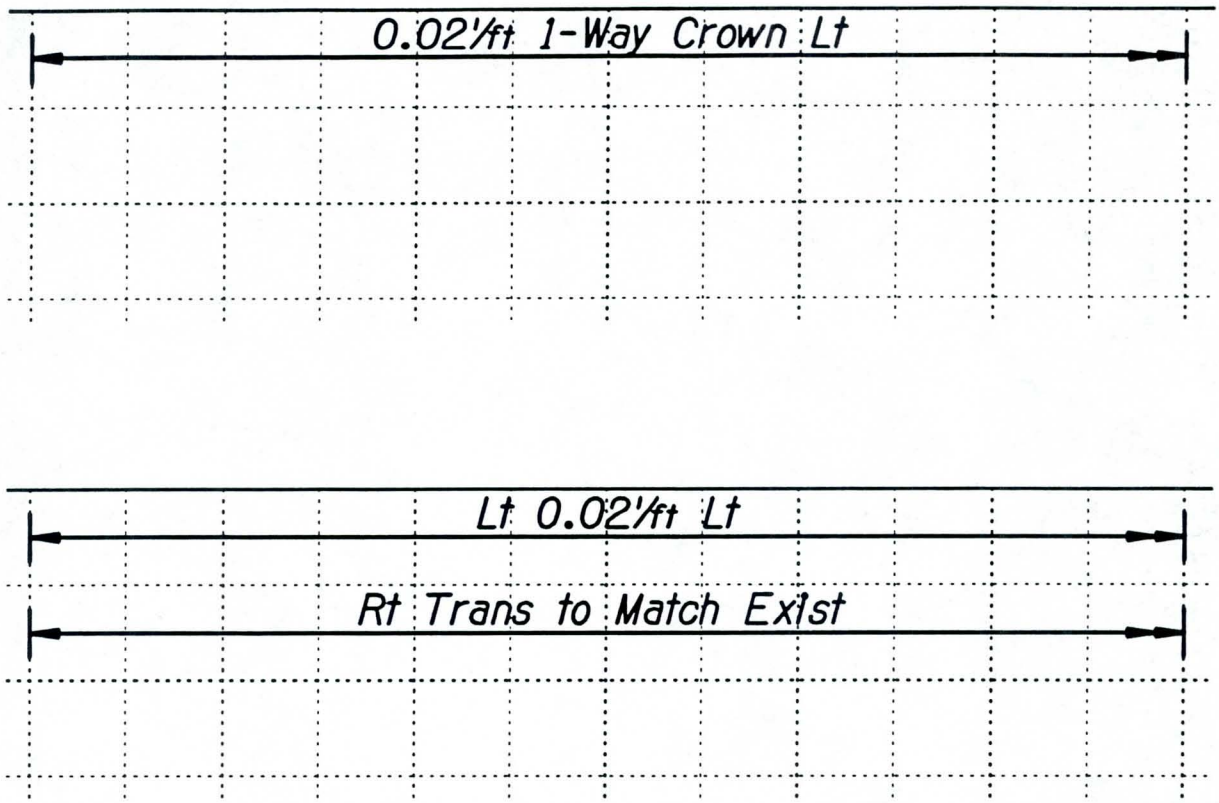
VARY

EMTA CAD STANDARDS

DESCRIPTION	CROSS SLOPE TEXT (profile)
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATIONS



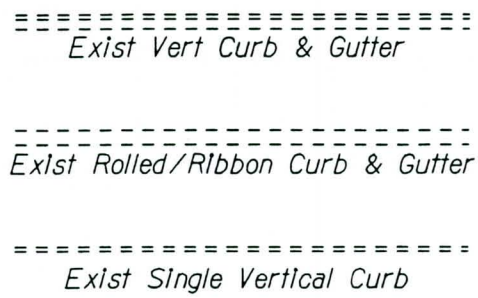
NOTES	GRAPHIC TEXT
Use the 'Place Line at Active Angle' command & center between top grid & border between the plan section & the profile section. Where the right & left cross slopes differ, place the right cross slope callout between the next two grid lines between grid, with the 'Place Active Line Terminator' and the 'Place Text Above Element' command. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.	LV=36 FT=23 TS=1.25 CO=7 LS=5 LT=AH10 WT=2 TJ=CB TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	CURB & CURB & GUTTER EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

The spaces between the lines have been exaggerated.
Use the back of curb for the control line.

For 1"=100' drawings use 2' from back of curb to face and 4' from face to lip of gutter.
For 1"=40' and 1"=50' drawings use 1' from back of curb to face and 2' from face to lip of gutter.
For 1"=20' draw to scale.

Roll curb shall be symbolized using the back of curb to lip dimensions given above without a face of curb line.
Single curb shall be symbolized using the back of curb to face dimensions given above.
It is possible to achieve this affect using the multi-line feature.
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=18 WT=0
LC=5 CO=10
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

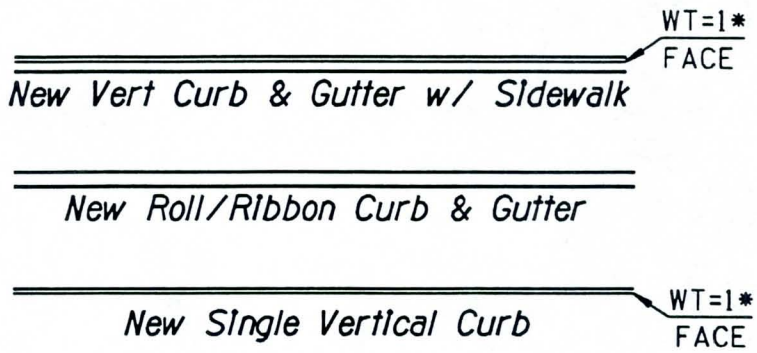
LV=18 FT=23
CO=10 LS=5
WT=0 TX=10

EMTA CAD STANDARDS

DESCRIPTION	CURB & CURB & GUTTER NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

The spaces between the lines have been exaggerated, use the back of curb for the control line.

For 1"=100' drawings use 2' from back of curb to face and 4' from face to lip of gutter.
For 1"=40' and 1"=50' drawings use 1' from back of curb to face and 2' from face to lip of gutter.
For 1"=20' draw to scale.

Roll curb shall be symbolized using the back of curb to lip dimensions given above without a face of curb line.

Single curb shall be symbolized using the back of curb to face dimensions given above.

It is possible to achieve this affect using the multi-line feature.

PARAMETERS

LV=36 WT=2,1*
LC=0 CO=7
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1,0*

GRAPHIC TEXT

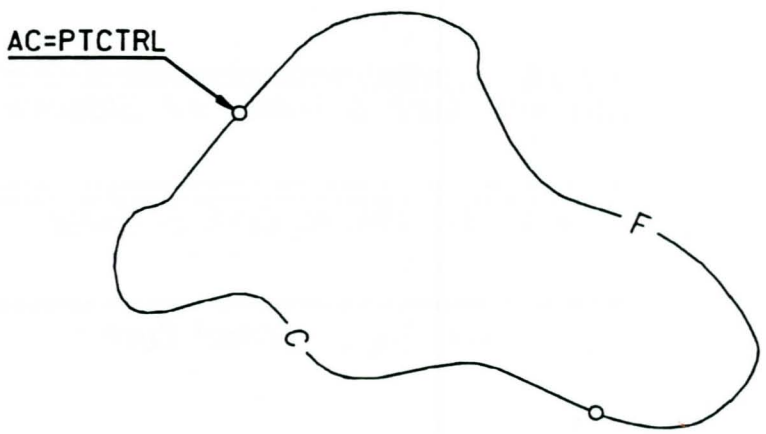
LV= FT=
CO= LS=
WT= TX=

EMTA CAD STANDARDS

DESCRIPTION	CUT AND FILL LINE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file. Then use the reference file mask command to give the broken line appearance.

Cut & fill lines may be imported from InRoads. Modify the features table in InRoads to match these parameters.

Use 'PTCTRL' (Control Point) cell for the transitions from cut and fill.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=6 WT=1
LC=1 CO=6
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=5 FT=1
CO=6
WT=1 TJ=CC TX=11

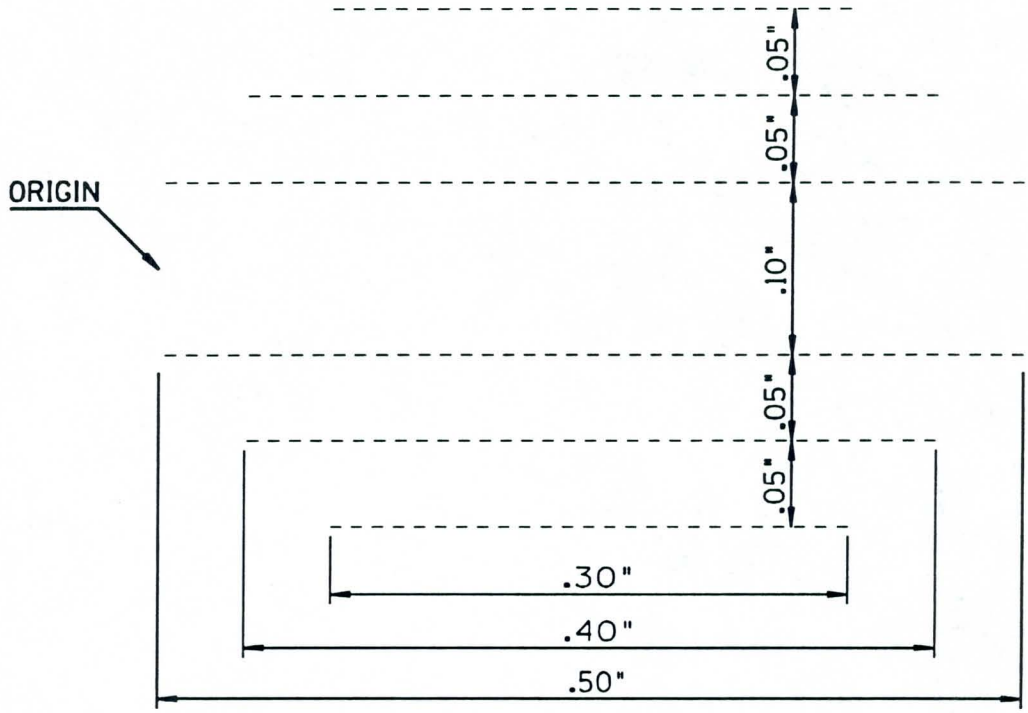
EMTA | CAD STANDARDS

DESCRIPTION	DIKE MEDIAN EXIST
CELL NAME	DIKEX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a generic symbol for an existing median dike. In order to represent various applications, scale the x axis and y axis as necessary.

PARAMETERS

LV=21 WT=0
LC=5 CO=6
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

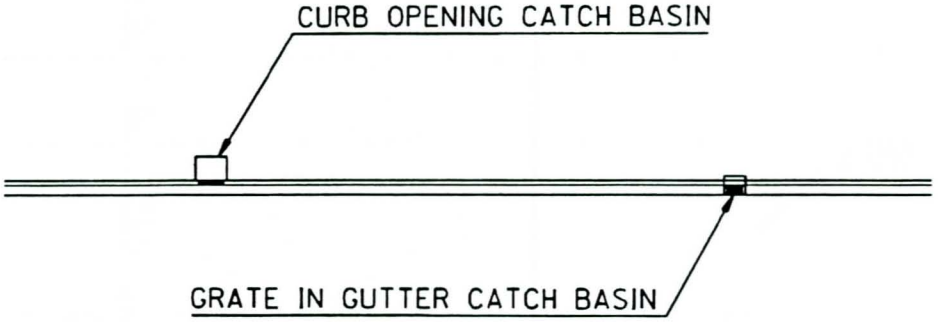
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	DRAINAGE CATCH BASIN CURB
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

The new curb opening catch basin symbol consists of the curb opening and the outline of the structure. The curb opening length shall be drawn and located to scale and be represented by parallel lines spaced 0.5' apart within the lines representing the face of curb and back of curb.

The gutter grate type catch basin symbol consists of the grate and the outline of the structure. The grate shall be drawn and located to scale and be represented by parallel lines spaced 0.5' apart between the lines representing the face of curb and the lip of gutter.

The symbol for a combination curb opening and grate type catch basin shalll be a combination of the 2 types .

PARAMETERS

LV=38 WT=2
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

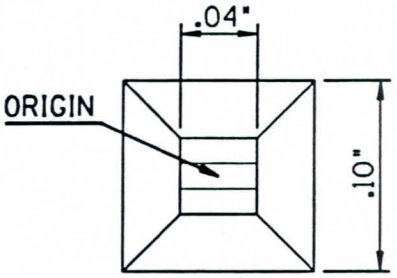
EMTA CAD STANDARDS

DESCRIPTION	DRAINAGE CATCH BASIN SHLDR
CELL NAME	DRCB
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a generic symbol for a grate-type catch basin with apron. In order to represent various applications, scale the x axis and y axis as necessary.

PARAMETERS

LV=38 WT=1
LC=0 CO=1
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=

GRAPHIC TEXT

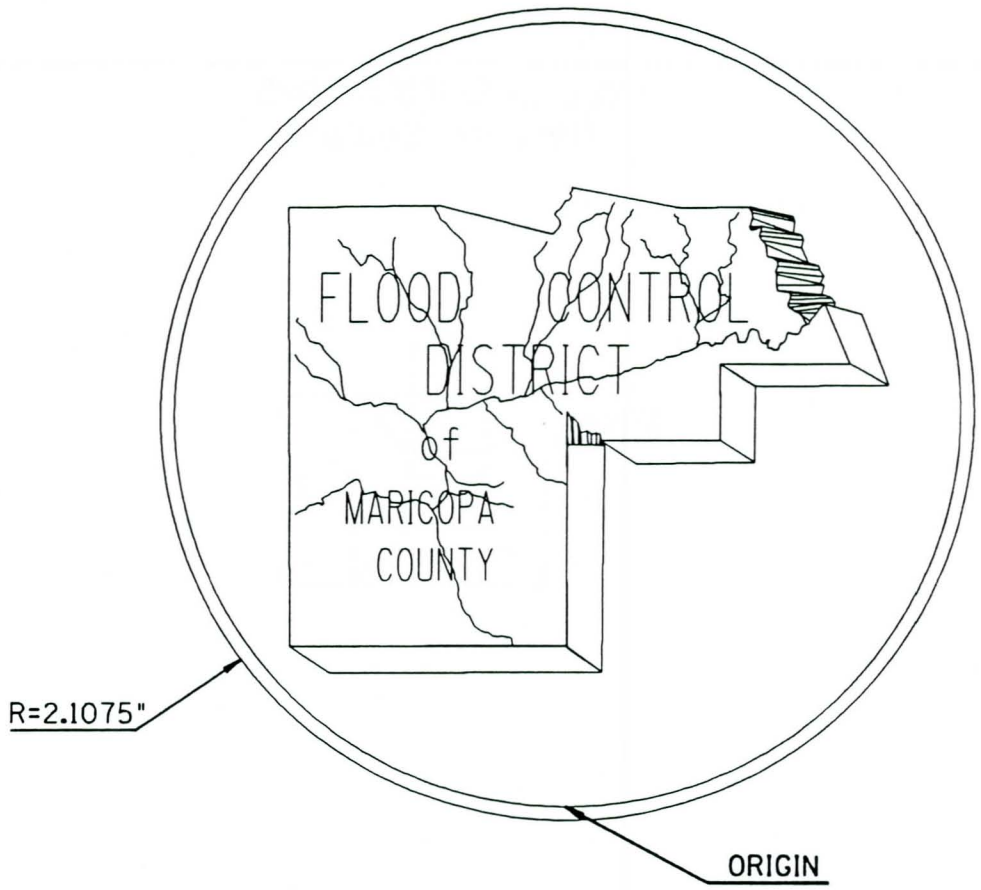
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	FCDMC LOGO
CELL NAME	FCDMC
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES	PARAMETERS
Although this cell is found in the f.dgn face sheet design file, it can be used for any application.	LV=VARY WT=VARY LC=0 CO=VARY AS=1 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=
	GRAPHIC TEXT
	VARIES

EMTA CAD STANDARDS

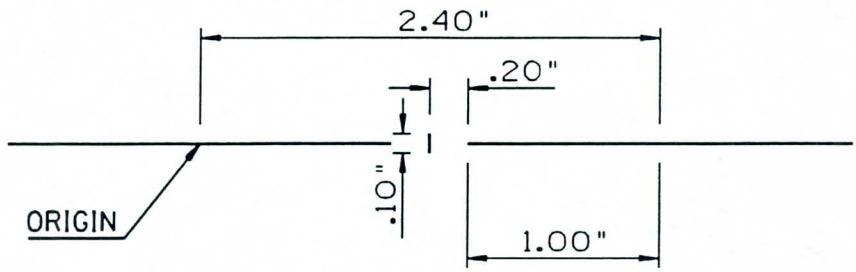
DESCRIPTION	FEDERAL BOUNDARY
CELL NAME	FED
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Tonto National Forest

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the long dashes double in length.

Label the boundary per the graphic text parameters shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

Uses forthis symbol include National Forest, Indian Reservation, Military Bases or Ranges, and Bureau of Land Management boundaries.

PARAMETERS

LV=13 WT=2
LC=0 CO=7
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV=13 FT=23
CO=7 LS=6.25
WT=2 TJ=CB TX=12.5

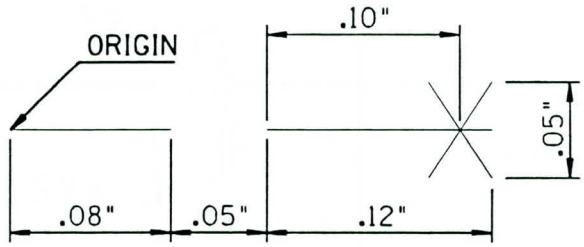
EMTA CAD STANDARDS

DESCRIPTION	FENCE BARBWIRE EXIST
CELL NAME	FBWX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use this cell for all types of fence except chain link, block wall, and wood fences. Label the fence type. Turn the graphic group lock off, copy the "x" and place it at each corner and starting point Use the complete cycle pattern command.

Text parameters shown are for 1"=100' drawings. for other applications, refer to Table 2-2, p 2-6

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=17 FT=23
CO=9 LS=5
WT=0 TJ=CC TX=10

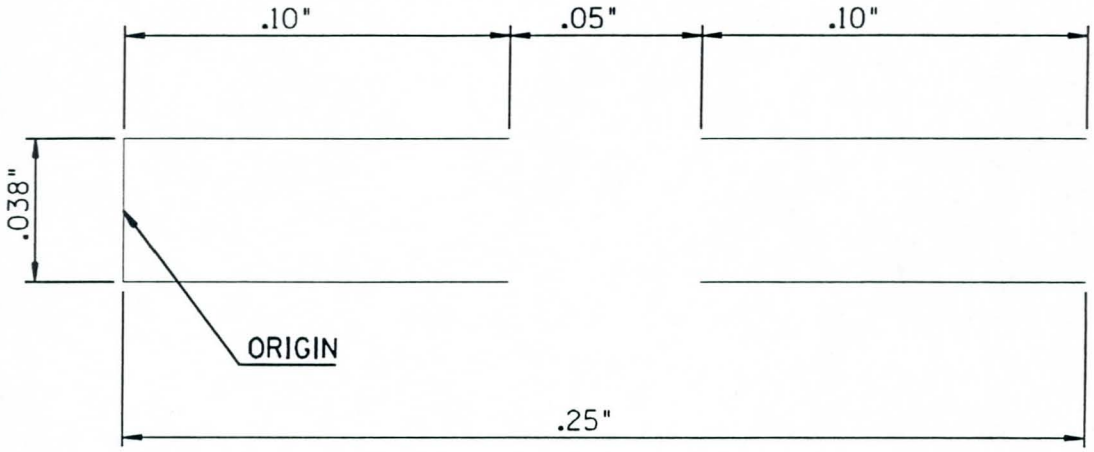
EMTA CAD STANDARDS

DESCRIPTION	FENCE BLOCK EXIST
CELL NAME	FBLKX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use complete cycle linear pattern command.

Label only if necessary.

Text parameters shown are for 1'=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

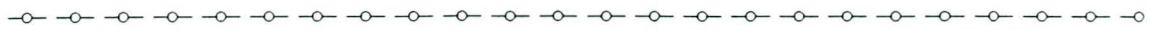
LV=17 FT=23
CO=9 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

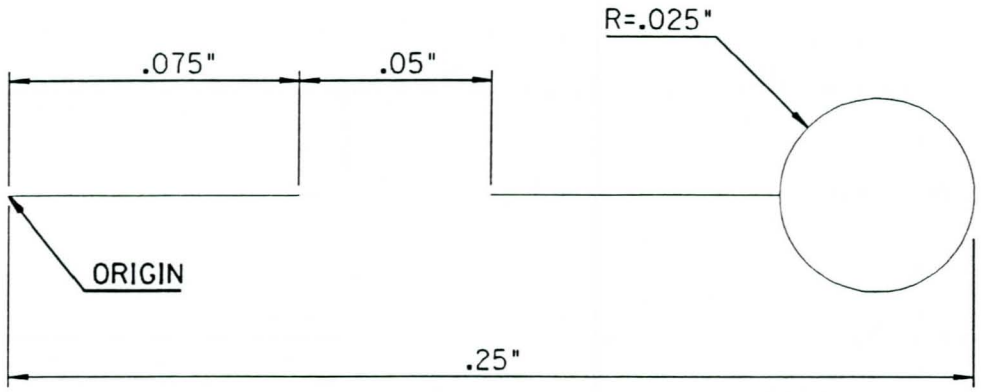
DESCRIPTION	FENCE CHAIN LINK EXIST
CELL NAME	FCLX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

Turn the graphic group lock off, copy the "circle" and place it at each corner and starting point.

Use the complete cycle linear pattern command.

Label fence height if unusual.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=17 FT=23
CO=9 LS=5
WT=0 TJ=CC TX=10

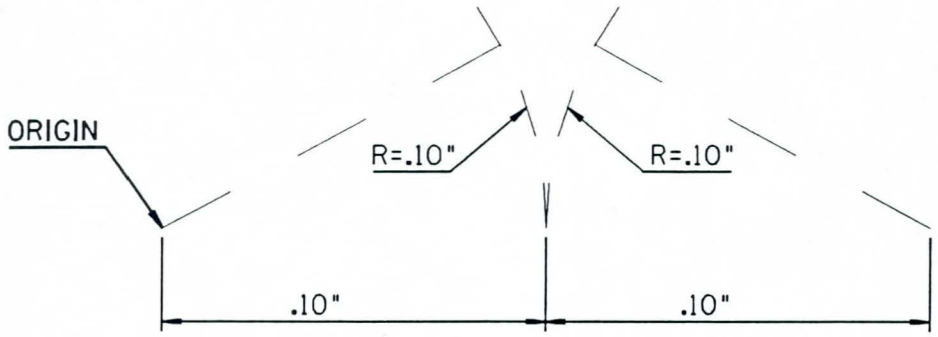
EMTA CAD STANDARDS

DESCRIPTION	FENCE GATE DOUBLE EXIST
CELL NAME	GATE2X
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a generic symbol for a gate, In order to represent various applications, scale the x and y axis as necessary.

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

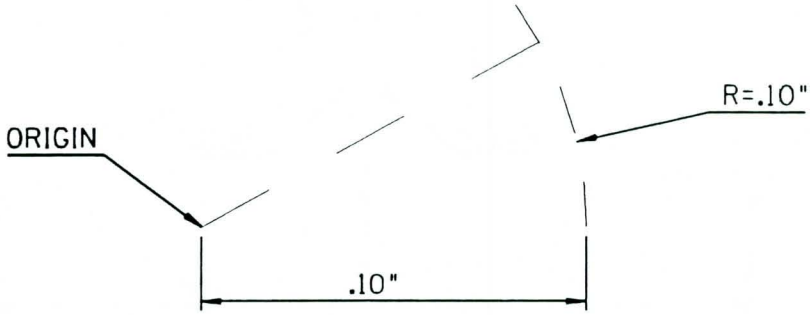
EMTA CAD STANDARDS

DESCRIPTION	FENCE GATE SINGLE EXIST
CELL NAME	GATE1X
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a generic symbol for a gate, In order to represent various applications, scale the x and y axis as necessary.

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

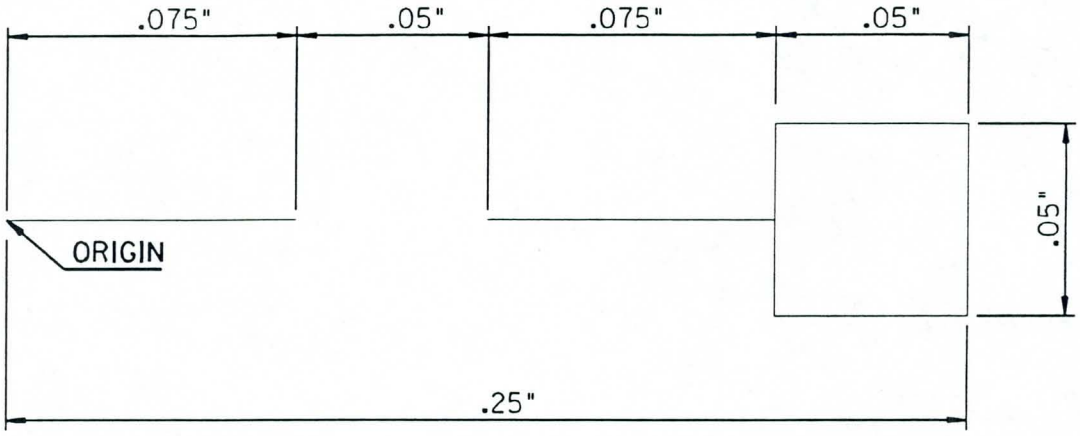
EMTA CAD STANDARDS

DESCRIPTION	FENCE WOOD EXIST
CELL NAME	FWDX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use the complete cycle pattern command.

Turn off the graphic group lock, copy the "square" and place it at each corner and starting point.

Label the type of wood fence per the text parameters shown.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=17 WT=0
LC=0 CO=9
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=17 FT=23
CO=9 LS=5
WT=0 TJ=CB TX=10

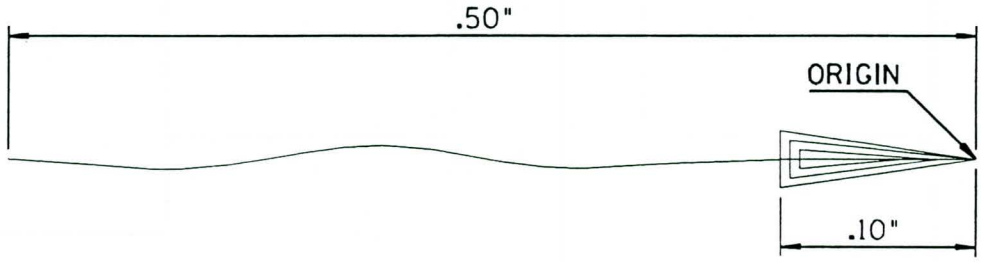
EMTA CAD STANDARDS

DESCRIPTION	FLOW DIRECTION ARROW
CELL NAME	FLOW
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES	PARAMETERS
	LV=14 WT=0 LC=0 CO=1 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

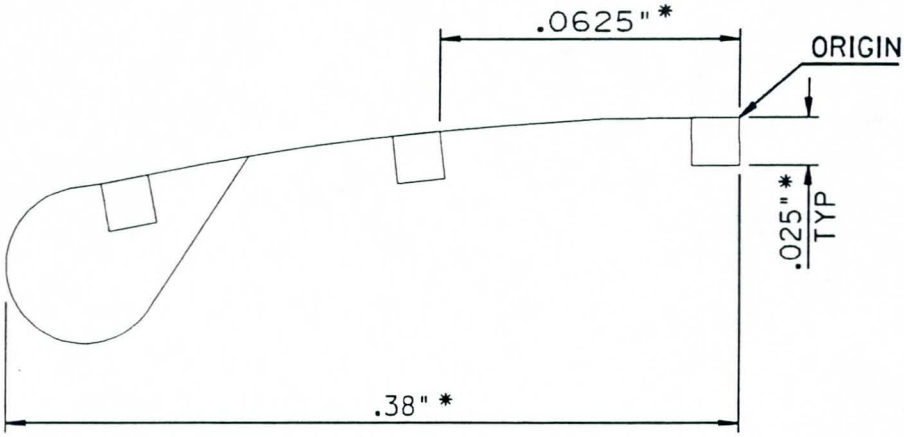
DESCRIPTION	GUARDRAIL BCT EXIST
CELL NAME	GRBCTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

Traffic Flow

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for existing guardrail breakaway terminal sections. To set the proper active angle, use the bearing of the guardrail mainline in the direction of the traffic flow.

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

Symbolize an anchor assembly by a short 45° line placed at the end of the guardrail.

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=18 WT=0
LC=0 CO=10
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

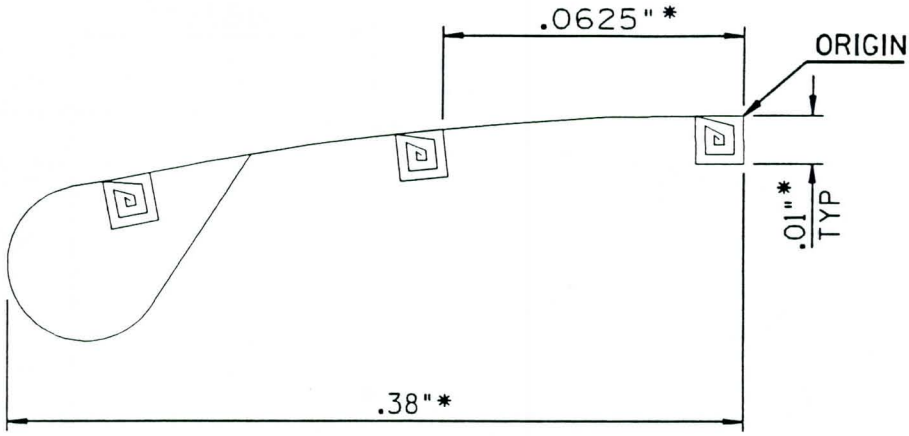
EMTA CAD STANDARDS

DESCRIPTION	GUARDRAIL BCT NEW
CELL NAME	GRBCTN
CELL LIBRARY	/usr/ip32/mstation/cell/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for new guardrail breakaway terminal sections. To set the proper active angle, use the bearing of the guardrail mainline in the direction of the traffic flow.

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

Symbolize an anchor assembly by a short 45° line placed at the end of the guardrail

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=36 WT=1
LC=0 CO=10
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

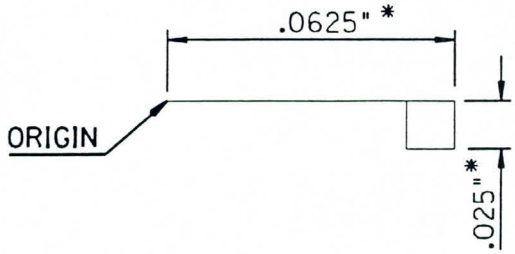
EMTA CAD STANDARDS

DESCRIPTION	GUARDRAIL EXIST
CELL NAME	GRX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for all existing guardrail applications. To orient the posts on the outside of the rail, select the element with the first data point. To determine pattern direction, place the second data point away from the first, in the direction of the traffic flow on that side of the roadway.

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=18 WT=0
LC=0 CO=10
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

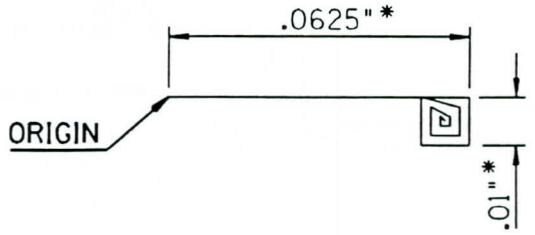
EMTA CAD STANDARDS

DESCRIPTION	GUARDRAIL NEW
CELL NAME	GRN
CELL LIBRARY	/usr/ip32/mstation/cell/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for new guardrail applications. To orient the posts on the outside of the rail, select the element with the first data point. To determine pattern direction, place the second data point away from the first, in the direction of the traffic flow on that side of the roadway.

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=36 WT=1
LC=0 CO=10
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

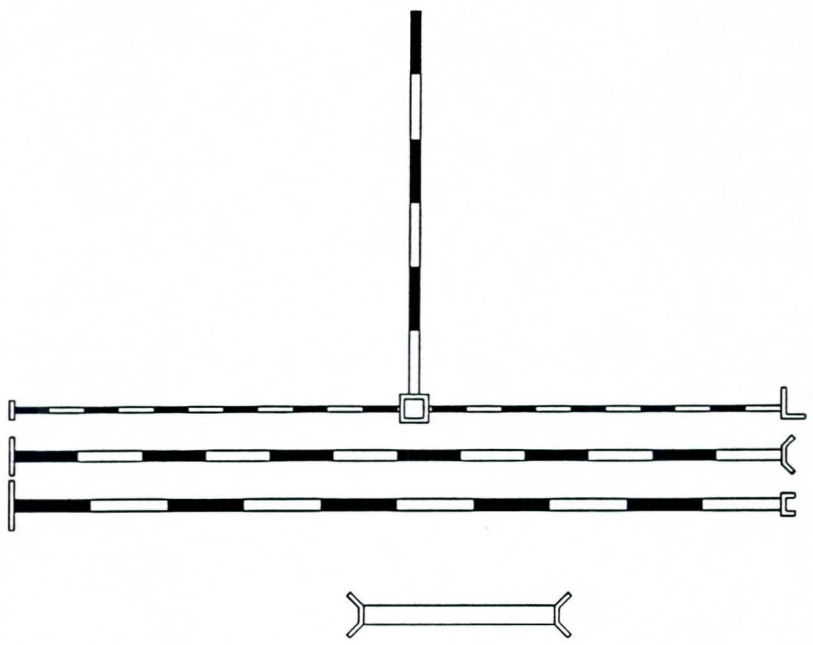
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	HEADWALLS NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

New irrigation and drainage structures including all headwalls, junction boxes, etc., will be drawn to scale per the parameters shown. However, for 1"=40' and 1"=50' applications, the wall thickness will be exaggerated to be 1' wide for appearance.

* Lv=37 for irrigation structures.
  Lv=38 for drainage structures.

PARAMETERS

LV=37/38* WT=1
LC=0 CO=1
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

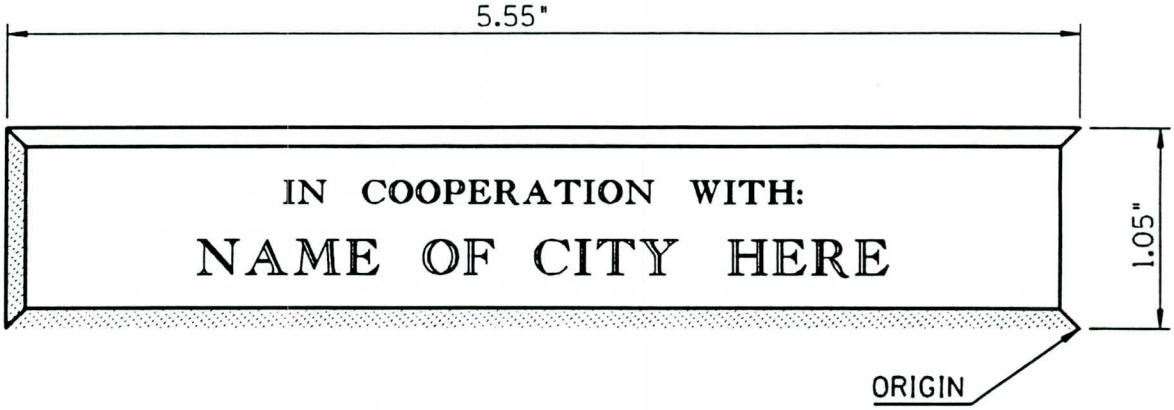
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	INTER GOVT AGREEMENT
CELL NAME	IGA
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

To be used on face sheet (f.dgn) when there is an IGA (inter-governmental agreement). Place it above the Board of Supervisors/Signature block on the face sheet, drop cell status, and edit 'NAME OF CITY' accordingly.

PARAMETERS

LV=1 WT=3
LC=0 CO=0
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=N/A

GRAPHIC TEXT

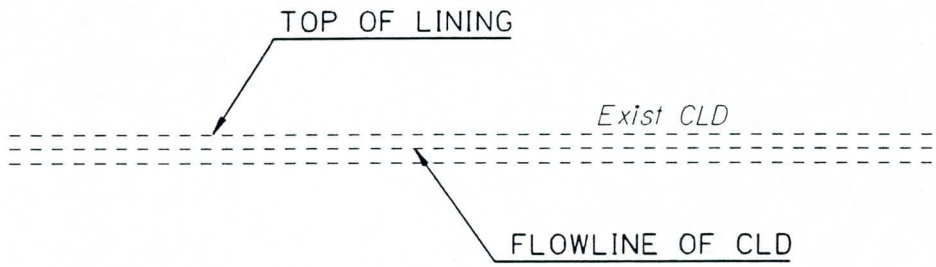
LV=2 FT=7
CO=3
WT=1 TJ=CC TX=30

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH CONCRETE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage concrete lined ditches (CLD). For CLDs greater than 10' in width (top of lining to top of lining), see "IRR DITCH CONCRETE LARGE EXIST" symbol sheet on p A-71.

*Lv=20 for existing irrigation ditches
Lv=21 for existing storm drainage dithces

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=20,21* WT=0
LC=5 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=000

GRAPHIC TEXT

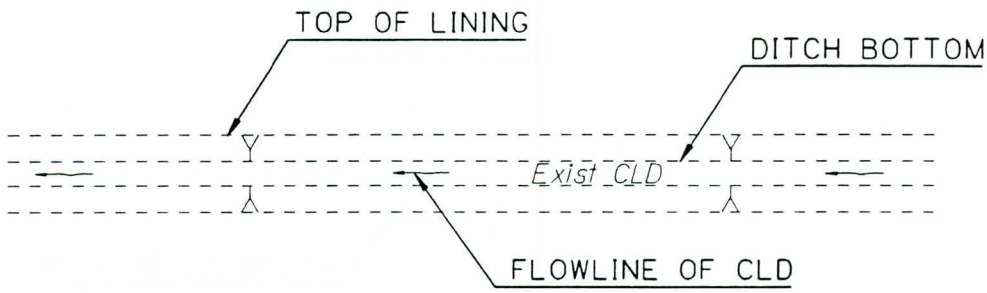
LV=20,21* FT=23
CO=1 LS=5
WT=0 TJ=CB TX=10

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH CONCRETE LARGE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage concrete lined ditches (CLD). For CLDs less than 10' in width (top of lining to top of lining), see "IRR DITCH CONCRETE EXIST" symbol sheet on p A-70.

Place the slope symbols with the "SLOPYX" cell at least once every 100' of ditch. Place the flow direction arrow with the "FLOW" cell at least once per 500' of ditch.

*Lv=20 for existing irrigation ditches
Lv=21 for existing storm drainage dithces

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=20,21* WT=0
LC=5 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=000

GRAPHIC TEXT

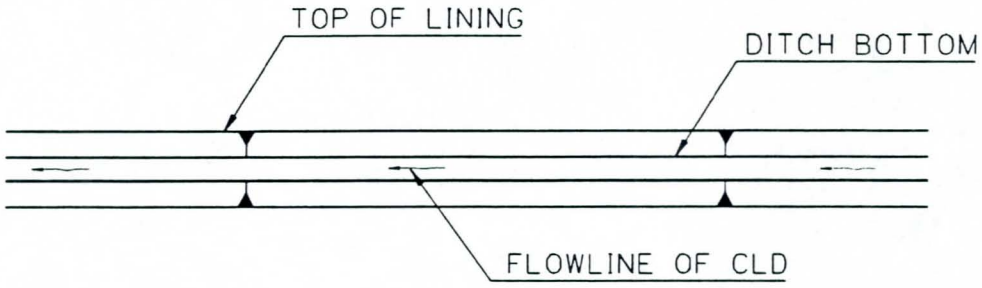
LV=20,21* FT=23
CO=1 LS=5
WT=0 TJ=CB TX=10

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH CONCRETE LARGE NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage concrete lined ditches (CLD). For CLDs less than 10' in width (top of lining to top of lining), see "IRR DITCH CONCRETE NEW" symbol sheet on p A-73.

Place the slope symbols with the "SLOPYX" cell at least once every 100' of ditch. Place the flow direction arrow with the "FLOW" cell at least once per 500' of ditch.

*Lv=37 for new irrigation ditches
Lv=38 for new storm drainage ditches

PARAMETERS

LV=37,38* WT=2
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

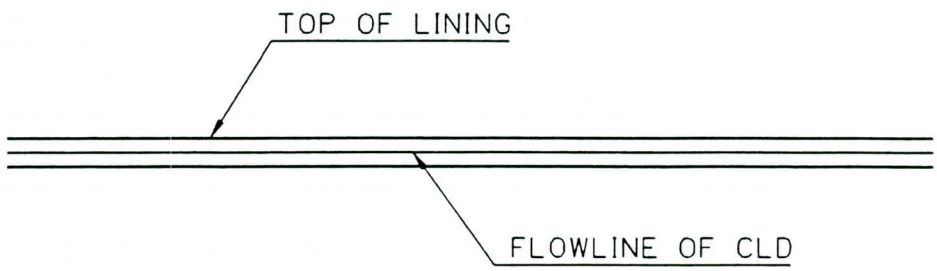
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH CONCRETE NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage concrete lined ditches (CLD). For CLDs greater than 10' in width (top of lining to top of lining), see "IRR DITCH CONCRETE LARGE NEW" symbol sheet on p A-72.

*Lv=37 for new irrigation ditches
Lv=38 for new storm drainage ditches

PARAMETERS

LV=37,38* WT=2
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

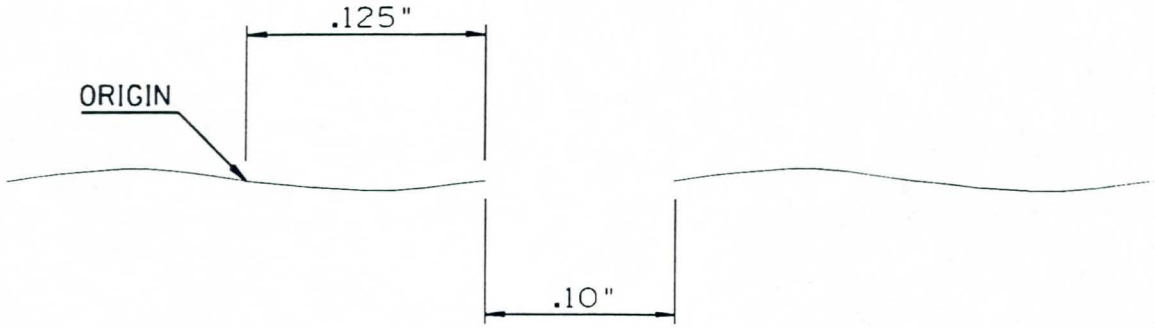
EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH DIRT EXIST
CELL NAME	IDDX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only and when used as a line pattern, the dashes double in length.

For flow direction arrows, see 'FLOW'.

For ditches greater than 10' in width (top to top), see "IRR DITCH DIRT LARGE EXIST" symbol sheet.

PARAMETERS

LV=14 WT=0
LC=0 CO=1
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

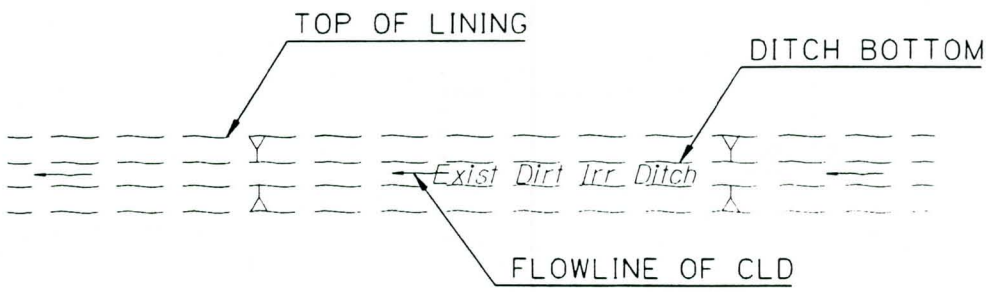
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH DIRT LARGE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage existing dirt ditches. For ditches less than 10' in width (top of bank to top of bank), see "IRR DITCH DIRT EXIST" symbol sheet on p A-74.

Pattern the lines representing the tops and bottoms of the ditch with "IDDX" (see p A-74).

Place the slope symbols with the "SLOPYX" cell at least once every 100' of ditch. Place the flow direction arrow with the "FLOW" cell at least once per 500' of ditch.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=14 WT=0
LC=0 CO=1
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: N/A
RAPIDO PEN NO.=000

GRAPHIC TEXT

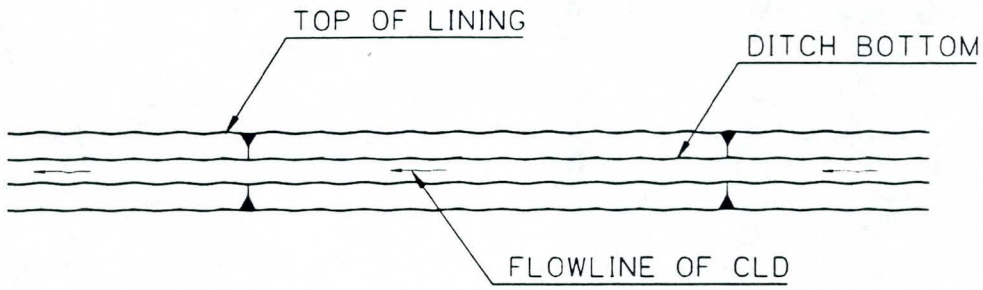
LV=14 FT=23
CO=1 LS=5
WT=0 TJ=CB TX=10

EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH DIRT LARGE NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This symbol shall be used for both irrigation and drainage dirt ditches. For ditches less than 10' in width (top of bank to top of bank), see "IRR DITCH DIRT NEW" symbol sheet on p A-77.

Place the slope symbols with the "SLOPYN" cell at least once every 100' of ditch. Place the flow direction arrow with the "FLOW" cell at least once per 500' of ditch.

*Lv=37 for new irrigation ditches
Lv=38 for new storm drainage dithces

PARAMETERS

LV=37,38* WT=2
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

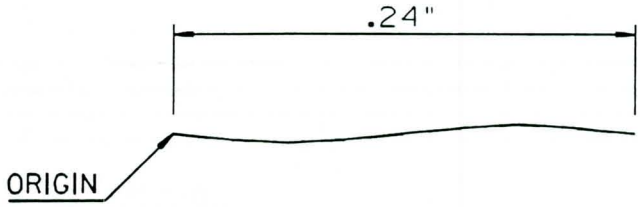
EMTA CAD STANDARDS

DESCRIPTION	IRR DITCH DIRT NEW
CELL NAME	IDDN
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only and when used as a line pattern, the dashes double in length.

For flow direction arrows, see 'FLOW'.

For ditches greater than 10' in width (top of bank to top of bank), see "IRR DITCH DIRT LARGE NEW" symbol sheet.

*LV=37 for new irrigation ditches
LV-38 for new storm drainage ditches

PARAMETERS

LV=37,38* WT=2
LC=0 CO=1
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	IRR LINE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

24"IRR (CP)

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file. Then use the reference file mask command to give the broken line appearance.
This application is for Irrigation lines that are smaller than 36". For 36" & larger pipes use 2 lines drawn to scale with line code 1. Irrigation structures including headwalls, CLD's, junction boxes, etc. will be drawn to scale with line code 5 except for wall widths, which will be assumed to be 1' wide even if they are less than 1'.
Space labels (pipe dia. and type) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes.
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=20 WT=0
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=20 FT=23
CO=1
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

DESCRIPTION	IRR STANDPIPE EXISTING
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

SP

NOTES	PARAMETERS
Draw to scale. Place text per text parameters as shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6. Orient text horizontal to sheet.	LV=20 WT=0 LC=0 CO=1 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV=20 FT=1 CO=1 LS=4.5 WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

DESCRIPTION	IRR WELL EXISTING
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

WELL

NOTES	PARAMETERS
Draw to scale. Place text per text parameters as shown. Text parameters, shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6. Orient text horizontal to sheet. Place on level 20 for irrigation or level 26 for a well that is part of a domestic water system.	LV=20/26 WT=0 LC=0 CO=1 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV=20/26 FT=1 CO=1 LS=4.5 WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

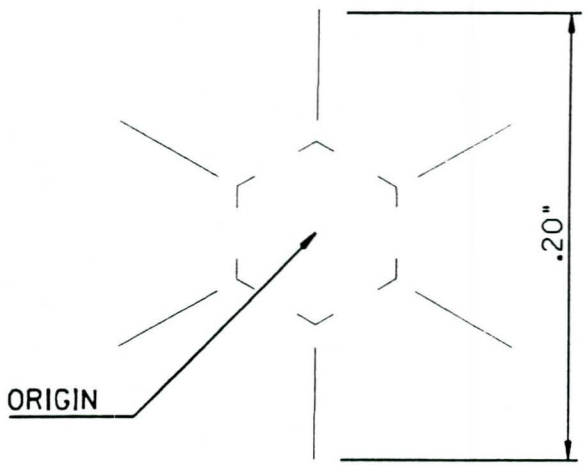
DESCRIPTION	LANDSCAPE LIGHT
CELL NAME	LANDLT
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

*

CELL SPECIFICATIONS
(Not to Scale)



NOTES	PARAMETERS
Place cell origin at location of post.	LV=18 WT=0 LC=0 CO=3 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

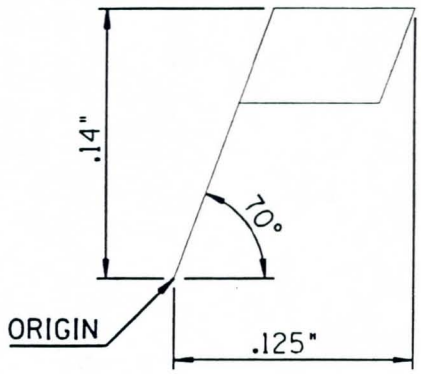
EMTA CAD STANDARDS

DESCRIPTION	MAIL BOX
CELL NAME	MAIL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



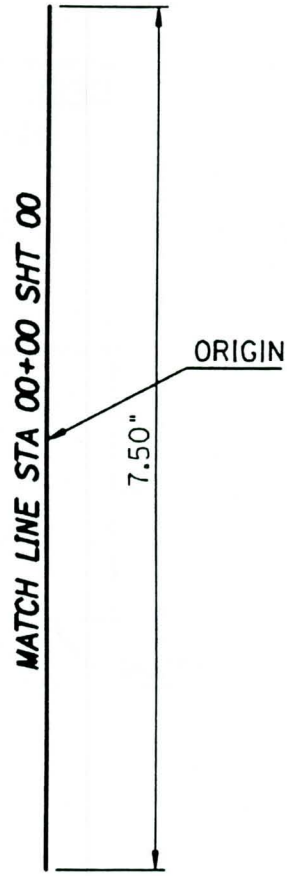
NOTES	PARAMETERS
Place cell origin at location of post.	LV=18 WT=0 LC=0 CO=7 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	MATCH LINE LEFT
CELL NAME	MLL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Move or rotate to place the match line perpendicular to the construction centerline, or delete as necessary for various plan sheet applications. Drop cell status and edit stations.
Text parameters shown ar for 1"=100' drawings. Use appropriate active scale for other applications
The match lines will be as wide as the reference file clipping width (300' at 40 scale). and define the extremes of the clipped area(1000' at 40 scale).
This match line will be used at the left end of the sheet and at the top of intersecting crossroads.

PARAMETERS

LV=58 WT=4
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=3

GRAPHIC TEXT

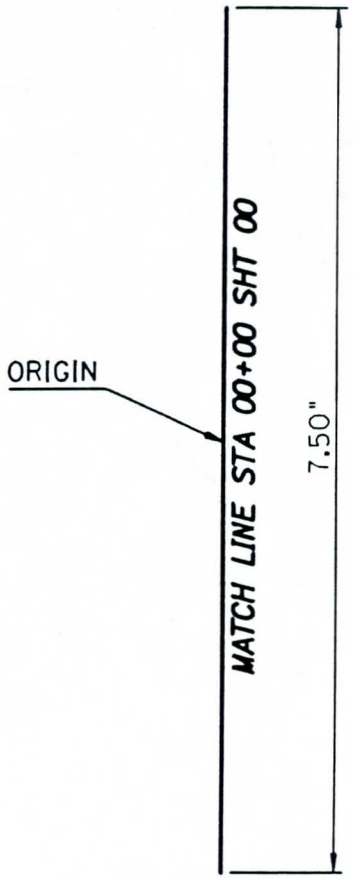
LV=58 FT=23
CO=3 LS=8.75
WT=4 TJ=TC TX=17.5

EMTA CAD STANDARDS

DESCRIPTION	MATCH LINE RIGHT
CELL NAME	MLR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Move or rotate to place the match line perpendicular to the construction centerline, or delete as necessary for various plan sheet applications. Drop cell status and edit stations.
Text parameters shown are for 1"=100' drawings. Use appropriate active scale for other applications
The match lines will be as wide as the reference file clipping width (300' at 40 scale). and define the extremes of the clipping length (1000' at 40 scale).
This match line will be used at the right end of the sheet and at the bottom of intersecting crossroads.

PARAMETERS

LV=58 WT=4
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=3

GRAPHIC TEXT

LV=58 FT=23
CO=3 LS=8.75
WT=4 TJ=TC TX=17.5

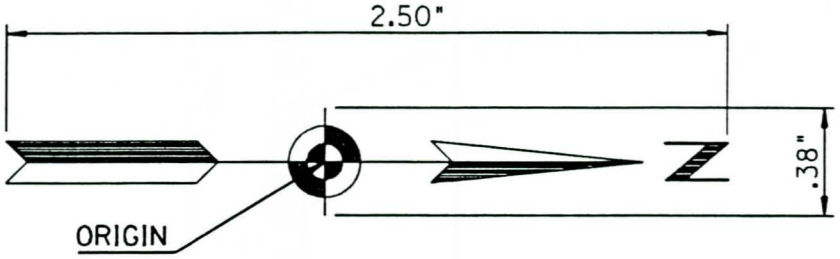
EMTA CAD STANDARDS

DESCRIPTION	NORTH ARROW
CELL NAME	NORTH
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will normally be placed in the project specific 00000p.dgn border sheet. Rotate accordingly to represent true north. Place between the right match line and the left line of the note column where possible. If not possible, place as close as possible to the top right corner of the plan section of the plan and profile sheet.

PARAMETERS

LV=58 WT=1
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

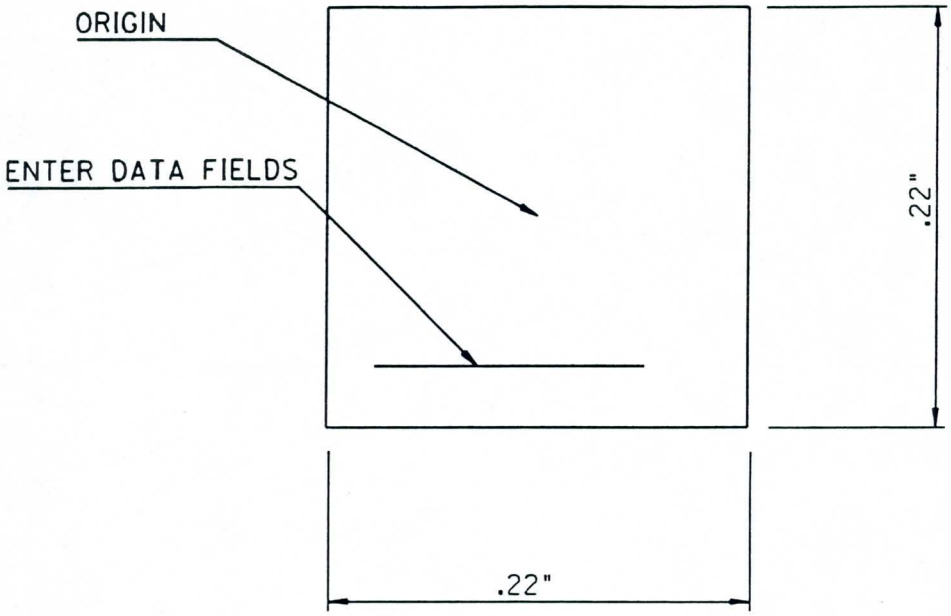
EMTA CAD STANDARDS

DESCRIPTION	NOTE BOX SYMBOL
CELL NAME	NOTBOX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

Use this cell for calling out all Removal/Relocate items in the plan view. The color and level shall match the item being refered to. This cell contains 2 enter data fields - one for single digits and one for 2 digits. Use the appropriate data field to enter the note number associated with the Remove/Relocate item in the note column on the right side of the plan and profile sheet.

Use an arced leader line with LT=ah10, TS=1.25

PARAMETERS

LV=* WT=2
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=* FT=23 TH=12.5
CO=* LS=N/A
WT=2 TJ=CC TW=10

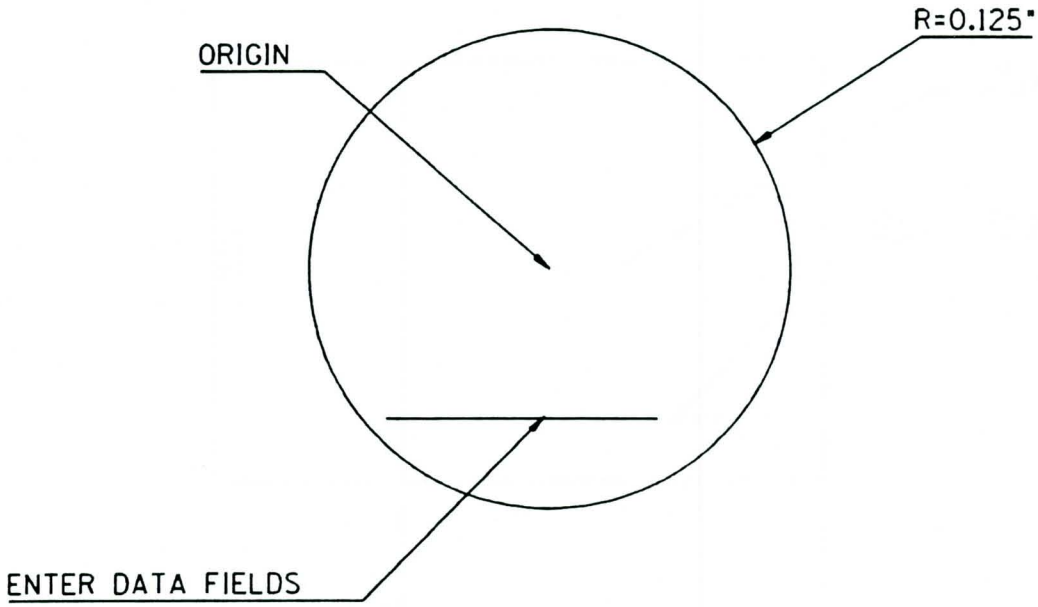
EMTA CAD STANDARDS

DESCRIPTION	NOTE CIRCLE SYMBOL
CELL NAME	NOTCIR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

Use this cell for calling out all Construction items in the plan view. The color and level shall match the item being refered to. This cell contains 2 enter data fields - one for single digits and one for 2 digits. Use the appropriate data field to enter the note number associated with the Construction item in the note column on the right side of the plan and profile sheet.

Use an arced leader line with LT=ah10, TS=1.25

PARAMETERS

LV=* WT=2
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=* FT=23 TW=12.5
CO=* LS=N/A
WT=2 TJ=CC TW=10

EMTA CAD STANDARDS

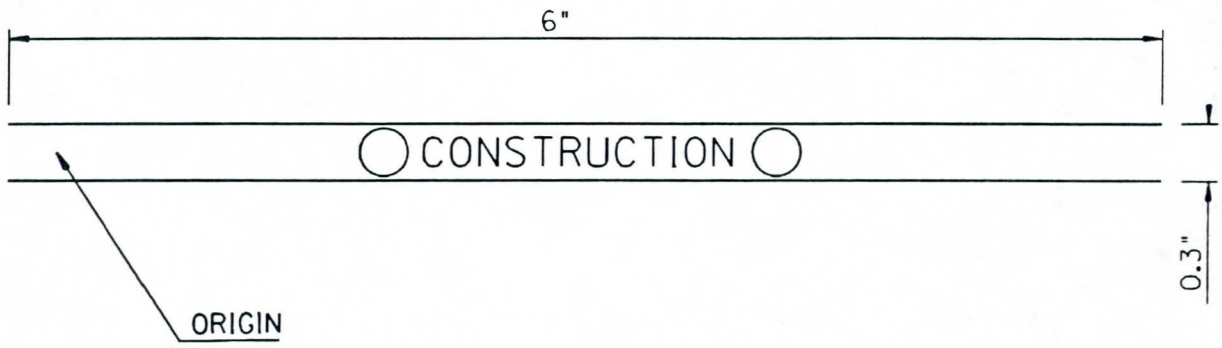
DESCRIPTION	NOTE CONSTRUCTION LABEL
CELL NAME	NOTCON
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CONSTRUCTION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This symbol is included in the p.dgn border file. Adjust its location as needed to accomodate the Removal/Relocate or Construction notes.

PARAMETERS

LV=61 WT=2
LC=0 CO=2
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=61 FT=1
CO=2 LS=7.5
WT=2 TJ=CC TX=15

EMTA CAD STANDARDS

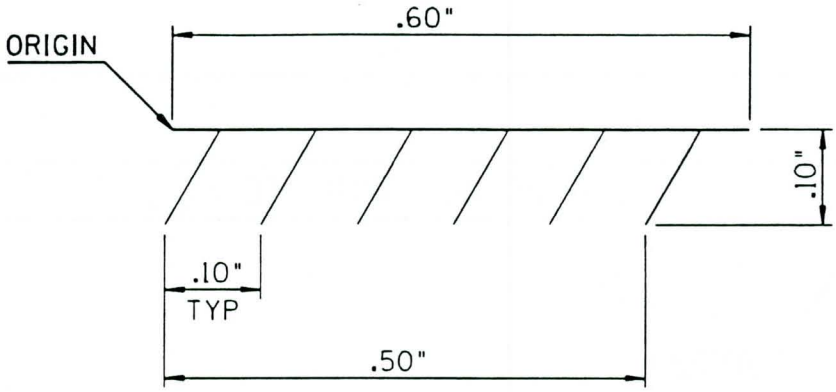
DESCRIPTION	PARK BOUNDARY
CELL NAME	PARK
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

White Tanks County Park

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Includes city, county, and state parks.

Place text per the text parameters shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

The diagonal lines are towards the inside of the park.

PARAMETERS

LV=13 WT=1,2
LC=0 CO=7
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0,1

GRAPHIC TEXT

LV=13 FT=23
CO=7 LS=6.25
WT=2 TJ=BC TX=12.5

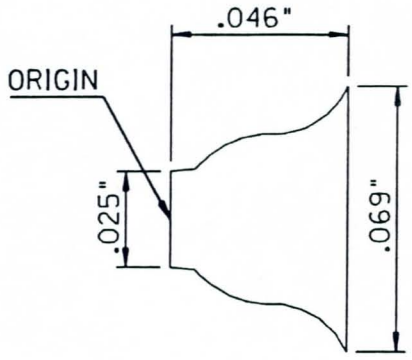
EMTA CAD STANDARDS

DESCRIPTION	PIPE END SECTION
CELL NAME	PIPEND
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

When placed using an active scale of 1, this cell will fit a 12" pipe plotted at 1"=40'. For other applications, scale accordingly.

Use this cell for new and existing applications.

PARAMETERS

LV=38 WT=1
LC=0 CO=1
AS=VARIES
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

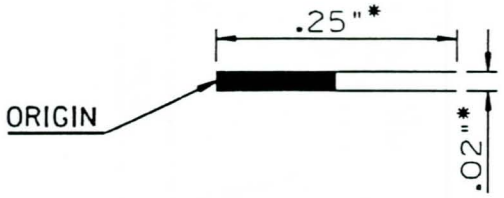
EMTA CAD STANDARDS

DESCRIPTION	PIPE 24 INCH NEW
CELL NAME	PIPE24
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol shall be used for new pipes 24" in diameter or smaller.

*Dimensions increase as the plotting scale decreases.
LV=37 for new irrigation pipe
LV=38 for new storm drain pipe

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

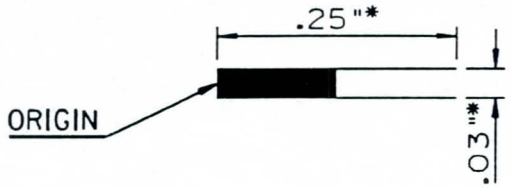
EMTA CAD STANDARDS

DESCRIPTION	PIPE 36 INCH NEW
CELL NAME	PIPE36
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol shall be used for new pipes greater than 24" in diameter to 36".

*Dimensions increase as the plotting scale decreases.
LV=37 for new irrigation pipe
LV=38 for new storm drain pipe

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

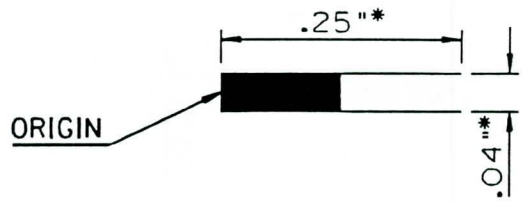
EMTA CAD STANDARDS

DESCRIPTION	PIPE 48 INCH NEW
CELL NAME	PIPE48
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol shall be used for new pipes greater than 36" in diameter to 48".

*Dimensions increase as the plotting scale decreases.
LV=37 for new irrigation pipes
LV=38 for new storm drain pipes

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

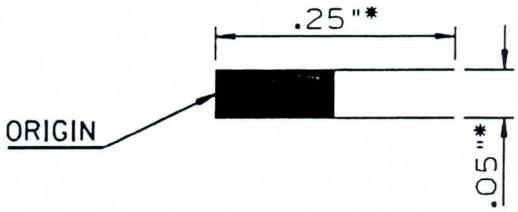
EMTA CAD STANDARDS

DESCRIPTION	PIPE 60 INCH NEW
CELL NAME	PIPE60
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol shall be used for new pipes greater than 48" in diameter to 60".

*Dimensions increase as the plotting scale decreases.
LV=37 for new irrigation pipes
LV=38 for new storm drain pipes

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

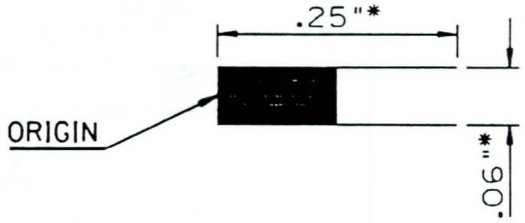
EMTA CAD STANDARDS

DESCRIPTION	PIPE 72 INCH NEW
CELL NAME	PIPE72
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol shall be used for new pipes greater than 60" in diameter to 70".

*Dimensions increase as the plotting scale decreases.
LV=37 for new irigation pipes
LV=38 for new storm drain pipes

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

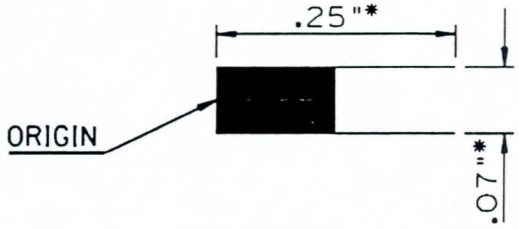
EMTA CAD STANDARDS

DESCRIPTION	PIPE 84 INCH NEW
CELL NAME	PIPE84
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This pattern represents actual ground distances and will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that it will scale correctly.

This plan symbol will be used for new pipes greater than 72" in diameter.

*Dimensions increase as the plotting scale decreases.
LV=37 for new irrigation pipes
LV=38 for new storm drain pipes

PARAMETERS

LV=37,38 WT=1
LC=0 CO=1
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

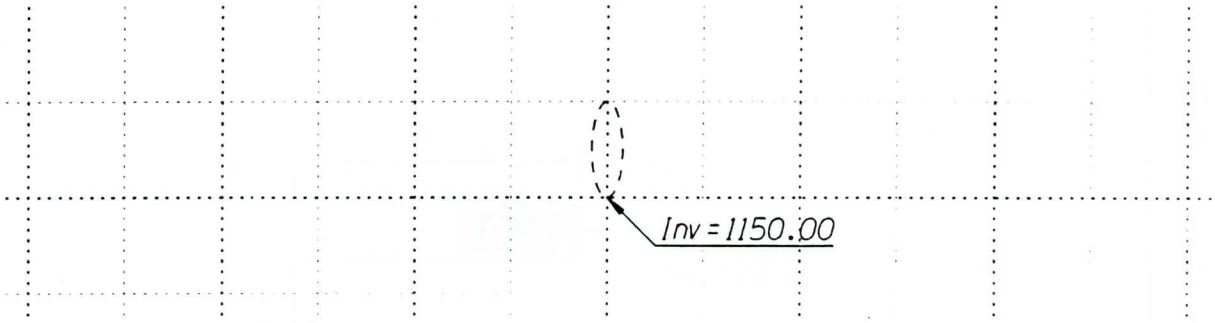
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	PIPE PROFILE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2, p2-6.

*Color and Level will vary depending on type of Utility.

PARAMETERS

LV=* WT=1
LC=5 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV=*
CO=* FT=23 LS=5.5
WT=1 TJ=LC TX=11

EMTA CAD STANDARDS

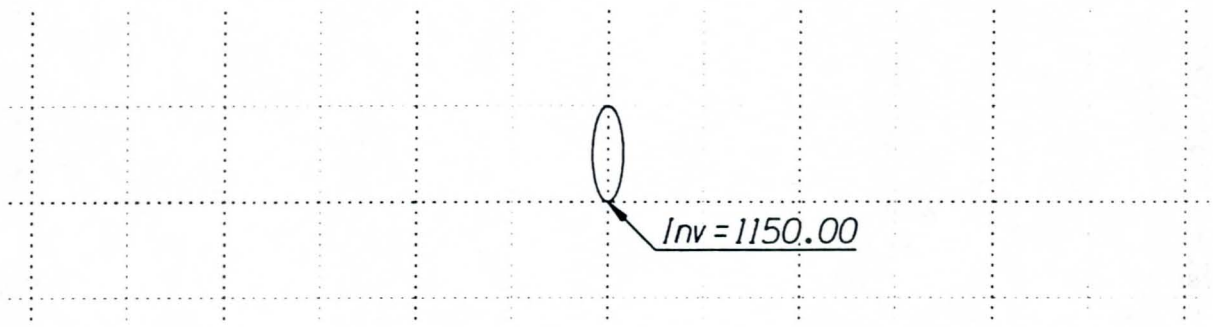
DESCRIPTION PIPE PROFILE NEW

CELL NAME NOT A CELL

CELL LIBRARY N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2.

*Color and Level will vary depending on type of Utility.

PARAMETERS

LV=* WT=2
LC=0 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV=*
CO=* FT=23 LS=6.25
WT=2 TJ=LC TX=12.5

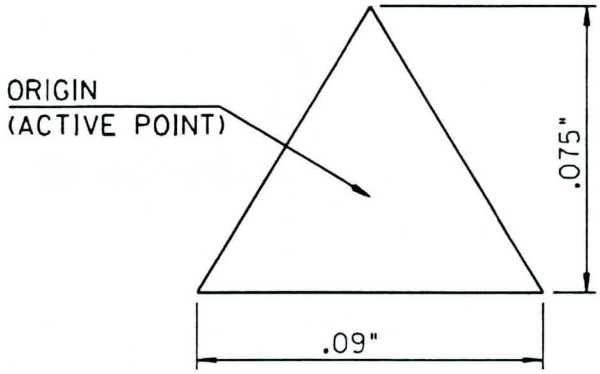
EMTA CAD STANDARDS

DESCRIPTION	POINT ANGLE
CELL NAME	PTANGL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

This cell is used for both vertical and horizontal alignment angle points.

PARAMETERS

LV=* WT=* (≡3)
LC=* CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

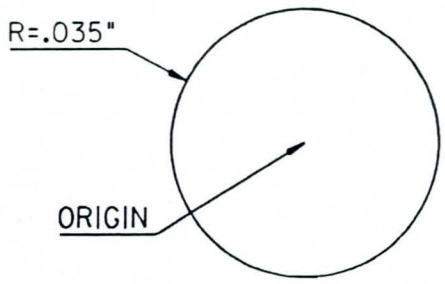
EMTA CAD STANDARDS

DESCRIPTION	POINT CONTROL
CELL NAME	PTCTRL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color).

This cell is used for both vertical and horizontal control points.

PARAMETERS

LV=* WT=* (≡3)
LC=* CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

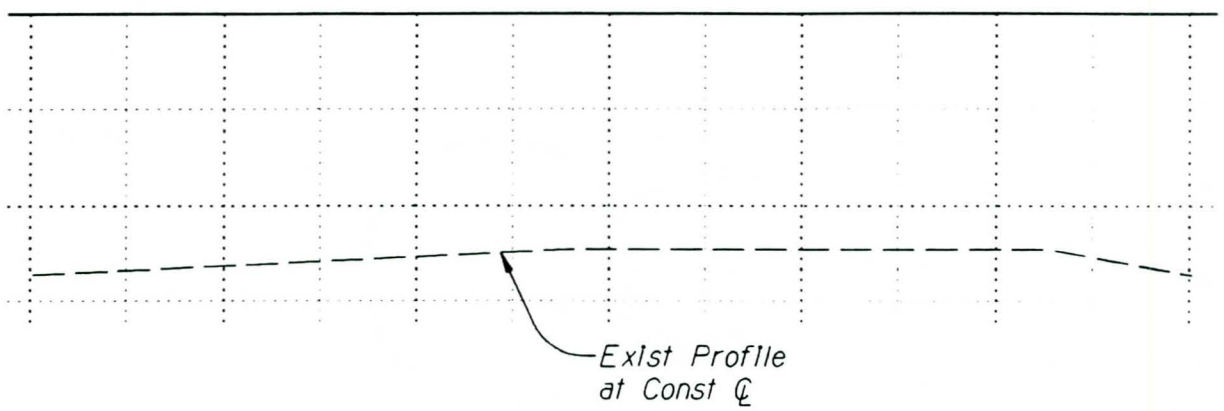
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	PROFILE GRADE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2, p 2-5.

*Color will vary depending on type of surface-dirt or pavement.

Existing profiles may be imported from InRoads.

PARAMETERS

LV=18 WT=1
LC=3 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

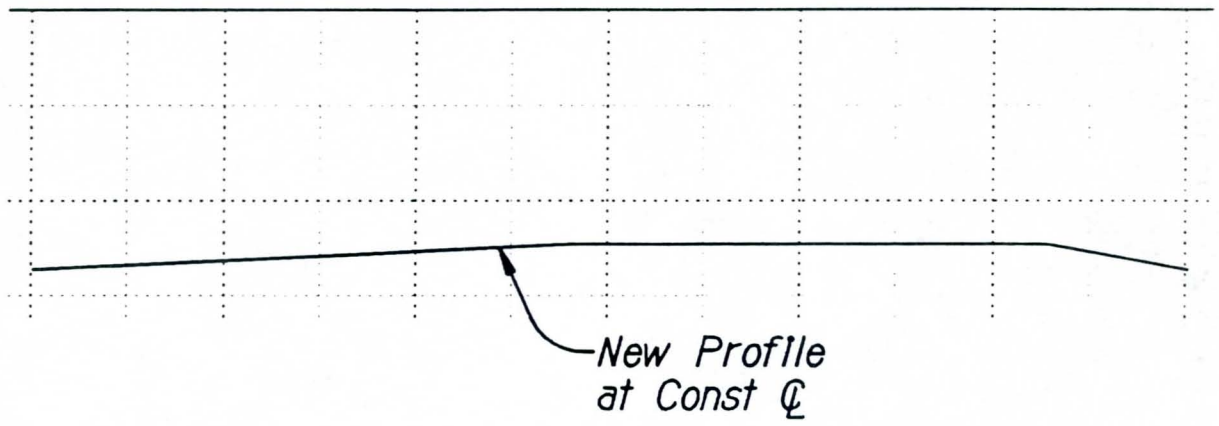
LV=18 FT=23
CO=* LS=5.5
WT=1 TJ=LC TX=11

EMTA CAD STANDARDS

DESCRIPTION	PROFILE GRADE NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2, p 2-5.

*Color and Level will vary depending on type of facility.

New profiles may be imported from InRoads.

PARAMETERS

LV=* WT=3
LC=0 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=2

GRAPHIC TEXT

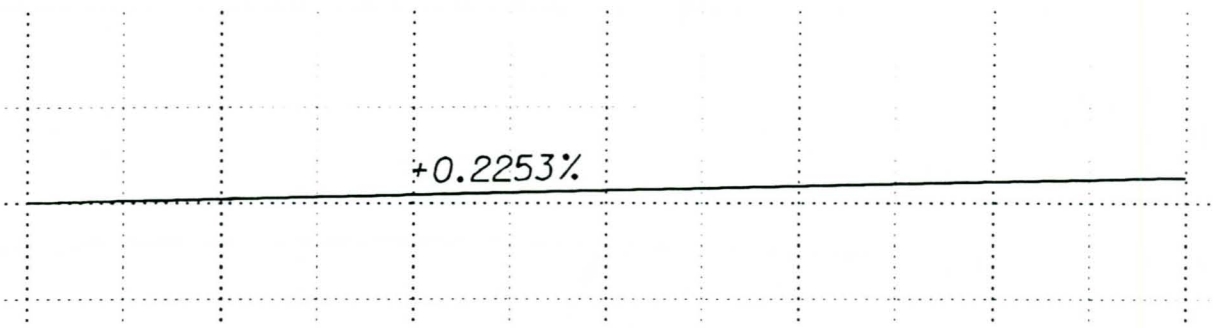
LV=*
CO=* FT=23 LS=7.5
WT=3 TJ=LC TX=15

EMTA CAD STANDARDS

DESCRIPTION	PROFILE SLOPE LABELS
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2, p 2-6..

*Color and Level will vary depending on type of facility.

New profiles can be imported from InRoads.

PARAMETERS

LV=* WT=2
LC=0 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

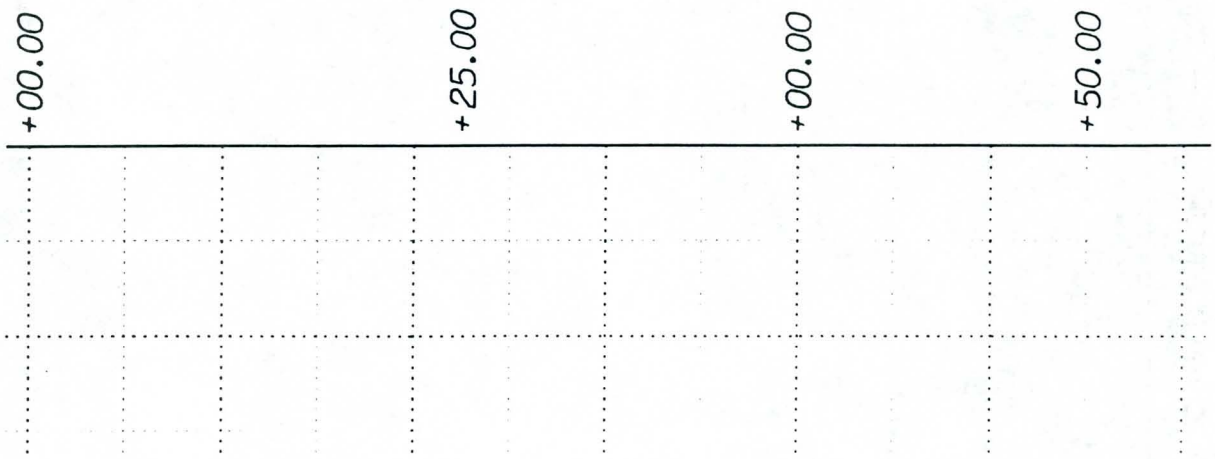
LV=*
CO=* FT=23 LS=6.25
WT=2 TJ=LC TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	PROFILE STATIONS
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



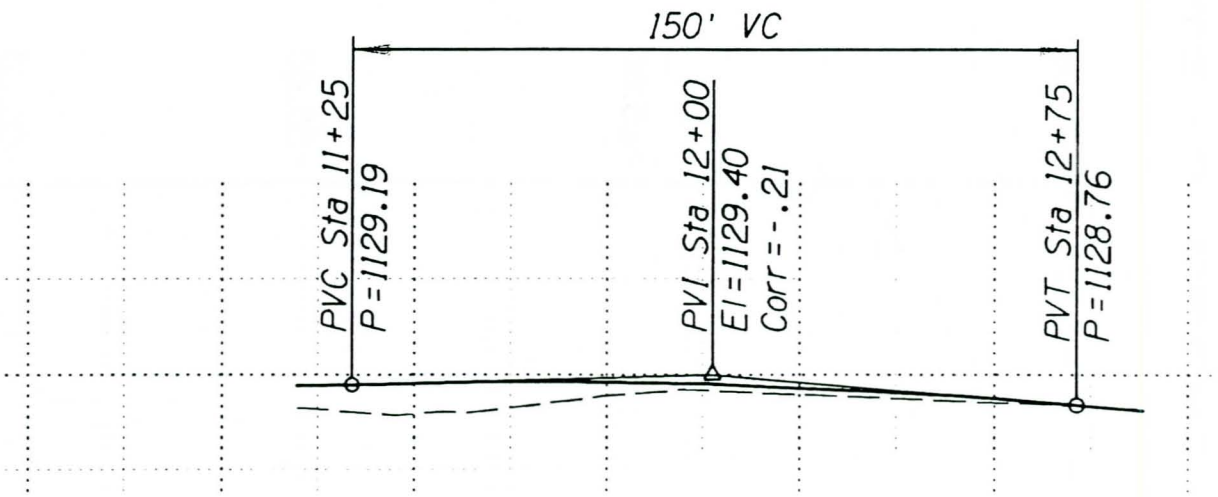
NOTES	GRAPHIC TEXT
Ued for station callouts on control points when necessary in the profile. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6 .	LV=36 FT=23 CO=7 WT=3 TJ=LC TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	PROFILE VERTICAL CURVE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE



NOTES

Text parameters shown are for 1"=100' drawings, for other applications, see Table 2-2., p 2-6.

*Color and Level will vary depending on type of Utility.

Profile lines shall continue through control point and angle point symbols.

PARAMETERS

LV=* WT=2
LC=0 CO=*
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=1

GRAPHIC TEXT

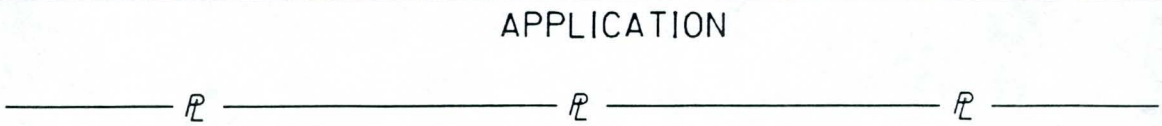
LV=*
CO=* FT=23 LS=6.25
WT=2 TJ=LC TX=12.5

EMTA CAD STANDARDS

DESCRIPTION	PROPERTY LINE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



SPECIFICATIONS
(Not to Scale)

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file. Then use the reference file mask command to give the broken line appearance.

The "!" character on the keyboard will give you the ℄ symbol.

When a fence is parallel to and within 1' of a property line. then adjust the location of either the property line or the fence so that both symbols are distinct and legible.
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=7 WT=1
LC=0 CO=4
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=7 FT=23
CO=4
WT=1 TJ=CC TX=11

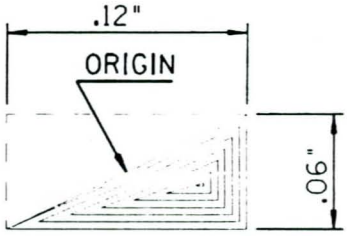
EMTA CAD STANDARDS

DESCRIPTION	RAILROAD CABINET EXIST
CELL NAME	RRCX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES	PARAMETERS
	LV=53 WT=0 LC=0 CO=3 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT

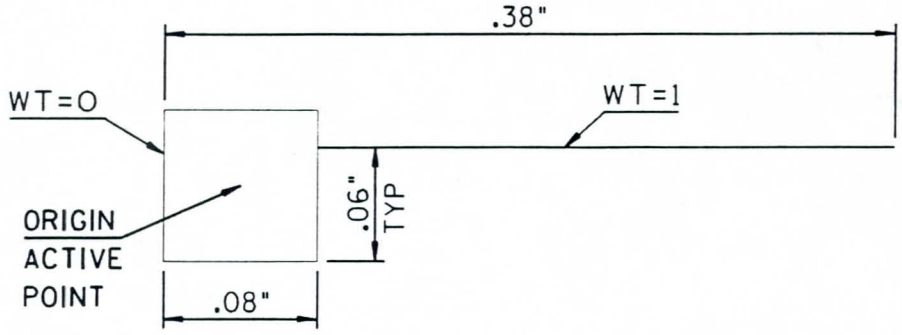
EMTA CAD STANDARDS

DESCRIPTION	RAILROAD GATE EXIST
CELL NAME	RRGATE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=18 WT=0,1
LC=0 CO=10
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00,0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

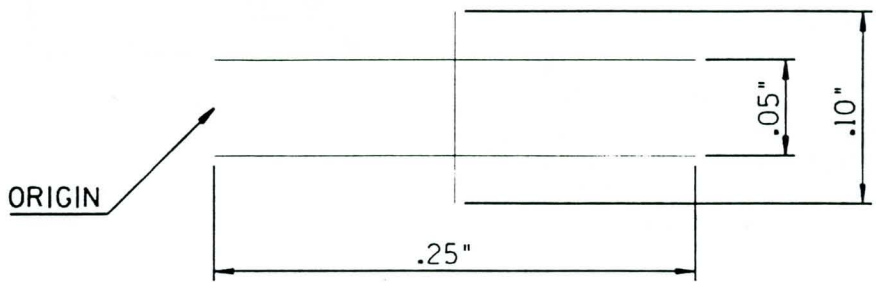
EMTA CAD STANDARDS

DESCRIPTION	RAILROAD TRACKS
CELL NAME	RR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the lines (between the perpendicular lines) double in length. Label line per the text parameters shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=18 WT=0
LC=0 CO=10
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

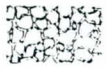
LV=18 FT=23
CO=10 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

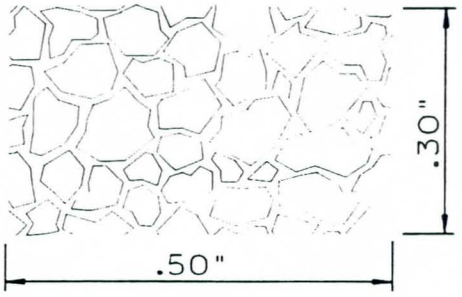
DESCRIPTION	RIPRAP ANGULAR
CELL NAME	RIPRPA
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



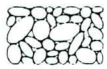
NOTES	PARAMETERS
Row Spacing=0 Column Spacing=0 Angle=0	LV=38 WT=0 LC=0 CO=1 AS=N/A PS=PLOT SCALE/100 CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

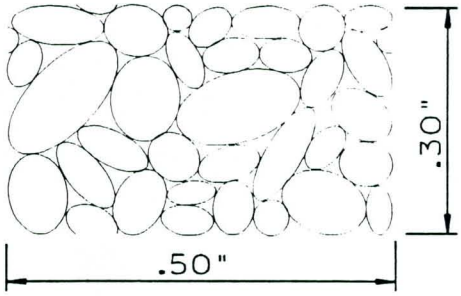
DESCRIPTION	RIPRAP SMOOTH
CELL NAME	RIPRPS
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



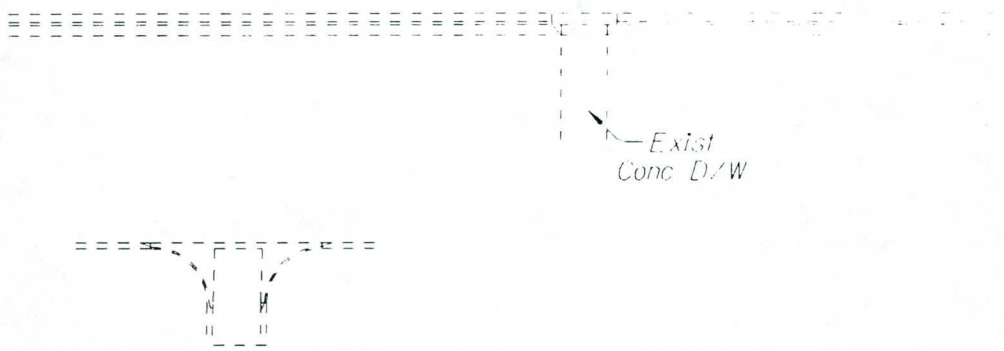
NOTES	PARAMETERS
Row Spacing=0 Column Spacing=0 Angle=0	LV=38 WT=0 LC=0 CO=1 AS=N/A PS=PLOT SCALE/100 CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	ROAD CONC ITEMS EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES

This is not a cell. Use the parameters shown for existing concrete driveways, sidewalks, valley gutters, etc.

Draw to scale except for curb & gutters (see curb & gutter cell sheet).

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=18 WT=0
LC=5 CO=10
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

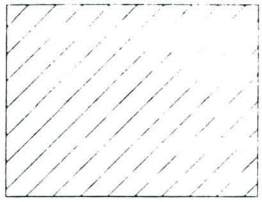
LV=18 FT=23
CO=10 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

DESCRIPTION	ROAD CONCRETE PVMT AREA NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES	PARAMETERS
Use the "Hatch Area Pattern" command with these parameters to symbolize new concrete pavement.	LV=36 WT=0 LC=0 CO=10 PS=PLOT SCALE/100 ROW SPACE=PLOT SCALE/10 PATTERN ANGLE=45° CELL TYPE: GRAPHIC RAPIDO PEN NO.=00

EMTA CAD STANDARDS

DESCRIPTION	ROAD DIRT EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NOTES	PARAMETERS
Draw to scale, connecting survey points with curve strings. Label with cell "RDDTXX".	LV=18 WT=0 LC=3 CO=6 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

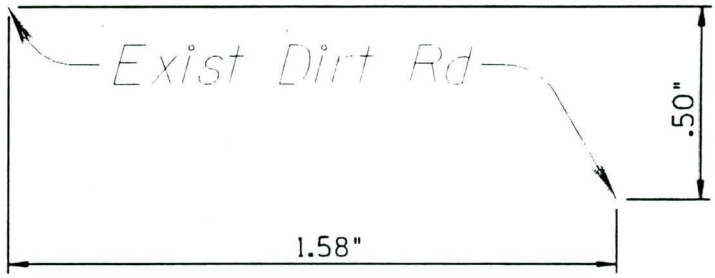
EMTA CAD STANDARDS

DESCRIPTION	ROAD DIRT TEXT EXIST
CELL NAME	RDDTXX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Drop complex status and adjust so that the arrows touch the edge of the road.

Text parameters shown are for 1"=100' drawings. For other applications, use the appropriate active scale.

PARAMETERS

LV=18 WT=0
LC=0 CO=6
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

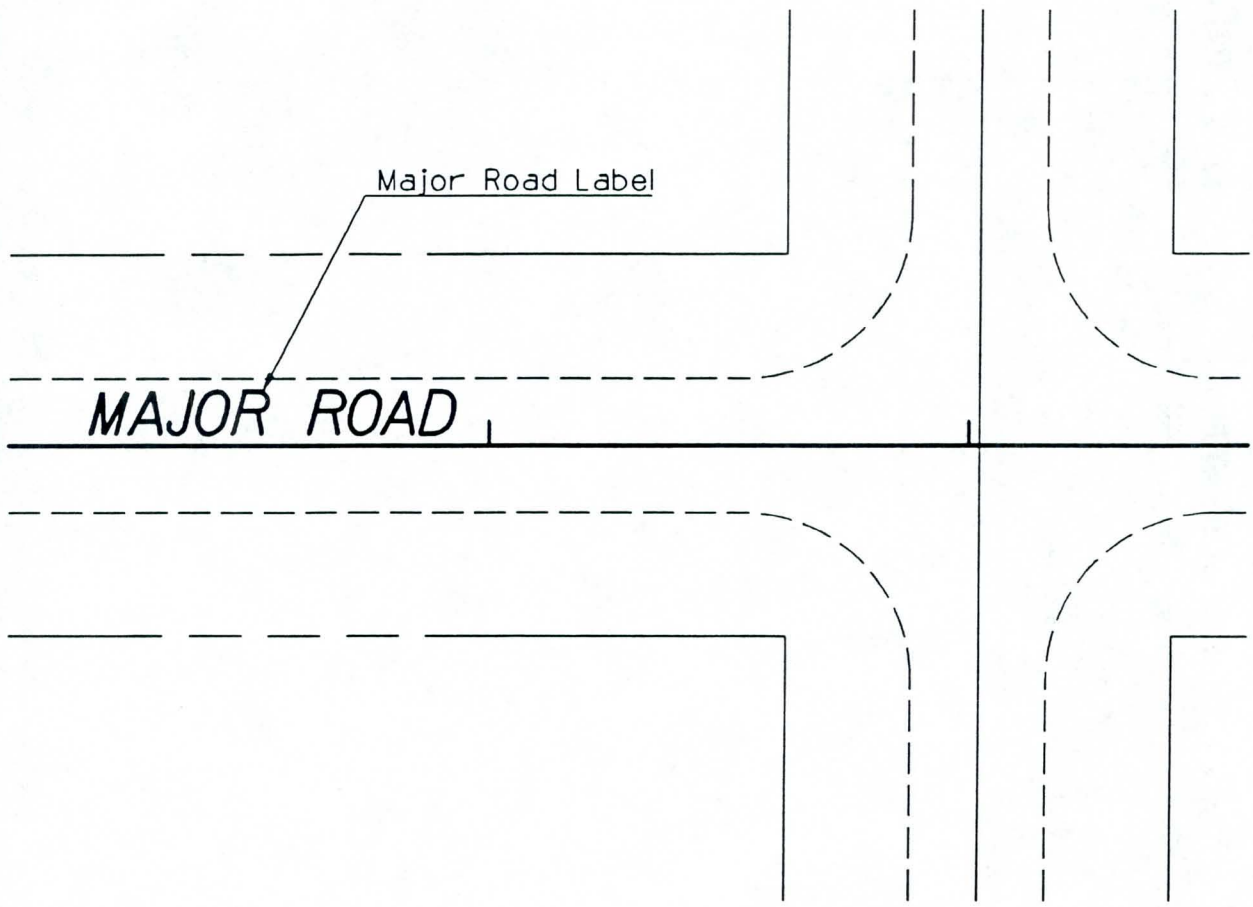
LV=18 FT=23
CO=6 LS=5
WT=0 TJ=CC TX=10

TADA CAD STANDARDS

DESCRIPTION	ROAD NAME TEXT MAJOR
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



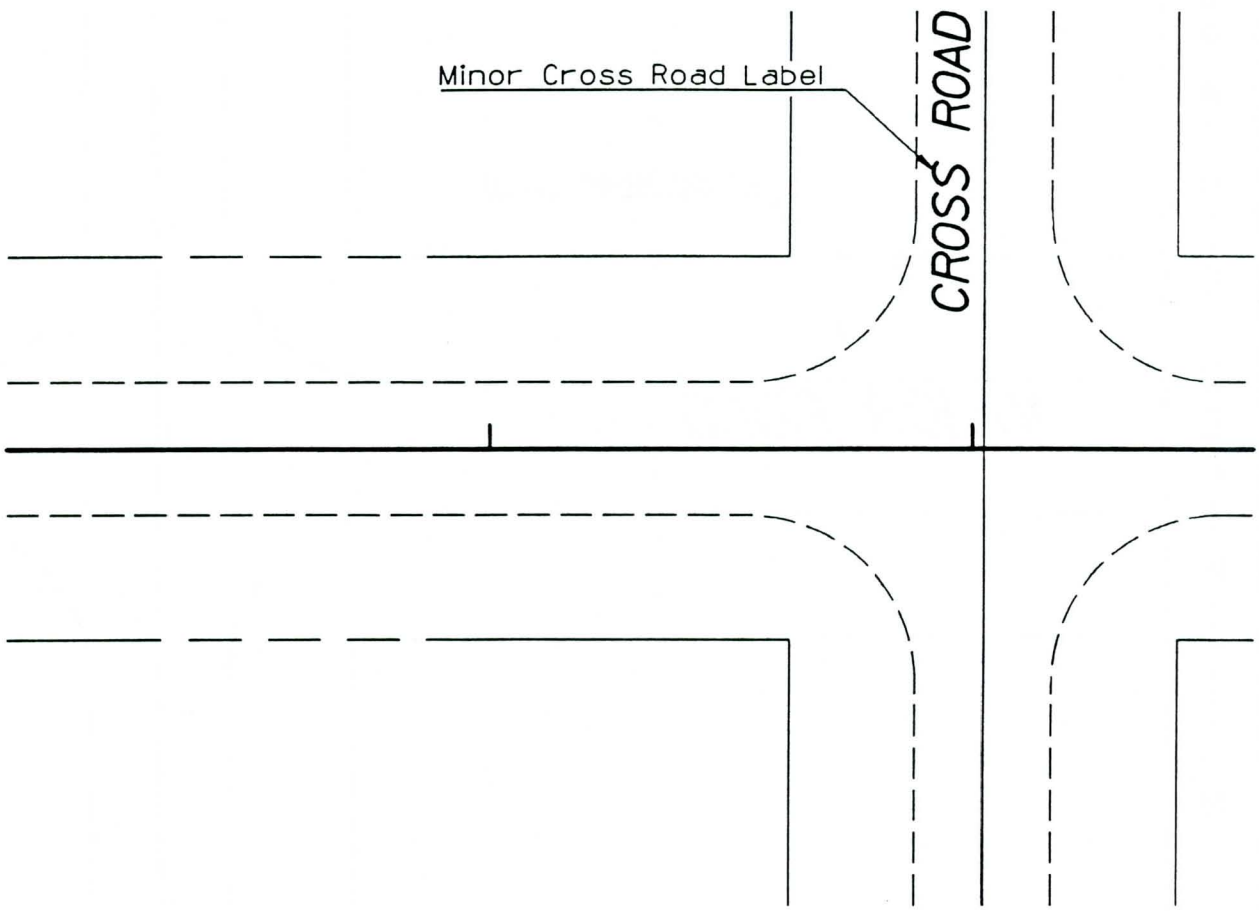
NOTES	GRAPHIC TEXT
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6 .	LV=15 FT=23 CO=5 LS=11 WT=5 TJ=CB TX=22

EMTA CAD STANDARDS

DESCRIPTION	ROAD NAME TEXT MINOR
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



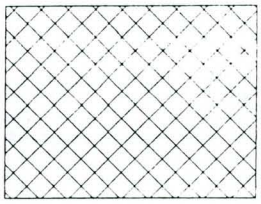
NOTES	GRAPHIC TEXT
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table P2-5 .	LV=15 FT=23 CO=5 LS=8.75 WT=4 TJ=CB TX=17.5

EMTA CAD STANDARDS

DESCRIPTION	ROAD OBLITERATE PVMT AREA
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION



NOTES	PARAMETERS
Use the "Crosshatch Area Pattern" command with these parameters to symbolize pavement removal. This symbol is to be used only in those areas where no new pavement is to replace removed material.	LV=36 WT=0 LC=0 CO=7 PS=PLOT SCALE/100 ROW SPACE=PLOT SCALE/10 COL SPACE=PLOT SCALE/10 PATTERN ANGLE=45°,135° CELL TYPE: GRAPHIC RAPIDO PEN NO.=00

EMTA CAD STANDARDS

DESCRIPTION	ROAD PVMT EDGE EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NAME OF PAVED ROAD

NOTES	PARAMETERS
Draw to scale. Includes AC parking lots, bike & golf cart paths, sidewalks, driveways, etc. Label road per Symbol Sheet A-124 or A-125.	LV=18 WT=0 LC=3 CO=10 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	ROAD PVMT EDGE NEW
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NAME OF ROAD

NOTES	PARAMETERS
Use for all new uncurbed edges of pavement. Label road per Symbol Sheets A-124 or A-125.	LV=36 WT=2 LC=0 CO=7 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=1
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

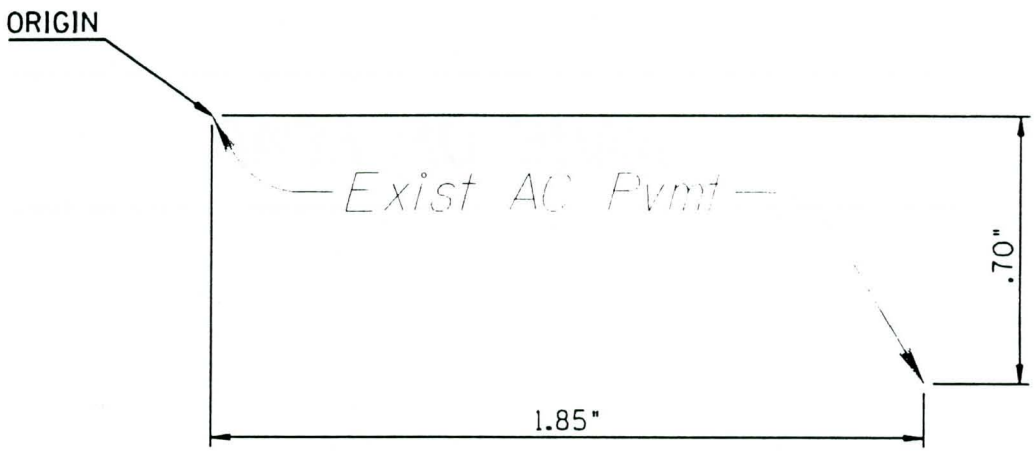
EMTA CAD STANDARDS

DESCRIPTION	ROAD PVMT TEXT EXIST
CELL NAME	RDPTXX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Drop complex status and adjust so that the arrows touch the edge of pavement.

Text parameters shown are for 1"=100' drawings. For other applications, use the appropriate active scale when placing.

PARAMETERS

LV=18 WT=0
LC=0 CO=10
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=10 LS=5
WT=0 TJ=CC TX=10

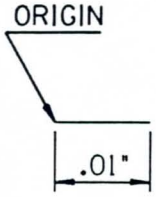
EMTA CAD STANDARDS

DESCRIPTION	ROAD ZIP
CELL NAME	RDZIP
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Use the "Pattern Fence Area" command with this cell to symbolize new AC pavement.

Shade 1½" of the new pavement at both ends of the plansheet, or as needed.

To change the 'look' of the pattern, for different pvmt structures, set the pattern angle at 0.

PARAMETERS

LV=36 WT=1
LC=0 CO=7
PS=PLOT SCALE/100
ROW SPACE=PLOT SCALE/20
COL SPACE=PLOT SCALE/20
PATTERN ANGLE=45°
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

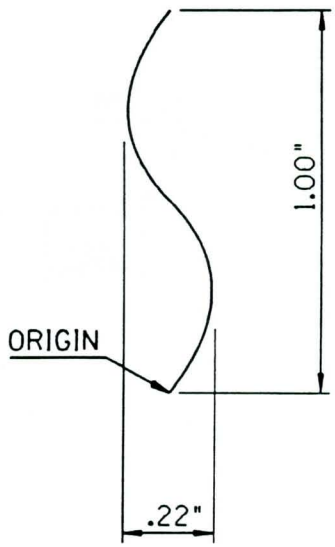
EMTA CAD STANDARDS

DESCRIPTION	ROAD ZIP BORDER
CELL NAME	RDZIPB
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell is to be used in conjunction with the cell RDZIP for new pavement applications, and deleted after the patterning is completed.

If placed using an active scale of one, this cell will measure 1" at 100' scale. To adjust the size, divide the the actual ground distance by 100.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=DIMENSION/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

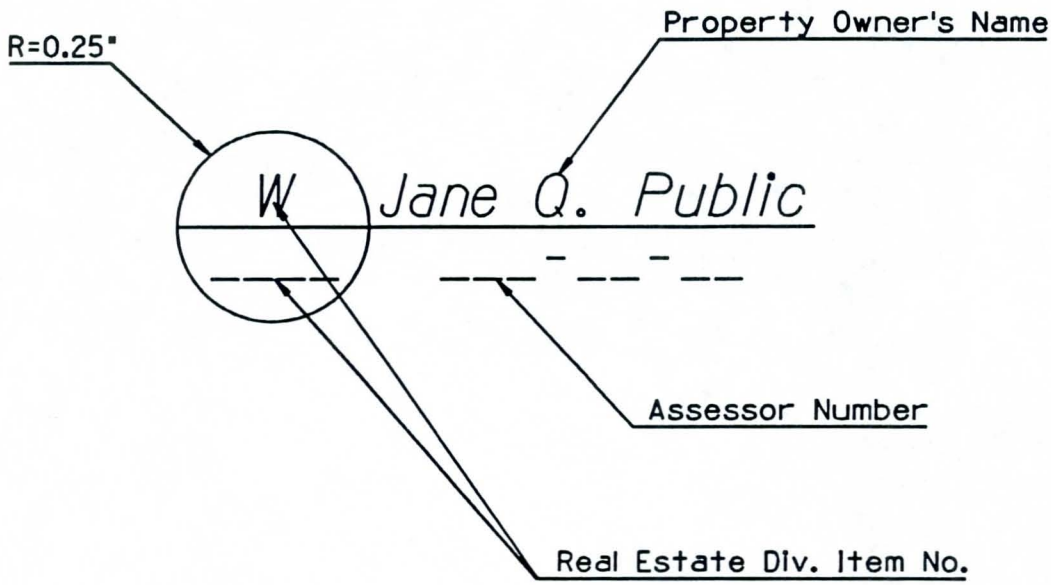
DESCRIPTION	RW ASSESSOR INFO TEXT
CELL NAME	RWASTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

W / 5832 — Jane Q. Public / 123-45-6A

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Normally the Real Estate Division will generate this information on their strip map. The Engineering Division will copy and place it centered within the parcel on the plan sheet where it appears, adjusting for interferences.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=12 WT=1
LC=0 CO=4
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=000

GRAPHIC TEXT

LV=12 FT=23
CO=4 LS=5.5
WT=1 TJ=CC TX=11

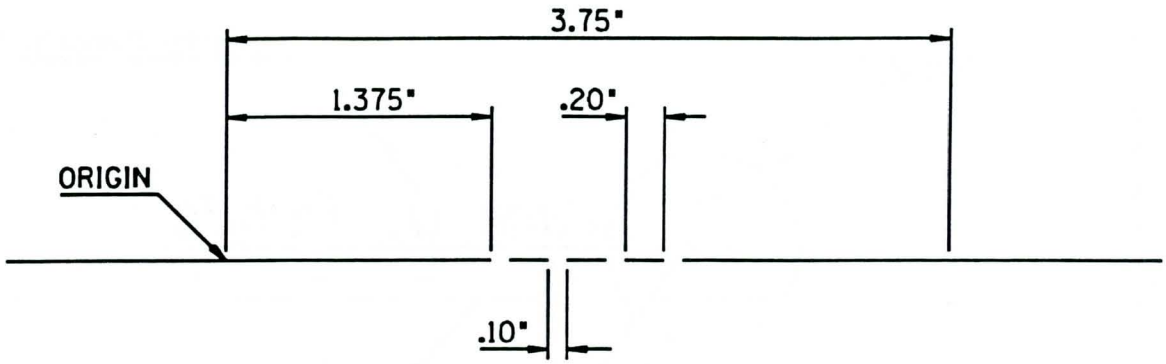
EMTA CAD STANDARDS

DESCRIPTION	RW LINE EXIST
CELL NAME	RWX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the long dashes double in length.

After the proposed R/W has been acquired, delete the obsolete R/W lines, and change the symbology of the remaining R/W Lines accordingly to indicate final R/W (wt=3 and lv=8).

When less than 1' exists between a R/W line and a fence line, adjust the fence location to allow at least 1' between the lines so that both can be patterned.

R/W triangles and segments less than 75' shall not be patterned.

PARAMETERS

LV=9 WT=1
LC=0 CO=4
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

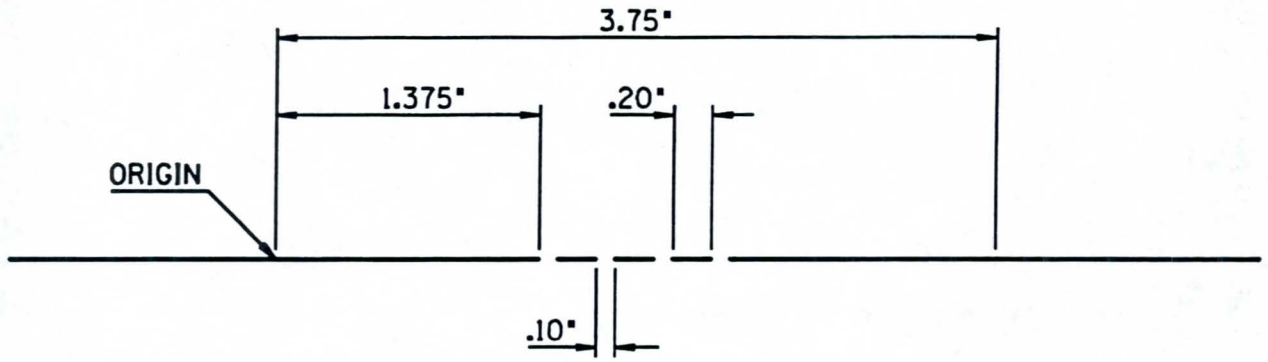
DESCRIPTION	RW PROPOSED OR FINAL
CELL NAME	RWP
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Prop R/W Line

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the long dashes double in length.

After the proposed R/W has been acquired, delete the obsolete R/W lines, and change the symbology of the remaining R/W Lines accordingly, to indicate final R/W (wt=3 and lv=10). Label the R/W lines per the text parameters shown. If necessary, use the place note command to label the lines. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6

R/W triangles and segments less than 75' shall not be patterned.

PARAMETERS

LV=10 WT=3
LC=0 CO=4
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=8 FT=23
CO=4 LS=7.5
WT=3 TJ=CB TX=15

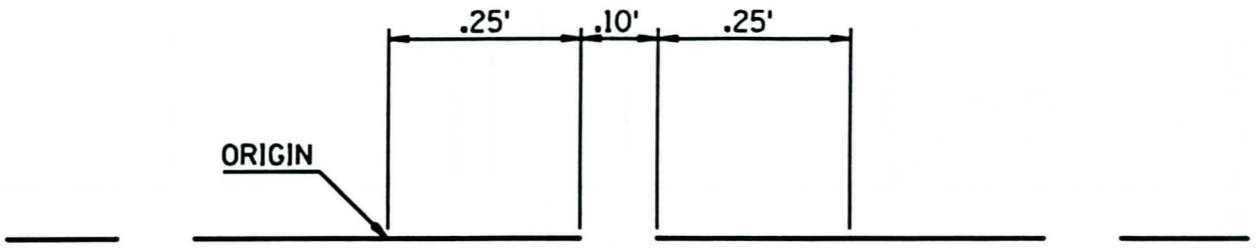
EMTA CAD STANDARDS

DESCRIPTION	RW TEMP CONST ESMT
CELL NAME	RWTCE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the long dashes double in length.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=10 WT=3
LC=0 CO=4
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=8 FT=23
CO=4 LS=7.5
WT=3 TJ=CB TX=15

EMTA CAD STANDARDS

DESCRIPTION	SEC TOWNSHIP RANGE TX
CELL NAME	SECTR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

SEC 30
T2N-R3E

NOTES

Use the "Auto Fill in Enter_Data Field" command to input section, township, and range information.

Orient to be north reading on the plan and profile sheet.

Text parameters shown are for 1"=100' drawings. For other applications, use the appropriate active scale when placing this cell.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

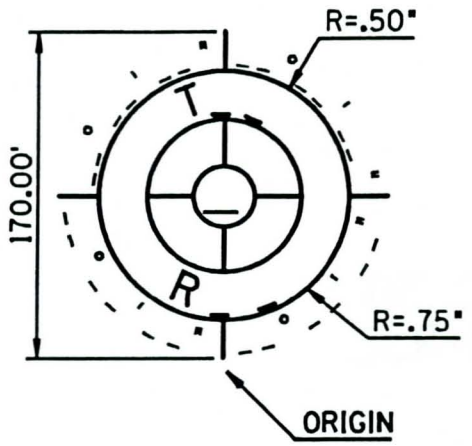
LV=2 FT=1
CO=3 LS=8.75
WT=4 TJ=CC TX=17.5

EMTA CAD STANDARDS

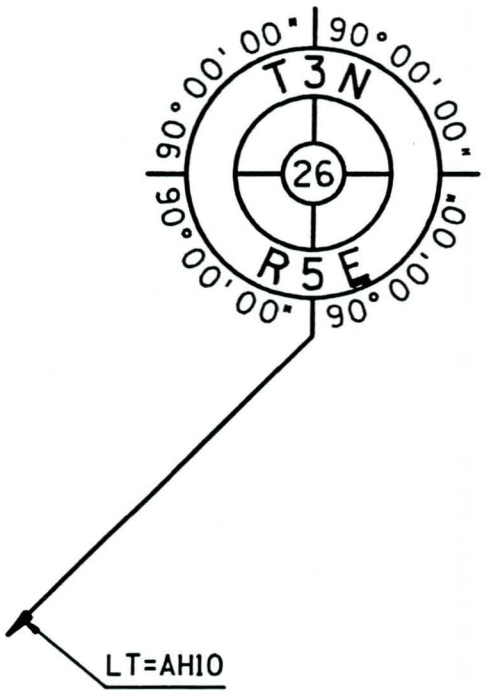
DESCRIPTION	SECTION CENTER TEXT
CELL NAME	SCCTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS



APPLICATION



NOTES

Use the "Auto Fill in Enter_Data Fields" command to input angle, section, township, and range information. Section number data fields allow for single and double digit entries.

Turn off data field display before plotting.

Orient to be north reading on the plan and profile sheet.

*Text parameters vary.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=2 FT=1 TS=*
CO=3 LS=*
WT=* TJ=* TX=*

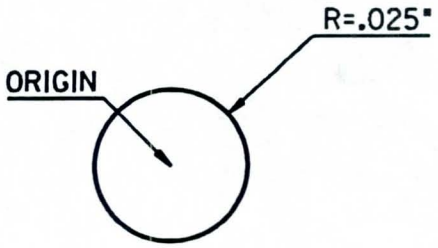
EMTA CAD STANDARDS

DESCRIPTION	SECTION CORNER
CELL NAME	SC
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

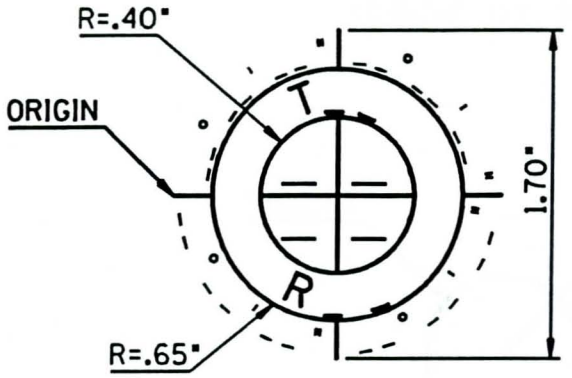
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

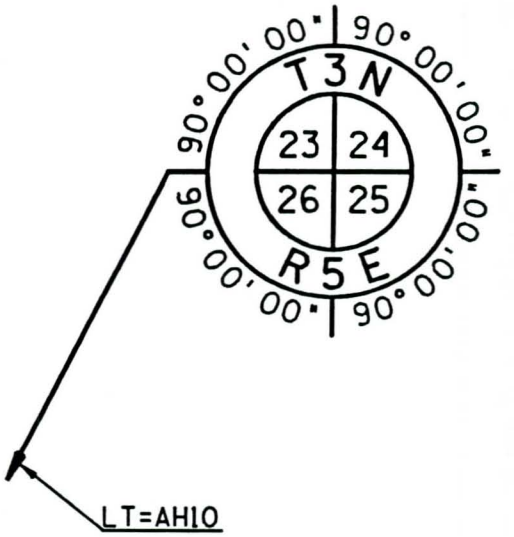
DESCRIPTION	SECTION CORNER TEXT
CELL NAME	SCTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS



APPLICATION



NOTES

Use the "Auto Fill in Enter_Data Fields" command to input angle, section, township, and range information. Section number data fields allow for single and double digit entries.

Turn off data field display before plotting.

Orient to be north reading on the plan and profile sheet.

*Text parameters vary.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

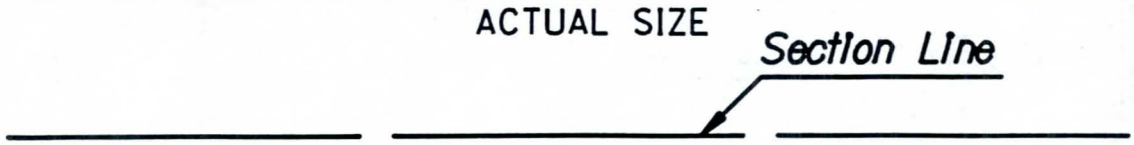
LV=2 FT=1 TS=*
CO=3 LS=*
WT=* TJ=* TX=*

EMTA CAD STANDARDS

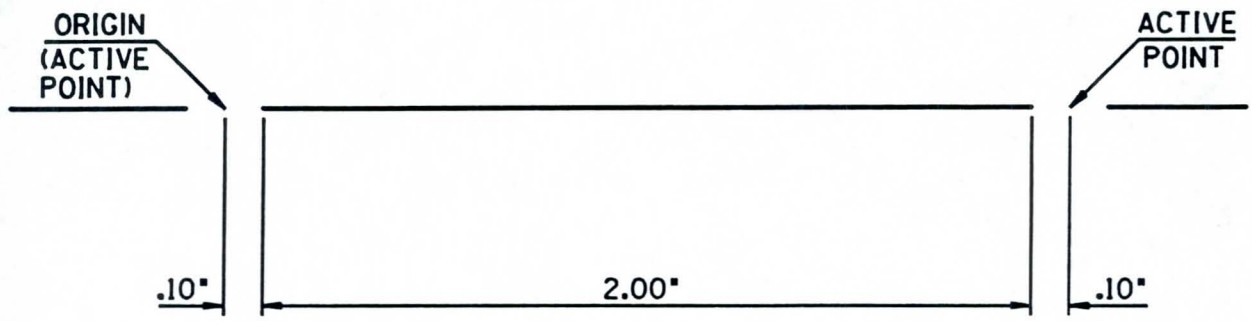
DESCRIPTION	SECTION LINE
CELL NAME	SL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only. When used as a line pattern, the spaces double in magnitude.

Label line per text parameters shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=1 WT=3
LC=0 CO=3
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

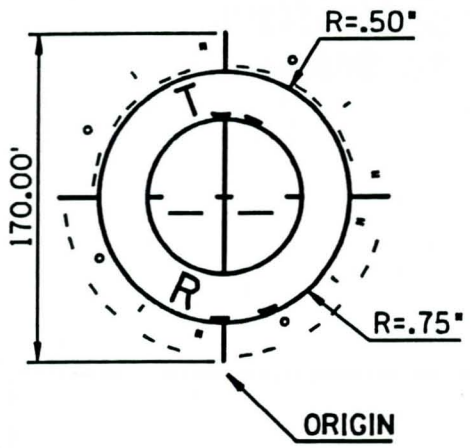
LV=1 FT=23
CO=3 LS=7.5 TS=1.5
WT=3 TJ=LB TX=15

EMTA CAD STANDARDS

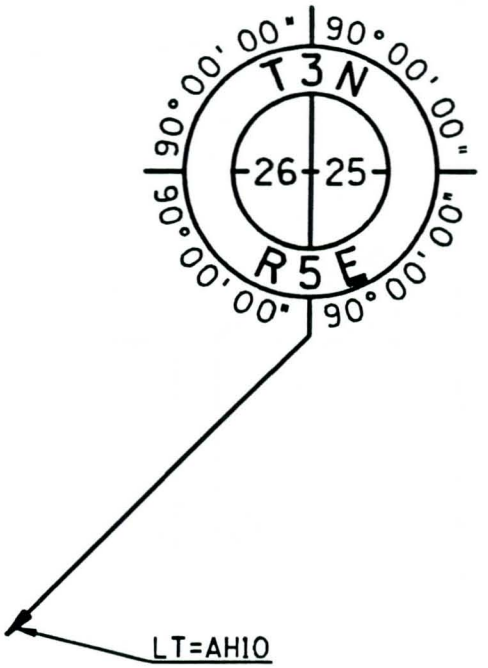
DESCRIPTION	SECTION QTR CORNER EW TEXT
CELL NAME	SQCEWT
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS



APPLICATION



NOTES

Use the "Auto Fill in Enter_Data Fields" command to input angle, section, township, and range information. Section number data fields allow for single and double digit entries. When their only two angles measured, drop status and modify accordingly

Turn off data field display before plotting.

Orient to be north reading on the plan and profile sheet.

*Text parameters vary.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

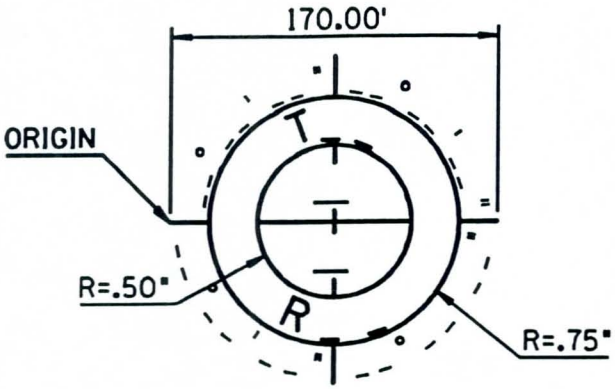
LV=2 FT=1 TS=*
CO=3 LS=*
WT=* TJ=* TX=*

EMTA CAD STANDARDS

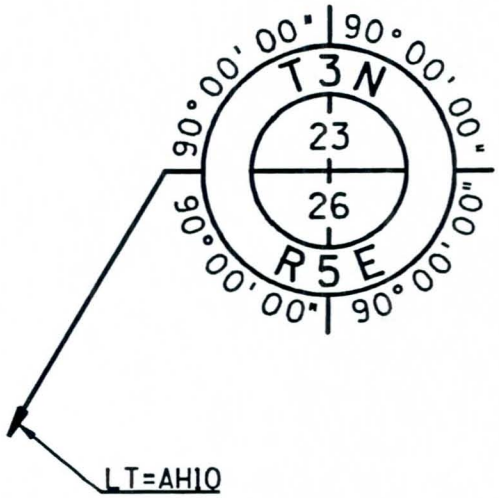
DESCRIPTION	SECTION QTR CORNER NS TEXT
CELL NAME	SQCNST
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

CELL SPECIFICATIONS



APPLICATION



NOTES

Use the "Auto Fill in Enter_Data Fields" command to input angle, section, township, and range information. Section number data fields allow for single and double digit entries. When their only two angles measured, drop status and modify accordingly

Turn off data field display before plotting.

Orient to be north reading on the plan and profile sheet.

*Text parameters vary.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=2 FT=1 TS=*
CO=3 LS=*
WT=* TJ=* TX=*

EMTA CAD STANDARDS

DESCRIPTION	SEC TOWNSHIP RANGE TX
CELL NAME	SECTR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

SEC 30
T2N-R3E

NOTES

Use the "Auto Fill in Enter_Data Field" command to input section, township, and range information.

Orient to be north reading on the plan and profile sheet.

Text parameters shown are for 1"=100' drawings. For other applications, use the appropriate active scale when placing this cell.

PARAMETERS

LV=2 WT=3
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

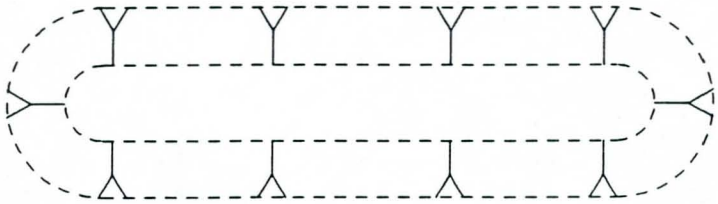
LV=2 FT=1
CO=3 LS=8.75
WT=4 TJ=CC TX=17.5

EMTA CAD STANDARDS

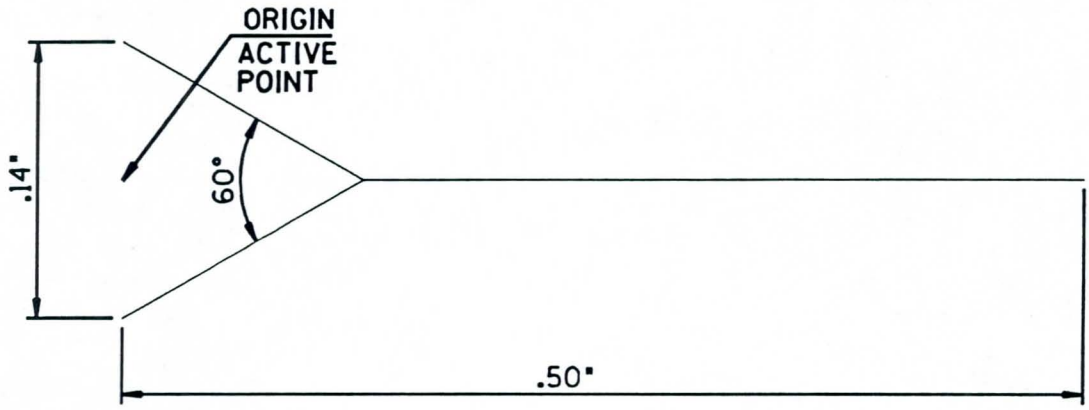
DESCRIPTION	SLOPE DIRECTION Y EXIST
CELL NAME	SLOPYX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

For various slope widths, drop complex cell status and extend or shorten the line to intersect the toe of slope. Use this symbol to designate existing uniform side slopes of existing CLDs, dirt dithces, channels, and retention basins only when the width of these items exceeds 10'. When the top of slope and the bottom of slope are concrete, symbolize these lines with a line code 3 line (see p A-71). When the top and toe of slopes are dirt, then symbolize with cell IDDX (p A-74) (see p A-75). Place at least once every 100'.

PARAMETERS

LV=* WT=0
LC=0 CO=1
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=00

GRAPHIC TEXT

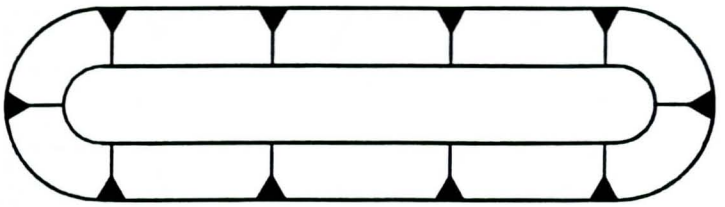
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

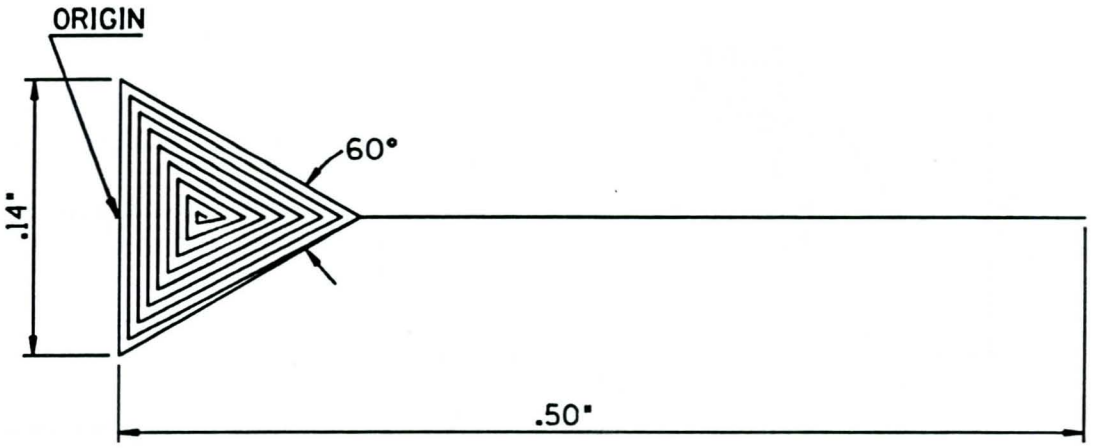
DESCRIPTION	SLOPE DIRECTION Y NEW
CELL NAME	SLOPYN
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

For various slope widths, drop complex cell status and extend or shorten the line to intersect the toe of slope.

Use this symbol to designate uniform side slopes of new CLDs, dirt dithces, channels, and retention basins only when the width of these items exceeds 10'. When the top of slope and the bottom of slope are concrete, symbolize these lines with a solid weight 2 line (see p A-71). When the top and toe of slopes are dirt, then symbolize with cell IDDN (p A-77) (see p A-76). Place at least once every 100'.

PARAMETERS

LV=* WT=1
LC=0 CO=1
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

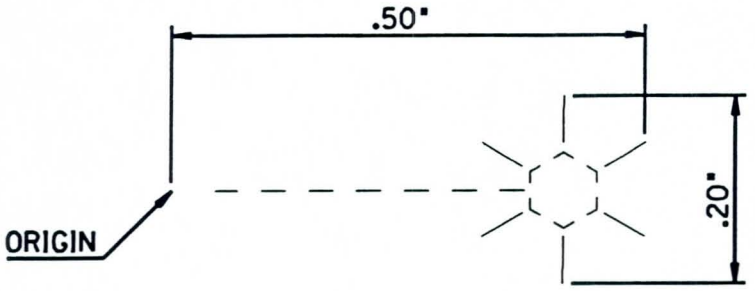
EMTA CAD STANDARDS

DESCRIPTION	STREET LIGHT EXIST
CELL NAME	STLTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell is designed to be placed on a power pole or signal pole with its origin corresponding to the origin of this cell.

PARAMETERS

LV=18 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

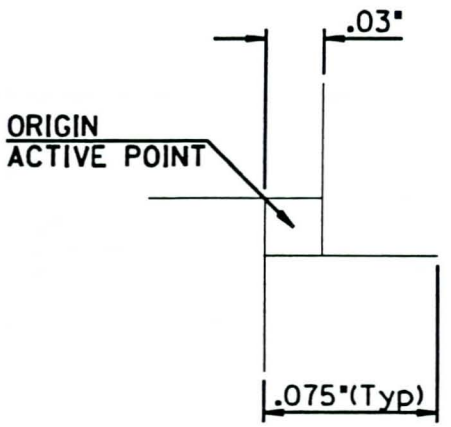
EMTA CAD STANDARDS

DESCRIPTION	STREET NAME SIGN EXIST
CELL NAME	SNSX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=48 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

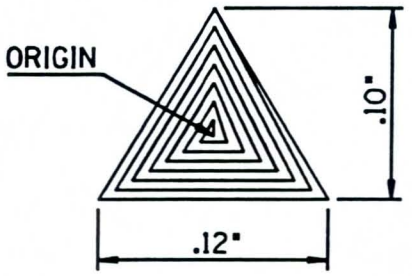
DESCRIPTION	SURVEY BENCHMARK
CELL NAME	SBM
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

▲

CELL SPECIFICATIONS
(Not to Scale)



NOTES	PARAMETERS
For text parameters see SBMTX, SURVEY BENCHMARK TEXT cell.	LV=2 WT=1 LC=0 CO=5 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=0
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	SURVEY BENCHMARK TEXT
CELL NAME	SBMTX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

APPLICATION

GRAPHIC DEFINITION

ORIGIN

BM #
Sta + .00, ' t
BC in HH
Elev= .

NOTES

To be used in conjunction with the SBM, SURVEY BENCHMARK cell. Use the 'Auto Fill In Enter Data Field' command to fill in the blanks.

Place this text (cell origin) directly beneath the SBM (SURVEY BENCHMARK) cell in the plan view (or as close as possible), and the distance above the baseline of the plan view as follows: 1"= 20'.....20', 1"= 40'.....40', 1"= 50'.....50', 1"=100'.....100'

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=2 WT=3
LC=0 CO=5
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=2 FT=23
CO=3 LS=7.5
WT=3 TJ=LB TX=15

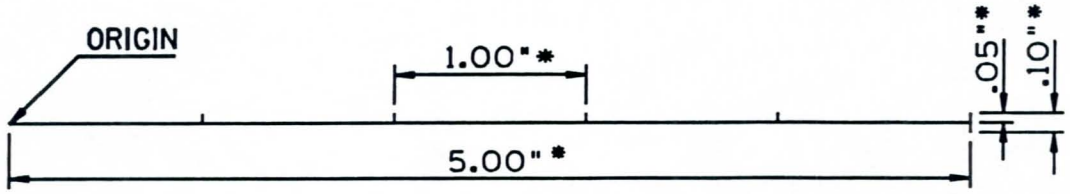
EMTA CAD STANDARDS

DESCRIPTION	SURVEY CENTERLINE
CELL NAME	SCL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS



NOTES

Patterns that represent actual ground distances will be placed using the 'Truncated Cycle Linear Pattern' command with a pattern scale of one (PS=1), so that they will scale correctly.

Label line per text parameters listed on this sheet. The "\" character on the keyboard will give you the ℄ symbol. The text parameters are for 1"=100' drawings. For other applicacations, refer to Table 2-2, p 2-6.
In order to effectively pattern along curves, the active pattern tolerance should be set at .01.

*Dimensions increase as the plotting scale decreases.

PARAMETERS

LV=3 WT=1
LC=0 CO=5
AS=N/A
PS=1
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=3 FT=23 TS=1.1
CO=5 LS=5.5
WT=1 TJ=LB TX=11

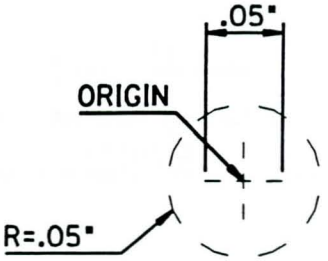
EMTA CAD STANDARDS

DESCRIPTION	SURVEY MONUMENT EXIST
CELL NAME	SMX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=2 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

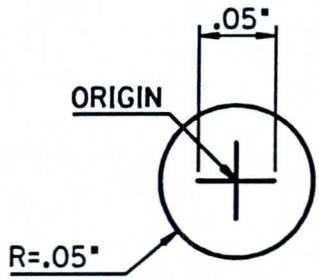
EMTA CAD STANDARDS

DESCRIPTION	SURVEY MONUMENT NEW
CELL NAME	SMN
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent.

PARAMETERS

LV=* WT=*
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=*

GRAPHIC TEXT

LV=	FT=	TH=
CO=	LS=	TW=
WT=	TJ=	TX=

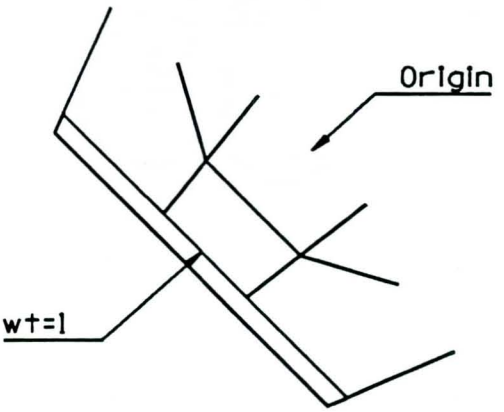
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE A R30
CELL NAME	SWRA30
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 29.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 231. This cell is for 5' wide sidewalk applications and shall be used on 40 scale applications only.

Place this cell at the center of the back of curb arc.

PARAMETERS

LV=36 WT=1,2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0,1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

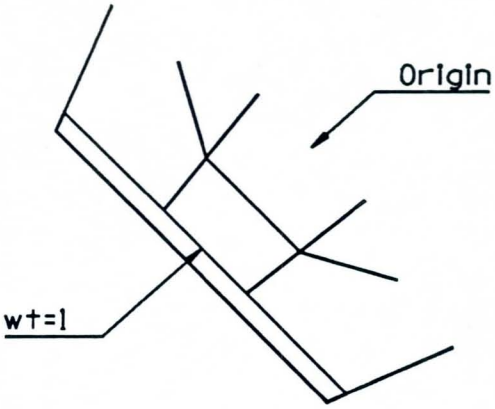
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE A R35
CELL NAME	SWRA35
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 34.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 231. This cell is for 5' wide sidewalk applications and shall be used on 40 scale applications only.

Place this cell at the center of the arc of the back of curb.

PARAMETERS

LV=36 WT=1,2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0,1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

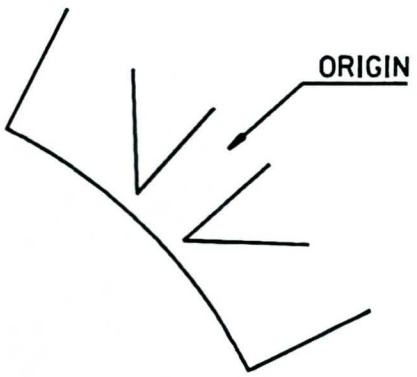
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE B R20
CELL NAME	SWRB20
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 19.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 232. This cell is for 5' wide sidewalk applications and shall be used only on 40 scale applications.

Place this cell at the center of the back of curb arc.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

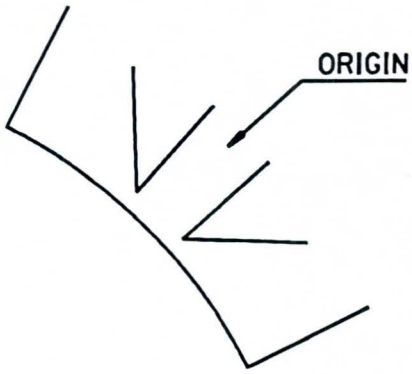
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE B R30
CELL NAME	SWRB30
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 29.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 232. This cell is for 5' wide sidewalk applications and shall be used only on 40 scale applications.

Place this cell at the center of the back of curb arc.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

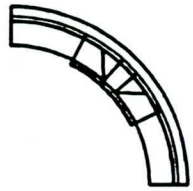
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

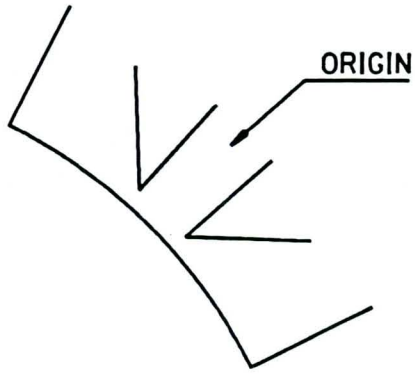
DESCRIPTION	SW RAMP TYPE B R35
CELL NAME	SWRB35
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')



CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 34.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 232. This cell is for 5' wide sidewalk applications and shall be used only on 40 scale applications.

Place this cell at the center of the back of curb arc.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

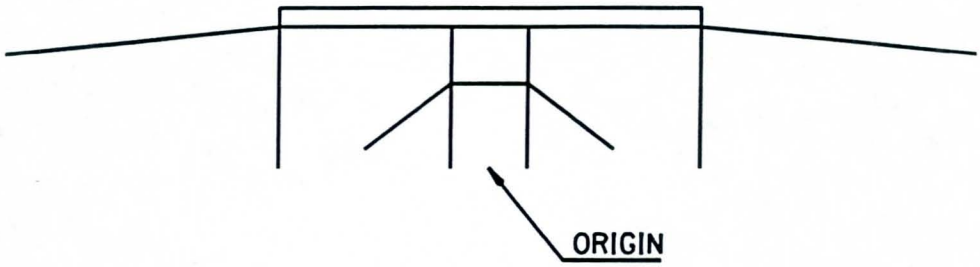
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE C
CELL NAME	SWRC
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 233. This cell is for 5' wide sidewalk applications and shall be used only on 40 scale applications.

Place this cell at the center of the back of curb.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

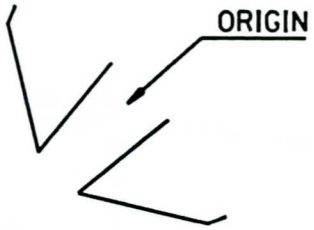
EMTA CAD STANDARDS

DESCRIPTION	SW RAMP TYPE D R20
CELL NAME	SWRD20
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION
(1"=40')

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell was drawn using the back of curb as the control line with a radius of 19.42'. The face of curb & lip of curb will be exaggerated per the curb & gutter symbol sheet. Use this cell for new sidewalk ramps per MAG Standard Detail Number 234. This cell is for 5' wide sidewalk applications and shall be used only on 40 scale applications.

Place this cell at the center of the back of curb arc.

PARAMETERS

LV=36 WT=2
LC=0 CO=7
AS=1
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=1

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

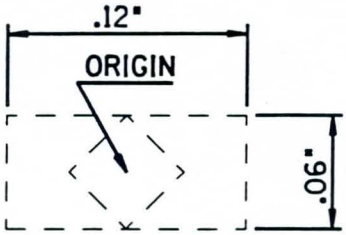
EMTA CAD STANDARDS

DESCRIPTION	TRAF CONTROL CAB EXIST
CELL NAME	TCCX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=53 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

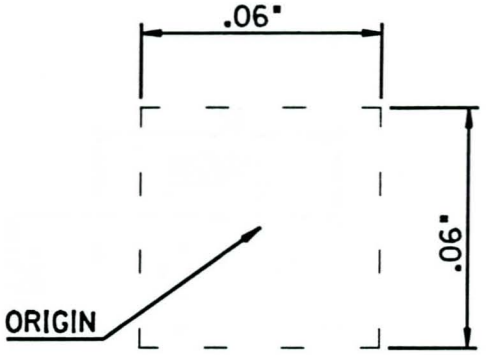
DESCRIPTION	TRAF PULL BOX EXIST
CELL NAME	TPBX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

PB

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Place text "PB" after placing the cell per the text parameters shown.

Text to read horizontal relative to plan sheet. Text parameters shown are for 1"=100' drawings. For other applications refer to Table 2-2, p2-6.

PARAMETERS

LV=52 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=53 FT=23
CO=3 LS=4.5
WT=0 TJ=TL TX=9

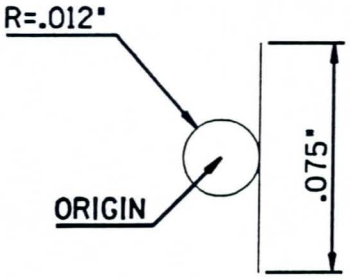
EMTA CAD STANDARDS

DESCRIPTION	TRAF SIGN 1 POST EXIST
CELL NAME	SIGN1X
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

PARAMETERS

LV=48 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

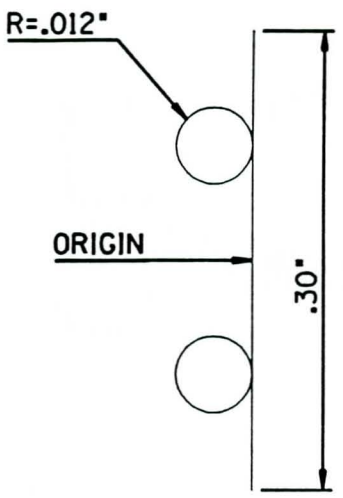
EMTA CAD STANDARDS

DESCRIPTION	TRAF SIGN 2 POST EXIST
CELL NAME	SIGN2X
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

For commercial signs such as billboards, drop the complex status and adjust so that the posts and sign are located and drawn to scale.

PARAMETERS

LV=48 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

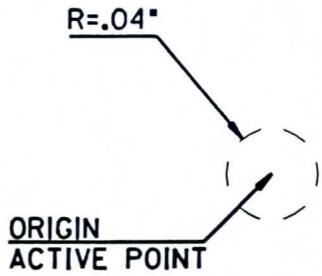
EMTA CAD STANDARDS

DESCRIPTION	TRAF SIGNAL POLE EXIST
CELL NAME	TSPOLE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Place text "TS" after placing the cell per the text parameters shown. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6. Orient to be north reading on the plan sheet

PARAMETERS

LV=53 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=53 FT=23
CO=3 LS=4.5
WT=0 TJ=CC TX=9

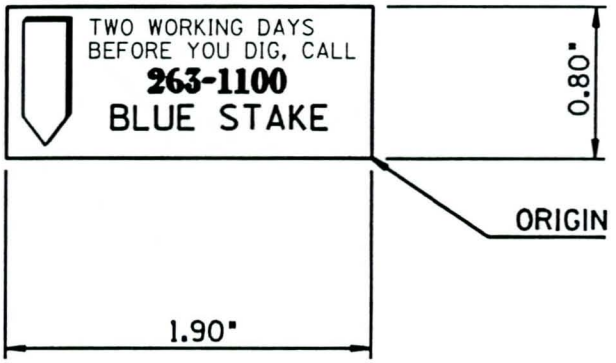
EMTA CAD STANDARDS

DESCRIPTION	UTIL BLUE STAKE SYMBOL
CELL NAME	UBLUE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell is a part of the general notes sheet (n.dgn), traffic signal sheet (t.dgn), and on the traffic interconnect sheet (i.dgn). It shall not be placed on every plan and profile sheet of the plans

PARAMETERS

LV=1 WT=0,1,2
LC=0 CO=0,1
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=0,1

GRAPHIC TEXT

LV=1 FT=1,7
CO=0,1 LS=Varies
WT=0,2 TX=12.5,8

EMTA CAD STANDARDS

DESCRIPTION	UTIL CATV LINE BURIED
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance.

Space line labels (TV) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes, and pedestals.

Overhead lines will not be shown on the plans.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=24 WT=0
LC=0 CO=6
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

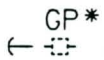
LV=24 FT=23
CO=6
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

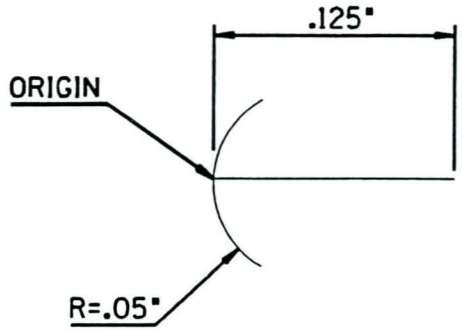
DESCRIPTION	UTIL DOWN GUY WIRE
CELL NAME	UGUY
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

The origin of this cell shall be placed at the surveyed point where the down guy enters the ground and the active angle set so that the guy wire line points to the pole it is guying.

For multiple down guy wires, show the location where each one enters the ground.

*When used in conjunction with a guy pole, use the utility multi-use pole cell and label it "GP" for guy pole.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=23 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=23 FT=1
CO=3 LS=4.5
WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

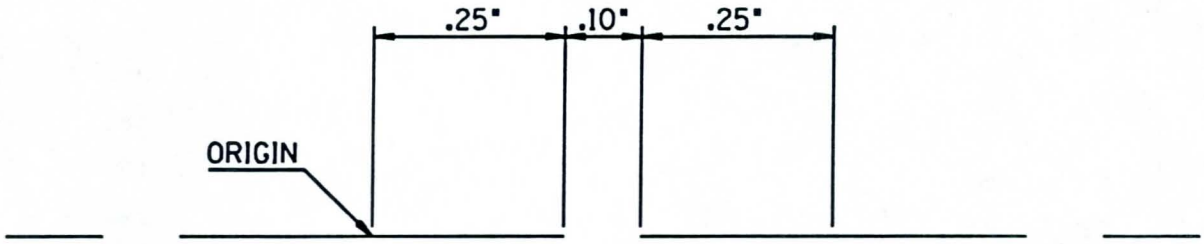
DESCRIPTION	UTIL EASEMENT
CELL NAME	UESMT
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

20' El Paso Natural Gas Easement

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only and when used as a line pattern, the dashes double in length.

Label line per the text parameters shown. Text parameters shown are for 1"=100' drawings. For other apllications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=11 WT=1
LC=0 CO=4
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=2

GRAPHIC TEXT

LV=9 FT=23
CO=4 LS=5.5
WT=1 TJ=CB TX=11

EMTA CAD STANDARDS

DESCRIPTION	UTIL ELEC LINE BURIED
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

E E

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance.

Space line labels (E) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes, pedestals and meters.

Overhead lines will not be shown on the plans.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=23 WT=0
LC=0 CO=3
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=23 FT=23
CO=3
WT=0 TJ=CC TX=10

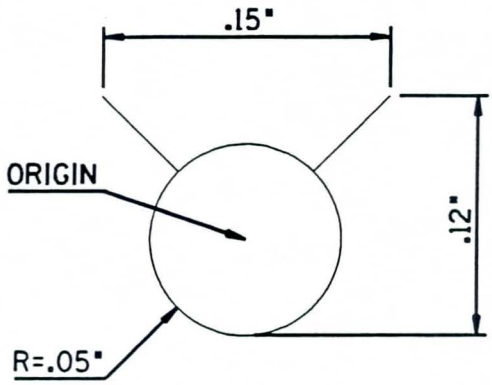
EMTA CAD STANDARDS

DESCRIPTION	UTIL FIRE HYDRANT
CELL NAME	UFH
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Place text "FH" after placing the cell per the text parameters shown. The text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6. Orient text horizontal to sheet.

Orient the lines to point toward the roadway.

PARAMETERS

LV=26 WT=0
LC=0 CO=1
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=26 FT=1
CO=1 LS=4.5
WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

DESCRIPTION	UTIL GAS LINE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

6" G HP ——— 6" G HP

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance.

Space labels (Pipe dia. G HP) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes, valves, and meters..

The "HP" designation is for high pressure gas lines only.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=25 WT=0
LC=0 CO=4
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=25 FT=23
CO=4
WT=0 TJ=CC TX=10

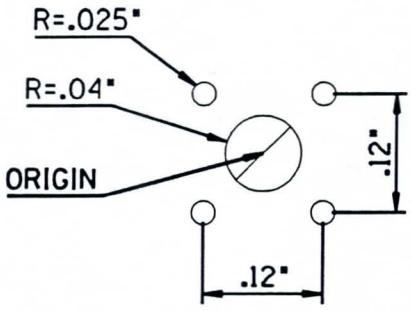
EMTA CAD STANDARDS

DESCRIPTION	UTIL GAS REGULATOR
CELL NAME	UGREG
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Drop complex status and move the surrounding posts to their true location. Orient text horizontal to sheet.
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.
Place text "GR" after placing the cell per the text parameters shown.

PARAMETERS

LV=25 WT=0
LC=0 CO=4
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

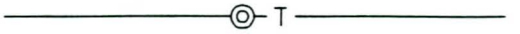
LV=25 FT=1
CO=4 LS=4.5
WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

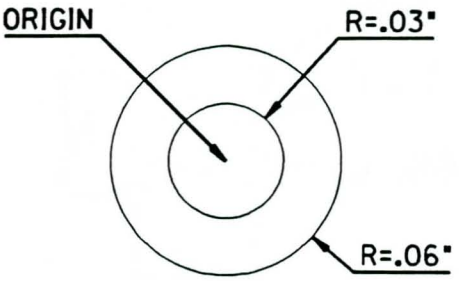
DESCRIPTION	UTIL MANHOLE EXIST
CELL NAME	UMHX
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent.

Place this cell on the level and color of its utility line.

Label the utility line with the appropriate abbreviation (adjacent to the manhole) as follows:
Telephone.....T
Sewer.....S
Storm Drain....SD
Electric.....E
Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=* WT=0
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=* FT=1
CO=* LS=4.5
WT=0 TJ=CC TX=9

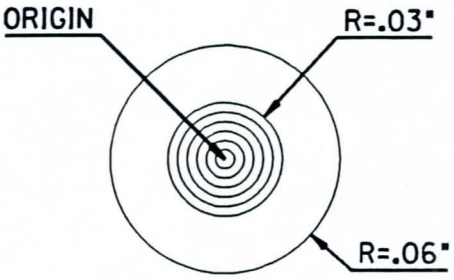
EMTA CAD STANDARDS

DESCRIPTION	UTIL MANHOLE NEW
CELL NAME	UMHN
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent.

Place this cell on the level and color of its utility line.

PARAMETERS

LV=* WT=0
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT*
RAPIDO PEN NO.=00

GRAPHIC TEXT

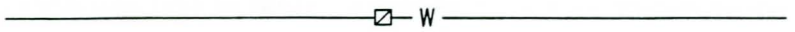
LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

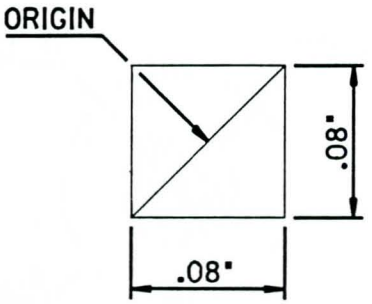
DESCRIPTION	UTIL METER
CELL NAME	UMTR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

Place this cell on the level and color of its utility line.

Label the utility line with the appropriate abbreviation (adjacent to the meter) as follows:
Electric.....E
Gas.....G
Water.....W

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=* WT=0
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=00

GRAPHIC TEXT

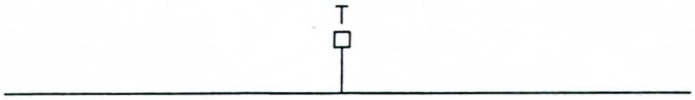
LV=* FT=1
CO=* LS=4.5
WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

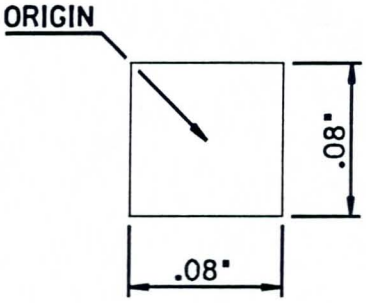
DESCRIPTION	UTIL PEDESTAL
CELL NAME	UPED
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

Place this cell on the level and color of its utility line.

Label the pedestal with the appropriate abbreviation as follows:
Telephone....T
Cable TV.....TV
Electric.....E

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=* WT=0
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=* FT=23
CO=* LS=5
WT=0 TJ=TC TX=10

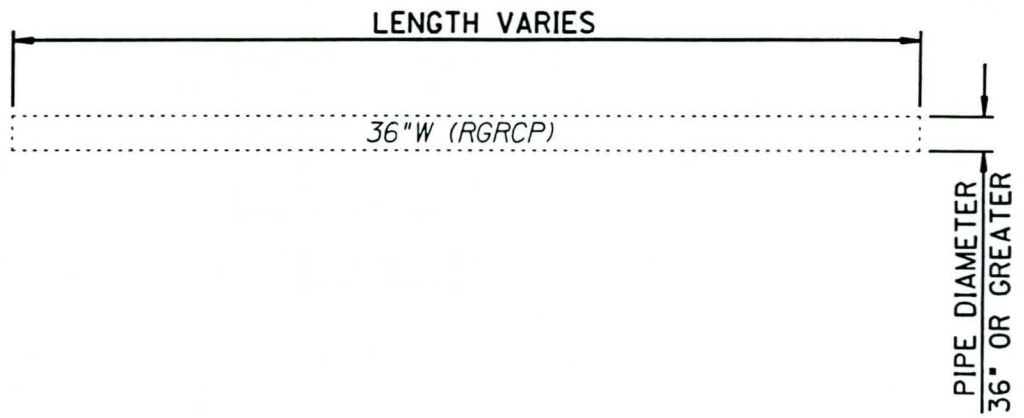
EMTA CAD STANDARDS

DESCRIPTION	UTIL PIPE >36" EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

ACTUAL SIZE

APPLICATION



NOTES

This is not a cell. This application is for pipe lines that are 36" or greater in diameter. Draw both edges and label accordingly.

*Levels and colors will depend on the type of utility line to be represented.

Space labels (Pipe dia. and type) a maximum of 500' apart or at least 3 per sheet.

Text paramteres shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=* WT=0
LC=1 CO=*
AS=1:1
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=* FT=23
CO=* LS=5
WT=0 TJ=CC TX=10

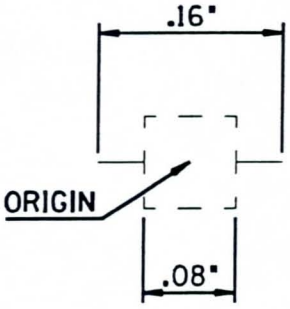
EMTA CAD STANDARDS

DESCRIPTION	UTIL POLE MULTIUSE
CELL NAME	UPOLE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for overhead electric, telephone, and cable TV poles.

When used in conjunction with a guy wire, use the utility down guy cell (UGUY). When a guy pole is to be symbolized, place "GP" adjacent to the pole symbol (see Util Down Guy Wire Symbol Sheet).

"Ears" should be oriented in the direction of overhead lines, including guy lines. More than 2 "ears" may be required.

PARAMETERS

LV=23 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

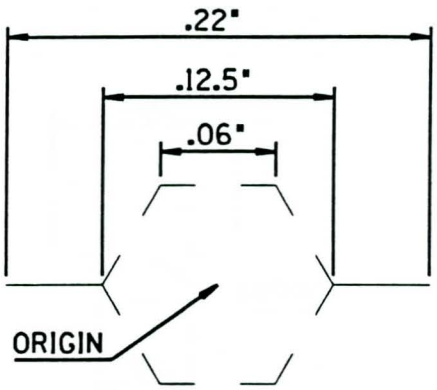
EMTA CAD STANDARDS

DESCRIPTION	UTIL POLE STEEL
CELL NAME	UPST
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Power transmission steel pole.

Orient "ears" in direction of overhead lines.

PARAMETERS

LV=23 WT=0
LC=0 CO=3
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV= FT=
CO= LS=
WT= TJ= TX=

EMTA CAD STANDARDS

DESCRIPTION	UTIL SANITARY SEWER LINE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NOTES

This is not a cell. This application is for sanitary sewer lines that are smaller than 36". For pipes 36" or larger draw both edges to scale using line code 1.

Space labels (pipe dia. and type) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes.

Delete "FM" when the sewer line is not a force main.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=27 WT=0
LC=0 CO=2
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=27 FT=23
CO=2
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

DESCRIPTION	UTIL STORM DRAIN EXIST
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

24"SD (RGRCP)

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance.
This application is for storm drains that are smaller than 36". For 36" and larger pipes, use 2 lines drawn to scale with line code 1. Storm drain structures including catch basins, scuppers, headwalls, etc., will be drawn to scale with line code 5 except wall thicknesses will be exaggerated to 1' wide if less than 1'.
Space labels (pipe dia. and type of pipe) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=21 WT=0
LC=0 CO=1
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=21 FT=23
CO=1
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

DESCRIPTION	UTIL TELECOM LINE BURIED
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

NOTES

This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance.

Space labels (type) a maximum of 500' apart or at least 3 per sheet and adjacent to manholes and pedestals.

The "T-FO" designation is for fiber optic lines only.

Overhead lines will not be shown on the plans.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=22 WT=0
LC=0 CO=6
AS=N/A
PS=N/A
CELL TYPE: N/A
RAPIDO PEN NO.=0

GRAPHIC TEXT

LV=22 FT=23
CO=6
WT=0 TJ=CC TX=10

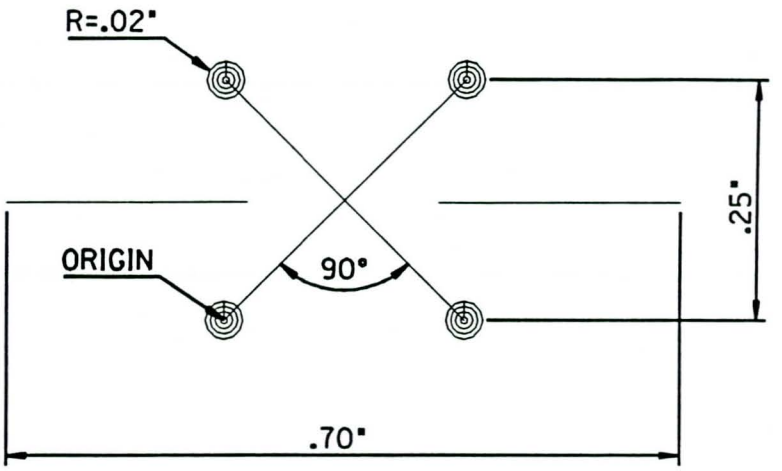
EMTA CAD STANDARDS

DESCRIPTION	UTIL TRANSMISSION TOWER
CELL NAME	UTRANS
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

CELL SPECIFICATIONS
(Not to Scale)



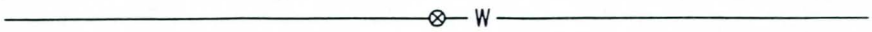
NOTES	PARAMETERS
The tower foundations will be shown located to scale. Drop complex status and adjust accordingly.	LV=23 WT=0 LC=0 CO=3 AS=PLOT SCALE/100 PS=N/A CELL TYPE: GRAPHIC RAPIDO PEN NO.=00
	GRAPHIC TEXT
	LV= FT= CO= LS= WT= TJ= TX=

EMTA CAD STANDARDS

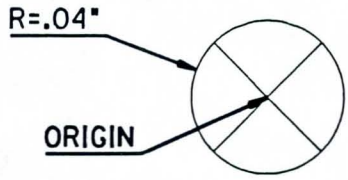
DESCRIPTION	UTIL VALVE
CELL NAME	UVALVE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE



CELL SPECIFICATIONS
(Not to Scale)



NOTES

*This is a point cell that when placed will assume the active parameters (level, weight, line code, & color). Point cells are view independent. Do not use if views have been rotated.

Place this cell on the level and color of its utility line.

Label the utility line with the appropriate abbreviation (adjacent to the valve) as follows:

Gas.....G
Water.....W

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p2-6.

PARAMETERS

LV=* WT=0
LC=0 CO=*
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: POINT
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=* FT=1
CO=* LS=4.5
WT=0 TJ=CC TX=9

EMTA CAD STANDARDS

DESCRIPTION	UTIL WATER LINE
CELL NAME	NOT A CELL
CELL LIBRARY	N/A

GRAPHIC DEFINITION

APPLICATION

6"W (ACP) 6"W (ACP)

NOTES	PARAMETERS
This is not a cell. Place the text in the design file, leaving the unbroken line in the reference file, then use the reference file mask command to give the broken line appearance. This application is for water lines that are smaller than 36". For 36" and larger pipes, use 2 lines drawn to scale with line code 1. Space labels (pipe dia. and type) a maximum of 500' apart or at least 3 per sheet and adjacent to valves, meters, and manholes. Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.	LV=26 WT=0 LC=0 CO=1 AS=N/A PS=N/A CELL TYPE: N/A RAPIDO PEN NO.=0
	GRAPHIC TEXT
	LV=26 FT=23 CO=1 WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

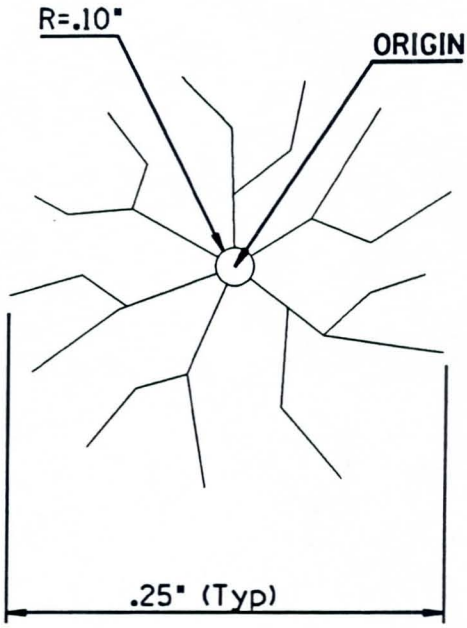
DESCRIPTION	VEGETATION ARID TREE
CELL NAME	VARID
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

18" Mesquite

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell represents the family of arid trees that includes palo verde, ironwood, mesquite, acacia, etc.

Label tree with the name and trunk diameter only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

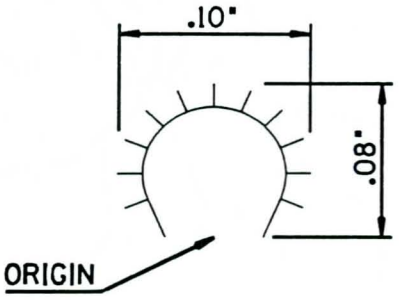
DESCRIPTION	VEGETATION BARREL CACTUS
CELL NAME	VBAR
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

10" Barrel Cactus

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell represents the family of cacti that include fishhook barrel.

Label cactus only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

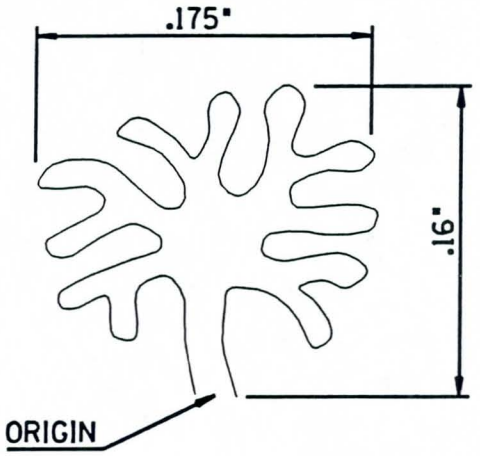
DESCRIPTION	VEGETATION CHOLLA CACTUS
CELL NAME	VCHOL
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Cholla Cacti

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Label cactus only if it is affected by construction of the project.

This cell represents the family of cacti that includes teddy bear, jumping, staghorn, and chain cholla.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

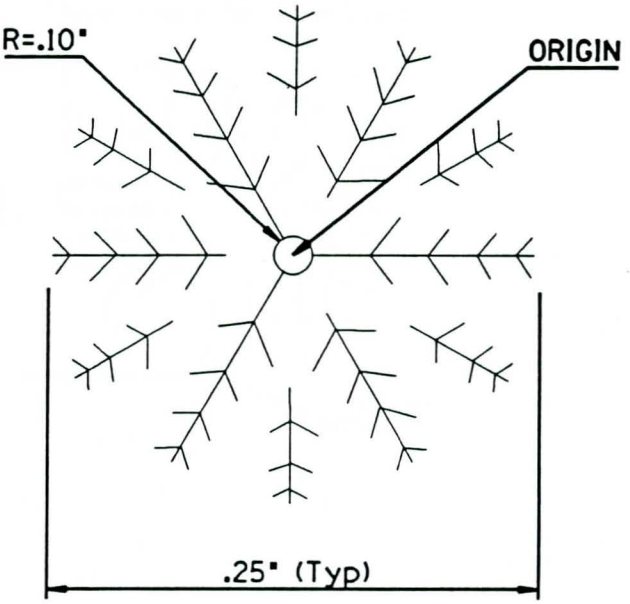
DESCRIPTION	VEGETATION CONIFER TREE
CELL NAME	VCON
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

8"Edarica Pine

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for all conifer/evergreen trees.

Label tree with name and trunk diameter only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

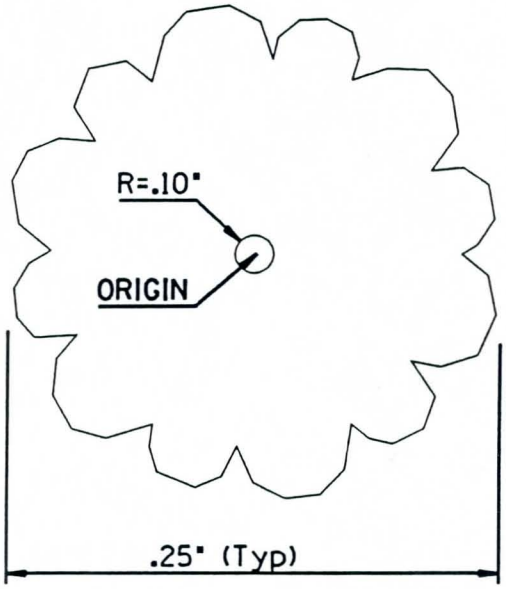
DESCRIPTION	VEGETATION LEAF TREE
CELL NAME	VLEAF
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

12"Citrus

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell represents the family of leaf bearing or deciduous trees that includes citrus, pecan, cottonwood, eucalyptus, olive, oak, etc. It is also to be used for bushes

Label tree with the name and diameter only if it is affected by construction of the project.

*Use an active scale for bushes as follows:
AS=Plot Scale/200

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100*
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

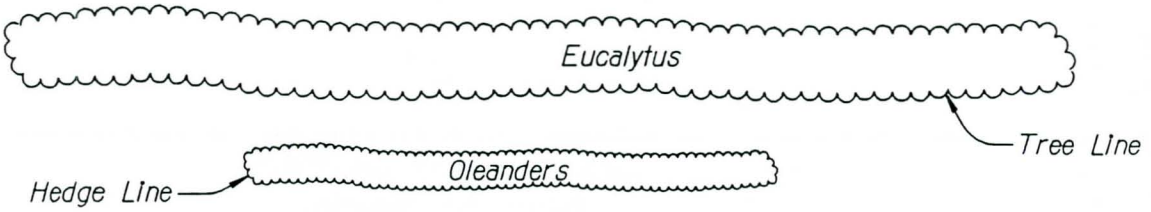
LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

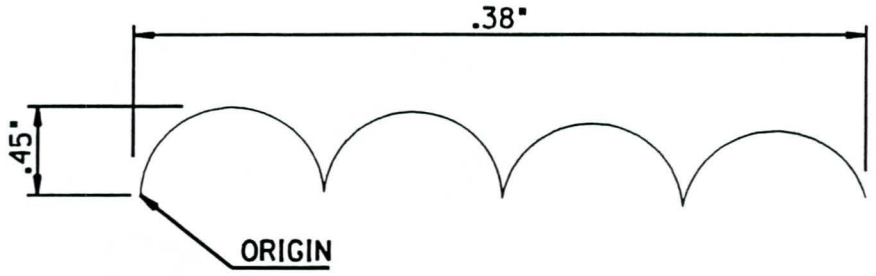
DESCRIPTION	VEGETATION TREE LINE
CELL NAME	VLINE
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION



CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell will be used for tree lines and hedges where single plants are too numerous to call out on the survey.

*Scale as follows for hedges and treelines:

Treeline.....PS=PLOT SCALE/100
Shrubline...PS=PLOT SCALE/200

Text parameters shown are for 1"=100' drawings. For other applications, rfer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=N/A
PS=PLOT SCALE/100*
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

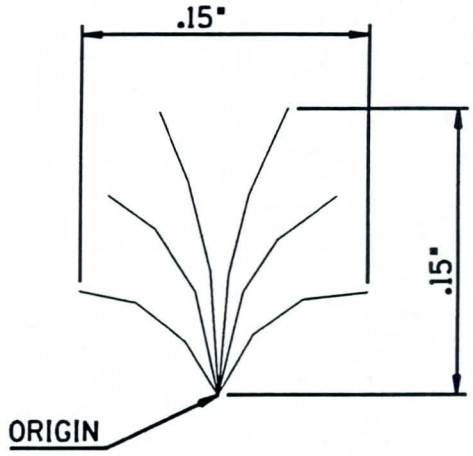
DESCRIPTION	VEGETATION OCOTILLO
CELL NAME	VOCO
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Ocotillo

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell represents the family of cacti that includes ocotillo, agave, creosote, century, and yucca.

Label plant only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

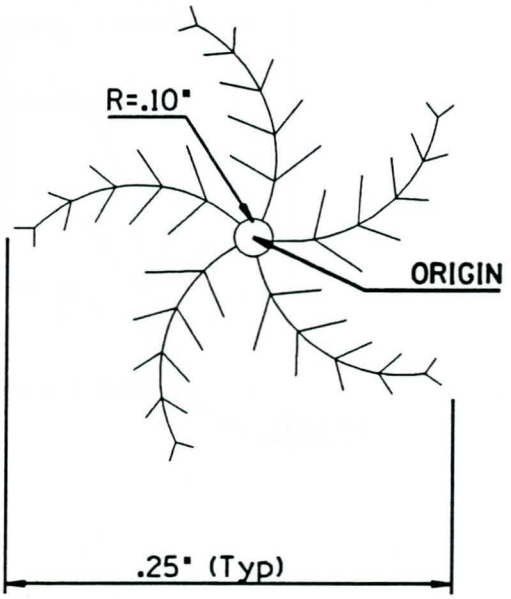
DESCRIPTION	VEGETATION PALM TREE
CELL NAME	VPALM
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

16" Palm

CELL SPECIFICATIONS
(Not to Scale)



NOTES

This cell represents all palm trees.

Label tree with name and trunk diameter only if it is affected by construction of the project.

Text parmeters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

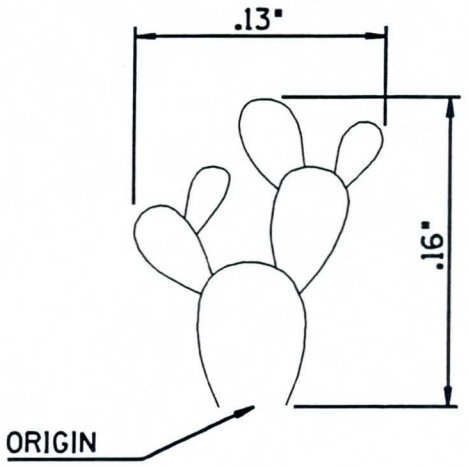
DESCRIPTION	VEGETATION PRICKLY PEAR
CELL NAME	VPRIC
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

Prickly Pear

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Label cactus only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

EMTA CAD STANDARDS

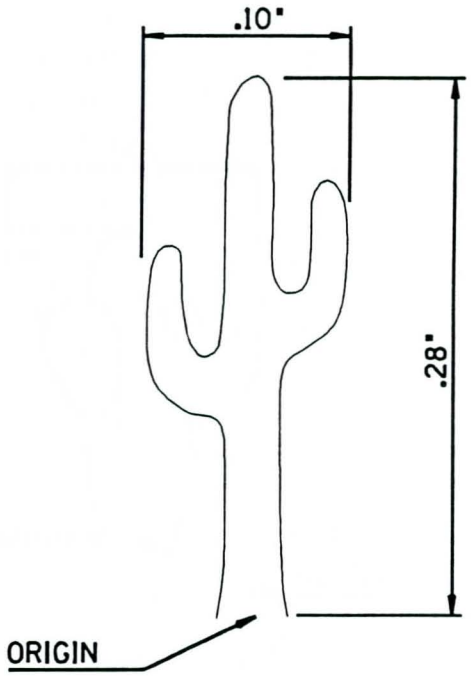
DESCRIPTION	VEGETATION SAGUARO CACTUS
CELL NAME	VSAG
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

ACTUAL SIZE

10' Saguaro

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Label cacti only if it is affected by construction of the project.

Text parameters shown are for 1"=100' drawings. For other applications, refer to Table 2-2, p 2-6.

PARAMETERS

LV=16 WT=0
LC=0 CO=8
AS=PLOT SCALE/100
PS=N/A
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00

GRAPHIC TEXT

LV=18 FT=23
CO=8 LS=5
WT=0 TJ=CC TX=10

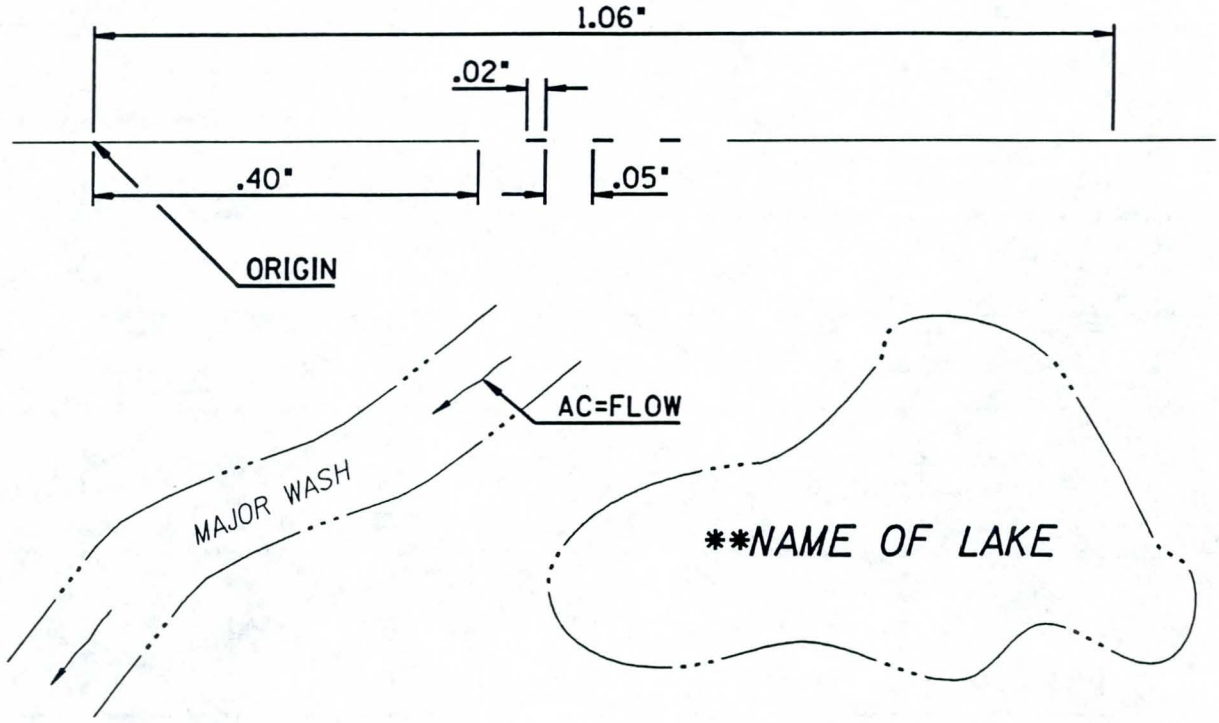
EMTA CAD STANDARDS

DESCRIPTION	WASH LAKE RIVER
CELL NAME	WASH
CELL LIBRARY	/usr/udd/standards/cells/emta.cel

GRAPHIC DEFINITION

APPLICATION

CELL SPECIFICATIONS
(Not to Scale)



NOTES

Dimensions shown define the cell only and when used as a line pattern, the long dashes double in length.

For minor washes, pattern flowline only, and place the flow direction arrows (AH10) on every other long dash. For major washes and rivers, pattern the top of banks, and place flow direction arrows (FLOW) near the label, up and downstream. The label shall be the name of the wash if known.

For lakes, pattern the water edge only.

* The dots are weight one.
**Text sizes will vary with the size of the body of water or River. For major & minor washes, tx=10, wt=0 (100-scale).

PARAMETERS

LV=14 WT=0,1*
LC=0 CO=1
AS=N/A
PS=PLOT SCALE/100
CELL TYPE: GRAPHIC
RAPIDO PEN NO.=00,0

GRAPHIC TEXT

LV=14 FT=23
CO=1 LS=**
WT=** TJ=CC TX=**

MCDOT STANDARD TITLE BLOCKS

NO.	REVISION	BY	DATE
3			
2			
1			

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION

STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY
NOT FOR
CONSTRUCTION

	BY	DATE
DESIGNED	A. ENGINEER	0/00/94
DRAWN	A. TECHNICIAN	0/00/94
CHECKED		

TYPE OF SHEET
STA 000+00.00 TO 000+00.00

SHEET 0 OF 10

TRACS NO.

IN-HOUSE VERSION

NO.	REVISION	BY	DATE
2			
1			

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION

STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY
NOT FOR
CONSTRUCTION

	BY	DATE
DESIGNED	A. ENGINEER	0/00/94
DRAWN	A. TECHNICIAN	0/00/94
CHECKED		

CONSULTANT LOGO HERE

TYPE OF SHEET
STA 000+00.00 TO 000+00.00

SHEET 0 OF 10

TRACS NO.

CONSULTANT VERSION

FCDMC STANDARD TITLE BLOCK

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION

STANDARD CHANNEL
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY
NOT FOR
CONSTRUCTION

	BY	DATE
DESIGNED	A. ENGINEER	0/00/94
DRAWN	A. TECHNICIAN	0/00/94
CHECKED		

CONSULTANT LOGO HERE

TYPE OF SHEET
STA 000+00.00 TO 000+00.00

SHEET 0 OF 10

TRACS NO.

STANDARD BORDER & TITLE BLOCK (b.dgn)

FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	4	10	

REVISIONS	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION

STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY
NOT FOR
CONSTRUCTION

DESIGNED	A. ENGINEER	0/00/94
DRAWN	A. TECHNICIAN	0/00/94
CHECKED		

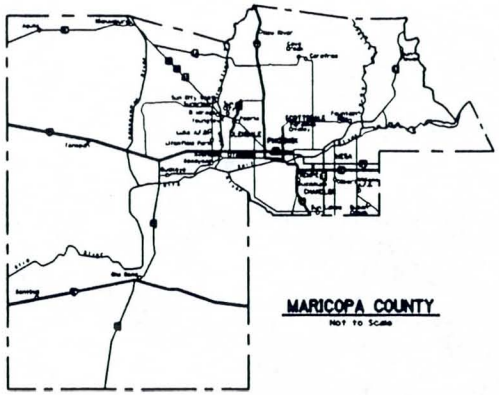
TYPE OF SHEET
STA 000+00.00 TO 000+00.00

SHEET 0 OF 30

TRACS NO.

MCDOT STANDARD FACE SHEET (f.dgn)

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION



MARICOPA COUNTY
Not to Scale

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

ISSUED FOR PUBLIC BIDDING BY:

DIRECTOR DATE

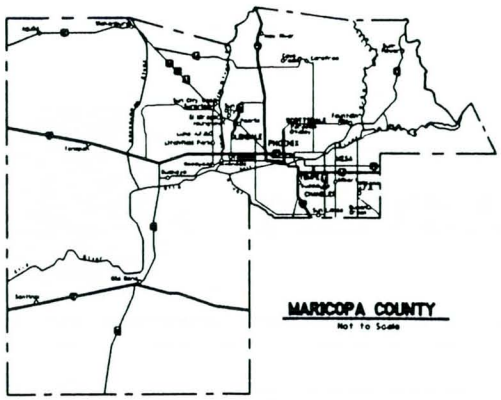
COUNTY BOARD OF SUPERVISORS

DETNET BATLESS - CHAIRMAN

DISTRICT 1	TOM RAWLES
DISTRICT 2	JIM BRUNER
DISTRICT 3	DETNET BATLESS
DISTRICT 4	EDWARD KING
DISTRICT 5	MARY ROSE WILCOX

FCDMC STANDARD FACE SHEET (f.dgn)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



MARICOPA COUNTY
Not to Scale

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY	
ISSUED FOR PUBLIC HEARING BY:	
SIGNATURE	DATE
COUNTY BOARD OF DIRECTORS	
DETRIT BATLEN - CHAIRMAN	
DISTRICT 1	TOM RAWLES
DISTRICT 2	JIM BRUNER
DISTRICT 3	DETRIT BATLEN
DISTRICT 4	EDWARD KING
DISTRICT 5	MARY ROSE WILCOX

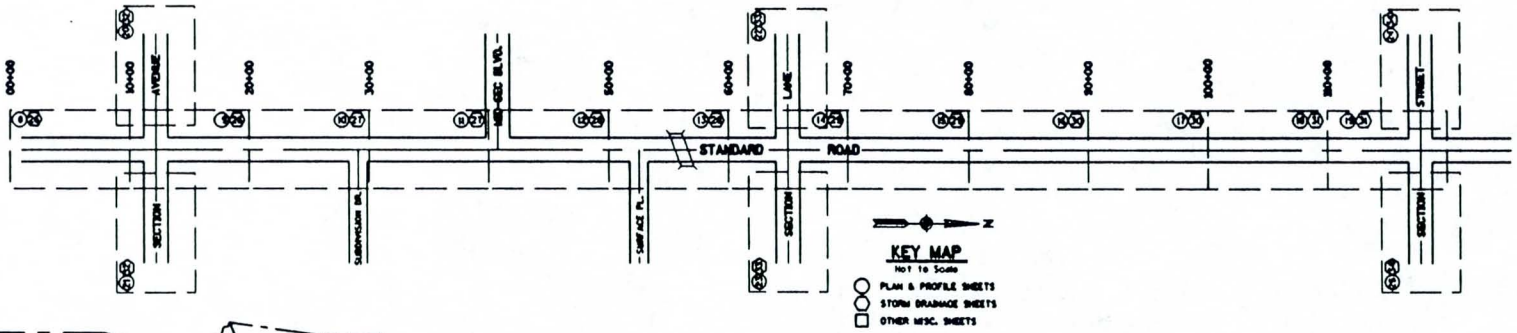
MCDOT FACE SHEET EXAMPLE (00000f.dgn)

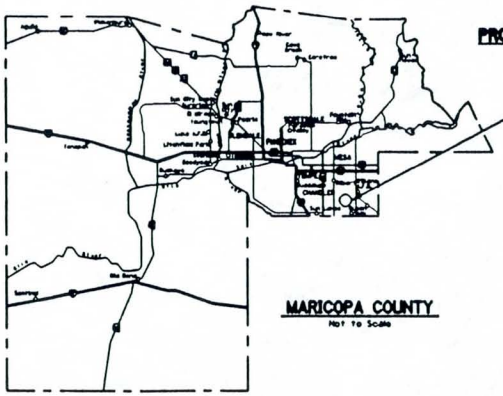
MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION

PLANS FOR THE CONSTRUCTION OF:

STANDARD ROAD - SECTION AVENUE TO SECTION STREET

PROJECT NO. 00000





MARICOPA COUNTY
Not to Scale

PROJECT NO. 00000

VICINITY MAP
Not to Scale

IN COOPERATION WITH
NAME OF CITY HERE

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

ISSUED FOR PUBLIC BIDDING BY:

DIRECTOR DATE

COUNTY BOARD OF SUPERVISORS

BETSEY BATLEIN - CHAIRMAN

DISTRICT 1	TOM RAWLES
DISTRICT 2	JIM BRUNER
DISTRICT 3	BETSEY BATLEIN
DISTRICT 4	EDWARD EDNO
DISTRICT 5	MARY ROSE WILCOX

F.A.P.U. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	2	10	

ABBREVIATIONS*

AASHTO.....American Association of State Highway and Transportation Officials
Ab.....Aggregate Base
AC.....Asphaltic Concrete
ACFC.....Asphalt Concrete Friction Course
ACI.....American Concrete Institute
ACP.....Asbestos Cement Pipe
ACSC.....Asphalt Concrete Surface Course
ADOT.....Arizona Department of Transportation
Ahd.....Ahead
AISC.....American Institute of Steel Construction Company
APE.....Aspect
Asph.....Asphalt
ASTM.....American Society for Testing and Materials
AWS.....

B/C.....Back of Curb
BC.....Brass Cap
BCN.....Bicycle Crossing
BCT.....
Bd.....Boulevard
Bm.....Beam
BPS.....Begin Full Super
Br.....Bituminous
Brk.....Brick
BLM.....Bureau of Land Management
Bot.....
Bsm.....Basin Mark
Bt.....Bench Mark
Br.....Bridge

CAP.....Corrugated Aluminum Pipe
CAP.....
CAPA.....Corrugated Aluminum Pipe Arch
CB.....Catch Basin
CBC.....Concrete Box Culvert
CC.....Cubic Foot
Cb.....Cubic Yard
CIP.....Cast Iron Pipe
CIPP.....Cast-in-Place Pipe
C.....Centerline
C.L.D.....Concrete Lined Ditch
CMP.....Corrugated Metal Pipe
Co.....Clean Out
Conc.....Concrete
Cons.....Construction
Cont.....Continuous
Cor.....Corner
Corr.....Correction (PPI to PCI)
Cr.....Crown

CSP.....Corrugated Steel Pipe
CSPA.....Corrugated Steel Pipe Arch
CTB.....Concrete Treated Base
Cu.....Cubic Yards

D.....Degree of Curve
Dg.....Drainage Area
DE.....Drainage Easement
Def.....Deflection
Det.....Detail
DIP.....Ductile Iron Pipe
Dis.....Distance
D/W.....Driveway
Dwg.....Drawing

E.....Equivalency
Ecc.....Eccentric
EC.....End Curb Return
EFS.....End Full Super
El.....Elevation
Elec.....Electrical
Emb.....Embankment
EP.....Edge of Pavement
Equal.....Equal
Exc.....Excavation
Exist.....Existing
Exp Jt.....Expansion Joint

F/C.....Face of Curb
FCDWR.....Flood Control District of Maricopa County
FF.....Finished Floor Elevation
FH.....Fire Hydrant
Fnd.....Found
Fwy.....Freeway

G.....Gutter Flowline Elevation
GB.....Grade
GR.....Grade Break
GW.....Gas Meter
Gnd.....Ground
GP.....Guy Pole
Gr.....Grade
GR.....Guardrail
GV.....Gas Valve

HDPE.....High Density Polyethylene
Hdwd.....Hardwood
HH.....Hand Hole
HW.....High Water

ID.....Inside Diameter
Inv.....Invert
Irr.....Irrigation

L.....Length of Curve

LC.....Long Chord
LF.....Linear Foot
LS.....Lump Sum
Lt.....Left

MAG.....Maricopa Association of Governments
MGD.....1000 Gallons
Mat.....Material
MCDOT.....Maricopa County Department of Transportation
Min.....Minimum
Mod.....Modify
Mon.....Monument

NC.....Normal Crown
NPV.....Non-Vehicle Area
NPDES.....National Pollutant Discharge Elimination System
NTS.....Not to Scale

OC.....On Center
OD.....Outside Diameter

P.....Pavement (Surface Elevation)
Pad.....Pedestal
PC.....Point of Curvature
PCC.....Point of Compound Curvature
PCC.....Portland Cement Concrete
PI.....Point of Intersection
POC.....Point on Curve
POT.....Point on Tangent
PP.....Power Pole
PRC.....Point of Reverse Curvature
Prel.....Preliminary
Proj.....Project
Prop.....Proposed
PRVC.....Point of Reverse Vertical Curvature
PT.....Point of Tangency
PVC.....Point of Vertical Curvature
PVI.....Poly Vinyl Chloride
PVI.....Point of Vertical Intersection
Pvmt.....Pavement
PVT.....Point of Vertical Tangency

Q.....Quantity of Drainage Runoff
Qtr.....Quarter

R.....Radius
Rge.....Range
RCP.....Reinforced Concrete Pipe
Rdwy.....Roadway
Rebar.....Reinforcing Bar
Relocate.....Relocate/Relocating

Relocate.....Relocate
Rem.....Remove
Rel.....Relocation
RUBCP.....Rubber Gasket Reinforced Concrete Pipe
RR.....Railroad
Rt.....Right
R/W.....Right of Way

S.....Slope
Sdwk.....Sidewalk
SCS.....Soil Conservation Service
SD.....Storm Drain
SE.....Slope Easement
Sgn.....Sign
SGV.....Square Feet
SB.....Subgrade
Shldr.....Shoulder
Sht.....Shortage
Sim.....Similar
St.....Street
Sta.....Station
Stabilized Mat'l.....Stabilized Material
Specifications (See note 1)
SRP.....Salt River Project
SS.....Sanitary Sewer
Sta.....Station
Struct.....Structural
Subdiv.....Subdivision
Supt.....Superintendent
Sur.....Survey
S/W.....Sidewalk
SWG.....Southwest Gas Corporation
SY.....Square Yards

T.....Tangent Length
Tan.....Tangent
TC.....Top of Curb
TCE.....Temporary Construction Easement
Trans.....Transition
TRS.....Trash Rack
TS.....Traffic Signal Pole
Typ.....Typical

USW.....US West Communications

VC.....Vertical Curve
VCP.....Vitrified Clay Pipe
VG.....Valley Gutter

w/.....with
w/o.....without
WM.....Water Meter
WV.....Water Valve
WWF.....Welded Wire Fabric

* Standard dictionary abbreviations not included.

SYMBOLS*

Exist Pdwy Conc Base
Exist Edge of Pavt
Exist R/W Line
Property Line
Top of Cut
Toe of Slope
Trans Cut to Fill
Exist Barb Wire Fence
Exist Chain Link & Gate
Exist Block Wall & Gate
Exist Wood Fence
Retrved Trees
Exist Guardrail
Exist Water Line
Exist Sanitary Sewer Line
Exist Buried Electric Line
Exist Electric Duct Bank
Exist Gas Line
Exist Irrigation Line
Exist Storm Drain Line
Exist Buried Cable TV Line
Exist Buried Telephone Line
Exist Fiber Optic Tel Line
New Pipe
Minor Wash

Angle Point
Bench Mark
Feet per Foot
Center Line
Flow Line
Monument Line
Property Line or Plats
Section Line
Exist Manhole
Exist MS Wall Box
Exist WM Valve
Exist WM Meter
Exist Gas Regulator
Exist Pump or Joint Gas Pole
Exist Steel Power Pole
Exist Guy Wire
Exist Street Light
Exist WM Pad
Exist Signal Pipe
Exist Fire Hydrant
Exist Street Sign
Exist Traf Cont Cab
Exist Traf Pull Box
Exist Traf Signal Pole
Exist Stop Direction

Tree or Hedge Line
Palm Tree
Deciduous Tree
Arbl Tree
Conifer Tree
Saguaro Cactus
Mist Cactus
Cholla Cactus
Prickly Pear Cactus
Barrel Cactus
Exist Sign (1 Post)
Exist Sign (2 Posts)
Ground Surface
New Bit Pvmt (Section)
New Select Material (Section)
New ABC (Section)
Riprap (Plan)
New Bit Pvmt (Plan)
New Conc Pvmt (Plan)
Remove Pvmt (Plan)
New Conc (Section)
New Mat'l (Section)

* Symbols labeled as plans not included. Traffic Signal and Striping Symbols are on Sht __ and __ of the plans.

GENERAL NOTES

1. All work to conform to the MAG Uniform Standard Specifications for Public Works Construction (Dated 1992 and current revisions thereto, together with the MCDOT Supplement to the MAG Standard Specifications and the Special Provisions.
2. Standard Details refer to the MAG Standard Details for Public Works Construction unless noted otherwise.
3. All existing utility lines shown on the plans are from available utility records. The Contractor shall verify the actual location before starting construction. The Contractor shall contact "Blue Stake", 263-1100, prior to beginning construction.
4. Utilities interfering with construction shall be road or relocated by the utility company concerned unless noted otherwise.
5. Disposal of all waste materials, broken concrete, etc. will be the responsibility of the contractor, subject to the approval of the Engineer.
6. All stations and related distances left and right refer to the construction centerline unless noted otherwise.
7. All trees, bushes and fences inside the existing right-of-way which interfere with construction, will be removed by MCDOT forces unless noted otherwise.
8. All paved turnouts shall have the same asphalt and base requirements as the adjacent roadway.
9. The Contractor shall obtain at the necessary permits from local governments for work within their jurisdiction.
10. The Contractor shall verify at bench mark elevations before using them for construction. Bm's in utility poles are particularly susceptible to damage.
11. All cattle bases interfering with construction shall be relocated by the Contractor so as to provide uninterrupted cattle service. This is a non-pay item.

LENGTH OF PROJECT

ROAD NAME STA 000+00.00 TO STA 000+00.00 = 0000.00 LF
ROAD NAME STA 000+00.00 TO STA 000+00.00 = 0000.00 LF
ROAD NAME STA 000+00.00 TO STA 000+00.00 = 0000.00 LF
TOTAL = 00,000.00 LF
00,000 LF/5280 = 0.00 MI

NPDES AREA OF PROJECT

ROAD NAME STA 000+00.00 TO STA 000+00.00 X 000' R/W WIDTH = 000,000.00 SF
ROAD NAME STA 000+00.00 TO STA 000+00.00 X 000' R/W WIDTH = 000,000.00 SF
R/W TRIANGLES = 000,000.00 SF
TOTAL = 0,000,000.00 SF
0,000,000 SF/43,560 = 00.00 AC

DESIGN DATA

CLASSIFICATION.....RURAL/LOCAL
TERRAIN.....LEVEL
DESIGN SPEED.....55 MPH
1992 AVERAGE DAILY TRAFFIC.....2500
2010 AVERAGE DAILY TRAFFIC.....10,000

INDEX

1.....FACE SHEET
2.....GENERAL NOTES SHEET
3-4.....TYPICAL SECTIONS SHEETS
5-6.....QUANTITY SUMMARY SHEETS
7.....PIPE SUMMARY SHEET
8-25.....PAVING PLAN AND PROFILE SHEETS
26-27.....INTERSECTION DETAIL SHEETS
28-31.....STORM DRAIN PLAN AND PROFILE SHEETS
32-36.....IRRIGATION SHEETS
37-39.....DETAIL SHEETS
40.....MASS DIAGRAM SHEET
41.....BORING LOG SHEET
50-54.....LANDSCAPING SHEETS
55-57.....TRAFFIC SIGNAL SHEETS
58.....SIGNAL INTERCONNECT SHEET
59-66.....STRIPING SHEETS
67.....TRAFFIC CONTROL (DETOURS) SHEET
67.....TOTAL SHEETS

REVISION	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

		BY	DATE
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	A. ENGINEER	6/00/94
	DRAWN	A. TECHNICIAN	6/00/94
	CHECKED		
	GENERAL NOTES SHEET		SHEET 2 OF 10

"IT'S SPECIAL BY LAW" CALL 263-1100 BLUE STAKE

TRACS NO.

Dgn: 12/4/91

QUANTITY SUMMARY SHEET (q.dgn)

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SUMMARY OF ESTIMATED QUANTITIES

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	100	100	

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SHEET NUMBER																		TOTAL

NO.	REVISION	BY	DATE
1			
2			
3			

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

		BY	DATE
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	L. ENGINEER	10/00/93
	DRAWN	L. TECHNICIAN	10/00/93
	CHECKED		
	QUANTITY SUMMARY SHEET		SHEET 100 OF 100

TRACS NO.

DOUBLE QUANTITY SUMMARY SHT (q.dgn)

F.A.H.S. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	100	100	

SUMMARY OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SHEET NUMBER							TOTAL

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SHEET NUMBER							TOTAL

REVISION	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY NOT FOR CONSTRUCTION		BY	DATE
	DESIGNED	A. DOWNER	10-20-93
	DRAWN	A. THOMPSON	10-20-93
	CHECKED		
	QUANTITY SUMMARY SHEET		SHEET 100 OF 100

TRACS NO.

HALF QUANTITY SUMMARY SHEET (q.dgn)

SUMMARY OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SHEET NUMBER							TOTAL

FHWA REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	100	100	

REVISION	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

		BY	DATE
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	A. ENGINEER	10/00/92
	DRAWN	A. TECHNICIAN	10/00/92
	CHECKED		
	QUANTITY SUMMARY SHEET		SHEET 100 OF 100

TRACE NO.

PIPE SUMMARY SHEET (ps.dgn)

FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	4	10	

NEW PIPE SUMMARY

PIPE LOCATION				SKEW	SIZE	LENGTH	CMP		REINF. CONC.	CIPP	MANHOLES	CATCH BASINS			HEADWALLS			END SECT.	CONC. SPILL-WAY	REMARKS
BEGIN STATION	OFFSET	END STATION	OFFSET		(in.)	(ft.)	Corr.	Coat.	CLASS	Wall Thick.	STDS.	STD.	WING	GRATE	STD.	TYPE	AREA			

4			
3			
2			
1			
NO.	REVISION	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

PRELIMINARY NOT FOR CONSTRUCTION		BY	DATE
	DESIGNED	A. ENGINEER	0/00/94
	DRAWN	A. TECHNICIAN	0/00/94
	CHECKED		
	PIPE SUMMARY SHEET		SHEET OF 0 NO

TRACS NO.

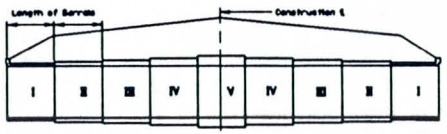
REINFORCED CONCRETE BOX CULVERT SUMMARY

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ.	00000	0	10	

DESCRIPTION				STANDARD DRAWINGS REQUIRED	LENGTH OF BARRELS										APPROXIMATE QUANTITIES					REMARKS
STATION	PLAN REF. NO.	STRUC NO.	SIZE		Left of ℄ ▲					Right of ℄ ▲					Struc Exc CY	Class S f'_c=3000psi Concrete CY	Reinforcing Steel Lbs.	Structure Backfill CY	Structure Exc CY	
					I	II	III	IV	V	V	IV	III	II	I						
Total																				

(■) References numbers correspond to numbers in circles on PLAN SHEETS.

NOTE:
FOR STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL PLACEMENT AND MEASUREMENT, SEE STANDARD DRAWINGS C-13.30, C-13.40 AND C-13.50.



▲ Construction ℄ (Looking Ahead).

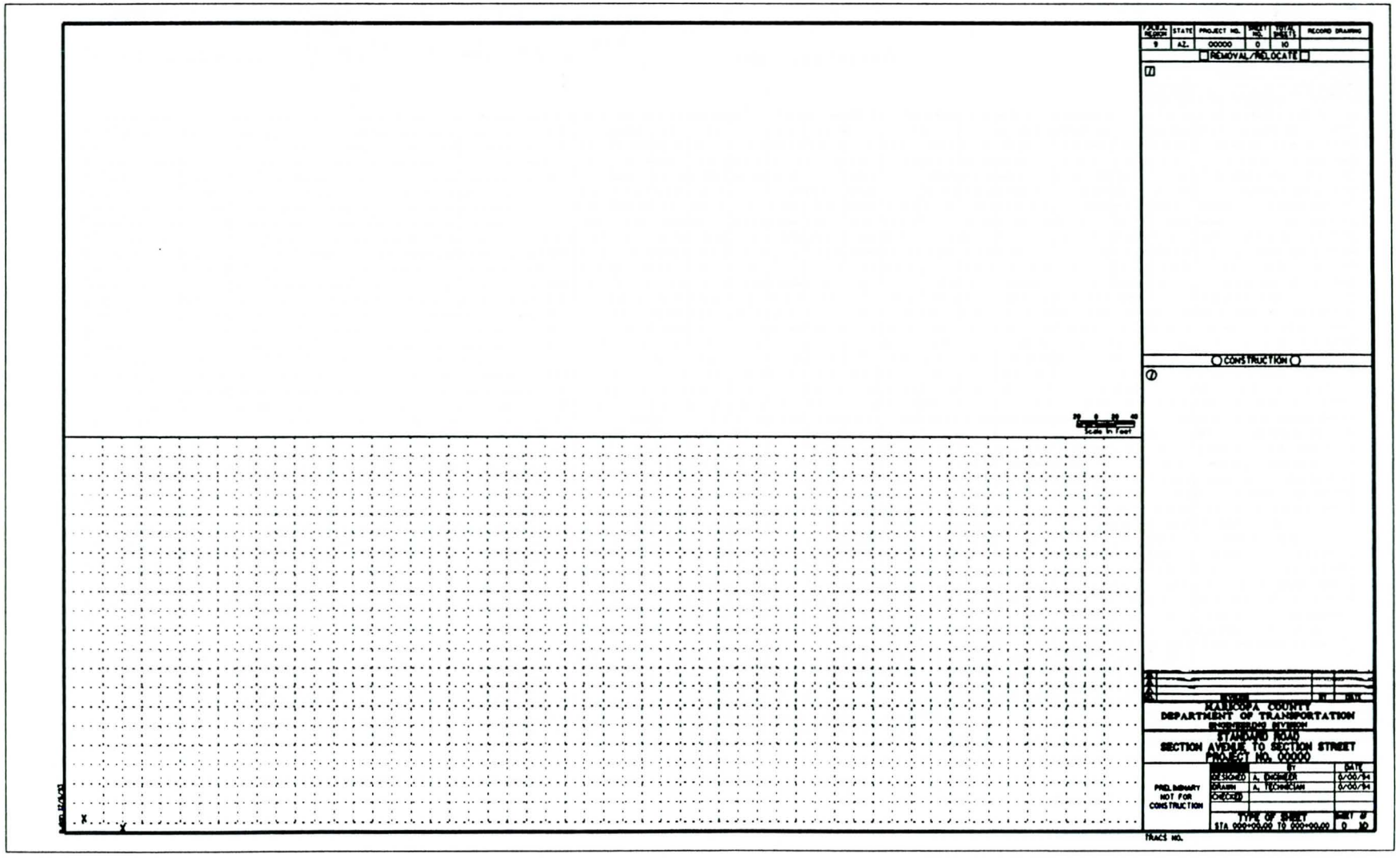
REVISION	BY	DATE

MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
STANDARD ROAD
SECTION AVENUE TO SECTION STREET
PROJECT NO. 00000

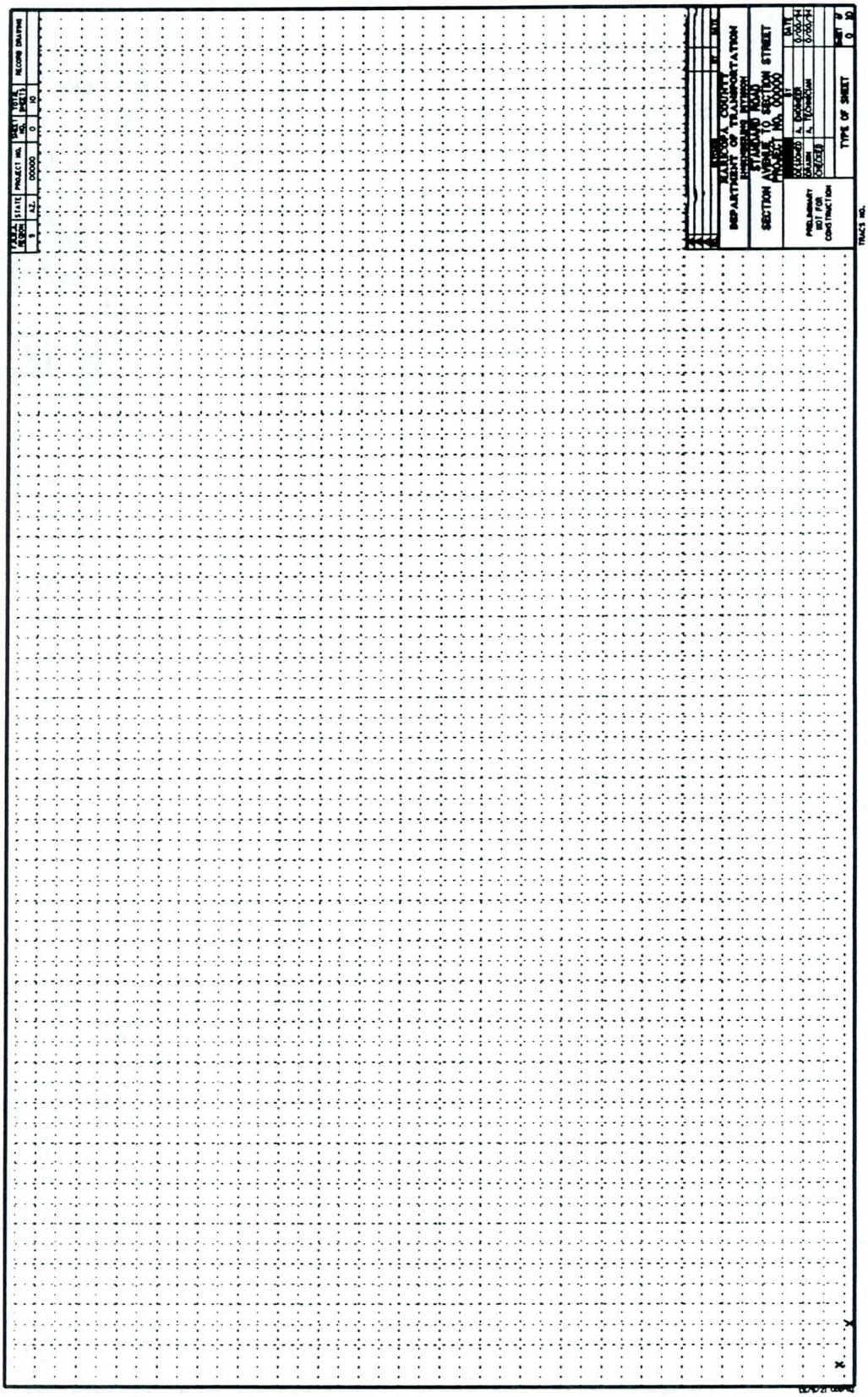
			DATE
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	A. ENGINEER	0/00/94
	DRAWN	A. TECHNICIAN	0/00/94
	CHECKED		
	BOX CULVERT SUMMARY		SHEET 0 OF 10

TRACS NO.

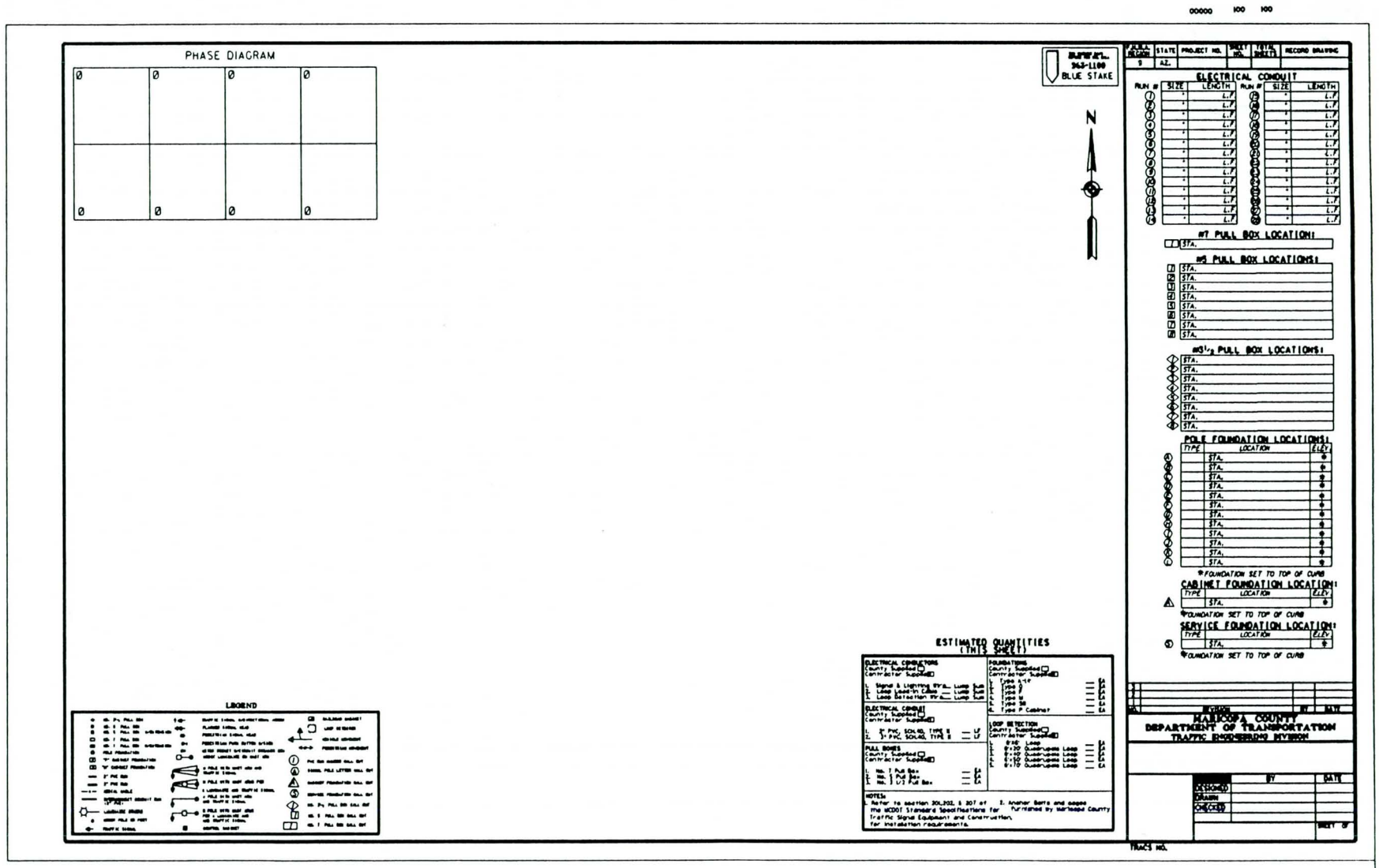
PLAN AND PROFILE SHEET (p.dgn)



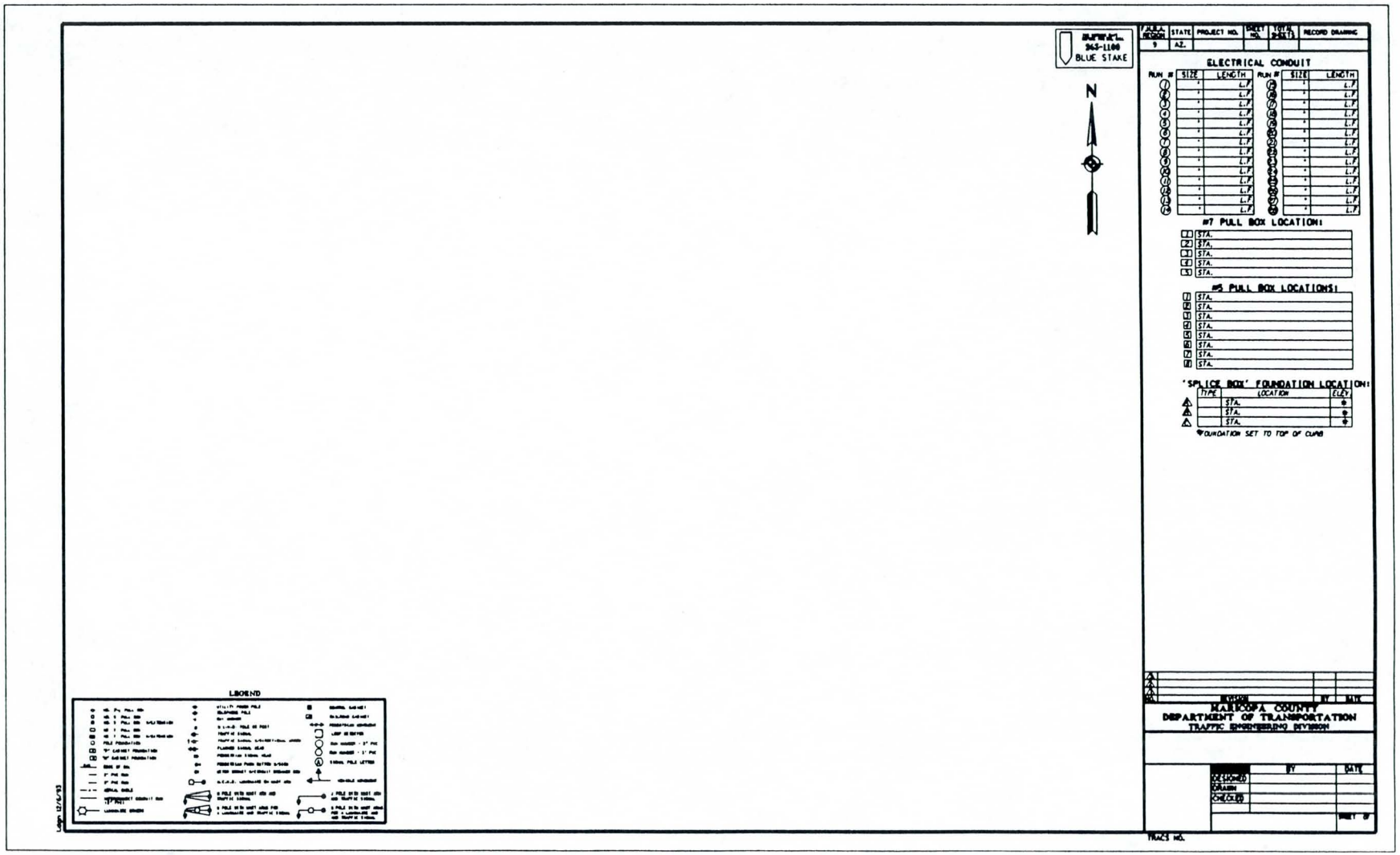
FULL PROFILE GRID & BORDER SHT (fp.dgn)



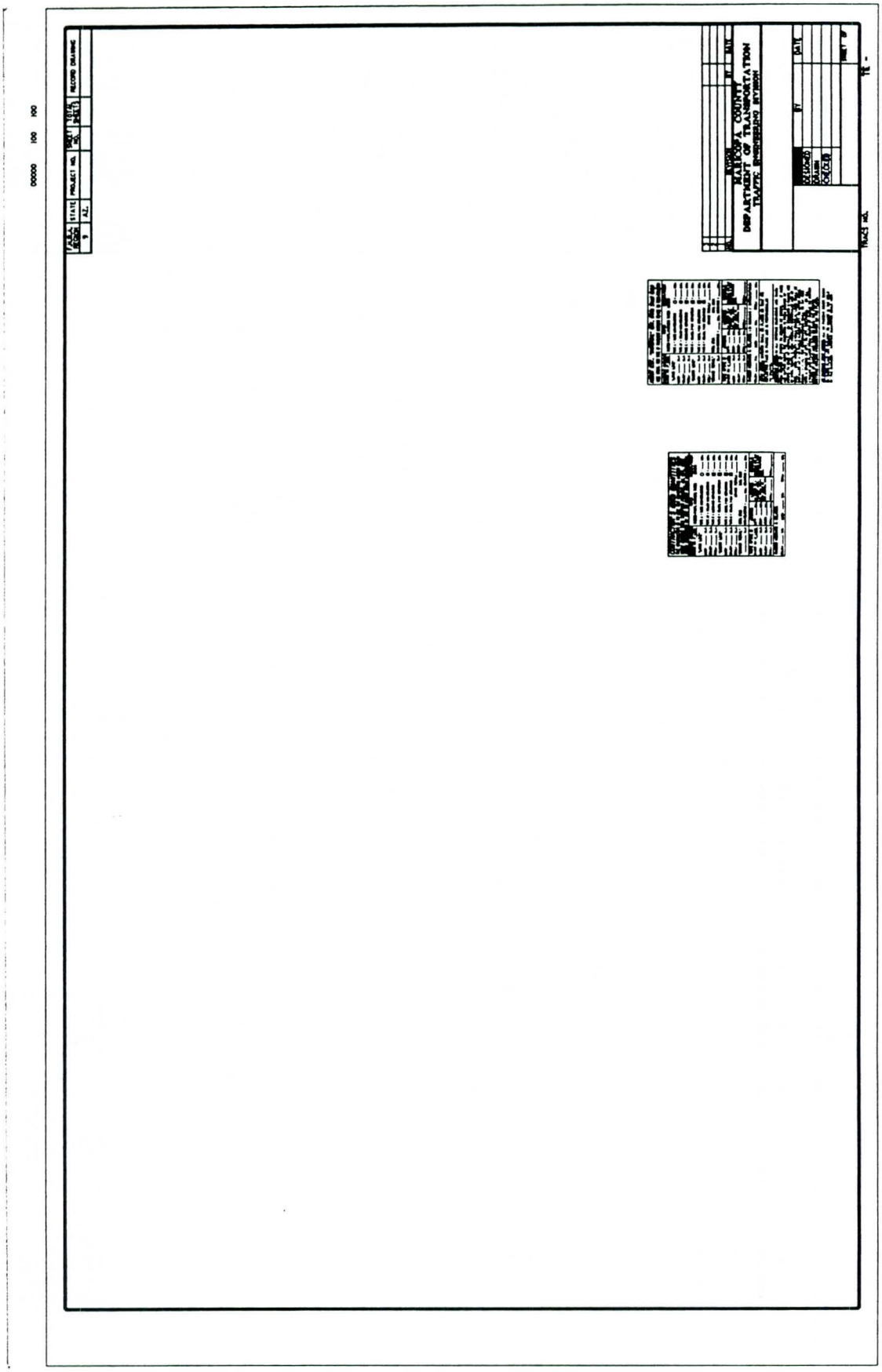
TRAFFIC SIGNAL SHEET BORDER (t.dgn)



TRAFFIC SIGNAL INTERCONNECT (i.dgn)



STRIPING and SIGNING SHEET (s.dgn)



EMTA DESCRIPTOR CODES

ROAD INFORMATION

CODE/FEATURE NAME	DESCRIPTION
*RPCL	Centerline of Paved (Asphalt) Road
*RDCL	Centerline of Dirt Road
*RRCL	Railroad Centerline-Midpoint Between Rails
*RT	Top of RR Rail
*SL	Section Line
*LEO *REO	Left & Right Edge of Paved (Asphalt) Surface.
*LMEO *RMEO	Left & Right Edge of Paved Surface Next to Median Curb
PVMT	(Parking Lot, Paved Area)
*LER *RER	Left & Right Edge of Dirt Road (Traveled Surface).
*LBC *RBC	Left & Right Back of Curb-Shot Taken on Top of Curb.
*LFLC *RFLC	Left & Right Flow Line (gutter line) of Curb.
*LBCT *RBCT	Left & Right Beginning of Curb Transition (From One Type of Curb to Another). Shot Taken at Top, Back of Curb.
*LECT *RECT	Left & Right End of Curb Transition (From One Type of Curb to Another).
*LGL *RGL	Left & Right Lip of Gutter Taken at Edge Where Gutter Meets Road Surface.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

ROAD INFORMATION

CODE/FEATURE NAME	DESCRIPTION
DCCL	Centerline of Depressed Curb For Driveway. Use Note to Designate Driveway Width.
*DWCL	Centerline of Driveway. Use Note to Designate Driveway Width.
*LRC *RRC	Left & Right Edge of Ribbon Curb. Shot Taken at back of curb.
*LMC *RMC	Left & Right Median Curb. Shot Taken on Top, Back of Curb.
*LEC *REC	Left & Right Edge of Extruded Curb. Shot Taken on top, Back of Curb.
VG	Valley Gutter. Shot Taken at Outer Edge of Concrete Valley Gutter. MAG. STD 240.
APRN	Corner of Concrete Apron. MAG. STD. 240
*LBSW *RBSW	Left & Right Back of Sidewalk. Shot Taken on Top, Back of Sidewalk.
*LESW *RESW	Left & Right Edge of Sidewalk. Shot Taken on Top, Inner Edge of Sidewalk. Used for Sidewalks that do not abut curb.
*LSWCL *RSWCL	Left & Right Centerline of Sidewalk. Use Function to Describe Width. Use With Meandering Sidewalk.
*GRB	Grade Break. Distinct Vertical Break in Line.
BKPT	Single Vertical Break Point
*CRWN	Crown of Roadway. Use When Different for Centerline or Section Line.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

ROAD INFORMATION

CODE/FEATURE NAME	DESCRIPTION
*LGR *RGR	Left & Right End or Beginning of Guard Rail That is Parallel to Roadway (Standard Section). Face of Guard Rail.
*BGRB	Beginning and End of Guard Rail.
*EGRB	End Section (Break-A-Way).

BRIDGE/BOX CULVERT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
CLV	Concrete Box Culvert. Use Note Function to Designate Size.
*CBCC	Concrete Box Culvert Corner. Top of Culvert.
CBCFL	Concrete Box Culvert Floor. Flow Line (or invert) of Culvert.
CBCIT	Concrete Box Culvert Inside Top. Inside Top of Barrel at Corner.
CBCT	Concrete Box Culvert Top. Any Shot on Top Except Corner.
*BRDC	Top, Corner of Bridge.
BRDST	Bottom of Bridge Stringer (Girder).
*ASCL	Centerline of Approach Slab.
*LASC *RASC	Left & Right Corner of Approach Slab.
*LBWT *RBWT	Left & Right Top of Barrier Wall. Shot Taken on Outside Edge.
PRCL	Center of Pier Column. Use Offset Method to Locate Center.
ABUT	Top of Abutment (bridge).

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

IRRIGATION/STORM DRAIN INFORMATION

CODE/FEATURE NAME	DESCRIPTION
WWE	End of Wingwall. Shot Taken at Inside (toward waterway) Top.
WWAP	Angle Point of Wingwall. Shot Taken at Inside Top.
HWCL	Centerline of Headwall. Use Note Function to Designate Length and Width. Shot Taken at Inside Top.
HWC	Corner of Headwall. Shot Taken at Inside Top.
CB	Center Point of Catch Basin. Use Note Function to Designate Length and Width. Shot Taken on Grate.
CBFL	Invert of Catch Basin. Invert of Pipe Inside Catch Basin.
CBCOR	Corner of Catch Basin, Shot Taken on Grate.
CG	Centerline of Cattle Guard. Shot Taken on Grate. Use Note Function to Designate Length and Width.
*CGC	Corner of Cattle Guard. Shot Taken on Grate.
CGFL	Flow Line (invert) of Cattle Guard That is Used to Carry Water. Shot Taken at Centerline of Cattle Guard.
*TB	Top of Distinct Bank Such as Wash, Dirt Ditch, River, Canal, etc.
*TS	Toe of Distinct Slope Such as Wash, Dirt Ditch, River, etc.
WLL	Utilize Offset Function to Describe Center (Shaft) Location. Z Coordinate Should Be On Average Ground.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

IRRIGATION/STORM DRAIN INFORMATION

CODE/FEATURE NAME	DESCRIPTION
ANCH	Large Concrete/Metal Down Guy. Utilize Offset Function to Locate Center. Utilize Note Function to Describe Size and Type.
PTEX	Utilize Note Function to Describe Size and Type.
STRAP	Irrigation Structure Angle Point. Utilize Note Function to Describe Size and Type.
HG	Shot Taken on Centerline, Top, of Gate. Take Pipe Flow Line as Next Shot.
CWCL	Irrigation Structure Foot Bridge. Take Shot at Centerline, End. Utilize Note Function to Describe Size and Type.
ALFV	Utilize Note Function to Describe Size and Type.
SILO	Center Point of Locked, Circular Silo Found Near Canal Irrigation Structures. Utilize Note Function to Describe Size and Type.
IRSTR	Corner of Irrigation Structure. Shot Taken on Top of Structure at Inside Corner. Utilize Note Function to Describe Size and Type.
TRK	Centerline, Top of Rack. Utilize Note Function to Describe Size and Type.
WIER	Shot Taken at Centerline, Flow Line to Wier. Utilize Note Function to Describe Size and Type.
*LCLD *RCLD	Left & Right Flow Line of Concrete Lined Ditch. Shot Taken at Toe of Slope. Shoot Both Toes on First Section, Centerline Only on Remainder of Sections.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

IRRIGATION/STORM DRAIN INFORMATION

CODE/FEATURE NAME	DESCRIPTION
*TLIL *TLIR	Left & Right Inside (Roadway Side) Top of Concrete Lined Ditch/Canal.
*TLOL *TLOR	Left & Right Outside Top of Concrete Lined Ditch/Canal.
*TBIL *TBIR	Left & Right Inside (Roadway Side) Top of Dirt Bank. Distinct Bank on Wash, Ditch, Canal, Road, etc.
*TBOL *TBOR	Left & Right Outside Top of Dirt Bank.
*TSIL *TSIR	Left & Right Inside (Roadway Side) Toe of Slope. Distinct Slope of Wash, Ditch, Canal, Road, etc.
*TSOL *TSOR	Left & Right Outside of Toe of Slope.
*LFL *RFL	Left & Right Flow Line of Dirt Ditch, Wash, Canal
*LCAN *RCAN	Left & Right Flow Line of Concrete Canal. Shot Taken at Centerline of Canal.
*SMP	Edge (Top of Bank) of Sump.
ELAK	Edge of Lake
HWTR	High Water Mark on Bridge or Concrete Box Culvert.
*TL	Top of Concrete Ditch/Canal Lining.
SPWY	Centerline of Concrete Spillway. Utilize Note Function to Describe Size and Type.
SCP	Centerline of Concrete Scupper. Utilize Note Function to Describe Size and Type.
PCINV	Invert (Flow Line) of Generic Concrete Pipe. Utilize Note Function to Describe

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

IRRIGATION/STORM DRAIN INFORMATION

CODE/FEATURE NAME	DESCRIPTION
PCINV	Invert (Flow Line) of Generic Concrete Pipe. Utilize Note Function to Describe Size and Type.
12CPT 14CPT 15CPT 18CPT 24CPT 30CPT 36CPT 48CPT 60CPT 72CPT	Inside Top of Concrete Pipe. Number Designates Size (Inches).
PMINV	Invert (Flow Line) of Generic Concrete Pipe. Utilize Note Function to Describe Size and Type
12CMT 15CMT 18CMT 24CMT 30CMT 36CMT 42CMT 48CMT 60CMT 72CMT 84CMT 96CMT	Inside Top of Corrugated Metal Pipe. Number Designates Size (Inches).
IRMH	Irrigation Man Hole Center Point.
SP	Utilize Offset Function to Locate Center.
PPINV	Invert of PVC Pipe. Utilize Note Function To Describe Size and Type.
PSINV	Invert of Steel Pipe. Utilize Note Function To Describe Size and Type.
SIPH	Top of Siphon Pipe. Utilize Note Function To Describe Size and Type.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

TRAFFIC SIGNS/STRUCTURES INFORMATION

CODE/FEATURE NAME	DESCRIPTION
SGN	Sign. Use Note Function to Describe Dimensions.
SGUG	Underground Gas Sign.
SEUG	Underground Electric Sign.
SCUG	Underground Cable TV Sign.
STUG	Underground Telephone Line Sign.
TRSS	Single Post Traffic Sign.
TRSM	Multiple Post Traffic Sign. Shot Taken in Middle of Posts. Utilize Note Function for Dimensions.
TRCAB	Traffic Signal Cabinet.
TRSP	Traffic Signal Pole.
PB	Pull Box. Use Note Function to Describe Dimensions.
BJ	Junction Box for Traffic Signals.
RRCAB	Railroad Control Cabinet. Shot Taken on Ground Next to Cabinet, Utilizing Offset Mode to Describe Center.
RRGT	Shot Taken on Ground Next to Cabinet, Utilizing Offset Mode to Describe Center.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

UTILITIES INFORMATION

CODE/FEATURE NAME	DESCRIPTION
FH	Center, Top, of Fire Hydrant.
WBS	Blue Stake Mark for Water (Blue).
WM	Center Point of Water Meter.
WV	Center Point of Water Valve.
WL	Exposed Water Line (top).
HB	Top of Hose Bib (Faucet).
SH	Center of Sprinkler Head.
IRBX	Center Point of Irrigation Control Box. Use Note Function to Describe Dimensions.
IRVB	Center Point of Irrigation Valve Box.
GBS	Blue Stake Mark for Gas (yellow).
GM	Center Point of Gas Meter.
GV	Center Point of Gas Valve.
GL	Top of Exposed Gas Line.
GVP	Ground Shot at Exposed Gas Vent Pipe.
GREG	Ground Shot at Exposed Gas Regulator.
SBS	Blue Stake Mark for Sewer (green).
*SS	Top of Exposed Sanitary Sewer Line.
*SD	Top of Exposed Storm Sewer Line.
MTR	Generic Meter. Use Note Function to Describe.
PEDSL	Generic Pedestal. Use Note Function to Describe.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

UTILITIES INFORMATION

CODE/FEATURE NAME	DESCRIPTION
MH	Generic Manhole. Use Note Function to Describe.
SSMH	Center Point of Sanitary Sewer Manhole.
SDMH	Center Point of Storm Sewer Manhole.
SDFL	Flow Line (invert) of Storm Sewer.
EBS	Electric Blue Stake Mark.
EOH	Electric Overhead Wire.
EUG	Underground Electric Wire.
EMH	Electric Manhole.
TXMS	Transmission Tower Corner. Shot Taken at Base of Tower.
PP	Wood Power Pole.
DG	Shot Taken at Point Guy Goes into Ground.
PSL	Street Light Pole.
PST	Steel Pole.
PG	Guy Pole Supporting Power Pole.
BP	Brace Pole Supporting Power Pole.
TRSF	Electric Transformer.
EM	Electric Meter Use Note Function to Describe Dimensions.
TBS	Blue Staked Communications (Telco) Line (orange).
TEL	Communications (Telco) Line.
TMH	Communications (Telco) Manhole.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

UTILITIES INFORMATION

CODE/FEATURE NAME	DESCRIPTION
TBX	Communications (Telco) Junction Box.
TPED	Telephone Company Pedestal Box.
TOH	Telephone Company Overhead Line.
TLB	Telephone Booth Center Point. Shot Taken to Locate Center or Post.
CPED	Cable TV Pedestal Box.
COH	Cable TV Overhead Line.
CJCT	Cable TV Junction Box.
CBS	Blue Staked Cable TV Line (Orange).

FENCE INFORMATION

CODE/FEATURE NAME	DESCRIPTION
FPST	Steel Fence Post. Use When Standing Alone Without Fence.
FPM	Masonry Fence Post. Use When Standing Alone Without Fence.
FPW	Wood Fence Post. Use When Standing Alone Without Fence.
FCP	Fence Corner Post. Use Note Function to Describe
*LFEN *RFEN	Left & Right Generic Fence Line. Type and Height. Shot Taken on Ground at Fence Line.
*LFBW *RFBW	Left & Right Barbed Wire Fence. Use Note for Height. Shot Taken on Ground at Fence Line.
*LFHW *RFHW	Left & Right HOG (Square) Wire Fence. Use Note For Height. Shot Taken on Ground at Fence Line.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

FENCE INFORMATION

CODE/FEATURE NAME	DESCRIPTION
*LFCL *RFCL	Left & Right Chain Link Fence. Use Note for Height. Shot Taken on Ground at Fence Line.
*LFW *RFW	Left & Right Wood Fence. Use Note For Height Shot Taken on Ground at Fence Line.
*LFSR *RFSR	Left & Right Split Rail Fence. Use Note For Height. Shot Taken on Ground at Fence Line.
*LFPI *RFPI	Left & Right Pipe Fence. Use Note for Height. Shot Taken on Ground at Fence Line.
*LFM *RFM	Left & Right Masonry Fence. Use Note for Height. Shot Taken on Ground at Fence Line.
*LFR *RFR	Left & Right Rock Fence. Use Note for Height. Shot Taken on Ground at Fence Line.
*LFRR *RFRR	Left & Right Railroad Tie Fence, Use Note for Height. Shot Taken on Ground at Fence Line.
GP	Use When Gate Post is Standing Alone Without Fence.
GPG	Use When Gate is Standing Alone Without Fence.
GCL	Centerline of Gate. Use Note Function to Describe Width.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

MISCELLANEOUS STRUCTURES

CODE/FEATURE NAME	DESCRIPTION
*RETW	Shot Taken on Inside, Top of Wall. Use Note to Describe Dimensions (Height, Wall Thickness).
HR	Top of Handrail.
*BLDC	Corner of Building. Shot Taken on Ground, Next to Corner.
FLEL	Building Floor Elevation. Shot Taken at any Convenient Point.
*MHC	Corner of Mobile Home. Shot Taken on Ground.
*PDC	Corner of Concrete Pad. Shot Taken on Top of Pad.
*PATC	Corner of Patio. Shot Taken on Top of Pad.
MB	Shot Taken on Ground, Next to Mail Box.
*TRL	Centerline of Trail. Use Note Function to Describe Width.

GROUND SHOT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
AG	Field Shot, Usually Last Shots Taken in a Cross Section.
GBL GBR	Left & Right, Vertical Grade Break.
NG	Natural, Undisturbed Ground.
FCLT	Average Ground in Cultivated Field.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

VEGETATION INFORMATION

CODE/FEATURE NAME	DESCRIPTION
TR	Generic Tree. Utilize Note Function to Designate Type.
CTR	Citrus Tree
PV	Palo Verde Tree
IW	Ironwood Tree
MQ	Mesquite Tree
CTC	Cat Claw Tree
ACA	Acacia Tree
PCN	Pecan Tree
CTW	Cottonwood Tree
EUC	Eucalytus Tree
PLM	Palm Tree
OL	Olive Tree
PIN	Pine Tree

(All tree shots taken on natural ground utilizing offset mode to describe center. Use note function to describe trunk diameter and approximate height.)

*LROTR *RROTR	Left & Right Row of Trees. Utilize Note Function to Describe Size & Type.
*LORCH *RORCH	Left & Right Edge of Citrus Orchard
*HDGL	Utilize Note Function to Describe Size & Type
SAG	Saguaro Cactus
BRL	Barrel Cactus
OCO	Ocotillo
PRP	Prickly Pear
CHO	Cholla Cactus
CEN	Century Plant
YUC	Yucca

(Utilize offset function to locate center cactus or plant and note function to describe height.)

CACG	Edge of Cactus Garden. Use Note For Size.
*LOLE *ROLE	Left & Right Oleander Bush Line

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

VEGETATION INFORMATION

CODE/FEATURE NAME	DESCRIPTION
*PYR	Edge of Pyracantha Bush Line
*LROBU *RROBU	Left & Right Rose Bush Line
BU	Generic Bush. Utilize Offset Function to Describe Center and Note for Type.
CREO	Take Shot at Center of Creosote Bush.

SURVEY GEOMETRIC INFORMATION

CODE/FEATURE NAME	DESCRIPTION
PC	Point of Curvature. Beginning of Simple Curve.
PI	Point of Intersection of Two Tangents.
PT	Point of Tangency. End of Simple Curve.
POC	Point on Curve.
*POT	Point on Tangent (straight line).
POCC	Point of Compound Curve. Point of Radius Change on Compound Curve.
PRC	Point of Reverse Curve. Point of Preceding Curve, PC of New Curve.

SURVEY POINT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
SCNR	Utilize Note Function to Describe Size and Type.
PRPC	Found Property Corner. Utilize Note Function To Describe Size and Type.
CTRLPT	Set Control Point. Utilize Note Function to Describe Size and Type.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

SURVEY POINT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
CTLPH	Set Horizontal Control Point. Utilize Note Function to Describe Size and Type.
CTLPV	Set Vertical Control Point. Utilize Note Function to Describe Size and Type.
TRVPT	Traverse Point. Utilize Note Fun
RP	Utilize Note Function to Describe Size and Type.
NEFD	Found North East Section Corner. Utilize Note Function to Describe Monument and Section.
NWFD	Found North West Section Corner. Utilize Note Function to Describe Monument and Section.
SEFD	Found South East Section Corner. Utilize Note Function to Describe Monument and Section.
SWFD	Found South West Section Corner. Utilize Note Function to Describe Monument and Section.
N4FD	Found North 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
E4FD	Found East 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
S4FD	Found South 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
W4FD	Found West 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
161FD	Found 16/1 Corner. Utilize Note

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

SURVEY POINT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
CTLPH	Set Horizontal Control Point. Utilize Note Function to Describe Size and Type.
CTLPV	Set Vertical Control Point. Utilize Note Function to Describe Size and Type.
TRVPT	Traverse Point. Utilize Note Fun
RP	Utilize Note Function to Describe Size and Type.
NEFD	Found North East Section Corner. Utilize Note Function to Describe Monument and Section.
NWFD	Found North West Section Corner. Utilize Note Function to Describe Monument and Section.
SEFD	Found South East Section Corner. Utilize Note Function to Describe Monument and Section.
SWFD	Found South West Section Corner. Utilize Note Function to Describe Monument and Section.
N4FD	Found North 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
E4FD	Found East 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
S4FD	Found South 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.
W4FD	Found West 1/4 Section Corner. Utilize Note Function to Describe Monument and Section.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

SURVEY POINT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
161FD	Found 16/1 Corner. Utilize Note Function to Describe Monument and Section
162FD	Found 16/2 Corner. Utilize Note Function to Describe Monument and Section.
163FD	Found 16/3 Corner. Utilize Note Function to Describe Monument and Section.
164FD	Found 16/4 Corner. Utilize Note Function to Describe Monument and Section.
1613F	Found 16/13 Corner (Center of Section) Utilize Note Function to Describe Monument and Section.
16ST	Set 1/16 Corner. Utilize Note Function to Describe Monument and Section.
16FD	Found 1/16 Corner. Utilize Note Function to Describe Monument and Section.
HTFD	Found Hub and Tack.
RBFD	Found Rebar. Utilize Note Function to Describe Size and Type.
RRFD	Found Railroad Spike.
RBFC	Found Rebar with Cap. Utilize Note Function to Describe Number and Type (L.S. or P.E.).
IPFD	Found Iron Pipe. Utilize Note Function to Describe Size and Type.
NLFD	Utilize Note Function to Describe Size and Type.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

SURVEY POINT INFORMATION

CODE/FEATURE NAME	DESCRIPTION
PKFD	Found PK Nail.
CPFD	Found Cotton Spindle.
BSFD	Found Bridge Spike.
HTST	Set Hub and Tack.
RBST	Set Rebar. Utilize Note Function to Describe Size and Type.
RRST	Set Railroad Spike
IPST	Set Iron Pipe. Utilize Note Function to Describe Size and Type.
NLST	Set Nail. Utilize Note Function to Describe Size and Type.
PKST	Set PK Nail.
CPST	Set Cotton Spindle.
BSST	Set Bridge Spike.
STN	Found Stone With Marks.
CRSS	Set or Found. Utilize Note Function to Describe Size and Type.
BM	Bench Mark. Utilize Note Function to Describe Size and Type.
BCHH	Found Brass Cap in Hand Hole.
BC	Found Brass Cap Flush With Surface.
MSCM	Found Miscellaneous Survey Monument. Utilize Note Function to Describe Size and Type.

*Designates line work codes. These items require line connection and must be used with Command Codes.

EMTA DESCRIPTOR CODES

ERROR CODES

CODE/FEATURE NAME	DESCRIPTION
DEF	Default. No Appropriate Code. Utilize Note Function to Describe Size and Type.
DEL	Delete Previous Code (Error).

*Designates line work codes. These items require line connection and must be used with Command Codes.