2.8   Color Table / Caltrans Standard Colors

A.   Introduction

Caltrans CADD uses standard colors to easily recognize, distinguish and select displayed elements. Colors also facilitate masking elements and enhance plotting capabilities. Each color has an intensity of red, green and blue on a scale from 0 to 255 (the RGB value).

B.   Caltrans Color Table files

Color table information is stored in each design file for its element color attribute feature. A *color table file* is an external resource that can be read so as to set the color table of a design file to a predetermined standard. A change to a color RGB value or the attachment of an external color table file will remain embedded in a design file upon closing the file; neither is dependent on the Save Settings command.

The MicroStation color table contains 256 colors, numbered from 0 to 255. Caltrans has two (2) standard color tables (see the table below).

Function	Color Table Name
Roadway, Right of Way & Structures	ctcolor.tbl
Office of Transportation Architecture and The Office of Electrical, Mechanical, Water and Waste Water	taemww_color.tbl

Caltrans uses masking in some cells and tables. Color 250 is used to mask over elements to avoid partially deleting or trimming them. Masking uses an off-black color (RGB 20, 20, 20) that appears white when plotted as specified by Caltrans standard design scripts (formerly called pen tables). Set the fill type option to "opaque" to create mask areas. Color 251 is used to outline a mask area. The mask outline color displays as white in MicroStation, but will plot as black as specified by Caltrans standard design scripts. Set the fill type option to "outlined" to create mask outlines.

Do not use color 252 for any element because it is used to identify the plot shape of a sheet border.

Color 255 is used as the background color (usually black).

C.   Standard Colors for Roadway Projects

There are sixteen (16) standard colors (colors 0-15) for Roadway projects in the Caltrans color table file (ctcolor.tbl). Use these sixteen colors for roadway design. One of the sixteen standard colors is assigned to each of most of the standard roadway named levels (only the first eight of the first sixteen colors are utilized by the Caltrans standard numbered level convention).

Standard Colors for Roadway

Color	Generic Description (*)	RGB Value
0	White	255, 255, 255
1	Blue	0, 150, 250
2	Green	0, 255, 0
3	Red	255, 0, 0
4	Yellow	250, 250, 0
5	Purple	130, 75, 190
6	Orange	235, 95, 0
7	Brown	150, 110, 70
8	Lightest Blue	148, 255, 255
9	Light Blue	0, 210, 255
10	Light Green	155, 255, 155
11	Light Red	255, 80, 80
12	Light Yellow	250, 255, 140
13	Light Purple	220, 110, 255
14	Light Orange	255, 145, 0
15	Light Brown	255, 190, 120

(*) Some color descriptions supplied with MicroStation may be identical to the above, but the associated RGB values may not be the same.

Colors 8 – 15 are lighter than but similar to colors 1 – 7, respectively. Colors 8 – 15 can be used to distinguish elements representing similar items on the monitor. For example, colors 6 and 14 could be used to distinguish electrical conduit for different electrical systems.

Colors 85 – 100 and 101 – 116 each have the same RGB values as colors 0 to 16, respectively. Colors 85 – 116 affect potting (to force the dropout of elements on non-dropout levels or prevent the dropout of elements on dropout levels) because of specifications in the Caltrans standard design scripts. See Section 5.10 for more information.

D.   Standard Colors for Right of Way

Colors 208 – 239 (in Caltrans color table file "ctcolor.tbl") are for Right of Way map products. Colors 208 – 223 facilitate Right of Way map elements to be grouped by similar color for display on the monitor (they are black when plotted). Colors 224 –239 are for parcel coloring, topo and relinquishment hatching (these colors will remain in color when plotted). Colors 250 and 251 are for special plotting functions for Surveys and Right of Way Engineering cells (see Section B).

Right of Way Engineering has separate design scripts for plotting/printing Right of Way map products.

The following table shows the color, description, RGB value, associated Right of Way map groups and plot appearance for Right of Way Engineering.

Color	Description *	RGB Value	R/W Map Element Groups	Plot Appearance
208	dark blue	25, 55, 255	Landnet Elements	Elements plot black
209	blue	75,155,255		
210	light blue	125,255,255		
211	dk. lavender	145,40,140	New Temporary Easements	
212	med lavender	171,93,178		
213	lt. lavender	198,146,216		
214	pale lavender	255,200,255		
215	dark green	0,125,0	Existing Elements	
216	med green	0,190,0		
217	green	0,255,0		
218	red	230,0,75	New Elements	
219	pink	242,92,152		
220	light pink	255,185,230		
221	dk. rust brown	190,100,50	Landnet Elements	
222	rust brown	222,150,25		
223	lt. rust brown	255,200,0		
224	light yellow	252,253,195	Excess Land Parcels	Parcel coloring, topo and hatching plot in color
225	light gray	170,170,170	Topo **	
226	pink	255,180,255	Parcel Areas	
227	light green	200,255,170		
228	light lavender	208,227,255		
229	light blue	200,255,255		
230	light orange	255,208,156		
231	tan	219,194,172		
232	dark gray	100,100,100	Relinquishment Hatching	
233	green	36,255,0	Parcel Areas	
234	aqua blue	72,209,204		
235	bright blue	36,255,255		
236	orange	255,146,38		
237	brown	182,109,38		
238	lavender	182,146,255		
239	bright pink	255,73,255		
250	black	20,20,20	Mask Area	
251	white	255,255,255	Outline of Mask Area	

*   These are generic descriptions of colors customized for Right of Way Engineering use.

**   Topography on Right of Way map products is not dropped out when plotted.

E.   Standard Colors for Structures

Structures bridge design uses the Caltrans standard color table "ctcolor.tbl." Contact the DES-Structures CADD Software Support Group (DES-SCSS) for the use of colors with the structures named level convention.

F.   Standard Colors for Office of Transportation Architecture, and Office of Electrical, Mechanical, Water and Wastewater

All disciplines in the Offices of Transportation Architecture, and Electrical, Mechanical Water & Waste Water Engineering (TAEMWW) use the standard color table file taemww_color.tbl. The assigned RGB values facilitate distinction of feature display on the monitor as well as interdisciplinary coordination. The standard color table is configured to avoid conflicts between pre-version 8 (pre-V8) format design files that use levels 1 - 63 with corresponding colors 1 - 63 and version 8 (V8) format design files that have virtually unlimited levels.

The TAEMWW color table has the following characteristics.
   - Colors 0 - 63 are used with pre-V8 format design files.

   - Colors 64 - 127 are not used by TAEMWW.

   - Colors 128 - 239 are used with V8 format design files.

   - Colors 240 - 249 are not used by TAEMWW.

   - Colors 250 - 255 are reserved for HQ CADD and the background color.

   - Colors 0 – 249 are plotted black on project plans because of specifications in the Caltrans standard design scripts (see Chapter 5).

Colors, color descriptions and RGB values for the color table file taemww_color.tbl are listed in the following table.

TEAMWW Standard Color Table				
Color	Color Description	Red	Green	Blue
0	yellow	255	255	0
1	electric blue	69	100	255
2	dark violet	156	31	240
3	bright yellow green	150	255	13
4	desert orange	255	123	0
5	dark lavender	152	137	250
6	scout green	0	227	170
7	pink rose	250	75	150
8	deep cyan	102	255	255
9	grey	185	185	185
10	white	255	255	255
11	white	255	255	255
12	bright green	0	255	55
13	red	255	0	0
14	yellow	255	255	0
15	deep lavender	211	181	255
16	plum crazy	255	102	255
17	cyan	0	255	255
18	sea foam green	204	255	204
19	soft blue	191	255	255
20	sea green	0	255	191
21	blueberry	124	153	247
22	desert orange	255	153	0
23	yellow	255	255	0
24	old gold	255	204	102
25	medium spring green	0	250	154
26	red	255	0	0
27	violet	238	130	238
28	deep sky blue	0	191	255
29	dark grey	163	163	163
30	soft red brown	230	170	115
31	deep red brown	204	126	102
32	red brown	204	128	102
33	desert red	194	62	33
34	dark goldenrod	184	134	11
35	light rust	240	152	29
36	rust	255	99	51
37	desert gold	255	204	102

TEAMWW Standard Color Table				
Color	**Color Description**	**Red**	**Green**	**Blue**
38	medium spring green	0	250	154
39	red	255	0	0
40	white	255	255	255
41	dark steel blue	115	154	186
42	blue green	118	179	164
43	dark plum	201	113	198
44	dark blue	76	142	217
45	rust	255	99	51
46	brown	194	149	91
47	mocha	222	188	149
48	dark sky blue	0	149	255
49	cyan	0	255	255
50	plum crazy	255	102	255
51	sea foam green	204	255	204
52	salmon	250	128	114
53	pale green	152	251	152
54	bisque	255	228	196
55	dark blue	76	142	217
56	yellow	255	255	0
57	deep sky blue	0	191	255
58	steel blue	70	130	180
59	black	0	0	0
60	white	255	255	255
61	red	255	0	0
62	red	255	0	0
63	red	255	0	0
64	grey	185	185	185
65	grey	185	185	185
66	grey	185	185	185
67	grey	185	185	185
68	grey	185	185	185
69	grey	185	185	185
70	grey	185	185	185
71	grey	185	185	185
72	grey	185	185	185
73	grey	185	185	185
74	grey	185	185	185
75	grey	185	185	185
76	grey	185	185	185

TEAMWW Standard Color Table				
Color	**Color Description**	**Red**	**Green**	**Blue**
77	grey	185	185	185
78	grey	185	185	185
79	grey	185	185	185
80	grey	185	185	185
81	grey	185	185	185
82	grey	185	185	185
83	grey	185	185	185
84	grey	185	185	185
85	dim grey	105	105	105
86	dim grey	105	105	105
87	dim grey	105	105	105
88	dim grey	105	105	105
89	dim grey	105	105	105
90	dim grey	105	105	105
91	dim grey	105	105	105
92	dim grey	105	105	105
93	dim grey	105	105	105
94	dim grey	105	105	105
95	dim grey	105	105	105
96	dim grey	105	105	105
97	dim grey	105	105	105
98	dim grey	105	105	105
99	dim grey	105	105	105
100	dim grey	105	105	105
101	dim grey	105	105	105
102	dim grey	105	105	105
103	dim grey	105	105	105
104	dim grey	105	105	105
105	dim grey	105	105	105
106	dim grey	105	105	105
107	dim grey	105	105	105
108	dim grey	105	105	105
109	dim grey	105	105	105
110	dim grey	105	105	105
111	dim grey	105	105	105
112	dim grey	105	105	105
113	dim grey	105	105	105
114	dim grey	105	105	105
115	dim grey	105	105	105

TEAMWW Standard Color Table				
Color	Color Description	Red	Green	Blue
116	dim grey	105	105	105
117	grey	185	185	185
118	grey	185	185	185
119	grey	185	185	185
120	grey	185	185	185
121	grey	185	185	185
122	grey	185	185	185
123	grey	185	185	185
124	grey	185	185	185
125	grey	185	185	185
126	grey	185	185	185
127	grey	185	185	185
128	navy blue	0	0	128
129	dark slate blue	72	61	139
130	slate blue	106	90	205
131	light slate blue	132	112	255
132	cornflower blue	100	149	237
133	sky blue	135	206	235
134	powder blue	176	224	230
135	light cyan	224	255	255
136	channel blue	200	255	255
137	cyan	0	255	255
138	clear sky blue	100	230	255
139	deep sky blue	0	191	255
140	dodger blue	30	144	255
141	steel blue	70	130	180
142	blue	0	0	255
144	burnt orange	205	100	0
145	honey orange	255	120	0
146	dark orange	255	140	0
147	orange	255	165	0
148	mustard	255	195	0
149	navajo white	255	222	173
150	papaya whip	255	239	213
151	moccasin	255	228	181
152	peach	255	190	120
153	light salmon	255	160	122
154	dark salmon	233	150	122
155	salmon	250	128	114

TEAMWW Standard Color Table				
Color	Color Description	Red	Green	Blue
156	coral	255	127	80
157	grey	185	185	185
158	grey	185	185	185
159	grey	185	185	185
160	dark green	0	100	0
161	forest green	0	155	0
162	lime green	50	205	50
163	green	0	255	0
164	light lime green	160	255	0
165	pale green	152	251	152
166	yellow green	154	205	50
167	olive green	140	155	0
168	dark olive green	85	107	47
169	dark blue green	0	100	100
170	cadet blue	95	158	160
171	light sea green	32	178	170
172	dark turquoise	0	206	209
173	pale turquoise	175	238	238
174	pale jade	205	255	205
175	light jade	0	255	190
176	sienna	160	82	45
177	chocolate	210	105	30
178	peru	205	133	63
179	warm sand	240	160	35
180	light brown	245	205	120
181	light gold	255	220	155
182	wheat	245	222	179
183	burlywood	222	184	135
184	orange brown	255	150	45
185	dark orange brown	230	120	40
186	dark rust	190	80	35
187	dark red brown	150	55	40
188	dark goldenrod	184	134	11
189	goldenrod	218	165	32
190	light goldenrod	238	221	130
191	pale goldenrod	238	232	170
192	black	0	0	0
193	dim grey	105	105	105
194	dark grey	135	135	135

TEAMWW Standard Color Table				
Color	**Color Description**	**Red**	**Green**	**Blue**
195	medium grey	165	165	165
196	grey	192	192	192
197	light grey	211	211	211
198	gainsboro	220	220	220
199	white smoke	245	245	245
200	white	255	255	255
201	alice blue	240	248	255
202	periwinkle	195	215	240
203	light steel blue	176	196	222
204	pale slate grey	145	165	185
205	light slate grey	119	136	153
206	medium slate grey	100	115	130
207	dark slate grey	47	79	79
208	black cherry	160	0	0
209	grenadine	200	0	0
210	red	255	0	0
211	orange red	255	69	0
212	construction red	255	100	0
213	adobe	255	130	100
214	warm pink	255	175	150
215	grey	185	185	185
216	maroon	176	48	96
217	medium violet red	199	21	133
218	pale violet red	219	112	147
219	misty rose	255	228	225
220	pink	255	192	203
221	deep pink	255	20	147
222	magenta	255	0	255
223	plum	221	160	221
224	amber	255	190	40
225	gold	255	215	0
226	pyrite	255	230	100
227	yellow	255	255	0
228	lemon chiffon	255	250	205
229	khaki	240	230	140
230	dark khaki	189	183	107
231	grey	185	185	185
232	lavendar	230	230	250
233	light purple	150	135	250

TEAMWW Standard Color Table				
Color	**Color Description**	**Red**	**Green**	**Blue**
234	medium orchid	186	85	211
235	purple	160	32	240
236	dark violet	148	0	211
237	deep violet	110	0	160
238	grey	185	185	185
239	grey	185	185	185
240	grey	185	185	185
241	grey	185	185	185
242	grey	185	185	185
243	grey	185	185	185
244	grey	185	185	185
245	grey	185	185	185
246	grey	185	185	185
247	grey	185	185	185
248	grey	185	185	185
249	grey	185	185	185
250	grey	185	185	185
251	grey	185	185	185
252	grey	185	185	185
253	grey	185	185	185
254	grey	185	185	185
255	Black (background)	0	0	0